KYOCERA

2021-2022 | KYOCERA Precision Tools

GENERAL CATALOG

AHB
TOOLING & MACHINERY

COMPLETE METALWORKING SOLUTIONS

(800) 991-4225
www.ahbinc.com
ISO Certified
customerservice@ahbinc.com

ADVANCING PRODUCTIVITY

KYOCERA

Continuously Create New Value
at the Cutting Edge of Technology

ADVANCING PRODUCTIVITY

Contributing to the betterment of world-wide
manufacturing and our customers' productivity by
providing efficient cutting tool products and
high-precision machining solutions

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KYOCERA CUTTING TOOLS

GLOBAL FACILITIES NETWORK

NORTH AMERICA

KPT Indexable Technical Center
North Carolina (USA)

KPT Indexable Mfg. Facility
Wapakoneta, Ohio (USA)

KPT Round Tool Mfg. Facility
California (USA)

KSPT Round Tool Mfg. Facility
Ohio (USA)

KSPT Tech Hub Mfg. & R&D Facility
Virginia (USA)

GLOBAL

KYOCERA Corp. Indexable Mfg. Facility
Okaya Facility (JAPAN)

KYOCERA Corp. Indexable Mfg. Facility
Yokaichi Facility (JAPAN)

KYOCERA Corp. Indexable Mfg. Facility
Sendai Facility (JAPAN)

KYOCERA Corp. Indexable Mfg. Facility
Silong Facility (CHINA)

KYOCERA Corp. Indexable Mfg. Facility
Incheon Facility (KOREA)

KYOCERA CUTTING TOOLS

GLOBAL TECHNICAL CENTERS

North American Technical Center (NORTH CAROLINA, USA)

Sales & Technical Center (GERMANY)

Technical Center (BRAZIL)

Technical Center (SINGAPORE)

Technical Center (JAPAN)

Technical Center (CHINA)

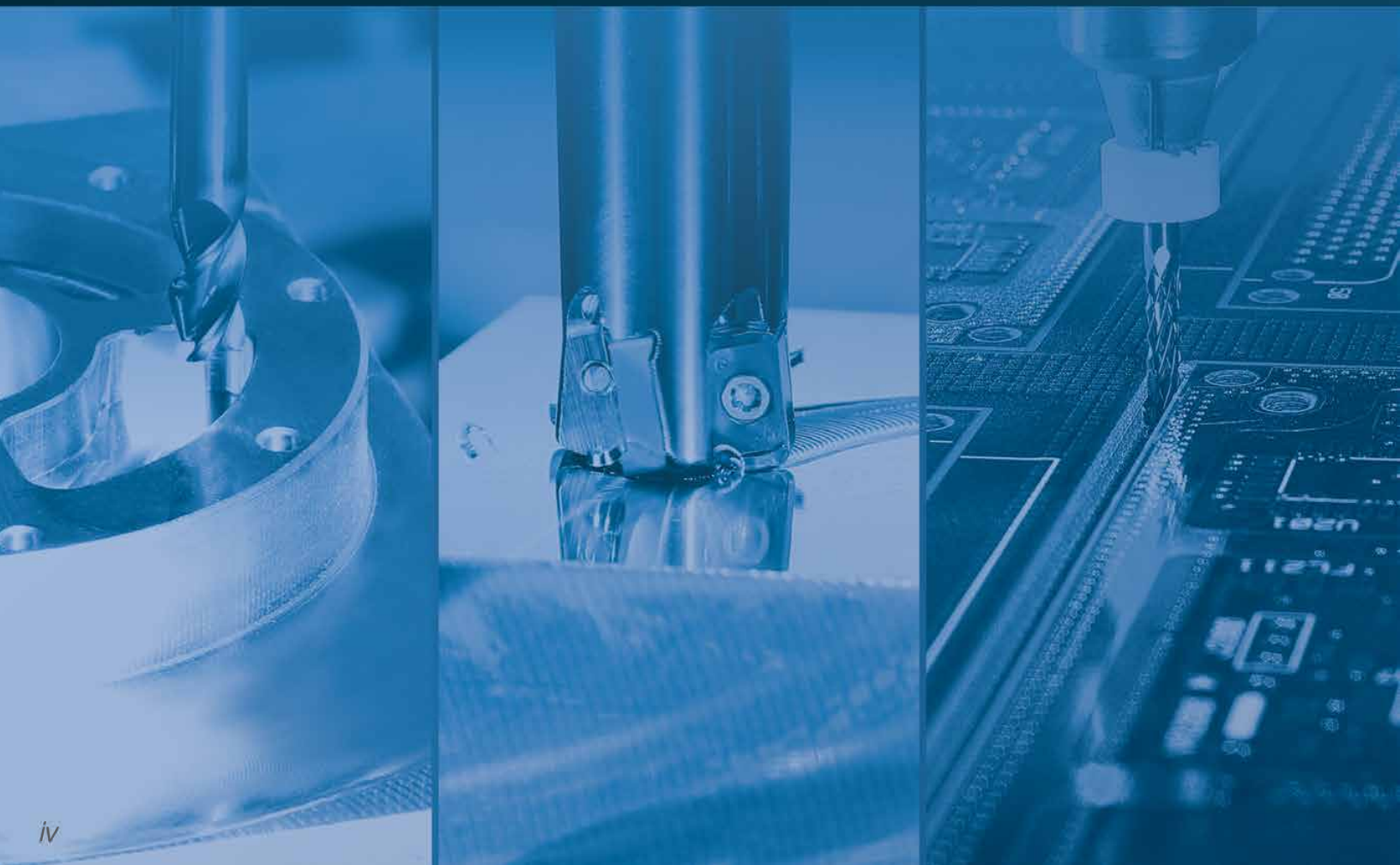
Technical Center (JAPAN)

Technical Center (KOREA)

Technical Center (JAPAN)

KYOCERA-SGS
Precision Tools Group

The KYOCERA-SGS Precision Tools Group (KSPT-G) is comprised several independently operated divisions, each with unique products to service a variety of industries, including aerospace, automotive, medical, dental, power generation, and printed circuit boards.



KYOCERA Precision Tools

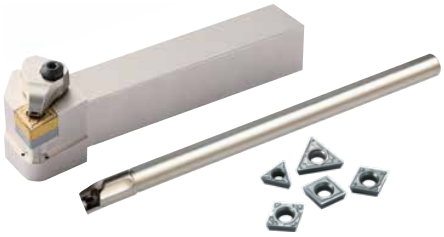
KYOCERA PRECISION TOOLS (KPT)

KYOCERA Precision Tools (KPT) is a division of the Kyocera-SGS Precision Tools Group specializing in the manufacturing, servicing, and marketing of Indexable Cutting Tools and Printed Circuit Board (PCB) drills. With over 40 years of cutting tool expertise, KYOCERA has become the market-leader in Japan and has an established global presence with manufacturing, technical centers and sales offices in the Americas, Europe, and Asia.

CUTTING-EDGE, COST-EFFICIENT SOLUTIONS

KYOCERA Precision Tools develops state-of-the-art indexable cutting tools that exceed quality expectations while providing the cost-efficiency that today's metalworking consumer demands. Though ceramic technologies were the nucleus of the original business model, Kyocera has become a global leader in the metal removal industry by developing state-of-the-art cutting tool solutions using carbide, cermet, CBN and PCD. Over the past 40 years, Kyocera has developed some of the highest-quality, innovative indexable tooling solutions the industry has seen, including the **MEC Ultra-Hurricane** 90° Milling Cutters, the **MFH-Raptor** High-Feed Milling Cutters, the **DRZ & DRV** Family of Magic Drills, and **CCX**, the first-ever CVD Coated Cermet.

PRODUCTS



Turning & Boring

Holemaking

Indexable Milling

Printed Circuit Board (PCB) Cutting Tools

Quick-Change Tooling & Specialty Tools

Grooving & Cut-Off

HOW TO REACH US

KYOCERA Precision Tools
102 Industrial Park Road
Hendersonville, NC 28792

Phone: (800) 823-7284
Email: ctsales@kyocerapti.com
Web: www.kyoceraprecisiontools.com

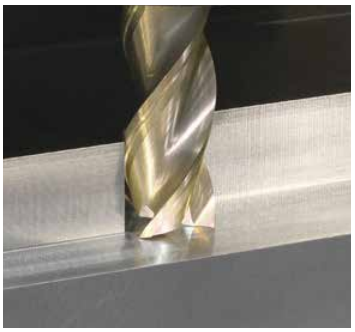
SGS Solid Carbide Tools

KYOCERA-SGS PRECISION TOOLS (KSPT)

KYOCERA SGS Precision Tools (KSPT) is an ISO-certied manufacturer of industry leading round solid carbide cutting tools. State of the art manufacturing and warehouse facilities have the capacity and processes to meet the quality and delivery demands of customers in all markets around the world. Complete inspections performed within its metallurgical lab and manufacturing quality departments ensure the use of high quality carbide and reliable manufacturing consistency regardless of when a cutting tool is produced. KSPT Technical Sales Engineers, Application Specialists, and Distribution Partners blanket the globe, delivering reliable service and support to all market segments.

VALUE AT THE SPINDLE®

KYOCERA SGS Precision Tools is a global leader in solid round cutting tools, thanks in part to our unrivaled portfolio of capabilities ranging from world class manufacturing centers, to vigorous research and development teams, to proprietary coatings and dependable logistics. Our dedication to bringing VALUE AT THE SPINDLE® starts with inspecting each batch of raw material, and ends with custom tooling solutions with KSPT Engineers and end users customizing tool paths, machine operation parameters, and work piece testing.



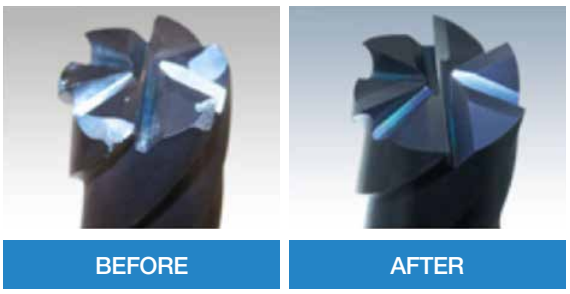
PRODUCTS

Solid Carbide End Mills

Micro Drills and End Mills

TOOL SERVICES

KSPT is committed to providing superior tooling services in the areas of Reconditioning, Recoating, Regrinding, Specials and Alterations. These services are offered to provide unique solutions and enhanced tool life with involvement from the KSPT Technical Support Team. KSPT proudly offers Tooling Services in North America and Europe.



BEFORE | AFTER

HOW TO REACH US

KYOCERA-SGS Precision Tools
55 South Main Street
Munroe Falls, Ohio 44262

Phone: (330) 686-5700
E-mail: webmaster@kyocera-sgstool.com
Web: www.kyocera-sgstool.com

KYOCERA SGS Tech Hub LLC

KYOCERA-SGS TECH HUB

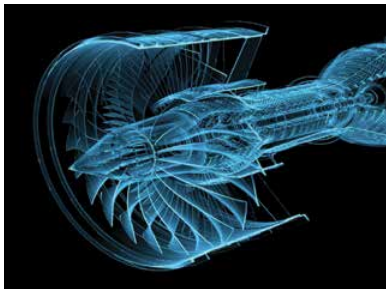
The KYOCERA SGS Tech Hub (KSTH) is an independent subsidiary of the Kyocera SGS Precision Tools (KSPT) group created to focus on custom cutting tool solutions and explore new technologies. This facility has resources designed to provide MORE than a cutting tool, but a complete scope of services to include managing the entire cutting tool application from conception to application and beyond.

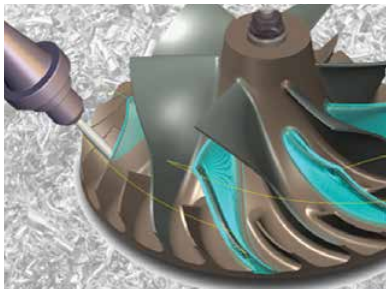
CUSTOMIZED ENGINEERING SOLUTIONS

At KSTH we approach each opportunity as a project and manage it as such. We pride ourselves on engineering each project to the specific needs of our customers. Providing quotes often within 24 hours and following through with detailed drawings, solid models, process plans, and program simulations if needed. Our goal is to work hand in hand with the end user and maintain constant communication to customize our support to their needs.

RELEVANT TESTED SOLUTIONS

KSTH R&D has been created with a dual purpose. First and foremost is to create dedicated resources for testing and evaluating application solutions tailored to each customer project. The second is to focus on evaluating technologies within industry as a whole so that we can provide complete and relevant solutions to our customers. The KSTH R&D space is a collaborative think tank that allows KSTH to work for each customer individually with industry partners, new technology, and Universities to provide thorough next level solutions.





HOW TO REACH US

KYOCERA-SGS Precision Tools Tech Hub
149 Slayton Avenue
Danville, VA 24540
Phone: (434) 791-2020
Web: www.kyocera-techhub.com

KYOCERA-SGS MEDICAL DIVISION

KSPT Medical produces unique, customer designed orthopedic devices using highly trained engineers dedicated to new technology. KSPT Medical is a division of KYOCERA SGS Precision tools—an ISO-certified leader, who proudly pioneered some of the world's most advanced metal cutting technology and sells to more than 60 countries. With over 20 years of industry experience, KSPT Medical Division maintains their ISO13485 certification and is FDA Registered in the production of medical devices in the orthopedic marketplace.

MACHINING CAPABILITIES

- Grinding
- Milling
- Turning
- Profiling
- Bending
- Customized Assembly

SERVICES OFFERED

- Welding
- Various Coatings
- Anodizing
- Passivation
- Electropolishing
- Laser Etching
- Heat Treating

HOW TO REACH US

KYOCERA-SGS Precision Tools Medical Division
724 East Swihart Street
Columbia City, Indiana 46725
Phone: (260) 244-7677
Web: www.kyocera-sgstool.com/medical-division

Request a Quote
rfq@kyocera-sgstool.com

Customer Service and Orders:
salesmd@kyocera-sgstool.com

FDA REGISTERED ISO 13485 CERTIFIED

How to Order

Kyocera Precision Tools' high-performance lineup of indexable and printed circuit board tooling products can be purchased through our vast North American Distribution network.

Locate a Distributor

Use our ***Locate a Distributor*** map at:
www.KyoceraPrecisionTools.com/locate

Contact Us

INDEXABLE TOOLS
Customer Service

1-800-823-7284
(OPTION 1)

Monday - Friday
5:00AM - 4:30PM (PST)
8:00AM - 7:30PM (EST)

PRINTED CIRCUIT BOARD
Customer Service

1-888-848-9266
(U.S.)

001-714-428-3655
(INTERNATIONAL)

Monday - Friday
5:00AM - 4:30PM (PST)
8:00AM - 7:30PM (EST)

TECHNICAL SUPPORT

1-800-823-7284
(OPTION 2)

Monday - Friday
4:00AM - 2:00PM (PST)
7:00AM - 5:00PM (EST)

GENERAL INQUIRIES
cuttingtools@kyocerapti.com

CUSTOMER SERVICE
(Indexable Tools)
ctsales@kyocerapti.com

CUSTOMER SERVICE
(Printed Circuit Board)
pcb.cs@kyocerapcb.com

TECHNICAL SUPPORT
techs@kyocerapti.com

Authorized Distributor Ordering Guide

TO PLACE ORDERS ONLINE VISIT - http://mykpti.kyocera.com

In addition to placing orders, the MyKPTI distributor website allows you to view real-time product availability, lead times, pricing, download product and promotional literature, watch product training videos, and more.

Stock Status Symbols

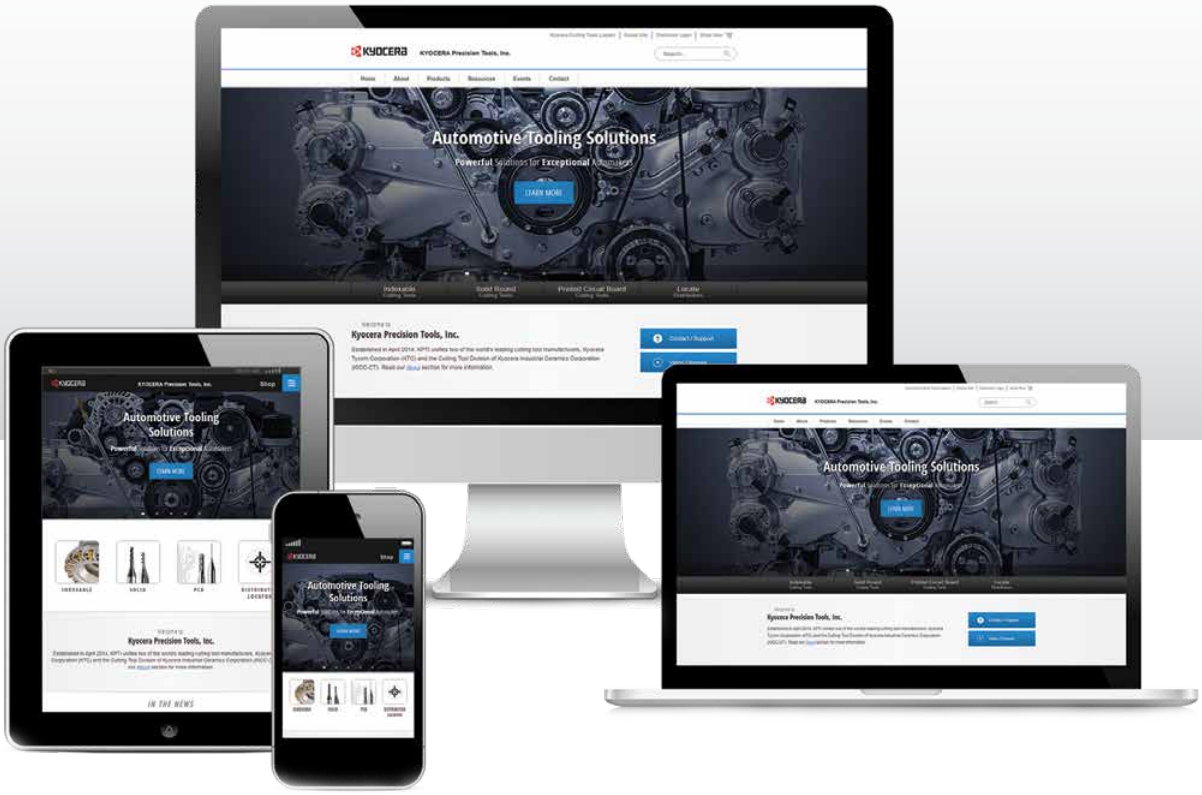
● Indicates that an item is a **Standard Item** and is available to order. If there is stock in the U.S., items will ship the same day if ordered by 4:30pm (EST). If there is no U.S. stock, please allow 7-10 business days for items to arrive.

△ Indicates that an item is being phased out of production. Please contact your local Kyocera sales engineer to determine a replacement solution.

*All Standard Items are subject to U.S. or International availability

VISIT US ONLINE

WWW.KYOCERAPRECISIONTOOLS.COM



BUILT FOR SPEED AND OPTIMIZATION ACROSS ALL DEVICES

- *Easy to navigate, sliding mobile menus*
- *Find the information you need faster than ever*
- *Easy-to-read articles transformed on mobile devices*
- *Fast load times allow you to browse products without waiting*
- *View and download digital product brochures and catalogs*
- *Locate distributors in your area on-the-go through our distributor map*

Turning Inserts

CCX

CVD Coated Cermet for Steel Finishing

B16~

- Long tool life and improved wear resistance
- High-speed machining of steel and cast iron

PR1725 / PR1705

PVD Coating for Small Parts Machining

B22~

PR1725

- Great for machining steel and other materials
- Wide range of applications and chipbreakers available

PR1725

- Excellent wear resistance
- High precision machining of free-cutting steel

PV730

Hybrid Cermet for Steel Finishing

B22~

- Kyocera's toughest cermet grade technology
- Stable machining with high-quality surface finish

KS6015

Silicon Nitride Ceramic for Cast Iron

B106~

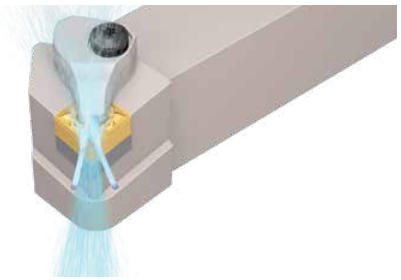
- Prevents chipping during scale removal and interrupted cuts
- Excellent wear resistance with reduced grain boundary phase

Coolant-Through External Holders

JCT Series

Jet Coolant Through Holders

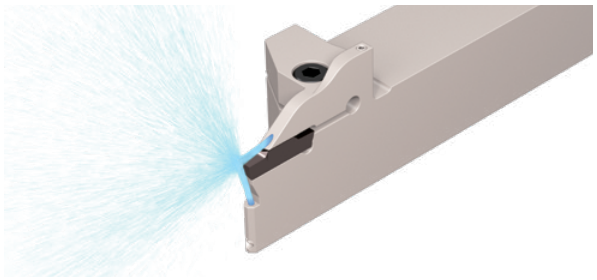
- Excellent chip control and long tool life with high pressure coolant systems
- Large holder lineup for turning, external grooving, cut-off and threading applications
- Internal coolant provides longer tool life and excellent chip control



Double-Clamp-JCT

External Turning Holders

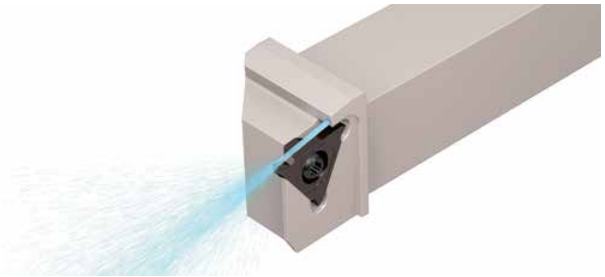
D8~



KGD-JCT

External Grooving / Cut-Off Holders

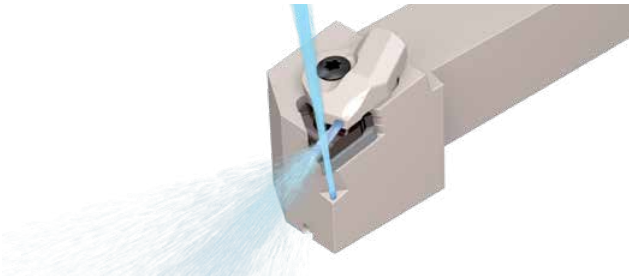
G32~



KGBA-JCT

External Shallow Grooving Holders

G13~



KTN-JCT

External Threading Holders

J21~

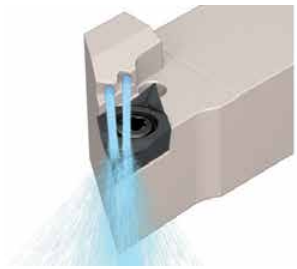
800.823.7284
Visit us online at KyoceraPrecisionTools.com

Coolant-Through Small Parts Holders

JCT Series

Jet Coolant Through Holders for Small Parts

- Excellent chip control and long tool life with high pressure coolant systems
- Capable of pressure up to 2,900 psi
- Large holder lineup for turning, external grooving, and cut-off



SDJC-JCT

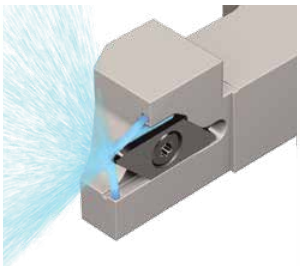
External Turning
(SCLC / SVJB / SVJP)

E27~

KGBF-JCT

Shallow Grooving

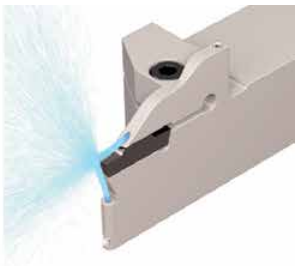
G19~



KTKF-JCT

Small Dia. Cut-Off

H13~



KGD-JCT

Grooving / Cut-Off

G29~

Internal Grooving

SIGC

High-Precision Small Internal Grooving

G62~

- Excellent chip evacuation with double coolant holes
- Long tool life with PR1725 insert grade
- Minimum bore dia. of Ø8mm
- Steel and carbide bar options available

Drilling

DRA Magic Drill

High Efficiency Replaceable Insert Tip Drills

K4~

- 1.5xD to 12xD drilling holder lineup with a low cutting force design for improved hole accuracy
- Fine chip breaking even in deep hole drilling
- Easy to replace inserts
- New KM insert for cast iron and FTP flat bottom / counterboring insert

KM Insert for Cast Iron

FTP Insert Flat Bottom / Counterboring

Chamfering Attachment

Expanded Lineup from Ø0.500"~Ø2.000" and Ø12mm~Ø60mm

DRV Magic Drill

High Efficiency Indexable Drills

K40~

- 2xD to 6xD drilling lineup with 4 chipbreakers for various machining applications
- High speed and highly efficient machining available with the combination of a CVD outer insert and PVD inner insert
- Excellent hole accuracy with a highly rigid design for better chatter resistance

Chamfering Attachment

FEATURED PRODUCTS

Milling

MEV

High Performance Multi-function Milling

M84~

New Triangular Insert Design

- Low cutting forces and higher rigidity for excellent chatter resistance
- Newly developed triangular inserts provide numerous solutions to machining challenges
- Longer insert and holder life when shouldering, slotting, and ramping

PR015S

Milling Grade for Machining Hardened Steel

M15~

- Long tool life and stable machining
- Improved wear resistance

MEAS

High Efficiency Milling of Aluminum

M150~

- High speed machining with grooved insert pockets
- Sharp cutting edge with low cutting force design
- Simultaneous 3-axis with a max. ramping angle of 20° (Ø25mm)

INSERT GRADES

A

A1 - A21

SUMMARY OF INSERT GRADES	A2 - A5
TURNING	A2
SMALL TOOLS	A3
GROOVING	A4
CUT-OFF	A4
DRILLING	A5
MILLING	A5
INSERT GRADES	**A6 - A21**
CERMET	A6
CVD COATED CARBIDE (Turning)	A8
PVD COATED CARBIDE (Turning)	A10
PVD / CVD COATED CARBIDE (Milling, Drilling)	A12
CARBIDE	A14
DLC COATING	A14
CERAMIC	A15
CBN (Cubic Boron Nitride)	A16
PCD (Polycrystaline Diamond)	A17
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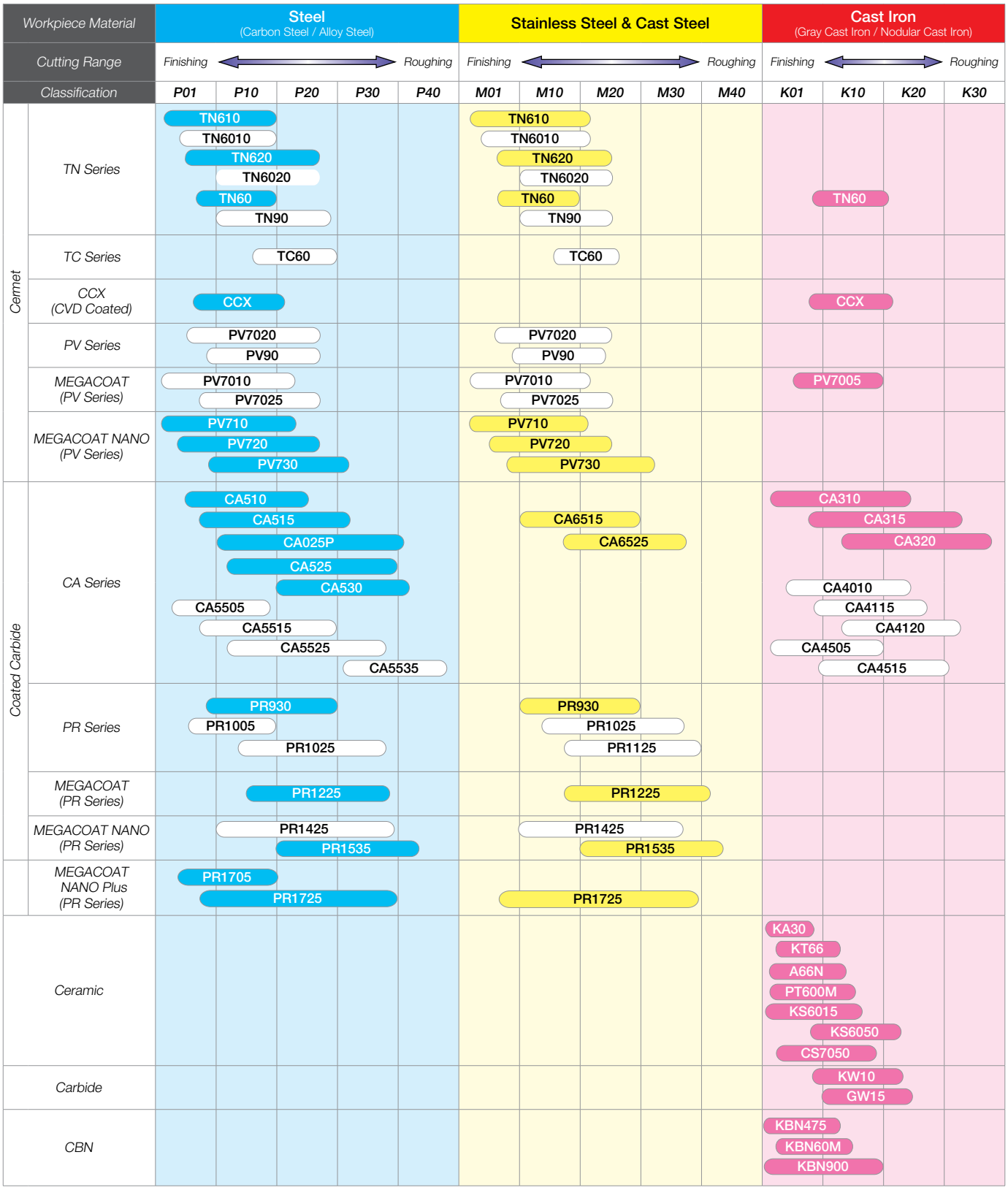
Turning



- White bars indicate old grades

800.823.7284
Visit us online at KyoceraPrecisionTools.com

Turning

Workpiece Material	Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Difficult-to-Cut Materials (HRSA / Ni-base HRSA)				Hard Materials (Hardened Steel / Chilled Cast Iron)				Powdered Steel			
Cutting Range	Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing			
Classification	N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30	01	10	20	30
Coated Carbide – CA Series						CA6515	CA6525									
Coated Carbide – PR Series							PR1125									
Coated Carbide – MEGACOAT (PR Series)					PR1305	PR1310	PR1325									
Coated Carbide – MEGACOAT HARD (PR Series)					PR005S	PR015S										
Coated Carbide – MEGACOAT NANO (PR Series)							PR1535									
Cermet													TN6010			
													TN60			
Ceramic						KXW1										
						CF1				KT66						
						KS6030				A66N						
						KS6040				PT600M						
CBN									KBN510							
									KBN525							
									KBN900							
MEGACOAT									KBN05M							
									KBN10M							
									KBN25M					KBN70M		
									KBN35M					KBN570		

Workpiece Material	Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Difficult-to-Cut Materials (Titanium)				Hard Materials (Hardened Steel / Chilled Cast Iron)				Powdered Steel			
Cutting Range	Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing			
Classification	N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30	01	10	20	30
Coated Carbide – MEGACOAT NANO (PR Series)							PR1535									
Carbide					SW05											
						SW10										
							SW25									
		KW10				KW10										
		GW15				GW15										
DLC Coating		PDL010														
		PDL025														
PCD	KPD001				KPD001											
	KPD010				KPD010											
	KPD230															
	KPD250															

PVD Coated Carbide for Small Tools

Workpiece Material	Steel (Carbon Steel / Alloy Steel)					Stainless Steel & Cast Steel					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range	Finishing ⟷ Roughing					Finishing ⟷ Roughing					Finishing ⟷ Roughing			
Classification	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Coated Carbide – PR Series		PR930					PR930							
		PR1005					PR1025							
			PR1025				PR1125							
Coated Carbide – MEGACOAT (PR Series)			PR1225					PR1225						
Coated Carbide – MEGACOAT NANO (PR Series)			PR1535					PR1535						
			PR1425					PR1425						
MEGACOAT NANO PLUS (PR Series)	PR1705													
	PR1725						PR1725							

- White bars indicate old grades

A INSERT GRADES

Grooving / Cut-Off

Workpiece Material		Steel (Carbon Steel / Alloy Steel)					Stainless Steel & Cast Steel					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range		Finishing ⟷ Roughing					Finishing ⟷ Roughing					Finishing ⟷ Roughing			
Classification		P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermet	MEGACOAT (PV Series)	PV7040										PV7040			
	TN Series	TN620, TN6020, TN60, TN90					TN620, TN6020, TN60, TN90					TN60			
	TC Series	TC40	TC60					TC60				TC40			
Coated Carbide	CR Series		CR9025					CR9025							
	PR Series	PR915, PR930, PR1025, PR1115		PR630, PR660			PR915, PR930, PR1025		PR630, PR660			PR905			
	MEGACOAT (PR Series)		PR1215, PR1225					PR1215, PR1225					PR1215		
	MEGACOAT NANO (PR Series)		PR1625	PR1535				PR1625	PR1515, PR1535						
Ceramic												A65, A66N, PT600M			
Carbide													KW10, GW15		

Workpiece Material		Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Difficult-to-Cut Materials (Titanium)				Hard Materials (Hardened Steel / Chilled Cast Iron)				Powdered Steel			
Cutting Range		Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing			
Classification		N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30	01	10	20	30
Coated Carbide	MEGACOAT (PR Series)														PR1215, PR1225		
Cermet															TN60		
Ceramic										A65, A66N, PT600M							
Carbide			KW10, GW05, GW15				KW10, GW15										
DLC Coating			PDL025														
CBN										KBN510, KBN525					KBN570		
PCD		KPD001, KPD010				KPD001, KPD010											

- White bars indicate old grades

Drilling

Workpiece Material		Steel (Carbon Steel / Alloy Steel)					Stainless Steel & Nickel-based Alloys					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range		Finishing ⟷ Roughing					Finishing ⟷ Roughing					Finishing ⟷ Roughing			
Classification		P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Coated Carbide	CA Series		CA520D					CA6535					CA415D		
	PR Series		PR830	PR660				PR830	PR660						
	MEGACOAT (PR Series)		PR1225 PR1230					PR1225					PR1210		
	MEGACOAT NANO (PR Series)		PR1535					PR1535					PR1525		
Carbide													KW10 GW15		

Workpiece Material		Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Difficult-to-Cut Materials (Inconel / Titanium)				Hard Materials (Hardened Steel / Chilled Cast Iron)			
Cutting Range		Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing			
Classification		N01	N10	N20	N30	S01	S10	S20	S30	H01	H10	H20	H30
Coated Carbide	MEGACOAT (PR Series)									PR1230			
Carbide			KW10 GW15				KW10 GW15						

Milling

Workpiece Material		Steel (Carbon Steel / Alloy Steel)					Stainless Steel & Cast Steel					Cast Iron (Gray Cast Iron / Nodular Cast Iron)			
Cutting Range		Finishing ⟷ Roughing					Finishing ⟷ Roughing					Finishing ⟷ Roughing			
Classification		P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30
Cermet	TN Series		TN620M TN60 TN100M					TN60 TN100M							
	TC Series		TC60					TC60							
Carbide	CA Series							CA6535					CA420M		
	PR Series		PR830					PR830							
	MEGACOAT (PR Series)		PR1225 PR1230					PR1225					PR1210		
	MEGACOAT NANO (PR Series)		PR1525					PR1525 PR1535					PR1510		
Carbide													KW10 GW25		

Workpiece Material		Non-Ferrous (Aluminum / Non-Ferrous Metals / Non-Metals)				Difficult-to-Cut Materials (HRSA / Ni-base HRSA)				Difficult-to-Cut Materials (Titanium)				Hard Materials (Hardened Steel / Chilled Cast Iron)			
Cutting Range		Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing				Finishing ⟷ Roughing			
Classification		N01	N10	N20	N30	S01	S10	S20	S30	S01	S10	S20	S30	H01	H10	H20	H30
Coated Carbide	CA Series						CA6535				CA6535						
	MEGACOAT (PR Series)										PR1210						
	MEGACOAT HARD (PR Series)														PR015S		
	MEGACOAT NANO (PR Series)						PR1535				PR1535						
Carbide			KW10 GW25								KW10 GW25						
DLC Coated Carbide			PDL025														
PCD			KPD001 KPD010 KPD230 KPD250								KPD001 KPD010						

• White bars indicate old grades

CERMET & COATED CERMET

CERMET

KYOCERA is known as one of the leading manufacturers of cermets. Cermet is a composite material combining ceramic and metal. Typical materials used in cermets are TiC, TiN, TiCN and NbC. Designed to provide long tool life and excellent surface finishes, cermets combine toughness with superior wear resistance.

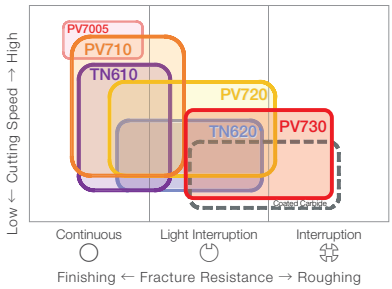
PVD & CVD COATED CERMET

PVD Coated Cermet is a cermet substrate with a thin coating offering high wear resistance and high adhesion resistance. The coating is applied by PVD (Physical Vapor Deposition) technology. CVD Coated Cermet is a cermet substrate with a thin coating offering high-speed wear resistance. The coating is applied by CVD (Chemical Vapor Deposition) technology.

FEATURES OF CERMET & COATED CERMET

Material	Description		Color	Main Component (Coating Composition)	Advantages
P Steel	Cermet	TN610	Gray	TiCN	· Three hybrid technology attributes maintain superior surface finish and machining stability · Application: Stable machining of steel
		TN620	Gray	TiCN	· High wear resistance and chipping resistance cermet due to three hybrid technology attributes · Application: Cermet for steel machining, long tool life in high speed and continuous applications
		TN60	Gray	TiCN+NbC	· Application: Machining of steel, continuous to interruption
		TN6020 (Super Micro-Grain)	Gray	TiCN	· Application: Uncoated cermet for steel
		TN620M	Gray	TiCN	· Tough cermet for milling with excellent balance of wear resistance and toughness
		TN100M	Gray	TiCN+NbC	· Tough cermet with improved oxidation resistance and thermal shock resistance · Application: Milling of steel at high speed
		TC40	Gray	TiC+TiN	· Good balance of wear resistance and toughness · Application: Grooving and threading of steel
	CVD Cermet	CCX	Gold	TiCN	· Ultra-fine grain, high-strength cermet base material with thick film CVD coating for excellent wear resistance and chipping resistance, achieving a long life in high-speed machining · Application: High-speed finishing of steel to light interrupted cutting
	MEGACOAT NANO Cermet	PV710	Gold	TiCN (MEGACOAT NANO)	· Superior wear and adhesion resistant MEGACOAT NANO on wear resistant cermet · Application: Long tool life and stability in high speed continuous machining of steel, excellent surface finish
		PV720	Gold	TiCN (MEGACOAT NANO)	· Superior wear and adhesion resistant MEGACOAT NANO on wear resistant, tough cermet · Application: First recommendation PVD coated cermet for steel machining and high quality surface finish
		PV730	Gold	TiCN (MEGACOAT NANO)	· Fracture resistant grade with MEGACOAT NANO on wear resistant, tough cermet · Application: Wear resistant PVD coated cermet for steel machining and high quality surface finish
		PV60M	Gold	TiCN+NbC (MEGACOAT NANO)	· Milling grade with improved stability using MEGACOAT NANO coating technology · Application: Stable steel milling and high-quality surface finish
	MEGACOAT Cermet	PV7040	Blackish Red	TiC+TiN (MEGACOAT)	· MEGACOAT cermet for grooving · Application: Excellent surface finish and longer tool life in steel grooving
K Cast Iron		PV7005	Blackish Red	TiC+TiN (MEGACOAT)	· Heat-resistant MEGACOAT on cermet with excellent wear resistance · Application: High speed finishing of gray and nodular cast iron

Application Map (PVD and Uncoated Cermet)



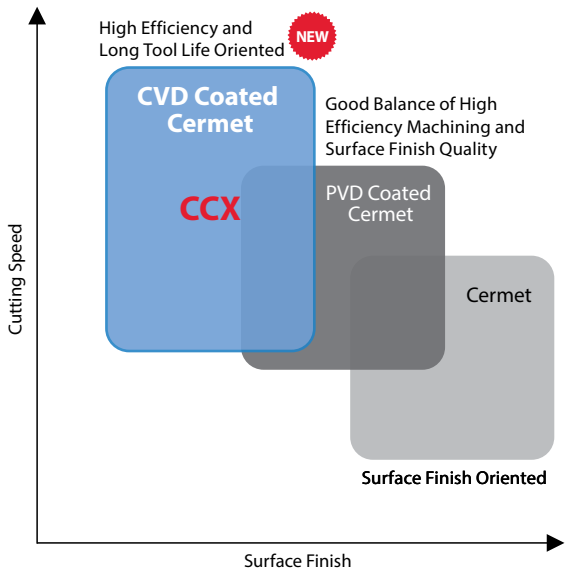
TN-Series (Uncoated Cermet)

TN610: High Wear Resistance
TN620: Chipping Resistance

PV-Series (MEGACOAT NANO Cermet)

PV710: Long Tool Life and Stable Machining for High Speed Continuous Cuts
PV720: First Recommendation for Efficiency and High Quality Surface Finish
PV730: Tough Cermet for High Stability and High Quality Surface Finish

Application Map (CVD Coated Cermet)



Uncoated CERMET
TN610 / TN620

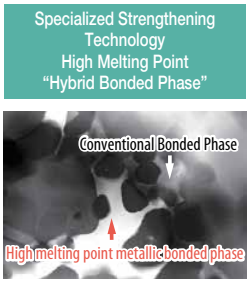
MEGACOAT NANO CERMET
PV710 / PV720 / PV730

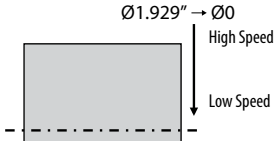
3 Hybrid Technology Attributes Maintain Superior Surface Finish and Machining Stability

Excellent Surface Finish

Combining the conventional cermet bonded phase (nickel, cobalt) and the special high melting point metallic bonded phase.

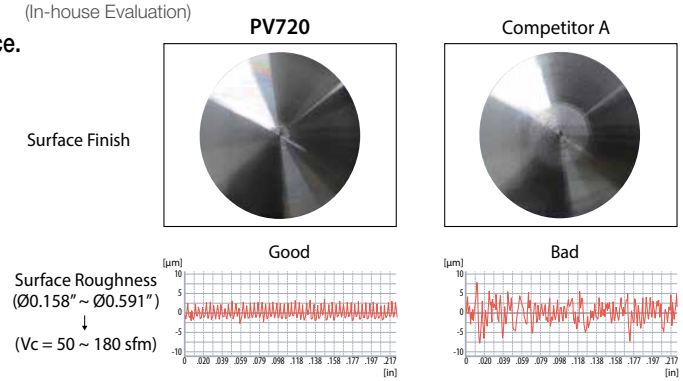
Provides high adhesion resistance to eliminate galling of the work piece.





Surface Finish Comparison (In-house Evaluation)

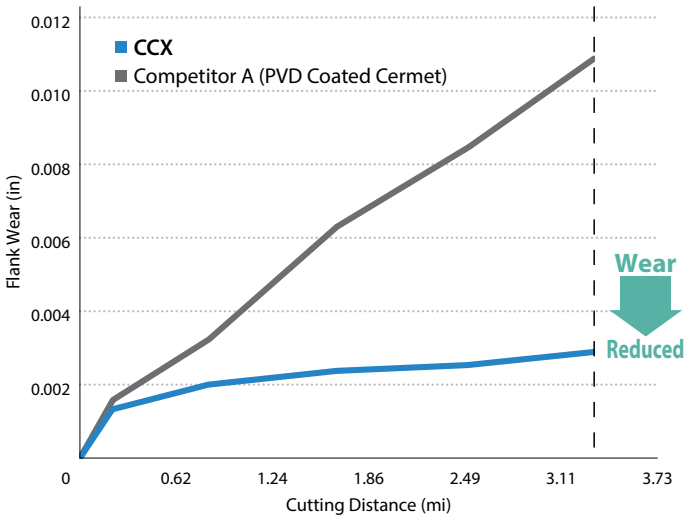
Cutting Conditions: Vc = 590 ~ 0 sfm (Constant Rate), D.O.C. = 0.020"
f = 0.004 ipr, Wet, CNMG431 type Workpiece: 1010



CVD Coated Cermet for Finishing
CCX

- Combination of cermet with a CVD coating provides high-speed machining for better productivity
- Applicable to a wide range of cutting conditions from general to high-speed applications
- Maintains long tool life in soft steel, general steel and cast iron machining

Wear Resistance Comparison (Internal Evaluation)

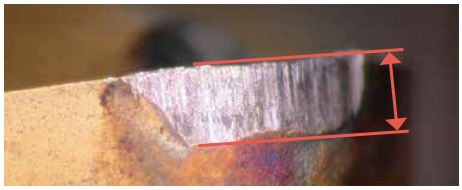


Cutting Conditions : Vc = 3,280 sfm, D.O.C. = 0.010", f = 0.006 ipr, Wet
CNMG432 Type Facing

Cutting Edge (As of 3.29 mi of machining)

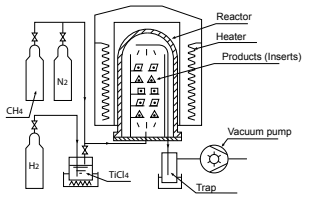
CCX

Competitor A (PVD Coated Cermet)



CVD COATED CARBIDE

CVD (Chemical Vapor Deposition)



Features
① Equally deposited on face
② Easy application for multilayer deposition
③ Enabling thick coating

Processing Temperature: 900° ~ 1100°C

CVD COATED CARBIDE

KYOCERA's CVD coated carbide grades are based on ceramic thin film technology and provide stable, efficient cutting at high speeds or heavily interrupted applications.

- Applicable from low to high speed cutting and from finishing to roughing
- Stable cutting is achieved due to the superior toughness and crack resistance
- Cutting times are reduced due to good chip control from effective chipbreakers

FEATURES OF CVD COATED CARBIDE

Material	*Description*	*Color*	*Main Component (Coating Composition)*	*Advantages*
P Steel	**CA510**	Gold	TiCN+Al_2O_3+TiN	· Special substrate with thermal deformation resistance along with a thick and tough coating layer providing high wear resistance · Application: High speed and high efficiency steel machining
	CA515	Gold	TiCN+Al_2O_3+TiN	· Improved wear resistance and stability due to special substrate with heat deformation resistance and hard and tough coating layer with reinforced interface · Application: Light interrupted machining of steel
	CA025P	Gold	TiCN+Al_2O_3+TiN	· Thickened alumina with good thermal resistance (twice as thick as conventional coating) and specialized post-coating process prevents adhesion. · Application: General to interrupted machining of steel
	CA525	Gold	TiCN+Al_2O_3+TiN	· Stable and long tool life machining due to special substrate with heat deformation resistance and tougher coating layer and reinforced interface · Application: Interrupted to general machining of steel
	CA530	Gold	TiCN+Al_2O_3+TiN	· Special tough substrate and tough coating layer providing high stability and wear resistance · Application: General to heavy interrupted machining (stability oriented)
	CA5505	Gold	TiCN+Al_2O_3+TiN	· Application: High speed continuous machining of steel, continuous to light interrupted machining of cast iron
	CA5515	Gold	TiCN+Al_2O_3+TiN	· Application: Machining of steel, continuous to light interruption
	CA5525	Gold	TiCN+Al_2O_3+TiN	· Application: For general machining of steel, roughing to interruption
	CA5535	Gold	TiCN+Al_2O_3+TiN	· Application: Roughing to heavily interrupted machining of steel
	CR9025	Gold	TiCN+TiN	· Application: For general machining of steel, roughing to interruption
M Stainless Steel	**CA6515**	Gold	TiCN+Al_2O_3+TiN	· Specialized carbide substrate for machining stainless steel, excellent wear resistance · Application: Continuous machining of stainless steel
	CA6525	Gold	TiCN+Al_2O_3+TiN	· Specialized carbide substrate for machining stainless steel with excellent notching resistance and toughness · Application: First choice for general machining of stainless steel, from finishing to roughing, continuous to interruption
K Cast Iron	**CA310**	Rose Gold	TiCN+Al_2O_3+Ti Base	· Grade for high-speed continuous machining and improved tool life through the deposition of a thickened Al2O3 coating layer · Application: For finishing to roughing of gray cast iron
	CA315	Rose Gold	TiCN+Al_2O_3+Ti Base	· High efficiency and long tool life for continuous to interrupted machining with a good balance of wear resistance and stability · Excellent performance for machining gray and nodular cast iron
	CA320	Rose Gold	TiCN+Al_2O_3+Ti Base	· Improved stability with CVD layer structure with high adhesion · Application: Roughing to heavy interrupted cutting of nodular cast iron
	CA4010	Gold	TiCN+Al_2O_3+TiN	· Application: Continuous to light interrupted high speed machining of cast iron
	CA4115	Gold	TiCN+Al_2O_3+TiN	· Application: Continuous to light interrupted machining of nodular cast iron
	CA4120	Gold	TiCN+Al_2O_3+TiN	· Application: Roughing to heavy interrupted machining of nodular cast iron
	CA4505	Blackish Gray	TiCN+Al_2O_3	· Stable, longer tool life due to improved bonding strength of coating layers and special treatment of the surface of the top coating layer · Application: For gray cast iron and nodular cast iron at high speed in continuous to light interrupted machining
	CA4515	Blackish Gray	TiCN+Al_2O_3	· Stable, longer tool life due to improved bonding strength of coating layers and special treatment of the surface of the top coating layer · Application: First choice for gray cast iron and nodular cast iron in light to heavy interrupted machining

CVD Coated Carbide for Steel

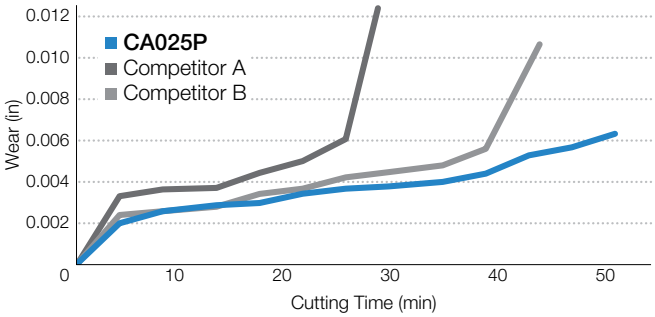
CA025P

Next Generation CVD Coating for Longer Tool Life

1 Improved Wear Resistance with New CVD Grade for Steel

Thickened Alumina with Good Thermal Resistance (Twice as thick as conventional coating) Improved Plastic Deformation Resistance by Increased Temperature Strength

Wear Resistance Comparison (Internal Evaluation)



CA025P (50.4 min) | Competitor A (29.4 min) | Competitor B (42 min)

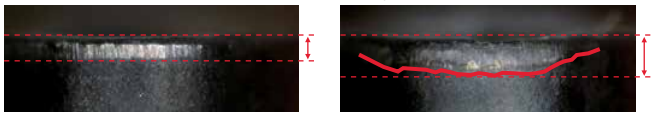
Good Surface Condition

Cutting Conditions : Vc = 980 sfm, D.O.C. = 0.059", f = 0.012 ipr, Wet Workpiece : 4137

CA025P Maintains Smooth and Flat Surface with Stable Tool Life

Wear Comparison (Internal Evaluation) Cutting Time 25.2 min

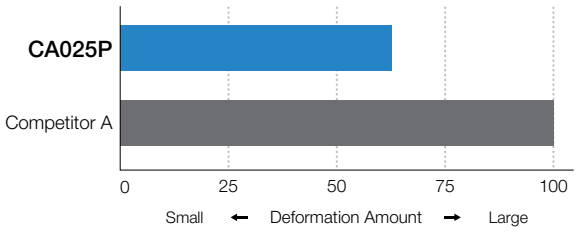
CA025P | Competitor A



Stable Wear on Surface | Unstable Wear Pattern

Cutting Conditions : Vc = 980 sfm, D.O.C. = 0.059", f = 0.012 ipr, Wet Workpiece : 4137

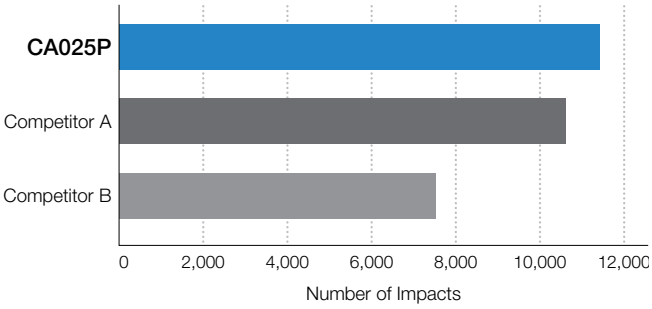
Plastic Deformation Comparison under High Temperature
(Internal Evaluation) Comparison with Competitor A



2 Excellent Fracture Resistance

New Substrate with High Stability Provides Excellent Chipping Resistance

Fracture Resistance Comparison (Internal Evaluation) Average of 5 times



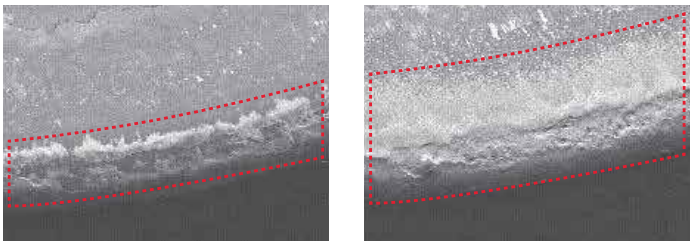
Cutting Conditions : Vc = 820 sfm, D.O.C. = 0.059", f = 0.014 ipr, Wet Workpiece : 4140 (with 4 Slots)

3 Excellent Adhesion Resistance and Chipping Resistance

Specialized Post-coating Process Prevents Adhesion

Adhesion on the Edge after Cutting (Internal Evaluation)

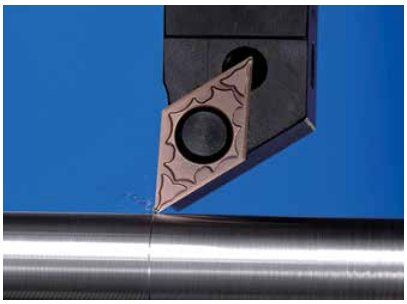
CA025P | Conventional



Less Adhesion | Wide Area of Adhesion
* Adhesion area appears white

Cutting Conditions : Vc = 890 sfm, D.O.C. = 0.039", f = 0.004 ipr, Wet Workpiece : 4140 (with 4 Slots)

PVD COATED CARBIDE FOR TURNING



PVD COATED CARBIDE

KYOCERA's PVD coated carbides for turning utilize very tough carbide substrates. The low processing temperature, compared with CVD, leads to improved bending strength, less deterioration of the coating and superior tool life with stable machining.

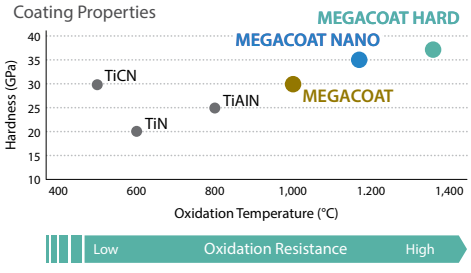
PVD COATED SUPER MICRO-GRAIN CARBIDE

- Smooth fine surface of PVD coated carbide provides good surface finish and high precision machining
- Stable machining with excellent toughness

FEATURES OF PVD COATED CARBIDE FOR TURNING

Material	Description	Color	Main Component (Coating Composition)	Advantages
P Steel	**PR915** (Super Micro-Grain)	Bluish Violet	TiAlN	· Application: Stable and reliable high precision machining of steel
	PR930 (Super Micro-Grain)	Reddish Gray	TiCN	· Application: Low machining speed, precise machining with sharp edge
	PR1005	Reddish Gray	TiCN	· TiCN base PVD coated hard micro-grain carbide · Application: Turning of free-cutting steel, longer tool life achieved through anti-adhesion performance
	PR1025	Reddish Gray	TiCN	· Application: General machining of steel and stainless steel, stable and longer tool life
	PR1115	Purple Red	TiAlN	· Superior oxidation resistance with well balanced wear resistance and toughness · Application: Machining of steel and stainless steel, for grooving, cut-off and threading
	PR1215	Blackish Red	MEGACOAT	· Superior wear and oxidation-resistant MEGACOAT on micro-grain carbide substrate · Application: Superior adhesion resistance and longer tool life for steel and stainless steel machining
	PR1425	Blackish Red	MEGACOAT NANO	· Nano thin multi-layer coating MEGACOAT NANO for superior wear resistance and high oxidation resistance · Application: Variety of steels, high speed machining of stainless steel with extended tool life
	PR1625	Blackish Red	MEGACOAT NANO	· Nano thin multi-layer coating MEGACOAT NANO for superior wear resistance and high oxidation resistance · Application: Stable machining and long tool life when grooving steel and stainless steel
	PR1705	Silver	MEGACOAT NANO PLUS	· Special MEGA COAT NANO PLUS nano-laminated coating for excellent wear resistance and welding resistance · Application: Excellent wear resistance and high-precision machining of free-cutting steel
	PR1725	Silver	MEGACOAT NANO PLUS	· Special MEGA COAT NANO PLUS nano-laminated coating for excellent wear resistance and welding resistance · Application: General purpose grade for stable machining and long tool life when turning steel and stainless steel
M Stainless Steel	**PR1125**	Purple Red	TiAlN	· Hard TiAlN base PVD coated super micro-grain carbide, superior toughness and heat resistance · Application: Finishing and light interrupted machining of stainless steel
	PR1225	Blackish Red	MEGACOAT	· Superior wear and oxidation resistant MEGACOAT on micro grain carbide substrate · Application: Light interrupted to interrupted cutting of stainless steel
	PR1515	Blackish Red	MEGACOAT NANO	· Nano thin multi-layer coating on micro-grain carbide substrate for improved wear resistance and stability · Application: Threading of stainless steel
	PR1535	Blackish Red	MEGACOAT NANO	· Nano thin multi-layer coating on micro-grain carbide substrate for improved wear resistance and stability · Application: Medium to roughing of stainless steel and heat-resistant alloys, cut-off of stainless steel
K Cast Iron	**PR905**	Bluish Violet	TiAlN	· Smooth fine surface PVD coated hard carbide with plastic deformation resistance · Application: Suitable for machining gray and nodular cast iron
S Heat-Resistant Alloys	**PR005S**	Blackish Gray	MEGACOAT HARD	· MEGACOAT on hard and superior heat resistant carbide, superior wear resistance · Application: Finishing of heat-resistant alloys
	PR015S	Blackish Gray	MEGACOAT HARD	· High temperature properties of special carbide substrate and excellent heat-resistance of MEGACOAT HARD for high wear resistance · Application: Finishing and high speed application of heat-resistant alloys
	PR1305	Blackish Red	MEGACOAT	· MEGACOAT on hard and superior heat-resistant carbide, superior wear resistance · Application: Finishing of heat-resistant alloys
	PR1310	Blackish Red	MEGACOAT	· MEGACOAT on hard and superior heat-resistant carbide, superior wear and oxidation resistance · Application: First choice for continuous and light interrupted machining and finishing of heat-resistant alloys
	PR1325	Blackish Red	MEGACOAT	· MEGACOAT on tough carbide · Application: Light interrupted machining and roughing of heat-resistant alloys

PVD Coating Properties

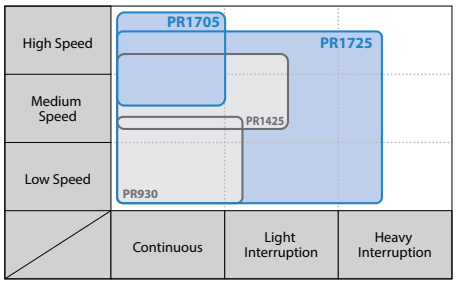


PVD Coated Carbide

PR1725 / PR1705

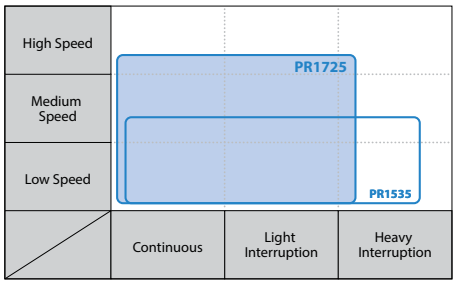
Excellent Surface Finish and Long Tool Life
Great Performance in Small Parts Machining Applications

Steel



PR1725 : 1st Recommendation for Steel

Stainless Steel



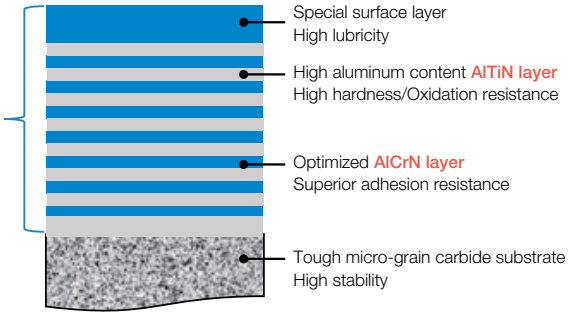
PR1725 : For general purpose high-speed machining
PR1535 : 1st Recommendation for stainless steel machining with long tool life and high-quality surface finish

MEGACOAT NANO PLUS

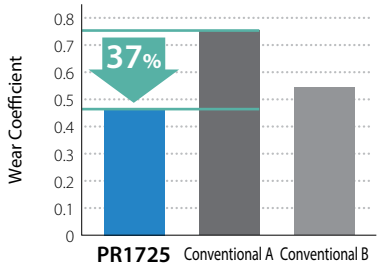
AlTiN/AlCrN Nano laminated film with superior wear resistance and adhesion resistance. Excellent surface finish and long tool life.

REDUCES CRACKING

Reduces abnormal damage such as chipping because of increased lamination layer with a thinner gap than conventional coatings



Wear Coefficient Comparison
(Internal evaluation)



Superior Wear and Chipping Resistance

High Strength with nano laminated film layer properties
Internal stress optimization reduces chipping

Excellent Surface Finish

Special surface layer with great lubricity reduces adhesion

Applicable to Various Workpiece Materials

Superior high temperature properties and oxidation resistance make for great performance in steel, stainless steel and free-cutting steel

High Machining Stability

Tough micro-grain carbide substrate provides stable machining

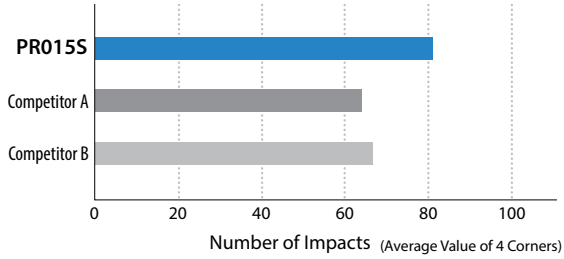
PR005S / PR015S for Heat-Resistant Alloy

PR005S : Hard, Wear-resistant Grade for High-speed Machining

PR015S : General Purpose Grade with Excellent Wear Resistance and Stability

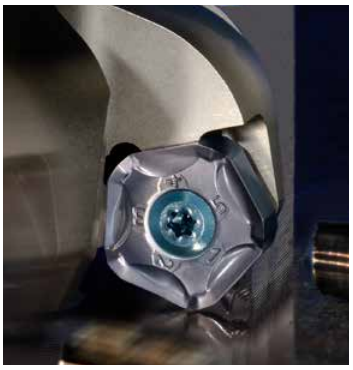
- Improved thermal conductivity by optimum distribution of WC coarse grains
- Resists heat concentration at the cutting edge to promote stable machining
- Improved wear resistance with MEGACOAT HARD coating with high-hardness to resist boundary damage with improved thermal properties

Fracture Resistance Comparison (Internal Evaluation)



Cutting Conditions: Vc = 80 sfm, D.O.C. = 0.039", f = 0.004 ipr, Wet
CNMG432 Type Workpiece: Nickel-based Superalloy
Cylindrical Workpiece with 1 Flat Face

PVD / CVD COATED CARBIDE FOR MILLING & DRILLING



PVD Coated Carbide *(MEGACOAT / MEGACOAT NANO)*

KYOCERA's PVD coated carbides for milling and drilling utilize very tough carbide substrates. The low processing temperature, compared with CVD, leads to improved bending strength, less deterioration of the coating and superior tool life with stable machining.

CVD Coated Carbide

CVD coated carbide grades provide stable, efficient machining at high speeds or for heavy interrupted applications. Ti-base (TiN, TiCN) coating with superior hardness and wear resistance or ceramic-base (Al_2O_3) coating with high-thermal stability is applied on a tough carbide substrate. Superior fracture and wear resistance.

FEATURES OF PVD / CVD COATED CARBIDE FOR MILLING & DRILLING

Material	*Description*	*Color*	*Main Component (Coating Composition)*	*Advantages*
P Steel	**PR830**	Gold	TiAlN+TiN	· Improved high temperature stability and wear resistance with TiAlN base PVD coating · Application: Milling of steel
	PR1230	Blackish Red	MEGACOAT	· Superior wear and oxidation-resistant MEGACOAT on a special tough carbide substrate · Application: Stable and high feed milling and drilling of steel
	PR1525	Blackish Red	MEGACOAT NANO	· MEGACOAT NANO coating technology with a nano thin multi-layer coating performs with superior wear resistance and high oxidation resistance · Application: Stable and longer tool life for milling of steel and stainless steel
	CA520D	Gold	TiCN+Al_2O_3+TiN (CVD)	· Combination of tough substrate, coating crystal control technology, and advanced layer adhesion coating ensures exceptional wear and fracture resistance · Application: 1st recommendation for drilling of steel (high speed applications)
M Stainless Steel	**PR1225**	Blackish Red	MEGACOAT	· Superior wear and oxidation-resistant MEGACOAT on micro-grain carbide substrate · Application: General high feed milling and drilling of steel and stainless steel
K Cast Iron	**PR1210**	Blackish Red	MEGACOAT	· Superior wear and oxidation-resistant MEGACOAT coated on specialized carbide substrate · Application: Highly efficient stable milling and drilling of gray and nodular cast iron
	PR1510	Blackish Red	MEGACOAT NANO	· New coating technology [MEGACOAT NANO] is applied. Nano thin multi-layer coating performs superior wear resistance and high oxidation resistance. · Application: For gray and nodular cast iron, stable wear resistance and toughness
	CA415D	Gold	TiCN+Al_2O_3+TiN (CVD)	· Combination of tough substrate for cast iron, coating crystal control technology, and advanced layer adhesion coating ensures exceptional wear resistance · Application: 1st recommendation for drilling of gray and nodular cast iron
	CA420M	Gold	TiCN+Al_2O_3+TiN (CVD)	· Kyocera's unique crystal control technology and advanced layer adhesion CVD coating with superior wear resistance and toughness · Application: Milling of gray and nodular cast iron
S Heat-Resistant Alloys	**PR1535**	Blackish Red	MEGACOAT NANO	· Nano thin multi-layer coating MEGACOAT NANO improves wear resistance and stability · Application: For milling of Ni-base heat-resistant alloys, titanium alloys and precipitation hardened stainless steel
	CA6535	Gold	TiCN+Al_2O_3+TiN (CVD)	· High heat-resistance and wear resistance with CVD coating · Application: For milling of Ni-base heat-resistant alloys and martensitic stainless steel
H Hardened Materials	**PR015S**	Blackish Gray	MEGACOAT HARD	· MEGACOAT NANO HARD coating technology achieves stable machining in hardened materials with excellent wear resistance and chipping resistance · Application: Suitable for machining hardened materials of 60 HRC or less and difficult-to-cut materials

Grades for Heat-resistant Alloys and Difficult-to-cut materials

CA6535 CVD

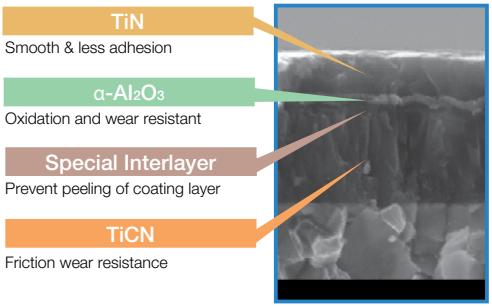
for Ni-base Heat Resistant Alloy and Martensitic Stainless Steels

PR1535 PVD

for Titanium Alloy and Precipitation Hardened Stainless Steels

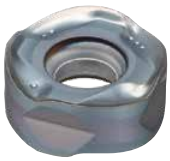
New grades for difficult-to-cut material

Stable cutting prevents insert fracturing for highly efficient machining



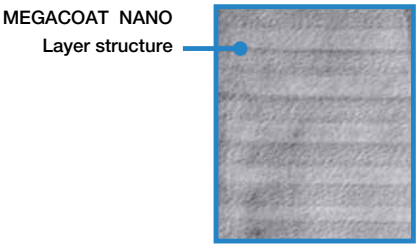
CA6535

- For Ni-base heat resistant alloys and martensitic stainless steel
- High heat resistance and wear resistance with CVD coating
- Improved stability due to thin film coating technology

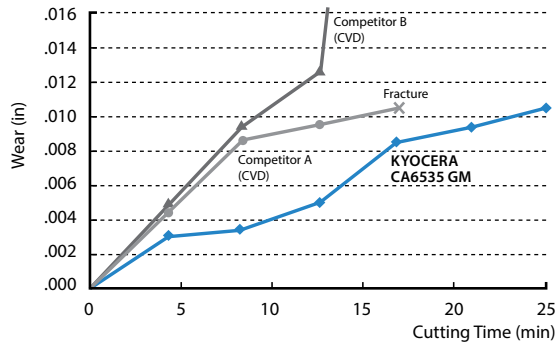


PR1535

- For titanium alloys and precipitation hardened stainless steel
- Stabilized milling operation and long tool life with Kyocera's MEGACOAT NANO coating technology
- Improved stability due to thin film coating technology



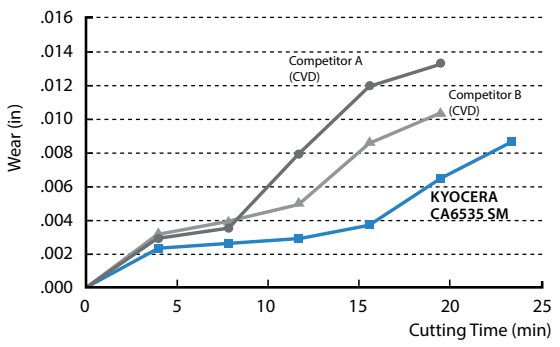
• Ni-base Heat Resistant Alloy



Cutting Conditions: 165 sfm, 0.006 ipt, 0.039" D.O.C., Coolant

(Internal Evaluation)

• Martensitic Stainless Steel



Cutting Conditions: 980 sfm, 0.008 ipt, 0.079" D.O.C., Coolant

(Internal Evaluation)

CARBIDE

CARBIDE

Due to its superior mechanical features carbide is used in a variety of applications. KYOCERA produces a variety of carbides, including KW10 for non-ferrous materials and micro-grain carbides for precision cutting.

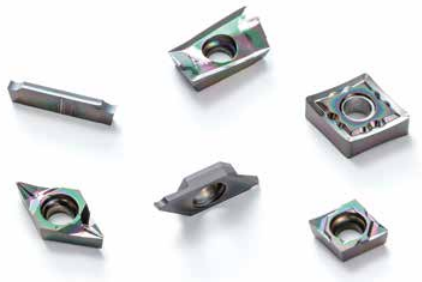
FEATURES

- Tough and hard
- Good thermal conductivity
- Suitable for cutting non-ferrous metals and non-metals
- Stable cutting at low cutting speeds, including milling operations

FEATURES OF CARBIDE

Material	Description	Color	Main Component (Coating Composition)	Advantages
N Non-Ferrous Materials	**KW10**	Gray	WC+Co	· ISO identification symbol K carbide (K10 class) · Application: Machining cast iron, non-ferrous materials and non-metals
	GW05	Gray	WC+Co	· ISO identification symbol K carbide (K05 class) · Application: Excellent wear resistance against cast iron and non-ferrous metals
	GW15	Gray	WC+Co	· ISO identification symbol K carbide (K10 class), tough micro-grain carbide · Application: Machining cast iron, non-ferrous materials and non-metals
	GW25	Gray	WC+Co	· ISO identification symbol K carbide (K30 class) · Application: Milling operations of aluminum
S Heat-Resistant Alloys	**SW05**	Gray	WC+Co	· ISO identification symbol K carbide (K05 class) · Application: Continuous machining and finishing of titanium alloys
	SW10 (Made to Order)	Gray	WC+Co	· ISO identification symbol K carbide (K10 class) · Application: Continuous to light interrupted machining of titanium alloys
	SW25 (Made to Order)	Gray	WC+Co	· ISO identification symbol K carbide (K25 class) · Application: Interrupted and light interrupted machining of titanium alloys

DLC COATING



DLC COATING

High quality and long tool life when machining aluminum. Achieves long tool life with hardness close to that of diamond and maintains an excellent surface finish with aluminum welding resistance.

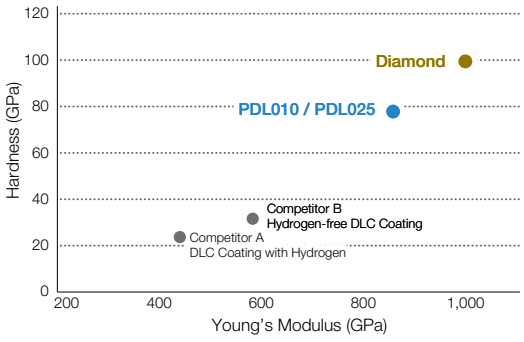
FEATURES

- Excellent surface finish
- Stable machining with excellent peeling resistance
- Improved chip evacuation due to high lubricity

FEATURES OF CARBIDE

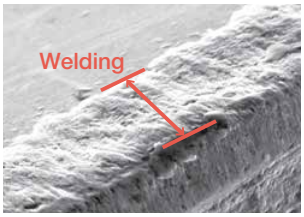
Material	Description	Color	Main Component (Coating Composition)	Advantages
N Non-Ferrous Materials	**PDL010**	Iridescent	C	· High Hardness with Kyocera's Proprietary Hydrogen-free DLC Coating · Application: Long tool life and stable machining of aluminum alloys
	PDL025	Iridescent	C	· High Hardness with Kyocera's Proprietary Hydrogen-free DLC Coating · Application: Excellent machining stability in interrupted aluminum machining

DLC Coating Properties



Welding Resistance Comparison

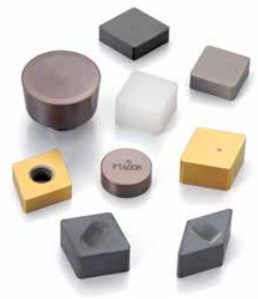
PDL025



Competitor A

Cutting Conditions: Vc = 2,630 sfm, fz = 0.004 ipt, D.O.C. × ae = 0.118" × 0.197", Dry
Cutter Dia. Ø1.000" Workpiece: 5052 Cutting Length: 187ft

CERAMIC



CERAMIC

Ceramic inserts are capable of running at high speeds, thus reducing expensive machining time. Hard turning of 38HRC to 64HRC hardened steel, or rough to finish turning of cast iron are recommended applications for ceramic inserts. KYOCERA's ceramic grades are designed to resist oxidation and maintain hardness at elevated temperatures.

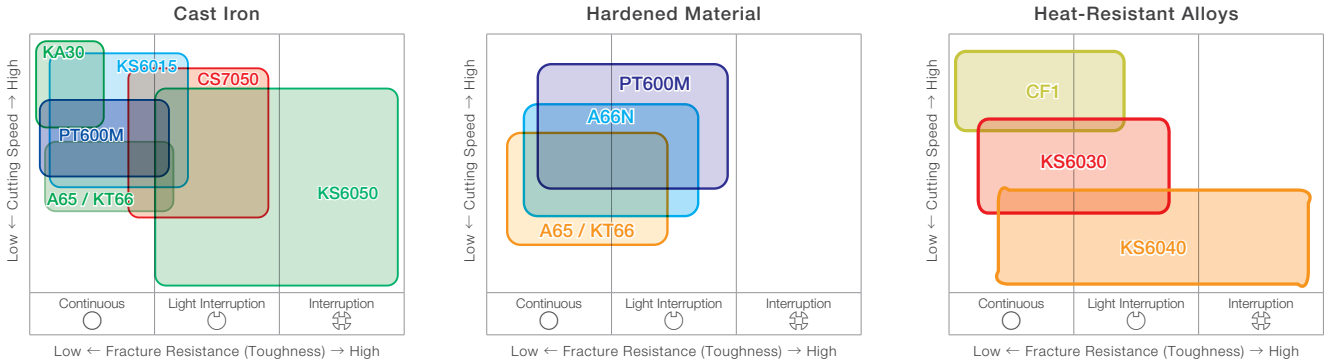
FEATURES

- Excellent wear resistance for high cutting speeds
- Ceramic maintains good surface finishes due to the low affinity to workpiece materials
- Silicon nitride ceramic has improved thermal shock resistance allowing cast iron cutting using coolants

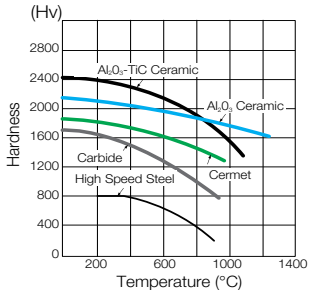
FEATURES OF CERAMIC

Material	Description	Color	Main Component (Coating Composition)	Coating Layer	Hardness of Substrate (GPa)	Fracture Toughness (MPa·m½)	Transverse Strength (MPa)	Advantages
K Cast Iron	KA30	White	Al_2O_3	-	17.5	4.0	750	· Aluminum oxide ceramic (Al_2O_3) · Application: Finishing of cast iron at high cutting speeds without coolant
	KS6015	Black	Si_3N_4	-	15.2	7.8	1,000	· Silicon nitride ceramic (Si_3N_4) · Application: High-speed continuous machining of cast iron. Focus on wear resistance. (with or without coolant)
	KS6050	Gray	Si_3N_4	-	15.6	8.0	1,200	· Silicon nitride ceramic (Si_3N_4) · Application: General purpose and interrupted machining of cast iron. Focus on stability. (with or without coolant)
	CS7050	Grayish White	Si_3N_4 (Special Al_2O_3 Coat)	Thin Coating	15.6	8.0	1,200	· Silicon nitride ceramic (Si3N4) CVD Coated Carbide (Special Al_2O_3 COAT) · Application: Finishing and continuous machining, high speed and high efficient machining (with or without coolant)
K Cast Iron	KT66	Black	Al_2O_3+TiC	-	20.1	4.1	980	· Aluminum Oxide and Titanium Carbide ceramic (Al_2O_3+TiC) · Application: Hard materials and hardened roll materials
	A65	Black	Al_2O_3+TiC	-	20.1	4.1	980	· Aluminum Oxide and Titanium Carbide ceramic (Al_2O_3+TiC) · Application: Semi-roughing to finishing of cast iron, and hard materials
H Hardened Materials	A66N	Gold	Al_2O_3+TiC (TiN Coat)	Thin Coating	20.1	4.1	980	· TiN PVD coated Aluminum Oxide and Titanium Carbide ceramic (TiN coated Al_2O_3+TiC) · Application: Semi-roughing to finishing of hard materials
	PT600M	Blackish Red	Al_2O_3+TiC (MEGACOAT)	Thin Coating	20.1	4.1	980	· Heat-resistant MEGACOAT on Aluminum Oxide and Titanium Carbide ceramic (MEGACOAT Al_2O_3+TiC) · Application: Semi-roughing to finishing of cast iron, hard materials and hardened roll materials
S Heat-Resistant Alloys	KS6030	Gray	SiAlON	-	15.2	6.0	600	· SiAlON Ceramic with superior wear resistance and high resistance against boundary wear · Application: Finishing to medium machining of heat-resistant alloys
	KS6040	Brown	SiAlON	-	16.7	7 .0	900	· High stability SiAlON ceramic with wear resistance and fracture resistance · Application: Roughing of heat-resistant alloys

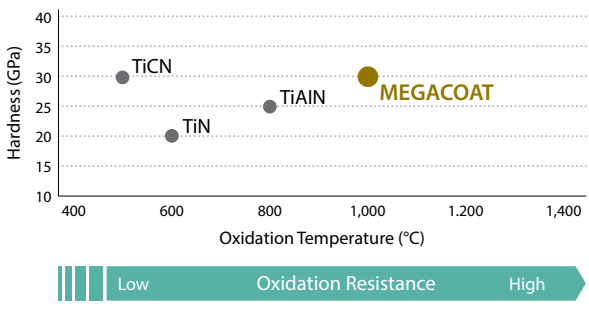
Application Maps



High Temperature Hardness



PVD Coating Properties



CBN

CBN

KYOCERA CBN is second only to diamond in hardness. CBN (Cubic Boron Nitride) is a synthetically produced material with high thermal conductivity which provides stable cutting.

FEATURES

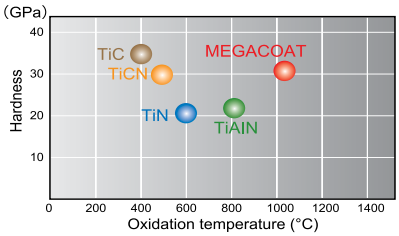
- Superior wear resistance when cutting hardened materials
- Suitable for high speed cutting of cast iron and sintered steel
- High thermal conductivity provides stable cutting

FEATURES OF CBN

Material	Description	Color	Av. Grain Size (μm)	Hardness of Substrate (GPa)	Transverse Strength (MPa)	Advantages
H Hardened Materials	**KBN510**	Black	2	28	1,000	· Excellent wear resistance and crack resistance, non-coated CBN · Application: Finishing and continuous cutting of hardened die steel
	KBN525	Black	1 and Under	25	1,250	· Good balance of toughness and wear resistance, non-coated CBN · Application: General grade for hardened steel, high stability at high speed and high feed cutting
	KBN05M (MEGACOAT)	Blackish Red	0.5-1.5	27	1,000	· Heat-resistant MEGACOAT on highly heat-resistant CBN substrate · Application: High speed finishing of hardened steel
	KBN10M (MEGACOAT)	Blackish Red	2	28	1,000	· Heat-resistant MEGACOAT on CBN with hard binder phase, superior anti-crater wear resistance · Application: High speed finishing of hardened die steel
	KBN25M (MEGACOAT)	Blackish Red	1 and Under	25	1,250	· Heat-resistant MEGACOAT on micro-grain CBN with heat resistant binder phase · Application: Stable cutting of hardened steel at high speed
Sintered Steel	**KBN570**	Black	2-4	34	1,350	· High CBN content ratio · Application: Machining of sintered steel (preventing burr formation)
	KBN70M (MEGACOAT)	Blackish Red	2-4	34	1,350	· Heat-resistant MEGACOAT on CBN rich substrate · Application: General cutting of sintered steel (ferrous sintered alloy) at high speed
K Cast Iron	**KBN475**	Black	2	39	1,400	· Excellent wear resistance due to high CBN content and special binder · Application: High speed machining of gray cast iron
	KBN60M (MEGACOAT)	Blackish Red	0.5-6	33	1,250	· Heat-resistant MEGACOAT on CBN rich substrate with hard binder phase · Application: High speed finishing of gray cast iron
	KBN900 (TiN COAT)	Gold	9	31	630	· TiN coated solid CBN · Application: Heavy duty, interrupted cutting and finishing of hardened steel, hardened roll steel and cast iron

MEGACOAT CBN

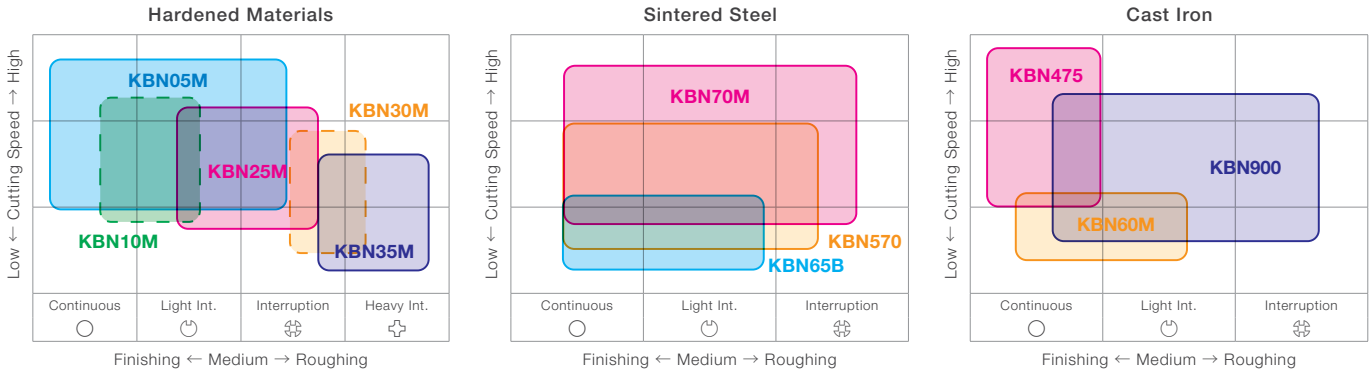
Properties of PVD Coated Layer



Advantages of MEGACOAT

- Long tool life and stable cutting due to superior heat-resistance and hardness
- Improvement of crater wear (oxidation, diffusional wear) resistance
- High thermal stability and surface smoothness provide excellent surface finish

Application Map



PCD

PCD (Polycrystalline Diamond)

KYOCERA diamond material is a synthetic diamond sintered under high temperatures and pressures. PCD (Polycrystalline diamond) is ideal for non-ferrous metals and non-metals.

FEATURES

- Applicable for non-ferrous metals, non-metals turning, milling and other various type of cutting
- Long tool life due to extreme hardness
- Capable of high cutting speeds which increases cutting productivity
- Reduced edge build-up allows for high precision cutting
- Diversified applications for cutting of non-ferrous materials and non-metals
- Finished surface will be rainbow colored.
  (a mirror-like finished surface will not be obtained as when single crystal diamond is used.)

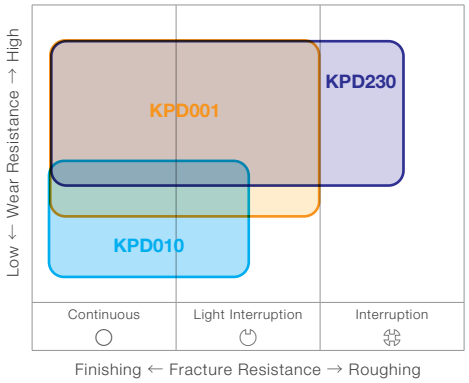
FEATURES OF PCD

Material	Description	Av. Grain Size (μm)	Advantages
N Non-Ferrous Materials	KPD001	0.5	· Super Micro-Grain PCD features cutting edge strength, wear resistance, fracture resistance, good edge-sharpening performance and long, stable tool life. · Application: High speed cutting of aluminum alloys, brass, non-ferrous metals and non-metals including plastics, fiberglass, carbide and ceramics.
	KPD010	10	· Good wear resistance and toughness, good grindability · Application: General purpose, high speed cutting of aluminum alloys, non-ferrous metals and non-metals including plastics, fiberglass, carbide and ceramics.
	KPD230	2-30	· Superior abrasive wear resistance and toughness due to high density PCD with mixed rough and fine grains · Application: High speed milling of aluminum alloys, non-ferrous metals, plastics and fiberglass
	KPD250	25	· Excellent wear resistance due to coarse-grained PCD (25 μm) · Application: High-speed processing of high-silicon aluminum alloy, processing of cemented carbide

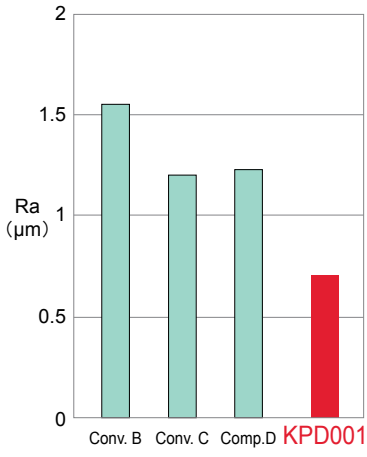
Applications

Workpiece Material		Non-ferrous materials (Aluminum / Non-ferrous metals / Non-metals)				Difficult-to-Cut Materials Titanium / Titanium alloys			
Cutting Range		Finishing ← → Roughing				Finishing ← → Roughing			
Classification		N01	N10	N20	N30	S01	S10	S20	S30
Turning Milling	PCD	KPD001	KPD001	KPD001	KPD001	KPD001	KPD001	KPD001	
			KPD010	KPD010		KPD010	KPD010		
		KPD230	KPD230	KPD230	KPD230				
		KPD250	KPD250						

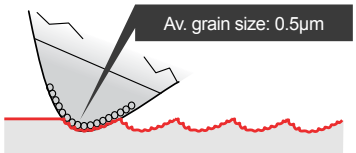
Application Map



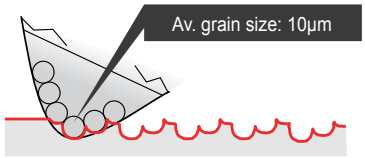
Surface Finish Roughness Comparison of Aluminum Cutting



Excellent surface finish provided by Super Micro-Grain KPD001



Surface finish of conventional PCD

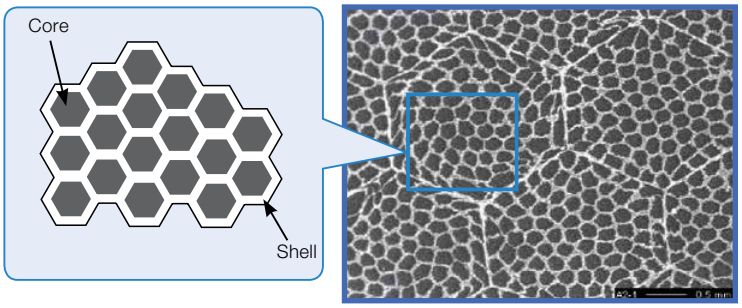


(Grain size affects surface finish quality)

Honeycomb Structure CBN / CERAMIC

Honeycomb Structure CBN / CERAMIC

Honeycomb structure is a composite material consisting of a hard and superior wear-resistant core (gray portion) and a tough shell (white portion) with a precisely controlled grain structure.



FEATURES

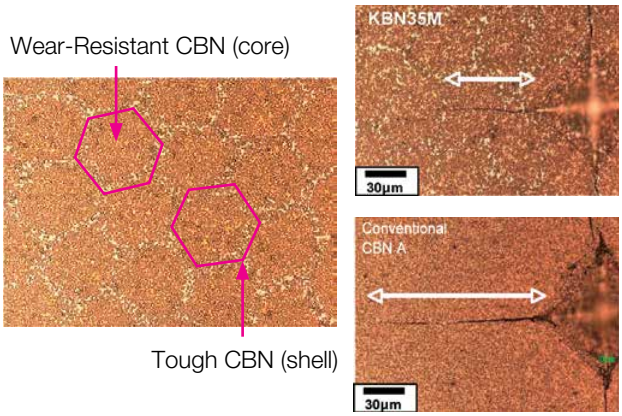
- Cell Fibers combine a hard, wear-resistant core and a tough shell into one insert.
- The tough shell stops cracks that form in the core.
- CBN is good for interrupted machining of exceptionally hard material and ceramic is good for heat-resistant alloys

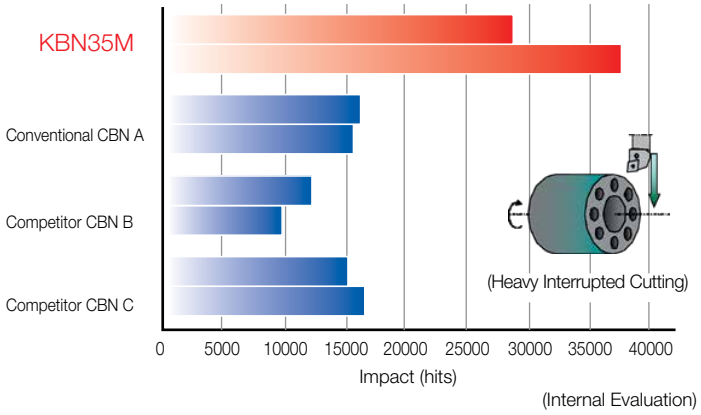
FEATURES OF CBN

Material	*Description*	*Color*	*Main Component (Coating Composition)*	*Advantages*
H Hardened Materials	**KBN35M** (MEGACOAT)	Blackish Red	CBN	· Honeycomb structure CBN composite material consisting of wear resistant CBN (core) and tough CBN (shell) · Heat-resistant MEGACOAT on tough Honeycomb structure CBN · Application: Stable machining of hardened steel at interrupted machining
S Heat-Resistant Alloys	**CF1**	Gray	Ceramic	· Honeycomb structure ceramic composite material consisting of wear resistant ceramic (core) and tough ceramic (shell) · Application: Machining of heat-resistant alloys like Ni-base heat-resistant alloys

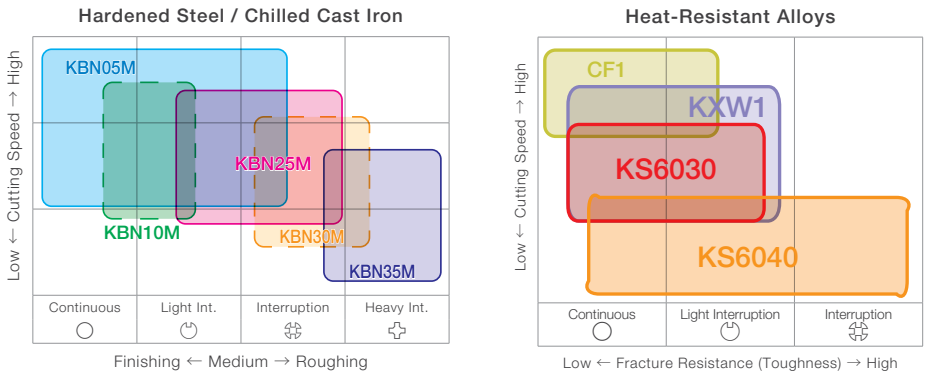
KBN35M (MEGACOAT Honeycomb Structure CBN)

Tough CBN (Shell) Prevents Crack Growth





Application Map



Insert Material Selection Table

Applications		Cutting Range	P	M	K		N	S		H	Powdered Metal
			Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-Ferrous Metals	Heat-Resistant Alloys	Titanium Alloys	Hardened Materials	
Turning		Finishing ↕ Roughing	TN610 CCX TN620 TN60 PV710 PV720 PV730 CA510 CA515 CA025P CA530	TN610 TN620 TN60 PV720 CA6515 CA6525 PR1535	KBN475 KBN60M KA30 PV7005 CA5505 CA310 CA315	TN60 PV7005 CA5505 CA310 CA315 CA320	KPD001 KPD010 PDL010 PDL025 KW10	CF1 KS6040 CA6515 CA6525 PR005S PR015S PR1535	KPD001 KPD010 SW05 SW10 SW25	KT66 A66N PT600M KBN05M KBN10M KBN25M KBN35M KBN900	TN610 TN60 KBN570 KBN70M
Small Tools		Finishing ↕ Roughing	TN610 TN620 PV710 PV720 PR1705 PR1725 PR930 PR1025 PR1535	TN610 TN620 PV720 PR1725 PR930 PR1025 PR1225 PR1535	CA310 CA315 KW10	CA310 CA315 CA320 KW10	KPD001 KPD010 PDL010 PDL025 GW05 KW10	CA6515 PR1125 PR1225 PR1535	KPD001 KPD010 KW10 PR1535	KBN05M KBN10M KBN25M KBN30M	TN610 TN60 KBN570 KBN70M
Boring		Large ↕ Small (Bore Dia.)	TN610 TN620 PV710 PV720 PV730 CA515 CA525 CA530 PR1705 PR1725 PR1025 PR930 PR1535	TN60 CA6515 CA6525 PR1725 PR1025 PR1225 PR930 PR1535	KBN475 KBN60M PV7005 CA310 CA315 KW10	PV7005 CA310 CA315 CA320 KW10	KPD001 KPD010 PDL010 PDL025 GW05 KW10	CA6515 CA6525 PR1125 PR1225 PR1535	KPD001 KPD010 KW10 SW05 PR1535	PT600M KBN05M KBN10M KBN25M	TN610 TN60 KBN570 KBN70M
General Cut-Off		Large ↕ Small (Cutting Dia.)	CR9025 PR930 PR915 PR1215 PR1225 PR1535	CR9025 PR930 PR915 PR1215 PR1225 PR1535	KW10 PR1215	KW10 PR1215	PDL025 KW10	KW10 PR1225 PR660	KW10	-	-
Small Dia. Cut-Off		Depends on Workpiece Material	PR1025 PR1225 PR1535	PR1025 PR1225 PR1535	KW10	KW10	PDL025 KW10	KW10 PR1025 PR1225	KW10	-	-
Grooving		Glossy Finish ↕ Stable	TC40 TN620 TN90 PV7040 PR930 PR1115 PR1215 PR1225 PR1625	TC40 TN620 TN90 PV7040 PR930 PR1115 PR1215 PR1225 PR1625	PR905 PR1215 KW10 GW15	PR905 PR1215 KW10 GW15	KPD001 PDL025 KW10 GW15	PR915 KW10 PR1215 PR1225 PR1535	KPD001 KW10 PR1535	KBN510 KBN525 PT600M	TC40 KBN570
Threading		Glossy Finish ↕ Stable	TC60 PR1215 PR1115 PR930	TC60 PR1515 PR1115 PR930	KW10 GW15	KW10 GW15	KW10 GW15	KW10 GW15	KW10 GW15	-	PR1515 PR1115
Drilling		Wear Resistance ↕ Toughness	CA520D PR1225 PR1230 PR1535	PR1225 PR1535	CA415D PR1210 KW10	PR1210 KW10	KW10 GW15	PR1225 KW10 GW15	KW10	-	-
Milling		Finishing ↕ Roughing	TN100M TN620M PV60M PR1225 PR1230	CA6535 PR1225 PR1525 PR1535	PR1210 PR1510 KW10	PR1210 PR1510 KW10	KPD230 KPD001 KPD010 PDL025 KW10 GW25	CA6535 PR1225 PR1535	KPD230 KPD001 KW10 PR905 PR1210 PR1535	PR015S	-

· *Highlighted Items are Recommended Grades*

Cermet

Grade Name	Color	Coating / Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
					(HV)	(GPa)		
TN610	Gray	TiCN	-	6.6	1,750	17.2	6.0	2,100
TN620	Gray	TiCN	-	6.9	1,550	15.2	9.0	2,500
TN620M	Gray	TiCN	-	6.9	1,550	15.2	9.0	2,500
TN6020	Gray	TiCN	-	6.4	1,500	14.7	10.0	2,500
TN60	Gray	TiCN+NbC	-	6.6	1,600	15.7	9.0	1,760
TN90	Gray	TiCN+NbC	-	6.4	1,450	14.2	10.0	1,960
TN100M	Gray	TiCN+NbC	-	6.7	1,520	14.9	10.5	1,860
TC40	Gray	TiC+TiN	-	6.0	1,650	16.2	9.0	1,570
TC60	Gray	NbC	-	8.1	1,500	14.7	10.5	1,670

CVD Coated Cermet

Grade Name	Color	Coating / Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
					(HV)	(GPa)		
CCX	Gold	TiCN+Al2O3+TiN	Thiick Coating	7	1,500	14.7	10.0	2,600

PVD Coated Cermet

Grade Name	Color	Coating / Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
					(HV)	(GPa)		
PV710	Gold	MEGACOAT NANO	Thin Coating	6.6	1,750	17.2	6.0	2,100
PV720	Gold	MEGACOAT NANO	Thin Coating	6.9	1,550	15.2	9.0	2,500
PV730	Gold	MEGACOAT NANO	Thin Coating	7.0	1,450	14.2	10.0	2,500
PV7005	Blackish Red	MEGACOAT	Thin Coating	6.0	1,650	16.2	8.5	1,470
PV7040	Blackish Red	MEGACOAT	Thin Coating	6.0	1,650	16.2	9.0	1,570
PV7020	Gold	TiAlN+TiN	Thin Coating	6.4	1,500	14.7	10.0	2,500
PV90	Gold	TiN	Thin Coating	6.4	1,450	14.2	10.0	1,960
PV60M	Gold	MEGACOAT	Thin Coating	6.6	1,600	15.7	9.0	1,760

CVD Coated Carbide

Grade Name	Color	Coating / Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
					(HV)	(GPa)		
CA310	Rose Gold	TiCN+Al_2O_3+Ti Base	Thick Coating	15.0	1,570	15.4	12.0	2,780
CA315	Rose Gold	TiCN+Al_2O_3+Ti Base	Thick Coating	15.0	1,570	15.4	12.0	2,780
CA320	Rose Gold	TiCN+Al_2O_3+Ti Base	Thick Coating	15.0	1,570	15.4	12.0	2,780
CA415D	Gold	TiCN+Al_2O_3+TiN	Thick Coating	15.0	1,570	15.4	12.0	2,780
CA420M	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.5	1,600	15.8	13.0	3,400
CA4505	Blackish Gray	TiCN+Al_2O_3	Thick Coating	15.0	1,790	17.5	9.5	2,350
CA4515	Blackish Gray	TiCN+Al_2O_3	Thick Coating	15.0	1,570	15.4	12.0	2,780
CA510	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.5	1,470	14.4	11.5	2,500
CA515	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.4	1,440	14.1	12.5	2,650
CA520D	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.7	1,370	13.4	16.0	3,100
CA025P	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.2	1,400	13.7	13.5	2,800
CA525	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.2	1,360	13.3	13.5	2,750
CA530	Gold	TiCN+Al_2O_3+TiN	Thick Coating	13.9	1,340	13.1	14.5	2,850
CA5505	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.7	1,730	17.0	10.0	2,540
CA5515	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.7	1,550	15.2	12.0	2,750
CA5525	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.5	1,400	13.7	12.0	2,780
CA5535	Gold	TiCN+Al_2O_3+TiN	Thick Coating	14.1	1,340	13.1	16.5	2,970
CA6515	Gold	TiCN+Al_2O_3+TiN	Thin Coating	14.7	1,530	15.0	12.0	2,780
CA6525	Gold	TiCN+Al_2O_3+TiN	Thin Coating	14.7	1,370	13.4	16.0	3,100
CA6535	Gold	TiCN+Al_2O_3+TiN	Thin Coating	14.3	1,320	12.9	16.0	3,700
CR9025	Gold	TiCN+TiN	Thick Coating	14.5	1,400	13.7	12.0	2,780

PVD Coated Carbide

Grade Name	Color	Coating / Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
					(HV)	(GPa)		
PR005S	Blackish Gray	MEGACOAT HARD	Thin Coating	15.0	1,750	17.2	8.0	2,000
PR015S	Blackish Gray	MEGACOAT HARD	Thin Coating	14.9	1,680	16.5	9.0	2,400
PR630	Gold	TiN	Thin Coating	12.5	1,500	14.7	11.0	2,160
PR660	Gold	TiN	Thin Coating	13.7	1,450	14.2	13.0	2,250
PR830	Gold	TiAlN+TiN	Thin Coating	13.7	1,450	14.2	13.0	2,250
PR905	Bluish Violet	TiAlN	Thin Coating	14.8	1,720	16.8	9.0	2,450
PR915	Bluish Violet	TiAlN	Thin Coating	14.1	1,700	16.7	11.0	4,140
PR930	Reddish Gray	TiCN	Thin Coating	14.1	1,700	16.7	11.0	4,140
PR1005	Reddish Gray	TiCN	Thin Coating	14.9	1,800	17.6	10.0	3,300
PR1025	Reddish Gray	TiCN	Thin Coating	14.5	1,600	15.8	13.0	3,400
PR1115	Purple red	TiAlN	Thin Coating	14.7	1,700	16.7	11.0	3,000
PR1125	Purple red	TiAlN	Thin Coating	14.5	1,600	15.8	13.0	3,400
PR1210	Blackish Red	MEGACOAT	Thin Coating	14.8	1,720	16.8	9.0	2,450
PR1215	Blackish Red	MEGACOAT	Thin Coating	14.7	1,700	16.7	11.0	3,000
PR1225	Blackish Red	MEGACOAT	Thin Coating	14.5	1,600	15.8	13.0	3,400
PR1230	Blackish Red	MEGACOAT	Thin Coating	13.7	1,450	14.2	13.0	2,250
PR1305	Blackish Red	MEGACOAT	Thin Coating	15.0	1,790	17.5	9.5	2,350
PR1310	Blackish Red	MEGACOAT	Thin Coating	14.8	1,720	16.8	9.0	2,450
PR1325	Blackish Red	MEGACOAT	Thin Coating	14.7	1,370	13.4	16.0	3,100
PR1425	Blackish Red	MEGACOAT NANO	Thin Coating	14.5	1,600	15.8	13.0	3,400
PR1510	Blackish Red	MEGACOAT NANO	Thin Coating	14.8	1,720	16.8	9.0	2,450
PR1515	Blackish Red	MEGACOAT NANO	Thin Coating	14.7	1,700	16.7	11.0	3,000
PR1525	Blackish Red	MEGACOAT NANO	Thin Coating	14.5	1,600	15.8	13.0	3,400
PR1535	Blackish Red	MEGACOAT NANO	Thin Coating	14.3	1,320	12.9	16.0	3,700
PR1625	Blackish Red	MEGACOAT NANO	Thin Coating	14.5	1,600	15.8	13.0	3,400
PR1705	Silver	MEGACOAT NANO PLUS	Thin Coating	14.9	1,800	17.6	10.0	3,300
PR1725	Silver	MEGACOAT NANO PLUS	Thin Coating	14.5	1,600	15.8	13.0	3,400

Carbide

Grade Name	Color	Coating / Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
					(HV)	(GPa)		
KW10	Gray	WC+Co	-	15.0	1,650	16.2	10.0	1,470
GW05	Gray	WC+Co	-	14.9	1,800	17.6	10.0	3,300
GW15	Gray	WC+Co	-	14.7	1,700	16.7	11.0	3,000
GW25	Gray	WC+Co	-	14.5	1,600	15.8	13.0	3,400
SW05	Gray	WC+Co	-	15.0	1,790	17.5	9.5	2,350
SW10	Gray	WC+Co	-	14.8	1,720	16.8	9.0	2,450
SW25	Gray	WC+Co	-	14.7	1,370	13.4	16.0	3,100

DLC Coated Carbide

Grade Name	Color	Coating / Main Component	Coating Layer	Density	Hardness of Substrate		Fracture Toughness ($MPam^{1/2}$)	Flexural Toughness (MPa)
					(HV)	(GPa)		
PDL010	Iridescent	C	Thin Coating	15.0	1,650	16.2	10.0	1,470
PDL025	Iridescent	C	Thin Coating	14.5	1,600	15.8	13.0	3,400

TURNING INSERTS

B

B1 - B115

TURNING INSERT IDENTIFICATION SYSTEM		B2
INSERT COLOR		B3
CHIPBREAKER SELECTION		B4 - B14
NEGATIVE INSERTS		B4
POSITIVE INSERT		B12
HOW TO READ INSERT PAGES		B15
CERMET / COATED CARBIDE / CARBIDE LINEUP		B16 - B104
NEGATIVE TURNING INSERTS	CN□□...80° Diamond	B16
	DN□□...55° Diamond	B23
	KN□□...55° Parallelogram	B31
	RN□□...Round	B31
	SN□□...90° Square	B32
	TN□□...60° Triangle	B36
	VN□□...35° Diamond	B44
	WN□□...80° Trigon	B46
	Small Double Sided Inserts	B50
POSITIVE TURNING INSERTS	CC□□, CP□□...80° Diamond	B53
	DC□□, DP□□...55° Diamond	B62
	JC□□...70° Diamond	B73
	RC□□...Round	B74
	SC□□, SP□□...90° Square	B75
	TB□□, TC□□, TP□□...60° Triangle	B76
	VB□□, VC□□, VP□□...35° Diamond	B89
	WB□□, WP□□...80° Trigon	B97
BACK TURNING INSERTS	TKFB, TKF	B100
	ABS15 / ABW15 / ABW23	B102
BEARING MACHINING	R□MT-BB / SNMF	B103
SOLID MICRO BORING BARS		B104
CERAMIC INSERTS INDENTIFICATION		B105
CERAMIC INSERTS		B106 - B115
NEGATIVE TURNING INSERTS	CN□□...80° Diamond	B106
	DN□□...55° Diamond	B107
	EN□□...75° Diamond	B107
	RN□□...Round	B108
	SN□□...90° Square	B109
	TN□□...60° Triangle	B111
	VN□□...35° Diamond	B112
	WN□□...80° Trigon	B112
POSITIVE TURNING INSERTS	RP□□...Round	B113
	SP□□...90° Square	B113
	TB□□, TC□□, TP□□...60° Triangle	B113
ROLL MACHINING INSERTS	RBG / RCGX / RPGX / RCMA / LNU	B114
GROOVING INSERTS	GH	B115

Symbol	Insert
H	Hexagon
O	Octagon
P	Pentagon
S	Square
T	Triangle
C	80° Diamond
D	55° Diamond
E	75° Diamond
F	50° Diamond
M	86° Diamond
J	70° Diamond
V	35° Diamond
W	80° Trigon
L	Rectangle
A	85° Parallelogram
B	82° Parallelogram
K	55° Parallelogram
R	Round

Shown angle stands for acute angle for diamond and parallelogram inserts.

① Shape Symbol

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

② Relief Angle Symbol

Symbol (Class)	Tolerance					
	Corner Height		Thickness		I.C. Size	
	ANSI (±inch)	ISO (±mm)	ANSI (±inch)	ISO (±mm)	ANSI (±inch)	ISO (±mm)
A	0.0002	0.005	0.0010	0.025	0.0010	0.025
F	0.0002	0.005	0.0010	0.025	0.0005	0.013
C	0.0005	0.013	0.0010	0.025	0.0010	0.025
H	0.0005	0.013	0.0010	0.025	0.0005	0.013
E	0.0010	0.025	0.0010	0.025	0.0010	0.025
G	0.0010	0.025	0.0050	0.130	0.0010	0.025
J	0.0002	0.005	0.0010	0.025	0.002~0.006	0.05~0.15
K※	0.0005	0.013	0.0010	0.025	0.002~0.006	0.05~0.15
L※	0.0010	0.025	0.0010	0.025	0.002~0.006	0.05~0.15
M※	0.003~0.007	0.080~0.180	0.0050	0.130	0.002~0.006	0.05~0.15
N※	0.003~0.007	0.080~0.180	0.0010	0.025	0.002~0.006	0.05~0.15
U※	0.005~0.015	0.130~0.380	0.0050	0.130	0.003~0.009	0.08~0.25

※ Insert's periphery is as fired.
Tolerance difference depends on size and shape of insert

③ Tolerance Symbol

Symbol	Hole	Hole Shape	Chipbreaker	Insert
N	No	-	No	
R			One Side	
F			Two Sides	
A	Yes	With Hole	No	
M			One Side	
G			Two Sides	
W		With Hole and One Countersink 40°~60°	No	
T			One Side	
Q		With Hole and Two Countersink 40°~60°	No	
U			Two Sides	
B		With Hole and One Countersink 70°~90°	No	
H			One Side	
C		With Hole and Two Countersink 70°~90°	No	
J			Two Sides	
X	-	-	-	-

④ Hole / Chipbreaker Symbol

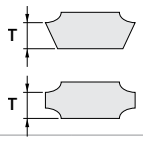
	①	②	③	④	⑤	⑥	⑦	⑧
ISO (metric)	C	N	M	G	12	04	08	PG
ANSI (inch)	C	N	M	G	4	3	2	PG

⑤ Edge Length Symbol (ISO)

C	D	S	R	T	V	W	I.C. Size (mm)	I.C. Size (ANSI) I.C. Size (inch)	I.C. Size (ANSI) Symbol
03	04		03	06			3.97	5/32	1.2
04	05		04	08	08		4.76	3/16	1.5
		05					5		
05	06		05	09		03	5.56	7/32	1.8
		06					6		
06	07		06	11	11	04	6.35	1/4	2
08	09		07	13		05	7.94	5/16	2.5
		08					8		
09	11	09	09	16	16	06	9.525	3/8	3
	12	10					10		
		12					12		
12	15	12	12	22	22	08	12.7	1/2	4
16	19	15	15	27	27	10	15.875	5/8	5
		16					16		
19	23	19	19	33	33	13	19.05	3/4	6
		20					20		
22	27		22	38			22.225	7/8	7
		25					25		
25	31	25	25	44	44	17	25.4	1	8
32	38	31	31	54	54	21	31.75	1-1/4	10
		32					32		

⑥ Thickness Symbol

ISO Thickness (mm)	ISO Symbol	ANSI Thickness (inch)	ANSI Symbol
1.59	01	1/16	1
1.98	T1	5/64	1.2
2.38	02	3/32	1.5
2.78	T2	-	-
3.18	03	1/8	2
3.97	T3	5/32	2.5
4.76	04	3/16	3
5.56	05	7/32	3.5
6.35	06	1/4	4
7.94	07	5/16	5
9.525	09	3/8	6



Thickness displayed as the distance between bottom surface and highest point on cutting edge.

⑦ Corner-R (RE) Symbol

ISO Corner-RE (mm)	ISO Symbol	ANSI Corner-RE (inch)	ANSI Symbol
Sharp Corner	00	0.000	00
0.03	003	0.001	0.1
0.05	005	0.002	0.13
0.10	01	0.004	0.2
0.20	02	0.008	0.5
0.40	04	1/64	1
0.80	08	1/32	2
1.20	12	3/64	3
1.60	16	1/16	4
2.00	20	5/64	5
2.40	24	3/32	6
2.80	28	7/64	7
3.20	32	1/8	8
Round insert	00 (inch) or M0 (metric)	Round insert	

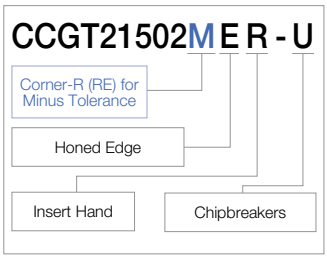
⑧ Manufacturer's Option

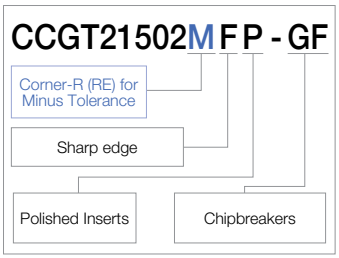
Hand Symbol, Chipbreaker, Symbol, Etc.

- Expressed as edge length for ISO.
- ANSI expresses the inscribed circle diameter in inches.

Positive Insert Identification System

(e.g. of (8) Manufacturer's Option)





When a minus tolerance is specified for the corner-R (RE)

- If a minus tolerance is specified for the corner-R (RE) as shown in the Fig.1, using an insert with corner-R (RE) = 0.008" may result in larger radius than specified.
- Use an insert the corner of which R (RE) has a minus tolerance.

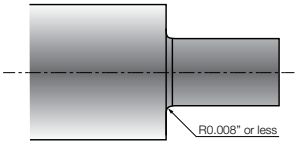


Fig.1 Example of a specified corner-R in the drawing

Insert Color

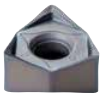
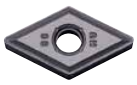
Cermet, CVD Coated Cermet, MEGACOAT NANO Cermet, MEGACOAT Cermet, and PVD Coated Cermet

Grades	Cermet									CVD Cermet	MEGACOAT NANO Cermet				MEGACOAT Cermet				PVD Cermet	
	TN610	TN620	TN620M	TN6010	TN6020	TN60	TN100M	TC40	TC60	NEW CCX	PV710	PV720	NEW PV730	NEW PV60M	PV7005	PV7010	PV7025	PV7040	PV7020	PV90
Insert Color																				

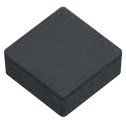
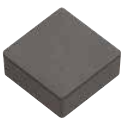
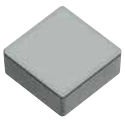
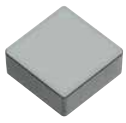
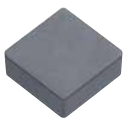
CVD Coated Carbide

Grades	CVD Coated Carbide																	
	CA310	CA315	CA320	CA415D	CA520D	CA420M	CA4505	CA4515	CA4010	CA4115	CA4120	CA510	CA515	CA025P	CA525	CA530	CA55 Series	CA65 Series	CR9025
Insert Color																		

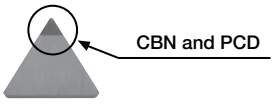
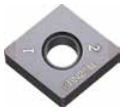
PVD Coated Carbide

Grades	MEGACOAT NANO					NEW	MEGACOAT NANO PLUS		MEGACOAT NANO HARD		MEGACOAT							PVD Coated Carbide							
	PR1425	PR1510	PR1515	PR1525	PR1535	PR1625	NEW PR1705	NEW PR1725	NEW PR005S	NEW PR015S	PR1210	PR1215	PR1225	PR1230	PR1305	PR1310	PR1325	PR660	PR830	PR905	PR915	PR930	PR1005	PR1025	PR1115	PR1125
Insert Color																										

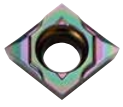
Ceramic

Grades	Alumina Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silcon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic		Whisker Reinforced Ceramic	Cell Fiber Ceramic
	KA30	A65	KT66	A66N	PT600M	NEW KS6015	KS6050	CS7050	KS6030	KS6040	KXW1	CF1
Insert Color												

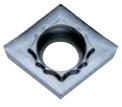
CBN and PCD

Grades	CBN					PCD			MEGACOAT CBN	PVD Coated CBN
	KBN65B	KBN475	KBN510	KBN525	KBN570	KPD001	KPD010	KPD230	KBN..M	KBN900
Insert Color	 CBN and PCD									

DLC Coated Carbide

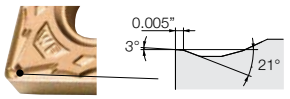
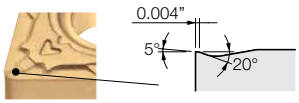
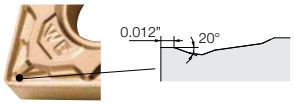
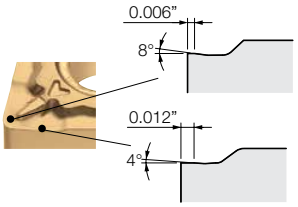
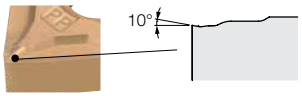
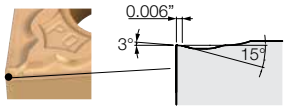
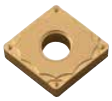
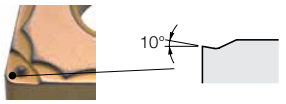
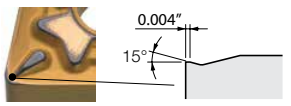
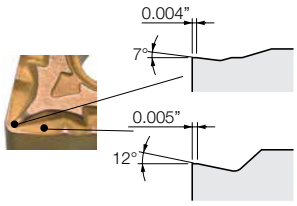
Grades	DLC	
	PDL010	PDL025
Insert Color		

Uncoated Carbide

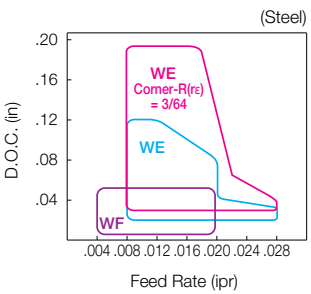
Grades	Carbide				
	GW05	GW15	GW25	KW10	SW05
Insert Color					

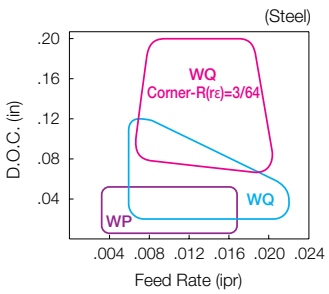
Steel

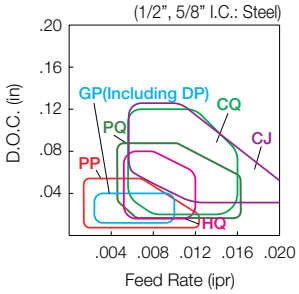
1 *Molded Chipbreaker*

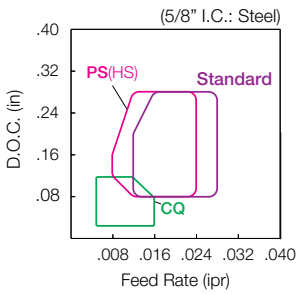
Finishing (Wiper Edge)	WF			Good chip control in finishing operations. Excellent surface finish by controlling adhesion. Less cutting force due to sharp cutting edge.
	WP			Double feed rate is available for finishing to light machining, while maintaining a smooth finish.
Finishing-Medium (Wiper Edge)	WE			Wide application range is available with improved chip control nd high stability. Good surface finish at high feed rates.
	WQ			Double feed rate possible while maintaining a smooth finish. High efficiency and good chip control.
Finishing	PP			3-step dot structure realizes stable chip control at a wide range of feed rates. Less cutting force due to sharp cutting edge and smooth rake face.
Finishing-Medium	PQ			Stable chip control over a wide feed rate range. Well-balanced edge sharpness and toughness.
Finishing	GP			Finishing to light machining. Good chip control.
Finishing-Medium	HQ			Sharp cutting performance with 3-D rake angle and double projection design.
Finishing-Medium	CQ			Good chip control at various D.O.C. such as copying. Applicable for up-facing.

Applicable Chipbreaker Range (D.O.C. Refers to Radial Depth of Cut)



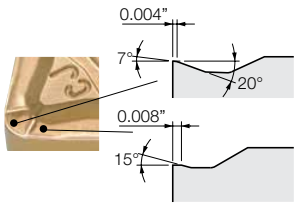
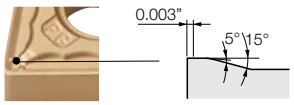
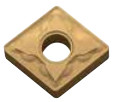
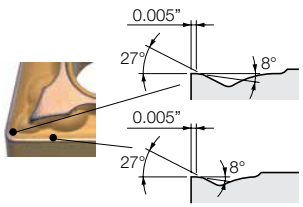
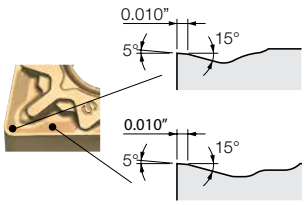
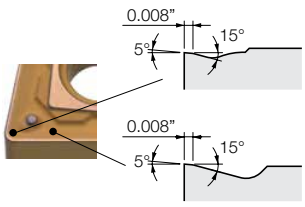
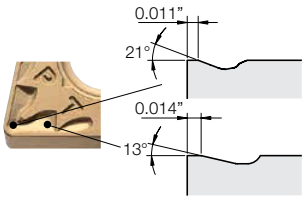
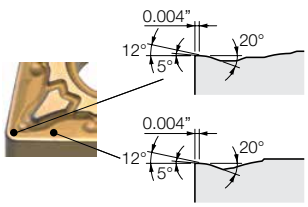
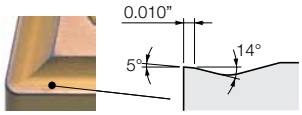




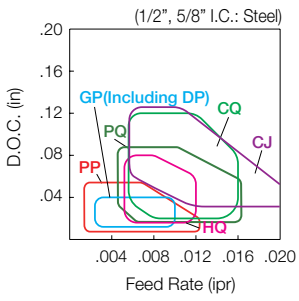


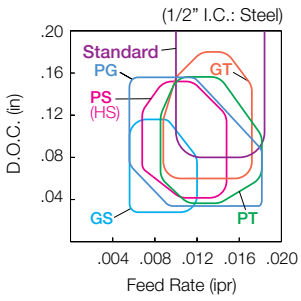
Steel

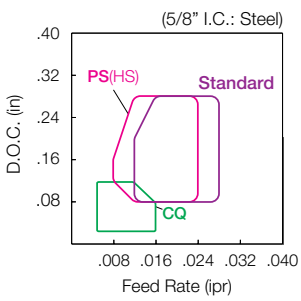
1 *Molded Chipbreaker*

Finishing-Medium (Up-Facing)	CJ			Ensures chips will curl even in small depth, high feed rate machining. Improves chip evacuation when copying and up-facing.
Medium-Roughing	PG			Stable machining with a balance of edge sharpness and strength. Prevents chip clogging at high feed rates. Good chip control at low feed rates. Stable machining with wide chip control range.
Medium-Roughing	GS			Strong edge chipbreaker. Stable for continuous machining and light interrupted machining.
Medium-Roughing	PS			General purpose chipbreaker. More stable due to large contact surface.
Medium-Roughing	HS			General purpose chipbreaker. Applicable for copying.
Medium-Roughing / High Feed Rate	PT			Low cutting force during high feed machining. Land support structure.
Medium-Roughing / High Feed Rate	GT			Strong edge chipbreaker. Wide land design and smooth chip control even at high feed rate machining.
Roughing	Standard			Low cutting force and suitable for large D.O.C. roughing.

Applicable Chipbreaker Range (D.O.C. Refers to Radial Depth of Cut)

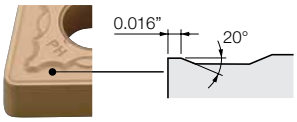
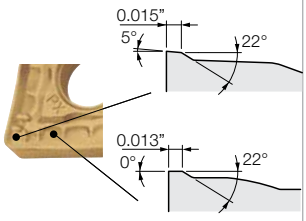




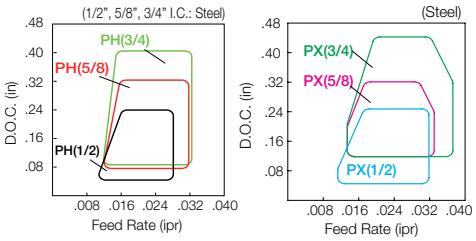


Steel

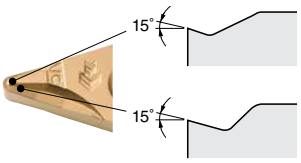
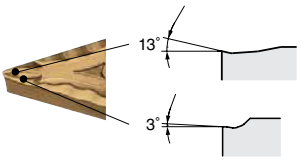
1 *Molded Chipbreaker*

Roughing	PH			For roughing of steel and cast iron. Suitable for heavy interrupted machining and for workpieces with scale due to strong cutting edge.
Single Sided Roughing (High Feed Rate)	PX			Roughing and high feed rate operation. Low cutting force chipbreaker.

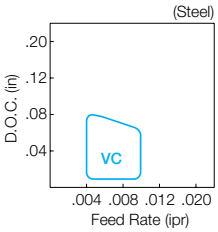
● **Applicable Chipbreaker Range** (D.O.C. Refers to Radial Depth of Cut)

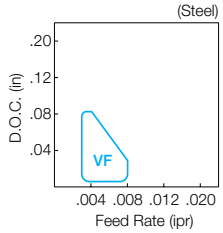


Steel (Copying / Undercutting, Varied D.O.C.)

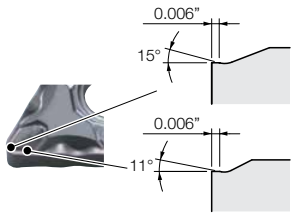
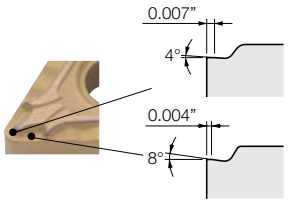
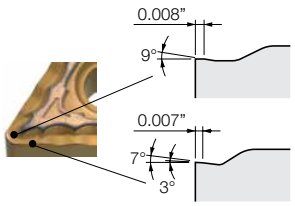
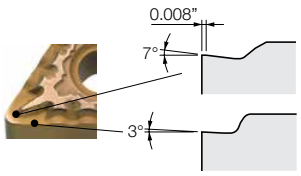
Finishing-Medium	VC			Handed chipbreaker for copying. Good chip control at varied D.O.C. because of the large space on the main cutting edge side.
Finishing-Medium	VF			Good chip control for varied D.O.C. such as copying and undercutting.

● **Applicable Chipbreaker Range** (D.O.C. Refers to Radial Depth of Cut)

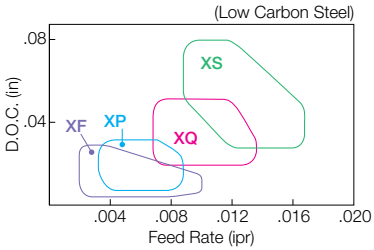




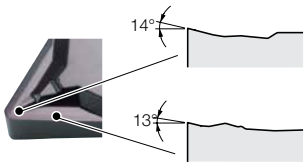
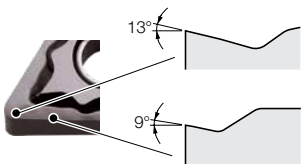
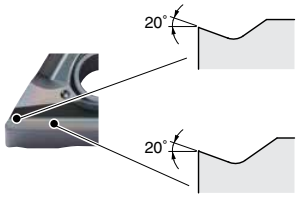
Steel (Copying / Undercutting, Varied D.O.C.)

Finishing	XF			Excellent chip control at high speed and small D.O.C. machining of low carbon steel.
Finishing	XP			Short chips when finishing due to sharp cutting and special design.
Medium	XQ			Consistent chip breaking at medium machining due to moderate rake face and special design.
Roughing	XS			Consistent chip breaking when roughing due to special rake angle design.

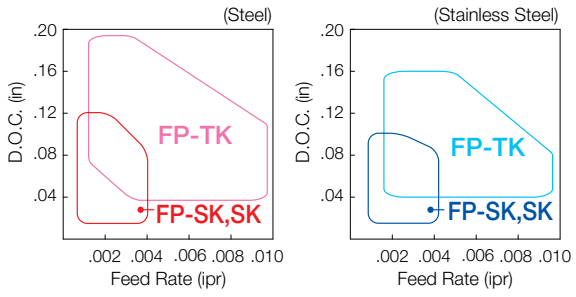
Applicable Chipbreaker Range (D.O.C. Refers to Radial Depth of Cut)

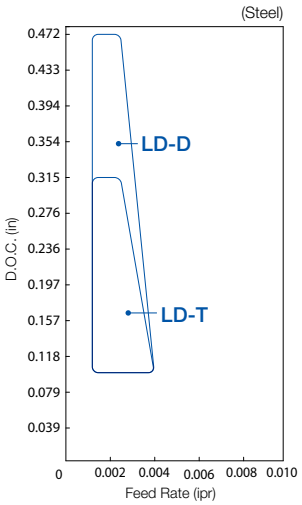


Steel / Stainless Steel (Small Parts Machining)

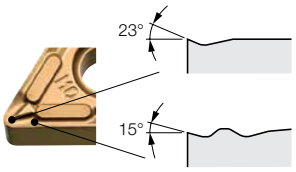
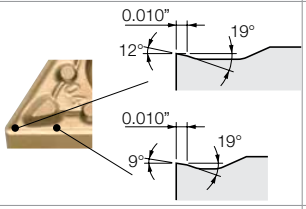
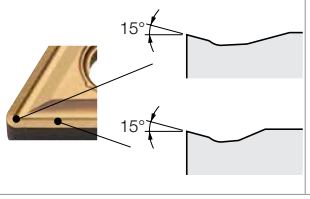
Finishing-Medium	SK	 FP-SK : Polished Sharp Edge -SK : Honed		For finishing to medium machining in automatic lathes. Sharp cutting performance equivalent to positive inserts. 2-step dot design provides reliable chip control at various D.O.C..
Medium-Roughing	FP-TK			For medium to high feed rate in automatic lathes (When machining workpieces of medium to large dia.) Superior cutting performance achieved by sharp edge and polished surface. Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.
Large D.O.C.	LD			Available for greater depths of cut than many conventional chipbreakers. Achieves high-precision machining in a single pass. Chipbreaker shape optimized for various depths of cut. Stable chip control in a wide range of machining applications.

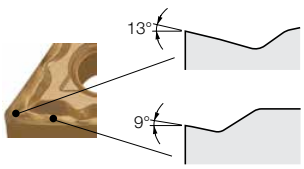
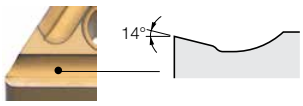
Applicable Chipbreaker Range
(D.O.C. Refers to Radial Depth of Cut)





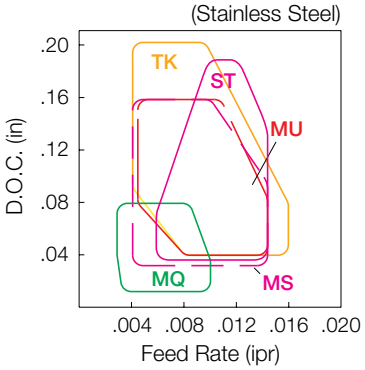
Stainless Steel / Heat-Resistant Alloy / Titanium Alloy

Finishing	MQ		Large rake angle and circular edge line. Low cutting force and good chip control.
Medium-Roughing	MS		Superior cutting edge sharpness and strength achieved by a positive land. Extra strength of cutting edge inhibits damage from wall shouldering.
Medium-Roughing	MU		Large rake angle reduces cutting force. Less burring achieved by diminishing damage from notching.

Medium-Roughing	TK		Smooth chipbreaker geometry improves chip flow with less adhesion. Large curled chips.
Medium-Roughing	ST		Lower cutting forces due to large rake angle. Less notching with special design.

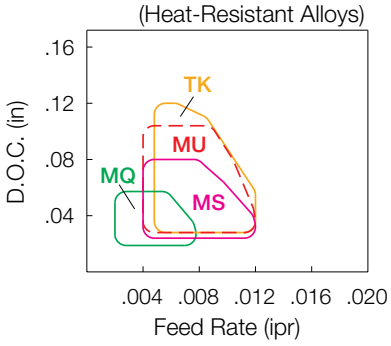
Stainless Steel

Applicable Chipbreaker Range
(D.O.C. Refers to Radial Depth of Cut)



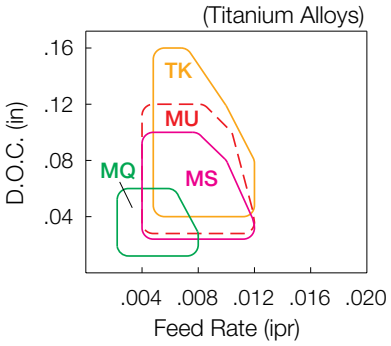
Heat-Resistant Alloy

Applicable Chipbreaker Range
(D.O.C. Refers to Radial Depth of Cut)

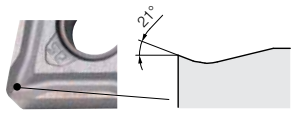
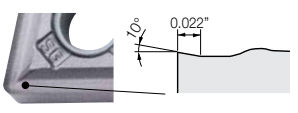
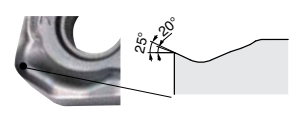


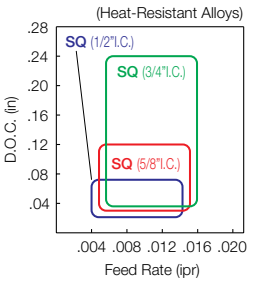
Titanium Alloy

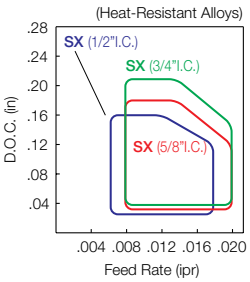
Applicable Chipbreaker Range
(D.O.C. Refers to Radial Depth of Cut)

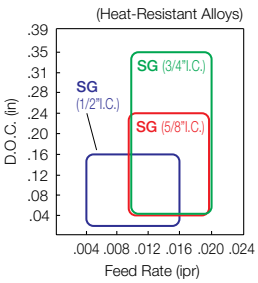


Heat-Resistant Alloy

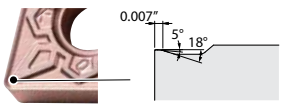
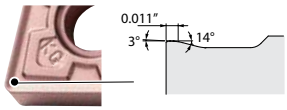
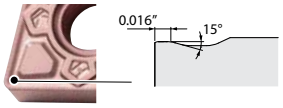
Finishing-Medium	SQ		Effective for burr suppression and reducing notching with slant cutting edge (inclined in (-) direction)
Roughing	SG		Stable chip control during heavy machining applications and high-strength land with low cutting force design.
Roughing (Single Sided)	SX		Slant cutting edge reduces cutting force. Less burring achieved by unique cutting edge design.





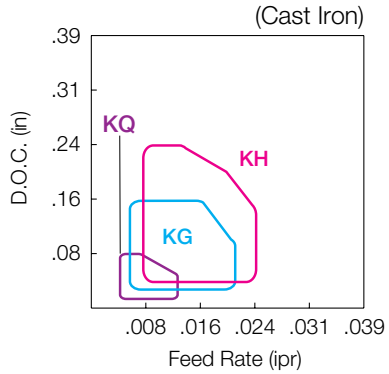


Cast Iron (K Series)

Sharp Cutting	KQ			Sharp cutting chipbreaker. Edge geometry is great when requiring sharpness such as machining thin-walled workpieces.
Medium	KG			Excellent balance of sharpness and strength. Excellent stability in continuous machining.
Medium-Roughing	KH			Good for heavily interrupted machining. Strong edge chipbreaker. Improved locating/seating in the toolholder pocket, with high reliability.

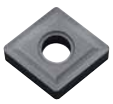
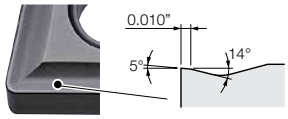
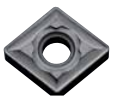
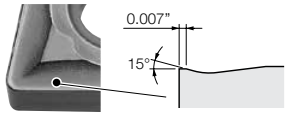
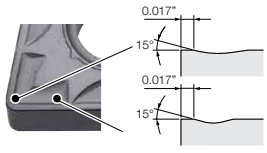
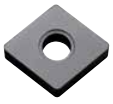
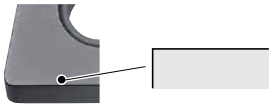
Applicable Chipbreaker Range

(D.O.C. Refers to Radial Depth of Cut)

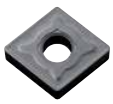
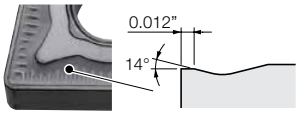
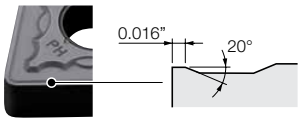


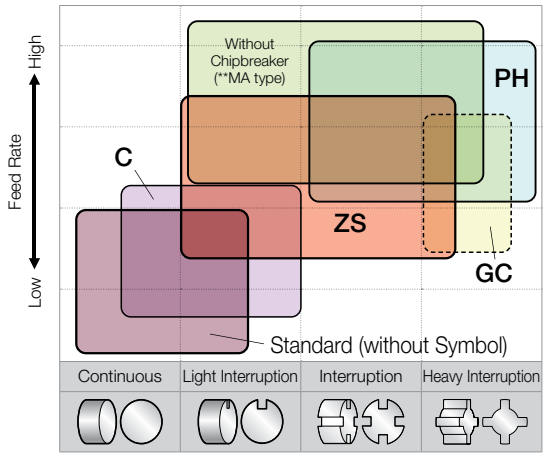
Cast Iron

Sharp Cutting Oriented

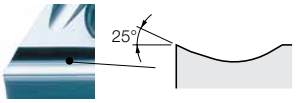
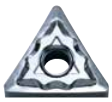
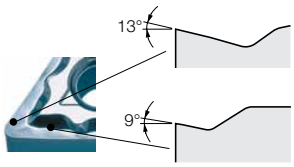
Standard			Standard chipbreaker for continuous to light interrupted machining of cast iron. (Low cutting force)
C			High feed rate chipbreaker for continuous to light interrupted machining of cast iron.
ZS			Standard chipbreaker for light interrupted to interrupted machining of cast iron. (High stability)
Without Chipbreaker			High feed rate chipbreaker for light interrupted machining of cast iron.

Stability Oriented

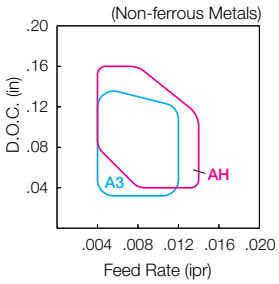
GC			Chipbreaker for heavy interrupted machining of cast iron. (Tough edge chipbreaker)
PH			Chipbreaker for roughing of cast iron and steel. Suitable for heavy interrupted machining and for workpieces with scale due to strong cutting edge.

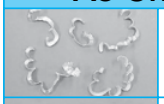
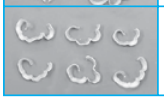


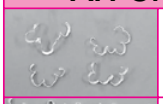
Non-ferrous Metals

Finishing-Medium	A3			Large rake angle and smooth surface. Good chip control and less adhesion.
Medium-Roughing	AH		 G Class: Sharp Edge Prep. M Class: Horned Edge Prep.	Polished chipbreaker. Smooth chip control and less adhesion.

● **Applicable Chipbreaker Range** (D.O.C. Refers to Radial Depth of Cut)

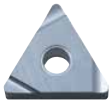
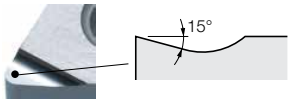
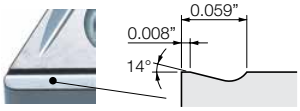


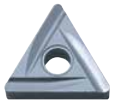
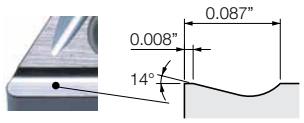
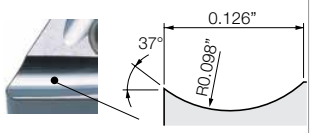
A3 Chipbreaker	
	D.O.C.= 0.08” f= 0.008 ipr
	D.O.C.=0.08” f= 0.012 ipr

AH Chipbreaker	
	D.O.C.= 0.08” f= 0.008 ipr
	D.O.C.= 0.08” f= 0.012 ipr

Steel

2 *Ground Chipbreaker*

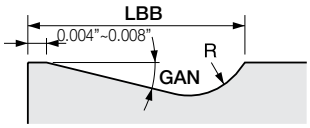
Sharp Cutting	S			Sharp edge and less cutting force. Good chip control and smooth chip evacuation.
Medium	B			Suitable for general purpose machining at feed rate from 0.006 to 0.010ipr.

Sharp Cutting	C			Suitable for general purpose machining at feed rate from 0.008 to 0.014ipr.
Medium	25R			Applicable to sticky material such as low carbon steel. Large rake angle also suitable for stainless steel.

Effectiveness of Ground Chipbreaker

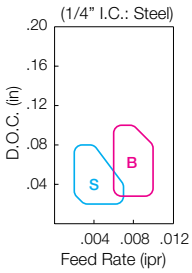
(1) Lower cutting force and sharper cutting edge
(2) Improved adhesion resistance
(3) Improved dimensional accuracy and surface finish
(4) Controlled chip flow

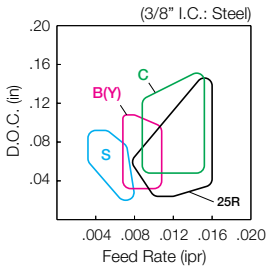
Specification of B, C, D and Parallel Ground Chipbreaker

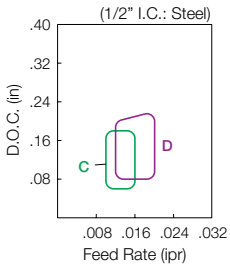


Insert Type	I.C. Size	Chipbreaker Name	LBB (in)	GAN	R (in)
CNGG	3/8, 1/2	Without Indication (Similar to C)	0.087	14°	0.040
WNGG	3/8	Without Indication (Similar to C)	0.087	14°	0.040
TNGG	1/4, 3/8	B	0.060	14°	0.020
	3/8, 1/2	C	0.087	14°	0.040
DNGG	3/8, 1/2	Without Indication (Similar to C)	0.100	14°	0.080
VNGG	3/8	Without Indication (Similar to B)	0.060	14°	0.020
SNGG	3/8, 1/2	B	0.060	14°	0.020
	1/2	C	0.087	14°	0.040

Applicable Chipbreaker Range (D.O.C. Refers to Radial Depth of Cut)

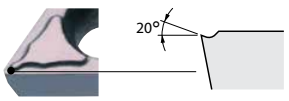
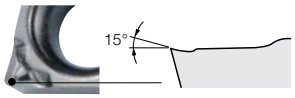
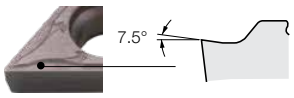
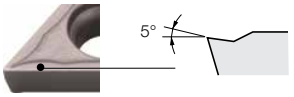
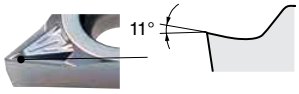
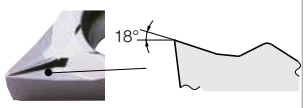
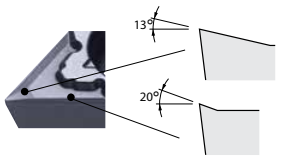
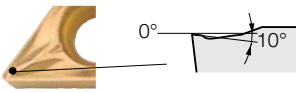


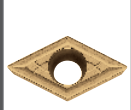
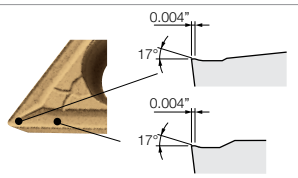
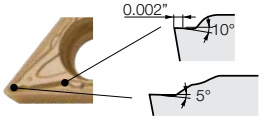
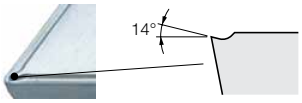
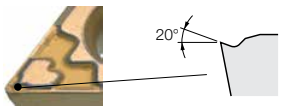
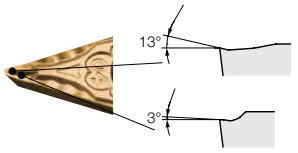
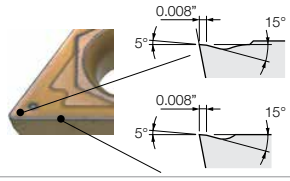
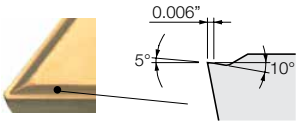
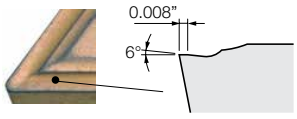




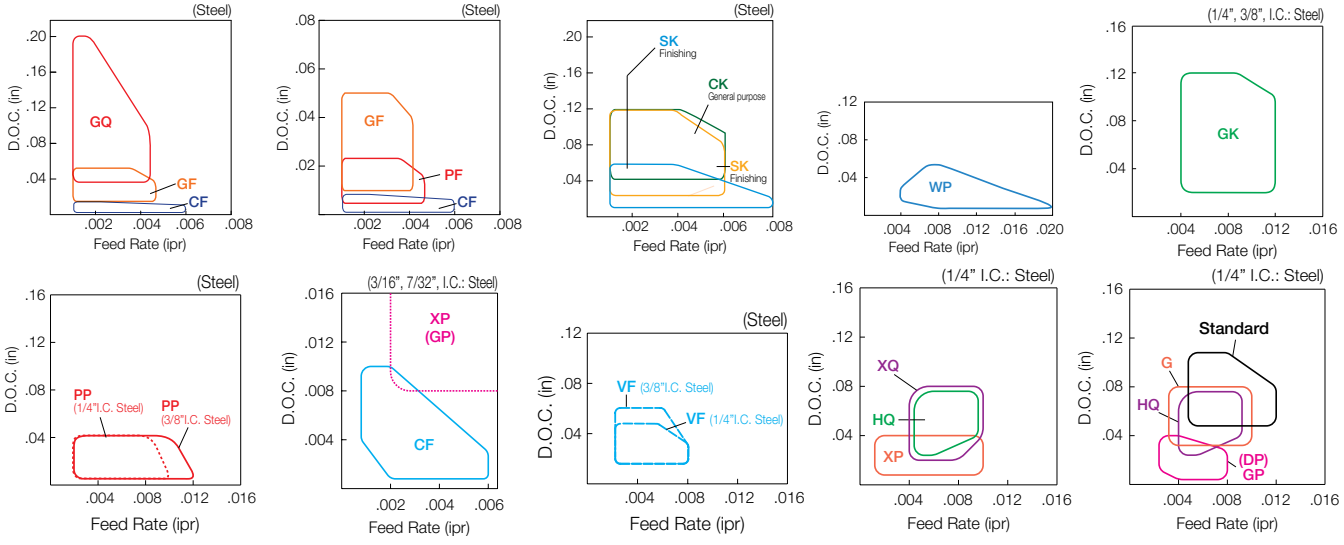
Steel

1 *Molded Chipbreaker*

Minute D.O.C.	CF			Available for minute D.O.C. (0.0008" - 0.008") finishing.
Finishing	PF			Finishing chipbreaker for boring with D.O.C. of (0.006"~0.024")
Finishing	GF			Dot located close to ridge line of cutting edge on corner. Chips fragmented in small pieces in cutting of small D.O.C..
Finishing-Medium	GQ			Enables cutting over a wide range of conditions by using the optimum chipbreaker width according to the cutting depth.
Finishing	SKS			Finishing chipbreaker with a D.O.C. of 0.2mm-1.5mm. Stable chip control with rake face, bottom face, and chipbreaker face design.
Finishing	SK			Sharp cutting performance due to Large rake angle. Large dot to the corner edge improved chip control in a wide feed rate range.
Finishing	CK			Good cutting performance. Applicable without hand for two direction cutting on automatic lathe.
Finishing	WP			Dual-dot structure with one dot offering stabilized chip control at low feed rates, while a second dot controls chips at higher feed rates.

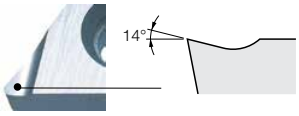
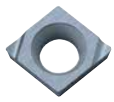
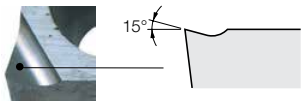
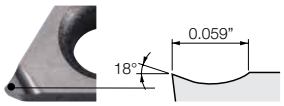
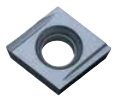
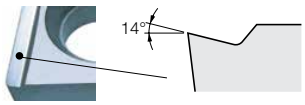
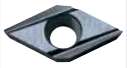
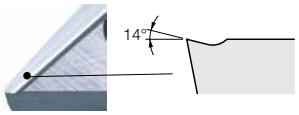
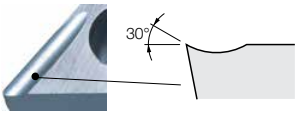
Finishing-Medium	GK			Good chip evacuation at wide range by breaker dot and wide chip pocket.
Finishing	PP			3-step Smart Dot structure is applicable to a wide range of feed rates in steel finishing. Smooth taper cutting edge reduces cutting forces.
Finishing	DP			Consistent chip breaking performance for finishing.
Finishing	GP			Good chip control at finishing. Applicable to sticky material like low carbon steel, pipe material.
Finishing	VF			Good chip control for varied D.O.C. such as copying and undercutting.
Finishing-Medium	HQ			General purpose chipbreaker for medium machining.
Medium	G			Chipbreaker for short chips at medium machining.
Medium	Standard			Strong edge chipbreaker for medium machining range.

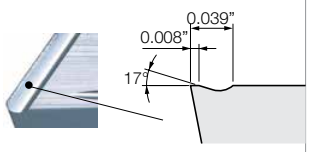
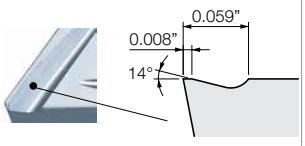
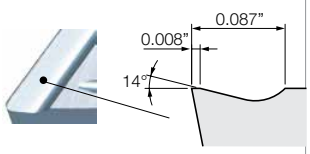
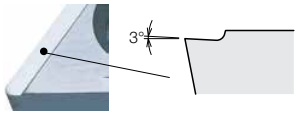
Applicable Chipbreaker Range (D.O.C. Refers to Radial Depth of Cut)



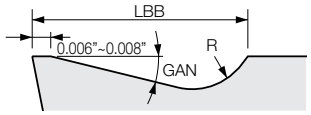
Steel

2 *Ground Chipbreaker*

Finishing	(Without Indication)			Good chip control during finishing to light machining with low cutting forces.
Finishing	F			Good chip control during finishing to light machining with low cutting forces.
Finishing	P			Chipbreaker smoothly breaks chips and directs them towards the outside of the workpiece when boring. Sharp cutting performance and good surface finish.
Finishing-Medium	Y			Sharp cutting performance and good surface finish.
Low Feed	J			Slant chipbreaker width provides chip control at various D.O.C..
Low Feed	U			Good chip control at low feed rates and varied D.O.C. with low cutting force. Suitable for automatic lathes.

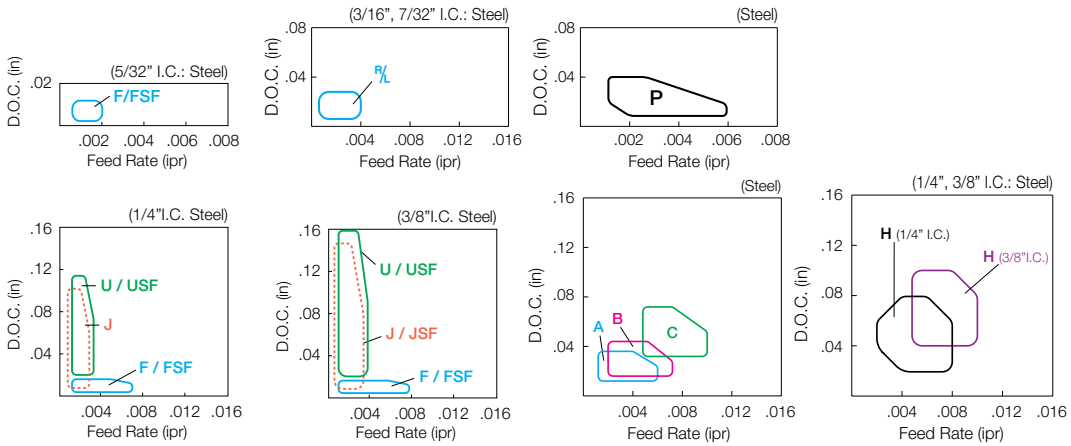
Finishing	A			Large rake angle and low cutting force. Narrow chipbreaker width and consistent chip control.
Finishing-Medium	B			General purpose chipbreaker for medium machining. Good balance between chip control and sharp cutting.
Medium	C			Applicable to high load machining. Good chip flow and less resistance.
Finishing-Medium	H			Sharp cutting performance and small curled chips.

Specification of A, B, C and parallel ground chipbreaker



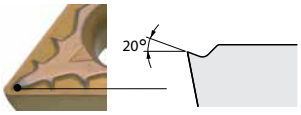
Insert Type	Size	Chipbreaker Name	LBB (in)	GAN	R (in)
TPGR	1/4	A	0.040	17°	0.020
	1/4, 3/8	B	0.060	14°	0.020
	3/8	C	0.087	14°	0.040
SPGR	3/8	Without Indication (Similar to B)	0.060	14°	0.020
	1/2	Without Indication (Similar to C)	0.087	14°	0.040

Applicable Chipbreaker Range (D.O.C. Refers to Radial Depth of Cut)



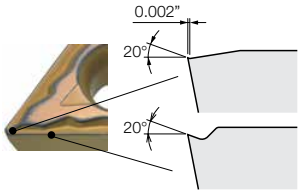
Low Carbon Steel (Pipe / Rolled Plate / Rolled Steel)

Finishing — **XP**



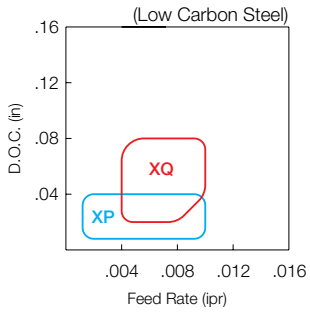
Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.

Finishing-Medium — **XQ**

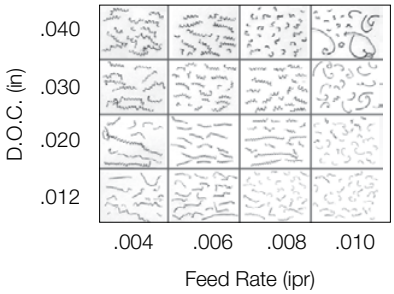


Wide chip control range and sharp cutting performance. Suitable for low carbon steel and sticky material.

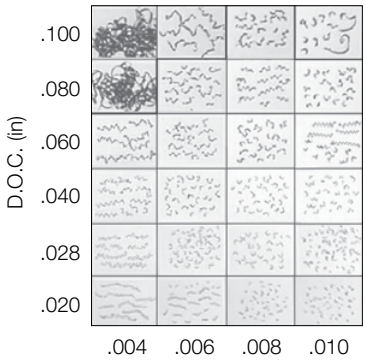
● **Applicable Chipbreaker Range** (D.O.C. Refers to Radial Depth of Cut)



XP Chipbreaker

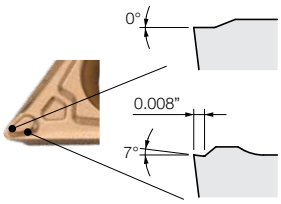


XQ Chipbreaker



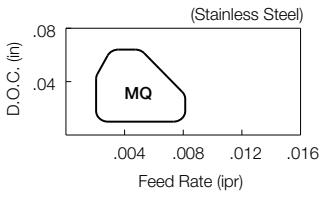
Stainless Steel

Finishing — **MQ**



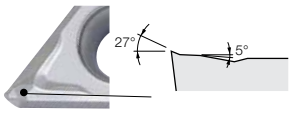
Good chip evacuation when boring. Small curled chips. Prevents chip entanglement with toolholder and stabilizes surface roughness.

● **Applicable Chipbreaker Range** (D.O.C. Refers to Radial Depth of Cut)



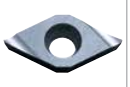
Non-ferrous Metals

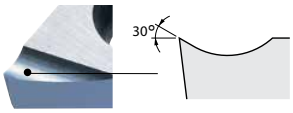
Finishing — **AP**



Stable chip evacuation and good surface finish when boring stainless steel with small curled chips evacuated towards the outside of the workpiece.

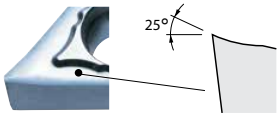
Finishing-Medium — **AH**





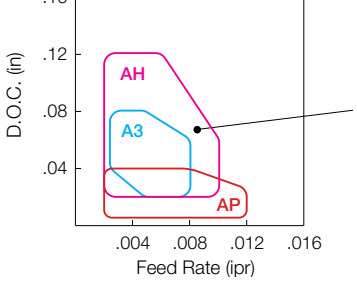
Large rake angle, smooth chip flow and less adhesion. Sharp edge and good surface finish.

Finishing-Medium — **A3**



Positive chip groove and good chip control with low cutting forces. Polished surface reduces adhesion.

● **Applicable Chipbreaker Range** (D.O.C. Refers to Radial Depth of Cut)



AH Chipbreaker

How to Read "Turning Inserts" Pages

- Refer below on how to read the "Indexable Turning Inserts" tables
- Section C contains similar content.

Classification of usage

- ✖ Interruption / 1st Choice
- ✖ Interruption / 2nd Choice
- ● Light Interruption / 1st Choice
- ○ Light Interruption / 2nd Choice
- ● Continuous / 1st Choice
- ○ Continuous / 2nd Choice

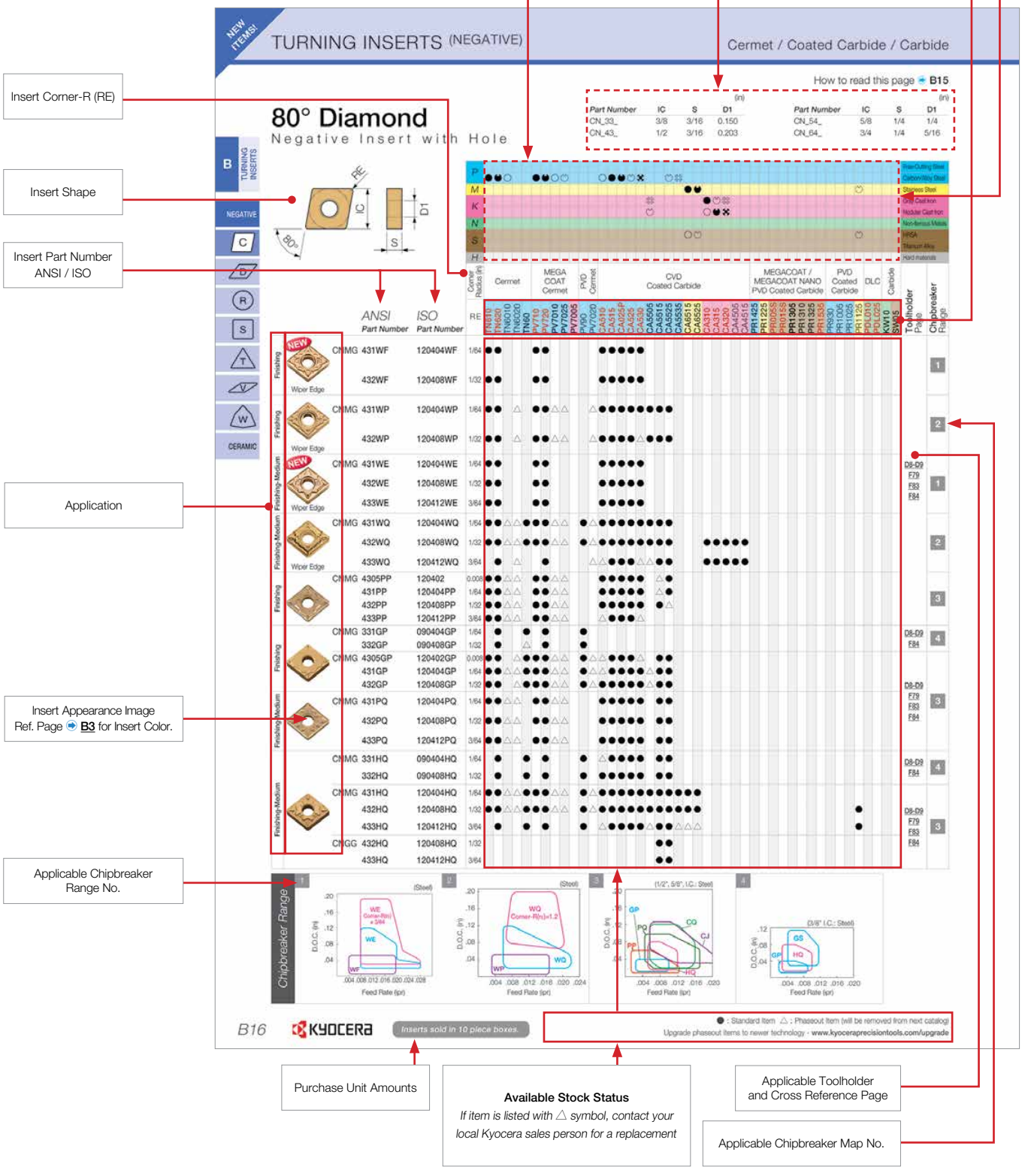
(In case hardness is under 45HRC)

Recommended grades for each application are shown here.

Inserts' ISO Classification of Usage
(Workpiece materials are written on the right side)

Insert Dimensions

Insert Grades
(Red Fonts Are New Grades)

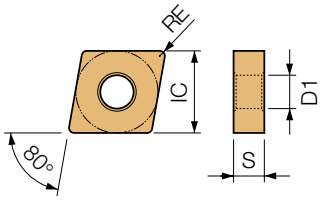


How to read this page B15

80° Diamond

Negative Insert with Hole

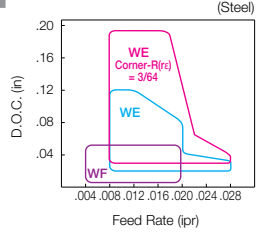
Part Number	IC (in)	S (in)	D1 (in)
CN_33_	3/8	3/16	0.150
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	1/4
CN_64_	3/4	1/4	5/16



		ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Coated Carbide																				MEGACOAT / MEGACOAT NANO PVD Coated Carbide												PVD Coated Carbide				DLC		Carbide		Toolholder Page	Chipbreaker Range
						TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing	Wiper Edge	CNMG	431WF	120404WF	1/64	●	●			●	●				●	●	●	●	●																														1
			432WF	120408WF	1/32	●	●			●	●				●	●	●	●	●																														
Finishing	Wiper Edge	CNMG	431WP	120404WP	1/64	●	●			●	●				●	●	●	●	●	●	●	●																											2
			432WP	120408WP	1/32	●	●			●	●				●	●	●	●	△	●	●	●																											
Finishing-Medium	Wiper Edge	CNMG	431WE	120404WE	1/64	●	●			●	●				●	●	●	●	●																												D8-D9 F81 F85 F86	1
			432WE	120408WE	1/32	●	●			●	●				●	●	●	●	●																													
			433WE	120412WE	3/64	●	●			●	●				●	●	●	●	●																													
Finishing-Medium	Wiper Edge	CNMG	431WQ	120404WQ	1/64	●	●	△		●	●			△	●	●	●	●	●	●	●	●																											2
			432WQ	120408WQ	1/32	●	●	△		●	●			●	●	●	●	●	●	●	●	●			●	●	●	●	●																		
			433WQ	120412WQ	3/64		●				●				△	●	●	●	△	△	●	●			●	●	●	●	●																		
Finishing		CNMG	4305PP	120402	0.008	●	●		●	●	●	●			●	●	●	●	●		△	●																											3
			431PP	120404PP	1/64	●	●		●	●	●	●			●	●	●	●	●		△	●																											
			432PP	120408PP	1/32	●	●		●	●	●	●			●	●	●	●	●		●	△																											
			433PP	120412PP	3/64	●	●		●	●	●	●				●	●	●																														
Finishing		CNMG	331GP	090404GP	1/64		●	●			●	●		●																															D9 F86	4
			332GP	090408GP	1/32		●	△			●	●		●																																	
		CNMG	4305GP	120402GP	0.008	●	●	●		●	●	●		△		●	●	●	△		●	●																										
			431GP	120404GP	1/64	●	●	●		●	●	●		●	△	●	●	●	●		●	●																										
			432GP	120408GP	1/32	●	●	●		●	●	●		●	●	●	●	●	●		●	●																									D8-D9 F81 F85 F86	
Finishing-Medium		CNMG	431PQ	120404PQ	1/64	●	●		●	●	●	●			●	●	●	●	●		●	●																											3
			432PQ	120408PQ	1/32	●	●		●	●	●	●			●	●	●	●	●		●	●																											
			433PQ	120412PQ	3/64	●	●		●	●	●	●			●	●	●	●	●		●	●																											
Finishing-Medium		CNMG	331HQ	090404HQ	1/64		●	●	●		●	●		△	△	●	●	●	●		●	●																									D9 F86	4
			332HQ	090408HQ	1/32		●	●	●		●	●		△	●	●	●	●	●		●	●																											
		CNMG	431HQ	120404HQ	1/64	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●																									
			432HQ	120408HQ	1/32	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●																						△			D8-D9 F81 F85 F86	3
			433HQ	120412HQ	3/64		●	●	●		●	●		△		●	●	●	●		●	●																						△				
		CNGG	432HQ	120408HQ	1/32																●	●																										
			433HQ	120412HQ	3/64																●	●																										

Chipbreaker Range

1



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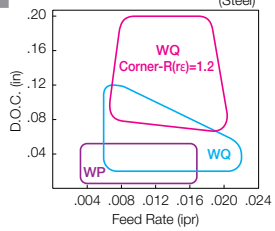

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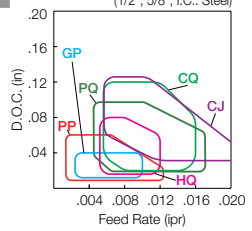

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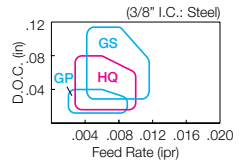


KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

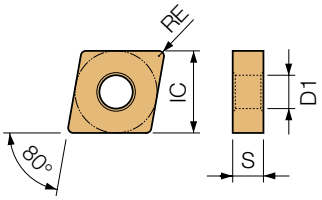
How to read this page B15

80° Diamond

Negative Insert with Hole

Part Number	IC	S	D1
	(in)		
CN_33_	3/8	3/16	0.150
CN_43_	1/2	3/16	0.203

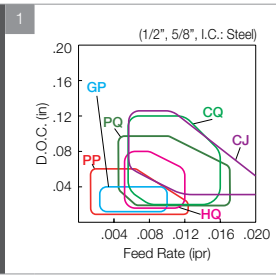
Part Number	IC	S	D1
	(in)		
CN_54_	5/8	1/4	1/4
CN_64_	3/4	1/4	5/16



		ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide														MEGACOAT / MEGACOAT NANO PVD Coated Carbide											PVD Coated Carbide				DLC			Carbide	Toolholder Page	Chipbreaker Range
						TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing-Medium		CNMG	431CQ	120404CQ	1/64	●	●			●	●	●		△	●	●	●	●	●	△	●	●	●															●								D8-D9 F81 F85 F86	
		CNMG	432CQ	120408CQ	1/32	●	●	●		●	●	●		●	●	●	●	●	●	●	●	●	●															●									
		CNMG	433CQ	120412CQ	3/64									●	●	●	●	●	●	●	●	●	●																	●									
	Up Facing	CNMG	542CQ	160608CQ	1/32										●	●	●	●	●			●	●																	●								D9	
	Up Facing	CNMG	543CQ	160612CQ	3/64										●	●	●	●	△		△	●																	●									
Finishing-Medium		CNMG	432CJ	120408CJ	1/32										●	●	●	●	●	●	●	●	●																	●								D8-D9 F81 F85 F86	1
		CNMG	433CJ	120412CJ	3/64										●	●	●	●	●		●	●	●																	●									
		CNMG	543CJ	160612CJ	3/64											●	●	△	●		●																			●								D8-D9	
	Up Facing	CNMG	544CJ	160616CJ	1/16											●	●	●	●		●																			●									
Medium		CNMG	431TN-V	120404TN-V	1/64			●																																							D8-D9 F81 F85 F86	2
		CNMG	432TN-V	120408TN-V	1/32			●																																							
Medium-Roughing		CNMG	331GS	090404GS	1/64		●	●			●	●		△		●	●	●	●		△	●																									D9 F86	See B16 4
		CNMG	332GS	090408GS	1/32		●	●			●	●		△	●	●	●	●	●		●	●																										
Medium-Roughing		CNMG	431GS	120404GS	1/64		●				●	●		●	△	●	●	●	●			●	●																										3
		CNMG	432GS	120408GS	1/32		●				●	●		●	●	●	●	●	●			●	●																										
		CNMG	433GS	120412GS	3/64									△		●	●	●	●			●	●																										
Medium-Roughing		CNMG	431PG	120404PG	1/64	●	●			●	●	●			●	●	●	●	●																					●								D8-D9 F81 F85 F86	
		CNMG	432PG	120408PG	1/32	●	●			●	●	●			●	●	●	●	●																					●									
		CNMG	433PG	120412PG	3/64		●				●	●			●	●	●	●	●																					●									
		CNMG	434PG	120416PG	1/16										△	●	●	●	●																														
Medium-Roughing		CNMG	431PS	120404PS	1/64		●				●	●			●	●	●	●	●	●	●	●	●	●	●																	△								3
		CNMG	432PS	120408PS	1/32		●				●	●			●	●	●	●	●	●	●	●	●	●	●																	△								
		CNMG	433PS	120412PS	3/64										●	●	●	●	●	●	●	●	●	△	●																	△								
		CNMG	434PS	120416PS	1/16											●	●	●	●		●	●	●		●																								
		CNMG	543PS	160612PS	3/64										●	●	●	●	●	△	●	●	●	●	●																							D9	
		CNMG	544PS	160616PS	1/16										●	●	●	●	●	●	●	●	●																									
Medium-Roughing		CNMG	431HS	120404HS	1/64			△						△							△	△																									D8-D9 F81 F85 F86	
		CNMG	432HS	120408HS	1/32			△						△							△	△																										
		CNMG	433HS	120412HS	3/64			△													△	△																										
		CNMG	434HS	120416HS	1/16																△	△																										

Chipbreaker Range

1



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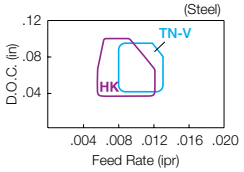

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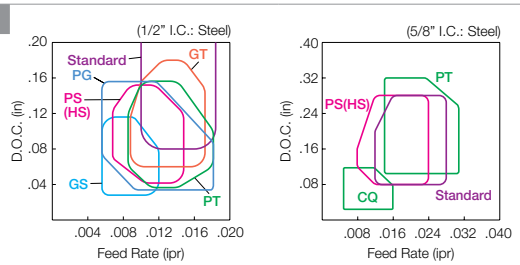


● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

80° Diamond

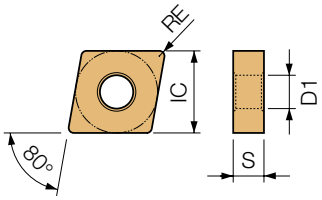
Negative Insert with Hole

(in)

Part Number	IC	S	D1
CN_33_	3/8	3/16	0.150
CN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
CN_54_	5/8	1/4	1/4
CN_64_	3/4	1/4	5/16

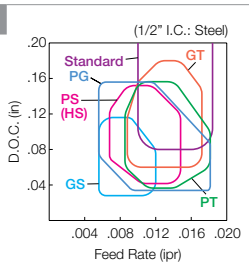


P Free-Cutting Steel / Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron / Nodular Cast Iron
N Non-ferrous Metals
S HRSA / Titanium Alloy
H Hard materials

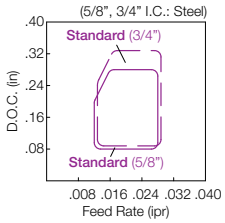
		ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet	CVD Cermet	MEGA COAT Cermet	PVD Cermet	CVD Coated Carbide																MEGACOAT / MEGACOAT NANO PVD Coated Carbide												PVD Coated Carbide				DLC		Carbide		Toolholder Page	Chipbreaker Range
						TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Medium-Roughing	High Feed Rate	CNMG	432PT	120408PT	1/32										●	●	●	●	●	●	●	●	●	●	●																						D8-D9 F81 F85 F86	
			433PT	120412PT	3/64										●	●	●	●	●	●	●	●	●		●																							
		CNMG	542PT	160608PT	1/32										●	●	●	●	●	●	●	●	●	●	●																						D9	
			543PT	160612PT	3/64										△	●	●	●	△	●	●	●		●																							
			544PT	160616PT	1/16										△	●	●	●		●	●	●		●																							
Medium-Roughing	High Feed Rate	CNMG	432GT	120408GT	1/32									●	●	●	●	●		●	●																											1
			433GT	120412GT	3/64									△	△	●	●	●		●	●																									
		CNMG	643GT	190612GT	3/64																●																								D8-D9 F81 F85 F86	
Roughing		CNMG	431	120404	1/64	●	●	●	●	●	●	●	●	△	●	●	●	●	●	●			●	●	●	●	●	●														△			●		
			432	120408	1/32	●	●	●	●	●	●	●	●	△	●	●	●	●	●	●	●	●	●	●	●	●	●	●														△		●			
			433	120412	3/64			●	●				●		●	●	●	●	●	△	●	●	●	●	●	●	●	●	●														△					
			434	120416	1/16															△					●	●	●	●																			
		CNMG	542	160608	1/32												●	●		△	●	●																								D9	2
			543	160612	3/64												●	●	●	●	●	●		●	●	●		●																			
			544	160616	1/16																	●			●	●		●																		
		CNMG	642	190608	1/32															●					●	●	●	●																		
			643	190612	3/64										●	●	●	●	●		●	●	●			●	●	●	●																●		
			644	190616	1/16												●	●	●			●	●			●	●		●																		
Roughing		CNMG	432PH	120408PH	1/32										●	●	●	●	●		●	●	●			●	●	●	●																		D8-D9 F81 F85 F86	
			433PH	120412PH	3/64										●	●	●	●	●		●	●	●			●	●	●	●																			
			434PH	120416PH	1/16										△	●	●	●	●			●	●			●	●	●																			
		CNMG	542PH	160608PH	1/32										●	●	●	●	●		△	●																								D9	3
			543PH	160612PH	3/64										●	●	●	●	●		●	●	●			●	●	●																			
			544PH	160616PH	1/16										●	●	●	●	●		●	●				●	●	●	●																		
		CNMG	642PH	190608PH	1/32										●	●	●	●	●		●	●																									
			643PH	190612PH	3/64										●	●	●	●	●		●	●	●																									
			644PH	190616PH	1/16										△	●	●	●	●		△	●	●																									
			646PH	190624PH	3/32										△	●	●	●	△																													

Chipbreaker Range

1



2



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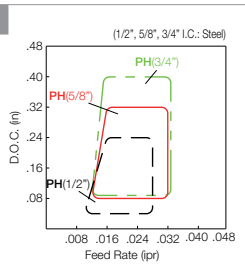


Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

80° Diamond

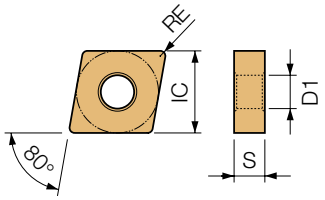
Negative Insert with Hole

(in)

Part Number	IC	S	D1
CN_33_	3/8	3/16	0.150
CN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
CN_54_	5/8	1/4	1/4
CN_64_	3/4	1/4	5/16

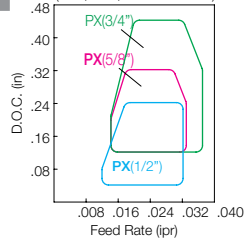


	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Corner Radius (in)				Cermet		CVD Cermet		MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																	MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide				DLC		Carbide			
Single Sided / Roughing	CNMM 432PX	120408PX	1/32										●	●	●	●	●		●	●	●																									D8-D9 F81 F85 F86	1
	CNMM 433PX	120412PX	3/64										●	●	●	●	●		●	●	△																										
	CNMM 434PX	120416PX	1/16												●	●				△																										
	CNMM 542PX	160608PX	1/32												●	●	●			△	△																										
	543PX	160612PX	3/64											●	●	●	●			●	●																										
	544PX	160616PX	1/16											●	●	●	●			●	●																										
	CNMM 642PX	190608PX	1/32												●	●				●																									D9	
	643PX	190612PX	3/64											●	●	●	●			●	●																										
	644PX	190616PX	1/16											●	●	●	●			●	●																										
High Feed Rate	646PX	190624PX	3/32												●	●	●			△	△																										
Finishing	CNMG 431XF	120404XF	1/64	●	●			●	●	●	●																																			
Low Carbon Steel Small D.O.C.	432XF	120408XF	1/32	●	●			●	●	●	●																																			
Finishing	CNMG 431XP	120404XP	1/64	●	●	●		●	●	●	●	△		●	●	●	△			●	●																										
Low Carbon Steel	432XP	120408XP	1/32	●	●	●		●	●	●	●	●	△	●	●	●	●			●	●																									D8-D9 F81 F85 F86	2
Medium	CNMG 431XQ	120404XQ	1/64	●	●	●		●	●	●	●	●	●	●	●	●	●	△		●	●																										
Low Carbon Steel	432XQ	120408XQ	1/32	●	●	●		●	●	●	●	●	●	●	●	●	●	△		●	●																										
Roughing	CNMG 432XS	120408XS	1/32	●	●	●		●	●	●	●	●	●	●	●	●	●	●		●	●																										
Low Carbon Steel																																														
Finishing-Medium	CNGG 4305MFP-SK	120402MFP-SK	<0.008							●																				●	△	●			●											
Sharp Edge / Polished	431MFP-SK	120404MFP-SK	<1/64							●																				●	△	●			●											D8-D9 E46 F81 F85 F86	3
Medium-Roughing	CNGG 431FP-TK	120404FP-TK	1/64																											●	△	●			●										
Sharp Edge / Polished	432FP-TK	120408FP-TK	1/32																											●	△	●			●										
Medium-Roughing	CNGG 431TK	120404TK	1/64																																△	△									●	
Sharp Edge Stainless Steel / HRSA	432TK	120408TK	1/32																																△	△									●	D8-D9 F81 F85 F86	See B20 1
Medium-Roughing	CNMG 431TK	120404TK	1/64																			●	●												△	△	△					△				
	432TK	120408TK	1/32																			●	●												△	△	△					△				

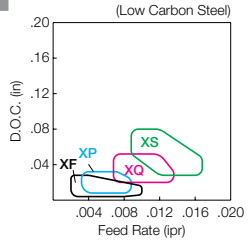
• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

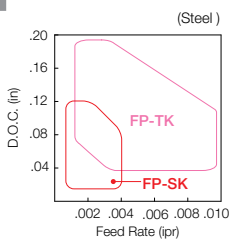
1 (1/2", 5/8", 3/4" I.C.: Steel)



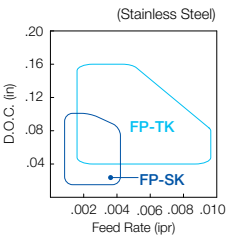
2 (Low Carbon Steel)



3 (Steel)



(Stainless Steel)



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

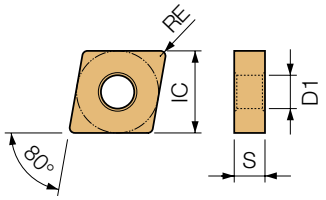
Inserts sold in 10 piece boxes.

How to read this page ➔ B15

80° Diamond

Negative Insert with Hole

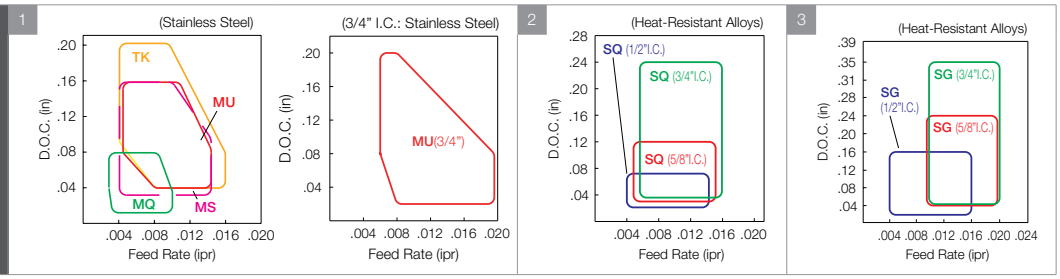
Part Number	IC	S	D1
		(in)	
CN_33_	3/8	3/16	0.150
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	1/4
CN_64_	3/4	1/4	5/16



	Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																MEGACOAT / MEGACOAT NANO PVD Coated Carbide								PVD Coated Carbide			DLC		Carbide		Toolholder Page	Chipbreaker Range
						TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing-Medium	Stainless Steel / HRSA	CNMG	431MQ	120404MQ	1/64																			●	●								●	●	△	△	△	●				●				●	D8-D9 F81 F85	1
			432MQ	120408MQ	1/32																			●	●								●	●	△	△	△	●				●				●		
Finishing-Medium	Heat-Resistant Alloy	CNMG	431SQ	120404SQ	1/64																												●	●													F86	2
			432SQ	120408SQ	1/32																												●	●														
			433SQ	120412SQ	3/64																												●	●														
		CNMG	543SQ	160612SQ	3/64																												●	●													D9	
			544SQ	160616SQ	1/16																												●	●														
		CNMG	643SQ	190612SQ	3/64																												●	●														
			644SQ	190616SQ	1/16																												●	●														
Medium-Roughing	Stainless Steel / HRSA	CNMG	431MS	120404MS	1/64																			●	●								●	●	△	△	△	●				△				●	D8-D9 F81 F85 F86	1
			432MS	120408MS	1/32																			●	●								●	●	△	△	△	●				△				●		
			433MS	120412MS	3/64																			●	●								●	●	△	△	△	●				△				●		
			434MS	120416MS	1/16																			△	●								●	●	△	△	△					△						
Medium-Roughing		CNGG	4302MU	120401MU	0.004																															△	△											D8-D9 F81 F85 F86	
			4305MU	120402MU	0.008																															△	△												
		CNMG	431MU	120404MU	1/64																			●	●								●	●	△	△	△	●				△				●		1
			432MU	120408MU	1/32																			●	●								●	●	△	△	△	●				△				●		
			433MU	120412MU	3/64																			●	●								●	●				●				△						
		CNMG	542MU	160608MU	1/32																			●	●								●	●			△	△				△						
			543MU	160612MU	3/64																			●	●								●	●			△	△				△						
			544MU	160616MU	1/16																				●								●	●			△	△				△					D9	
		CNMG	643MU	190612MU	3/64																												●	●			△	△										
	Stainless Steel / HRSA		644MU	190616MU	1/16																												●	●			△	△										
Roughing		CNMG	432SG	120408SG	1/32																												●	●				●								●	D8-D9 F81 F85~F86	3
			433SG	120412SG	3/64																												●	●				●								●		
		CNMG	543SG	160612SG	3/64																												●	●				●								●	D9	
			544SG	160616SG	1/16																												●	●				●								●		
		CNMG	643SG	190612SG	3/64																												●	●				●								●		
	Heat-Resistant Alloy		644SG	190616SG	1/16																												●	●				●								●		

For Heat-Resistant Alloys See ➔ B8

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

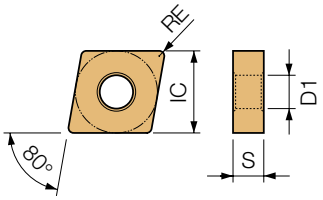
How to read this page ➔ B15

80° Diamond

Negative Insert with Hole

Part Number	IC (in)	S (in)	D1 (in)
CN_33_	3/8	3/16	0.150
CN_43_	1/2	3/16	0.203
CNMM_43X_	1/2	0.174	0.203

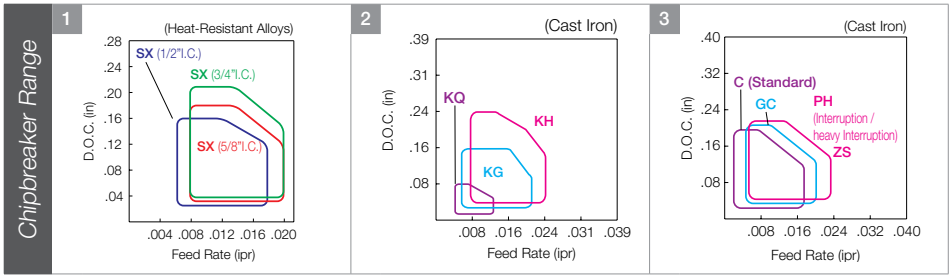
Part Number	IC (in)	S (in)	D1 (in)
CN_54_	5/8	1/4	1/4
CNMM_54X_	5/8	0.235	1/4
CN_64_	3/4	1/4	5/16
CNMM_64X_	3/4	0.233	5/16



		ANSI Part Number	ISO Part Number	RE	Toolholder Page	Chipbreaker Range
Roughing (Single Sided)	Heat-Resistant Alloy	CNMM 43XR-SX	1204XR-SX	-	D8-D9	1
		43XL-SX	1204XL-SX	-		
		CNMM 54XR-SX	1606XR-SX	-		
		54XL-SX	1606XL-SX	-		
		CNMM 64XR-SX	1906XR-SX	-		
		64XL-SX	1906XL-SX	-		
Sharp Edge	Cast Iron	CNMG 431KQ	120404KQ	1/64	D8-D9 F81 F85 F86	2
		432KQ	120408KQ	1/32		
		433KQ	120412KQ	3/64		
Medium	Cast Iron	CNMG 431KG	120404KG	1/64		
		432KG	120408KG	1/32		
		433KG	120412KG	3/64		
Medium-Roughing	Cast Iron	CNMG 432KH	120408KH	1/32		
		433KH	120412KH	3/64		
		434KH	120416KH	1/16		
Roughing	Cast Iron	CNMG 431C	120404C	1/64		3
		432C	120408C	1/32		
		433C	120412C	3/64		
		434C	120416C	1/16		
		CNMG 543C	160612C	3/64	D9	
Roughing	Cast Iron	CNMG 432ZS	120408ZS	1/32		
		433ZS	120412ZS	3/64		
Roughing	Cast Iron	CNMG 432GC	120408GC	1/32	D8-D9 F81 F85 F86	
		433GC	120412GC	3/64		
Cast Iron	Without Chipbreaker	CNGA 431	120404	1/64		-
		432	120408	1/32		
		CNMA 431	120404	1/64		
		432	120408	1/32		
		433	120412	3/64		
		434	120416	1/16		
		CNMA 543	160612	3/64	D9	

• **CNMM…X**ℝ**-SX** inserts require a different shim, sold separately. See applicable holders on page ➔ D8-D9 for applicable shim for SX chipbreaker inserts.

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

80° Diamond

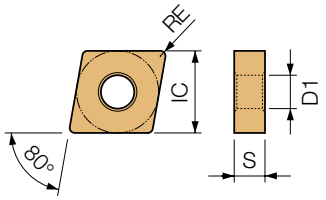
Negative Insert with Hole

(in)

Part Number	IC	S	D1
CN_33_	3/8	3/16	0.150
CN_43_	1/2	3/16	0.203

(in)

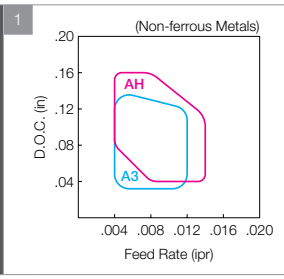
Part Number	IC	S	D1
CN_54_	5/8	1/4	1/4
CN_64_	3/4	1/4	5/16



	Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet TN610	Cermet TN620	Cermet TN60	CVD Cermet CCX	MEGA COAT Cermet PV710	MEGA COAT Cermet PV720	MEGA COAT Cermet PV730	PVD Cermet PV7005	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA025P	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	CVD Coated Carbide CA310	CVD Coated Carbide CA315	CVD Coated Carbide CA320	CVD Coated Carbide CA4505	CVD Coated Carbide CA4515	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1705	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1725	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1425	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1225	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR005S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR015S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1305	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1310	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1325	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1535	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	DLC PDL010	DLC PDL025	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing-Medium	Sharp Edge / Non-ferrous Metals	CNGG	431R-A3	120404R-A3	1/64																																			●	●	●			
			431L-A3	120404L-A3	1/64																																			●	●	●			
			432R-A3	120408R-A3	1/32																																			●	●	●			
			432L-A3	120408L-A3	1/32																																			●	●	●			
Medium-Roughing	Sharp Edge / Non-ferrous Metals	CNGG	431AH	120404AH	1/64																																	●	●	●	D8-D9 F81 F85 F86	1	
			432AH	120408AH	1/32																																			●	●	●			
Medium-Roughing	Non-ferrous Metals	CNMG	431AH	120404AH	1/64																																	●	●	●			
			432AH	120408AH	1/32																																			●	●	●			
Finishing	Surface Roughness Oriented	CNGG	3305R-S	090402R-S	0.008	●	●	●		●	●			△																														
			3305L-S	090402L-S	0.008	●	●	●		●	●																																		
			331R-S	090404R-S	1/64	●	●	●		●	●																																		
			331L-S	090404L-S	1/64	●	●	●		●	●																															●		D9 F86	
			332R-S	090408R-S	1/32	●				●																																		
			332L-S	090408L-S	1/32	●				●																																		
Medium		CNGG	331L	090404L	1/64																																				●			
			332L	090408L	1/32																																				●			
		CNGG	431R	120404R	1/64	●	●	●		●	●	●																																
			431L	120404L	1/64	●	●	●		●	●	●																																
			432R	120408R	1/32	●	●	●		●	●	●																																
			432L	120408L	1/32	●	●	●		●	●	●																																
		CNGG	4302FR	120401FR	0.004			●																																			
			4302FL	120401FR	0.004			●																																			
Medium-Roughing	Low Cutting Force	CNGG	431R-25R	120404R-25R	1/64	●	●	●		●	●																														●		D8-D9 F81 F85 F86	2	
			431L-25R	120404L-25R	1/64	●	●	●		●	●																														●			
			432R-25R	120408R-25R	1/32	●	●	●		●	●																														●			
			432L-25R	120408L-25R	1/32	●	●	●		●	●																														●			
Medium-Roughing		CNGG	431Z	120404Z	1/64			●																																			

Chipbreaker Range

1



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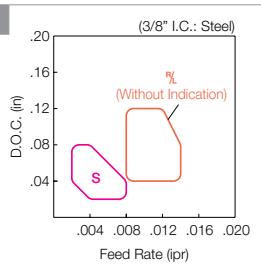
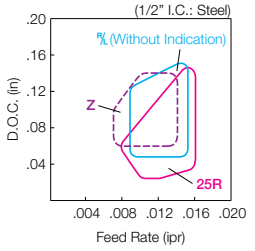




● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

55° Diamond

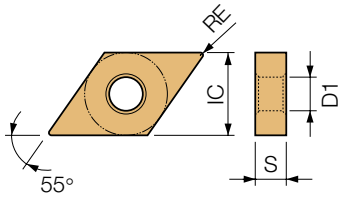
Negative Insert with Hole

(in)

Part Number	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
DN_44_	1/2	1/4	0.203



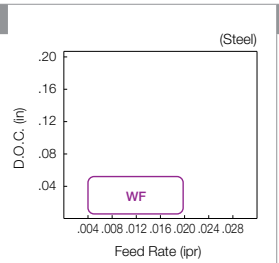
		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing		DNMX	431WF	150404WF	1/64	●	●			●	●				●	●	●	●	●																												D12 D13 F82 F88 F89	1
			432WF	150408WF	1/32	●	●			●	●				●	●	●	●	●																													
			433WF	150412WF	3/64	●	●			●	●				●	●	●	●	●																													
		DNMX	441WF	150604WF	1/64	●	●			●	●				●	●	●	●	●																												D12 D13 F82	
			442WF	150608WF	1/32	●	●			●	●				●	●	●	●	●																													
	Wiper Edge		443WF	150612WF	3/64	●	●			●	●				●	●	●	●	●																													
Finishing		DNMG	4305PP	150402PP	0.008	●	●		●	●	●	●		△	●	●	●	●		△	●																								D12 D13 F82 F88 F89	2
			431PP	150404PP	1/64	●	●		●	●	●	●		●	●	●	●	●		●	●																									
			432PP	150408PP	1/32	●	●		●	●	●	●		●	●	●	●	●		●	●																									
			433PP	150412PP	3/64	●	●		●	●	●	●		●	●	●	●	●																													
		DNMG	4405PP	150602PP	0.008	●	●		●	●	●	●			●	●	●			△	△																								D12 D13 F82	
			441PP	150604PP	1/64	●	●		●	●	●	●			●	●	●	●		●	△																									
			442PP	150608PP	1/32	●	●		●	●	●	●			●	●	●	●	△	△	△																									
			443PP	150612PP	3/64	●	●		●	●	●	●					●	●																													
Finishing		DNMG	331GP	110404GP	1/64		●	●			●	●		●	△	●	●	●	●			●	●																						D13 F87	2
			332GP	110408GP	1/32		●	●			●	●		●	●	●	●	●					●																								
		DNMG	4305GP	150402GP	0.008	●	●	●		●	●	●		●	●	●	●	●	△		●	●																								D12 D13 F82 F88 F89	
			431GP	150404GP	1/64	●	●	●		●	●	●		●	●	●	●	●	●	△	●	●																								
			432GP	150408GP	1/32	●	●	●		●	●	●		●	●	●	●	●	●	●	●	●																								
		DNMG	4405GP	150602GP	0.008	●				●																																				D12 D13 F82	
			441GP	150604GP	1/64	●				●																																				
			442GP	150608GP	1/32	●				●																																				
Finishing-Medium		DNMG	431PQ	150404PQ	1/64	●	●		●	●	●	●		●	●	●	●	●			●	●																								D12 D13 F82 F88 F89	
			432PQ	150408PQ	1/32	●	●		●	●	●	●		●	●	●	●	●			●	●																									
			433PQ	150412PQ	3/64	●	●		●	●	●	●		●	●	●	●	●			●	●																									
		DNMG	441PQ	150604PQ	1/64	●	●		●	●	●	●		●	●	●	●	●				△																								D12 D13 F82	
			442PQ	150608PQ	1/32	●	●		●	●	●	●		●	●	●	●	●			△	●																									
			443PQ	150612PQ	3/64	●	●		●	●	●	●			●	●	●	△																													

Corner Radius (in) | Cermet | CVD Cermet | MEGA COAT Cermet | PVD Cermet | CVD Coated Carbide | MEGACOAT / MEGACOAT NANO PVD Coated Carbide | PVD Coated Carbide | DLC | Carbide

P Free-Cutting Steel; Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron; Nodular Cast Iron
N Non-ferrous Metals
S HRSA; Titanium Alloy
H Hard materials

Chipbreaker Range

1



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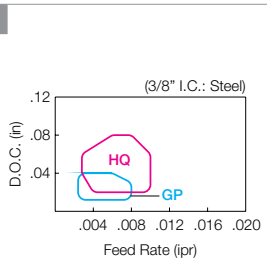
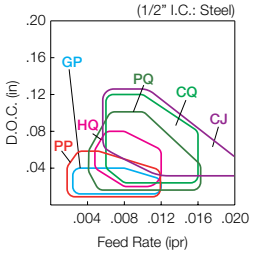




● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

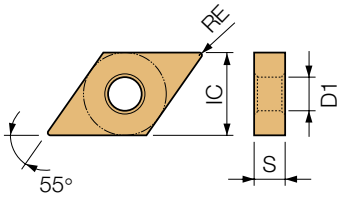
How to read this page ➔ B15

55° Diamond

Negative Insert with Hole

Part Number	IC	S	D1
			(in)
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203

Part Number	IC	S	D1
			(in)
DN_44_	1/2	1/4	0.203



| | | |

How to read this page ➔ B15

55° Diamond

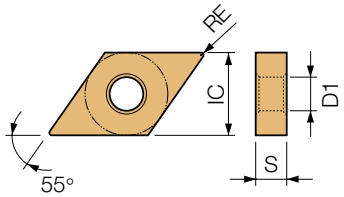
Negative Insert with Hole

(in)

Part Number	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203

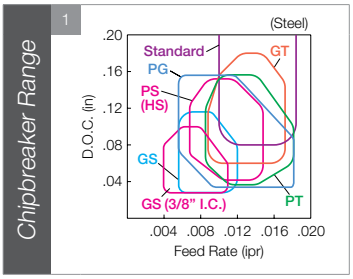
(in)

Part Number	IC	S	D1
DN_44_	1/2	1/4	0.203



		ANSI Part Number	ISO Part Number	RE	Cermet TN610	Cermet TN620	Cermet TN60	CVD Cermet CCX	MEGA COAT Cermet PV710	MEGA COAT Cermet PV720	MEGA COAT Cermet PV730	PVD Cermet PV7005	CVD Coated Carbide PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA025P	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	CVD Coated Carbide CA310	CVD Coated Carbide CA315	CVD Coated Carbide CA320	CVD Coated Carbide CA4505	CVD Coated Carbide CA4515	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1705	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1725	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1425	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1225	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR005S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR015S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1305	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1310	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1325	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1535	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	DLC PDL010	DLC PDL025	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Medium-Roughing		DNMG	431PG	150404PG	1/64	●	●			●	●	●		●	●	●	●	△																										D12	
			432PG	150408PG	1/32	●	●			●	●	●		●	●	●	●	●																										D13	
			433PG	150412PG	3/64		●				●	●		●	●	●	●	●																										F82	
			434PG	150416PG	1/16									△	△	●	●	△																										F88	
																																											F89	
		DNMG	441PG	150604PG	1/64	●	●			●	●	●		●	●	●	●	●																										D12	
			442PG	150608PG	1/32	●	●			●	●	●		●	●	●	●	●																										D13	
			443PG	150612PG	3/64		●				●	●		●	●	●	●	△																										F82	
			444PG	150616PG	1/16									△		●																													
Medium-Roughing		DNMG	431PS	150404PS	1/64		●				●	●		●	●	●	●	●	△	●	●	●	●	●																	△			D12	
			432PS	150408PS	1/32		●				●	●		●	●	●	●	●	●	●	●	●	●	●																	△			D13	
			433PS	150412PS	3/64									△	●	●	●	●		●	●	●		●																				F82	
			434PS	150416PS	1/16															●	●																							F88	
		DNMG	441PS	150604PS	1/64									●	●	●	●	●		●	●		●	●																	△			F89	
			442PS	150608PS	1/32									●	●	●	●	●	△	●	●	●	●	●																	△			D12	
			443PS	150612PS	3/64									●	●	●	●	●	△	●	●	●		●																				D13	
			444PS	150616PS	1/16										●	●	●	●		●	●																							F82	
Medium-Roughing		DNMG	431HS	150404HS	1/64			△					△							△	△																						D12	
			432HS	150408HS	1/32			△					△							△	△																						D13	
			433HS	150412HS	3/64			△																																			F82	
		DNMG	441HS	150604HS	1/64			△					△							△	△																						D12	
			442HS	150608HS	1/32			△					△							△	△																						D13	
			443HS	150612HS	3/64			△																																			F82	
Medium-Roughing		DNMG	432PT	150408PT	1/32									●	●	●	●	●	△	●	●	●		●																				D12	
			433PT	150412PT	3/64									●		●	●	●	●		●	●		●																				D13	
		DNMG	442PT	150608PT	1/32									●	●	●	●	●	●	●	●	●		●																				F82	
	High Feed Rate		443PT	150612PT	3/64									●	●	●	●	●	●	●	●	●	●																						F88	
																																											F89	
Medium-Roughing		DNMG	432GT	150408GT	1/32								△	△	●	●	●			●	●																						D12	
			433GT	150412GT	3/64								△		●	●	●																										D13	
		DNMG	442GT	150608GT	1/32									●	●	●	●	●		●	●																						F82	
	High Feed Rate		443GT	150612GT	3/64										●	●	●	●		●	●																						F88	
																																											F89	

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

55° Diamond

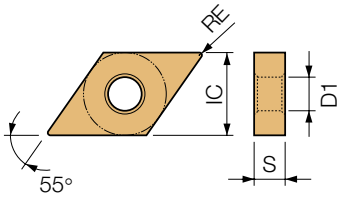
Negative Insert with Hole

(in)

Part Number	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203

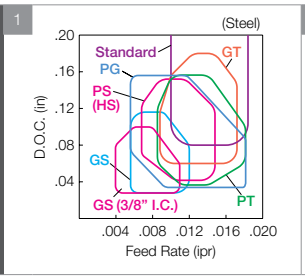
(in)

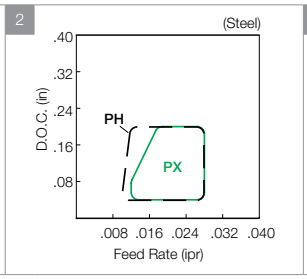
Part Number	IC	S	D1
DN_44_	1/2	1/4	0.203

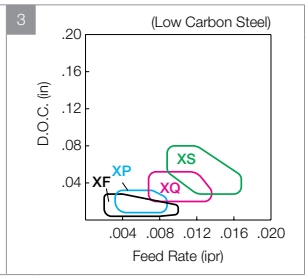


	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Roughing	DNMG 431	150404	1/64	●	●	●		●	●	●		●	△	●	●	●	△	△	●	●				●	●	●	●	●																		D12 D13 F82 F88 F89	1
		432	1/32	●	●	●	●	●	●	●	●	△	●	●	●	●	●	△	●	●	●			●	●	●	●	●																			
		433	3/64																		●			●	●	●	●	●																			
	DNMG 441	150604	1/64																					●	●	●																				D12 D13 F82	
		442	1/32										△	●	●	●	●		△	●	●			●	●	●	●	●																			
		443	3/64											●	●	●	●		●					●	●	●		●																			
Roughing	DNMG 432PH	150408PH	1/32									●	●	●	●	●	△		●	●				●	●	●	●	●																		D12 D13 F82 F88 F89	2
		433PH	3/64											●	●	●	△		●	●				●	●	●	●	●																			
		434PH	1/16												●	●	●																													
	DNMG 442PH	150608PH	1/32											●	●	●	●			●				●	●	●																		D12 D13 F82	
		443PH	3/64											●	●	●	●			●				●	●	●		△																			
		444PH	1/16											●	●	●	●		△	●																											
Roughing	DNMM 432PX	150408PX	1/32												●	●	△			●	△																								D12 D13 F82 F88 F89	
		433PX	3/64												●	●	●			●																										
		434PX	1/16												●																															
	DNMM 442PX	150608PX	1/32										△	●	●	●				●																								D12 D13 F82	
		443PX	3/64											●	●	●	●			●	●	●																							
Single Sided High Feed Rate		444PX	1/16												●	●					△																								
Finishing	DNMG 431XF	150404XF	1/64	●	●		●	●	●	●																																	D12 D13 F82 F88 F89	3
Small D.O.C. Low Carbon Steel		432XF	1/32	●	●		●	●	●	●																																	
Finishing	DNMG 431XP	150404XP	1/64	●	●	●	●	●	●	●		●	●	●	●	●	△	●	●	●																								
		432XP	1/32	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●																								
	DNMG 441XP	150604XP	1/64	●		●	●	●					●																														D12 D13 F82	
Low Carbon Steel		442XP	1/32	●		●	●	●					●																														
Medium	DNMG 431XQ	150404XQ	1/64	●	●	●	●	●	●	●		●	△	●	●	●	●		●	●																								D12 D13 F82 F88 F89	
		432XQ	1/32	●	●	●	●	●	●	●		●	△	●	●	●	●		●	●																								
	DNMG 441XQ	150604XQ	1/64																																								D12 D13 F82	
Low Carbon Steel		442XQ	1/32			●																																				
Roughing	DNMG 432XS	150408XS	1/32	●	●			●	●	●			△	△	●	●	●			●	●																								D12 D13 F82 F88 F89	
Low Carbon Steel																																													

Chipbreaker Range







KYOCERA

Inserts sold in 10 piece boxes.

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Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

55° Diamond

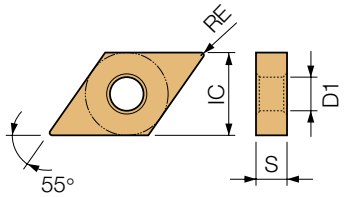
Negative Insert with Hole

(in)

Part Number	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
DN_44_	1/2	1/4	0.203

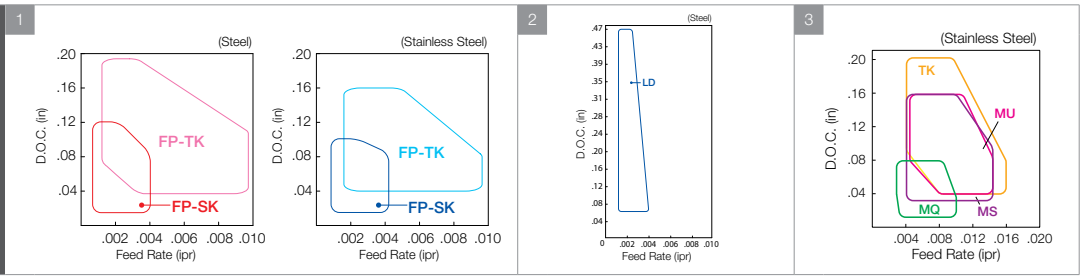


	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet	CVD Cermet	MEGA COAT Cermet	PVD Cermet	CVD Coated Carbide																MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide				DLC		Carbide		Toolholder Page	Chipbreaker Range
					TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing-Medium		DNGG 4305MFP-SK	150402MFP-SK	<0.008							●																		●	△	●						●									1
	Sharp Edge / Polished	431MFP-SK	150404MFP-SK	<1/64							●																		●	△	●						●									
Large D.O.C.		DNMG 4305R-LD	150402R-LD	0.008																									●	△							●									2
		431R-LD	150404R-LD	1/64																									●	△							●									
Medium-Roughing		DNGG 431FP-TK	150404FP-TK	1/64																									●	△	●						●									1
	Sharp Edge / Polished	432FP-TK	150408FP-TK	1/32																									●	△	●						●									
Medium-Roughing		DNGG 431TK	150404TK	1/64																															△	△								●		
		432TK	150408TK	1/32																															△	△								●		
	Sharp Edge Stainless Steel / HRSA	DNGG 441TK	150604TK	1/64																																△									●	D12 D13 F82	
		442TK	150608TK	1/32																															△	△								●		
Medium-Roughing		DNMG 431TK	150404TK	1/64																		●	●													△	△	△					△			D12 D13 F82 F88 F89	3
		432TK	150408TK	1/32																		●	●													△	△	△					△				
	Stainless Steel / HRSA	DNMG 441TK	150604TK	1/64																		●	●														△	△					△			D12 D13 F82	
		442TK	150608TK	1/32																		●	●													△	△	△					△				
Finishing-Medium		DNMG 431MQ	150404MQ	1/64																		●	●											●	●	△	△	△	●				△		●	D12 D13 F82 F88 F89	
		432MQ	150408MQ	1/32																		●	●											●	●	△	△	△	●				△		●		
	Stainless Steel / HRSA	DNMG 441MQ	150604MQ	1/64																		●	●											●	●	△	△	△	●				△		●	D12 D13 F82	
		442MQ	150608MQ	1/32																		●	●											●	●	△	△	△	●				△		●		

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

For Heat-Resistant Alloys See ➔ B8

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

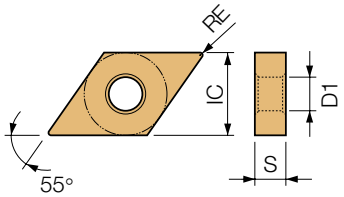
Inserts sold in 10 piece boxes.

How to read this page ➡ B15

55° Diamond

Negative Insert with Hole

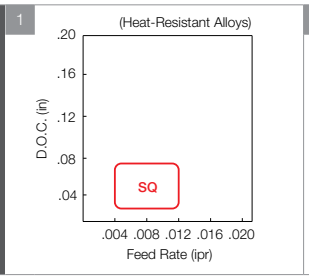
Part Number	IC	S	D1
	(in)		
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

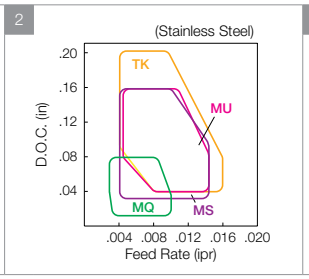


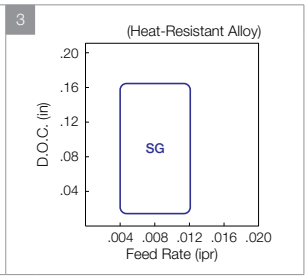
		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing-Medium		DNMG 431SQ	150404SQ	1/64																													●	●														D12 D13 F82 F88 F89	1
			432SQ	1/32																													●	●														
			433SQ	3/64																													●	●														
		DNMG 441SQ	150604SQ	1/64																													●	●														D12 D13 F82	
	Heat-Resistant Alloy		442SQ	1/32																													●	●														
			443SQ	3/64																													●	●														
Medium-Roughing		DNMG 431MS	150404MS	1/64																			●	●									●	●	△	△	△	●				△				●	D12 D13 F82 F88 F89	2
			432MS	1/32																			●	●									●	●	△	△	△	●				△				●		
			433MS	3/64																			●	●									●	●	△	△	△	●				△				●		
		DNMG 441MS	150604MS	1/64																			●	●									●	●	△	△	△	●				△					D12 D13 F82	
	Stainless Steel / HRSA		442MS	1/32																			●	●									●	●	△	△	△	●				△						
			443MS	3/64																			●	●									●	●	△	△	△	●				△						
Medium-Roughing		DNMG 431MU	150404MU	1/64																			●	●									●	●	△	△	△	●				△				●	D12 D13 F82 F88 F89	
			432MU	1/32																			●	●									●	●	△	△	△	●				△				●		
		DNMG 441MU	150604MU	1/64																			●	●									●	●	△	△	△	●				△				●	D12 D13 F82	
	Stainless Steel / HRSA		442MU	1/32																			●	●									●	●	△	△	△	●				△				●		
Roughing		DNMG 432SG	150408SG	1/32																													●	●				●								●	D12 D13 F82 F88 F89	3
			433SG	3/64																													●	●				●								●		
		DNMG 442SG	150608SG	1/32																													●	●				●								●	D12 D13 F82	
	Heat-Resistant Alloy		443SG	3/64																													●	●				●								●		

For Heat-Resistant Alloys See ➡ B8

Chipbreaker Range







Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

55° Diamond

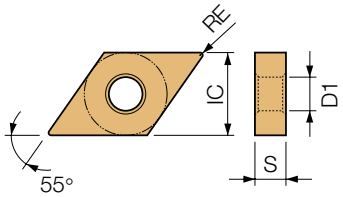
Negative Insert with Hole

(in)

Part Number	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
DN_44_	1/2	1/4	0.203



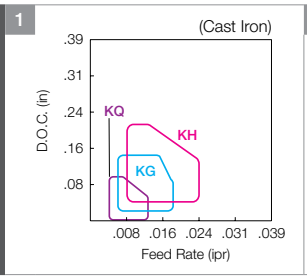
	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Sharp Edge	DNMG 431KQ	150404KQ	1/64																					●	●	●																				D12-D13 F82 F88-F89	
	432KQ	150408KQ	1/32																					●	●	●																					
	DNMG 441KQ	150604KQ	1/64																					●	●	●																				D12 D13 F82	
Cast Iron	442KQ	150608KQ	1/32																					●	●	●																					
Medium	DNMG 431KG	150404KG	1/64																					●	●	●																				D12 D13 F82 F88 F89	1
	432KG	150408KG	1/32																					●	●	●																					
	433KG	150412KG	3/64																					●	●	●																					
	DNMG 441KG	150604KG	1/64																					●	●	●																				D12 D13 F82	
	442KG	150608KG	1/32																					●	●	●																					
Cast Iron	443KG	150612KG	3/64																					●	●	●																					
Medium-Roughing	DNMG 432KH	150408KH	1/32																					●	●	●																				D12-D13 F82 F88-F89	
	433KH	150412KH	3/64																					●	●	●																					
	DNMG 442KH	150608KH	1/32																					●	●	●																				D12 D13 F82	
Cast Iron	443KH	150612KH	3/64																					●	●	●																					
Roughing	DNMG 431C	150404C	1/64																					●	●	●	●	●																D12 D13 F82 F88 F89	
	432C	150408C	1/32																					●	●	●	●	●																			
	433C	150412C	3/64																					●	●	●		●																			
	DNMG 441C	150604C	1/64																					●	●	●		●																D12 D13 F82	
	442C	150608C	1/32																					●	●	●		●																			
Cast Iron	443C	150612C	3/64																					●	●	●		△																			
Roughing	DNMG 432ZS	150408ZS	1/32																					●	●	●	●	●																D12-D13 F82 F88-F89	2
	433ZS	150412ZS	3/64																					●	●	●	●	●																			
	DNMG 442ZS	150608ZS	1/32																					●	●	●	●	●																D12 D13 F82	
Cast Iron	443ZS	150612ZS	3/64																					●	●	●		●																			
Roughing	DNMG 432GC	150408GC	1/32																△					●	●	●	△	●																D12-D13 F82 F88-F89	
	433GC	150412GC	3/64																					●	●	●		●																			
	DNMG 442GC	150608GC	1/32																					●	●	●		●																D12 D13 F82	
Cast Iron	443GC	150612GC	3/64																					●	●	●																					

Corner Radius (in) | Cermet | CVD Cermet | MEGA COAT Cermet | PVD Cermet | CVD Coated Carbide | MEGACOAT / MEGACOAT NANO PVD Coated Carbide | PVD Coated Carbide | DLC | Carbide

P Free-Cutting Steel; Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron; Nodular Cast Iron
N Non-ferrous Metals
S HRSA; Titanium Alloy
H Hard materials

Chipbreaker Range

1



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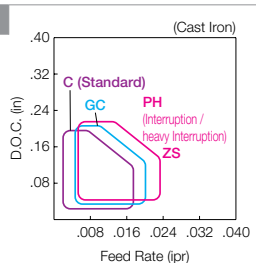


● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

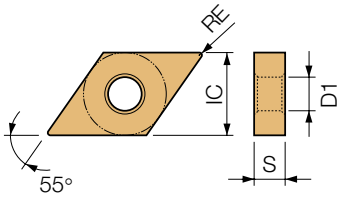
How to read this page ➔ B15

55° Diamond

Negative Insert with Hole

Part Number	IC	S	D1
	(in)		
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203

Part Number	IC	S	D1
	(in)		
DN_44_	1/2	1/4	0.203



| | | |

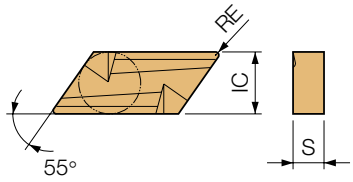
How to read this page ➔ B15

55° Parallelogram

Negative Insert without Hole

(in)

Part Number	IC	S	D1
KNMX1604_	3/8	3/16	-



	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Medium-Roughing	KNMX 160405R-1	160405R-1	0.020																●	●																											-	1
		160405L-1	0.020																●	●																												
		160410R	0.039																●	●																												
		160410L	0.039																●	●																												

Round

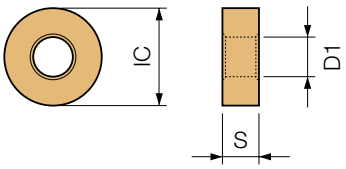
Negative Insert with Hole

(in)

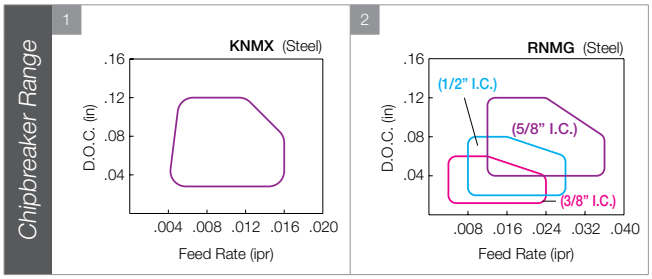
Part Number	IC	S	D1
RN_32_	3/8	1/8	0.150
RN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
RN_54_	5/8	1/4	1/4



	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Medium-Roughing	RNMG 32	090300	-		●●			●				△	●	●	●	●	△		●																											D23	2
	RNMG 43	120400	-		●●			●		●		△	●	●	●	●	●		●●					●●	●		△																				
	RNMG 54	150600	-												●●				△	●				●●	●																						-	



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

90° Square

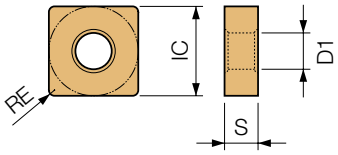
Negative Insert with Hole

(in)

Part Number	IC	S	D1
SN_32_	3/8	1/8	0.150
SN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
SN_54_	5/8	1/4	1/4
SN_64_	3/4	1/4	5/16



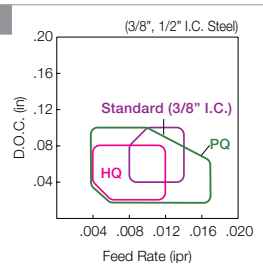
		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
				Corner Radius (in)	Cermet			CVD Cermet	MEGA COAT Cermet			PVD Cermet		CVD Coated Carbide																	MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide			
Finishing-Medium		SNMG 431PQ	120404PQ	1/64	●	●		●	●	●	●			●	●	●	●	△		△																													
			432PQ	120408PQ	1/32	●	●		●	●	●	●			●	●	●	●	●		△	△																												
			433PQ	120412PQ	3/64									△	●	●	●	●			△																												
Finishing-Medium		SNMG 431HQ	120404HQ	1/64	●	●	●	●	●	●	●		△	△	●	●	●	●		●	●																												
			432HQ	120408HQ	1/32	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●																								
			433HQ	120412HQ	3/64	●	●	●	●	●	●	●		△	△	●	●	●	△		●	●																												
Medium-Roughing		SNMG 432PG	120408PG	1/32	●	●			●	●	●			●	●	●	●	●																						●									
			433PG	120412PG	3/64		●			●	●				●	●	●	●	●																						●									
			434PG	120416PG	1/16		●			●	●			△	△	●	△	△																														D14 D15 F91	
Medium-Roughing		SNMG 432PS	120408PS	1/32										●	●	●	●	●	●	●	●	●	●	●																									
			433PS	120412PS	3/64										●	●	●	●	●		●	●	●		●																								1
			434PS	120416PS	1/16											●	●	●	●		●	●																									
Medium-Roughing		SNMG 432HS	120408HS	1/32			△						△								△																										
			433HS	120412HS	3/64			△						△								△																										
			434HS	120416HS	1/16			△														△																										
Medium-Roughing	High Feed Rate	SNMG 432PT	120408PT	1/32										●	●	●	●	●	●		●	●		●																									
			433PT	120412PT	3/64										△	●	●	●	●	△		●	●		●																								
Roughing		SNMG 321	090304	1/64	●	●	●		●	●	●					●	●	△			●																											D14 D15	
			322	090308	1/32	●	●	●		●	●	●					●	●	△			●					●	●	●		●																
		SNMG 431	120404	1/64	●	●	●		●	●	●		●						●								●	●	●																			
			432	120408	1/32	●	●	●	●	●	●	●	●	△	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																	
			433	120412	3/64		●	●		●				△	●	●	●	●	●	●	●	●	●				●	●	●	●	●																	D14 D15 F91	
			434	120416	1/16		●	●		●							●	●	●	●	△	●	●				●	●	●		●																	
			435	120420	5/64		●	●		●										●								●	●	●		●																	
		SNMG 643	190612	3/64															△			●																										
			644	190616	1/16															●	●	●																										-	2

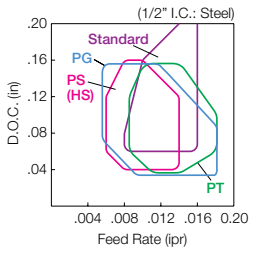
● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

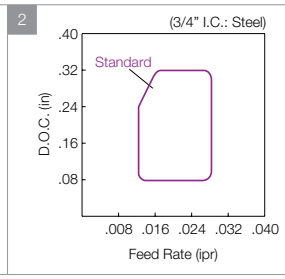
Chipbreaker Range

1





2



Inserts sold in 10 piece boxes.

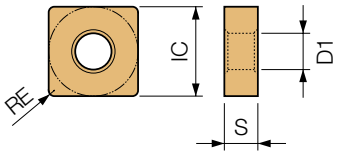
How to read this page ➔ B15

90° Square

Negative Insert with Hole

(in)

Part Number	IC	S	D1
SN_32_	3/8	1/8	0.150
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	1/4
SN_64_	3/4	1/4	5/16
SN_86_	1	3/8	0.359



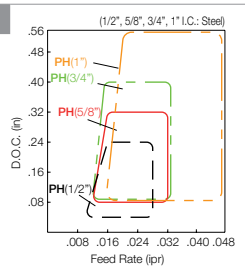
		ANSI Part Number	ISO Part Number	RE	Toolholder Page	Chipbreaker Range
Roughing		SNMG 432PH	120408PH	1/32	D14 D15 F91	1
		SNMG 433PH	120412PH	3/64		
		SNMG 434PH	120416PH	1/16		
		SNMG 543PH	150612PH	3/64	-	
		SNMG 544PH	150616PH	1/16		
		SNMG 643PH	190612PH	3/64		
		SNMG 644PH	190616PH	1/16		
		SNMG 646PH	190624PH	3/32		
		SNMG 866PH	250924PH	3/32		
Roughing	Single Sided High Feed Rate	SNMM 432PX	120408PX	1/32	D14 D15 F91	
		SNMM 433PX	120412PX	3/64		
		SNMM 434PX	120416PX	1/16		
		SNMM 543PX	150612PX	3/64	-	
		SNMM 544PX	150616PX	1/16		
		SNMM 643PX	190612PX	3/64		
		SNMM 644PX	190616PX	1/16		
		SNMM 646PX	190624PX	3/32		
Finishing	Low Carbon Steel	SNMG 432XP	120408XP	1/32	D14 D15 F91	2
Medium	Low Carbon Steel	SNMG 432XQ	120408XQ	1/32		
Roughing	Low Carbon Steel	SNMG 432XS	120408XS	1/32		

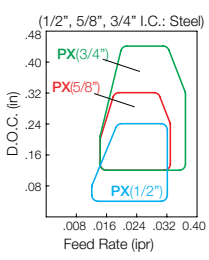
	Corner Radius (in)	Cermet	CVD Cermet	MEGA COAT Cermet	PVD Cermet	CVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	PVD Coated Carbide	DLC	Carbide
P	RE	TN610 TN620 TN60	CCX	PV710 PV720 PV730	PV7005 PV90	CA510 CA515 CA025P CA525 CA530 CA5505 CA5515 CA5525 CA5535 CA6515 CA6525	CA310 CA315 CA320 CA4505 CA4515 PR1705 PR1725 PR1425 PR1225 PR005S PR015S PR1305 PR1310 PR1325 PR1535	PR930 PR1005 PR1025 PR1125	PDL010 PDL025	KW10 SW05
M										
K										
N										
S										
H										

Free-Cutting Steel
Carbon/Alloy Steel
Stainless Steel
Gray Cast Iron
Nodular Cast Iron
Non-ferrous Metals
HRSA
Titanium Alloy
Hard materials

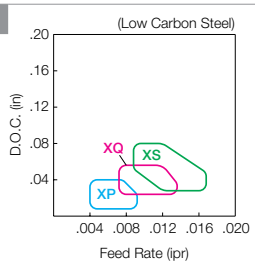
Chipbreaker Range

1





2



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

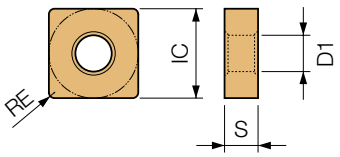
SNMG866PH sold in 5 piece boxes.
Inserts sold in 10 piece boxes.

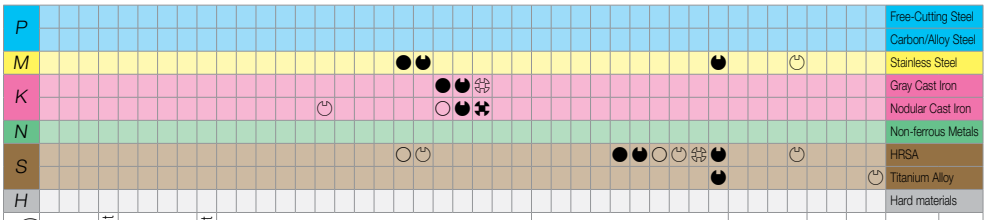
How to read this page ➔ B15

90° Square
Negative Insert

Part Number	IC	S	D1
	(in)		
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	1/4

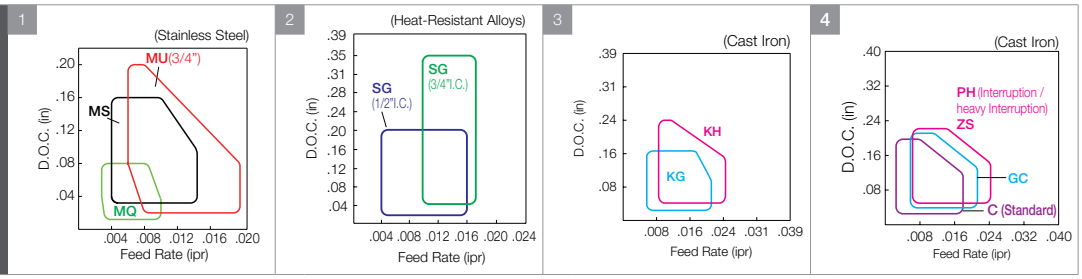
Part Number	IC	S	D1
	(in)		
SN_64_	3/4	1/4	5/16





		ANSI Part Number	ISO Part Number	RE	Toolholder Page	Chipbreaker Range
Finishing-Medium	Stainless Steel / HRSA	SNMG 431MQ	120404MQ	1/64	D14 D15 F91	1
		432MQ	120408MQ	1/32		
Medium-Roughing	Stainless Steel / HRSA	SNMG 431MS	120404MS	1/64		
		432MS	120408MS	1/32		
		433MS	120412MS	3/64		
		434MS	120416MS	1/16		
Medium-Roughing	Stainless Steel / HRSA	SNMG 643MU	190612MU	3/64	-	
		644MU	190616MU	1/16		
Roughing	Heat-Resistant Alloy	SNMG 432SG	120408SG	1/32	D14 D15 F91	2
		433SG	120412SG	3/64		
		SNMG 643SG	190612SG	3/64	-	
		644SG	190616SG	1/16		
Medium	Cast Iron	SNMG 432KG	120408KG	1/32	D14 D15 F91	3
		433KG	120412KG	3/64		
Medium-Roughing	Cast Iron	SNMG 432KH	120408KH	1/32		
		433KH	120412KH	3/64		
		434KH	120416KH	1/16		
Roughing	Cast Iron	SNMG 432C	120408C	1/32		
		433C	120412C	3/64		
Roughing	Cast Iron	SNMG 432ZS	120408ZS	1/32		4
		433ZS	120412ZS	3/64		
Roughing	Cast Iron	SNMG 432GC	120408GC	1/32		
		433GC	120412GC	3/64		

Chipbreaker Range



For Heat-Resistant Alloys See ➔ B8

KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

90° Square

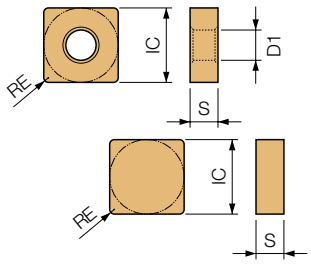
Negative Insert with & without Hole

(in)

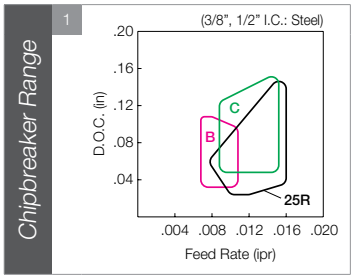
Part Number	IC	S	D1
SN_32_	3/8	1/8	0.150
SN_43_	1/2	3/16	0.203

(in)

Part Number	IC	S	D1
SN_64_	3/4	1/4	5/16
SNM43_	1/2	3/16	-



		ANSI	ISO	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
	Right-Hand Shown where Applicable	Part Number	Part Number		Cermet			CVD Cermet	MEGA COAT Cermet			PVD Cermet		CVD Coated Carbide																	MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide			
Cast Iron		SNGA	321	090304	1/64																																								●		D14 D15 F91	-
			322	090308	1/32	●																																							●			
		SNMA	431	120404	1/64																				●	●	●		●																			
			432	120408	1/32														●						●	●	●	●	●																			
			433	120412	3/64			●											●						●	●	●	●	●																			
			434	120416	1/16														●						●	●	●		●																			
	Without Chipbreaker		435	120420	5/64																				●	●	●		●																			
Cast Iron		SNM	432	120408	1/32																				●	●	●		△																	D29 D34 D35	
	Without Chipbreaker		433	120412	3/64																				●	●	●		△																			
Finishing-Medium / Medium-Roughing		SNGG	321R-B	090304R-B	1/64	●	●	●		●	●		●																																	D14 D15	1
			321L-B	090304L-B	1/64	●	●	●		●	●		●																																			
			322R-B	090308R-B	1/32	●	●	●		●	●																																				
			322L-B	090308L-B	1/32	●	●	●		●	●																																				
		SNGG	431R-C	120404R-C	1/64	●	●	●		●	●		△	△																																●			
			431L-C	120404L-C	1/64	●	●	●		●	●		△	△																																●			
			432R-C	120408R-C	1/32	●	●	●		●	●		●	△																																●			
			432L-C	120408L-C	1/32	●	●	●		●	●		△	△																																●			
		SNMG	431R-C	120404R-C	1/64	●	●	●		●	●																																				
			431L-C	120404L-C	1/64	●	●	●		●	●																																				
	-B Finishing-Medium -C Medium-Roughing		432R-C	120408R-C	1/32	●	●	●		●	●																																				
			432L-C	120408L-C	1/32	●	●	●		●	●																																				
Medium-Roughing		SNGG	431R-25R	120404R-25R	1/64	●	●	●		●	●																																				
			431L-25R	120404L-25R	1/64	●	●	●		●	●																																				
			432R-25R	120408R-25R	1/32	●	●	●		●	●																																				
	Low Cutting Force		432L-25R	120408L-25R	1/32	●	●	●		●	●																																				



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

60° Triangle

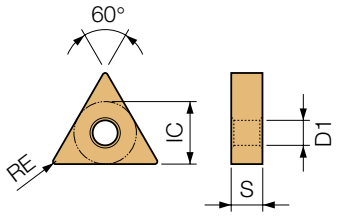
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089

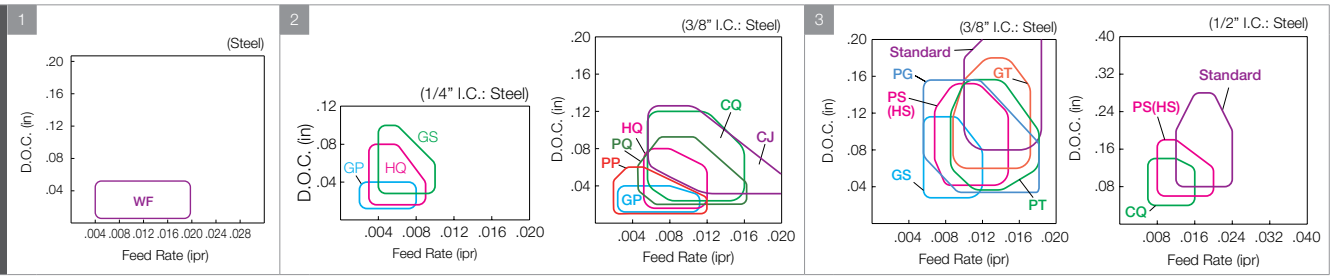
(in)

Part Number	IC	S	D1
TN_32_	3/8	1/8	0.150
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203



		ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide												MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide		Toolholder Page	Chipbreaker Range
						TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing	Wiper Edge	TNMX	331WF	160404WF	1/64	●	●			●	●				●	●	●	●	●																										D16 D17 F92	1
			332WF	160408WF	1/32	●	●			●	●				●	●	●	●	●																											
			333WF	160412WF	3/64	●	●			●	●				●	●	●	●	●																											
Finishing		TNMG	3305PP	160402PP	0.008	●	●		●	●	●	●			●	●	●	●	●			●																						D16-D18 F82 F92 F93	
			331PP	160404PP	1/64	●	●		●	●	●	●			●	●	●	●	●			●																							
			332PP	160408PP	1/32	●	●		●	●	●	●			●	●	●	●	●			△																							
			333PP	160412PP	3/64	●	●		●	●	●	●			△	●	●	●	●																											
Finishing		TNMG	231GP	110404GP	1/64		●	●			●	●		△																													D16-D17 F93	
			232GP	110408GP	1/32		●	●			●	●		△																													
		TNMG	3305GP	160402GP	0.008	●	●	●		●	●	●			●	●	●	●	●	●	●	●																						D16-D18 F82 F92 F93	
			331GP	160404GP	1/64	●	●	●		●	●	●			●	●	●	●	●	●	●	●																							
			332GP	160408GP	1/32	●	●	●		●	●	●			●	●	●	●	●		●	●																							
Finishing-Medium		TNMG	331PQ	160404PQ	1/64	●	●		●	●	●	●			●	●	●	●	●			●																						D16-D18 F82 F92 F93	2
			332PQ	160408PQ	1/32	●	●		●	●	●	●			●	●	●	●	●			●																							
			333PQ	160412PQ	3/64	●	●		●	●	●	●			△	●	●	●	△			●																							
Finishing-Medium		TNMG	231HQ	110404HQ	1/64		●	●	●		●	●		●		●	●	●				●																						D16-D17 F93	
			232HQ	110408HQ	1/32		●	●	●		●	●		●	●	●	●	●	●		●	●																							
		TNMG	331HQ	160404HQ	1/64	●	●		●	●	●	●			●	●	●	●	●	●	●	●	●	●																		△		D16-D18 F82 F92 F93	
			332HQ	160408HQ	1/32	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●																		△			
			333HQ	160412HQ	3/64		●	●	●		●	●		△	●	●	●	●	●		●	●																							
Finishing-Medium		TNMG	331CQ	160404CQ	1/64	●	●	●		●	●	●			●	●	●	●	●	△	●	●	●																							
			332CQ	160408CQ	1/32	●	●	●		●	●	●			●	●	●	●	●	●	●	●	●																							
			333CQ	160412CQ	3/64		●	●			●	●			●	●	●	●	●	△	●	●	●																							
	Up Facing	TNMG	432CQ	220408CQ	1/32										●	●	●	●	●			●	●																						D16-D17 F93	
			433CQ	220412CQ	3/64											●	●	●				△	●																							
Medium-Roughing		TNMG	231GS	110404GS	1/64		●	●			●	●					●	●				●																						D16-D17 F93	
			232GS	110408GS	1/32												●	●				●																							
		TNMG	331GS	160404GS	1/64		●				●	●			●	●	●	●	●			●	●																						D16-D18 F82 F92 F93	3
			332GS	160408GS	1/32		●				●	●			●	●	●	●	●			●	●																							
			333GS	160412GS	3/64									△																																
Medium-Roughing		TNMG	331PG	160404PG	1/64	●	●			●	●	●			●	●	●	●	●																						●					
			332PG	160408PG	1/32	●	●			●	●	●			●	●	●	●	●																						●					
			333PG	160412PG	3/64		●				●	●			●	●	●	●	●																						●					

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page B15

60° Triangle

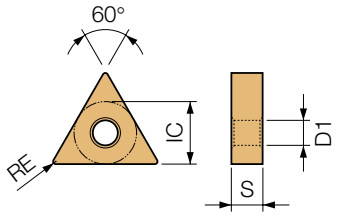
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089

(in)

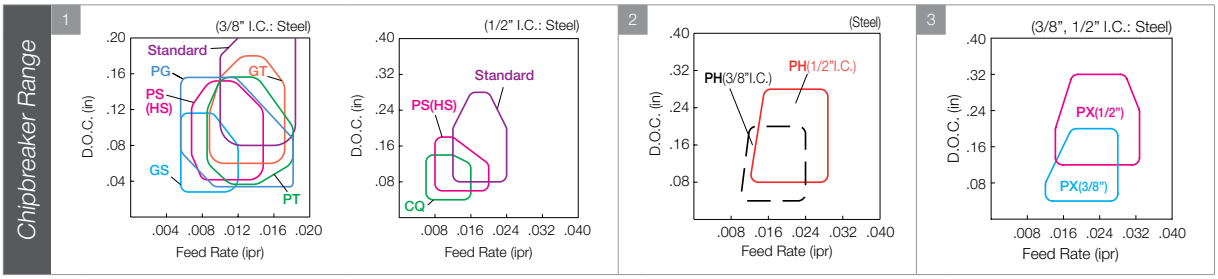
Part Number	IC	S	D1
TN_32_	3/8	1/8	0.150
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203



P Free-Cutting Steel / Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron / Nodular Cast Iron
N Non-ferrous Metals
S HRSA / Titanium Alloy
H Hard materials

		ANSI Part Number	ISO Part Number	RE	Toolholder Page	Chipbreaker Range
Medium-Roughing	TNMG	331PS	160404PS	1/64	D16-D18	
		332PS	160408PS	1/32	F82 F92 F93	
		333PS	160412PS	3/64		
	TNMG	431PS	220404PS	1/64	D16 D17 F92	
		432PS	220408PS	1/32		
		433PS	220412PS	3/64		
		434PS	220416PS	1/16		
Medium-Roughing	TNMG	331HS	160404HS	1/64	D16-D18	
		332HS	160408HS	1/32	F82 F92 F93	
		333HS	160412HS	3/64		
	TNMG	431HS	220404HS	1/64	D16-D17	
		432HS	220408HS	1/32	F92	
Medium-Roughing	TNMG	332PT	160408PT	1/32		1
High Feed Rate		333PT	160412PT	3/64		
Medium-Roughing	TNMG	332GT	160408GT	1/32	D16-D18 F82 F92 F93	
High Feed Rate		333GT	160412GT	3/64		
Roughing	TNMG	331	160404	1/64		
		332	160408	1/32		
		333	160412	3/64		
		334	160416	1/16		
		335	160420	5/64		
	TNMG	431	220404	1/64	D16 D17 F92	
		432	220408	1/32		
		433	220412	3/64		
Medium-Roughing	TNMG	332PH	160408PH	1/32	D16-D18 F82 F92 F93	
		333PH	160412PH	3/64		2
	TNMG	432PH	220408PH	1/32	D16 D17 F92	
		433PH	220412PH	3/64		
		434PH	220416PH	1/16		

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

60° Triangle

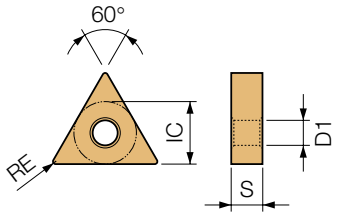
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089
TN_32_	3/8	1/8	0.150

(in)

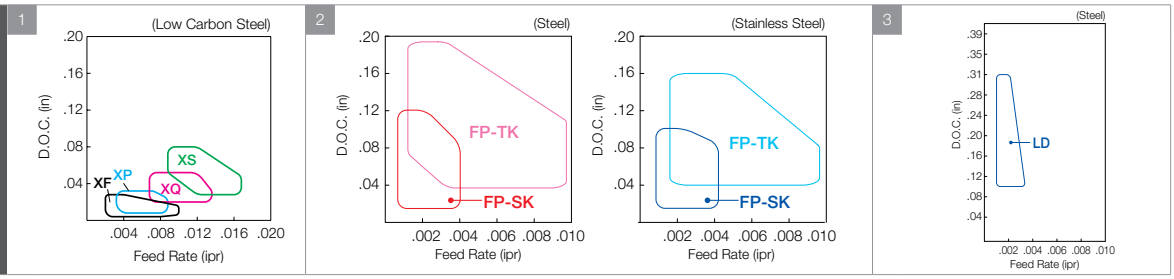
Part Number	IC	S	D1
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203
TN_66_	1	3/8	0.312



		Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Coated Carbide																				MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide	Toolholder Page	Chipbreaker Range
							TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Roughing	Single Sided High Feed Rate	TNMM	332PX	160408PX	1/32													●	●	△			●																								D16-D18 F82 F92-F93	See B38
			333PX	160412PX	3/64													●	●				●																									
		TNMM	432PX	220408PX	1/32													●	●				●																								D16 D17 F92	3
			433PX	220412PX	3/64													●	●				●																									
			434PX	220416PX	1/16													●	●	●																													
Finishing	Small D.O.C. Low Carbon Steel	TNMG	331XF	160404XF	1/64		●	●		●	●	●	●																																D16-D18 F82 F92 F93	1
			332XF	160408XF	1/32		●	●		●	●	●	●																																	
Finishing	Low Carbon Steel	TNMG	331XP	160404XP	1/64		●	●	●	●	●	●	●		●	△	●	●	●	△			●	●																							
			332XP	160408XP	1/32		●	●		●	●	●	●		●	●	●	●	●	●	●	●	●	●																							
Medium	Low Carbon Steel	TNMG	331XQ	160404XQ	1/64		●	●	●	●	●	●	●		●	△	●	●	●	●			●	●																							
			332XQ	160408XQ	1/32		●	●	●	●	●	●	●		●	●	●	●	●	●			●	●																							
Roughing	Low Carbon Steel	TNMG	332XS	160408XS	1/32			●	●			●	●		●	△	●	●	●	●			●	●																							
Finishing-Medium	Sharp Edge / Polished	TNGG	3302MFP-SK	160401MFP-SK	<0.004								●																			●	△	●						●							D16-D18 E47 F82 F92 F93	2
			3305MFP-SK	160402MFP-SK	<0.008								●																			●	△	●						●								
			331MFP-SK	160404MFP-SK	<1/64								●																			●	△	●						●								
Large D.O.C.		TNMG	3305R-LD	160402R-LD	0.008																											●	△							●								3
			331R-LD	160404R-LD	1/64																											●	△							●								

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

60° Triangle

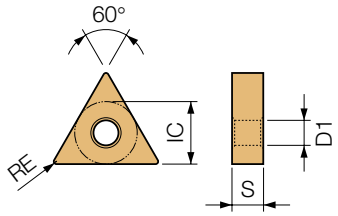
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089

(in)

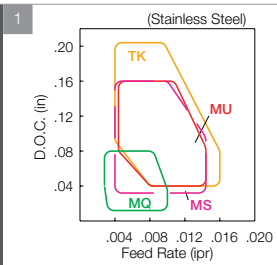
Part Number	IC	S	D1
TN_32_	3/8	1/8	0.150
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

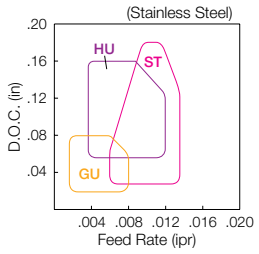


	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet			CVD Coated Carbide																MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide	Toolholder Page	Chipbreaker Range
					TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Medium-Roughing	Sharp Edge / Polished	TNGG	331FP-TK	160404FP-TK	1/64																									●	△	●					●								D16-D18	
			332FP-TK	160408FP-TK	1/32																									●	△	●					●								E47 F82 F92 F93	
Medium-Roughing	Sharp Edge Stainless Steel / HRSA	TNGG	331TK	160404TK	1/64																														△	△								●		
			332TK	160408TK	1/32																														△	△								●		
Medium-Roughing	Sharp Edge Stainless Steel / HRSA	TNMG	331TK	160404TK	1/64																		●	●																			△				
			332TK	160408TK	1/32																		●	●																			△				
Finishing-Medium	Sharp Edge Stainless Steel / HRSA	TNMG	331MQ	160404MQ	1/64																		●	●									●	●	△	△	△	●				△			●		1
			332MQ	160408MQ	1/32																		●	●									●	●	△	△	△	●				△			●	D16-D18 F82 F92 F93	
Medium-Roughing	Sharp Edge Stainless Steel / HRSA	TNMG	331MS	160404MS	1/64																		●	●									●	●	△	△	△	●				△			●		
			332MS	160408MS	1/32																		●	●									●	●	△	△	△	●				△			●		
			333MS	160412MS	3/64																		●	●									●	●	△	△	△	●				△			●		
Medium-Roughing	Sharp Edge Stainless Steel / HRSA	TNMG	331MU	160404MU	1/64																		●	●									●	●	△	△	△	●							●		
			332MU	160408MU	1/32																		●	●									●	●	△	△	△	●							●		
Medium-Roughing	Stainless Steel	TNMG	331R-ST	160404R-ST	1/64	●	●	●		●	●			●	●	●	●	●			●	●	●	●																			△				
			331L-ST	160404L-ST	1/64	●	●	●		●	●			△	●	●	●	●			●	●	●	●																			△				
			332R-ST	160408R-ST	1/32		●	●			●			●	●	●	●	●			●	●	●	●																			△				
			332L-ST	160408L-ST	1/32		●	●			●			●	●	●	●	●			●	●	●	●																			△				
Roughing	Heat-Resistant Alloy	TNMG	332SG	160408SG	1/32																												●	●				●							●		2
			333SG	160412SG	3/64																												●	●				●							●		
		TNMG	432SG	220408SG	1/32																												●	●				●							●	D16 D17 F92	
			433SG	220412SG	3/64																												●	●				●							●		

Chipbreaker Range

1





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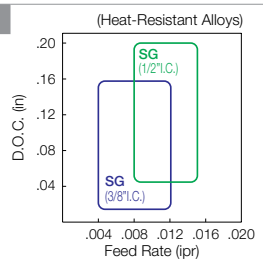


For Heat-Resistant Alloys See ➔ B8

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

60° Triangle

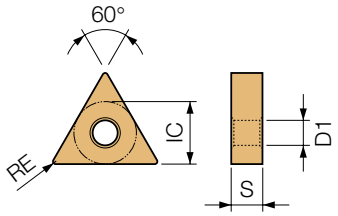
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089

(in)

Part Number	IC	S	D1
TN_32_	3/8	1/8	0.150
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

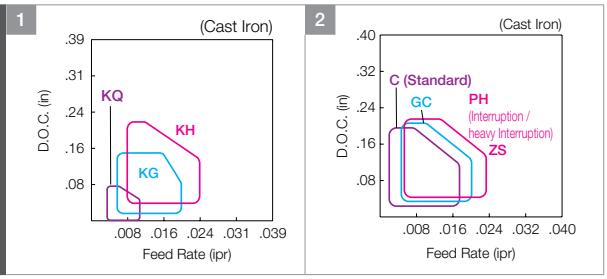


		ANSI Part Number	ISO Part Number	RE	Cermet TN610	Cermet TN620	Cermet TN60	CVD Cermet CCX	MEGA COAT Cermet PV710	MEGA COAT Cermet PV720	MEGA COAT Cermet PV730	PVD Cermet PV7005	CVD Coated Carbide PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PVD Coated Carbide PR930	PR1005	PR1025	PR1125	DLC PDL010	DLC PDL025	Carbide KW10	SW05	Toolholder Page	Chipbreaker Range
Sharp Edge	Cast Iron	TNMG 331KQ	160404KQ	1/64																					●	●	●																							
			332KQ	160408KQ	1/32																					●	●	●																							
Medium	Cast Iron	TNMG 331KG	160404KG	1/64																					●	●	●																							
			332KG	160408KG	1/32																					●	●	●																							
			333KG	160412KG	3/64																					●	●	●																							
Medium-Roughing	Cast Iron	TNMG 332KH	160408KH	1/32																					●	●	●																							
			333KH	160412KH	3/64																					●	●	●																							
			334KH	160416KH	1/16																					●	●	●																							
Roughing	Cast Iron	TNMG 331C	160404C	1/64																					●	●	●	●	●																						
			332C	160408C	1/32														●						●	●	●	●	●																						
			333C	160412C	3/64																				●	●	●		●																						
Roughing	Cast Iron	TNMG 332ZS	160408ZS	1/32																					●	●	●	●	●																						
			333ZS	160412ZS	3/64														●						●	●	●		●																						
Roughing	Cast Iron	TNMG 332GC	160408GC	1/32																					●	●	●	●	●																						
			333GC	160412GC	3/64														●						●	●	●		●																						
Cast Iron	Without Chipbreaker	TNGA 221	110304	1/64																																										●				
		TNGA 331	160404	1/64								●																																		●				
			332	160408	1/32								●																																		●				
		TNMA 331	160404	1/64		●	●	●		●		●						△						●	●	●	●	●																						
			332	160408	1/32		●	●	●		●		●						●						●	●	●	●	●																						
			333	160412	3/64																				●	●	●	●	●																						
			334	160416	1/16																				●	●	●		●																						
			335	160420	5/64																				●	●	●		●																						

Toolholder Page: D16-D18 F82 F92 F93 (Sharp Edge, Medium, Medium-Roughing, Roughing, Roughing, Roughing, Cast Iron TNMA); D16-D17 (Cast Iron TNGA 221); D16-D18 F82 F92 F93 (Cast Iron TNGA 331, TNMA)

Chipbreaker Range: 1 (Sharp Edge, Medium, Medium-Roughing); 2 (Roughing, Roughing, Roughing, Cast Iron)

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page B15

60° Triangle

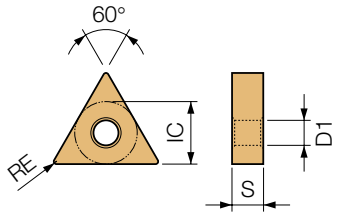
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089

(in)

Part Number	IC	S	D1
TN_32_	3/8	1/8	0.150
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203



| | | |

How to read this page ➔ B15

60° Triangle

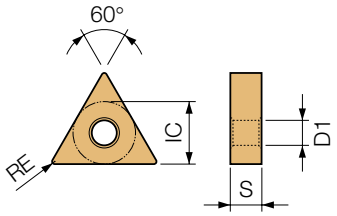
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089

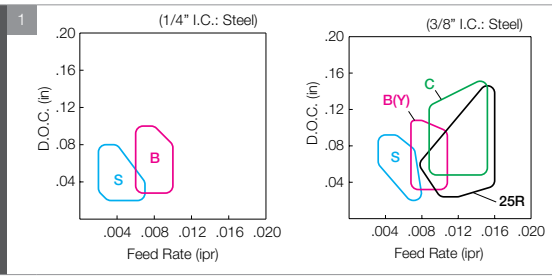
(in)

Part Number	IC	S	D1
TN_32_	3/8	1/8	0.150
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203



					Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet	PVD Cermet	CVD Coated Carbide																			MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide			DLC		Carbide		Toolholder Page	Chipbreaker Range
	Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number		RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing	Super Fine Sharp Edge / Precision	TNEG	3305R-SSF	160402R-SSF	0.008	●	●	●		●	●	●																												●								D16-D18 F82 F92 F93	
			3305L-SSF	160402L-SSF	0.008	●	●	●		●	●	●																												●									
			331R-SSF	160404R-SSF	1/64	●	●	●		●	●	●																													●									
			331L-SSF	160404L-SSF	1/64	●	●	●		●	●	●																													●									
Finishing		TNGG	2305R-S	110402R-S	0.008			●																																					●		D16 D17 F92	
			2305L-S	110402L-S	0.008			●																																					●			
			231R-S	110404R-S	1/64			●																																								
			231L-S	110404L-S	1/64			●																																								
			232R-S	110408R-S	1/32			●																																								
			232L-S	110408L-S	1/32			●																																								
		TNGG	3302R-S	160401R-S	0.004		●				●	●																																			
			3302L-S	160401L-S	0.004		●				●	●																																				
			3305R-S	160402R-S	0.008	●	●	●		●	●	●	●	●																			△									●	●		△					D16-D18 F82 F92 F93	1
			3305L-S	160402L-S	0.008	●	●	●		●	●	●	●	●																			△									●	●		△						
			331R-S	160404R-S	1/64	●	●	●		●	●	●	●	●																			△									●	●		△						
			331L-S	160404L-S	1/64	●	●	●		●	●	●	●	●																			△									●	●		△						
	Surface Roughness Oriented		332R-S	160408R-S	1/32	●	●	●		●	●	●																					△									●	●		△						
			332L-S	160408L-S	1/32	●	●	●		●	●	●																					△									●	●		△						
Finishing-Medium		TNGG	2205R-B	110302R-B	0.008	●	●	●		●	●																																			●		D16 D17	
			2205L-B	110302L-B	0.008	●	●	●		●	●																																			●			
			221R-B	110304R-B	1/64	●	●	●		●	●																																			●			
			221L-B	110304L-B	1/64	●	●	●		●	●																																			●			
		TNGG	321R-B	160304R-B	1/64			●																																								-
			321L-B	160304L-B	1/64			●																																								
		TNGG	3305R-B	160402R-B	0.008	●	●	●		●	●	●																														●					●		D16-D18 F82 F92 F93	
			3305L-B	160402L-B	0.008	●	●	●		●	●	●																														●					●			
			331R-B	160404R-B	1/64	●	●	●		●	●	●	●																														●								
			331L-B	160404L-B	1/64	●	●	●		●	●	●	●																														●								
			332R-B	160408R-B	1/32	●	●	●		●	●	●																																					
			332L-B	160408L-B	1/32	●	●	●		●	●	●																																					

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

60° Triangle

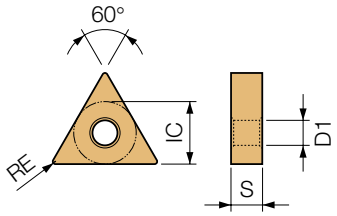
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_23_	1/4	3/16	0.089

(in)

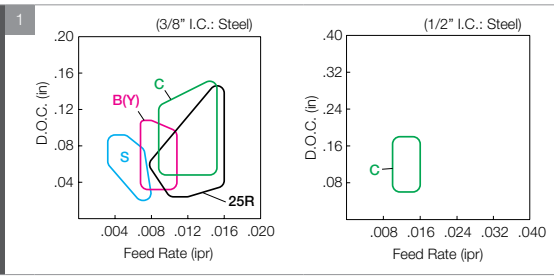
Part Number	IC	S	D1
TN_32_	3/8	1/8	0.150
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203



					Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																				MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide					DLC		Carbide		Toolholder Page	Chipbreaker Range
				RE		TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
				P		●	●			●	●	◔																													◔			◔					Free-Cutting Steel	
				M																																					◔			◔					Carbon/Alloy Steel	
				K								●																																		✱		Stainless Steel	
												○																																		✱		Gray Cast Iron	
				N																																									✱		Nodular Cast Iron	
				S																																							◔			✱		Non-ferrous Metals	
				H																																									✱		HRSA	
																																													✱		Titanium Alloy	
																																															Hard materials	
	Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number																																														
Medium-Roughing		TNGG	3305R-C	160402R-C	0.008		●			●	●																																							
			3305L-C	160402L-C	0.008		●			●	●																																							
			331R-C	160404R-C	1/64	●	●	●		●	●	●	●	●																												●					●				
			331L-C	160404L-C	1/64	●	●	●		●	●	●	●	△																												●					●			D16-D18	
			332R-C	160408R-C	1/32	●	●	●		●	●	●	●	△																												●					●			F82	
			332L-C	160408L-C	1/32	●	●	●		●	●	●	●	△																												●					●			F92 F93	
			333R-C	160412R-C	3/64	●	●	●		●	●	●	●																																					
			333L-C	160412L-C	3/64	●	●	●		●	●	●	●																																					
			334R-C	160416R-C	1/16								△																																					
		TNGG	431R-C	220404R-C	1/64	●	●	●			●																																					
			431L-C	220404L-C	1/64	●	●	●			●																																						D16 D17 F92
			432R-C	220408R-C	1/32		●	●			●																																					
			432L-C	220408L-C	1/32		●	●			●																																					
		TNGG	2305R	110402R	0.008			●																																										
			2305L	110402L	0.008			●																																										
			231R	110404R	1/64			●																																									D16 D17 F93
			231L	110404L	1/64			●																																								
			232R	110408R	1/32			●																																									
		TNMG	331R-C	160404R-C	1/64	●	●	●		●	●	●																																						
			331L-C	160404L-C	1/64	●	●	●		●	●	●																																					
			332R-C	160408R-C	1/32	●	●	●		●	●	●																																					
			332L-C	160408L-C	1/32	●	●	●		●	●	●																																					
			333R-C	160412R-C	3/64			●																																									D16-D18 F82 F92 F93
Medium-Roughing	Low Cutting Force	TNGG	331R-25R	160404R-25R	1/64	●	●	●		●	●	●																													●		△			●				
			331L-25R	160404L-25R	1/64	●	●	●		●	●	●																													●		△			●				
			332R-25R	160408R-25R	1/32	●	●	●		●	●	●																													●		△			●				
			332L-25R	160408L-25R	1/32	●	●	●		●	●	●																													●		△			●				

1

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

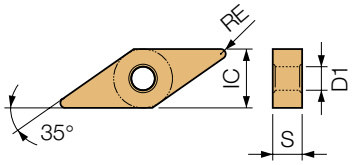
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

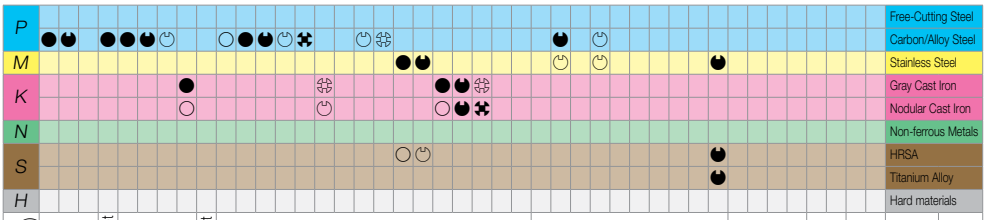
35° Diamond

Negative Insert with Hole



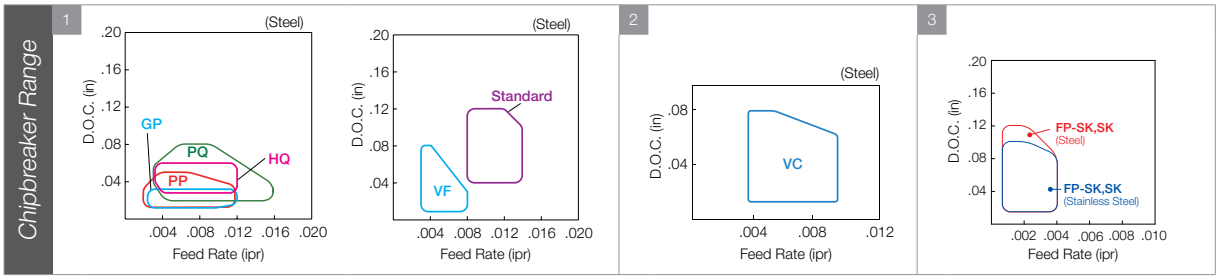
(in)

Part Number	IC	S	D1
VN_33_	3/8	3/16	0.150



	Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing		VNMG 3305PP	160402PP	0.008	●	●		●	●	●	●			●	●	●	●	●		△	●																												
		331PP	160404PP	1/64	●	●		●	●	●	●			●	●	●	●	●		△	●																												
		332PP	160408PP	1/32	●	●		●	●	●	●			●	●	●	●	●		●	△																												
		333PP	160412PP	3/64	●	●		●	●	●	●					●	●	△																														
Finishing		VNMG 3305GP	160402GP	0.008	●	●	●		●	●	●		●		●	●	●	●		●	●																												
		331GP	160404GP	1/64	●	●	●		●	●	●		●	●	●	●	●	●		●	●																												
		332GP	160408GP	1/32	●	●	●		●	●	●		●	●	●	●	●	●		●	●																												
Finishing-Medium		VNMG 331 R/L VC	160404 R/L VC	1/64	●	●		●	●	●	●			●	●	●	●	●																														
		332 R/L VC	160408 R/L VC	1/32	●	●		●	●	●	●			●	●	●	●	●																														
		333 R/L VC	160412 R/L VC	3/64	●	●		●	●	●	●			●	●	●	●	●																														
Finishing-Medium		VNMG 331VF	160404VF	1/64	●	●		●	●	●	●			●	●	●	●	●		●	●																												
		332VF	160408VF	1/32	●	●		●	●	●	●			●	●	●	●	●		●	●																												
		333VF	160412VF	3/64		●				●	●			△	●	●	●	●		●	●																												
Finishing-Medium		VNMG 331PQ	160404PQ	1/64	●	●		●	●	●	●			●	●	●	●	●		△	●																												
		332PQ	160408PQ	1/32	●	●		●	●	●	●			●	●	●	●	●		●	●																												
		333PQ	160412PQ	3/64	●	●		●	●	●	●			●	●	●	●	●		●																												
Finishing-Medium		VNMG 331HQ	160404HQ	1/64	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●																												
		332HQ	160408HQ	1/32	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●																												
		333HQ	160412HQ	3/64		●	●	●		●	●		●	●	●	●	●	●	●	●	●																												
Medium		VNMG 331TN-V	160404TN-V	1/64			●																																									
		332TN-V	160408TN-V	1/32			●																																									
		333TN-V	160412TN-V	3/64			●																																									
Roughing		VNMG 331	160404	1/64	●	●	●		●	●	●			●	●	●	●	●	△	●	●	●	●	●	●	●	●	●	●																			
		332	160408	1/32	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																			
Finishing-Medium		VNGG 3305MFP-SK	160402MFP-SK	<0.008							●																				●	△	●					●											
	Sharp Edge / Polished	331MFP-SK	160404MFP-SK	<1/64							●																				●	△	●					●											
Finishing-Medium		VNGG 3305M-SK	160402M-SK	<0.008	●	●			●	●	●																																						
		331M-SK	160404M-SK	<1/64	●	●			●	●	●																																						

D20
D21
D22



KYOCERA

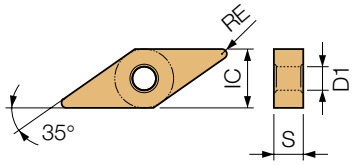
Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

35° Diamond

Negative Insert with Hole



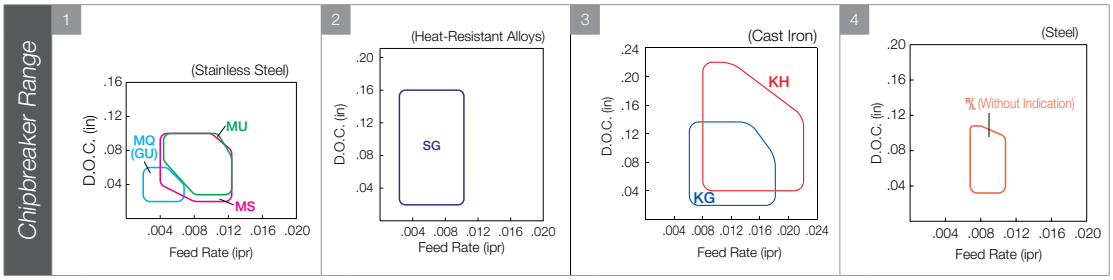
(in)

Part Number	IC	S	D1
VN_33_	3/8	3/16	0.150

	Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing-Medium		VNMG 331MQ	160404MQ	1/64																			●	●									●	●	△	△	△	●				△				●	D20 D21 D22	1
	Stainless Steel / HRSA	332MQ	160408MQ	1/32																			●	●									●	●	△	△	△	●				△				●		
Medium-Roughing		VNMG 331MS	160404MS	1/64																			●	●									●	●	△	△	△	●				△				●		
	Stainless Steel / HRSA	332MS	160408MS	1/32																			●	●									●	●	△	△	△	●				△				●		
		333MS	160412MS	3/64																			●	●									●	●	△	△	△	●				△				●		
Medium-Roughing		VNGG 3302MU	160401MU	0.004																																●												
		3305MU	160402MU	0.008																																●												
	Stainless Steel / HRSA	VNMG 331MU	160404MU	1/64																			●	●									●	●	△	△	△	●				△				●		
		332MU	160408MU	1/32																			●	●									●	●	△	△	△	●				△				●		
Roughing		VNMG 331SG	160404SG	1/64																			●	●									●	●				●								●		2
	Heat-Resistant Alloy	332SG	160408SG	1/32																			●	●									●	●				●								●		
Medium-Roughing		VNMG 332KH	160408KH	1/32																					●	●	●																					3
	Cast Iron	333KH	160412KH	3/64																					●	●	●																					
Medium-Roughing		VNMG 332KG	160408KG	1/32																					●	●	●																					
	Cast Iron	333KG	160412KG	3/64																					●	●	●																					
Cast Iron		VNGA 331	160404	1/64								●																																		●		-
	Without Chipbreaker	332	160408	1/32								●																																		●		
Medium		VNGG 3305R	160402R	0.008	●	●	●		●	●	●		●																												●							4
		3305L	160402L	0.008	●	●	●		●	●	●		△																												●							
		331R	160404R	1/64	●	●	●		●	●	●		△																												●						●	
		331L	160404L	1/64	●	●	●		●	●	●																														●						●	
		332R	160408R	1/32	●	●	●		●	●	●																														●						●	
		332L	160408L	1/32	●	●	●		●	●	●																														●						●	

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

80° Trigon

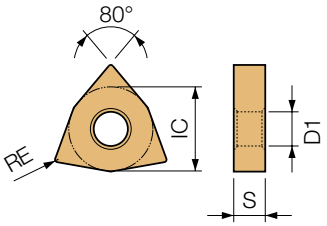
Negative Insert with Hole

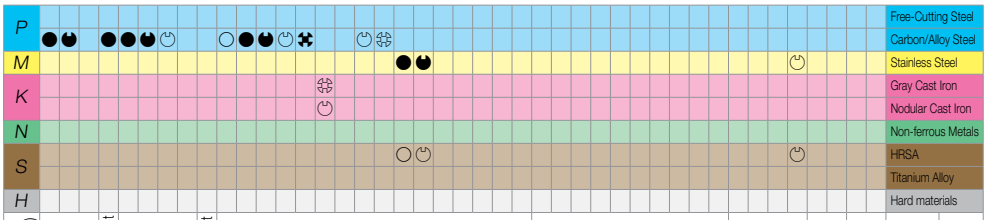
(in)

Part Number	IC	S	D1
WN_325_	3/8	5/32	0.150
WN_33_	3/8	3/16	0.150

(in)

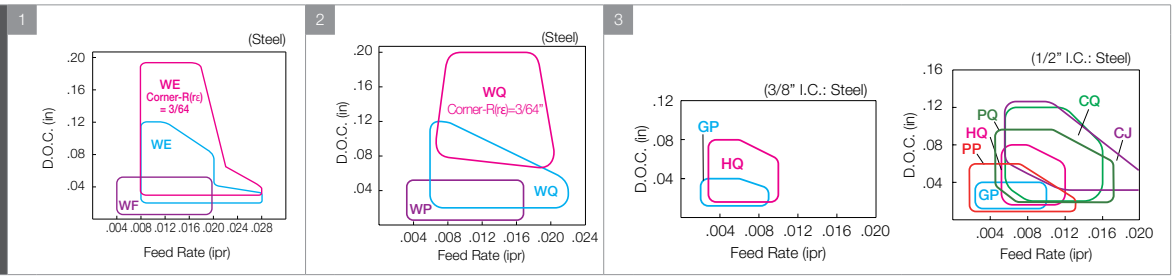
Part Number	IC	S	D1
WN_43_	1/2	3/16	0.203





		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing	Wiper Edge	WNMG 431WF	080404WF	1/64	●	●			●	●				●	●	●	●	●																																	
		432WF	080408WF	1/32	●	●			●	●				●	●	●	●	●																																	
Finishing	Wiper Edge	WNMG 431WP	080404WP	1/64	●	●			●	●				●	●	●	●	△	●	●	●																															
		432WP	080408WP	1/32	●	●			●	●				●	●	●	●	●	●	●	●																															
Finishing-Medium	Wiper Edge	WNMG 431WE	080404WE	1/64	●	●			●	●				●	●	●	●	●																																	
		432WE	080408WE	1/32	●	●			●	●				●	●	●	●	●																																	
		433WE	080412WE	3/64	●	●			●	●				●	●	●	●	●																																	
Finishing-Medium	Wiper Edge	WNMG 431WQ	080404WQ	1/64	●	●			●	●			●	△	●	●	●	●			●	●																													
		432WQ	080408WQ	1/32	●	●			●	●			△	●	●	●	●	●	●	●	●																													
		433WQ	080412WQ	3/64		●				●				●	●	●	●	●	●	●	●																													
Finishing		WNMG 4305PP	080402PP	0.008	●	●		●	●	●	●			●	●	●	●	●																																	
		431PP	080404PP	1/64	●	●		●	●	●	●			●	●	●	●	●																																	
		432PP	080408PP	1/32	●	●		●	●	●	●			●	●	●	●	●																																	
		433PP	080412PP	3/64	●	●		●	●	●	●			△	●	●	●	●																																	
Finishing		WNMG 331GP	060404GP	1/64		●	●			●	●	●	●																																			D24-D25 F94	
		332GP	060408GP	1/32		●	●			●	●		●																																				
		WNMG 431GP	080404GP	1/64	●	●	●		●	●	●		△																																			D24 D25 F95 F96	
		432GP	080408GP	1/32	●	●	●		●	●	●		●																																				
Finishing-Medium		WNMG 431PQ	080404PQ	1/64	●	●		●	●	●	●			●	●	●	●	●		△	●																													
		432PQ	080408PQ	1/32	●	●		●	●	●	●			●	●	●	●	●		●	●																													
		433PQ	080412PQ	3/64										●	●	●	●	●		△	●																													
Finishing-Medium		WNMG 3251HQ	06T304HQ	1/64		●	●			●	●					●	●	●			●																													
		3252HQ	06T308HQ	1/32			●									●	●	△			●																													
		WNMG 331HQ	060404HQ	1/64		●	●	●		●	●			●	●	●	●	●			●	●																											D24-D25 F94	
		332HQ	060408HQ	1/32		●	●	●		●	●			●	●	●	●	●			●	●																											
		WNMG 431HQ	080404HQ	1/64	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●																			△				D24 D25 F95 F96	
		432HQ	080408HQ	1/32	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●																			△					
		433HQ	080412HQ	3/64	●	●	●	●	●	●	●			△	●	●	●	●			●	●																											

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

80° Trigon

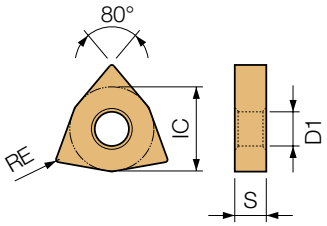
Negative Insert with Hole

(in)

Part Number	IC	S	D1
WN_325_	3/8	5/32	0.150
WN_33_	3/8	3/16	0.150

(in)

Part Number	IC	S	D1
WN_43_	1/2	3/16	0.203

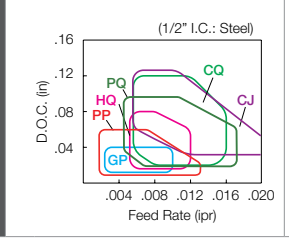


P Free-Cutting Steel / Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron / Nodular Cast Iron
N Non-ferrous Metals
S HRSA / Titanium Alloy
H Hard materials

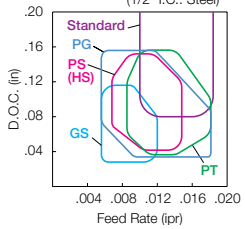
		ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide														MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide		Toolholder Page	Chipbreaker Range
						TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing-Medium	Up Facing	WNMG 431CQ	080404CQ	1/64		●	●			●	●	●		△	●	●	●	●	△			●	●																							D24 D25 F95 F96	1
			432CQ	1/32		●	●	●		●	●	●		●	●	●	●	●	●	●	●	●	●	●																							
			433CQ	3/64			●	●			●	●			●	●	●	●	●			●	●	●																							
Finishing-Medium	Up Facing	WNMG 432CJ	080408CJ	1/32										△	●	●	●	●	●			●	●																							D24 D25 F95 F96	1
			433CJ	3/64											●	●	●	●	△			●	●	△																							
Medium-Roughing		WNMG 331GS	060404GS	1/64			●	●			●	●		△	△	●	●	●	●			●	●																							D24 F94	2
			332GS	060408GS	1/32		●	●			●	●		△	●	●	●	●	●			●	●																							
		WNMG 431GS	080404GS	1/64			●				●	●		△		●	●	●				●	●																							
			432GS	080408GS	1/32		●				●	●		△	●	●	●	●	●			●	●																							
			433GS	080412GS	3/64											●	●	●	●			●	●																							
Medium-Roughing		WNMG 431PG	080404PG	1/64		●	●			●	●	●			●	●	●	●	●																					●						
			432PG	080408PG	1/32		●	●			●	●	●			●	●	●	●	●																					●						
			433PG	080412PG	3/64											●	●	●	●	●																					●						
			434PG	080416PG	1/16											●	●	●	●	●																											
Medium-Roughing		WNMG 431PS	080404PS	1/64			●				●	●				●	●	●	●	△	●	●	●	●	●																		△				
			432PS	080408PS	1/32		●				●	●				●	●	●	●	●	●	●	●	●	●																		△				
			433PS	080412PS	3/64											●	●	●	●	●	●	●	●		●																						
			434PS	080416PS	1/16											●	●	●	●	△		△	●																							
Medium-Roughing		WNMG 431HS	080404HS	1/64			△							△								△																							D24 D25 F95 F96	2
			432HS	080408HS	1/32			△						△							△	△																							
			433HS	080412HS	3/64			△						△								△																							
Medium-Roughing	High Feed Rate	WNMG 432PT	080408PT	1/32											●	●	●	●	●	●	●	●	●	●																							
			433PT	080412PT	3/64										●	●	●	●	●	△	●	●	●																							
Medium-Roughing	High Feed Rate	WNMG 432GT	080408GT	1/32										●	●	●	●	●	●		●	●																							
			433GT	080412GT	3/64										●	●	●	●	●		●	●																							
Medium-Roughing	High Feed Rate	WNMG 433HT	080412HT	3/64																		△																							
Roughing		WNMG 431	80404	1/64		●	●	●		●	●	●			△	●	●	●	△	△	●	●		△	●	●	●	●	●														△				
			432	80408	1/32	●	●	●	●	●	●	●	●		●	●	●	●	●	△	●	●	●	●	●	●	●	●	●														△				
			433	80412	3/64										△	●	●	●			●	●	●	●	●	●	●	●	●															△				

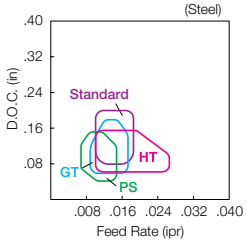
Chipbreaker Range

1



2





● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

80° Trigon

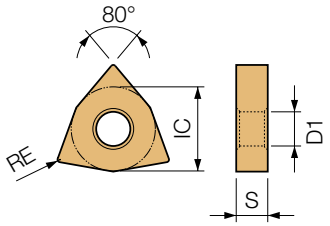
Negative Insert with Hole

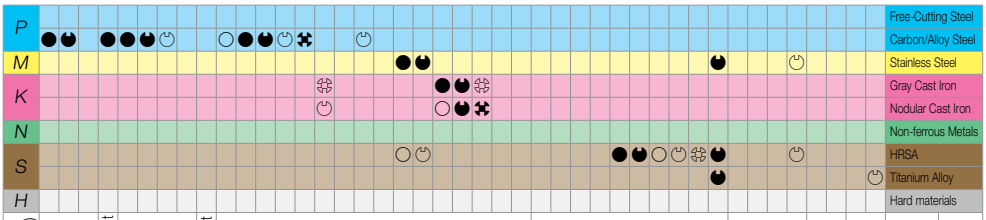
(in)

Part Number	IC	S	D1
WN_325_	3/8	5/32	0.150
WN_33_	3/8	3/16	0.150

(in)

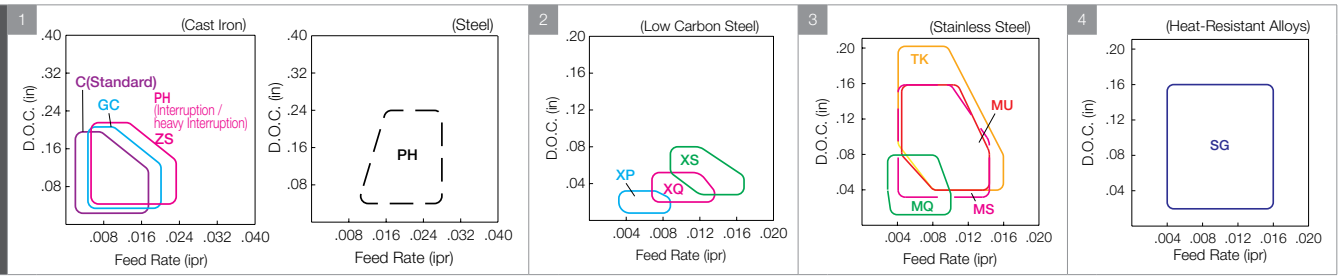
Part Number	IC	S	D1
WN_43_	1/2	3/16	0.203





		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Roughing		WNMG 432PH	080408PH	1/32										●	●	●	●	●							●	●	●	●	●																					
		433PH	080412PH	3/64										●	●	●	●	●							●	●	●	△	●																					
Finishing	Low Carbon Steel	WNMG 431XP	080404XP	1/64	●	●	●	●	●	●	●		△	●	●	●	●	△			●	●																													
		432XP	080408XP	1/32	●	●	△	●	●	●	●		●	●	●	●	●				●	●																													
Medium	Low Carbon Steel	WNMG 431XQ	080404XQ	1/64	●	●		●	●	●	●		△		●	●	●	●			●	●																													
		432XQ	080408XQ	1/32	●	●	●	●	●	●	●		△	△	●	●	●	●			●	●																													
Roughing	Low Carbon Steel	WNMG 432XS	080408XS	1/32		●				●	●		●		●	●	●	●			●	●																													
Medium-Roughing	Sharp Edge	WNGG 431TK	080404TK	1/64																																△	△											●			
		432TK	080408TK	1/32																																△	△											●			
Medium-Roughing	Stainless Steel / HRSA	WNMG 431TK	080404TK	1/64																			●	●												△	△	△						△					D24 D25 F95 F96	
		432TK	080408TK	1/32																			●	●												△	△	△						△						
Finishing-Medium	Stainless Steel / HRSA	WNMG 431MQ	080404MQ	1/64																			●	●										●	●	△	△	△	●					△			●		
		432MQ	080408MQ	1/32																			●	●										●	●	△	△	△	●					△			●		
Medium-Roughing	Stainless Steel / HRSA	WNMG 431MS	080404MS	1/64																			●	●										●	●	△	△	△	●					△			●		
		432MS	080408MS	1/32																			●	●										●	●	△	△	△	●					△			●		
		433MS	080412MS	3/64																			●	●										●	●	△	△	△	●					△			●		
Medium-Roughing	Stainless Steel / HRSA	WNMG 431MU	080404MU	1/64																			●	●										●	●	△	△	△	●					△			●		
		432MU	080408MU	1/32																			●	●										●	●	△	△	△	●					△			●		
Roughing	Heat-Resistant Alloy	WNMG 432SG	080408SG	1/32																														●	●				●								●		
		433SG	080412SG	3/64																														●	●				●								●		

Chipbreaker Range



For Heat-Resistant Alloys See ➔ B8

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

80° Trigon

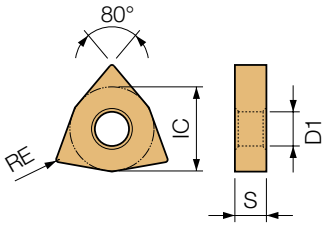
Negative Insert with Hole

(in)

Part Number	IC	S	D1
WN_325_	3/8	5/32	0.150
WN_33_	3/8	3/16	0.150

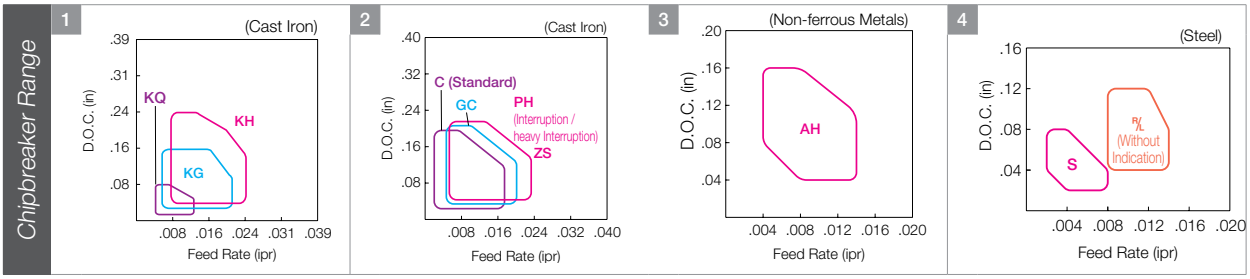
(in)

Part Number	IC	S	D1
WN_43_	1/2	3/16	0.203



		ANSI Part Number	ISO Part Number	RE	Chipbreaker Range	Toolholder Page
Sharp Edge	Cast Iron	WNMG 431KQ	080404KQ	1/64	1	D24 D25 F95 F96
		432KQ	080408KQ	1/32		
		433KQ	080412KQ	3/64		
Medium	Cast Iron	WNMG 431KG	080404KG	1/64		
		432KG	080408KG	1/32		
		433KG	080412KG	3/64		
Medium-Roughing	Cast Iron	WNMG 432KH	080408KH	1/32		
		433KH	080412KH	3/64		
		434KH	080416KH	1/16		
Roughing	Cast Iron	WNMG 431C	080404C	1/64	2	
		432C	080408C	1/32		
		433C	080412C	3/64		
Roughing	Cast Iron	WNMG 432ZS	080408ZS	1/32		
		433ZS	080412ZS	3/64		
Roughing	Cast Iron	WNMG 432GC	080408GC	1/32		
		433GC	080412GC	3/64		
Cast Iron	Without Chipbreaker	WNMA 432	080408	1/32	-	
		433	080412	3/64		
Medium-Roughing	Sharp Edge Non-Ferrous	WNGG 431AH	080404AH	1/64	3	
		432AH	080408AH	1/32		
Finishing	Surface Roughness Oriented	WNGG 3305R-S	060402R-S	0.008	4	D24 F94
		3305L-S	060402L-S	0.008		
		331R-S	060404R-S	1/64		
		331L-S	060404L-S	1/64		
		332R-S	060408R-S	1/32		
		332L-S	060408L-S	1/32		
Medium		WNGG 331R	060404R	1/64		
		331L	060404L	1/64		

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

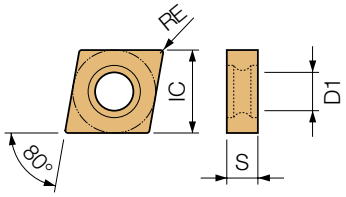
How to read this page B15

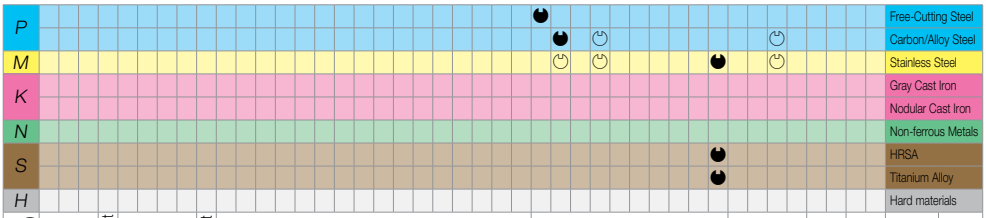
Small Double-Sided / 80° Diamond

Turning Inserts

(in)

Part Number	IC	S	D1
CN_U242_	0.295	1/8	0.142





	Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
		Corner Radius (in)			Cermet			CVD Cermet	MEGA COAT Cermet				PVD Cermet	CVD Coated Carbide																	MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide				DLC		Carbide			
Finishing-Medium	CNGU	24202MF-SK	070301MF-SK	<0.004																										●	△	●					●			△							E44	See B52
Sharp Edge		24205MF-SK	070302MF-SK	<0.008																										●	△	●					●			△								1
Finishing-Medium	CNGU	24202MFP-SK	070301MFP-SK	<0.004																										●	△	●					●											
Sharp Edge / Polished		24205MFP-SK	070302MFP-SK	<0.008																										●	△	●					●											
Medium-Roughing	CNMU	24205E-GK	070302E-GK	0.008																										●		●					●			△								
Honed Edge		2421E-GK	070304E-GK	1/64																										●	△	●					●			△	△							
Finishing	CNGU	242013MFR-F	0703005MFR-F	<0.002																										●		●																
Sharp Edge		24202MFR-F	070301MFR-F	<0.004																										●	●	△	●				●											
		24205MFR-F	070302MFR-F	<0.008																										●	●	△	●				●			△								
		2421MFR-F	070304MFR-F	<1/64																										●	●	△					●											
Low Feed	CNGU	242013MFR-U	0703005MFR-U	<0.002																										●		●								△								
Sharp Edge		24202MFR-U	070301MFR-U	<0.004																										●	●	△	●							●			△					
		24205MFR-U	070302MFR-U	<0.008																										●	●	△	●							●			△					
		2421MFR-U	070304MFR-U	<1/64																										●	●	△	●							●	△	△	△					
Low Feed	CNGU	24202MER-U	070301MER-U	<0.004																																						△						
Honed Edge		24205MER-U	070302MER-U	<0.008																																						△						
		2421MER-U	070304MER-U	<1/64																																						△						

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Small Double-Sided Tool Identification System

CNGU070301M F P - SK

- Minus Tolerance for Corner-R (RE)
- Sharp Edge
- Polished Inserts
- Chipbreakers

CNGU070301M F R - U

- Minus Tolerance for Corner-R (RE)
- Sharp Edge
- Insert Hand
- Chipbreakers

CNGU070301M E R - U

- Minus Tolerance for Corner-R (RE)
- Honed Edge
- Insert Hand
- Chipbreakers

When minus tolerance is specified for corner-R (rε)

- If a minus tolerance is specified for the corner-R (RE) as shown in Fig.1, using an insert with corner-R = 0.008" may result in larger radius than specified.
- Use an insert whose corner-R (RE) has a minus tolerance.

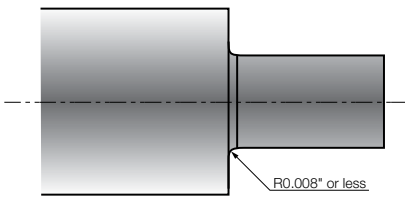


Fig.1 Example of a specified corner-R in drawing

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

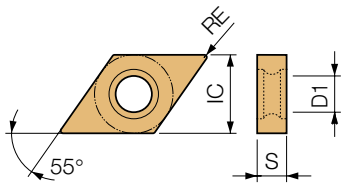
How to read this page B15

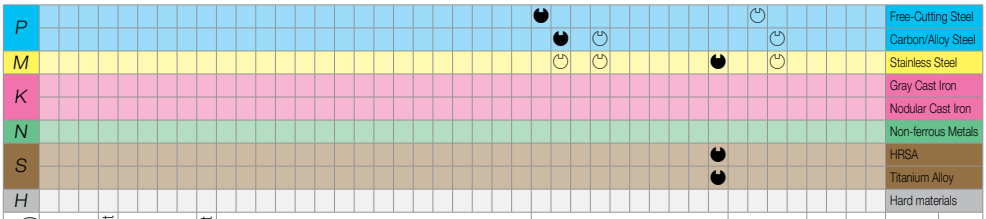
Small Double-Sided / 55° Diamond

Turning Inserts

(in)

Part Number	IC	S	D1
DN_222_	0.276	1/8	0.142





		Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet			MEGA COAT Cermet				PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide								PVD Coated Carbide				DLC		Carbide		Toolholder Page	Chipbreaker Range
							TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing-Medium	Sharp Edge	DNGU	22202MF-SK	080301MF-SK	<0.004																																				△								
			22205MF-SK	080302MF-SK	<0.008																																				△								
			2221MF-SK	080304MF-SK	<1/64																																				△								
Finishing-Medium	Sharp Edge / Polished	DNGU	22202MFP-SK	080301MFP-SK	<0.004																												●	△	●					●									
			22205MFP-SK	080302MFP-SK	<0.008																												●	△	●					●									
			2221MFP-SK	080304MFP-SK	<1/64																												●	△	●					●									
Medium-Roughing	Honed Edge	DNMU	22205E-GK	080302E-GK	0.008																												●	△	●					●			△						
			2221E-GK	080304E-GK	1/64																												●	△	●					●	△	△							
Finishing	Sharp Edge	DNGU	22202MFR-F	080301MFR-F	<0.004																												●	△	●					●			△						
			22205MFR-F	080302MFR-F	<0.008																												●	●	△	●				●	△	△							
			2221MFR-F	080304MFR-F	<1/64																												●	△	●					●									
Low Feed	Sharp Edge	DNGU	222013MFR-U	0803005MFR-U	<0.002																																				△								
			22202MFR-U	080301MFR-U	<0.004																												●	●	△	●				●		△							
			22205MFR-U	080302MFR-U	<0.008																												●	●	△	●				●	△	△							
			2221MFR-U	080304MFR-U	<1/64																												●	△	●					●		△							
Low Feed	Honed Edge	DNGU	22202MER-U	080301MER-U	<0.004																												●	●								△	△							
			22205MER-U	080302MER-U	<0.008																												●	●									△						
			2221MER-U	080304MER-U	<1/64																												●	●									△						

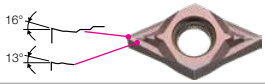
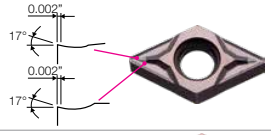
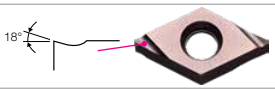
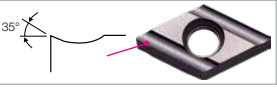
E44

See B52

2

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Selection (Negative Inserts)

Cutting Range	Name	Cross-Section	Advantages
Finishing-Medium	**SK**		A low cutting force chipbreaker designed for chip control in steel and stainless steel. Cutting performance is similar to comparably sized positive inserts.
Medium-Roughing	**GK**		Chipbreaker "dot" and pocket design provide chip control at multiple depths of cut and feed rates.
Finishing	**F**		Controlled chip evacuation direction with low cutting forces.
Low Feed	**U**		Good chip control at low feed rates and varied depths of cut with low cutting forces.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

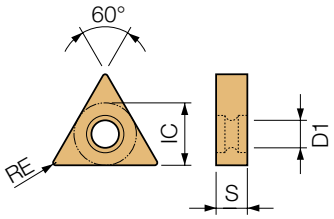
How to read this page B15

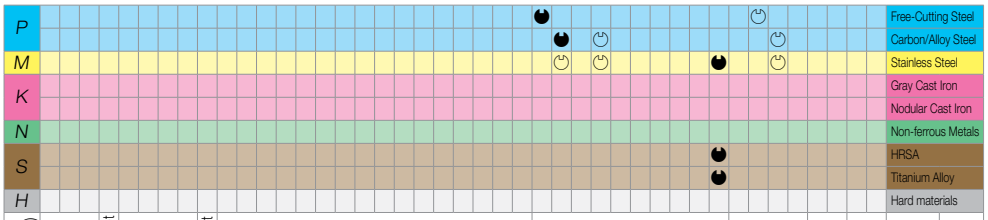
Small Double-Sided / 60° Triangle

Turning Inserts

(in)

Part Number	IC	S	D1
TN_182_	7/32	1/8	0.118

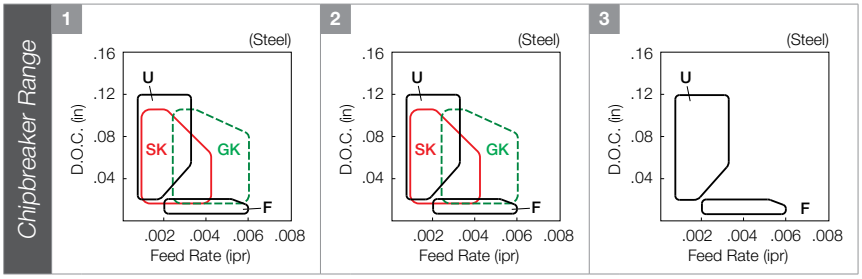




		Right-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	Corner Radius (in) RE	Cermet TN610	Cermet TN620	Cermet TN60	CVD Cermet CCX	MEGA COAT Cermet PV710	MEGA COAT Cermet PV720	MEGA COAT Cermet PV730	PVD Cermet PV7005	PVD Cermet PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA025P	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	CVD Coated Carbide CA310	CVD Coated Carbide CA315	CVD Coated Carbide CA320	CVD Coated Carbide CA4505	CVD Coated Carbide CA4515	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1705	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1725	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1425	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1225	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR005S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR015S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1305	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1310	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1325	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1535	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	DLC PDL010	DLC PDL025	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing	Sharp Edge	TNGU	182013MFR-F	0903005MFR-F	<0.002																											●									△							E45	3
			18202MFR-F	090301MFR-F	<0.004																									●	●	△	●				●		△	△							
			18205MFR-F	090302MFR-F	<0.008																									●	●	△	●				●		△	△							
			1821MFR-F	090304MFR-F	<1/64																									●	●	△	●				●		△	△							
Low Feed	Sharp Edge	TNGU	182013MFR-U	0903005MFR-U	<0.002																											●									△								
			18202MFR-U	090301MFR-U	<0.004																										●	△	●				●			△							
			18205MFR-U	090302MFR-U	<0.008																									●	●	△	●				●		△	△							
			1821MFR-U	090304MFR-U	<1/64																									●	●	△	●				●		△	△							
Low Feed	Honed Edge	TNGU	18205MER-U	090302MER-U	<0.008																																										
			1821MER-U	090304MER-U	<1/64																									●	●									△								

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

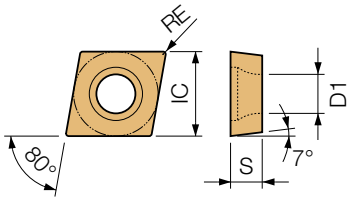
How to read this page ➔ B15

80° Diamond

Positive Insert with Hole

Part Number	IC	S	D1
	(in)		
CC_1109_	0.138	0.055	0.075
CC_1411_	0.169	0.071	0.091

Part Number	IC	S	D1
	(in)		
CC_215_	1/4	3/32	0.110
CC_325_	3/8	5/32	0.173
CC_43_	1/2	3/16	0.217



			ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Coated Carbide Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide						PVD Coated Carbide			DLC		Carbide		Toolholder Page	Chipbreaker Range
							TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Minute D.O.C.	Sharp Edge	CCGT	110902M-CF	030101M-CF	<0.004																																		△	△						F27 F45 F47	
			110905M-CF	030102M-CF	<0.008																																		△	△							
		CCGT	141102M-CF	040101M-CF	<0.004																																		△	△						F27 F45	
			141105M-CF	040102M-CF	<0.008																																		△	△							
Minute D.O.C.	Sharp Edge / Polished	CCGT	110902MP-CF	030101MP-CF	<0.004																											●	●	△	●				●			△		●	●		F27 F45 F47	
			110905MP-CF	030102MP-CF	<0.008																											●	●	△	●				●			△		●	●			
		CCGT	141102MP-CF	040101MP-CF	<0.004																											●	●	△	●				●			△		●	●		F21 F43	
			141105MP-CF	040102MP-CF	<0.008																											●	●	△	●				●			△		●	●			
Finishing	Sharp Edge / Polished	CCGT	110902MFP-PF	030101MFP-PF	<0.004																											●	●	△					●								F27 F45	
			110905MFP-PF	030102MFP-PF	<0.008																											●	●	△					●									
		CCGT	141102MFP-PF	040101MFP-PF	<0.004																											●	●	△					●									
			141105MFP-PF	040102MFP-PF	<0.008																											●	●	△					●									
		CCGT	21502MFP-PF	060201MFP-PF	<0.004																											●	●	△					●									1
			21505MFP-PF	060202MFP-PF	<0.008																											●	●	△					●									
			2151MFP-PF	060204MFP-PF	<1/64																											●	●	△					●									
Finishing	Sharp Edge	CCGT	21502MF-GF	060201MF-GF	<0.004																																		△								
			21505MF-GF	060202MF-GF	<0.008																																		△								
		CCGT	32502MF-GF	09T301MF-GF	<0.004																																		△								
			32505MF-GF	09T302MF-GF	<0.008																																		△								
			3251MF-GF	09T304MF-GF	<1/64																																		△								
Finishing	Sharp Edge / Polished	CCGT	21502MFP-GF	060201MFP-GF	<0.004																											●	●	△	●				●			△						
			21505MFP-GF	060202MFP-GF	<0.008																											●	●	△	●				●			△						
			2151MFP-GF	060204MFP-GF	<1/64																											●	●	△	●				●			△						
		CCGT	32502MFP-GF	09T301MFP-GF	<0.004																											●	●	△	●				●			△						
			32505MFP-GF	09T302MFP-GF	<0.008																											●	●	△	●				●			△						
			3251MFP-GF	09T304MFP-GF	<1/64																											●	●	△	●				●			△						
Finishing	NEW Sharp Edge / Polished	CCGT	215013MFP-SKS	0602005MFP-SKS	<0.002							●																				●	●						●									2
			21502MFP-SKS	060201MFP-SKS	<0.004							●																				●	●						●									
			21505MFP-SKS	060202MFP-SKS	<0.008							●																				●	●						●									
		CCGT	325013MFP-SKS	09T3005MFP-SKS	<0.002							●																				●	●						●									
			32502MFP-SKS	09T301MFP-SKS	<0.004							●																				●	●						●									
			32505MFP-SKS	09T302MFP-SKS	<0.008							●																				●	●						●									
			3251MFP-SKS	09T304MFP-SKS	<1/64							●																				●	●						●									
Finishing	Sharp Edge / Polished	CCGT	21502MFP-SK	060201MFP-SK	<0.004							●																				●	●	△	●				●					●	●			
			21505MFP-SK	060202MFP-SK	<0.008							●																				●	●	△	●				●					●	●			
			2151MFP-SK	060204MFP-SK	<1/64							●																				●	●	△	●				●					●	●			
		CCGT	32502MFP-SK	09T301MFP-SK	<0.004							●																				●	●	△	●				●						●			
			32505MFP-SK	09T302MFP-SK	<0.008							●																				●	●	△	●				●						●			
			3251MFP-SK	09T304MFP-SK	<1/64							●																				●	●	△	●				●						●			
Finishing	Sharp Edge / Polished	CCGT	21502MP-CK	060201MP-CK	<0.004																											●	●	△	●				●						●			
			21505MP-CK	060202MP-CK	<0.008																											●	●	△	●				●						●			
		CCGT	32502MP-CK	09T301MP-CK	<0.004																											●	●	△	●				●						●			
			32505MP-CK	09T302MP-CK	<0.008																											●	●	△	●				●						●			
Finishing-Medium	Sharp Edge	CCGT	21502MF-GQ	060201MF-GQ	<0.004																																		△								
			21505MF-GQ	060202MF-GQ	<0.008																																		△								
			2151MF-GQ	060204MF-GQ	<1/64																																		△								1
		CCGT	32502MF-GQ	09T301MF-GQ	<0.004																																		△								
			32505MF-GQ	09T302MF-GQ	<0.008																																		△								
			3251MF-GQ	09T304MF-GQ	<1/64																																		△								

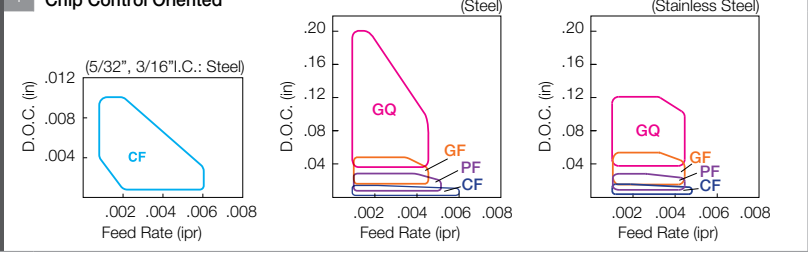
P Free-Cutting Steel; Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron; Nodular Cast Iron
N Non-ferrous Metals
S HRSA; Titanium Alloy
H Hard materials

Reference Table at Top of B54

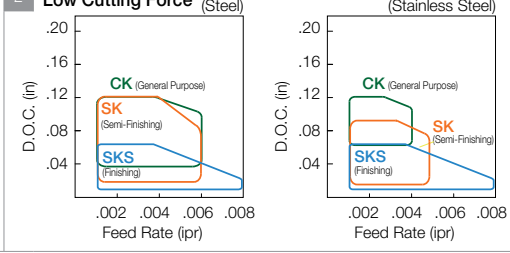
• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1 Chip Control Oriented



2 Low Cutting Force



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

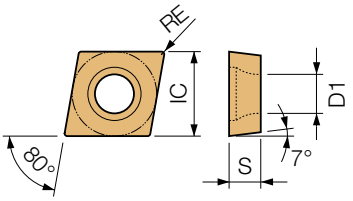
80° Diamond

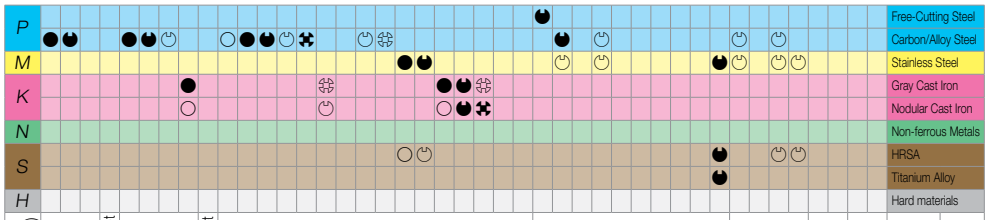
Positive Insert with Hole

Part Number	Applicable Toolholder Page
CC..215	E24~E25, E41, E48, F27, F45, F47
CC..325	E24~E25, E41, E48, F45, F83

(in)

Part Number	IC	S	D1
CC_215_	1/4	3/32	0.110
CC_325_	3/8	5/32	0.173
CC_43_	1/2	3/16	0.217

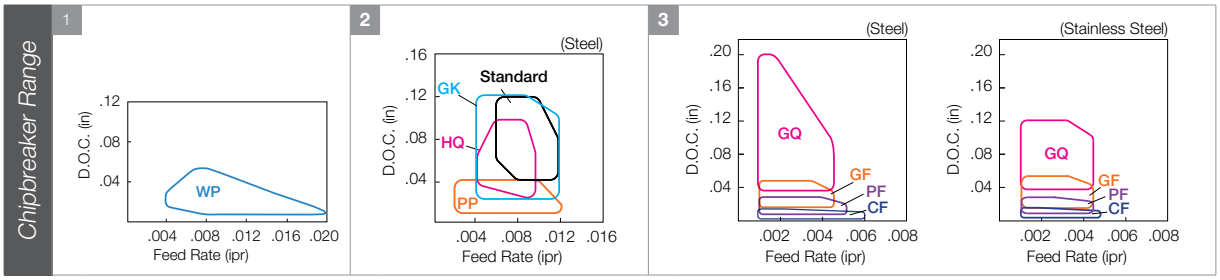




		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing-Medium	Sharp Edge / Polished	CCGT	21502MFP-GQ	060201MFP-GQ	<0.004																									●	●	△	●						●		△							Reference Table Above	3
			21505MFP-GQ	060202MFP-GQ	<0.008																									●	●	△	●						●		△								
			2151MFP-GQ	060204MFP-GQ	<1/64																									●	●	△	●						●		△								
		CCGT	32502MFP-GQ	09T301MFP-GQ	<0.004																									●	●	△	●						●		△								
			32505MFP-GQ	09T302MFP-GQ	<0.008																									●	●	△	●						●		△								
			3251MFP-GQ	09T304MFP-GQ	<1/64																									●	●	△	●						●		△								
Finishing	Wiper Edge	CCMT	21505WP	060202WP	0.008	●	●		●	●				●	●	●	●	●												●	△	●																1
			2151WP	060204WP	1/64	●	●		●	●				●	●	●	●	●												●	△	●																
			2152WP	060208WP	1/32	●	●		●	●				●	●	●	●	●												●	△	●																
		CCMT	32505WP	09T302WP	0.008	●	●		●	●				●	●	●	●	●												●	△	●																
			3251WP	09T304WP	1/64	●	●		●	●				●	●	●	●	●												●	△	●																
			3252WP	09T308WP	1/32	●	●		●	●				●	●	●	●	●												●	△	●																
Finishing		CCMT	21505PP	060202PP	0.008	●	●	●	●	●	●			●	●	●	●													●	△	●							●									
			2151PP	060204PP	1/64	●	●	●	●	●	●			●	●	●	●	●												●	△	●							●									
		CCMT	32505PP	09T302PP	0.008	●	●	●	●	●	●				●	●	●	△												●	△	●							●									
			3251PP	09T304PP	1/64	●	●	●	●	●	●			●	●	●	●	●												●	△	●							●									
			3252PP	09T308PP	1/32	●	●	●	●	●	●			●	●	●	●	●												●	△	●							●									
Finishing-Medium		CCMT	21505GK	060202GK	0.008	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●		●	●	●		●	●	△							●	●			△	△				
			2151GK	060204GK	1/64	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●		●	●	●		●	●	△							●	●			△	△				
		CCMT	32505GK	09T302GK	0.008	●	●	●	●	●	●			△	●	●	●	●	●	●	●	●	●		●	●	●		●	●	△							●	●			△	△				
			3251GK	09T304GK	1/64	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●		●	●	●		●	●	△							●	●			△	△				
		CCMT	431GK	120404GK	1/64	●	●		●	●	●	●		●	●	●	●	●	●	●	●	●	●		●	●	●		●	●									●			△	△				
			432GK	120408GK	1/32	●	●		●	●	●	●		●	●	●	●	●	●	●	●	●	●		●	●	●		●	●									●			△	△			E25	
			433GK	120412GK	3/64				●					●	●	●	●	△		●		●								●									●				△				
Finishing-Medium		CCMT	21505HQ	060202HQ	0.008	●	●	●	●	●	●	●		●	●	●	●	●	●	●	△	●	●						●	●	△							●	●			△	△				
			2151HQ	060204HQ	1/64	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●						●	●	△							●	●			△	△				
		CCMT	32505HQ	09T302HQ	0.008	●	●	●	●	●	●	●		△	△	●	●	●	●	●	●	●	●						●	●	△							●	●			△	△				
			3251HQ	09T304HQ	1/64	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●						●	●	△							●	●			△	△				
			3252HQ	09T308HQ	1/32	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●						●	●	△							●	●			△	△				
Medium		CCGT	21502	060201	0.004	●	●	●		●	●	●		△																								●								
			21505	060202	0.008	●	●	●		●	●	●		△																								●								
			2151	060204	1/64	●	●	●		●	●	●		△																								●								
		CCGT	32502	09T301	0.004	●	●	●		●	●	●		●																								●								
			32505	09T302	0.008	●	●	●		●	●	●		●																								●								
			3251	09T304	1/64	●	●	●		●	●	●		●																								●								
		CCMT	3252	09T308	1/32	●	●	●	●	●	●	●	●	△	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	△							●	●			△	△			Reference Table Above	
		CCGT	21501M	0602005M	<0.002																																					△					
			21502M	060201M	<0.004																																					△					
			21505M	060202M	<0.008																																					△					
			2151M	060204M	<1/64																																					△					
		CCGT	32501M	09T3005M	<0.002																																					△					
			32502M	09T301M	<0.004																																					△					
			32505M	09T302M	<0.008																																					△					
			3251M	09T304M	<1/64																																					△					

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

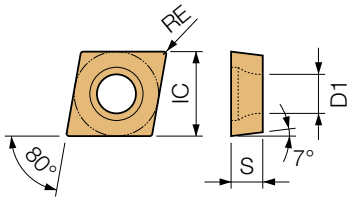
● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

80° Diamond

Positive Insert with Hole



(in)

Part Number	IC	S	D1
CC_1109_	0.138	0.055	0.075
CC_1411_	0.169	0.071	0.091

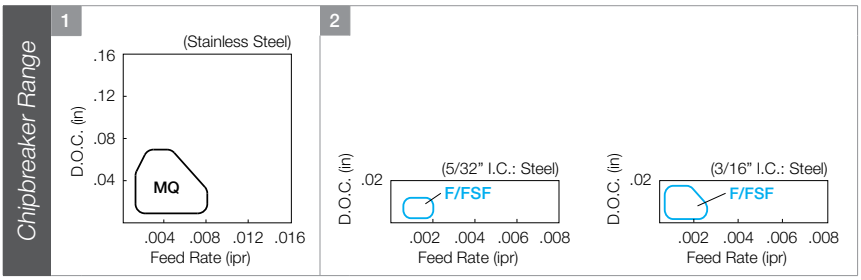
(in)

Part Number	IC	S	D1
CC_215_	1/4	3/32	0.110
CC_325_	3/8	5/32	0.173
CC_43_	1/2	3/16	0.217

		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
			Corner Radius (in)			Cermet			CVD Cermet	MEGA COAT Cermet				PVD Cermet	CVD Coated Carbide																	MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide			
Medium			CCGT	215013MF	0602005MF	<0.002																								●	△	●	●						●			△							
				21502MF	060201MF	<0.004																								●	△	●	●						●			△							
				21505MF	060202MF	<0.008																								●	△	●	●						●		△	△							
				2151MF	060204MF	<1/64																								●	△	●	●						●		△	△							
			CCGT	325013MF	09T3005MF	<0.002																								●	△	●	●						●			△							
				32502MF	09T301MF	<0.004																								●	△	●	●						●		△	△							
				32505MF	09T302MF	<0.008																								●	△	●	●						●		△	△							
		Sharp Edge		3251MF	09T304MF	<1/64																								●	△	●	●						●		△	△							
Finishing-Medium			CCMT	3251MQ	09T304MQ	1/64																			●	●												△	△	△	●			△				●		
		Stainless Steel / HRSA		3252MQ	09T308MQ	1/32																			●	●												△	△	△	●			△				●		
Finishing		Super Fine	CCET	110901R-FSF	0301003R-FSF	0.001																																			●									
				110901L-FSF	0301003L-FSF	0.001																																			●									
				110902R-FSF	030101R-FSF	0.004																																			●									
				110902L-FSF	030101L-FSF	0.004			●																																●								F27 F45 F47	
				110905R-FSF	030102R-FSF	0.008			●																																●									
				110905L-FSF	030102L-FSF	0.008			●																																●									
				11091R-FSF	030104R-FSF	1/64			△																																●									
				11091L-FSF	030104L-FSF	1/64			●																																●									
			CCET	141101L-FSF	0401003L-FSF	0.001																																			●									
				141102R-FSF	040101R-FSF	0.004																																			●									
				141102L-FSF	040101L-FSF	0.004			●																																●								F27 F45	
				141105R-FSF	040102R-FSF	0.008			●																																●									
				141105L-FSF	040102L-FSF	0.008			●																																●									
				14111L-FSF	040104L-FSF	1/64			●																																●									
			CCET	1109013MR-FSF	0301005MR-FSF	<0.002																																				●								
				1109013ML-FSF	0301005ML-FSF	<0.002																																				●								
				110902MR-FSF	030101MR-FSF	<0.004																																				●								
				110902ML-FSF	030101ML-FSF	<0.004																																				●			△					F27 F45 F47	
				110905MR-FSF	030102MR-FSF	<0.008																																				●			△						
				110905ML-FSF	030102ML-FSF	<0.008																																				●			△						
				11091MR-FSF	030104MR-FSF	<1/64																																				●									
				11091ML-FSF	030104ML-FSF	<1/64																																				●			△						
			CCET	1411013ML-FSF	0401005ML-FSF	<0.002																																				●								
				141102MR-FSF	040101MR-FSF	<0.004																																				●			△						
				141102ML-FSF	040101ML-FSF	<0.004																																				●			△						
				141105MR-FSF	040102MR-FSF	<0.008																																				●			△					F27 F45	
				141105ML-FSF	040102ML-FSF	<0.008																																				●			△						
		Sharp Edge / Precision		14111MR-FSF	040104MR-FSF	<1/64																																				●									
				14111ML-FSF	040104ML-FSF	<1/64																																				●			△						

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



Part Number	Applicable Toolholder Page
CC..215	E24~E25, E41, E48, F27, F45, F47
CC..325	E24~E25, E41, E48, F45, F83

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

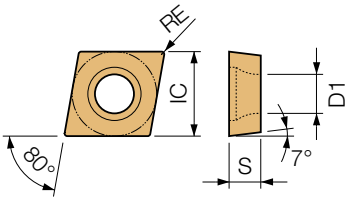
How to read this page ➔ B15

80° Diamond

Positive Insert with Hole

Part Number	IC	S	D1
			(in)
CC_1109_	0.138	0.055	0.075
CC_1411_	0.169	0.071	0.091

Part Number	IC	S	D1
			(in)
CC_215_	1/4	3/32	0.110
CC_325_	3/8	5/32	0.173
CC_43_	1/2	3/16	0.217



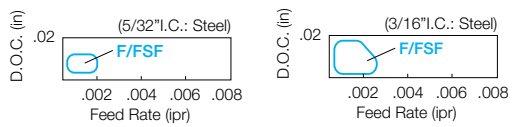
	Free-Cutting Steel	Carbon/Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	HRSA	Titanium Alloy	Hard materials
P	●	●	○						
M			○	●	○	○	○	○	
K									
N						●	●	○	
S				●			○	○	
H									

Left-Hand Shown where Applicable		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
				Corner Radius (in)	Cermet			CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide				DLC		Carbide			
Finishing		CCET 1109013MR-F	0301005MR-F	<0.002																										●	△		●						●									
		1109013ML-F	0301005ML-F	<0.002																										●	△		●						●						●			
		110902MR-F	030101MR-F	<0.004	●				●																					●			●						●									
		110902ML-F	030101ML-F	<0.004	●	●			●	●	●																			●	△		●						●						●	●		F27 F45 F47
		110905MR-F	030102MR-F	<0.008	●				●																					●	△		●						●									
		110905ML-F	030102ML-F	<0.008	●	●			●	●	●																			●			●						●						●	●		
		11091MR-F	030104MR-F	<1/64	●				●																					●	△		●						●									
		11091ML-F	030104ML-F	<1/64	●	●			●	●	●																			●	△		●						●						●	●		
		CCET 141102MR-F	040101MR-F	<0.004	●				●																					●	△		●						●									
		141102ML-F	040101ML-F	<0.004	●	●			●	●	●																			●	△		●						●						●	●		
		141105MR-F	040102MR-F	<0.008	●				●																					●	△		●						●									F27 F45
		141105ML-F	040102ML-F	<0.008	●	●			●	●	●																			●	△		●						●						●	●		
		14111MR-F	040104MR-F	<1/64	●				●																					●	△		●						●									
	Sharp Edge	14111ML-F	040104ML-F	<1/64	●	●			●	●	●																			●	△		●						●						●	●		
Finishing		CCGT 110901R-F	0301003R-F	0.001																																			●								
		110901L-F	0301003L-F	0.001		△																																	●								
		110902R-F	030101R-F	0.004		●																																	●							●	
		110902L-F	030101L-F	0.004		●																																	●							●		F27 F45 F47
		110905R-F	030102R-F	0.008		●																																	●							●	
		110905L-F	030102L-F	0.008		●							●																											●							●	
		11091R-F	030104R-F	1/64		●																																	●							●	
		11091L-F	030104L-F	1/64		●							△																											●							●	
		CCGT 141101L-F	0401003L-F	0.001																																			●								1
		141102R-F	040101R-F	0.004																																			●							●	
		141102L-F	040101L-F	0.004		●																																	●							●	
		141105R-F	040102R-F	0.008		●																																	●							●	F27 F45
		141105L-F	040102L-F	0.008		●							△																											●							●	
		14111R-F	040104R-F	1/64		●																																	●							●	
		14111L-F	040104L-F	1/64		●							△																											●							●	
		CCGT 1109013MR-F	0301005MR-F	<0.002																												●															
		1109013ML-F	0301005ML-F	<0.002																												●															
		110902MR-F	030101MR-F	<0.004																												●															
		110902ML-F	030101ML-F	<0.004																												●												△			F27 F45 F47
		110905MR-F	030102MR-F	<0.008																												●												△			
		110905ML-F	030102ML-F	<0.008																												●											△	△			
		11091MR-F	030104MR-F	<1/64																												●												△			
		11091ML-F	030104ML-F	<1/64																												●											△	△			
		CCGT 1411013ML-F	0401005ML-F	<0.002																												●															
		141102MR-F	040101MR-F	<0.004																												●															
		141102ML-F	040101ML-F	<0.004																												●												△			F27 F45
		141105MR-F	040102MR-F	<0.008																												●											△	△			
		141105ML-F	040102ML-F	<0.008																												●											△	△			
		14111MR-F	040104MR-F	<1/64																												●												△			
	Sharp Edge	14111ML-F	040104ML-F	<1/64																												●											△	△			

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1



KYOCERA

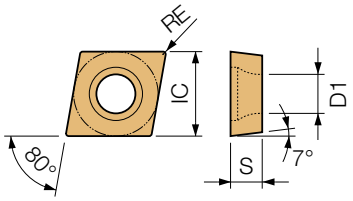
Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page B15

80° Diamond

Positive Insert with Hole



(in)

Part Number	IC	S	D1
CC_1109_	0.138	0.055	0.075
CC_1411_	0.169	0.071	0.091

(in)

Part Number	IC	S	D1
CC_215_	1/4	3/32	0.110
CC_325_	3/8	5/32	0.173
CC_43_	1/2	3/16	0.217

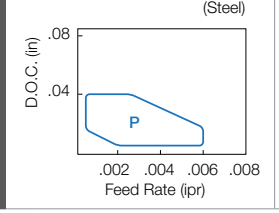
			ANSI	ISO	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
	Left-Hand Shown where Applicable		Part Number	Part Number		Cermet			CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide						PVD Coated Carbide				DLC		Carbide						
					Corner Radius (in)																																													
Finishing	Sharp Edge	CCET	32502MR-P	09T301MR-P	<0.004																										●	△							●										1	
			32502ML-P	09T301ML-P	<0.004																										●	△							●											
			32505MR-P	09T302MR-P	<0.008																										●	△							●											
			32505ML-P	09T302ML-P	<0.008																										●	△							●											
			3251MR-P	09T304MR-P	<1/64																										●	△							●											
			3251ML-P	09T304ML-P	<1/64																										●	△							●											
Low Feed	Super Fine	CCET	21501FR-USF	0602003FR-USF	0.001																																		●											
			21501FL-USF	0602003FL-USF	0.001																																		●											
			21502FR-USF	060201FR-USF	0.004			●																															●											
			21502FL-USF	060201FL-USF	0.004			△																															●											
			21505FR-USF	060202FR-USF	0.008			●																															●											
			21505FL-USF	060202FL-USF	0.008			●																															●											
		CCET	32501FR-USF	09T3003FR-USF	0.001			●																															●											
			32501FL-USF	09T3003FL-USF	0.001			●																															●											
			32502FR-USF	09T301FR-USF	0.004			●																															●											
			32502FL-USF	09T301FL-USF	0.004			●																															●											
			32505FR-USF	09T302FR-USF	0.008			●																															●											
			32505FL-USF	09T302FL-USF	0.008			●																															●											
		CCET	215013MFR-USF	0602005MFR-USF	<0.002																												●																
			215013MFL-USF	0602005MFL-USF	<0.002																												●																
			21502MFR-USF	060201MFR-USF	<0.004																												●											△				
			21502MFL-USF	060201MFL-USF	<0.004																												●											△				
			21505MFR-USF	060202MFR-USF	<0.008																												●											△				
			21505MFL-USF	060202MFL-USF	<0.008																												●											△				
		CCET	325013MFR-USF	09T3005MFR-USF	<0.002																												●																
			325013MFL-USF	09T3005MFL-USF	<0.002																												●																
			32502MFR-USF	09T301MFR-USF	<0.004																												●											△				
			32502MFL-USF	09T301MFL-USF	<0.004																												●											△				
	Sharp Edge / Precision		32505MFR-USF	09T302MFR-USF	<0.008																												●											△				
			32505MFL-USF	09T302MFL-USF	<0.008																												●											△				
		CCET	215013MFR-U	0602005MFR-U	<0.002																										●	●	△							●						●				
			215013MFL-U	0602005MFL-U	<0.002																											●	△							●						●				
			21502MFR-U	060201MFR-U	<0.004	●	●			●	●	●																				●	●	△							●						●	●			
			21502MFL-U	060201MFL-U	<0.004	●	●			●	●	●																				●	●	△							●						●	●			
			21505MFR-U	060202MFR-U	<0.008	●	●			●	●	●																				●	●	△							●						●	●			
			21505MFL-U	060202MFL-U	<0.008	●	●			●	●	●																				●	●	△							●						●	●			
		CCET	325013MFR-U	09T3005MFR-U	<0.002																												●	●	△							●						●				
			325013MFL-U	09T3005MFL-U	<0.002																												●	△							●						●				
			32502MFR-U	09T301MFR-U	<0.004	●	●			●	●	●																				●	●	△							●						●	●			
			32502MFL-U	09T301MFL-U	<0.004	●	●			●	●	●																				●	●	△							●						●	●			
			32505MFR-U	09T302MFR-U	<0.008	●	●			●	●	●																				●	●	△							●						●	●			
			32505MFL-U	09T302MFL-U	<0.008	●	●			●	●	●																				●	●	△							●						●	●			
	Sharp Edge		3251MFR-U	09T304MFR-U	<1/64																												●	△							●						●	●			
			3251MFL-U	09T304MFL-U	<1/64																												●	△							●						●	●			

Reference Table Below

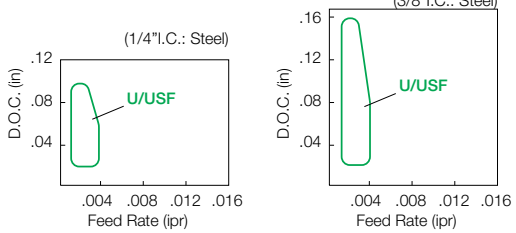
• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1



2



Part Number	Applicable Toolholder Page
CC..215	E24~E25, E41, E48, F27, F45, F47
CC..325	E24~E25, E41, E48, F45, F83

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

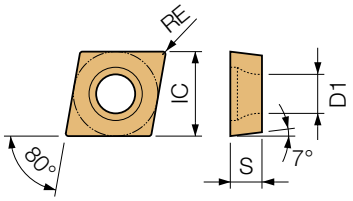
How to read this page B15

80° Diamond

Positive Insert with Hole

(in)

Part Number	IC	S	D1
CC_215_	1/4	3/32	0.110
CC_325_	3/8	5/32	0.173
CC_43_	1/2	3/16	0.217

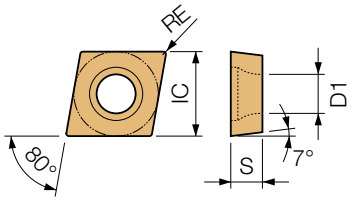


| | | |

How to read this page ➔ B15

80° Diamond

Positive Insert with Hole



(in)

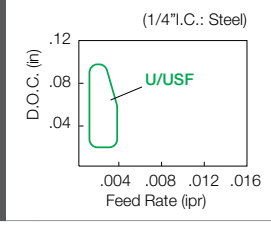
Part Number	IC	S	D1
CC_215_	1/4	3/32	0.110
CC_325_	3/8	5/32	0.173
CC_43_	1/2	3/16	0.217

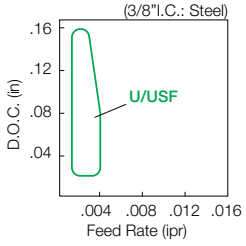
		ANSI	ISO	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
	Left-Hand Shown where Applicable	Part Number	Part Number																																													
Low Feed		CCGT 21502ER-U	060201ER-U	0.004	●				●																															●								Reference Table Below	1
		21502EL-U	060201EL-U	0.004	●	●	●		●	●	●																											●									
		21505ER-U	060202ER-U	0.008	●	●	●		●	●	●																											●									
		21505EL-U	060202EL-U	0.008	●	●	●		●	●	●																											●									
		2151ER-U	060204ER-U	1/64	●	●	●		●	●	●																											●									
		2151EL-U	060204EL-U	1/64	●	●	●		●	●	●																											●									
		CCGT 32502ER-U	09T301ER-U	0.004	●	●	●		●	●	●																											●									
		32502EL-U	09T301EL-U	0.004	●	●	●		●	●	●																											●									
		32505ER-U	09T302ER-U	0.008	●	●	●		●	●	●																											●									
		32505EL-U	09T302EL-U	0.008	●	●	●		●	●	●																											●									
		3251ER-U	09T304ER-U	1/64	●	●	●		●	●	●																											●									
		3251EL-U	09T304ER-U	1/64	●	●	●		●	●	●																											●									
		CCGT 21505MER-U	060202MER-U	<0.008																											●																	
		21505MEL-U	060202MEL-U	<0.008																											●												△					
		2151MER-U	060204MER-U	<1/64																											●												△					
		2151MEL-U	060204MEL-U	<1/64																											●												△					
		CCGT 32502MER-U	09T301MER-U	<0.004																											●												△					
		32505MER-U	09T302MER-U	<0.008																											●												△					
		32505MEL-U	09T302MEL-U	<0.008																											●												△					
		3251MER-U	09T304MER-U	<1/64																											●												△					
	Honed Edge	3251MEL-U	09T304MEL-U	<1/64																											●												△					
Low Feed		CCET 215013MFR-J	0602005MFR-J	<0.002																											●	△								●								2
		21502MFR-J	060201MFR-J	<0.004																											●	△	●							●								
		21502MFL-J	060201MFL-J	<0.004																											●	△	●							●								
		21505MFR-J	060202MFR-J	<0.008																											●	△	●							●								
		21505MFL-J	060202MFL-J	<0.008																											●	△	●							●								
		CCET 32502MFR-J	09T301MFR-J	<0.004																											●	△	●							●								
		32502MFL-J	09T301MFL-J	<0.004																											●	△	●							●								
		32505MFR-J	09T302MFR-J	<0.008																											●	△	●							●								
		32505MFL-J	09T302MFL-J	<0.008																											●	△	●							●								
		3251MFR-J	09T304MFR-J	<1/64																											●	△	●							●								
	Sharp Edge	3251MFL-J	09T304MFL-J	<1/64																											●	△	●							●								

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1





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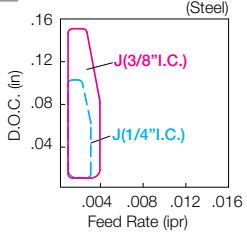


Part Number	Applicable Toolholder Page
CC..215	E24~E25, E41, E48, F27, F45, F47
CC..325	E24~E25, E41, E48, F45, F83

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

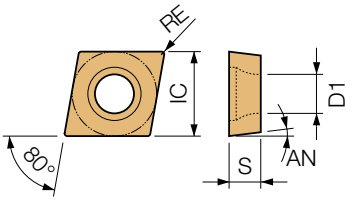
How to read this page ➔ B15

80° Diamond

Positive Insert with Hole

Part Number	IC	S	D1 (in)	AN
CC_215_	1/4	3/32	0.110	7°
CC_325_	3/8	5/32	0.173	
CC_43_	1/2	3/16	0.217	

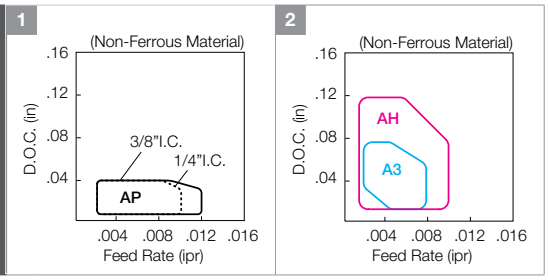
Part Number	IC	S	D1 (in)	AN
CP_215_	1/4	3/32	0.110	11°
CP_325_	3/8	5/32	0.123	



	Free-Cutting Steel	Carbon/Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	HRSA	Titanium Alloy	Hard materials
P		●							
M			●						
K				●	●				
N						●	●	○	
S								○	
H									●

		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet		CVD Coated Carbide		MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide																						MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide			DLC			Carbide	Toolholder Page	Chipbreaker Range
							TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing-Medium	Sharp Edge / Polished	CCGT	21505AP	060202AP	0.008																																					●		●				
			2151AP	060204AP	1/64																																					●		●				
		CCGT	32505AP	09T302AP	0.008																																					●		●			1	
			3251AP	09T304AP	1/64																																					●		●				
			3252AP	09T308AP	1/32																																					●		●				
Finishing-Medium	Sharp Edge Non-ferrous Metals	CCGT	32505R-A3	09T302R-A3	0.008																																					●	●	●				
			32505L-A3	09T302L-A3	0.008																																					●	●	●				
			3251R-A3	09T304R-A3	1/64																																					●	●	●				
			3251L-A3	09T304L-A3	1/64																																					●	●	●				
			3252R-A3	09T308R-A3	1/32																																					●	●	●				
			3252L-A3	09T308L-A3	1/32																																					●	●	●				
		CCGT	4305R-A3	120402R-A3	0.008																																							●	●				
			4305L-A3	120402L-A3	0.008																																							●	●				
			431R-A3	120404R-A3	1/64																																							●	●				
			431L-A3	120404L-A3	1/64																																							●	●				
			432R-A3	120408R-A3	1/32																																							●	●				
			432L-A3	120408L-A3	1/32																																							●	△				
Finishing-Medium	Sharp Edge Non-ferrous Metals	CCGT	3251AH	09T304AH	1/64																																					●	●	●				
			3252AH	09T308AH	1/32																																					●	●	●				
Cast Iron	Without Chipbreaker	CCGW	21502	060201	0.004																																							●				
			21505	060202	0.008																																							●				
		CCGW	32500	09T300	0.000																																							●				
			32502	09T301	0.004																																							●				
			32505	09T302	0.008																																							●				
			3251	09T304	1/64																																							●				
Medium		CPGT	21505	060202	0.008						●																																						
			2151	060204	1/64						●																																						
		CPGT	32505	09T302	0.008										△																																		
			3251	09T304	1/64			△																																							-	
			3252	09T308	1/32			●																																								

Chipbreaker Range



Part Number	Applicable Toolholder Page
CC..215	E24~E25, E41, E48, F27, F45, F47
CC..325	E24~E25, E41, E48, F45, F83

KYOCERA

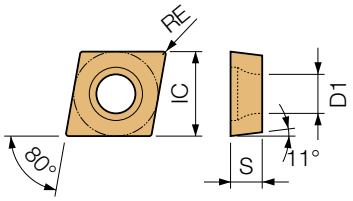
Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

80° Diamond

Positive Insert with Hole

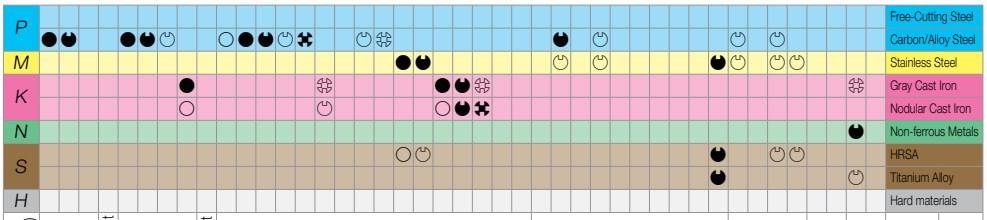


(in)

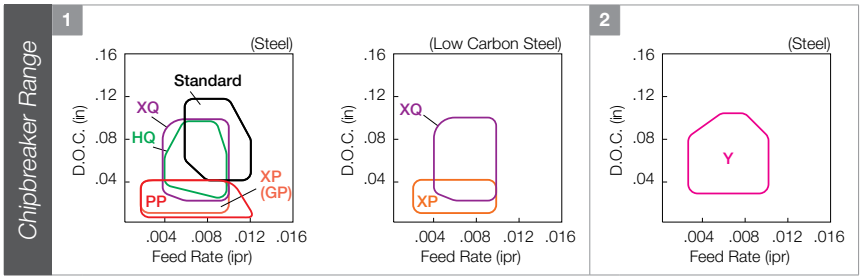
Part Number	IC	S	D1
CPMT2515_	5/16	3/32	0.130
CPMT32_	3/8	1/8	0.173

(in)

Part Number	IC	S	D1
CP_2515_	5/16	3/32	0.138
CP_32_	3/8	1/8	0.177



		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Toolholder Page	Chipbreaker Range
Finishing		CPMT	251505PP	080202PP	0.008	F49 F51	1
			25151PP	080204PP	1/64		
		CPMT	3205PP	090302PP	0.008		
			321PP	090304PP	1/64		
			322PP	090308PP	1/32		
Finishing		CPMT	25151GP	080204GP	1/64		
		CPMT	321GP	090304GP	1/64		
			322GP	090308GP	1/32		
Finishing-Medium		CPMH	25151HQ	080204HQ	1/64		
			25152HQ	080208HQ	1/32		
		CPMH	321HQ	090304HQ	1/64		
			322HQ	090308HQ	1/32		
Medium		CPMH	25151	080204	1/64		
			25152	080208	1/32		
		CPMH	321	090304	1/64		
			322	090308	1/32		
Finishing	Low Carbon Steel	CPMT	25151XP	080204XP	1/64		
		CPMT	321XP	090304XP	1/64		
			322XP	090308XP	1/32		
Finishing-Medium	Low Carbon Steel	CPMT	321XQ	090304XQ	1/64		
			322XQ	090308XQ	1/32		
Finishing-Medium		CPMH	25151R-Y	080204R-Y	1/64		2
			25151L-Y	080204L-Y	1/64		
			25152L-Y	080208L-Y	1/32		
		CPMH	321R-Y	090304R-Y	1/64		
			321L-Y	090304L-Y	1/64		
			322R-Y	090308R-Y	1/32		
			322L-Y	090308L-Y	1/32		
Cast Iron	Without Chipbreaker	CPMB	251505	080202	0.008		-
			25151	080204	1/64		
			25152	080208	1/32		
		CPMB	3205	090302	0.008		
			321	090304	1/64		
			322	090308	1/32		



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

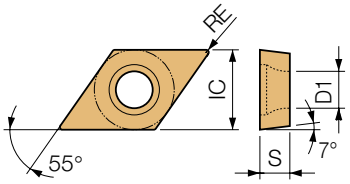
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173



		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Minute D.O.C.		DCGT 21505CF	070202CF	0.008																																				●									
		DCGT 32505CF	11T302CF	0.008																																				●									
		DCGT 21502M-CF	070201M-CF	<0.004																																						△								
			21505M-CF	070202M-CF	<0.008																																					△	△								
		DCGT 32502M-CF	11T301M-CF	<0.004																																					△	△								
	Sharp Edge		32505M-CF	11T302M-CF	<0.008																																					△	△								
Minute D.O.C.		DCGT 21502MP-CF	070201MP-CF	<0.004																											●	△	●					●				△			●	●				
			21505MP-CF	070202MP-CF	<0.008																										●	△	●					●				△			●	●				
		DCGT 32502MP-CF	11T301MP-CF	<0.004																										●	△	●					●				△			●	●				
	Sharp Edge / Polished		32505MP-CF	11T302MP-CF	<0.008																										●	△	●					●				△			●	●				
Finishing		DCGT 21502MF-GF	070201MF-GF	<0.004																																						△								
			21505MF-GF	070202MF-GF	<0.008																																					△								
		DCGT 32502MF-GF	11T301MF-GF	<0.004																																					△								
			32505MF-GF	11T302MF-GF	<0.008																																					△								
	Sharp Edge		3251MF-GF	11T304MF-GF	<1/64																																					△								
Finishing		DCGT 21502MFP-GF	070201MFP-GF	<0.004																											●	●	△	●					●				△								
			21505MFP-GF	070202MFP-GF	<0.008																											●	●	△	●					●				△								
			2151MFP-GF	070204MFP-GF	<1/64																											●	●	△	●					●												
		DCGT 32502MFP-GF	11T301MFP-GF	<0.004																											●	●	△	●					●				△								
	Sharp Edge / Polished		32505MFP-GF	11T302MFP-GF	<0.008																											●	●	△	●					●				△								
			3251MFP-GF	11T304MFP-GF	<1/64																											●	●	△	●					●				△								
Finishing	NEW	DCGT 215013MFP-SKS	0702005MFP-SKS	<0.002							●																					●	●						●											
			21502MFP-SKS	070201MFP-SKS	<0.004							●																					●	●						●											
			21505MFP-SKS	070202MFP-SKS	<0.008							●																					●	●						●											
		DCGT 325013MFP-SKS	11T3005MFP-SKS	<0.002							●																					●	●						●											
			32502MFP-SKS	11T301MFP-SKS	<0.004							●																					●	●						●											
	Sharp Edge / Polished		32505MFP-SKS	11T302MFP-SKS	<0.008							●																					●	●						●											
			3251MFP-SKS	11T304MFP-SKS	<1/64							●																					●	●						●											
Finishing-Medium		DCGT 21502MFP-SK	070201MFP-SK	<0.004							●																					●	●	△	●					●											
			21505MFP-SK	070202MFP-SK	<0.008							●																					●	●	△	●					●											
			2151MFP-SK	070204MFP-SK	<1/64							●																					●	●	△	●					●											
		DCGT 32502MFP-SK	11T301MFP-SK	<0.004							●																					●	●	△	●					●											
	Sharp Edge / Polished		32505MFP-SK	11T302MFP-SK	<0.008							●																					●	●	△	●					●											
			3251MFP-SK	11T304MFP-SK	<1/64							●																					●	●	△	●					●											
Finishing		DCGT 21502CK	070201CK	0.004																																				●									
			21505CK	070202CK	0.008																																				●									
		DCGT 32502CK	11T301CK	0.004																																				●									
			32505CK	11T302CK	0.008																																				●									
		DCGT 21502M-CK	070201M-CK	<0.004																																						△	△							
			21505M-CK	070202M-CK	<0.008																																						△	△							
		DCGT 32502M-CK	11T301M-CK	<0.004																																						△	△							
	Honed Edge		32505M-CK	11T302M-CK	<0.008																																						△	△							

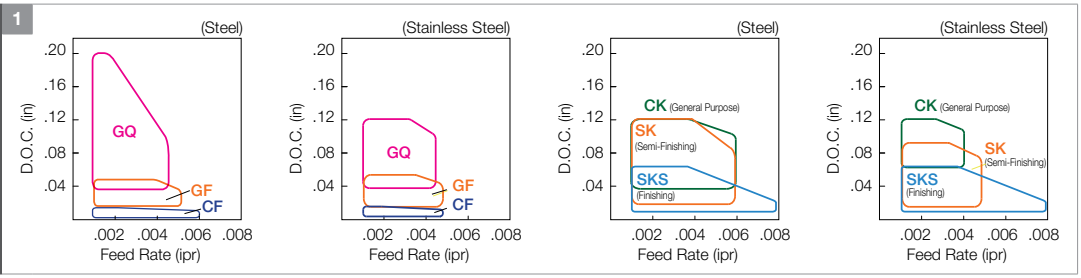
Reference Table Above

1

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1



Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

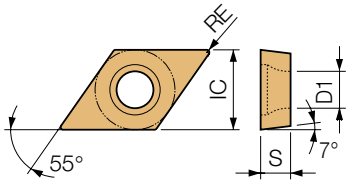
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173



				Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Toolholder Page	Chipbreaker Range
Finishing		DCGT	21502MP-CK		070201MP-CK	<0.004			
			21505MP-CK		070202MP-CK	<0.008			
		DCGT	32502MP-CK		11T301MP-CK	<0.004			
			32505MP-CK	Sharp Edge / Polished	11T302MP-CK	<0.008			
Finishing-Medium		DCGT	21502MF-GQ		070201MF-GQ	<0.004			
			21505MF-GQ		070202MF-GQ	<0.008			
			2151MF-GQ		070204MF-GQ	<1/64			
		DCGT	32502MF-GQ		11T301MF-GQ	<0.004			B62
			32505MF-GQ		11T302MF-GQ	<0.008			1
			3251MF-GQ	Sharp Edge	11T304MF-GQ	<1/64			
Finishing-Medium		DCGT	21502MFP-GQ		070201MFP-GQ	<0.004			
			21505MFP-GQ		070202MFP-GQ	<0.008			
			2151MFP-GQ		070204MFP-GQ	<1/64			
		DCGT	32502MFP-GQ		11T301MFP-GQ	<0.004			
			32505MFP-GQ		11T302MFP-GQ	<0.008			
			3251MFP-GQ	Sharp Edge / Polished	11T304MFP-GQ	<1/64			
Finishing		DCMX	21505WP		070202WP	0.008		Reference Table Above	
			2151WP		070204WP	1/64			
			2152WP		070208WP	1/32			
		DCMX	32505WP		11T302WP	0.008			
			3251WP		11T304WP	1/64			
			3252WP	Wiper Edge	11T308WP	1/32			
Finishing	NEW	DCMX	2151R-WP		070204R-WP	1/64			
			2151L-WP		070204L-WP	1/64			
		DCMX	3251R-WP		11T304R-WP	1/64			
			3251L-WP	Wiper Edge	11T304L-WP	1/64			1
Finishing		DCMT	21505PP		070202PP	0.008			
			2151PP		070204PP	1/64			
		DCMT	32505PP		11T302PP	0.008			
			3251PP		11T304PP	1/64			
			3252PP		11T308PP	1/32			
Finishing		DCMT	21505GP		070202GP	0.008			
			2151GP		070204GP	1/64			
		DCMT	3251GP		11T304GP	1/64			
			3252GP		11T308GP	1/32			

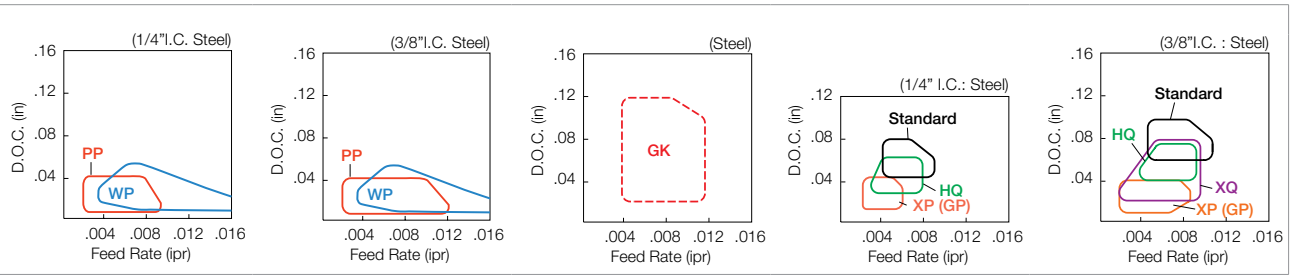
	Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide														MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide			DLC		Carbide	
	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05
P		●	●		●	●	●	◔		○	●	●	◔	✖		◔											●		◔						●		◔	◔		◔	◔		
M																											◔	◔						●	◔		◔					
K																																										
N																																								●	●	◔	
S																																		●							◔	
H																																										
		Cermet		CVD Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide														MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide			DLC		Carbide	

Free-Cutting Steel
Carbon/Alloy Steel
Stainless Steel
Gray Cast Iron
Nodular Cast Iron
Non-ferrous Metals
HRSA
Titanium Alloy
Hard materials

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

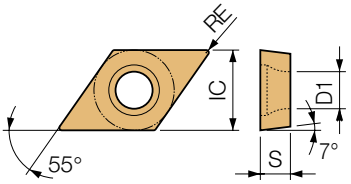
55° Diamond

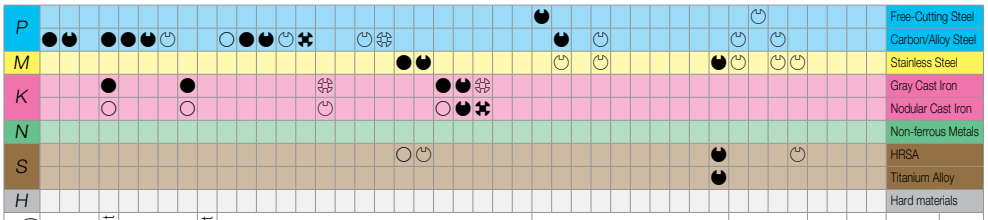
Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173

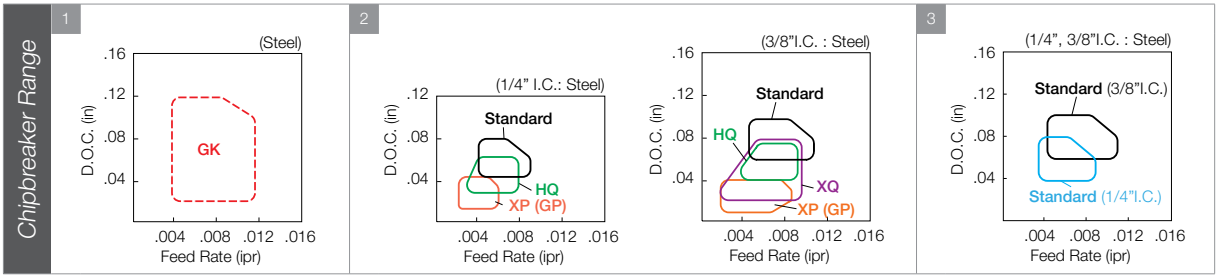




		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing-Medium	DCMT	21505GK	070202GK	0.008	●	●		●	●	●	●			△	●	●	●	●	●	●		●	●							●	△							●	●	△	△							Reference Table Above	1
		2151GK	070204GK	1/64	●	●		●	●	●	●			△	●	●	●	●	●	●		●	●				●	●		●	△							●	●	△	△								
		2152GK	070208GK	1/32	●	●		●	●	●	●			△	●	●	●	●	●	●		●	●				●	●		●	△							●	●	△	△								
	DCMT	32505GK	11T302GK	0.008	●	●		●	●	●	●			△	●	●	●	●	●	●	△	●	●							●	△							●	●	△	△								
		3251GK	11T304GK	1/64	●	●		●	●	●	●			●	●	●	●	●	●	●	●	●	●				●			●	△							●	●	△	△								
		3252GK	11T308GK	1/32	●	●		●	●	●	●			●	●	●	●	●	●	●	●	●	●				●			●	△							●	●	△	△								
Finishing-Medium	DCMT	21505HQ	070202HQ	0.008	●	●	●	●	●	●	●		△	△	●	●	●	●	●	●										●	△							●	●		△								2
		2151HQ	070204HQ	1/64	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							●	△							●	●		△	△							
		2152HQ	070208HQ	1/32	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●							●	△							●	●		△	△							
	DCMT	32505HQ	11T302HQ	0.008	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●							●	△							●	●		△	△							
		3251HQ	11T304HQ	1/64	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							●	△							●	●		△	△							
		3252HQ	11T308HQ	1/32	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●							●	△							●	●		△	△							
Medium	DCGT	21502	070201	0.004	●	●	●		●	●	●	●																										●										3
		21505	070202	0.008	●	●	●		●	●	●	●																										●										
		2151	070204	1/64	●	●	●		●	●	●	●																										●										
	DCGT	32502	11T301	0.004	●	●	●		●	●	●	●																										●										
		32505	11T302	0.008	●	●	●		●	●	●	●																										●										
		3251	11T304	1/64	●	●	●		●	●	●	●																										●										
	DCMT	3252	11T308	1/32	●	●	●	●	●	●	●	●	△					●							●	●	●	●	●	●								●		△								
	DCGT	21501M	0702005M	<0.002																											△									△								
		21502M	070201M	<0.004																										●	△									△								
		21505M	070202M	<0.008																										●	△									△								
		2151M	070204M	<1/64																										●	△									△								
	DCGT	32501M	11T3005M	<0.002																											△									△								
		32502M	11T301M	<0.004																										●	△									△								
		32505M	11T302M	<0.008																										●	△									△								
		3251M	11T304M	<1/64																										●	△									△								
Medium	DCGT	215013MF	0702005MF	<0.002																										●	△	●							●									
		21502MF	070201MF	<0.004																										●	●	△	●							●	△	△							
		21505MF	070202MF	<0.008																										●	●	△	●							●	△	△							
		2151MF	070204MF	<1/64																										●	●	△	●							●	△	△							
	DCGT	325013MF	11T3005MF	<0.002																											●	△	●							●									
		32502MF	11T301MF	<0.004																										●	●	△	●							●	△	△							
		32505MF	11T302MF	<0.008																										●	●	△	●							●	△	△							
Sharp Edge		3251MF	11T304MF	<1/64																										●	●	△	●							●	△	△							
Medium	DCGT	21505FN-Z	070202FN-Z	0.008		●																																									-
		2151FN-Z	070204FN-Z	1/64		●																																									
	DCGT	32505FN-Z	11T302FN-Z	0.008		●																																									
Sharp Edge		3251FN-Z	11T304FN-Z	1/64		●																																									

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

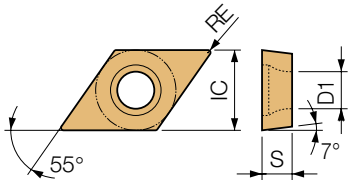
55° Diamond

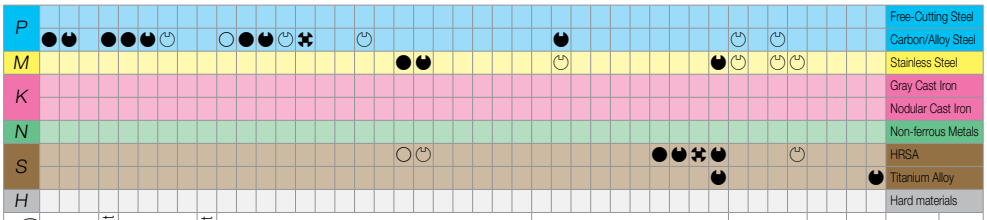
Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173

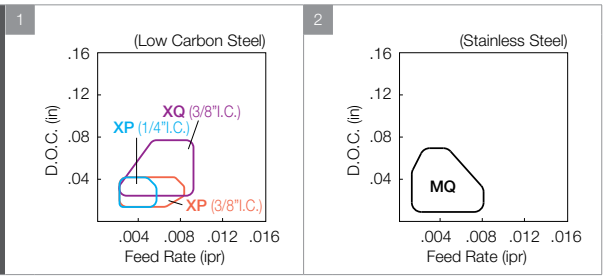




		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing		DCMT	2151XP	070204XP	1/64	●	●		●	●	●	●		△	△	●	●	●	△		●	●									●	△							●	●		△						Reference Table Above	1
		DCMT	32505XP	11T302XP	0.008	●	●		●	●	●	●		△	△	●	●	●	△		●	●									●	△							●	●		△							
			3251XP	11T304XP	1/64	●	●		●	●	●	●		●	●	●	●	●	●		●	●									●	△							●	●		△							
	Low Carbon Steel		3252XP	11T308XP	1/32	●	●		●	●	●	●		●	△	●	●	●	●		●	●									●	△							●	●		△							
Finishing-Medium		DCMT	3251XQ	11T304XQ	1/64	●	●		●	●	●	●		●	●	●	●	●	●		●	●																											
	Low Carbon Steel		3252XQ	11T308XQ	1/32	●	●		●	●	●	●		●	●	●	●	●	●		●	●																											
Finishing-Medium		DCMT	21505MQ	070202MQ	0.008																		●	●											△	△	△	●			●			●		Reference Table Above	2
			2151MQ	070204MQ	1/64																		●	●											△	△	△	●			●			●			
		DCMT	32505MQ	11T302MQ	0.008																		●	●														●			●			●			
			3251MQ	11T304MQ	1/64																		●	●											△	△	△	●			●			●			
	Stainless Steel / HRSA		3252MQ	11T308MQ	1/32																		●	●											△	△	△	●			●			●			

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

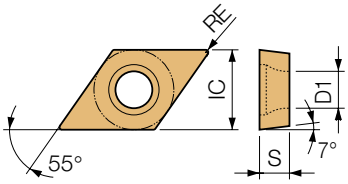
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173



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How to read this page ➔ B15

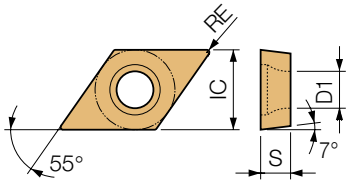
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173



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How to read this page ➔ B15

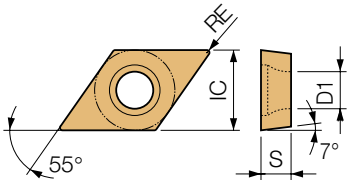
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173



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How to read this page ➔ B15

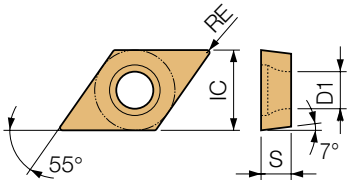
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173



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How to read this page ➔ B15

55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
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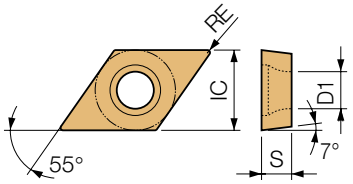
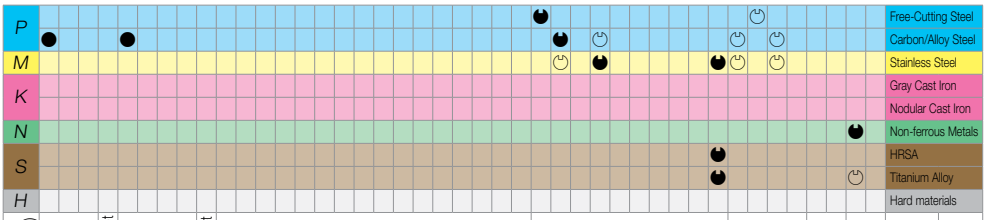
(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173





			ANSI	ISO		Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide			DLC			Carbide		Toolholder Page	Chipbreaker Range
	Left-Hand Shown where Applicable		Part Number	Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Low Feed	Super Fine	DCET	32501FR-JSF	11T3003FR-JSF	0.001																																			●									
			32501FL-JSF	11T3003FL-JSF	0.001																																			●									
			32502FR-JSF	11T301FR-JSF	0.004																																			●									
			32502FL-JSF	11T301FL-JSF	0.004																																			●									
			32505FR-JSF	11T302FR-JSF	0.008																																			●									
			32505FL-JSF	11T302FL-JSF	0.008																																			●									
		DCET	325013MFR-JSF	11T3005MFR-JSF	<0.002																													●															
			325013MFL-JSF	11T3005MFL-JSF	<0.002																													●															
			32502MFR-JSF	11T301MFR-JSF	<0.004																													●											△			
			32502MFL-JSF	11T301MFL-JSF	<0.004																													●															
			32505MFR-JSF	11T302MFR-JSF	<0.008																													●											△			
	Sharp Edge / Precision		32505MFL-JSF	11T302MFL-JSF	<0.008																													●											△			
Low Feed		DCET	215013MFR-J	0702005MFR-J	<0.002																											●	△	●						●									
			21502MFR-J	070201MFR-J	<0.004																											●	△	●						●									
			21502MFL-J	070201MFL-J	<0.004																											●	△							●									
			21505MFR-J	070202MFR-J	<0.008																											●	△	●						●									
			21505MFL-J	070202MFL-J	<0.008																											●	△	●						●									
		DCET	325013MFR-J	11T3005MFR-J	<0.002																											●	△							●									
			32502MFR-J	11T301MFR-J	<0.004	●				●																						●	●	△						●									
			32502MFL-J	11T301MFL-J	<0.004	●				●																						●	●	△						●									
			32505MFR-J	11T302MFR-J	<0.008	●				●																						●	●	△						●									
			32505MFL-J	11T302MFL-J	<0.008	●				●																						●	●	△						●									
	Sharp Edge		3251MFR-J	11T304MFR-J	<1/64																											●	●	△						●									
Low Feed		DCGT	32501FR-J	11T3003FR-J	0.001																																			●									
			32505FR-J	11T302FR-J	0.008			●																																	●							●		
			32505FL-J	11T302FL-J	0.008			●																																	●							●		
		DCGT	325013MFR-J	11T3005MFR-J	<0.002																													●															
			325013MFL-J	11T3005MFL-J	<0.002																													●															
			32502MFR-J	11T301MFR-J	<0.004																													●											△	△			
			32502MFL-J	11T301MFL-J	<0.004																													●															
			32505MFR-J	11T302MFR-J	<0.008																													●											△	△			
			32505MFL-J	11T302MFL-J	<0.008																													●												△			
			3251MFR-J	11T304MFR-J	<1/64																													●											△	△			
	Sharp Edge		3251MFL-J	11T304MFL-J	<1/64																													●											△	△			

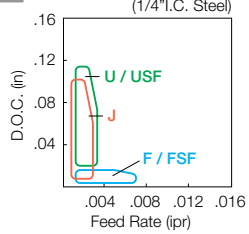
Reference Table Above

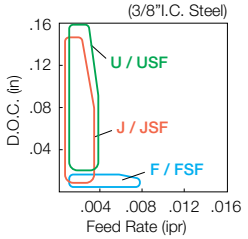
1

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1





KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

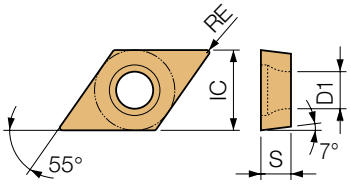
55° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
DC..215	E26~E27, E30~E31, E42, E48, F53~F57
DC..325	E22, E26~E31, E42, E48, F53~F57, F83

(in)

Part Number	IC	S	D1
DC_215_	1/4	3/32	0.110
DC_325_	3/8	5/32	0.173

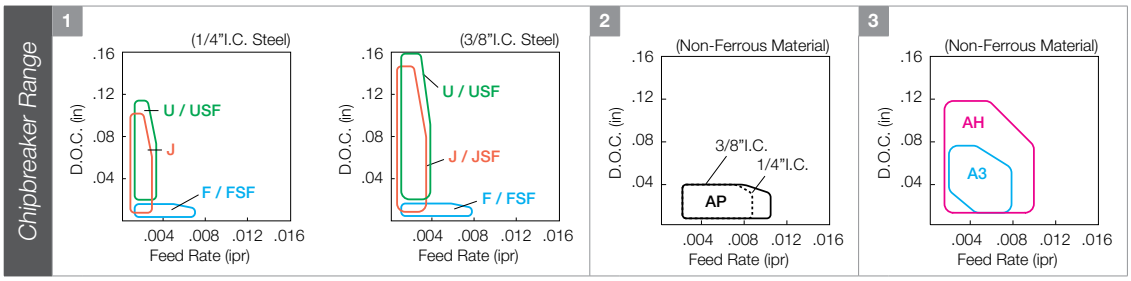


						Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide																			MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide			DLC		Carbide	Toolholder Page	Chipbreaker Range
		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number		RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Low Feed			DCGT	32501ER-J	11T3003ER-J	0.001																																				●					△		
				32502ER-J	11T301ER-J	0.004	●	●	●		●	●	●																													●							
				32502EL-J	11T301EL-J	0.004	●				●																																●							
				32505ER-J	11T302ER-J	0.008	●	●	●		●	●	●																														●					●		
				32505EL-J	11T302EL-J	0.008	●		●		●																																●							
				3251ER-J	11T304ER-J	1/64	●	●	●		●	●	●																														●					●		1
				3251EL-J	11T304EL-J	1/64	●	●	●		●	●	●																														●					●		
			DCGT	325013MER-J	11T3005MER-J	<0.002																											●															
				32502MER-J	11T301MER-J	<0.004																											●											△				
				32505MER-J	11T302MER-J	<0.008																											●											△				
				3251MER-J	11T304MER-J	<1/64																											●											△				
		Honed Edge		3251MEL-J	11T304MEL-J	<1/64																											●											△				
Medium-Finishing			DCGT	21505AP	070202AP	0.008																																						●		●			
				2151AP	070204AP	1/64																																							●		●			
			DCGT	32505AP	11T302AP	0.008																																						●		●			2
				3251AP	11T304AP	1/64																																							●		●			
		Sharp Edge / Polished		3252AP	11T308AP	1/32																																						●		●			
Medium-Finishing			DCGT	21505R-A3	070202R-A3	0.008																																									●		
			DCGT	32505R-A3	11T302R-A3	0.008																																						●		●	●		
				32505L-A3	11T302L-A3	0.008																																						●		●	●		
				3251R-A3	11T304R-A3	1/64																																						●		●	●		
				3251L-A3	11T304L-A3	1/64																																						●		●	●		
		Sharp Edge / Non-ferrous Metals		3252R-A3	11T308R-A3	1/32																																						●		●			3
				3252L-A3	11T308L-A3	1/32																																						●		●			
Medium-Finishing			DCGT	3251AH	11T304AH	1/64																																						●		●	●		
		Sharp Edge / Non-ferrous Metals		3252AH	11T308AH	1/32																																						●		●	●		
Cast Iron			DCGW	21502	070201	0.004																																								●		
				21505	070202	0.008																																								●		
			DCGW	32502	11T301	0.004																																								●		-
				32505	11T302	0.008																																								●		
		Without Chipbreaker		3251	11T304	1/64																																								●		

Reference Table Above

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

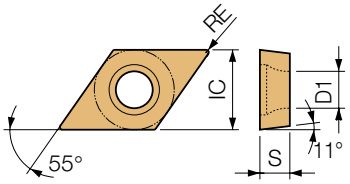
How to read this page B15

55° Diamond

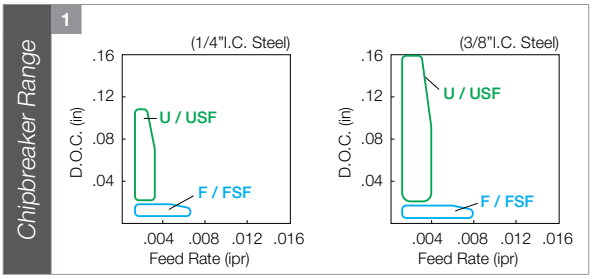
Positive Insert with Hole

(in)

Part Number	IC	S	D1
DP_215_	1/4	3/32	0.110
DP_325_	3/8	5/32	0.173



						Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide		DLC			Carbide	Toolholder Page	Chipbreaker Range
		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number		RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
							TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	E32	1
Finishing	Super Fine	DPET	21501R-FSF	0702003R-FSF		0.001																																			●									
			21502R-FSF	070201R-FSF		0.004																																			●									
			21505R-FSF	070202R-FSF		0.008																																			●									
			21505L-FSF	070202L-FSF		0.008																																			●									
		DPET	32501R-FSF	11T3003R-FSF		0.001																																			●									
			32502R-FSF	11T301R-FSF		0.004																																			●									
			32505R-FSF	11T302R-FSF		0.008			●																																	●									
			32505L-FSF	11T302L-FSF		0.008			●																																	●									
		DPET	21505MR-FSF	070202MR-FSF		<0.008																											●											△							
			21505ML-FSF	070202ML-FSF		<0.008																											●											△							
		DPET	325013MR-FSF	11T305MR-FSF		<0.002																											●																		
			32502MR-FSF	11T301MR-FSF		<0.004																											●											△							
	Sharp Edge / Precision		32505MR-FSF	11T302MR-FSF		<0.008																											●											△							
Low Feed	Super Fine	DPET	21501FR-USF	0702003FR-USF		0.001																																			●									
			21502FR-USF	070201FR-USF		0.004																																			●									
			21502FL-USF	070201FL-USF		0.004																																			●									
			21505FR-USF	070202FR-USF		0.008																																			●									
			21505FL-USF	070202FL-USF		0.008																																			●									
		DPET	32501FR-USF	11T3003FR-USF		0.001																																			●									
			32502FR-USF	11T301FR-USF		0.004																																			●									
			32502FL-USF	11T301FL-USF		0.004																																			●									
			32505FR-USF	11T302FR-USF		0.008			●																																	●									
			32505FL-USF	11T302FL-USF		0.008			●																																	●									
		DPET	215013MFR-USF	0702005MFR-USF		<0.002																											●																		
			21502MFR-USF	070201MFR-USF		<0.004																											●											○							
			21505MFR-USF	070202MFR-USF		<0.008																											●											○							
		DPET	325013MFR-USF	11T3005MFR-USF		<0.002																											●																		
			32502MFR-USF	11T301MFR-USF		<0.004																											●											○							
	Sharp Edge / Precision		32505MFR-USF	11T302MFR-USF		<0.008																											●											○							

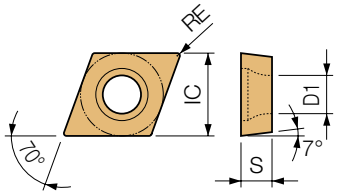


● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

70° Diamond

Positive Insert with Hole



(in)

Part Number	IC	S	D1
JC_1109_	0.138	0.055	0.075

| | | |

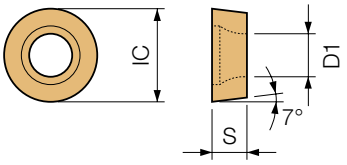
How to read this page ➔ B15

Round

Positive Insert with Hole

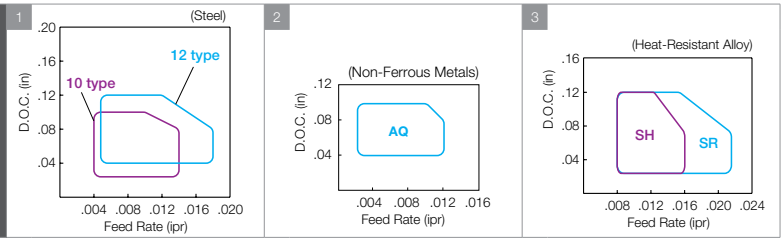
Part Number	IC (in)	S (in)	D1 (in)
RC_1003_	0.394	1/8	0.142
RC_1204_	0.472	3/16	0.165

Part Number	IC (in)	S (in)	D1 (in)
RCMT43..	0.500	3/16	0.173



		ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet			CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide														MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide				DLC		Carbide		Toolholder Page	Chipbreaker Range
						TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR1515	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	GW15		
Medium		RCMX	1003M0	1003M0	-		●	●			●	●			●	●	●	●	●		●	●			●																							
		RCMX	1204M0	1204M0	-		●	●			●	●			●	●	●	●	●		△	●			●	●	●	●	△	●																				D23	1
Finishing-Medium	Non-ferrous Metals	RCGX	1003M0-AQ	1003M0-AQ	-																																							●			2
Finishing-Medium		RCMT	43SR	120400SR	-																																		●						●	-	3
		RCMT	43SH	120400SH	-																																		●								

Chipbreaker Range



*Chipbreaker shape of RCMX... varies by grade (cermet / PVD coated cermet / CVD coated carbide)

Inserts sold in 10 piece boxes.

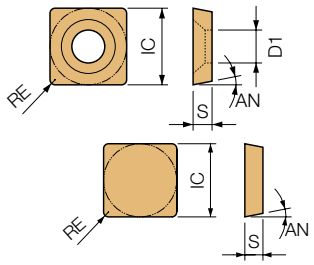
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

90° Square
Positive Insert

Part Number	IC	S	D1 (in)	AN
SC_325_	3/8	5/32	0.173	7°
SPGH32_	3/8	1/8	0.177	11°

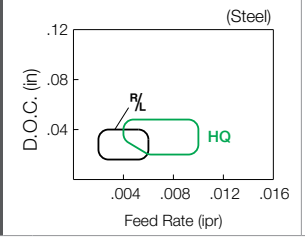
Part Number	IC	S	D1 (in)	AN
SP_32_	3/8	1/8	-	
SP_42_	1/2	1/8	-	11°
SP_43_	1/2	3/16	-	



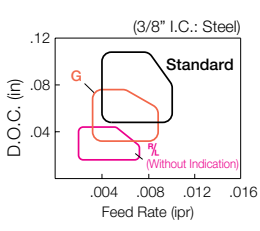
	Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet		PVD Cermet	CVD Coated Carbide												MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide			DLC		Carbide		Toolholder Page	Chipbreaker Range
	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
P		●	●			●	●	◔			○	●	●	◔	✱		◔	✲																							Free-Cutting Steel
P		●	●			●	●	◔			○	●	●	◔	✱		◔	✲																							Carbon/Alloy Steel
M																					●															◔				Stainless Steel
K								●								✲						●	●	✲															✲		Gray Cast Iron
K								○								◔						○	●	✱																	Nodular Cast Iron
N																																						●		Non-ferrous Metals
S																					◔															◔				HRSA
S																																						●		Titanium Alloy
H																																								Hard materials
Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number																																						
Finishing-Medium	SCMT	3251HQ	09T304HQ	1/64	●	●	●		●	●	●		●	●	●	●	●		●	●	●																		-	1
		3252HQ	09T308HQ	1/32	●	●	●		●	●	●		△	●	●	●	●		●	●	●																			
Finishing	SPGH	321L	090304L	1/64			●																																	
Medium	SPMR	321G	090304G	1/64		●	●			●	●		●																											
		322G	090308G	1/32		●	●			●	●		△																											
	SPMR	421G	120304G	1/64		●	●			●	●		△																											
		422G	120308G	1/32		●	●			●	●		△																											
Medium	SPMR	321	090304	1/64									●	●	●		●	●			●															△				
		322	090308	1/32			●						●	●	●		●	●			●															△				
	SPMR	421	120304	1/64									●	●	●	●	●	●			●															△				2
		422	120308	1/32									●	●	●	△	●	●			●															△				
Finishing	SPGR	321R	090304R	1/64	●	●	●		●	●																														
		321L	090304L	1/64	●	●	●		●	●																														
		322R	090308R	1/32	●	●	●		●	●																														
		322L	090308L	1/32	●	●	●		●	●																														
	SPGR	421R	120304R	1/64	●	●	●		●	●																														
		421L	120304L	1/64	●	●	●		●	●																														
		422R	120308R	1/32	●	●	●		●	●	△																													
		422L	120308L	1/32	●	●	●		●	●	△																													
Cast Iron	SPG	321	090304	1/64																																			●	
		322	090308	1/32	●																																		●	
	SPG	421	120304	1/64							△																												●	
		422	120308	1/32		●	●				●																												●	
	SPM	421	120304	1/64												△						●	●	●	●															-
		422	120308	1/32	●	●	●		●	●						●						●	●	●	●														●	
		423	120312	3/64	●	●	●		●	●												●	●	●															
Without Chipbreaker	SPM	432	120408	1/32																		●	●	●	●														
		433	120412	3/64																		●	●	●															

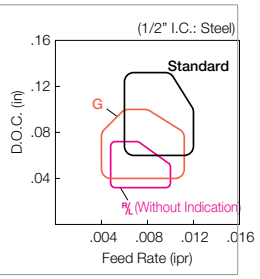
Chipbreaker Range

1



2





● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

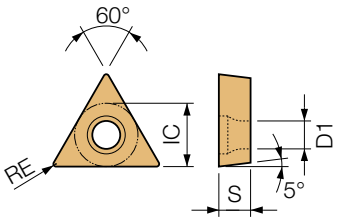
How to read this page ➔ B15

(in)

Part Number	IC	S	D1
TB_121_	5/32	1/16	0.091

60° Triangle

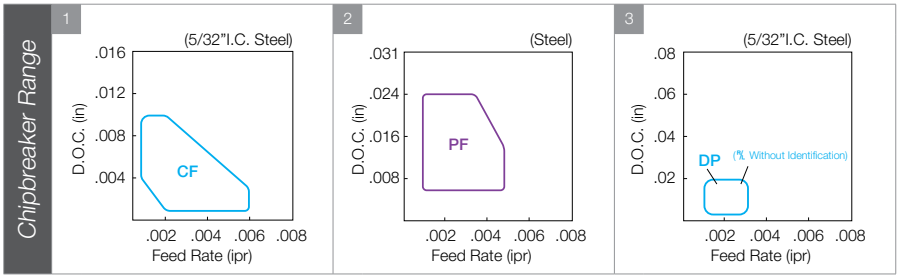
Positive Insert with Hole



						Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide											PVD Coated Carbide			DLC			Carbide	Toolholder Page	Chipbreaker Range
			ANSI Part Number	ISO Part Number		RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Minute D.O.C.	Sharp Edge	TBGT	12105CF	060102CF		0.008																																			●								F28 F61 F63 F65	1
		TBGT	12102M-CF	060101M-CF		<0.004																																				△									
			12105M-CF	060102M-CF		<0.008																																				△	△								
Minute D.O.C.	Sharp Edge / Polished	TBGT	12102MP-CF	060101MP-CF		<0.004																											●	△	●						●											
			12105MP-CF	060102MP-CF		<0.008																										●	●	△	●						●			△							
Finishing	Sharp Edge / Polished	TBGT	12102MFP-PF	060101MFP-PF		<0.004																											●	△							●										
			12105MFP-PF	060102MFP-PF		<0.008																											●	△							●										
			1211MFP-PF	060104MFP-PF		<1/64																											●	△							●										
Finishing		TBMT	12105DP	060102DP		0.008	●	●	●	●	●	●	●			●	●	●	●	●			●	●																											
			1211DP	060104DP		1/64	●	●	●	●	●	●	●			●	●	●	●	●			●	●																			●									
Finishing		TBET	12013MR	0601005MR		<0.002																											●	△							●										
			12013ML	0601005ML		<0.002																											●	△							●										
			12102MR	060101MR		<0.004																											●	△							●										
			12102ML	060101ML		<0.004																											●	△							●										
			12105MR	060102MR		<0.008																											●	△							●										
			12105ML	060102ML		<0.008																										●	●	△							●										
			1211MR	060104MR		<1/64																										●	●	△							●										
			1211ML	060104ML		<1/64																										●	●	△							●										
		TBGT	12101L	0601003L		0.001																																			●									
			12102R	060101R		0.004																																			●						●			
			12102L	060101L		0.004			●																																	●						●			
			12105R	060102R		0.008	●	●	●		●	●	●		△																											●						●			
			12105L	060102L		0.008	●	●	●		●	●	●		△																											●						●			
			1211R	060104R		1/64	●	●	●		●	●	●																													●						●			
			1211L	060104L		1/64	●	●	●		●	●	●		△																											●						●			
		TBGT	121013ML	0601005ML		<0.002																																				△								
			12102ML	060101ML		<0.004																																				△								
			12105MR	060102MR		<0.008																																				△								
			12105ML	060102ML		<0.008																																				△	△							
			1211MR	060104MR		<1/64																																				△	△							
			1211ML	060104ML		<1/64																																				△	△							
Cast Iron	Without Chipbreaker	TBGW	12105	060102		0.008			●																																							●			-
			1211	060104		1/64			●																																							●			

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



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Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

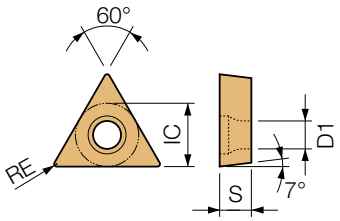
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page B15

60° Triangle

Positive Insert with Hole

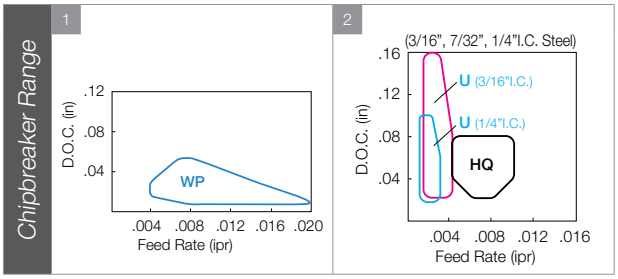
Part Number	IC	S	D1 (in)
TC_1515_	3/16	3/32	0.091
TC_1815_	7/32	3/32	0.098
TC_215_	1/4	3/32	0.110
TC_325_	3/8	5/32	0.173



	Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Corner Radius (in)	Cermet	CVD Cermet	MEGA COAT Cermet	PVD Cermet	CVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	PVD Coated Carbide	DLC	Carbide	Toolholder Page	Chipbreaker Range
						TN610 TN620 TN60 CCX PV710 PV720 PV730 PV7005	PV90 CA510 CA515 CA025P CA525 CA530 CA5505 CA5515 CA5525 CA5535 CA6515 CA6525 CA310 CA315 CA320 CA4505 CA4515	PR1705 PR1725 PR1425 PR1225 PR005S PR015S PR1305 PR1310 PR1325 PR1535	PR930 PR1005 PR1025 PR1125	PDL010 PDL025	KW10 SW05		
Finishing	Wiper Edge	TCMX	18151WP	090204WP	1/64	●● ●●	●●●●●●	●△●								1
		TCMX	2151WP	110204WP	1/64	●● ●●	●●●●●●	●△●								
Finishing-Medium		TCMT	181505HQ	090202HQ	0.008	●●●●●●●	●● ●								F59	
			18151HQ	090204HQ	1/64	●●●●●●●	●● ●									
		TCMT	21505HQ	110202HQ	0.008	●●●●●●●										
			2151HQ	110204HQ	1/64	●●●●●●●	●●●●●● ●●●	●●● ●	●		●			●		
			2152HQ	110208HQ	1/32	●●●●●●●	●△●●●● ●●●	●●● ●						●		
		TCMT	3251HQ	16T304HQ	1/64	●●● ●●	●●● ●● ●●							●	-	
			3252HQ	16T308HQ	1/32	●●● ●●	●●● ●● ●●	●●● ●								
			3253HQ	16T312HQ	3/64	●	●● ●	●●● ●								
Low Feed	Super Fine	TCET	151501FR-USF	0802003FR-USF	0.001							●			E33	2
			151501FL-USF	0802003FL-USF	0.001							●				
			151502FR-USF	080201FR-USF	0.004							●				
			151505FR-USF	080202FR-USF	0.008							●				
		TCET	2201FR-USF	1103003FR-USF	0.001							●				
			2201FL-USF	1103003FL-USF	0.001							●				
			2202FR-USF	110301FR-USF	0.004		●					●				
			2202FL-USF	110301FL-USF	0.004							●				
			2205FR-USF	110302FR-USF	0.008		●					●				
			2205FL-USF	110302FL-USF	0.008							●				
		TCET	22013MFR-USF	1103005MFR-USF	<0.002						●		△			
			2202MFR-USF	110301MFR-USF	<0.004						●		△			
	Sharp Edge / Precision		2205MFR-USF	110302MFR-USF	<0.008						●		△			

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

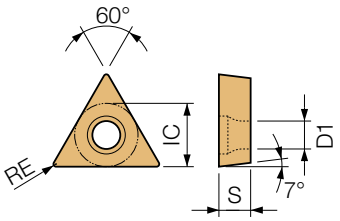
How to read this page ➔ B15

60° Triangle

Positive Insert with Hole

(in)

Part Number	IC	S	D1
TC_1515_	3/16	3/32	0.091
TC_22_	1/4	1/8	0.110



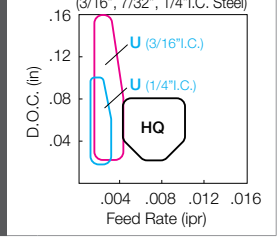
		Free-Cutting Steel	Carbon/Alloy Steel	Stainless Steel	Gray Cast Iron	Nodular Cast Iron	Non-ferrous Metals	HRSA	Titanium Alloy	Hard materials
P				○				○	●	
M				●				○	○	
K										
N							●			
S									●	
H										

						Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide			DLC		Carbide	Toolholder Page	Chipbreaker Range
	Left-Hand Shown where Applicable		ANSI Part Number	ISO Part Number		RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Low Feed		TCGT	151501FR-U	0802003FR-U		0.001																																			△							
			151502FR-U	080201FR-U		0.004			●																																	●						△	
			151502FL-U	080201FL-U		0.004			●																																	●							
			151505FR-U	080202FR-U		0.008			●																																	●						●	
			151505FL-U	080202FL-U		0.008			●																																	●						●	
		TCGT	2201FR-U	1103003FR-U		0.001																																			●						●	
			2202FR-U	110301FR-U		0.004			●																																	●						●	
			2202FL-U	110301FL-U		0.004			●																																	●						●	
			2205FR-U	110302FR-U		0.008			●																																	●						●	
			2205FL-U	110302FL-U		0.008			●																																	●						●	
		TCGT	151502MFR-U	080201MFR-U		<0.004																												●															
			151505MFR-U	080202MFR-U		<0.008																												●															
			151505MFL-U	080202MFL-U		<0.008																												●															
		TCGT	22013MFR-U	1103005MFR-U		<0.002																												●														△	
			22013MFL-U	1103005MFL-U		<0.002																												●															
			2202MFR-U	110301MFR-U		<0.004																												●														△	
			2202MFL-U	110301MFL-U		<0.004																												●															
			2205MFR-U	110302MFR-U		<0.008																												●														△	
			2205MFL-U	110302MFL-U		<0.008																												●														△	
			221MFR-U	110304MFR-U		<1/64																												●														△	
	Sharp Edge		221MFL-U	110304MFL-U		<1/64																												●														△	
Low Feed		TCGT	151505ER-U	080202ER-U		0.008			●																																	●							
			151505EL-U	080202EL-U		0.008			●																																	●							
		TCGT	2202ER-U	110301ER-U		0.004			●																																								
			2205ER-U	110302ER-U		0.008			●																																	●							
			2205EL-U	110302EL-U		0.008			●																																	●							
			221ER-U	110304ER-U		1/64			●																																	●							
			221EL-U	110304EL-U		1/64			●																																	●							
		TCGT	151505MER-U	080202MER-U		<0.008																										●															△	
		TCGT	2205MER-U	110302MER-U		<0.008																										●															△	
			2205MEL-U	110302MEL-U		<0.008																										●															△	
	Honed Edge		221MER-U	110304MER-U		<1/64																										●															△	

E33 | 1

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range 1



Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

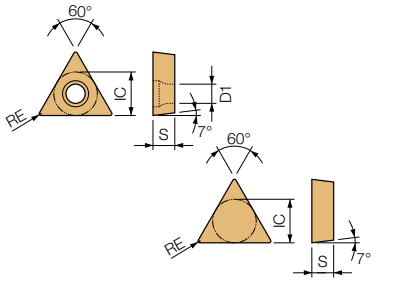
How to read this page ➔ B15

60° Triangle

Positive Insert

Part Number	IC	S	D1 (in)
TCG_121_	5/32	1/16	-
TC_1515_	3/16	3/32	0.091

Part Number	IC	S	D1 (in)
TC_215_	1/4	3/32	0.110
TC_22_	1/4	1/8	0.110



| | | | | | | Corner Radius (in) | Cermet | | CVD Cermet | MEGA COAT Cermet | | PVD Cermet | CVD Coated Carbide | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | MEGACOAT / MEGACOAT NANO PVD Coated Carbide | | | | | | | | | | | | | | PVD Coated Carbide | | | | | DLC | | Carbide | | | Toolholder Page | Chipbreaker Range |
|---|---|---|---

How to read this page B15

60° Triangle

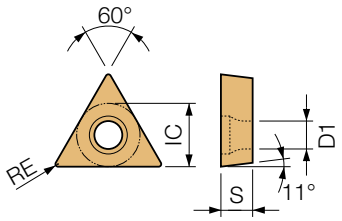
Positive Insert with Hole

(in)

Part Number	IC	S	D1
TP_1515_	3/16	3/32	0.091
TPMT1815_	7/32	3/32	0.110

(in)

Part Number	IC	S	D1
TP_1815_	7/32	3/32	0.118
TP_22_	1/4	1/8	0.130
TPMT32_	3/8	1/8	0.173



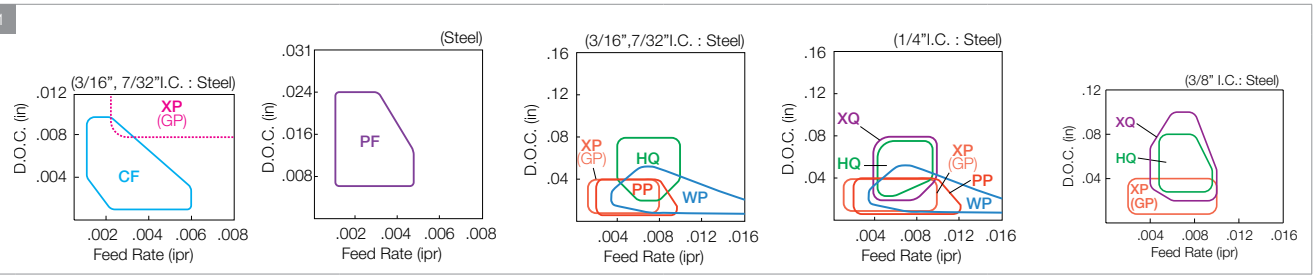
		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
			Corner Radius (in)	Cermet				CVD Cermet	MEGA COAT Cermet				PVD Cermet	CVD Coated Carbide																	MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide			DLC		Carbide			
Minute D.O.C.	Sharp Edge	TPGT	151505CF	080202CF	0.008																																		●									Reference Table Below	1
		TPGT	181505CF	090202CF	0.008																																		●										
		TPGT	151502M-CF	080201M-CF	<0.004																																				△									
			151505M-CF	080202M-CF	<0.008																																				△	△								
		TPGT	181502M-CF	090201M-CF	<0.004																																				△									
			181505M-CF	090202M-CF	<0.008																																				△	△								
Minute D.O.C.	Sharp Edge / Polished	TPGT	151502MP-CF	080201MP-CF	<0.004																																		●	△	●									
			151505MP-CF	080202MP-CF	<0.008																																		●	●	△	●									
		TPGT	181502MP-CF	090201MP-CF	<0.004																																				●	△	●									
			181505MP-CF	090202MP-CF	<0.008																																				●	●	△	●									
Finishing	Sharp Edge / Polished	TPGT	181502MFP-PF	090201MFP-PF	<0.004																																				●	△									
			181505MFP-PF	090202MFP-PF	<0.008																																				●	△									
			18151MFP-PF	090204MFP-PF	<1/64																																				●	△									
Finishing	Wiper Edge	TPMX	181505WP	090202WP	0.008	●	●			●	●				●	●	●	●	●																							●	△	●								
			18151WP	090204WP	1/64	●	●			●	●				●	●	●	●	●																							●	△	●								
			18152WP	090208WP	1/32	●	●			●	●				●	●	●	●	●																							●	△	●								
		TPMX	2205WP	110302WP	0.008	●	●			●	●				●	●	●	●	●																							●	△	●								
			221WP	110304WP	1/64	●	●			●	●				●	●	●	●	●																							●	△	●								
			222WP	110308WP	1/32	●	●			●	●				●	●	●	●	●																							●	△	●								
Finishing	NEW Wiper Edge	TPMX	221R-WP	110304R-WP	1/64																																				●										
			221L-WP	110304L-WP	1/64																																				●										
Finishing		TPMT	181505PP	090202PP	0.008	●	●		●	●	●	●			△	●	●	●	△																							●	△	●								
			18151PP	090204PP	1/64	●	●		●	●	●	●			●	●	●	●	●																							●	△	●								
		TPMT	2205PP	110302PP	0.008	●	●		●	●	●	●			△	●	●	●	△																							●	△	●								
			221PP	110304PP	1/64	●	●		●	●	●	●			●	●	●	●	●																							●	△	●								
			222PP	110308PP	1/32	●	●		●	●	●	●			△	●	●	●	●																							●	△	●								

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Part Number	Applicable Toolholder Page
TP_1515_	E33, F59, F61, F63, F65
TP_1815_	E33, F28, F61, F63, F65
TP_22_	E33, F61, F63, F64
TP_32_	F61, F64

Chipbreaker Range

1



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

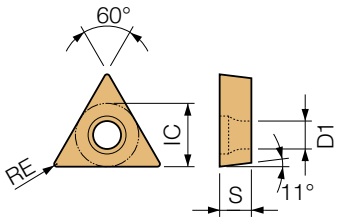
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

60° Triangle

Positive Insert with Hole

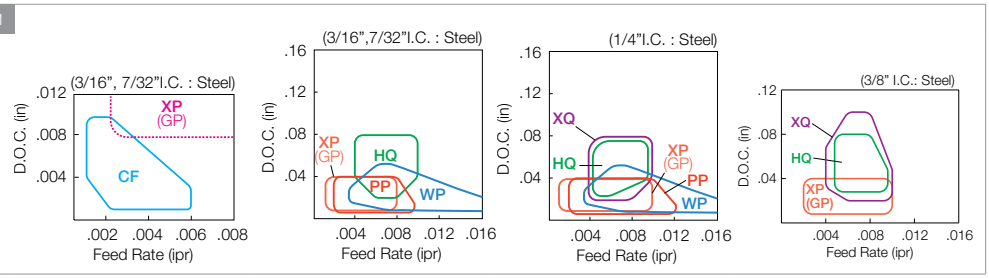
Part Number	IC	S	D1
	(in)		
TP_1515_	3/16	3/32	0.091
TPMT1815_	7/32	3/32	0.110
TP_1815_	7/32	3/32	0.118
TP_22_	1/4	1/8	0.130
TPMT32_	3/8	1/8	0.173



				Corner Radius (in)	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number																																													
Finishing		TPMT	181505GP	090202GP	0.008	●	●	●		●	●	●																			●	△							●	●		△							Reference Table Below	1
			18151GP	090204GP	1/64	●	●	●		●	●	●		△		●	●	●		△	●										●	△							●	●		△								
		TPMT	221GP	110304GP	1/64	●	●	●		●	●	●		●	●	●	●	●	△		●	●									●	△							●	●		△								
			222GP	110308GP	1/32	●	●	●		●	●	●		●	△	●	●	●			●	●									●	△							●	●		△								
		TPMT	321GP	160304GP	1/64	●	●	●		●	●	●		●	●	●	●	●	△			●									●	△							●	●		△								
Finishing-Medium		TPMT	181505HQ	090202HQ	0.008	●	●		●	●	●	●		△	●	●	●	●	△		●	●										●	△							●	●		△								
			18151HQ	090204HQ	1/64	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●						●	△							●	●		△	△							
		TPMT	2205HQ	110302HQ	0.008	●	●	●	●	●	●	●			●	●	●	△			●	●									●	△							●	●		△								
			221HQ	110304HQ	1/64	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●	●	●	●		●	△							●	●		△	△							
			222HQ	110308HQ	1/32	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●	●	●		●	●	△							●	●		△	△							
		TPMT	3205HQ	160302HQ	0.008	●	●	●	●	●	●	●																			●	△							●	●		△								
			321HQ	160304HQ	1/64	●	●	●	●	●	●	●		△	△	●	●	●	●		●	●	●	●	●	●	●	●		●	●	△							●	●		△	△							
			322HQ	160308HQ	1/32	●	●	●	●	●	●	●		●	△	●	●	●	●		●	●	●	●	●	●	●	●		●	●	△							●	●		△	△							
Finishing		TPMT	18151XP	090204XP	1/64	●	●			●	●	●		△	△	●	●	●	△		△	●										●	△							●	●		△								
		TPMT	221XP	110304XP	1/64	●	●		●	●	●	●		●	●	●	●	●	●		●	●										●	△							●	●		△								
			222XP	110308XP	1/32	●	●		●	●	●	●		●	●	●	●	●	△		●	●										●	△							●	●		△								
	Low Carbon Steel	TPMT	321XP	160304XP	1/64	●	●		●	●	●	●		△	△	●	●	●	●			●										●	△							●	●										
			322XP	160308XP	1/32	●	●		●	●	●	●		△		●	●	●			●	●										●	△							●	●										
Finishing-Medium		TPMT	221XQ	110304XQ	1/64	●	●		●	●	●	●		●	●	●	●	●	●		●	●										●								●	●										
			222XQ	110308XQ	1/32	●	●		●	●	●	●		●	●	●	●	●	●		●	●										●								●	●										
	Low Carbon Steel	TPMT	321XQ	160304XQ	1/64	●	●		●	●	●	●		△		●	●	●	△		●	●																												
			322XQ	160308XQ	1/32	●	●		●	●	●	●		●		●	●	●	●		△	●																												

Chipbreaker Range

1



Part Number	Applicable Toolholder Page
TP_1515_	E33, F59, F61, F63, F65
TP_1815_	E33, F28, F61, F63, F65
TP_22_	E33, F61, F63, F64
TP_32_	F61, F64

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Inserts sold in 10 piece boxes.

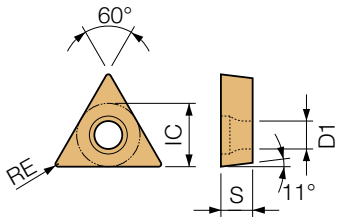
How to read this page ➔ B15

60° Triangle

Positive Insert with Hole

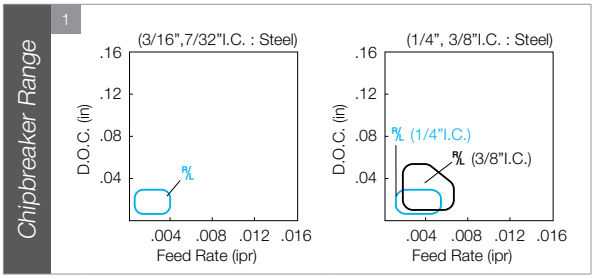
Part Number	IC	S	D1
	(in)		
TP_1515_	3/16	3/32	0.091
TP_1815_	7/32	3/32	0.118
TP_215_	1/4	3/32	0.138

Part Number	IC	S	D1
	(in)		
TP_22_	1/4	1/8	0.130
TP_32_	3/8	1/8	0.177



		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	Cermet TN610	Cermet TN620	Cermet TN60	CVD Cermet CCX	MEGA COAT Cermet PV710	MEGA COAT Cermet PV720	MEGA COAT Cermet PV730	PVD Cermet PV7005	PVD Cermet PV90	CVD Coated Carbide CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PVD Coated Carbide PR930	PR1005	PR1025	PR1125	DLC PDL010	PDL025	Carbide KW10	SW05	Toolholder Page	Chipbreaker Range
						P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		
						M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
						K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K	K		
						N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
						S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
						H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		
					Corner Radius (in)	Cermet	Cermet	Cermet	CVD Cermet	MEGA COAT Cermet	MEGA COAT Cermet	MEGA COAT Cermet	PVD Cermet	PVD Cermet	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	CVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	MEGACOAT / MEGACOAT NANO PVD Coated Carbide	PVD Coated Carbide	PVD Coated Carbide	PVD Coated Carbide	PVD Coated Carbide	DLC	DLC	Carbide	Carbide	Toolholder Page	Chipbreaker Range
					RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing			TPGH	151502R	080201R	0.004																									●	△								●										Reference Table Below	1
				151502L	080201L	0.004			●																					●	△								●	●							●			
				151505R	080202R	0.008		●	●		●	●																		●	●	△							●	●							●			
				151505L	080202L	0.008	●	●	●	●	●	●	●	△																●	●	△							●	●							●			
				15151R	080204R	1/64		●	●		●	●																		●	●	△							●	●							●			
				15151L	080204L	1/64	●	●	●	●	●	●	●	●																●	●	△							●	●							●			
			TPGH	181502R	090201R	0.004																									●	△							●	●							●			
				181502L	090201L	0.004			●																						●	△							●	●							●			
				181505R	090202R	0.008		●	●		●	●																		●	●	△							●	●							●			
				181505L	090202L	0.008	●	●	●	●	●	●	●	△																●	●	△							●	●							●			
				18151R	090204R	1/64		●	●		●	●	●																	●	●	△							●	●							●			
				18151L	090204L	1/64	●	●	●	●	●	●	●	●																●	●	△							●	●							●			
			TPGH	21505R	110202R	0.008																									●	△							●	●							△			
				21505L	110202L	0.008	●	●	●	●	●	●																		●	●	△							●	●							●			
				2151R	110204R	1/64			●																						●	△							●	●							●		F64	1
				2151L	110204L	1/64	●	●	●	●	●	●	●	△																●	●	△							●	●							●			
			TPGH	2205R	110302R	0.008		●	●		●	●																		●	●	△							●	●							●			
				2205L	110302L	0.008	●	●	●	●	●	●	●	●																●	●	△							●	●							●			
				221R	110304R	1/64		●	●		●	●	●																	●	●	△							●	●							●			
				221L	110304L	1/64	●	●	●	●	●	●	●	●																●	●	△							●	●							●			
				222R	110308R	1/32	●	●	●	●	●	●																		●	●	△							●	●							●			
				222L	110308L	1/32	●	●	●	●	●	●		△																●	●	△							●	●							●			
			TPGH	3205R	160302R	0.008	●	●	●	●	●	●																		●	●	△							●	●							●			
				3205L	160302L	0.008	●	●	●	●	●	●																		●	●	△							●	●							●			
				321R	160304R	1/64	●	●	●	●	●	●	△																	●	●	△							●	●							●			
				321L	160304L	1/64	●	●	●	●	●	●	●	△																●	●	△							●	●							●			
				322R	160308R	1/32							●																	●	●	△							●											
				322L	160308L	1/32	●	●	●	●	●	●	●																	●	●	△							●	●							●			

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).



Part Number	Applicable Toolholder Page
TP_1515_	E33, F59, F61, F63, F65
TP_1815_	E33, F28, F61, F63, F65
TP_22_	E33, F61, F63, F64
TP_32_	F61, F64

KYOCERA

Inserts sold in 10 piece boxes.

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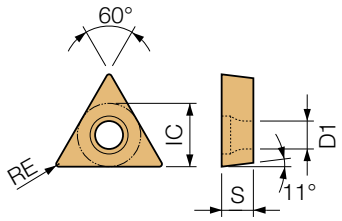
How to read this page ➔ B15

60° Triangle

Positive Insert with Hole



(in)

Part Number	IC	S	D1
TP_1515_	3/16	3/32	0.091
TP_1815_	7/32	3/32	0.118
TP_215_	1/4	3/32	0.138

(in)

Part Number	IC	S	D1
TP_22_	1/4	1/8	0.130
TP_32_	3/8	1/8	0.177

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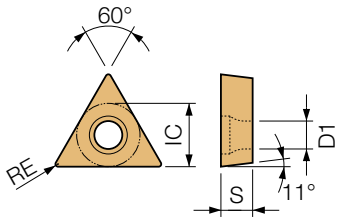
How to read this page ➔ B15

60° Triangle

Positive Insert with Hole



(in)

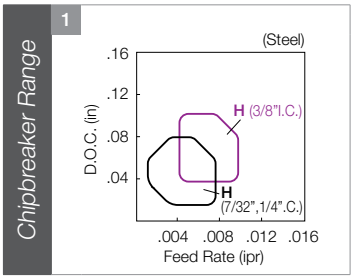
Part Number	IC	S	D1
TP_1515_	3/16	3/32	0.091
TP_1815_	7/32	3/32	0.118

(in)

Part Number	IC	S	D1
TP_22_	1/4	1/8	0.130
TP_32_	3/8	1/8	0.177
TP_33_	3/8	3/16	0.173

		ANSI	ISO	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
		Left-Hand Shown where Applicable	Part Number	Part Number	Corner Radius (in)	Cermet			CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide				DLC		Carbide			
Medium		TPGH	181502L-H	090201L-H	0.004																									●	△							●								Reference Table Below	1
			181505L-H	090202L-H	0.008																									●	△							●									
			18151L-H	090204L-H	1/64																									●	△							●									
		TPGH	2205R-H	110302R-H	0.008			●																						●	△							●	●								
			2205L-H	110302L-H	0.008	●	●	●	●	●	●		△																	●	△							●	●						●		
			221R-H	110304R-H	1/64		●	●		●	●																			●	△							●	●						●		
			221L-H	110304L-H	1/64	●	●	●	●	●	●		△																	●	△							●	●						●		
			222R-H	110308R-H	1/32			●																						●	△							●	●						△		
			222L-H	110308L-H	1/32	●	●	●	●	●	●																			●	△							●	●						●		
		TPGH	321R-H	160304R-H	1/64			●																						●	△							●	●								1
			321L-H	160304L-H	1/64	●	●	●	●	●	●		△																	●	△							●	●						●		
			322R-H	160308R-H	1/32		△																							●	△							●	●								
			322L-H	160308L-H	1/32		●																							●	△							●	●						△		
		TPGT	3305L-H	160402L-H	0.008	●	●		●	●	●																																				-	
			331L-H	160404L-H	1/64	●	●	●	●	●	●																																				
			332L-H	160408L-H	1/32			●																																								
		TPGH	2205ML-H	110302ML-H	<0.008																																										Reference Table Below	
			221ML-H	110304ML-H	<1/64																																										
		TPGH	321ML-H	160304ML-H	<1/64																																										

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).



Part Number	Applicable Toolholder Page
TP_1515_	E33, F59, F61, F63, F65
TP_1815_	E33, F28, F61, F63, F65
TP_22_	E33, F61, F63, F64
TP_32_	F61, F64

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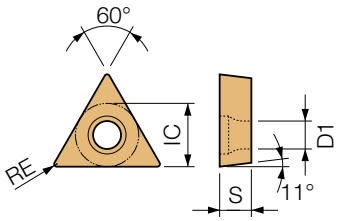
How to read this page ➔ B15

60° Triangle

Positive Insert with Hole

Part Number	IC (in)	S (in)	D1 (in)
TP_1515_	3/16	3/32	0.091
TP_1815_	7/32	3/32	0.118
TP4_	1/4	3/32	0.110

Part Number	IC (in)	S (in)	D1 (in)
TP_22_	1/4	1/8	0.130
TP_32_	3/8	1/8	0.177
TP_33_	3/8	3/16	0.173



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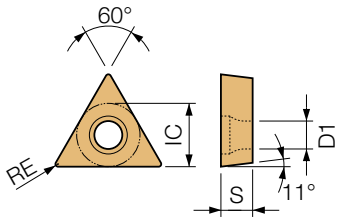
How to read this page ➔ B15

60° Triangle

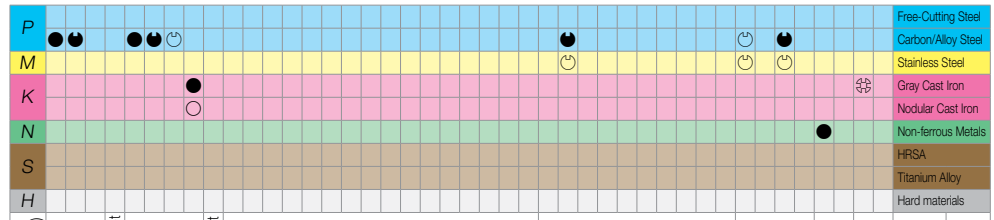
Positive Insert with Hole

Part Number	IC (in)	S (in)	D1 (in)
TP_1515_	3/16	3/32	0.091
TP_1815_	7/32	3/32	0.118
TP_215_	1/4	3/32	0.138

Part Number	IC (in)	S (in)	D1 (in)
TP_22_	1/4	1/8	0.130
TP_32_	3/8	1/8	0.177
TP_33_	3/8	3/16	0.173

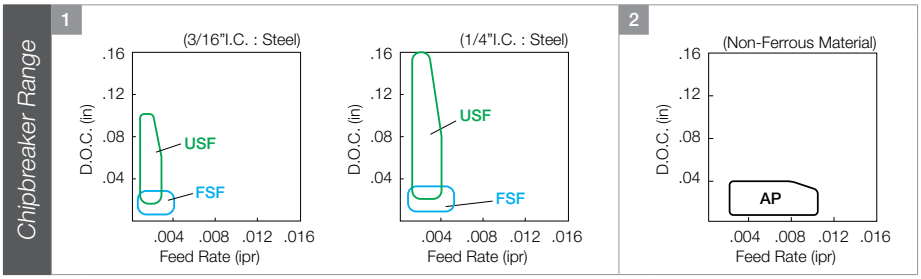


						Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																			MEGACOAT / MEGACOAT NANO PVD Coated Carbide								PVD Coated Carbide			DLC		Carbide	Toolholder Page	Chipbreaker Range
		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing	Super Fine	TPET	151502FL-USF	080201FL-USF	0.004																																			●							Reference Table Below	1
			151505FR-USF	080202FR-USF	0.008			●																							●									●								
			151505FL-USF	080202FL-USF	0.008			●																							●									●								
		TPET	2201FR-USF	1103003FR-USF	0.001																																			△								
			2201FL-USF	1103003FL-USF	0.001																																			●								
			2202FR-USF	110301FR-USF	0.004			●																																●								
			2202FL-USF	110301FL-USF	0.004			●																								●								●								
			2205FR-USF	110302FR-USF	0.008			●																								●								●								
			2205FL-USF	110302FL-USF	0.008			●																								●								●								
		TPET	151505MFR-USF	080202MFR-USF	<0.008																																					△							
			151505MFL-USF	080202MFL-USF	<0.008																																					△							
		TPET	2202MFL-USF	110301MFL-USF	<0.004																																					△							
	Sharp Edge / Precision		2205MFR-USF	110302MFR-USF	<0.008																																					△							
			2205MFL-USF	110302MFL-USF	<0.008																																					△							
Medium-Finishing		TPGT	181505AP	090202AP	0.008																																							●		●			2
			18151AP	090204AP	1/64																																							●		●			
			18152AP	090208AP	1/32																																							●		●			
	Sharp Edge / Polished	TPGT	2205AP	110302AP	0.008																																							●		●			
			221AP	110304AP	1/64																																							●		●			
			222AP	110308AP	1/32																																							●		●			
Cast Iron		TPGB	151505	080202	0.008			●																																					●			
			15151	080204	1/64		●	●			●	●																																	●			
			15152	080208	1/32			●																																								
		TPGB	181505	090202	0.008			●																																					●			
			18151	090204	1/64		●	●			●	●	●																																●			
		TPGB	21501	1102005	0.002			●																																					●			
			21502	110201	0.004			●																																					●			
			21505	110202	0.008			●																																					●			
			2151	110204	1/64	●	●	●		●		●																																	●			
		TPGB	22013	1103005	0.002			●																																					●			
			2202	110301	0.004			●																																								
			2205	110302	0.008	●	●	●		●	●	●																																	●			
			221	110304	1/64	●	●	●		●	●	●	●																																	●			
			222	110308	1/32	●	●	●		●	●	●	●																																	●			
	Without Chipbreaker	TPGB	321	160304	1/64	●	●	●		●	●	●	●																																	●			
			322	160308	1/32	●	●	●		●	●	●																																	●			



• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



Part Number	Applicable Toolholder Page
TP_1515_	E33, F59, F61, F63, F65
TP_1815_	E33, F28, F61, F63, F65
TP_22_	E33, F61, F63, F64
TP_32_	F61, F64

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

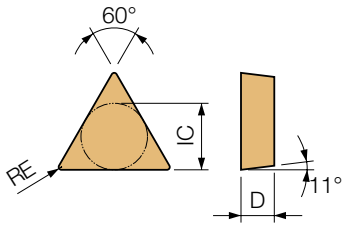
How to read this page ➔ B15

60° Triangle

Positive Insert without Hole

(in)

Part Number	IC	S	D1
TP_1815_	7/32	3/32	-
TP_22_	1/4	1/8	-
TP_32_	3/8	1/8	-



		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing	TPMR		221DP	110304DP	1/64			●																																								
			222DP	110308DP	1/32			●																																								
	TPMR		321DP	160304DP	1/64			●																																								
			322DP	160308DP	1/32			●																																								
Finishing	TPMR		221GP	110304GP	1/64		●	●			●	●		△																																		
	TPMR		321GP	160304GP	1/64		●	●			●	●		△		●	●	●	●		●	●																											
Finishing-Medium	TPMR		221HQ	110304HQ	1/64		●	●			●	●		△	△	●	●	●	●		●	●			●																			△				
			222HQ	110308HQ	1/32		●	●			●	●		△		●	●	●	●		●	●			●																			△				
	TPMR		321HQ	160304HQ	1/64	●	●	●		●	●	●		△		●	●	●	●		●	●	●		●																			△				
			322HQ	160308HQ	1/32	●	●	●		●	●	●		●	●	●	●	●	●		●	●	●		●																			△				
Medium	TPMR		181505G	090202G	0.008			●																																								
			18151G	090204G	1/64			●														●	●																										
	TPMR		221G	110304G	1/64		●	●			●	●		●																																		
			222G	110308G	1/32			●						△																																		
	TPMR		321G	160304G	1/64		●	●			●	●		△																																		
			322G	160308G	1/32		●	●			●	●		△																																		
Medium	TPMR		221	110304	1/64	●	●	●		●	●					●	●	●	△		●	●			●	●	●	●	●															△				
			222	110308	1/32	●	●	●		●	●				△	●	●	●	●		●	●			●	●	●	●	●	●															△				
	TPMR		321	160304	1/64	●	●	●		●	●		●			●	●	●	●	△	●	●			●	●	●	●	●	●															△				
			322	160308	1/32	●	●	●		●	●		●			●	●	●	●	●	●	●			●	●	●	●	●	●															△				
Finishing	TPGR		181505R-F	090202R-F	0.008			△																																								
			181505L-F	090202L-F	0.008			●																																								
			18151R-F	090204R-F	1/64			●																																								
		Sharp Edge	18151L-F	090204L-F	1/64			●																																								

P Free-Cutting Steel, Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron, Nodular Cast Iron
N Non-ferrous Metals
S HRSA, Titanium Alloy
H Hard materials

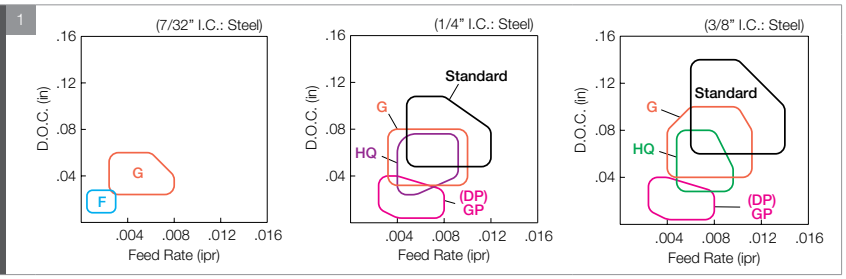
Corner Radius (in): Cermet; CVD Cermet; MEGA COAT Cermet; PVD Cermet; CVD Coated Carbide; MEGACOAT / MEGACOAT NANO PVD Coated Carbide; PVD Coated Carbide; DLC; Carbide

Toolholder Page: F79

Chipbreaker Range: 1

Chipbreaker Range

1



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

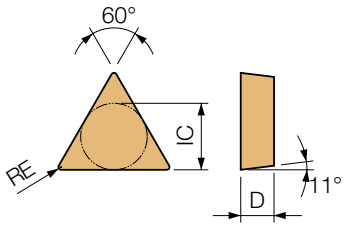
How to read this page B15

60° Triangle

Positive Insert without Hole

(in)

Part Number	IC	S	D1
TP_1815_	7/32	3/32	-
TP_22_	1/4	1/8	-
TP_32_	3/8	1/8	-

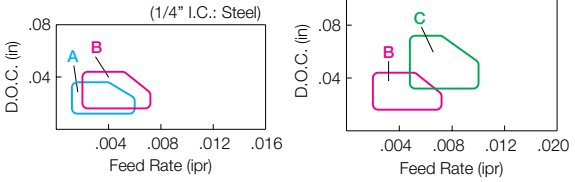


		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
					Corner Radius (in)	Cermet			CVD Cermet	MEGA COAT Cermet				PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide			
Finishing / Finishing-Medium / Medium			TPGR	2205R-A	110302R-A	0.008			●																																						F79	1
				2205L-A	110302L-A	0.008	●	●	●		●	●	●																																				
				221R-A	110304R-A	1/64			●																																							●		
				221L-A	110304L-A	1/64	●	●	●		●	●	●																																		●		
			TPGR	221R-B	110304R-B	1/64			●																																								
				221L-B	110304L-B	1/64	●	●	●		●	●	●		△																																		
				222R-B	110308R-B	1/32			●																																								
				222L-B	110308L-B	1/32	●	●	●		●	●	●																																			
			TPGR	3205R-B	160302R-B	0.008	●	●	●		●	●	●																																				
				3205L-B	160302L-B	0.008	●	●	●		●	●	●	△	△																																		
				321R-B	160304R-B	1/64	●	●	●		●	●	●																																		●		
				321L-B	160304L-B	1/64	●	●	●		●	●	●	●	●																																	●		
				322R-B	160308R-B	1/32	●	●	●		●	●	●																																		●		
				322L-B	160308L-B	1/32	●	●	●		●	●	●																																		●		
		-A : Finishing	TPGR	321R-C	160304R-C	1/64	●	●	●		●	●	●																																				
		-B : Finishing-Medium		321L-C	160304L-C	1/64	●	●	●		●	●	●		△																																		
		-C : Medium		322R-C	160308R-C	1/32	●	●	●		●	●	●																																				
				322L-C	160308L-C	1/32	●	●	●		●	●	●		△																																		
Cast Iron			TPG	181505	90202	0.008																																									●		-
				18151	90204	1/64	●		●																																						●		
				18152	90208	1/32			●																																						●		
			TPG	2205	110302	0.008			●																																						●		
				221	110304	1/64	●	●	●		●	●		●																																●		
				222	110308	1/32	●	●	●		●	●		●																																●		
			TPG	321	160304	1/64	●	●	●		●	●		●																																●		
				322	160308	1/32	●	●	●		●	●		●																																●		
				323	160312	3/64	●		●																																								
			TPM	221	110304	1/64														△						●	●	●		●																●		
				222	110308	1/32														●						●	●	●	●	●																●		
			TPM	321	160304	1/64														●						●	●	●	△	●																●		
		Without Chipbreaker		322	160308	1/32														●						●	●	●	△	●																●		
				323	160312	3/64																				●	●	●		●																		

P Free-Cutting Steel
Carbon/Alloy Steel
M Stainless Steel
K Gray Cast Iron
Nodular Cast Iron
N Non-ferrous Metals
S HRSA
Titanium Alloy
H Hard materials

Chipbreaker Range

1



Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

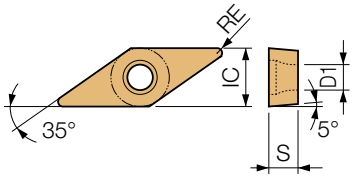
35° Diamond

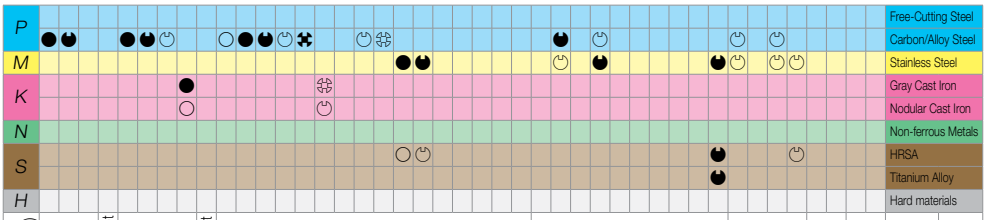
Positive Insert with Hole

Part Number	Applicable Toolholder Page
VB..22_	E34~E36, E43, E48, F66~F73
VB..33_	E34~E36, F66~F73

(in)

Part Number	IC	S	D1
VB_22_	1/4	1/8	0.110
VB_33_	3/8	3/16	0.173



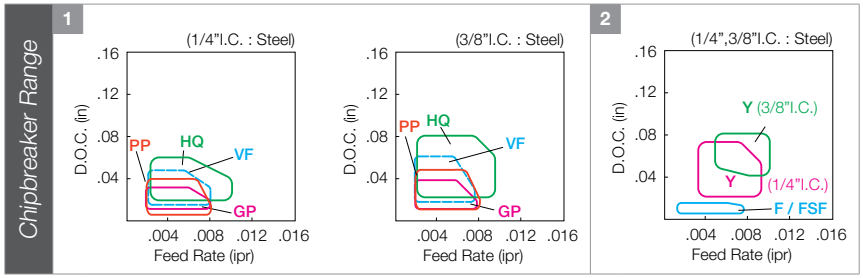


		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
	Corner Radius (in)					Cermet			CVD Cermet	MEGA COAT Cermet				PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide									PVD Coated Carbide				DLC		Carbide			
Finishing		VBMT	2205PP	110302PP	0.008	●	●		●	●	●	●			●	●	●	●	●												●	△	●							●									
			221PP	110304PP	1/64	●	●		●	●	●	●			●	●	●	●	●												●	△	●							●									
			222PP	110308PP	1/32	●	●		●	●	●	●			●	●	●	●	●												●	△	●							●									
		VBMT	331PP	160404PP	1/64	●	●		●	●	●	●			●	●	●	●	●												●	△	●							●									
			332PP	160408PP	1/32	●	●		●	●	●	●			●	●	●	●	●												●	△	●							●									
			333PP	160412PP	3/64	●	●		●	●	●				●	●	●	●	●												●	△	●							●									
Finishing		VBMT	221GP	110304GP	1/64	●	●	●		●	●	●		●	●	●	●	●	●		●	●									●	△							●	●		△						
		VBMT	331GP	160404GP	1/64	●	●	●		●	●	●		●	●	●	●	●	●		●	●									●									●		△						
			332GP	160408GP	1/32	●	●	●		●	●	●		●		●	●	●	●		●	●									●									●		△						
Finishing		VBMT	2205VF	110302VF	0.008	●	●		●	●	●	●		△	●	●	●	●			●	●									●	△							●	●		△						
			221VF	110304VF	1/64	●	●		●	●	●	●		△	●	●	●	●	●	●	●	●	●								●	△							●	●		△						
			222VF	110308VF	1/32	●	●		●	●	●	●			●	●	●	●	●	●	●	●									●	△							●	●		△						
		VBMT	3305VF	160402VF	0.008	●	●		●	●	●	●		△	●	●	●	●	●	●	●	●									●									●		△						
			331VF	160404VF	1/64	●	●		●	●	●	●			●	●	●	●	●	●	●	●	●								●									●		△						
			332VF	160408VF	1/32	●	●		●	●	●	●			●	●	●	●	●	●	●	●	●								●									●		△						
			333VF	160412VF	3/64	●	●		●	●	●				●	●	●	●	●			●	●								●											△						
Finishing-Medium		VBMT	221HQ	110304HQ	1/64	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●						●	△							●	●		△	△					
			222HQ	110308HQ	1/32	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●						●	△							●	●		△	△					
		VBMT	331HQ	160404HQ	1/64	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●						●									●		△	△					
			332HQ	160408HQ	1/32	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●						●									●		△	△					
			333HQ	160412HQ	3/64	●	●		●	●	●	●		●	●	●	●	●	●		●	●	●								●									●		△						
Finishing	Super Fine	VBET	2201R-FSF	1103003R-FSF	0.001			●																															●								
			2201L-FSF	1103003L-FSF	0.001			●																															●								
			2202R-FSF	110301R-FSF	0.004			●																															●								
			2202L-FSF	110301L-FSF	0.004			●																															●								
			2205R-FSF	110302R-FSF	0.008			●																															●								
			2205L-FSF	110302L-FSF	0.008			●																															●								
		VBET	22013MR-FSF	1103005MR-FSF	<0.002																													●								△					
			22013ML-FSF	1103005ML-FSF	<0.002																													●								△					
			2202MR-FSF	110301MR-FSF	<0.004																													●								△					
			2202ML-FSF	110301ML-FSF	<0.004																													●								△					
			2205MR-FSF	110302MR-FSF	<0.008																													●								△					
	Sharp Edge / Precision		2205ML-FSF	110302ML-FSF	<0.008																													●								△					

Reference Table Above

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

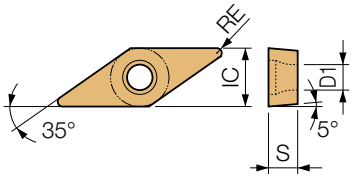
35° Diamond

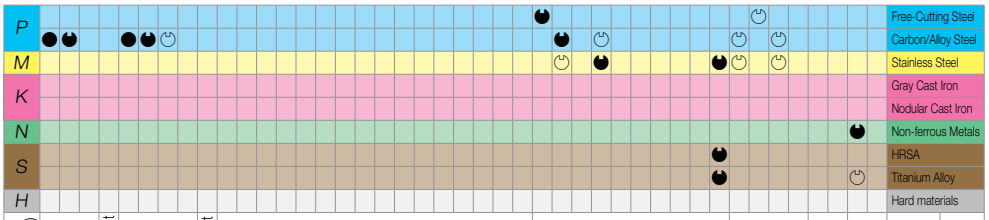
Positive Insert with Hole

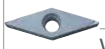
Part Number	Applicable Toolholder Page
VB..22_	E34~E36, E43, E48, F66~F73
VB..33_	E34~E36, F66~F73

(in)

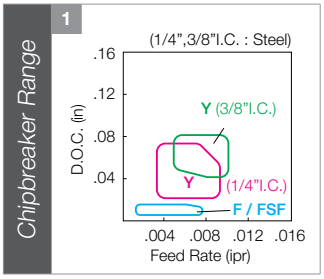
Part Number	IC	S	D1
VB_22_	1/4	1/8	0.110
VB_33_	3/8	3/16	0.173





		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	Corner Radius (in) RE	Cermet TN610	Cermet TN620	Cermet TN60	CVD Cermet CCX	MEGA COAT Cermet PV710	MEGA COAT Cermet PV720	MEGA COAT Cermet PV730	PVD Cermet PV7005	CVD Coated Carbide PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA025P	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	CVD Coated Carbide CA310	CVD Coated Carbide CA315	CVD Coated Carbide CA320	CVD Coated Carbide CA4505	CVD Coated Carbide CA4515	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1705	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1725	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1425	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1225	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR005S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR015S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1305	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1310	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1325	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1535	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	DLC PDL010	DLC PDL025	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Finishing		VBET	22013MR-F	1103005MR-F	<0.002																									●	△								●								Reference Table Above	
			22013ML-F	1103005ML-F	<0.002																									●	△								●									
			2202MR-F	110301MR-F	<0.004		●				●	●																		●	●	△								●									1
			2202ML-F	110301ML-F	<0.004		●				●	●																			●	△								●									
			2205MR-F	110302MR-F	<0.008	●	●			●	●	●																			●	●	△								●									
		Sharp Edge	2205ML-F	110302ML-F	<0.008	●	●			●	●	●																			●	●	△								●									
Medium		VBGT	2202FN-Z	110301FN-Z	0.004			●																															●									-
			2205FN-Z	110302FN-Z	0.008			●																															●									
		Sharp Edge	221FN-Z	110304FN-Z	1/64			●																															●									
Finishing		VBGT	2201R-F	1103003R-F	0.001																																		●							●		
			2201L-F	1103003L-F	0.001																																		●									
			2202R-F	110301R-F	0.004		●	●			●	●																											●							●		
			2202L-F	110301L-F	0.004			●																															●							●		
			2205R-F	110302R-F	0.008		●	●			●	●																											●							●		
		Sharp Edge	2205L-F	110302L-F	0.008			●																															●							●		
		VBGT	22013MR-F	1103005MR-F	<0.002																												●								△							
			22013ML-F	1103005ML-F	<0.002																												●								△							
			2202MR-F	110301MR-F	<0.004																												●							△	△							
			2202ML-F	110301ML-F	<0.004																												●								△							
			2205MR-F	110302MR-F	<0.008																												●							△	△							1
		Sharp Edge	2205ML-F	110302ML-F	<0.008																												●							△	△							
Finishing-Medium		VBET	22013MR-Y	1103005MR-Y	<0.002																									●	△								●									
			22013ML-Y	1103005ML-Y	<0.002																									●	△								●									
			2202MR-Y	110301MR-Y	<0.004																									●	△								●									
			2202ML-Y	110301ML-Y	<0.004																									●	△								●									
			2205MR-Y	110302MR-Y	<0.008	●	●			●	●	●																			●	△								●									
			2205ML-Y	110302ML-Y	<0.008	●	●			●	●	●																			●	△								●									
			221MR-Y	110304MR-Y	<1/64	●	●			●	●	●																			●	△								●									
			221ML-Y	110304ML-Y	<1/64	●	●			●	●	●																			●	△								●									

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).



Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

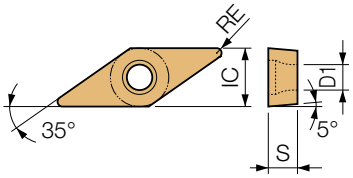
35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VB..22_	E34~E36, E43, E48, F66~F73
VB..33_	E34~E36, F66~F73

(in)

Part Number	IC	S	D1
VB_22_	1/4	1/8	0.110
VB_33_	3/8	3/16	0.173



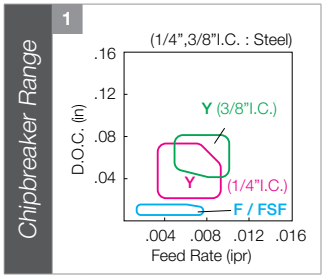
		Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
Finishing-Medium	VBGT		2201R-Y	1103003R-Y	0.001																																			●					●			
			2201L-Y	1103003L-Y	0.001																																			●					●			
			2202R-Y	110301R-Y	0.004		●	●			●	●																											●					●			
			2202L-Y	110301L-Y	0.004			●																															●					●			
			2205R-Y	110302R-Y	0.008		●	●			●	●																											●					●			
			2205L-Y	110302L-Y	0.008		●	●			●	●																											●					●			
			221R-Y	110304R-Y	1/64		●	●			●	●																											●					●			
			221L-Y	110304L-Y	1/64		●	●			●	●																											●					●			
			222R-Y	110308R-Y	1/32			●																															●					●			
			222L-Y	110308L-Y	1/32			●																															●					●			
	VBGT		3305R-Y	160402R-Y	0.008	●	●	●		●	●	●																											●					●			
			3305L-Y	160402L-Y	0.008	●	●	●		●	●	●																											●					●			
			331R-Y	160404R-Y	1/64	●	●	●		●	●	●																											●					●			
			331L-Y	160404L-Y	1/64	●	●	●		●	●	●																											●					●			
			332R-Y	160408R-Y	1/32			●																															●					●			
			332L-Y	160408L-Y	1/32			●																															●					●			
	VBGT		22013MR-Y	1103005MR-Y	<0.002																													●						△	△						1	1
			22013ML-Y	1103005ML-Y	<0.002																													●							△							
			2202MR-Y	110301MR-Y	<0.004																													●						△	△							
			2202ML-Y	110301ML-Y	<0.004																													●							△							
			2205MR-Y	110302MR-Y	<0.008																													●						△	△							
			2205ML-Y	110302ML-Y	<0.008																													●						△	△							
			221MR-Y	110304MR-Y	<1/64																													●						△	△							
			221ML-Y	110304ML-Y	<1/64																													●						△	△							
			222MR-Y	110308MR-Y	<1/32																													●														
			222ML-Y	110308ML-Y	<1/32																													●														
	VBGT		3305MR-Y	160402MR-Y	<0.008																										●			●						△	△							
			3305ML-Y	160402ML-Y	<0.008																													●							△							
			331MR-Y	160404MR-Y	<1/64																										●			●						△	△							
			331ML-Y	160404ML-Y	<1/64																													●							△							
			332MR-Y	160408MR-Y	<1/32																													●							△							
			332ML-Y	160408ML-Y	<1/32																													●							△							

Corner Radius (in) | Cermet | CVD Cermet | MEGA COAT Cermet | PVD Cermet | CVD Coated Carbide | MEGACOAT / MEGACOAT NANO PVD Coated Carbide | PVD Coated Carbide | DLC | Carbide

Reference Table Above

P	Free-Cutting Steel
	Carbon/Alloy Steel
M	Stainless Steel
K	Gray Cast Iron
	Nodular Cast Iron
N	Non-ferrous Metals
S	HRSA
	Titanium Alloy
H	Hard materials

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

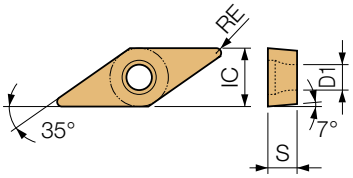
How to read this page ➔ B15

35° Diamond

Positive Insert with Hole

(in)

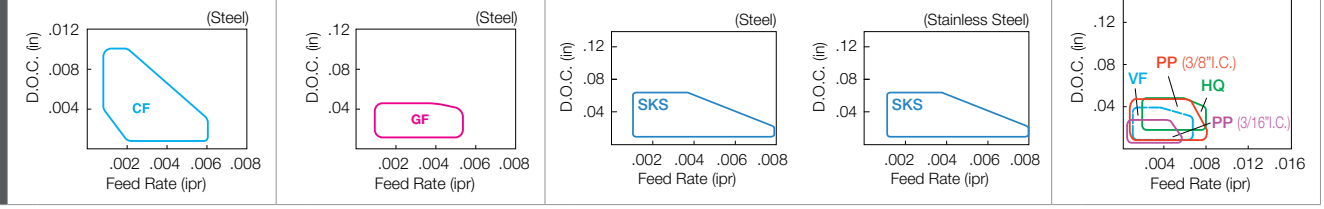
Part Number	IC	S	D1
VC_1515_	3/16	3/32	0.091
VC_22_	1/4	1/8	0.110
VC_33_	3/8	3/16	0.173



			Left-Hand Shown where Applicable	ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05	Toolholder Page	Chipbreaker Range
				Corner Radius (in)			Cermet			CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide				DLC		Carbide			
Minute D.O.C.		VCGT	2202MP-CF	110301MP-CF	<0.004																										●	△							●									E37 E38 E43	1
	Sharp Edge Polished		2205MP-CF	110302MP-CF	<0.008																										●	△							●										
Finishing		VCGT	2202MFP-GF	110301MFP-GF	<0.004																										●	●	△						●									E37 E38 E43	2
	Sharp Edge Polished		2205MFP-GF	110302MFP-GF	<0.008																										●	●	△						●										
Finishing	NEW	VCGT	2202MFP-SKS	110301MFP-SKS	<0.004																										●	●							●									E37 E38 E43	3
			2205MFP-SKS	110302MFP-SKS	<0.008																										●	●							●										
	Sharp Edge Polished		221MFP-SKS	110304MFP-SKS	<1/64																										●	●							●										
Finishing		VCMT	151505PP	080202PP	0.008	●	●		●	●	●	●			●	●	●	●	●												●	△	●						●									E43 F66 F68~F73	
			15151PP	080204PP	1/64	●	●		●	●	●	●			●	●	●	●	●												●	△	●						●										
		VCMT	331PP	160404PP	1/64	●	●		●	●	●	●			●	●	●	●	●												●	△	●						●									E35-E36 F66 F68~F73	
			332PP	160408PP	1/32	●	●		●	●	●	●			●	●	●	●	●												●	△	●						●										
Finishing		VCMT	151505VF	080202VF	0.008	●	●		●	●	●	●			△	●	●	●	△		●	●									●	△							●	●		△						E43 F66 F68~F73	4
			15151VF	080204VF	1/64	●	●		●	●	●	●			●	●	●	●	●	●	●	●									●	△							●	●		△							
Finishing-Medium		VCMT	151505HQ	080202HQ	0.008	●	●	●	●	●	●	●			△	△	●	●	△		●	●									●	△							●	●		△						E43 F66 F68~F73	
			15151HQ	080204HQ	1/64	●	●	●	●	●	●	●			●	●	●	●	●		●	●	●	●	●						●	△							●	●		△	△						
		VCMT	221HQ	110304HQ	1/64			●											●	●			●																									
		VCMT	331HQ	160404HQ	1/64			●							●				●	●			●																							E35-E36 F66 F68~F73	
			332HQ	160408HQ	1/32			●							●				●	●			●		●										●												

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

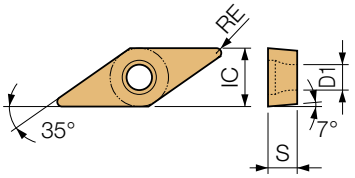
● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

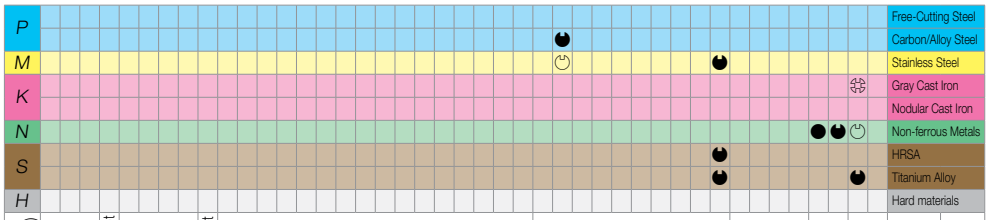
35° Diamond

Positive Insert with Hole



(in)

Part Number	IC	S	D1
VC_1515_	3/16	3/32	0.091
VC_22_	1/4	1/8	0.110
VC_33_	3/8	3/16	0.173

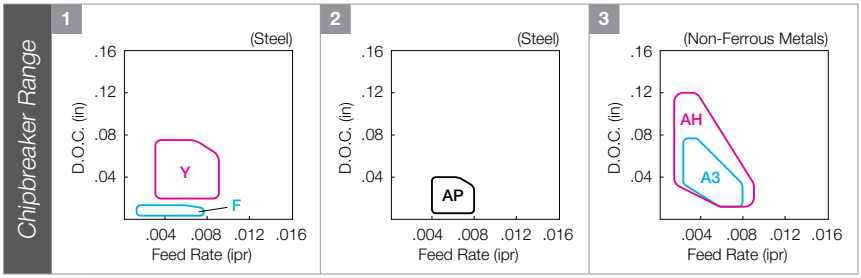


					Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																				MEGACOAT / MEGACOAT NANO PVD Coated Carbide								PVD Coated Carbide					DLC		Carbide			Toolholder Page	Chipbreaker Range
	Left-Hand Shown where Applicable		ANSI Part Number	ISO Part Number	RE	TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Finishing		VCET	2202MR-F	110301MR-F	<0.004																									●	△								●										
			2202ML-F	110301ML-F	<0.004																									●	△								●										
			2205MR-F	110302MR-F	<0.008																									●	△								●										
			2205ML-F	110302ML-F	<0.008																									●	△								●										
			221MR-F	110304MR-F	<1/64																									●	△								●										
	Sharp Edge		221ML-F	110304ML-F	<1/64																									●	△								●										
Finishing-Medium		VCET	22013MR-Y	1103005MR-Y	<0.002																									●	△								●										
			22013ML-Y	1103005ML-Y	<0.002																									●	△								●										
			2202MR-Y	110301MR-Y	<0.004																									●	△								●										
			2202ML-Y	110301ML-Y	<0.004																									●	△								●										
			2205MR-Y	110302MR-Y	<0.008																									●	△								●										
			2205ML-Y	110302ML-Y	<0.008																									●	△								●										
			221MR-Y	110304MR-Y	<1/64																									●	△								●										
	Sharp Edge		221ML-Y	110304ML-Y	<1/64																									●	△								●										
Finishing	Sharp Edge Non-ferrous Metals	VCGT	331AP	160404AP	1/64																																							●		●				
Finishing-Medium		VCGT	331R-A3	160404R-A3	1/64																																							●	●	●				
			331L-A3	160404L-A3	1/64																																							●	●	●				
	Sharp Edge Non-ferrous Metals		332R-A3	160408R-A3	1/32																																							●	●	●				
			332L-A3	160408L-A3	1/32																																							●	●	●				
Finishing-Medium	Sharp Edge Non-ferrous Metals	VCGT	331AH	160404AH	1/64																																							●	●	●				
Medium		VCGT	2202FN-Z	110301FN-Z	0.004			●																																										
			2205FN-Z	110302FN-Z	0.008			●																																										
	Sharp Edge		221FN-Z	110304FN-Z	1/64			●																																										
Medium-Roughing	Non-ferrous Metals	VCGT	333	160412	3/64																																										●				

Toolholder Page	Chipbreaker Range
E37 E38 E43	1
	2
E35-E36 F66 F68~F73	3
E37 E38 E43	-
E35-E36 F66 F68~F73	

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page ➔ B15

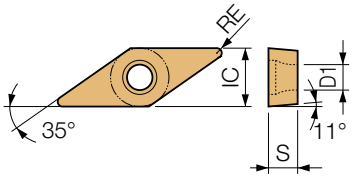
35° Diamond

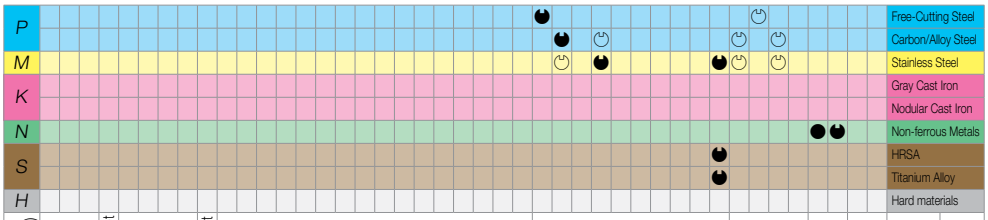
Positive Insert with Hole

Part Number	Applicable Toolholder Page
VP_1515_	E39~E40, F66
VP_22_	E23, E39~E40

(in)

Part Number	IC	S	D1
VP_1515_	3/16	3/32	0.091
VP_22_	1/4	1/8	0.110



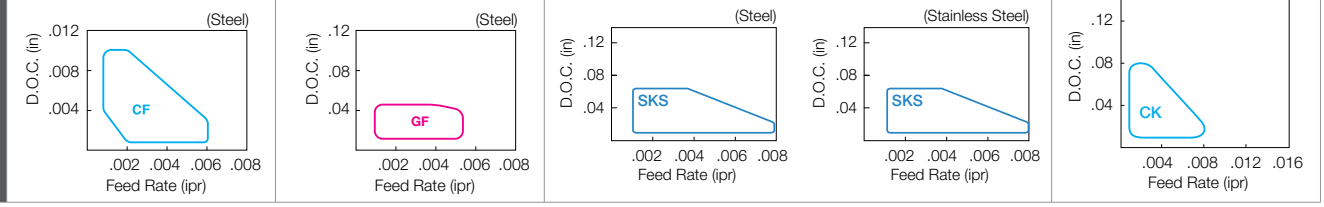


		ANSI Part Number	ISO Part Number	RE	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																			MEGACOAT / MEGACOAT NANO PVD Coated Carbide											PVD Coated Carbide			DLC		Carbide		Toolholder Page	Chipbreaker Range
					TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
Minute D.O.C.	Sharp Edge	VPGT	2205CF	110302CF	0.008																																		●									
		VPGT	2202M-CF	110301M-CF	<0.004																																			△	△							
			2205M-CF	110302M-CF	<0.008																																			△	△						1	
Minute D.O.C.	Sharp Edge / Polished	VPGT	2202MP-CF	110301MP-CF	<0.004																								●	●	△	●				●				△		●	●					
			2205MP-CF	110302MP-CF	<0.008																								●	●	△	●				●				△		●	●					
Finishing	Sharp Edge	VPGT	2202MF-GF	110301MF-GF	<0.004																																			△								
			2205MF-GF	110302MF-GF	<0.008																																			△							2	
Finishing	Sharp Edge / Polished	VPGT	2202MFP-GF	110301MFP-GF	<0.004																								●	●	△	●				●				△								
			2205MFP-GF	110302MFP-GF	<0.008																								●	●	△	●				●				△							2	
Finishing	NEW Sharp Edge Polished	VPGT	2202MFP-SKS	110301MFP-SKS	<0.004																								●	●						●												
			2205MFP-SKS	110302MFP-SKS	<0.008																								●	●						●											3	
			221MFP-SKS	110304MFP-SKS	<1/64																								●	●						●												
Finishing		VPGT	151502CK	080201CK	0.004																																		●								
			151505CK	080202CK	0.008																																		●								
		VPGT	2202CK	110301CK	0.004																																		●								
			2205CK	110302CK	0.008																																		●								
		VPGT	151502M-CK	080201M-CK	<0.004																																			△	△							
			151505M-CK	080202M-CK	<0.008																																			△	△						4	
		VPGT	2202M-CK	110301M-CK	<0.004																																			△	△							
			2205M-CK	110302M-CK	<0.008																																			△	△							
Finishing		VPGT	151502MP-CK	080201MP-CK	<0.004																								●	●	△	●				●				△		●	●					
			151505MP-CK	080202MP-CK	<0.008																								●	●	△	●				●				△		●	●					
	Sharp Edge / Polished	VPGT	2202MP-CK	110301MP-CK	<0.004																								●	●	△	●				●				△		●	●					
			2205MP-CK	110302MP-CK	<0.008																								●	●	△	●				●				△		●	●					

Reference Table Above

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



KYOCERA

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

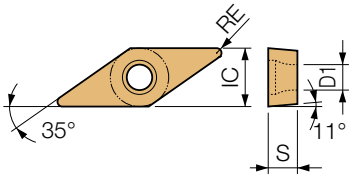
35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VP..22_	E39~E40, F66
VP..33_	E23, E39~E40

(in)

Part Number	IC	S	D1
VP_1515_	3/16	3/32	0.091
VP_22_	1/4	1/8	0.110



| | | |

How to read this page B15

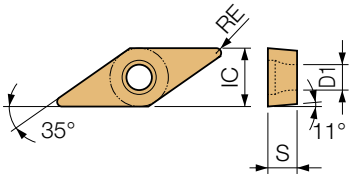
35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VP..22_	E39~E40, F66
VP..33_	E23, E39~E40

(in)

Part Number	IC	S	D1
VP_1515_	3/16	3/32	0.091
VP_22_	1/4	1/8	0.110

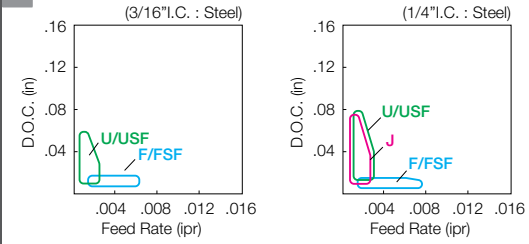


						RE	Corner Radius (in)	Cermet		CVD Cermet	MEGA COAT Cermet			PVD Cermet	CVD Coated Carbide																		MEGACOAT / MEGACOAT NANO PVD Coated Carbide										PVD Coated Carbide			DLC		Carbide	Toolholder Page	Chipbreaker Range
			ANSI Part Number	ISO Part Number				TN610	TN620	TN60	CCX	PV710	PV720	PV730	PV7005	PV90	CA510	CA515	CA025P	CA525	CA530	CA5505	CA5515	CA5525	CA5535	CA6515	CA6525	CA310	CA315	CA320	CA4505	CA4515	PR1705	PR1725	PR1425	PR1225	PR005S	PR015S	PR1305	PR1310	PR1325	PR1535	PR930	PR1005	PR1025	PR1125	PDL010	PDL025	KW10	SW05		
	Left-Hand Shown where Applicable																																																
Low Feed	Super Fine	VPET	151502FR-USF	080201FR-USF		0.004			△																																	●								Reference Table Above	1
			151502FL-USF	080201FL-USF		0.004			△																																	●									
			151505FR-USF	080202FR-USF		0.008			●																																	●									
			151505FL-USF	080202FL-USF		0.008			●																																	●									
		VPET	2201FR-USF	1103003FR-USF		0.001																																			●									
			2201FL-USF	1103003FL-USF		0.001																																			●									
			2202FR-USF	110301FR-USF		0.004			●																																	●									
			2202FL-USF	110301FL-USF		0.004			●																																	●									
			2205FR-USF	110302FL-USF		0.008			●																																	●									
			2205FL-USF	110302FL-USF		0.008			●																																	●									
		VPET	151502MFR-USF	080201MFR-USF		<0.004																														●											△					
			151505MFR-USF	080202MFR-USF		<0.008																														●											△					
			151505MFL-USF	080202MFL-USF		<0.008																														●											△					
		VPET	22013MFR-USF	1103005MFR-USF		<0.002																														●											△					
			22013MFL-USF	1103005MFL-USF		<0.002																														●																
			2202MFR-USF	110301MFR-USF		<0.004																														●											△					
			2202MFL-USF	110301MFL-USF		<0.004																														●											△					
	Sharp Edge / Precision		2205MFR-USF	110302MFR-USF		<0.008																														●											△					
			2205MFL-USF	110302MFL-USF		<0.008																														●											△					
Low Feed		VPET	151502MFR-U	080201MFR-U		<0.004																												●	△								●									
			151502MFL-U	080201MFL-U		<0.004																												●	△								●									
			151505MFR-U	080202MFR-U		<0.008																												●	△								●									
			151505MFL-U	080202MFL-U		<0.008																												●	△								●									
		VPET	22013MFR-U	1103005MFR-U		<0.002																												●	△								●									
			22013MFL-U	1103005MFL-U		<0.002																												●	△								●									
			2202MFR-U	110301MFR-U		<0.004																												●	△								●									
			2202MFL-U	110301MFL-U		<0.004																												●	△								●									
			2205MFR-U	110302MFR-U		<0.008																												●	△								●									
	Sharp Edge		2205MFL-U	110302MFL-U		<0.008																												●	△								●									
Low Feed		VPET	22013MFR-J	1103005MFR-J		<0.002																												●	△	●							●									
			2202MFR-J	110301MFR-J		<0.004																												●	△	●							●									
			2202MFL-J	110301MFL-J		<0.004																												●	△	●							●									
			2205MFR-J	110302MFR-J		<0.008																												●	△	●							●									
	Sharp Edge		2205MFL-J	110302MFL-J		<0.008																												●	△	●							●									

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range

1



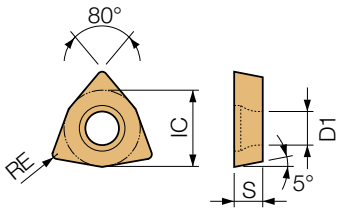
Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

80° Trigon

Positive Insert with Hole



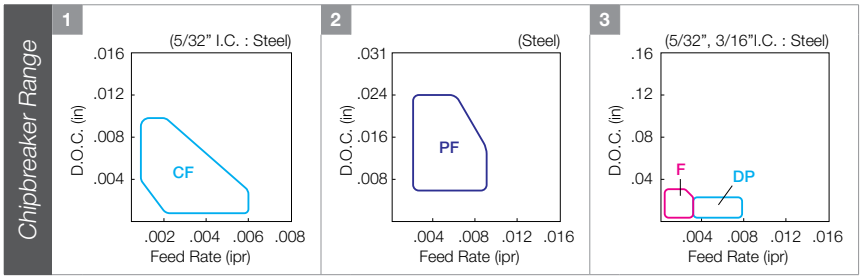
(in)

Part Number	IC	S	D1
WB_121_	5/32	1/16	0.091
WB_1515_	3/16	3/32	0.091

	ANSI Part Number	ISO Part Number	RE	Cermet TN610	Cermet TN620	Cermet TN60	CVD Cermet CCX	MEGA COAT Cermet PV710	MEGA COAT Cermet PV720	MEGA COAT Cermet PV730	PVD Cermet PV7005	CVD Coated Carbide PV90	CVD Coated Carbide CA510	CVD Coated Carbide CA515	CVD Coated Carbide CA025P	CVD Coated Carbide CA525	CVD Coated Carbide CA530	CVD Coated Carbide CA5505	CVD Coated Carbide CA5515	CVD Coated Carbide CA5525	CVD Coated Carbide CA5535	CVD Coated Carbide CA6515	CVD Coated Carbide CA6525	CVD Coated Carbide CA310	CVD Coated Carbide CA315	CVD Coated Carbide CA320	CVD Coated Carbide CA4505	CVD Coated Carbide CA4515	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1705	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1725	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1425	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1225	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR005S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR015S	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1305	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1310	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1325	MEGACOAT / MEGACOAT NANO PVD Coated Carbide PR1535	PVD Coated Carbide PR930	PVD Coated Carbide PR1005	PVD Coated Carbide PR1025	PVD Coated Carbide PR1125	DLC PDL010	DLC PDL025	Carbide KW10	Carbide SW05	Toolholder Page	Chipbreaker Range
Minute D.O.C.	WBGT 12105ML-CF	060102ML-CF	<0.008																																△	△								
Minute D.O.C.	WBGT 12102MPR-CF	060101MPR-CF	<0.004																											●	△	△														1
	12102MPL-CF	060101MPL-CF	<0.004																											●	△	●														
	12105MPR-CF	060102MPR-CF	<0.008																											●	△	●							△							
	12105MPL-CF	060102MPL-CF	<0.008																											●	△	●							△							
Finishing	WBGT 12102MFPR-PF	060101MFPR-PF	<0.004																											●	△															
	12102MFPL-PF	060101MFPL-PF	<0.004																											●	△															
	12105MFPR-PF	060102MFPR-PF	<0.008																											●	△															2
	12105MFPL-PF	060102MFPL-PF	<0.008																											●	△															
	WBGT 151502MFPR-PF	080201MFPR-PF	<0.004																											●	△															
	151502MFPL-PF	080201MFPL-PF	<0.004																											●	△															
	151505MFPR-PF	080202MFPR-PF	<0.008																											●	△															
Sharp Edge / Polished	151505MFPL-PF	080202MFPL-PF	<0.008																											●	△															
Finishing	WBMT 12105R-DP	060102R-DP	0.008		●	●	●		●	●																			●	△						●	●		△						
	12105L-DP	060102L-DP	0.008	●	●	●	●	●	●	●			●	●	●	●	△		●	●									●	△						●	●		△						
	1211R-DP	060104R-DP	1/64		●	●	●		●	●																			●	△						●	●		△						
	1211L-DP	060104L-DP	1/64	●	●	●	●	●	●	●			△	●	●	●	△		●	●									●	△						●	●		△						
	WBMT 151505R-DP	080202R-DP	0.008		●	●	●		●	●										●									●	△						●	●		△						
	151505L-DP	080202L-DP	0.008	●	●	●	●	●	●	●				●	●	●	●		△	●									●	△						●	●		△						
	15151R-DP	080204R-DP	1/64		●	●	●		●	●										●									●	△						●	●		△						
	15151L-DP	080204L-DP	1/64	●	●	●	●	●	●	●			●	●	●	●	●		●	●									●	△						●	●		△						
Finishing	WBET 121013ML-F	0601005ML-F	<0.002																											●	△															
	12102MR-F	060101MR-F	<0.004																											●	△															
	12102ML-F	060101ML-F	<0.004																											●	△															3
	12105MR-F	060102MR-F	<0.008	●				●																						●	△															
	12105ML-F	060102ML-F	<0.008	●	●			●	●	●																				●	△															
	1211MR-F	060104MR-F	<1/64	●				●																						●	△															
	1211ML-F	060104ML-F	<1/64	●	●			●	●	●																				●	△															
	WBET 151502MR-F	080201MR-F	<0.004	●				●																																						
	151502ML-F	080201ML-F	<0.004	●				●																						●	△															
	151505MR-F	080202MR-F	<0.008	●				●																																						
	151505ML-F	080202ML-F	<0.008	●	●			●	●	●																				●	△															
Sharp Edge	15151MR-F	080204MR-F	<1/64	●				●																						●	△															
	15151ML-F	080204ML-F	<1/64	●	●			●	●	●																				●	△															

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

Chipbreaker Range



● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

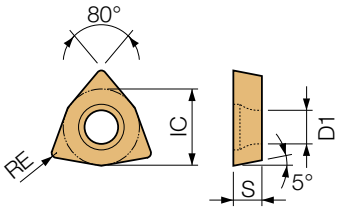
How to read this page ➔ B15

80° Trigon

Positive Insert with Hole

(in)

Part Number	IC	S	D1
WB_121_	5/32	1/16	0.091
WB_1515_	3/16	3/32	0.091



| | | |

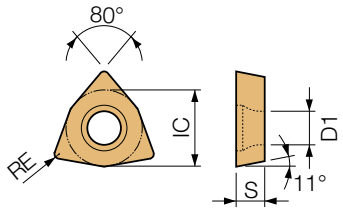
How to read this page ➔ B15

80° Trigon

Positive Insert with Hole

(in)

Part Number	IC	S	D1
WP_215_	1/4	3/32	0.110
WP_32_	3/8	1/8	0.173



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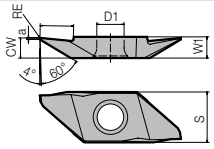
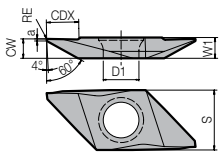
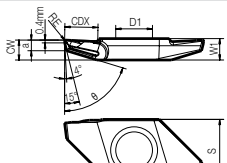
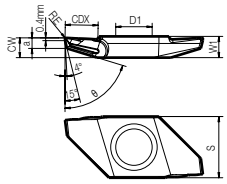
How to read this page ➔ B15

Back Turning

Turning Inserts (Small Tools)

		PR1725	PR1425	PR1535	PR1225	PR1025	KW10
P	Free-Cutting Steel						
	Carbon Steel / Alloy Steel	●	◔	◔	◔	◔	
M	Stainless Steel	◔	◔	●	◔	◔	
K	Gray Cast Iron						●
	Nodular Cast Iron						◔
N	Non-ferrous Metals						●
S	Heat-Resistant Alloys		◔	●	◔	◔	
	Titanium Alloy			●			◔
H	Hard materials						

TKFB Inserts
(for KTKF Toolholders)

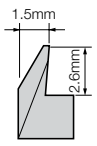
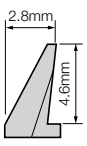
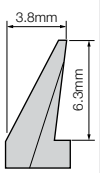
		ANSI Part Number	CW	a	CDX	RE	W1	S	D1	θ	PR1725	PR1425	PR1535	PR1225	PR1025	KW10	Toolholder Page
	 • Right-handed insert shown	TKFB 12R15005M	0.059	0.010	0.102	<0.002	0.118	0.343	0.205	-	●	△	●	●	△	●	
		TKFB 12R28005M	0.110	0.012	0.181	<0.002	0.118	0.343	0.205	-	●	△	●	●	△	●	
		TKFB 12R28010M	0.110	0.012	0.181	<0.004	0.118	0.343	0.205	-	●	△	●	●	△	●	
		TKFB 16R38005M	0.150	0.012	0.248	<0.002	0.157	0.374	0.205	-	●	△	●	●	△	●	
		TKFB 16R38010M	0.150	0.012	0.248	<0.004	0.157	0.374	0.205	-	●	△	●	●	△	●	
	 • Left-handed insert shown	TKFB 12L28005MR	0.110	0.012	0.181	<0.002	0.118	0.343	0.205	-			●	●			
		12L28010MR	0.110	0.012	0.181	<0.004	0.118	0.343	0.205	-			●	●			
		TKFB 16L38005MR	0.150	0.012	0.248	<0.002	0.157	0.374	0.205	-			●	●			
		16L38010MR	0.150	0.012	0.248	<0.004	0.157	0.374	0.205	-			●	●			
Polished	 • Right-handed insert shown	TKFB 12R28005P-GQ	0.110	0.059	0.181	0.002	0.118	0.343	0.205	74°	●	△	●	●			E12 E14
		12R28015P-GQ	0.110	0.059	0.181	0.006	0.118	0.343	0.205	74°	●	△	●	●			
		TKFB 16R38005P-GQ	0.150	0.071	0.248	0.002	0.157	0.374	0.205	72°	●	△	●	●			
		16R38015P-GQ	0.150	0.071	0.248	0.006	0.157	0.374	0.205	72°	●	△	●	●			
	 • Right-handed insert shown	TKFB 12R28005-GQ	0.110	0.059	0.181	0.002	0.118	0.343	0.205	74°	●	△	●	●			
		12R28015-GQ	0.110	0.059	0.181	0.006	0.118	0.343	0.205	74°	●	△	●	●			
		TKFB 16R38005-GQ	0.150	0.071	0.248	0.002	0.157	0.374	0.205	72°	●	△	●	●			
		16R38015-GQ	0.150	0.071	0.248	0.006	0.157	0.374	0.205	72°	●	△	●	●			

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

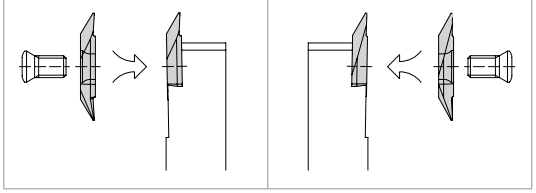
● Insert Identification System
(See Tables Below)

TKFB 12 R 15 005 M R

- TKFB — Insert Type
- 12 — Insert Size
- R — Insert Hand (R : Right-hand, L : Left-hand)
- 15 — Insert width
- 005 — Corner-R (RE)
- M — Indicates the corner-R (RE) has a minus tolerance
- R — Hand of lead angle (R : Right-hand, L : Left-hand)

Small D.O.C.	General Purpose	Large D.O.C.
		
TKFB12R15..	TKFB12R28..	TKFB16R38..

Tooholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	Right-hand (R)	Insert	Left-hand (L)
Lead Angle	Right-hand (R)	Lead Angle	Right-hand (R)

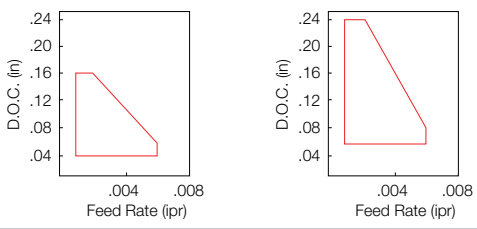


● Insert Identification System
(See Tables Below)

TKFB 12 R 28 005 GQ

- TKFB — Insert Type
- 12 — Insert Size
- R — Insert Hand (R : Right-hand)
- 28 — Insert width
- 005 — Corner-R (RE)
- GQ — Chipbreaker

Chipbreaker Range



Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

How to read this page B15

Back Turning

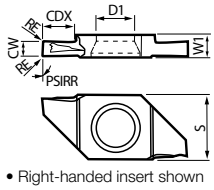
Turning Inserts (Small Tools)

P	Free-Cutting Steel		
	Carbon Steel / Alloy Steel	●	◔
M	Stainless Steel	◔	●
K	Gray Cast Iron		
	Nodular Cast Iron		
N	Non-ferrous Metals		
S	Heat-Resistant Alloys		●
	Titanium Alloy		●
H	Hard materials		

TKF Inserts (GTP Chipbreaker)

(for KTKF Toolholders)

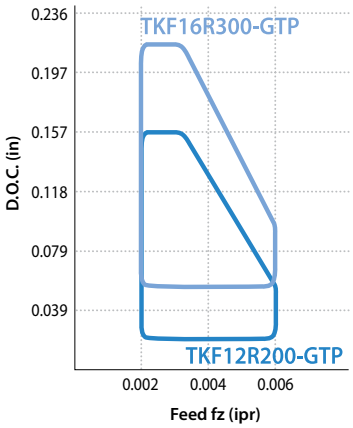
ANSI ***Part Number***



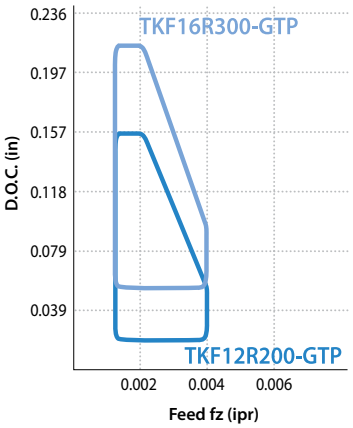
• Right-handed insert shown

		Dimensions (in)								MEGACOAT NANO		Toolholder Page
		CW		CUTDIA	RE	W1	S	D1	PSIRR	PR1725	PR1535	
		in	mm									
TKF	12R200-GTP	0.079	2.0	0.181	0.003	0.118	0.343	0.197	0°	●	●	E12 E14
TKF	16R300-GTP	0.118	3.0	0.236	0.003	0.157	0.374	0.197	0°	●	●	

Chipbreaker Range (Steel)



Chipbreaker Range (Stainless Steel)

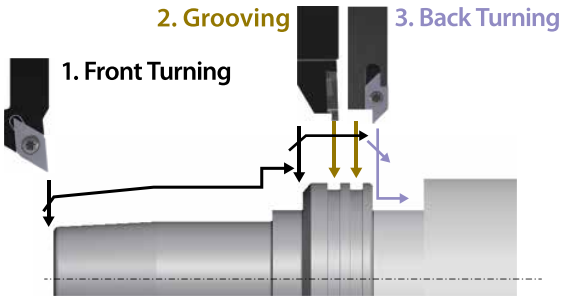


Integrated Tooling Solutions with GTP chipbreaker

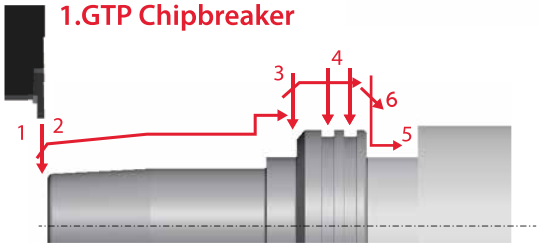
The GTP chipbreaker can be used for external turning, grooving, and back turning operations

Workpiece Example

Conventional Tools



GTP Chipbreaker



* Max. Grooving Width / Max. D.O.C. = TKF12R200-GTP (2.0mm / 4.0mm), TKF16R300-GTP (3.0mm / 5.5mm)

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

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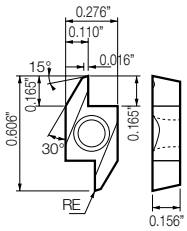
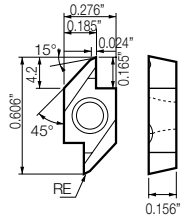
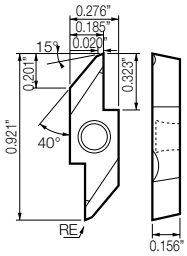
Inserts sold in 10 piece boxes.

Back Turning

Turning Inserts (Small Tools)

AABS / SABS / AABW / SABW Inserts

				ANSI Part Number	Corner Radius (in) RE	Cermet	MEGACOAT NANO				PVD Coated Carbide			Carbide	Toolholder Page
						TC60	PR1705	PR1725	PR1425	PR1225	PR930	PR1005	PR1025	KW10	
		ABS	15R4005	0.002	●					●			●	E19
			15R4015	0.006	●					●			●	
		ABS	15R4005M	<0.002		●	●	△	●		△	△		
			15R4015M	<0.006		●	●	△	●		△			
		ABW	15R4005	0.002	●					●			●	E20
			15R4015	0.006	●					●			●	
		ABW	15R4005M	<0.002		●	●	△	●		△	△		
			15R4015M	<0.006		●	●	△	●		△	△		
		ABW	23R5005	0.002	●					●			●	E21
			23R5015	0.006	●					●			●	
		ABW	23R5005M	<0.002			●	△	●			△		
			23R5015M	<0.006		●	●	△	●		△	△		

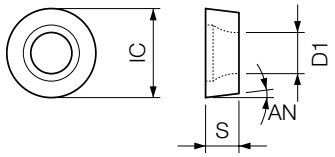
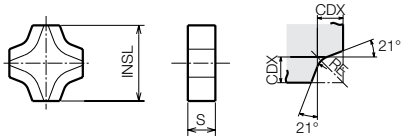
P	Free-Cutting Steel
	Carbon Steel / Alloy Steel
M	Stainless Steel
K	Gray Cast Iron
	Nodular Cast Iron
N	Non-ferrous Metals
S	Heat-Resistant Alloys
	Titanium Alloy
H	Hard materials

• Insert with corner R (RE) dimension expressed with less than sign (e.g. **<0.002, <0.004, <0.008** etc.) indicate models with minus tolerance for corner R (RE).

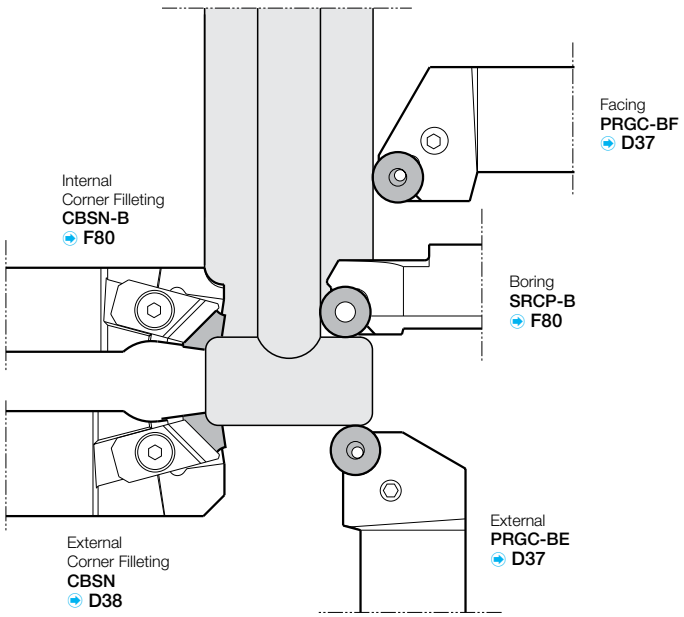
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

Bearing Machining

		ISO/ANSI Part Number	Dimension (mm) IC	S	D1	RE	Relief Angle AN	Cermet TN90	Toolholder Page
External / Boring / Facing		RCMT 1204M0-BB	12.0	4.76	4.2	-	7°	●	D37
		1606M0-BB	16.0	6.35	5.5	-	7°	●	
		RPMT 42M0-BB	12.0	3.18	4.4	-	11°	●	F80
		1604M0-BB	16.0	4.76	5.5	-	11°	●	
			INSL	S	CDX	RE			
Corner Filleting		SNMF 120406-21	12.70	4.76	1.5	0.6		●	D38 F80
		120410-21	12.70	4.76	3.0	1.0		●	
		120416-21	12.70	4.76	3.1	1.6	-	●	
		120421-21	12.70	4.76	3.2	2.1		●	
		120426-21	12.70	4.76	3.3	2.6		●	

◆ Tooling for Bearing Machining

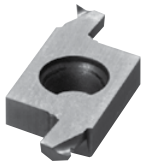
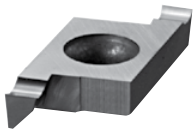
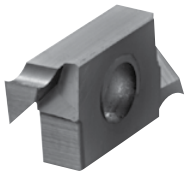


● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

Micro Boring

Twin Bars

Micro Boring	Micro Face Grooving
TWB Twin-Bars → F42	**TWFG** Twin-Bars → G94
	
TWBT Twin-Bars → F41	**TWFGT** Twin-Bars → G95
	

Solid Micro Boring Bars

Micro Boring	
MBS Micro Bars → F14	**MBE** Micro Bars → F15

EZ Bars / System Tip-Bars / Tip-Bars

Micro Boring		Micro Back Boring
EZB EZ Bars → F18	**EZVB** EZ Bars → F24	**EZBT** EZ Bars → F26
VNB-S / VNB System Tip-Bars → F36	**VNBX-S** System Tip-Bars → F40	**VNBT** System Tip-Bars → F37

Solid Tip-Bars (Grooving / Threading)

Micro Grooving	Micro Face Grooving	Micro Internal Threading
EZG EZ Bars → G59	**EZFG** EZ Bars → G90	**EZT** EZ Bars → J32
VNG System Tip-Bars → G61	**VNFG** System Tip-Bars → G92	**VNT** System Tip-Bars → J36

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KS6015 / KS6050 / CS7050 High Speed Machining of Cast Iron

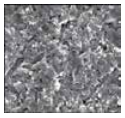
- Improved fracture resistance by high aspect ratio constituents
- Resists chipping due to scale and interrupted machining
- High speed machining of cast iron by controlling grain boundary phase (good wear resistance)

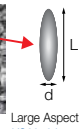
KS6015 NEW

Wear Resistant Machining

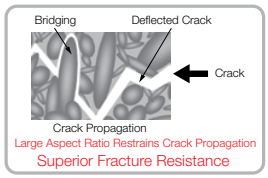
KS6050

General Purpose Interrupted Machining



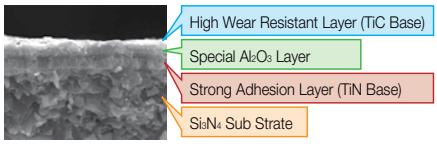


Large Aspect Ratio= L/d
KS6050 has a higher aspect ratio compared with the conventional product A.

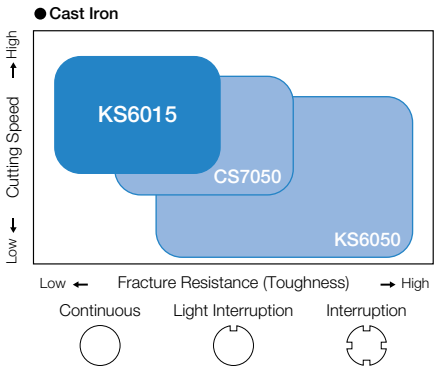


CS7050 (Coated Si3N4)

Superior wear resistance attained
with strong coating adherence
Applicable to high speed machining



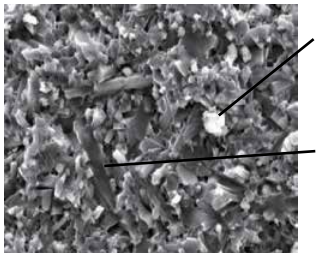
Application Map



KS6030/KS6040 SiAlON Ceramic Heat-Resistant Alloy Machining

Improved wear and fracture resistance due to the mixture of the hard and acicular particles

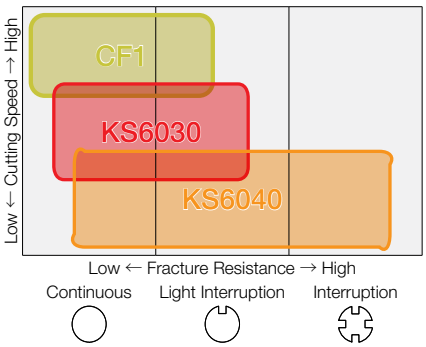
Superior balance in heat resistant alloys machining achieves optimum balance between wear and fracture resistance.



Hard Particle
(Improved Wear Resistance)

Acicular Particle
(Improved Fracture Resistance)

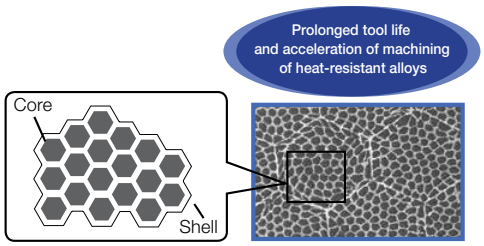
HRSA Application Map



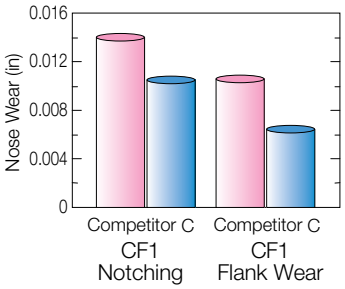
CF1 Honeycomb Structure Ceramic Heat-Resistant Alloy Machining

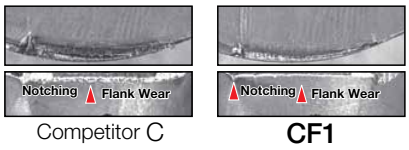
What is Honeycomb structure ceramic?

Honeycomb structure ceramic is a composite material consisting of a core (gray portion) and shell (white portion)



Comparison of Wear Resistance





<Cutting Conditions>
Workpiece Material: Ni-base Heat-Resistant Alloys
Tool Geometry: RNGN120400
Vc = 490sfm, D.O.C. = 0.039"
Feed Rate f =0.006ipr Wet

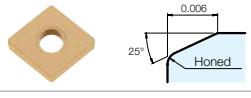
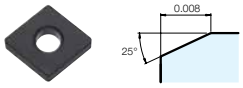
Ceramic Insert Identification System

C	N	G	A	12	04	04	S01525

Refer to ➔ **B2** for "Indexable Turning Inserts Identification System"

Edge Prep.

How to Identify Edge Preparation

Edge Prep.	Symbol	Cutting Edge Spec.	Example		Shape
	S	Chamfered and Honed Cutting edge	S00625	0.006" X 25° Chamfered and Honed Cutting edge	
	T	Chamfered Cutting edge	T00825	0.008" X 25° Chamfered Cutting edge	

● Refer to ➔ B3 for insert color

How to read this page ➔ B15

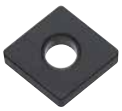
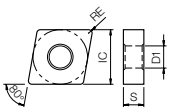
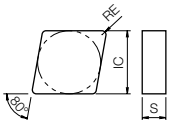
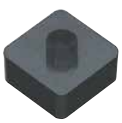
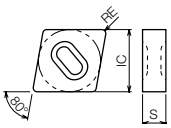
80° Diamond

Negative Insert

Part Number	IC	S	D1 (in)
CN_A 43_	1/2	3/16	0.203
CN_ 43_	1/2	3/16	-
CN_ 45_	1/2	5/16	-

Part Number	IC	S	D1 (in)
CNG 55_	5/8	5/16	-
CNGX 45_	1/2	5/16	-

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00625	0.006" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00625	0.006" X 25° Chamfered Cutting Edge

		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials
		K	K	K	K	S	H
Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Corner Radius (in) RE	Aluminum Oxide Ceramic KA30	Aluminum Oxide Ceramic A65	Aluminum Oxide Ceramic KT66	PVD Coated Ceramic A66N	MEGACOAT Ceramic PT600M	Silicon Nitride Ceramic KS6015	Silicon Nitride Ceramic KS6050	CVD Coated Silicon Nitride Ceramic CS7050	SiAlON Ceramic KS6030	SiAlON Ceramic KS6040	Honeycomb Structure Ceramic CF1	Whisker Reinforced Ceramic KXW1	Toolholder Page
 	CNGA 433T00425AA	S00425	CNGA 120412S01025	3/64	●												D8-D9 F81 F85 F86
	CNGA 431T00625AA	S00625	CNGA 120404S01525	1/64				●									
	432T00625AA		120408S01525	1/32				●									
	433T00625AA		120412S01525	3/64				●									
	CNGA 431S00825	S00825	CNGA 120404S02025	1/64					●								
	432S00825		120408S02025	1/32					●								
	433S00825		120412S02025	3/64					●								
	CNGA 431T01230AA	S01230	CNGA 120404S03030	1/64				●									
	432T01230AA		120408S03030	1/32				●									
	433T01230AA		120412S03030	3/64				●									
	CNGA 431T00625	T00625	CNGA 120404T01525	1/64				●									
	432T00625		120408T01525	1/32				●									
	433T00625		120412T01525	3/64				●									
	CNGA 431T00825	T00825	CNGA 120404T02025	1/64		●	●		●								
	432T00825		120408T02025	1/32		●			●	●	●	●					
	433T00825		120412T02025	3/64		●	●		●	●	●	●					
	CNMA 432T00625AA	S00625	CNMA 120408S01525	1/32				●									
	CNMA 432T01230AA	S01230	CNMA 120408S03030	1/32				●									
	433T01230AA		120412S03030	3/64				●									
	CNG 432T00425AA	S00425	CNGN 120408S01025	1/32	●												D26
	433T00425AA		120412S01025	3/64	●												
	CNG 432T00420	T00420	CNGN 120408T01020	1/32										●	△		
	433T00420		120412T01020	3/64										△	△		
	CNG 432T00825	T00825	CNGN 120408T02025	1/32		●			●	●	△	△		●			
	433T00825		120412T02025	3/64					●	●	●	△		△			
	434T00825		120416T02025	1/16		●					●						
	CNG 452T00625AA	S00625	CNGN 120708S01525	1/32				●									
	453T00625AA		120712S01525	3/64				●									
	CNG 452T00420	T00420	CNGN 120708T01020	1/32											△	●	
	453T00420		120712T01020	3/64											△		
	CNG 451T00825	T00825	CNGN 120704T02025	1/64		●											
	452T00825		120708T02025	1/32		●					●						
	453T00825		120712T02025	3/64		●											
	454T00825		120716T02025	1/16		●					●						
	CNG 552T00825	T00825	CNGN 160708T02025	1/32		●											
	553T00825		160712T02025	3/64		●											
	554T00825		160716T02025	1/16		●											
	CNM 452T00825	T00825	CNMN 120708T02025	1/32		●											
	453T00825		120712T02025	3/64		●											
 	CNGX 453T00420	T00420	CNGX 120712T01020	3/64										△			-
	454T00420		120716T01020	1/16										△			
	CNGX 452T00825	T00825	CNGX 120708T02025	1/32							△	△					
	453T00825		120712T02025	3/64							△	△		△			
	454T00825		120716T02025	1/16							△	△		△			

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

55° / 75° Diamond

Negative Insert

(in)

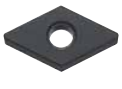
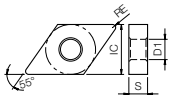
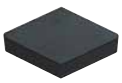
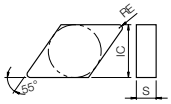
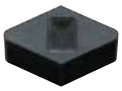
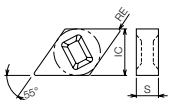
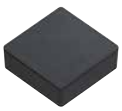
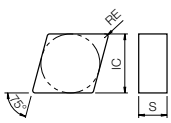
Part Number	IC	S	D1
DNGA 43_	1/2	3/16	0.203
DNGA 44_	1/2	1/4	0.203
DNG 43_	1/2	3/16	-
DNG 45_	1/2	5/16	-

(in)

Part Number	IC	S	D1
DNGX 35_	0.394	5/16	-
DNGX 45_	1/2	5/16	-
ENG 45_	1/2	5/16	-

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

		Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic		Honeycomb Structure Ceramic	Whisker Reinforced Ceramic	
K	Gray Cast Iron (With Scale)							✖	◔					
	Gray Cast Iron (Without Scale)	●		◔		◔		◔	◕					
	Nodular Cast Iron (With Scale)								◔					
	Nodular Cast Iron (Without Scale)								◔					
S	Heat-resistant Alloys													
H	Hard Materials				○	●								

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Corner Radius (in) RE	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1	KXW1	Toolholder Page
 	DNGA 432T00425AA	S00425	DNGA 150408S01025	1/32	●												D12 D13 F82 F88 F89
	DNGA 431T00625AA	S00625	DNGA 150404S01525	1/64				●									
	432T00625AA		150408S01525	1/32				●									
	DNGA 431S00825	S00825	DNGA 150404S02025	1/64					●								
	432S00825		150408S02025	1/32					●								
	DNGA 432T01230AA	S01230	DNGA 150408S03030	1/32				●									
	DNGA 431T00825	T00825	DNGA 150404T02025	1/64		●			●								
	432T00825		150408T02025	1/32		●	●		●								
	433T00825		150412T02025	3/64		●	●		●								
	434T00825		150416T02025	1/16		●											
	DNGA 442T00625AA	S00625	DNGA 150608S01525	1/32				●									
	443T00625AA		150612S01525	3/64				●									
	444T00625AA		150616S01525	1/16				●									
	DNGA 441T00825	T00825	DNGA 150604T02025	1/64		●			●								D12 D13 F82
	442T00825		150608T02025	1/32		●	●		●								
	443T00825		150612T02025	3/64		●			●								
 	DNG 451T00625AA	S00625	DNGN 150704S01525	1/64				●									D27
	452T00625AA		150708S01525	1/32				●									
	453T00625AA		150712S01525	3/64				●									
	DNG 452S00825	S00825	DNGN 150708S02025	1/32					●								
	DNG 451T00825	T00825	DNGN 150704T02025	1/64		●											
	452T00825		150708T02025	1/32		●											
	453T00825		150712T02025	3/64		●											
	454T00825		150716T02025	1/16		●											
 	DNGX 352T00825	T00825	DNGX 120708T02025	1/32							△						-
	353T00825		120712T02025	3/64							△						
	DNGX 452T00825	T02025	DNGX 150708T02025	1/32							△	△					
	453T00825		150712T02025	3/64							△	△					
	454T00825		150716T02025	1/16							●						
 	ENG 452T00625AA	S00625	ENGN 130708S01525	1/32				●									D27 F97
	453T00625AA		130712S01525	3/64				●									
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	452T00825		130708T02025	1/32		●											
	453T00825		130712T02025	3/64		●			●								
	454T00825		130716T02025	1/16		●											
	455T00825		130720T02025	5/64		●											

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

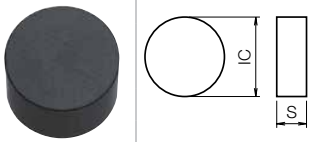
Round

Negative Insert

Part Number	IC	S	D1 (in)
RNG 32_	3/8	1/8	-
RNG 33_	3/8	3/16	-
RNG 35_	3/8	5/16	-
RNG 43_	1/2	3/16	-
RNG 45_	1/2	5/16	-
RNG 55_	5/8	5/16	-
RNG 65_	3/4	5/16	-
RNG 85_	1	5/16	-

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

		Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic		Honeycomb Structure Ceramic	Whisker Reinforced Ceramic	
		KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1	KXW1	Toolholder Page
K	Gray Cast Iron (With Scale)						●	✠	◔					
	Gray Cast Iron (Without Scale)			◔		◔		◔	●					
	Nodular Cast Iron (With Scale)								◔					
	Nodular Cast Iron (Without Scale)								◔					
S	Heat-resistant Alloys									●	✠	◔	●	
H	Hard Materials				○	●							○	

Insert	*Edge Prep (in)	ANSI Part Number	ISO Part Number	Corner Radius (in) RE													
	E001	RNG 32E001	RNGN 090300E003	-									●				
	T00420	32T00420	090300T01020	-									●				
	S00625	RNG 33T00625AA	RNGN 090400S01525	-				●									D33
	S00825	33S00825	090400S02025	-					●								
	T00420	33T00420	090400T01020	-											△		
	T00825	33T00825	090400T02025	-		●			●								
	T00420	RNG 35T00420	RNGN 090700T01020	-											△	●	-
	E001	RNG 43E001	RNGN 120400E003	-									●				
	S00625	43T00625AA	120400S01525	-				●									
	S00825	43S00825	120400S02025	-					●								
	T00420	43T00420	120400T01020	-									●	△	△		
	T00625	43T00625	120400T01525	-				●									
	T00825	43T00825	120400T02025	-		●	●		●	●	●	●					
	E001	RNG 45E001	RNGN 120700E003	-									●				D31 D33
	E002	45E002	120700E005	-										●			
	K06015	45K06015	120700K15015	-					●								
	S00625	45T00625AA	120700S01525	-				●									
	S00825	45S00825	120700S02025	-					●								
	T00420	45T00420	120700T01020	-									●	●	△	●	
	T00625	45T00625	120700T01525	-				●									
	T00825	45T00825	120700T02025	-		●	●		●	●	●	△					
	S00625	RNG 55T00625AA	RNGN 150700S01525	-				●									D31
	S00825	55S00825	150700S02025	-					●								
	T00825	55T00825	150700T02025	-		●											
	E001	RNG 65E001	RNGN 190700E003	-									●				
	E002	65E002	190700E005	-										△			
	T00420	65T00420	190700T01020	-									●	●		●	-
	E001	RNG 85E001	RNGN 250700E003	-									●				
	T00420	85T00420	250700T01020	-									●				

* For cutting edge "E" and "K", please refer to the table below.

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E002	R0.002" Honed
K	Double Chamfered Cutting Edges	K06015	0.060" X 15° Chamfered Cutting Edge

- Note: Symbol "K" describe only the largest chamfer width and its angle.

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

90° Square

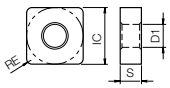
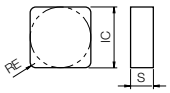
Negative Insert

(in)

Part Number	IC	S	D1
SN_A 43_	1/2	3/16	0.203
SNG 43_	1/2	3/16	-
SNG 45_	1/2	5/16	-

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

K	Gray Cast Iron (With Scale)	● ✠ ◔
	Gray Cast Iron (Without Scale)	● ◔ ◔ ◔ ◔ ◔ ◔ ◔ ◔ ◔ ◔ ◔ ◔
	Nodular Cast Iron (With Scale)	◔ ◔
	Nodular Cast Iron (Without Scale)	◔ ◔
S	Heat-resistant Alloys	✠ ◕ ●
H	Hard Materials	○ ● ◔ ○

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Corner Radius (in) RE	Aluminum Oxide Ceramic KA30	Aluminum Oxide Ceramic A65	Aluminum Oxide Ceramic KT66	PVD Coated Ceramic A66N	MEGACOAT Ceramic PT600M	Silicon Nitride Ceramic KS6015	Silicon Nitride Ceramic KS6050	CVD Coated Silicon Nitride Ceramic CS7050	SiAlON Ceramic KS6030	SiAlON Ceramic KS6040	Honeycomb Structure Ceramic CF1	Whisker Reinforced Ceramic KXW1	Toolholder Page
	SNGA 432T00625AA	S00625	SNGA 120408S01525	1/32				●									D14 D15 D29 F91
	433T00625AA		120412S01525	3/64				●									
	SNGA 432S00825	S00825	SNGA 120408S02025	1/32					●								
	433S00825		120412S02025	3/64					●								
	SNGA 432T00625	T00625	SNGA 120408T01525	1/32					●								
	433T00625		120412T01525	3/64				●									
	SNGA 432T00825	T00825	SNGA 120408T02025	1/32		●	△		●	●	●	△					
	433T00825		120412T02025	3/64		●	△		●	●	●	△					
	434T00825		120416T02025	1/16					●	●	●	●					
	SNMA 432T01230AA	S01230	SNMA 120408S03030	1/32				●									
	SNG 432T00425AA	S00425	SNGN 120408S01025	1/32	●												D29 D34 D35
	433T00425AA		120412S01025	3/64	●												
	434T00425AA		120416S01025	1/16	●												
	435T00425AA		120420S01025	5/64	●												
	SNG 432T00625AA	S00625	SNGN 120408S01525	1/32				●									
	433T00625AA		120412S01525	3/64				●									
	434T00625AA		120416S01525	1/16				●									
	SNG 432S00825	S00825	SNGN 120408S02025	1/32					●								
	433S00825		120412S02025	3/64					●								
	434S00825		120416S02025	1/16					●								
	SNG 434T01230AA	S01230	SNGN 120416S03030	1/16				●									
	SNG 432T00220	T00220	SNGN 120408T00520	1/32		●											
	SNG 432T00420	T00420	SNGN 120408T01020	1/32											△		
	433T00420		120412T01020	3/64										●	△		
	434T00420		120416T01020	1/16										△	△		
	435T00420		120420T01020	5/64											△		
	SNG 431T00825	T00825	SNGN 120404T02025	1/64		●			●								
	432T00825		120408T02025	1/32		●	●		●	●							
	433T00825		120412T02025	3/64		●	●		●	●	●	●		△			
	434T00825		120416T02025	1/16		●			●	●	●	△					
	435T00825		120420T02025	5/64		●				●	●	△					
	SNG 452T00425AA	S00425	120708S01025	1/32	●												
	453T00425AA		120712S01025	3/64	●												
	454T00425AA		120716S01025	1/16	●												
	SNG 451T00625AA	S00625	SNGN 120704S01525	1/64				●									
	452T00625AA		120708S01525	1/32				●									
	453T00625AA		120712S01525	3/64				●									
	454T00625AA		120716S01525	1/16				●									
	455T00625AA		120720S01525	5/64				●									
	SNG 452S00825	S00825	SNGN 120708S02025	1/32					●								
	453S00825		120712S02025	3/64					●								
	454S00825		120716S02025	1/16					●								
	455S00825		120720S02025	5/64					●								
	SNG 452T00420	T00420	SNGN 120708T01020	1/32											△		
	453T00420		120712T01020	3/64											△		
	454T00420		120716T01020	1/16											△	●	
	455T00420		120720T01020	5/64											△		

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

90° Square

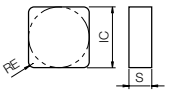
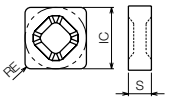
Negative Insert

(in)

Part Number	IC	S	D1
SN_45_	1/2	5/16	-
SN_55_	5/8	5/16	-

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

		Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic		Honeycomb Structure Ceramic	Whisker Reinforced Ceramic	
		KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1	KXW1	
K	Gray Cast Iron (With Scale)					●		✠	◔					
	Gray Cast Iron (Without Scale)					◔		◔	◕					
	Nodular Cast Iron (With Scale)								◔					
	Nodular Cast Iron (Without Scale)								◔					
S	Heat-resistant Alloys										✠			
H	Hard Materials					●								

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Corner Radius (in) RE													Toolholder Page
		SNG 451T00825	T00825	SNGN 120704T02025	1/64		●											D29 D34 D35
		452T00825		120708T02025	1/32		●			●								
		453T00825		120712T02025	3/64		●			●								
		454T00825		120716T02025	1/16		●			●	●	●	△					
		455T00825		120720T02025	5/64		●			●								
		SNM 454T00825	T00825	SNMN 120716T02025	1/16		●											
		SNG 553T00825	T00825	SNGN 150712T02025	3/64		●			●								D29
		554T00825		150716T02025	1/16		●					●						
		SNGX 453T00420	T00420	SNGX 120712T01020	3/64										△			-
		454T00420		120716T01020	1/16										△			
		SNGX 453T00825	T00825	SNGX 120712T02025	3/64							△	△		△			
		454T00825		120716T02025	1/16							△	△		△			
		SNGX 552T00825	T00825	SNGX 150708T02025	1/32							●						
		553T00825		150712T02025	3/64							●						
		554T00825		150716T02025	1/16							△						

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

60° Triangle

Negative Insert

(in)

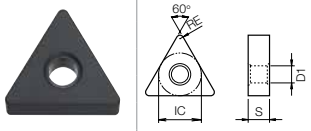
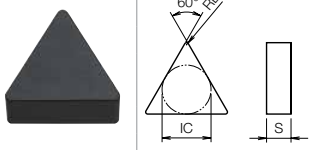
Part Number	IC	S	D1
TNGA 33_	3/8	3/16	0.150
TNG 22_	1/4	1/8	-

(in)

Part Number	IC	S	D1
TNG 33_	3/8	3/16	-
TNG 35_	3/8	5/16	-
TNG 43_	1/2	3/16	-

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

		Aluminum Oxide Ceramic			PVD Coated Ceramic	MEGACOAT Ceramic	Silicon Nitride Ceramic		CVD Coated Silicon Nitride Ceramic	SiAlON Ceramic		Honeycomb Structure Ceramic	Whisker Reinforced Ceramic	
		KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1	KXW1	
K	Gray Cast Iron (With Scale)						●	✠	◔					
	Gray Cast Iron (Without Scale)	●		◔		◔		◔	◕					
	Nodular Cast Iron (With Scale)								◔					
	Nodular Cast Iron (Without Scale)								◔					
S	Heat-resistant Alloys													
H	Hard Materials				○	●								

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Corner Radius (in) RE	Toolholder Page
	TNGA 332T00425AA	S00425	TNGA 160408S01025	1/32	
	TNGA 331T00625AA	S00625	TNGA 160404S01525	1/64	
	332T00625AA		160408S01525	1/32	
	333T00625AA		160412S01525	3/64	
	TNGA 331S00825	S00825	TNGA 160404S02025	1/64	
	332S00825		160408S02025	1/32	D16 D17 D18
	333S00825		160412S02025	3/64	
	TNGA 332T01230AA	S01230	TNGA 160408S03030	1/32	F82
	TNGA 332T00220	T00220	TNGA 160408T00520	1/32	F92 F93
	TNGA 331T00625	T00625	TNGA 160404T01525	1/64	
	332T00625		160408T01525	1/32	
	333T00625		160412T01525	3/64	
	TNGA 331T00825	T00825	TNGA 160404T02025	1/64	
	332T00825		160408T02025	1/32	
	333T00825		160412T02025	3/64	
	TNGA 432T00825		TNGA 220408T02025	1/32	D16 D17 D18
	433T00825		220412T02025	3/64	
	TNG 221T00220	T00220	TNGN 110304T00520	1/64	
	222T00220		110308T00520	1/32	D40 F97
	223T00220		110312T00520	3/64	
	TNG 331T00425AA	S00425	TNGN 160404S01025	1/64	
	332T00425AA		160408S01025	1/32	
	333T00425AA		160412S01025	3/64	
	334T00425AA		160416S01025	1/16	
	335T00425AA		160420S01025	5/64	
	TNG 331T00625AA	S00625	TNGN 160404S01525	1/64	
	332T00625AA		160408S01525	1/32	
	333T00625AA		160412S01525	3/64	
	TNG 331S00825	S00825	TNGN 160404S02025	1/64	
	332S00825		160408S02025	1/32	
	333S00825		160412S02025	3/64	
	TNG 331T00220	T00220	TNGN 160404T00520	1/64	
	332T00220		160408T00520	1/32	D30
	333T00220		160412T00520	3/64	
	TNG 331T00825	T00825	TNGN 160404T02025	1/64	
	332T00825		160408T02025	1/32	
	333T00825		160412T02025	3/64	
	TNG 351T00825	T00825	TNGN 160704T02025	1/64	
	352T00825		160708T02025	1/32	
	353T00825		160712T02025	3/64	
	354T00825		160716T02025	1/16	
	355T00825		160720T02025	5/64	
	TNG 432T00825	T00825	TNGN 220408T02025	1/32	
	434T00825		220416T02025	1/16	

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

How to read this page B15

35° Diamond / 80°Trigon

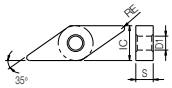
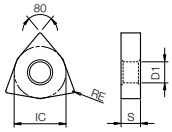
Negative Insert

(in)

Part Number	IC	S	D1
VN_A 33_	3/8	3/16	0.150
WNGA 43_	1/2	3/16	0.203

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials
		K	K	K	K	S	H
			◔		●		○ ●

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Corner Radius (in) RE	Aluminum Oxide Ceramic KA30	Aluminum Oxide Ceramic A65	Aluminum Oxide Ceramic KT66	PVD Coated Ceramic A66N	MEGACOAT Ceramic PT600M	Silicon Nitride Ceramic KS6015	Silicon Nitride Ceramic KS6050	CVD Coated Silicon Nitride Ceramic CS7050	SiAlON Ceramic KS6030	SiAlON Ceramic KS6040	Honeycomb Structure Ceramic CF1	Whisker Reinforced Ceramic KXW1	Toolholder Page
		VNGA 331T00625AA	S00625	VNGA 160404S01525	1/64				●									D20 D21 D22
		332T00625AA			160408S01525	1/32				●								
		VNGA 331S00825	S00825	VNGA 160404S02025	1/64					●								
		332S00825			160408S02025	1/32				●								
		VNGA 331T00825	T00825	VNGA 160404T02025	1/64		●	●		●								
		332T00825			160408T02025	1/32		●	●		●								
		333T00825			160412T02025	3/64		●			●								
		VNMA 332T00625AA	S00625	VNMA 160408S01525	1/32				●									
		WNGA 432T00625AA	S00625	WNGA 080408S01525	1/32				●									D24 D25 F95 F96
		WNGA 431T00625	T00625	WNGA 080404T01525	1/64				●									
		432T00625			080408T01525	1/32				●								
		433T00625			080412T01525	3/64				●								

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

Positive

Positive Insert

Part Number	IC	S	AN
RPG 32	3/8	1/8	11°
RPG 43	1/2	3/16	
SPG 32_	3/8	1/8	
SPG 42_	1/2	1/8	

Part Number	IC	S	AN
TBG 121_	5/32	1/16	5°
TCG 33_	3/8	3/16	7°
TPG 1815_	7/32	3/32	11°
TPG 22_	1/4	1/8	
TPG 32_	3/8	1/8	

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

		Gray Cast Iron (With Scale)	Gray Cast Iron (Without Scale)	Nodular Cast Iron (With Scale)	Nodular Cast Iron (Without Scale)	Heat-resistant Alloys	Hard Materials
Insert	*Edge Prep* (in)	K	K	K	K	S	H
ANSI Part Number							
ISO Part Number	Corner Radius (in) RE	Aluminum Oxide Ceramic KA30	Aluminum Oxide Ceramic A65	Aluminum Oxide Ceramic KT66	PVD Coated Ceramic A66N	MEGACOAT Ceramic PT600M	Silicon Nitride Ceramic KS6015	Silicon Nitride Ceramic KS6050	CVD Coated Silicon Nitride Ceramic CS7050	SiAlON Ceramic KS6030	SiAlON Ceramic KS6040	Honeycomb Structure Ceramic CF1	Whisker Reinforced Ceramic KXW1	Toolholder Page
RPG 32E001	E001	RPGN 090300E003	-								●				-
32E002	E002	090300E005	-									△			
32T00420	T00420	090300T01020	-								●				
RPG 43E001	E001	RPGN 120400E003	-								●				
43E002	E002	120400E005	-									△			
43T00420	T00420	120400T01020	-								●	●		●	
SPG 322T00320AA	S00320	SPGN 090308S00820	1/32				●								F78
SPG 322T00320	T00320	SPGN 090308T00820	1/32		●			●							
SPG 422T00320	T00320	SPGN 120308T00820	1/32		●										
423T00320		120312T00820	3/64		●										
TBG 12105T00320AA	S00320	TBGN 060102S00820	0.008				●								-
1211T00320AA		060104S00820	1/64				●								
1212T00320AA		060108S00820	1/32				●								
TCG 332T00320	T00320	TCGN 160408T00820	1/32		●										
TPG 18151T00320	T00320	TPGN 090204T00820	1/64			●		●							F79
18152T00320		090208T00820	1/32					●							
TPG 2205T00320AA	S00320	TPGN 110302S00820	0.008				●								
TPG 221T00320AA		TPGN 110304S00820	1/64				●								
222T00320AA		110308S00820	1/32				●								
TPG 221T00320	T00320	TPGN 110304T00820	1/64		●		●	●							
222T00320		110308T00820	1/32		●		●	●							
TPG 321T00320AA	S00320	TPGN 160304S00820	1/64				●								
322T00320AA		160308S00820	1/32				●								
323T00320AA		160312S00820	3/64				●								
TPG 3205T00320	T00320	TPG 160302T00820	0.008		●										
321T00320		160304T00820	1/64		●		●	●							
322T00320		160308T00820	1/32		●		●	●							
323T00320		160312T00820	3/64		●										

* For cutting edge "E", please refer to the table below.

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E002	R0.002" Honed

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

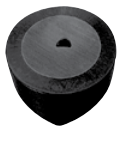
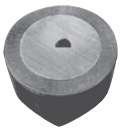
Contact your local Kyocera sales engineer to upgrade old products to new technology

Inserts sold in 10 piece boxes.

Inserts for Roll Machining

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

K	Gray Cast Iron (With Scale)	✠
	Gray Cast Iron (Without Scale)	
	Nodular Cast Iron (With Scale)	
	Nodular Cast Iron (Without Scale)	
S	Heat-resistant Alloys	● ✠ ◔ ●
H	Hard Materials	◔ ● ○

Insert	ANSI Part Number	*Edge Prep (in)	ISO Part Number	Dimensions (in) IC	D1	S	S2	CHW	Aluminum Oxide Ceramic KA30	A65	KT66	PVD Coated Ceramic MEGACOAT Ceramic A66N	PT600M	Silicon Nitride Ceramic KS6015	KS6050	CVD Coated Silicon Nitride Ceramic CS7050	SiAlON Ceramic KS6030	KS6040	Honeycomb Structure Ceramic Whisker Reinforced Ceramic CF1	KXW1	Toolholder Page
	RBG 12K20003	K20003	RBG 12K20003	12mm	6mm	6mm	3mm	0.2mm					△								-
	16K20003	K20003	16K20003	16mm	8mm	8mm	5mm	0.2mm					●								
	20K20003	K20003	20K20003	20mm	10mm	10mm	5mm	0.3mm					△								
	RCGX 24E001	E001	RCGX 060600E003	1/4	-	1/4	-	-									●				D31
	24E002	E002	060600E005	1/4	-	1/4	-	-										●			
	24T00420	T00420	060600T01020	1/4	-	1/4	-	-									●	●			
	102T04015 *1	T04015	060400 *1	1/4	-	0.180	-	-		●		●									
	102H315T04015		060700	1/4	-	0.315	-	-		●		●									
	35E001	E001	090700E003	3/8	-	0.315	-	-									●				
	35E002	E002	090700E005	3/8	-	0.315	-	-										△			
	103T08015625AA	P08015	090700P20015	3/8	-	0.315	-	-		●		●	●								
	103S00420	S00420	090700S01020	3/8	-	0.315	-	-											△		
	35T00420	T00420	090700T01020	3/8	-	0.315	-	-									●	●		●	
	45E001	E001	120700E003	1/2	-	0.315	-	-									●				
	45E002	E002	120700E005	1/2	-	0.315	-	-										△			
	104T08015625AA	P08015	120700P20015	1/2	-	0.315	-	-		●		●	●								
	104S00420	S00420	120700S01020	1/2	-	0.315	-	-											△		
	45T00420	T00420	120700T01020	1/2	-	0.315	-	-									●	△		●	
	106T08015625AA	P08015	191000P20015	3/4	-	0.394	-	-		●		●									
	RPGX 24E001	E001	RPGX 060600E003	1/4	-	1/4	-	-									●				-
	24T00420	T00420	060600T01020	1/4	-	1/4	-	-									●				
	35E001	E001	090700E003	3/8	-	0.315	-	-									●				
	35T00420	T00420	090700T01020	3/8	-	0.315	-	-									●	△		●	
	45E001	E001	120700E003	1/2	-	0.315	-	-									●				
	45E002	E002	120700E005	1/2	-	0.315	-	-										△			
	45T00420	T00420	120700T01020	1/2	-	0.315	-	-									●	●		●	
	RCMA 66T08015625AA	P08015	RCMA 190900P20015	3/4	0.250	3/8	-	-		●		●									
	88T08015625AA		251200P20015	1	0.266	1/2	-	-		●											
	106T08015625AA		310900P20015	1 1/4	0.390	3/8	-	-		●		●									
	1012T08015625AA		311800P20015	1 1/4	0.390	3/4	-	-		△											
	LNU 6688T08015625A	P08015	LNUN 381232P20015	CW	S	INSL	RE	-	KA30	A65	KT66	A66N	PT600M	KS6015	KS6050	CS7050	KS6030	KS6040	CF1	KXW1	
				3/4	1/2	1 1/2	1/8	-		△											

*1 IC may differ based on edge prep.

For cutting edge "E", "K" and "P" please refer to the table below.

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	R-honed Cutting Edge	E002	R0.002" Honed
K	Double Chamfered Cutting Edges	K20003	2.00mm X 3° Chamfered Cutting Edge
P	Double Chamfered + Honed Cutting Edge	P20015	2.00mm X 15° Chamfered + Honed Cutting Edge

· Note: Symbol "K" and "P" describe only the largest chamfer width and its angle.

RBG Inserts are sold in 1 piece boxes

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

Grooving Inserts

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge

| | | |

CBN & PCD INSERTS

C

C1 - C34

CBN INSERTS & BARS		**C2 - C21**
IDENTIFICATION SYSTEM		C2
HOW TO IDENTIFY EDGE PREPARATION		C2
MEGACOAT CBN		C3
APPLICATION MAPS		C4
RECOMMENDED CUTTING CONDITIONS		C4
CASE STUDIES		C5
NEGATIVE TURNING INSERTS		C6
POSITIVE TURNING INSERTS		C14
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EXTERNAL GROOVING INSERTS		C20
SOLID TIP-BARS FOR MICRO BORING	EZ Bars / Tip-Bars	C21
PCD INSERTS & BARS		**C22 - C34**
PCD GRADES AND FEATURES		C22
IDENTIFICATION SYSTEM		C22
RECOMMENDED CUTTING CONDITIONS		C22
NEGATIVE TURNING INSERTS		C23
POSITIVE TURNING INSERTS		C24
EXTERNAL GROOVING		C30
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SOLID TIP-BARS FOR MICRO BORING	EZ Bars	C33
	System Tip-Bars / Tip-Bars	C34

MEGACOAT CBN

Innovative CBN Tools

Extended Tool Life | **Improved Stability** | **High Speed Cutting**

For CBN Variation and Features See Page A16

Various Insert Edge Preparations Available in High Performance MEGACOAT CBN

Turning Insert Identification System

C	N	G	A	12	04	04	S01225	ME

Refer to B2 for "Turning Indexable Inserts Identification System"

Insert Type	Part Number	Edge Prep.	Manufacture's Option	Cutting Edge Length	No. of Edges	Re-Grinding
Negative	CNGA431MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CNGA431ME4	S00525	ME4		4 (Double-sided)	
	CNGA431S00525ME		ME		2	
	CNGA431S00245MEP	S00245	MEP		2	
	CNGA431S00525SE	S00525	SE		1	
	CNMN431S00820	S00820	No Indication (Only KBN900)	Long	Multiple Edge	Possible
Positive	CCMW3251MEF	F	MEF	Short (Small Edge)	2	Not Recommended
	CCMW3251T00315ME	T00315	ME		2	
	CCMW3251S00525MES	S00525	MES		2	
	CCMW3251T00315SE	T00315	SE		1	

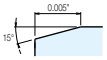
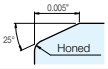
Refer to Page B3 for insert color.

• Re-Grinding

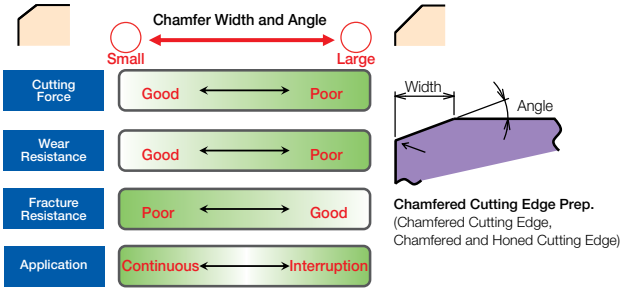
1) Regrinding is possible for inserts without any indication in manufacturer's option. Regrinding may not be available depending on the edge condition.

2) Regrinding is not recommended for inserts with manufacturer's symbol like "ME" or "SE".

How To Identify Edge Preparation

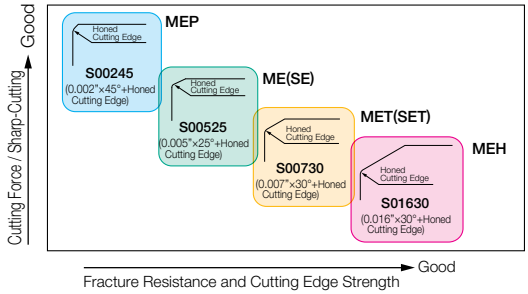
Edge Prep.				
Symbol	Cutting Edge Spec.	Example		Shape
F	Sharp Edge	F	Sharp Edge	
E	Honed Cutting Edge	E003	R0.003" Honed Cutting Edge	
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge	
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered + Honed Cutting Edge	

Features of Chamfer Width & Angle

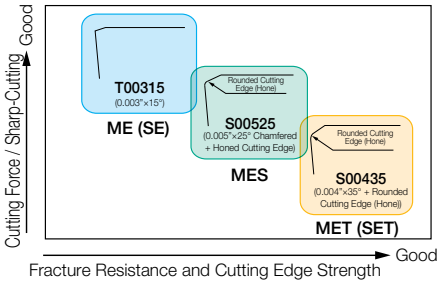


Chamfered Cutting Edge Prep.
(Chamfered Cutting Edge, Chamfered and Honed Cutting Edge)

① Standard Cutting Edge Prep. of Negative inserts



② Standard Cutting Edge Prep. of Positive Inserts



Manufacturer's Option	Cutting Edge Prep.		Application & Features
MEP	S00245	0.002" X 45° + Honed Cutting Edge	High speed, continuous machining Excellent crater wear resistance
ME	S00525	0.005" X 25° + Honed Cutting Edge	General Purpose
MET	S00730	0.007" X 30° + Honed Cutting Edge	Superior fracture resistance
MEH	S01630	0.016" X 30° + Honed Cutting Edge	Interrupted high feed machining Prevention of flaking

Manufacturer's Option	Cutting Edge Prep.		Application & Features
ME	T00315	0.003" X 15°	Chamfered Sharp cutting oriented, less burring
MES	S00525	0.005" X 25° + Rounded Cutting Edge (Hone)	General Purpose
MET	S00435	0.004" X 35° + Rounded Cutting Edge (Hone)	Interrupted Cutting Stable cutting oriented

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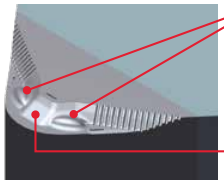
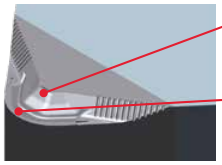
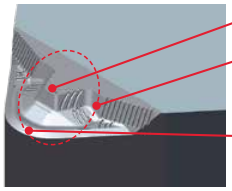
H Chipbreaker Series

CBN Inserts for Machining Hardened Material

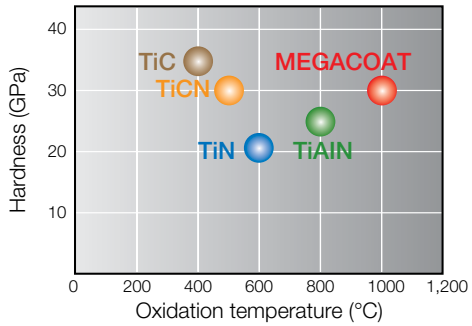
Unique Molded Chipbreaker Provides Excellent Chip Control when Machining Hardened Material

3 Chipbreaker Styles Available for a Wide Range of Machining Applications

Chipbreaker	Application	Recommended Cutting Range
HH (1st Recommendation)  Twin Dots: Breaks chips into small pieces Wide Bump: Provides stable chip curls	Hardened Steel Finishing 55HRC or more	Small D.O.C. (D.O.C. = 0.004" ~ 0.012")
HL  Wide Bump Rake Surface: Stable chip control for softer interior of hardened materials	Hardened Steel Finishing 55HRC or less	
HD  Wide Bump Multi-step Structure: Good for a wide range of conditions Rake Surface: Stable chip control for softer interior of hardened materials	Removing the Carburized Layer (From Carburized Layer to Unhardened Layer)	Large D.O.C. (ap = 0.012" ~ 0.028")

MEGACOAT CBN

PVD Layer Coating Properties

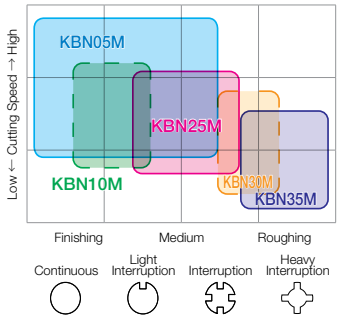


Advantages of MEGACOAT

- Long tool life and stable machining due to superior heat-resistance and hardness
- Stability improvement through prevention of crater wear (oxidation, diffusional wear)
- High thermal stability and surface smoothness provide excellent surface finish

Application Maps

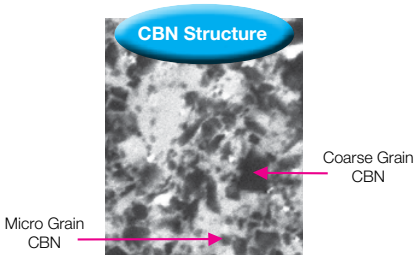
Hardened Materials

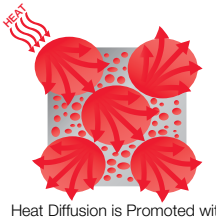


KBN05M
1st recommended grade for a wide range of applications from continuous (high speed finishing) to interrupted cutting.

Hybrid Grain Structure (KBN05M)

Mixed structure of micro grain CBN and coarse grain CBN
➡CBN possesses high hardness, toughness, and thermal resistance characteristics.





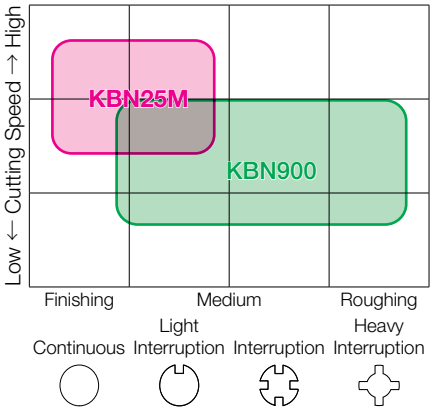
Heat Diffusion is Promoted with Coarse Grain CBN
➡ High Thermal Conductivity

KBN25M: High Stability for General Cutting

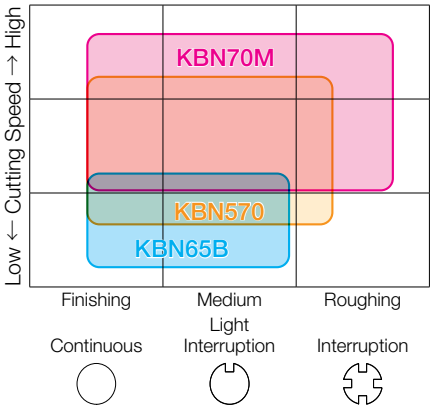
KBN30M: High Stability During Interrupted Cutting

KBN35M: Honeycomb Structure CBN with Superior Fracture Resistance in Heavy Interrupted Cutting

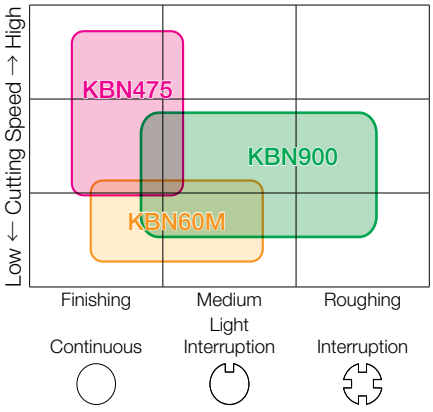
Roll Materials (Chilled Cast Iron)



Powdered Steel



Cast Iron



Recommended Cutting Conditions

Workpiece Material	Hardness	Applications		Recommended Insert Grade	Cutting Conditions		
					Vc (sfm)	D.O.C. (in)	f (ipr)
Heat Treated Steel	Over 55HRC	General Finishing	Continuous~Interruption	KBN05M	330 ~ **490** ~ 660	0.002 ~ **0.012** ~ 0.020	0.002 ~ **0.003** ~ 0.004
		Finishing (HH Chipbreaker)	Continuous~Interruption	KBN05M	330 ~ **490** ~ 660	0.004 ~ **0.008** ~ 0.012	0.004 ~ **0.006** ~ 0.010
		High Efficiency Stable Machining	Light Interruption~Interruption	KBN25M	260 ~ **390** ~ 520	0.002 ~ **0.012** ~ 0.020	0.002 ~ **0.003** ~ 0.004
		Interruption (Small D.O.C.)	Interruption~Heavy interruption	KBN35M	200 ~ **330** ~ 490	0.002 ~ **0.008** ~ 0.016	0.002 ~ **0.003** ~ 0.004
		Heavy Machining	Continuous~Interruption	KBN900	230 ~ **300** ~ 360	0.020 ~ **0.039** ~ 0.079	0.002 ~ **0.004** ~ 0.008
	Under 55HRC	Finishing (HL Chipbreaker)	Continuous~Interruption	KBN05M	330 ~ **490** ~ 660	0.004 ~ **0.008** ~ 0.012	0.004 ~ **0.006** ~ 0.010
		Finishing	Continuous	*PT600M	200 ~ **260** ~ 390	0.008 ~ **0.020** ~ 0.028	0.002 ~ **0.004** ~ 0.006
	Machining carburized layer to unhardened layer	Remove Carburized Layer (HD Chipbreaker)	Continuous~Interruption	KBN05M	330 ~ **490** ~ 660	0.012 ~ **0.020** ~ 0.028	0.004 ~ **0.006** ~ 0.010
Gray Cast Iron	Under 250HB	Finishing	Continuous~Light interruption	KBN475	1310 ~ **2620** ~ 3940	0.002 ~ **0.008** ~ 0.020	0.004 ~ **0.008** ~ 0.012
		Finishing	Continuous~Light interruption	KBN60M	980 ~ **1640** ~ 2300	0.002 ~ **0.008** ~ 0.020	0.004 ~ **0.008** ~ 0.012
		High Efficiency Finishing	Continuous~Light interruption	KBN900	1640 ~ **2950** ~ 3940	0.004 ~ **0.020** ~ 0.039	0.002 ~ **0.004** ~ 0.008
		Heavy Machining	Continuous~Interruption	KBN900	1640 ~ **2300** ~ 2950	0.020 ~ **0.059** ~ 0.118	0.004 ~ **0.012** ~ 0.020
Roll Materials (Chilled Cast Iron)	Over 55HRC	Finishing	Continuous~Interruption	KBN25M	260 ~ **390** ~ 520	0.002 ~ **0.012** ~ 0.020	0.002 ~ **0.003** ~ 0.004
		Heavy Machining	Continuous~Interruption	KBN900	230 ~ **300** ~ 360	0.012 ~ **0.028** ~ 0.039	0.002 ~ **0.004** ~ 0.006
Sintered Steel	-	Finishing	Continuous~Light interruption	KBN570	160 ~ **490** ~ 820	0.002 ~ **0.006** ~ 0.010	0.001 ~ **0.004** ~ 0.008
	-	Finishing	Continuous~Interruption	KBN70M	330 ~ **660** ~ 820	0.002 ~ **0.008** ~ 0.012	0.002 ~ **0.006** ~ 0.010

*PT600M : MEGACOAT on Al_2O_3+TiC Ceramic

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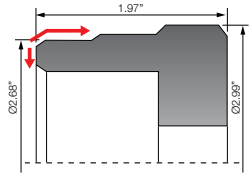
Case Studies

5120H (58HRC)

Gear
- External and Face machining and Chamfering
- Vc=427 sfm
- D.O.C.=0.024"
- f=0.005 ipr
- WET
- CNGA432S00525ME (KBN05M)



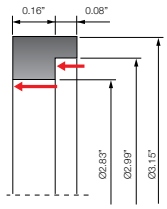
KBN05M	300 pcs/edge
Competitor C	200 pcs/edge

KBN05M achieved 1.5 times longer tool life than competitor C.
➡ Its longer tool life contributes to cost-cutting.

User Evaluation

4131 (55HRC)

Stator
- Boring
- Vc=558 sfm
- D.O.C.=0.016"
- f=0.004 ipr
- WET
- CNGA432S00525ME (KBN05M)



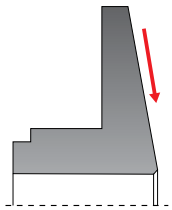
KBN05M	600 pcs/edge
Competitor D	300 pcs/edge

KBN05M achieved twise longer tool life than competitor D.
➡Its longer tool life contributes to cost-cutting.

User Evaluation

5120H (58HRC)

Pulley
- Face machining (Continuous)
- Vc=394 sfm
- D.O.C.=0.006"~0.008"
- f=0.009 ipr
- WET
- DNGA432S00245MEP (KBN05M)



KBN05M-MEP (Edge Preparation : 0.002"×45°)	150 pcs/edge
KBN05M-ME (Edge Preparation : 0.005"×25°)	100 pcs/edge
Competitor E	100 pcs/edge

Tool life of KBN05M-ME type (Edge prep.: 0.005"×25° Chamfered + R honed) is same as competitor E.'s.
KBN05M-MEP (Edge prep.: 0.0020"×45° Chamfered + R honed) type achieved 1.5 times longer tool life, preventing crater wear.

KBN05M-MEP

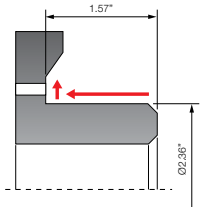
KBN05M-ME

Competitor E

User Evaluation

5120 (61~65HRC)

Gear
- External and Face machining (Interrupted)
- Vc=394 sfm
- D.O.C.=0.006"
- f=0.004~0.006 ipr (External)
- WET
- CNGA432S01630MEH (KBN05M)



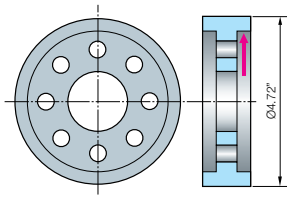
KBN05M-MEH (Edge Preparation : 0.016"×30°)	150 pcs/edge
Competitor F	100 pcs/edge

Compared to competitor. F, KBN05M-MEH type (Edge prep.: 0.016"×30° Chamfered + R-honed) achieved 1.5 times longer tool life.
No chipping in interrupted machining, and improved productivity.
(Comp. F's cutting edge had multiple chips.)
Feed rate could be increased from 0.006 to 0.010 ipr in facing.
➡Achieved cycle time and cost reduction.

User Evaluation

4131 (60HRC)

Gear Parts
- Face machining (Interrupted)
- Vc=295 sfm
- D.O.C.=0.020"
- f=0.005 ipr
- WET_DRY
- CNGA432S00525ME (KBN25M)



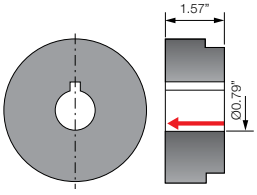
KBN25M	70 pcs/edge
Competitor G	30 pcs/edge (Unstable)

KBN25M improved tool life up to 70 pieces/edge (two times more than competitor's G CBN tool). Also, KBN25M had increased tool life up to 250 pieces/edge by changing from wet machining to dry machining.

User Evaluation

4131 (58HRC)

Sleeve
- Internal machining (Heavy interruption)
- Vc=328sfm
- D.O.C.=0.020"
- f=0.004 ipr
- WET
- TPGB222S00435MET (KBN35M)



KBN35M	115 pcs/edge
Competitor H	100 pcs/edge

KBN35M achieved 15% Longer tool life in heavy interrupted machining compared with competitor H.
Furthermore it still keeps the insert in a good condition and so provides stable machining result.
➡Its longer tool life and capability of providing stable result can contribute to cost-cutting and improved efficiency in machining.

User Evaluation

How to read this page ➔ B15

80° Diamond

Negative Insert with Hole

(in)

Part Number	IC	S	D1
CNGA 43_	1/2	3/16	0.203
CNGM 43_	1/2	3/16	0.203

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

		MEGACOAT CBN						CBN				
		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570	
K	Gray Cast Iron (with Scale)											
	Nodular Cast Iron (without Scale)					●				●		
	Nodular Cast Iron (with Scale)											
H	Hard Materials (Roughing)				✖							
	Hard Materials (Finishing)	●	○	●				○	◔			
	Hard Materials (Chip Control)		●	●								
	Powdered Steel						✖				●	

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570	Toolholder Page
Multi Edge With Wiper Edge	CNGA 431S00515MEW		CNGA 120404S01215MEW	1/64	0.102		●		●				●	●			
	432S00515MEW	S00515	120408S01215MEW	1/32	0.098	2	●	●	●	●			●	●			
	433S00515MEW		120412S01215MEW	3/64	0.098		●	●	●					△			
Multi Edge Finishing	CNGA 431S00245MEP		CNGA 120404S00545MEP	1/64	0.102		●										
	432S00245MEP		120408S00545MEP	1/32	0.102		●										
	433S00245MEP	S00245	120412S00545MEP	3/64	0.098	2	●										
	434S00245MEP		120416S00545MEP	1/16	0.134		●										
	435S00245MEP		120420S00545MEP	5/64	0.134		●										
	436S00245MEP		120424S00545MEP	3/32	0.130		●										
Multi Edge Sharp Edge	CNGA 431MEF		CNGA 120404MEF	1/64	0.102										●	●	
	432MEF	F	120408MEF	1/32	0.102	2									●	●	
	433MEF		120412MEF	3/64	0.098										●	△	
Double-Sided Multi-Edge	CNGA 431ME4		CNGA 120404ME4	1/64	0.102		●										D8 D9 F81 F85 F86
	432ME4	S00525	120408ME4	1/32	0.102	4	●										
	433ME4		120412ME4	3/64	0.098		●										
Multi Edge	CNGA 4305S00525ME		CNGA 120402S01225ME	0.008	0.102		●	△	●	△	●			●			
	431S00525ME		120404S01225ME	1/64	0.102		●	●	●	●	●		●	●	●		
	432S00525ME		120408S01225ME	1/32	0.102		●	●	●	●	●		●	●	●		
	433S00525ME	S00525	120412S01225ME	3/64	0.098	2	●	●	●	●	●			●	●		
	434S00525ME		120416S01225ME	1/16	0.134		●										
	435S00525ME		120420S01225ME	5/64	0.134		●										
	436S00525ME		120424S01225ME	3/32	0.130		●										
	CNGA 431T00515ME		CNGA 120404T01215ME	1/64	0.102							●			●		
	432T00515ME	T00515	120408T01215ME	1/32	0.102	2						●			●		
	433T00515ME		120412T01215ME	3/64	0.098							●			●		
Multi Edge Tough	CNGA 431S00730MET		CNGA 120404S01730MET	1/64	0.102		●		●	●				●			
	432S00730MET		120408S01730MET	1/32	0.102		●	●	●	●				●			
	433S00730MET	S00730	120412S01730MET	3/64	0.098	2	●		●	●				△			
	434S00730MET		120416S01730MET	1/16	0.134		●										
	435S00730MET		120420S01730MET	5/64	0.134		●										
	436S00730MET		120424S01730MET	3/32	0.130		●										
Multi Edge Interruption	CNGA 431S01630MEH		CNGA 120404S04030MEH	1/64	0.102		●										
	432S01630MEH		120408S04030MEH	1/32	0.102		●										
	433S01630MEH	S01630	120412S04030MEH	3/64	0.098	2	●										
	434S01630MEH		120416S04030MEH	1/16	0.134		●										
	435S01630MEH		120420S04030MEH	5/64	0.134		●										
	436S01630MEH		120424S04030MEH	3/32	0.130		●										

CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

How to read this page B15

80° Diamond

Negative Insert with Hole

(in)

Part Number	IC	S	D1
CNGA 43_	1/2	3/16	0.203
CNGM 43_	1/2	3/16	0.203

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

		MEGACOAT CBN						CBN				
		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570	Toolholder Page
K	Gray Cast Iron (with Scale)											
	Nodular Cast Iron (without Scale)											
	Nodular Cast Iron (with Scale)											
H	Hard Materials (Roughing)											
	Hard Materials (Finishing)	●	○	◕				○	◔			
	Hard Materials (Chip Control)	●	○	◕								
	Powdered Steel											

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570	Toolholder Page
Small Edge	CNGA 4305S00525SE	S00525	CNGA 120402S01225SE	0.008	0.102	1			△					△			D8 D9 F81 F85 F86
	431S00525SE		120404S01225SE	1/64	0.102			△	△				△	△			
	432S00525SE		120408S01225SE	1/32	0.102			△	△				△				
	433S00525SE		120412S01225SE	3/64	0.098				△								
Small Edge Tough	CNGA 431S00730SET	S00730	CNGA 120404S01730SET	1/64	0.102	1			△					△			
	432S00730SET		120408S01730SET	1/32	0.102				△								
Chip Control	CNGM 431S00325BB1	S00325	CNGM 120404S00825BB1	1/64	0.071	1			△								
	432S00325BB1		120408S00825BB1	1/32	0.079				●								
	433S00325BB1		120412S00825BB1	3/64	0.087				●								
	CNGM 431S00525BB2	S00525	CNGM 120404S01225BB2	1/64	0.087	1			●								
	432S00525BB2		120408S01225BB2	1/32	0.094				●								
	433S00525BB2		120412S01225BB2	3/64	0.102				△								
	CNGM 431S00625BB3	S00625	CNGM 120404S01625BB3	1/64	0.102	1			●								
	432S00625BB3		120408S01625BB3	1/32	0.110				●								
	433S00625BB3		120412S01625BB3	3/64	0.118				●								
NEW Small D.O.C. (55HRC~)	CNGM 431ME-HH	E	CNGM 120404ME-HH	1/64	0.102	2	●										
	432ME-HH		120408ME-HH	1/32	0.102		●										
	433ME-HH		120412ME-HH	3/64	0.098		●										
NEW Small D.O.C. (~55HRC)	CNGM 431ME-HL	E	CNGM 120404ME-HL	1/64	0.102	2	●										
	432ME-HL		120408ME-HL	1/32	0.102		●										
	433ME-HL		120412ME-HL	3/64	0.098		●										
NEW Large D.O.C.	CNGM 431ME-HD	S00535	CNGM 120404ME-HD	1/64	0.102	2	●										
	432ME-HD		120408ME-HD	1/32	0.102		●										
	433ME-HD		120412ME-HD	3/64	0.098		●										

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

How to read this page ➔ **B15**

55° Diamond

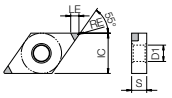
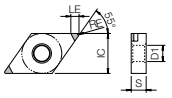
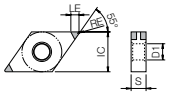
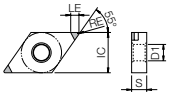
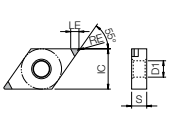
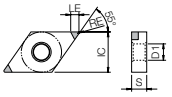
Negative Insert with Hole

(in)

Part Number	IC	S	D1
DNGA 43_	1/2	3/16	0.203
DNGA 44_	1/2	1/4	0.203

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	○
	Nodular Cast Iron (without Scale)	●
	Nodular Cast Iron (with Scale)	●
H	Hard Materials (Roughing)	✠
	Hard Materials (Finishing)	● ○ ● ◔ ○ ◔
	Hard Materials (Chip Control)	● ●
	Powdered Steel	✠ ●

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
Multi Edge Finishing		DNGA 431S00245MEP	S00245	DNGA 150404S00545MEP	1/64	0.102	2	●										
		432S00245MEP		150408S00545MEP	1/32	0.087		●										
		433S00245MEP		150412S00545MEP	3/64	0.075		●										
		434S00245MEP		150416S00545MEP	1/16	0.150		●										
		435S00245MEP		150420S00545MEP	5/64	0.138		●										
		436S00245MEP		150424S00545MEP	3/32	0.122		●										
Multi Edge Sharp Edge		DNGA 431MEF	F	DNGA 150404MEF	1/64	0.102	2									●	●	
		432MEF		150408MEF	1/32	0.087										●	●	
		433MEF		150412MEF	3/64	0.075										●		
Double-Sided Multi-Edge		DNGA 431ME4	S00525	DNGA 150404ME4	1/64	0.102	4	●										D12 D13 F82 F88 F89
		432ME4		150408ME4	1/32	0.087		●										
		433ME4		150412ME4	3/64	0.075		●										
Multi Edge		DNGA 4302S00525ME	S00525	DNGA 150401S01225ME	0.004	0.110	2	●		●								
		4305S00525ME		150402S01225ME	0.008	0.106		●		●		●		●	●			
		431S00525ME		150404S01225ME	1/64	0.102		●	●	●	●	●		●	●	●		
		432S00525ME		150408S01225ME	1/32	0.087		●	△	●	●	●		●	●	●		
		433S00525ME		150412S01225ME	3/64	0.075		●	△	●	△					●		
		434S00525ME		150416S01225ME	1/16	0.150		●										
		435S00525ME		150420S01225ME	5/64	0.138		●										
		436S00525ME		150424S01225ME	3/32	0.122		●										
		DNGA 431T00515ME	T00515	DNGA 150404T01215ME	1/64	0.102	2						●			●		
		432T00515ME		150408T01215ME	1/32	0.087							●			●		
		433T00515ME		150412T01215ME	3/64	0.075							△			●		
		DNGA 441S00525ME	S00525	DNGA 150604S01225ME	1/64	0.102	2	●		●	△				●			D12 D13 F82
		442S00525ME		150608S01225ME	1/32	0.087		●		●	●	●			●			
		443S00525ME		150612S01225ME	3/64	0.075		●			●							
		DNGA 441T00515ME	T00515	DNGA 150604T01215ME	1/64	0.102	2						●					
		442T00515ME		150608T01215ME	1/32	0.087							●					
Multi Edge Tough		DNGA 431S00730MET	S00730	DNGA 150404S01730MET	1/64	0.102	2	●		●	●				●			D12 D13 F82 F88 F89
		432S00730MET		150408S01730MET	1/32	0.087		●		●	●				●			
		433S00730MET		150412S01730MET	3/64	0.075		●		●	●				●			
		434S00730MET		150416S01730MET	1/16	0.150		●										
		435S00730MET		150420S01730MET	5/64	0.138		●										
		436S00730MET		150424S01730MET	3/32	0.122		●										
		DNGA 441S00730MET	S00730	DNGA 150604S01730MET	1/64	0.102	2	●	●	●	●							D12 D13 F82
		442S00730MET		150608S01730MET	1/32	0.075		●	●	●	●				●			
		443S00730MET		150612S01730MET	3/64	0.075		●			●							
Multi Edge Interruption		DNGA 431S01630MEH	S01630	DNGA 150404S04030MEH	1/64	0.102	2	●										D12 D13 F82 F88 F89
		432S01630MEH		150408S04030MEH	1/32	0.087		●										
		433S01630MEH		150412S04030MEH	3/64	0.075		●										
		434S01630MEH		150416S04030MEH	1/16	0.150		●										
		435S01630MEH		150420S04030MEH	5/64	0.138		●										
		436S01630MEH		150424S04030MEH	3/32	0.122		●										

KYOCERA

CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

How to read this page B15

55° Diamond

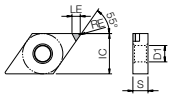
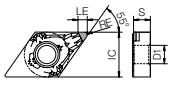
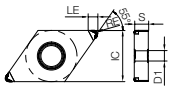
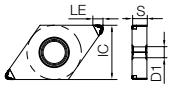
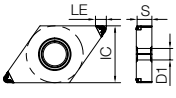
Negative Insert with Hole

(in)

Part Number	IC	S	D1
DNGA 43_	1/2	3/16	0.203
DNGA 44_	1/2	1/4	0.203
DNGM 43_	1/2	3/16	0.203

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	● ● ○ ◔
	Hard Materials (Chip Control)	● ●
	Powdered Steel	

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
Small Edge		DNGA 4302S00525SE	S00525	DNGA 150401S01225SE	0.004	0.087	1			△								
		4305S00525SE		150402S01225SE	0.008	0.098				△				△	△			
		431S00525SE		150404S01225SE	1/64	0.091				△				△	△			
		432S00525SE		150408S01225SE	1/32	0.075				△								
Chip Control		DNGM 431S00325BB1	S00325	DNGM 150404S00825BB1	1/64	0.062	1			△								
		432S00325BB1		150408S00825BB1	1/32	0.062				●								
		433S00325BB1		150412S00825BB1	3/64	0.071				△								
		DNGM 431S00525BB2	S00525	DNGM 150404S01225BB2	1/64	0.071	1			△								
		432S00525BB2		150408S01225BB2	1/32	0.079			△	△								
		433S00525BB2		150412S01225BB2	3/64	0.083				●								
		DNGM 431S00625BB3	S00625	DNGM 150404S01625BB3	1/64	0.087	1			△								
		432S00625BB3		150408S01625BB3	1/32	0.098				△								
		433S00625BB3		150412S01625BB3	3/64	0.098				△								
NEW Small D.O.C. (55HRC~)		DNGM 431ME-HH	E	DNGM 150404ME-HH	1/64	0.102	2	●										D12 D13 F82 F88 F89
		432ME-HH		150408ME-HH	1/32	0.087		●										
		433ME-HH		150412ME-HH	3/64	0.075		●										
NEW Small D.O.C. (~55HRC)		DNGM 431ME-HL	E	DNGM 150404ME-HL	1/64	0.102	2	●										
		432ME-HL		150408ME-HL	1/32	0.087		●										
		433ME-HL		150412ME-HL	3/64	0.075		●										
NEW Large D.O.C.		DNGM 431ME-HD	S00535	DNGM 150404ME-HD	1/64	0.102	2	●										
		432ME-HD		150408ME-HD	1/32	0.087		●										
		433ME-HD		150412ME-HD	3/64	0.075		●										

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

How to read this page ➡ B15

90° Square

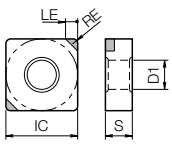
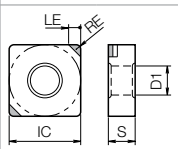
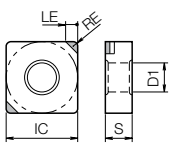
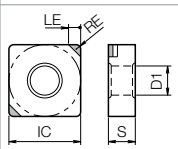
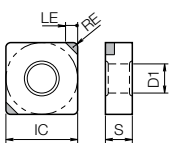
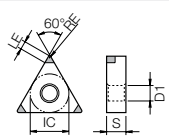
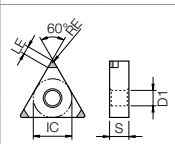
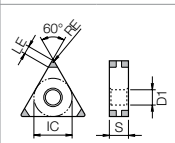
Negative Insert with Hole

(in)

Part Number		IC	S	D1
SNGA	43_	1/2	3/16	0.203
TNGA	33_	3/8	3/16	0.150

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)																
	Nodular Cast Iron (without Scale)														●		
	Nodular Cast Iron (with Scale)																
H	Hard Materials (Roughing)				✖												
	Hard Materials (Finishing)	●		◕									◔				
	Hard Materials (Chip Control)			◕													
	Powdered Steel															◕	

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
Multi Edge Finishing		SNGA 432S00245MEP	S00245	SNGA 120408S00545MEP	1/32	0.071	2	●										D14 D15 F91
		433S00245MEP		120412S00545MEP	3/64	0.087		●										
Multi Edge Sharp Edge		SNGA 432MEF	F	SNGA 120408MEF	1/32	0.071	2									●		
		433MEF		120412MEF	3/64	0.087										●		
Multi Edge		SNGA 431S00525ME	S00525	SNGA 120404S01225ME	1/64	0.071	2	●		●								
		432S00525ME		120408S01225ME	1/32	0.071		●		●	△				●	●		
		433S00525ME		120412S01225ME	3/64	0.071										●		
		SNGA 432T00515ME	T00515	SNGA 120408T01215ME	1/32	0.071	2									●		
		433T00515ME		120412T01215ME	3/64	0.071										●		
Multi Edge Tough		SNGA 431S00730MET	S00730	SNGA 120404S01730MET	1/64	0.071	2	●		●								
		432S00730MET		120408S01730MET	1/32	0.071		●		●	●				●			
		433S00730MET		120412S01730MET	3/64	0.087		●		●	●							
Multi Edge Interruption		SNGA 432S01630MEH	S01630	SNGA 120408S04030MEH	1/32	0.071	2	●										
		433S01630MEH		120412S04030MEH	3/64	0.087		●										
Multi Edge Finishing		TNGA 331S00245MEP	S00245	TNGA 160404S00545MEP	1/64	0.106	3	●										D16 D17 D18 F82 F92 F93
		332S00245MEP		160408S00545MEP	1/32	0.094		●										
		333S00245MEP		160412S00545MEP	3/64	0.083		●										
Multi Edge Sharp Edge		TNGA 331MEF	F	TNGA 160404MEF	1/64	0.106	3									●	●	
		332MEF		160408MEF	1/32	0.094										●	●	
		333MEF		160412MEF	3/64	0.083										●	△	
Double-Sided Multi-Edge		TNGA 331ME6	S00525	TNGA 160404ME6	1/64	0.106	6	●										
		332ME6		160408ME6	1/32	0.094		●										
		333ME6		160412ME6	3/64	0.083		●										

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CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page ➔ B15

60° Triangle

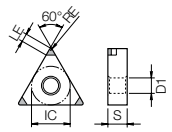
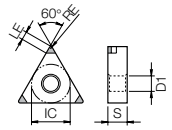
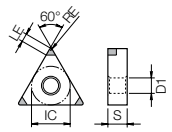
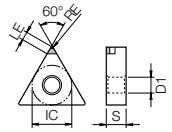
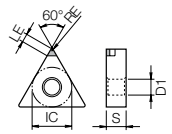
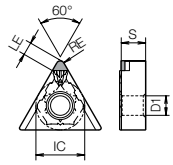
Negative Insert with Hole

(in)

Part Number	IC	S	D1
TNGA 33_	3/8	3/16	0.150
TNGM 33_	3/8	3/16	0.150

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	
	Hard Materials (Chip Control)	
	Powdered Steel	

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
Multi Edge		TNGA 3302S00525ME		TNGA 160401S01225ME	0.004	0.114		●		●								
		3305S00525ME		160402S01225ME	0.008	0.110		●	●	●	●	●		●	●			
		331S00525ME	S00525	160404S01225ME	1/64	0.106	3	●	●	●	●	●		●	●	●		
		332S00525ME		160408S01225ME	1/32	0.094		●	●	●	●	●		●	●	●		
		333S00525ME		160412S01225ME	3/64	0.083		●		●	△	●			●	●		
		TNGA 331T00515ME		TNGA 160404T01215ME	1/64	0.106							●			●		
		332T00515ME	T00515	160408T01215ME	1/32	0.094	3						●			●		
		333T00515ME		160412T01215ME	3/64	0.083							●			●		
Multi Edge Tough		TNGA 331S00730MET		TNGA 160404S01730MET	1/64	0.106		●		●	●				●			
		332S00730MET	S00730	160408S01730MET	1/32	0.094	3	●		●	●				●			
		333S00730MET		160412S01730MET	3/64	0.083		●		●	●				●			
Multi Edge Interruption		TNGA 331S01630MEH		TNGA 160404S04030MEH	1/64	0.106		●										D16 D17 D18 F82 F92 F93
		332S01630MEH	S01630	160408S04030MEH	1/32	0.094	3	●										
		333S01630MEH		160412S04030MEH	3/64	0.083		●										
Small Edge		TNGA 3305S00525SE		TNGA 160402S01225SE	0.008	0.114			△	△				△	△			
		331S00525SE	S00525	160404S01225SE	1/64	0.106	1		△	△				△	△			
		332S00525SE		160408S01225SE	1/32	0.094								△	△			
Small Edge Tough		TNGA 331S00730SET	S00730	TNGA 160404S01730SET	1/64	0.106	1			△					△			
Chip Control		TNGM 331S00325BB1	S00325	TNGM 160404S00825BB1	1/64	0.059	1			△								
		332S00325BB1		160408S00825BB1	1/32	0.067				●								
		TNGM 331S00525BB2	S00525	TNGM 160404S01225BB2	1/64	0.075	1			△								
		332S00525BB2		160408S01225BB2	1/32	0.083				●								
		TNGM 331S00625BB3	S00625	TNGM 160404S01625BB3	1/64	0.087	1			△								
		332S00625BB3		160408S01625BB3	1/32	0.094				△								

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

How to read this page ➔ **B15**

35° Diamond

Negative Insert with Hole

(in)

Part Number	IC	S	D1
VNGA 33_	3/8	3/16	0.150

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

| | | |

How to read this page ➔ **B15**

80° Trigon

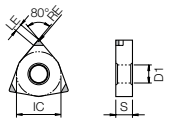
Negative Insert with Hole

(in)

Part Number	IC	S	D1
WNGA 43_	1/2	3/16	0.203

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570
K	Gray Cast Iron (with Scale)										
	Nodular Cast Iron (without Scale)					●				●	
	Nodular Cast Iron (with Scale)										
H	Hard Materials (Roughing)				✠						
	Hard Materials (Finishing)	●		●				○	◔		
	Hard Materials (Chip Control)										
	Powdered Steel						✠				●

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570	Toolholder Page
Multi Edge Sharp Edge		WNGA 431MEF	F	WNGA 080404MEF	1/64	0.079	3									●		D24 D25 F95 F96
		432MEF		080408MEF	1/32	0.102										●		
Multi Edge		WNGA 431S00525ME	S00525	WNGA 080404S01225ME	1/64	0.079	3	●			●	●			●	●		
		432S00525ME		080408S01225ME	1/32	0.102		●		●	●	●		△	●	●		
		433S00525ME		080412S01225ME	3/64	0.098		●		●	△							
		WNGA 431T00515ME	T00515	WNGA 080404T01215ME	1/64	0.079	3									●		
		432T00515ME		080408T01215ME	1/32	0.102										●		
Multi Edge Tough		WNGA 431S00730MET	S00730	WNGA 080404S01730MET	1/64	0.079	3			●	●							
		432S00730MET		080408S01730MET	1/32	0.102				●	●							
		433S00730MET		080412S01730MET	3/64	0.098					●							

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

How to read this page ➔ **B15**

80° Diamond

Positive Insert with Hole

Part Number		IC (in)	S (in)	D1 (in)
CCMW	1109_	0.138	0.055	0.075
	1411_	0.169	0.071	0.091
	215_	1/4	3/32	0.110
	325_	3/8	5/32	0.173

Part Number		IC (in)	S (in)	D1 (in)
CPGB	2515_	5/16	3/32	0.138
	32_	3/8	1/8	0.177

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

		MEGACOAT CBN						CBN				
		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570	Toolholder Page
K	Gray Cast Iron (with Scale)											
	Nodular Cast Iron (without Scale)					●				●		
	Nodular Cast Iron (with Scale)											
H	Hard Materials (Roughing)				✖							
	Hard Materials (Finishing)	●	○	●				○	◔			
	Hard Materials (Chip Control)											
	Powdered Steel						✖				●	

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges											Toolholder Page
Multi-Edge Sharp Edge	CCMW 3251MEF	F	CCMW 09T304MEF	1/64	0.075	2							●	●	●	●	C15 Reference Table Below
	3252MEF		09T308MEF	1/32	0.071								●	●	●	△	
Multi-Edge	CCMW 21505T00315ME	T00315	CCMW 060202T00815ME	0.008	0.079	2	●	●	●	●			●	●			
	2151T00315ME		060204T00815ME	1/64	0.075		●	●	●	●	●		●	●	●		
	2152T00315ME		060208T00815ME	1/32	0.071		●	●	●	●	●		●		●		
	CCMW 32505T00315ME	T00315	CCMW 09T302T00815ME	0.008	0.079	2	●		●	●	●			●			
	3251T00315ME		09T304T00815ME	1/64	0.075		●	●	●	●	●	●	●	●	●		
	3252T00315ME		09T308T00815ME	1/32	0.071		●	●	●	●	●	●	●	●	●		
Multi-Edge General Purpose	CCMW 2151S00525MES	S00525	CCMW 060204S01225MES	1/64	0.075	2	●										
	2152S00525MES		060208S01225MES	1/32	0.071		●										
	CCMW 3251S00525MES	S00525	CCMW 09T304S01225MES	1/64	0.075	2	●								●		
	3252S00525MES		09T308S01225MES	1/32	0.071		●								●		
Multi-Edge / Tough	CCMW 3251S00435MET	S00435	CCMW 09T304S01035MET	1/64	0.075	2	●	●	●	●				●			
	3252S00435MET		09T308S01035MET	1/32	0.071		●	●	●	●							
Small Edge	CCMW 110905T00315SE	T00315	CCMW 030102T00815SE	0.008	0.055	1		●	●				●	●			F27 F45
	11091T00315SE		030104T00815SE	1/64	0.055			●	●				●	●			
	CCMW 141105T00315SE	T00315	CCMW 040102T00815SE	0.008	0.055	1		●	●				●	●			
	14111T00315SE		040104T00815SE	1/64	0.055			●	●				●	●			
	CCMW 21505T00315SE	T00315	CCMW 060202T00815SE	0.008	0.079	1							●	●			C15 Reference Table Below
	2151T00315SE		060204T00815SE	1/64	0.075				●				●	●			
	CCMW 32505T00315SE	T00315	CCMW 09T302T00815SE	0.008	0.079	1							●	●			
	3251T00315SE		09T304T00815SE	1/64	0.075			●					●	●			
Small Edge / Tough	CCMW 110905S00435SET	S00435	CCMW 030102S01035SET	0.008	0.055	1		●	●								F27 F45
	11091S00435SET		030104S01035SET	1/64	0.055			●	●					●			
	CCMW 141105S00435SET	S00435	CCMW 040102S01035SET	0.008	0.055	1		●	●								
	14111S00435SET		040104S01035SET	1/64	0.055			●	●					●			
	CCMW 2151S00435SET	S00435	CCMW 060204S01035SET	1/64	0.075	1								●			C15 Ref. Table Below
	CCMW 3251S00435SET	S00435	CCMW 09T304S01035SET	1/64	0.075	1								●			
Multi-Edge	CPGB 25151T00315ME	T00315	CPGB 080204T00815ME	1/64	0.075	2	●		●	△			●	●	●		
	CPGB 3205T00315ME	T00315	CPGB 090302T00815ME	0.008	0.075	2	●		●				●	△			
	321T00315ME		090304T00815ME	1/64	0.075		●		●	●	●		●	●	●		
	322T00315ME		090308T00815ME	1/32	0.098										●		
Multi-Edge General Purpose	CPGB 321S00525MES	S00525	CPGB 090304S01225MES	1/64	0.075	2	●										
	322S00525MES		090308S01225MES	1/32	0.098		●										
Multi-Edge / Tough	CPGB 25151S00435MET	S00435	CPGB 080204S01035MET	1/64	0.075	2				●	△				●		F49 F51
	25152S00435MET		080208S01035MET	1/32	0.087					●							
	CPGB 321S00435MET	S00435	CPGB 090304S01035MET	1/64	0.075	2	●	●	●						●		
	322S00435MET		090308S01035MET	1/32	0.098		●		●	●							
Small Edge	CPGB 251505T00315SE	T00315	CPGB 080202T00815SE	0.008	0.075	1							●	●			
	25151T00315SE		080204T00815SE	1/64	0.075								●	●			
	CPGB 3205T00315SE	T00315	CPGB 090302T00815SE	0.008	0.075	1							●	●			
	321T00315SE		090304T00815SE	1/64	0.075								●	●			
Small Edge / Tough	CPGB 321S00435SET	S00435	CPGB 090304S01035SET	1/64	0.075	1								●			

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CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

How to read this page B15

55° Diamond

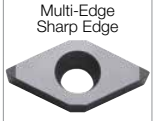
Positive Insert with Hole

(in)

Part Number		IC	S	D1
DCMW	215_	1/4	3/32	0.110
	325_	3/8	5/32	0.177

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00515	0.005" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)											
	Nodular Cast Iron (without Scale)				●				●			
	Nodular Cast Iron (with Scale)											
H	Hard Materials (Roughing)			✠								
	Hard Materials (Finishing)	●	○	●				○	◔			
	Hard Materials (Chip Control)											
	Powdered Steel					✠				●		

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
Multi-Edge Sharp Edge		DCMW 3251MEF	F	DCMW 11T304MEF	1/64	0.067	2							●		●	●	Reference Table Below
		3252MEF		11T308MEF	1/32	0.075								●	●	●	●	
Multi-Edge		DCMW 21505T00315ME	T00315	DCMW 070202T00815ME	0.008	0.075	2	●	●	●	●	●		●	●	●		
		2151T00315ME		070204T00815ME	1/64	0.067		●	●	●	●	●		●	●	●		
		2152T00315ME		070208T00815ME	1/32	0.075		●		●	●				●			
		DCMW 32505T00315ME	T00315	DCMW 11T302T00815ME	0.008	0.075	2	●	●	●	●	●		●	●			
		3251T00315ME		11T304T00815ME	1/64	0.067		●	●	●	●	●	●	●		●		
		3252T00315ME		11T308T00815ME	1/32	0.075		●	●	●	●	●	●	●	●	●		
		3253T00315ME		11T312T00815ME	3/64	0.075		●		●	△							
Multi-Edge General Purpose		DCMW 32505S00525MES	S00525	DCMW 11T302S01225MES	0.008	0.075	2	●										
		3251S00525MES		11T304S01225MES	1/64	0.067		●								●		
		3252S00525MES		11T308S01225MES	1/32	0.075		●								●		
Multi-Edge Tough		DCMW 21505S00435MET	S00435	DCMW 070202S01035MET	0.008	0.075	2			●	●							
		2151S00435MET		070204S01035MET	1/64	0.067				●	●							
		2152S00435MET		070208S01035MET	1/32	0.075				●	△							
		DCMW 32505S00435MET	S00435	DCMW 11T302S01035MET	0.008	0.075	2	●		●	●				●			
		3251S00435MET		11T304S01035MET	1/64	0.067		●	●	●	●				●			
		3252S00435MET		11T308S01035MET	1/32	0.075			●	●	●				●			
		3253S00435MET		11T312S01035MET	3/64	0.075			●		●							
Small Edge		DCMW 21505T00315SE	T00315	DCMW 070202T00815SE	0.008	0.075	1			●				●	●			
		2151T00315SE		070204T00815SE	1/64	0.067				●				●	●			
		DCMW 32505T00315SE	T00315	DCMW 11T302T00815SE	0.008	0.075	1							●	●			
		3251T00315SE		11T304T00815SE	1/64	0.067								●	●			
		3252T00315SE		11T308T00815SE	1/32	0.075				●					●			
Small Edge Tough		DCMW 2151S00435SET	S00435	DCMW 070204S01035SET	1/64	0.067	1								●			
		DCMW 32505S00435SET	S00435	DCMW 11T302S01035SET	0.008	0.075	1								●			
		3251S00435SET		11T304S01035SET	1/64	0.067									●			
		3252S00435SET		11T308S01035SET	1/32	0.075									●			

● CC

Part Number	Applicable Toolholder Page
CC..215_	E24~E25, E41, E48, F27, F45, F47
CC..325_	E24~E25, E41, E48, F45, F83

● DC

Part Number	Applicable Toolholder Page
DC..215_	E26~E27, E30~E31, E42, E48, F53~F57
DC..325_	E22, E26~E31, E42, E48, F53~F57, F83

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

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CBN & PCD Inserts sold in 1 piece boxes.

How to read this page ➔ **B15**

60° Triangle

Positive Insert with Hole

Part Number	Applicable Toolholder Page
TP..1515_	E33, F59, F61, F63, F65
TP..1815_	E33, F28, F61, F63, F65
TP..22_	E33, F61, F63, F64
TP..32_	F61, F64

(in)

Part Number		IC	S	D1
TPGB	1515_	3/16	3/32	0.098
	1815_	7/32	3/32	0.118
	22_	1/4	1/8	0.138
	32_	3/8	1/8	0.177
TPGW	33_	3/8	3/16	0.173

Edge Prep.		
Symbol	Cutting Edge Spec.	Example
F	Sharp Edge	
E	Rounded Cutting Edge (Hone)	E003 R0.003" Honed
T	Chamfered Cutting Edge	T00315 0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525 0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	●
	Nodular Cast Iron (with Scale)	●
H	Hard Materials (Roughing)	✖
	Hard Materials (Finishing)	● ○ ● ○ ◔
	Hard Materials (Chip Control)	
	Powdered Steel	●

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
Multi-Edge Sharp Edge	TPGB 221MEF	F	TPGB 110304MEF	1/64	0.083	3							●	●	●	●	Reference Table Above
	TPGB 222MEF		TPGB 110308MEF	1/32	0.071									●	●	●	
Multi-Edge	TPGB 2205T00315ME	T00315	TPGB 110302T00815ME	0.008	0.091	3	●		●		●		●	●	●		
	TPGB 221T00315ME		TPGB 110304T00815ME	1/64	0.083		●	●	●	●	●		●	●	●		
	TPGB 222T00315ME		TPGB 110308T00815ME	1/32	0.071		●		●	●	●			●	●		
	TPGB 321T00315ME	T00315	TPGB 160304T00815ME	1/64	0.071	3	●		●	●	●				●		
	TPGB 322T00315ME		TPGB 160308T00815ME	1/32	0.059		●		●	△	●				●		
Multi-Edge General Purpose	TPGB 221S00525MES	S00525	TPGB 110304S01225MES	1/64	0.083	3	●								●		
	TPGB 222S00525MES		TPGB 110308S01225MES	1/32	0.071		●								●		
Multi-Edge Tough	TPGB 2205S00435MET	S00435	TPGB 110302S01035MET	0.008	0.091	3		●	●	●							
	TPGB 221S00435MET		TPGB 110304S01035MET	1/64	0.083		●	●	●	●							
	TPGB 222S00435MET		TPGB 110308S01035MET	1/32	0.071		●	●	●	●							
	TPGB 321S00435MET	S00435	TPGB 160304S01035MET	1/64	0.071	3			●	△				●			
	TPGB 322S00435MET		TPGB 160308S01035MET	1/32	0.059				●					●			
Small Edge	TPGB 151505T00315SE	T00315	TPGB 080202T00815SE	0.008	0.071	1			●				●	●			
	15151T00315SE		080204T00815SE	1/64	0.062			●	●				●	●			
	TPGB 181505T00315SE	T00315	TPGB 090202T00815SE	0.008	0.071	1		●	●				●	●			
	18151T00315SE		090204T00815SE	1/64	0.062			●	●				●	●			
	TPGB 2205T00315SE	T00315	TPGB 110302T00815SE	0.008	0.075	1		●					●	●			
	221T00315SE		110304T00815SE	1/64	0.071			●					●	●			
	222T00315SE		110308T00815SE	1/32	0.059									●			
	TPGB 3205T00315SE	T00315	TPGB 160302T00815SE	0.008	0.075	1							●	●			
	321T00315SE		160304T00815SE	1/64	0.071								●	●			
Small Edge Tough	TPGB 151505S00435SET	S00435	TPGB 080202S01035SET	0.008	0.071	1			●								
	15151S00435SET		080204S01035SET	1/64	0.062				●					●			
	TPGB 181505S00435SET	S00435	TPGB 090202S01035SET	0.008	0.071	1			●								
	18151S00435SET		090204S01035SET	1/64	0.062				●					●			
	TPGB 221S00435SET	S00435	TPGB 110304S01035SET	1/64	0.071	1								●			
	222S00435SET		110308S01035SET	1/32	0.059									●			
	TPGB 321S00435SET	S00435	TPGB 160304S01035SET	1/64	0.071	1								●			
	322S00435SET		160308S01035SET	1/32	0.059									△			
Multi-Edge	TPGW 331T00315ME	T00315	TPGW 160404T00815ME	1/64	0.071	3			●								
	332T00315ME		160408T00815ME	1/32	0.059				●								
Multi-Edge Tough	TPGW 331S00435MET	S00435	TPGW 160404S01035MET	1/64	0.071	3			●					●			-
	332S00435MET		160408S01035MET	1/32	0.059				●								
Small Edge	TPGW 331T00315SE	T00315	TPGW 160404T00815SE	1/64	0.071	1								●			

KYOCERA

CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

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How to read this page B15

35° Diamond

Positive Insert with Hole

Part Number	Applicable Toolholder Page
VB..22_	E34~E36, E43, E48, F66~F73
VB..33_	E34~E36, F66~F73

(in)

Part Number		IC	S	D1
VBGW	22_	1/4	1/8	0.110
	33_	3/8	3/16	0.173
VCGW	1515_	3/16	3/32	0.091

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

		KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	KBN510	KBN525	KBN475	KBN570
K	Gray Cast Iron (with Scale)										
	Nodular Cast Iron (without Scale)					●				●	
	Nodular Cast Iron (with Scale)										
H	Hard Materials (Roughing)				✖						
	Hard Materials (Finishing)	●	○	●				○	◔		
	Hard Materials (Chip Control)										
	Powdered Steel						✖			●	

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	Toolholder Page
Multi-Edge Sharp Edge	VBGW 221MEF	F	VBGW 110304MEF	1/64	0.079	2	Reference Table Above
	222MEF		110308MEF	1/32	0.067		
	VBGW 331MEF		VBGW 160404MEF	1/64	0.079	2	
	332MEF		160408MEF	1/32	0.067		
Multi-Edge	VBGW 2205T00315ME	T00315	VBGW 110302T00815ME	0.008	0.094	2	
	221T00315ME		110304T00815ME	1/64	0.079		
	222T00315ME		110308T00815ME	1/32	0.067		
	VBGW 3305T00315ME	T00315	VBGW 160402T00815ME	0.008	0.094	2	
	331T00315ME		160404T00815ME	1/64	0.079		
	332T00315ME		160408T00815ME	1/32	0.067		
Multi-Edge General Purpose	VBGW 221S00525MES	S00525	VBGW 110304S01225MES	1/64	0.079	2	
	222S00525MES		110308S01225MES	1/32	0.067		
	VBGW 331S00525MES	S00525	VBGW 160404S01225MES	1/64	0.079	2	
	332S00525MES		160408S01225MES	1/32	0.067		
Multi-Edge Tough	VBGW 2205S00435MET	S00435	VBGW 110302S01035MET	0.008	0.094	2	
	221S00435MET		110304S01035MET	1/64	0.079		
	222S00435MET		110308S01035MET	1/32	0.067		
	VBGW 3305S00435MET	S00435	VBGW 160402S01035MET	0.008	0.094	2	
	331S00435MET		160404S01035MET	1/64	0.079		
	332S00435MET		160408S01035MET	1/32	0.067		
Small Edge	VBGW 2205T00315SE	T00315	VBGW 110302T00815SE	0.008	0.110	1	
	221T00315SE		110304T00815SE	1/64	0.094		
	222T00315SE		110308T00815SE	1/32	0.067		
	VBGW 3305T00315SE	T00315	VBGW 160402T00815SE	0.008	0.094	1	
	331T00315SE		160404T00815SE	1/64	0.079		
	332T00315SE		160408T00815SE	1/32	0.067		
Small Edge Tough	VBGW 221S00435SET	S00435	VBGW 110304S01035SET	1/64	0.079	1	
	222S00435SET		110308S01035SET	1/32	0.067		
	VBGW 331S00435SET	S00435	VBGW 160404S01035SET	1/64	0.079	1	
	332S00435SET		160408S01035SET	1/32	0.067		
Multi-Edge	VCGW 151505T00315ME	T00315	VCGW 080202T00815ME	0.008	0.079	2	E43 F66 F68~F73
	15151T00315ME		080204T00815ME	1/64	0.079		
	15152T00315ME		080208T00815ME	1/32	0.067		
Multi-Edge Tough	VCGW 151505S00435MET	S00435	VCGW 080202S01035MET	0.008	0.079	2	
	15151S00435MET		080204S01035MET	1/64	0.079		
	15152S00435MET		080208S01035MET	1/32	0.067		
Small Edge	VCGW 151505T00315SE	T00315	VCGW 080202T00815SE	0.008	0.094	1	
	15151T00315SE		080204T00815SE	1/64	0.079		
Small Edge Tough	VCGW 15151S00435SET	S00435	VCGW 080204S01035SET	1/64	0.079	1	
	15152S00435SET		080208S01035SET	1/32	0.071		

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

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CBN & PCD Inserts sold in 1 piece boxes.

How to read this page ➔ **B15**

80° Trigon

Positive Insert with Hole

(in)

Part Number	IC	S	D1
WBGW 121_	5/32	1/16	0.091
1515_	3/16	3/32	0.091

Edge Prep. Symbol	Cutting Edge Spec.	Example		Edge Prep (in)
F	Sharp Edge			
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed	
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge	T00315
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge	S00525

		Edge Prep (in)
K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	
	Hard Materials (Chip Control)	
	Powdered Steel	

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
Small Edge	WBGW 12105T00315L-SE	T00315	WBGW 060102T00815L-SE	0.008	0.075	1		●	●				●	●			F29 F75 F76 F77
	1211T00315L-SE		060104T00815L-SE	1/64	0.075			●	●				●	●			
	WBGW 151505T00315L-SE	T00315	WBGW 080202T00815L-SE	0.008	0.091	1		●	●				●	●			
	15151T00315L-SE		080204T00815L-SE	1/64	0.091			●	●				●	●			
Small Edge Tough	WBGW 12105S00435L-SET	S00435	WBGW 060102S01035LSET	0.008	0.075	1			●					●			
	1211S00435L-SET		060104S01035LSET	1/64	0.075				●					●			
	WBGW 151505S00435L-SET	S00435	WBGW 080202S01035LSET	0.008	0.091	1			●								
	15151S00435L-SET		080204S01035LSET	1/64	0.091			●	●					●			

60° Triangle

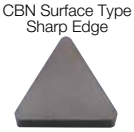
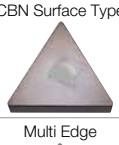
Positive Insert without Hole

(in)

Part Number	IC	S	D1
TBG 121_	5/32	1/16	-
TPG 22_	1/4	1/8	-
TPG 32_	3/8	1/8	-

Edge Prep. Symbol	Cutting Edge Spec.	Example		Edge Prep (in)
F	Sharp Edge			
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed	
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge	T00315
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge	S00525

		Edge Prep (in)
K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	
	Hard Materials (Chip Control)	
	Powdered Steel	

Insert	ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	Dimensions (in) LE	No. of Edges	MEGACOAT CBN KBN05M	KBN10M	KBN25M	KBN35M	KBN60M	KBN70M	CBN KBN510	KBN525	KBN475	KBN570	Toolholder Page
CBN Surface Type Sharp Edge 	TBG 1211F	F	TBGN 060104F	1/64	-	3							●	●		△	-
CBN Surface Type 	TBG 12105T00315		TBGN 060102T00815	0.008	-									●			
	1211T00315	T00315	060104T00815	1/64	-	3							●	●			
	1212T00315		060108T00815	1/32	-			●					●				
Multi Edge	TPG 2205T00315ME	T00315	TPGN 110302T00815ME	0.008	0.102	3								●			
	221T00315ME		110304T00815ME	1/64	0.098									●			
Small Edge	TPG 221T00315SE	T00315	TPGN 110304T00815SE	1/64	0.098	1							△	●			F79
	222T00315SE		110308T00815SE	1/32	0.094									△			
	TPG 3205T00315SE	T00315	TPGN 160302T00815SE	0.008	0.102	1								●			
	321T00315SE		160304T00815SE	1/64	0.094								●	●			
	322T00315SE		160308T00815SE	1/32	0.083									●			
Small Edge Tough	TPG 221S00435SET	S00435	TPGN 110304S01035SET	1/64	0.098	1								●			
	222S00435SET		110308S01035SET	1/32	0.094									△			
	TPG 321S00435SET	S00435	TPGN 160304S01035SET	1/64	0.094	1								●			

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CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Negative

Negative Insert without Hole

(in)

Part Number		IC	S
CNM	32_	3/8	1/8
	43_	1/2	3/16
RNM	22	1/4	1/8
	32	3/8	1/8
	42	1/2	1/8
	43	1/2	3/16

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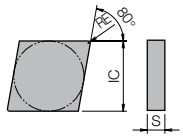
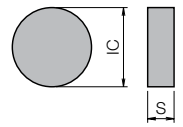
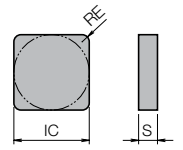
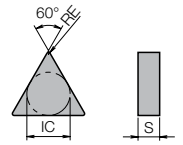
(in)

Part Number		IC	S
SNM	32_	3/8	1/8
	42_	1/2	1/8
	43_	1/2	3/16
TNM	22_	1/4	1/8
	33_	3/8	3/16

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
F	Sharp Edge		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	✖
	Nodular Cast Iron (without Scale)	✖
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	●
	Hard Materials (Chip Control)	
	Powdered Steel	

Insert		ANSI Part Number	Edge Prep (in)	ISO Part Number	Dimensions (in) RE	No. of Edges	PVD Coated CBN KBN900	Toolholder Page
Solid		CNM 322	S00820	CNMN 090308S02020	1/32	4	●	D32
		CNM 323		CNMN 090312S02020	3/64		●	
		CNM 432	S00820	CNMN 120408S02020	1/32	4	△	D26
		CNM 433		CNMN 120412S02020	3/64		●	
		CNM 434		CNMN 120416S02020	1/16		●	
Solid		RNM 22	S00820	RNMN 060300S02020	-	Depends on D.O.C.	●	-
		RNM 32	S00820	RNMN 090300S02020	-		●	D33
		RNM 42	S00820	RNMN 120300S02020	-		●	
		43	S00820	RNMN 120400S02020	-		●	D31 D33
Solid		SNM 322	S00820	SNMN 090308S02020	1/32	8	●	D34 D35
		SNM 323		SNMN 090312S02020	3/64		●	
		SNM 422		SNMN 120308S02020	1/32	8	●	
		423		120312S02020	3/64		●	
		SNM 432	S00820	SNMN 120408S02020	1/32	8	●	D29 D34 D35
		SNM 433		120412S02020	3/64		●	
		SNM 434		120416S02020	1/16		●	
		SNM 435		120420S02020	5/64		●	
Solid		TNM 222	S00820	TNMN 110308S02020	1/32	6	●	D36 F98
		TNM 332	S00820	TNMN 160408S02020	1/32	6	●	D30
		TNM 333		160412S02020	3/64		●	

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

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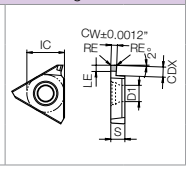
CBN & PCD Inserts sold in 1 piece boxes.

External Grooving Inserts

How to read this page ➔ B15

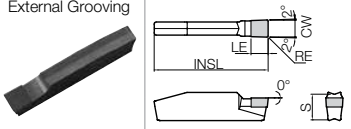
Grooving Inserts (1-edge)

Edge Prep.				K	Gray Cast Iron (with Scale)		
Symbol	Cutting Edge Spec.	Example			Nodular Cast Iron (without Scale)		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed		Nodular Cast Iron (with Scale)		
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge	H	Hard Materials (Roughing)		
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		Hard Materials (Finishing)	○	●
					Hard Materials (Chip Control)		
					Powdered Steel		

Insert (Handed Insert shows Right-hand)		ANSI Part Number	ANSI Old Part Number	Edge Prep (in)	CW±0.0012 (in)	Dimensions (mm) CW±0.03	CDX	RE	IC	S	D1	LE	No. of Edges	CBN KBN510 R	KBN510 L	KBN525 R	KBN525 L	Toolholder Page
External Internal Grooving		GBA43R/L 125-020	GBA43R/L 125	E003	0.049	1.25	2.0	0.2	12.7	4.76	5.5	1.9	1	●		●	●	
		GBA43R/L 150-020	GBA43R/L 150	E003	0.059	1.50	3.5	0.2	12.7	4.76	5.5	1.9	1	●	●	●	●	G12 G13
		GBA43R/L 200-020	GBA43R/L 200	E003	0.079	2.00	3.5	0.2	12.7	4.76	5.5	1.9	1	●	●	●	●	G76
		GBA43R/L 300-020	GBA43R/L 300	E003	0.118	3.00	4.0	0.2	12.7	4.76	5.5	1.9	1	●		●		

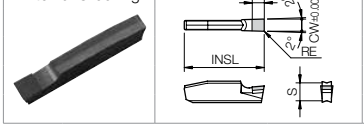
Deep Grooving Inserts (1-edge)

Edge Prep.				K	Gray Cast Iron (with Scale)		
Symbol	Cutting Edge Spec.	Example			Nodular Cast Iron (without Scale)		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed		Nodular Cast Iron (with Scale)		
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge	H	Hard Materials (Roughing)		
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		Hard Materials (Finishing)	○	
					Hard Materials (Chip Control)		
					Powdered Steel		●

Insert		ANSI Part Number	Edge Prep (in)	CW±0.0012 (in)	Dimensions (mm) CW±0.03	RE	INSL	S	LE	No. of Edges	MEGA CBN KBN05M	KBN570	Toolholder Page
External Grooving		GDGS 2020N-020NB	E003	0.079	2.0	0.2	20	4.3	2.9	1	●		G28 ~ G36
			E0008	0.079	2.0	0.2	20	4.3	2.9	1		●	
		3020N-040NB	E003	0.118	3.0	0.4	20	4.3	2.9	1	●		
			E0008	0.118	3.0	0.4	20	4.3	2.9	1		●	
		4020N-040NB	E003	0.157	4.0	0.4	20	4.3	2.9	1	●		
			E0008	0.157	4.0	0.4	20	4.3	2.9	1		●	
		5020N-040NB	E003	0.197	5.0	0.4	20	4.3	2.9	1	●		
			E0008	0.197	5.0	0.4	20	4.3	2.9	1		●	
		6020N-040NB	E003	0.236	6.0	0.4	20	4.3	2.9	1	●		
			E0008	0.236	6.0	0.4	20	4.3	2.9	1		△	

Deep Grooving Inserts (1-edge)

Edge Prep.				K	Gray Cast Iron (with Scale)		
Symbol	Cutting Edge Spec.	Example			Nodular Cast Iron (without Scale)		
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed		Nodular Cast Iron (with Scale)		
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge	H	Hard Materials (Roughing)		
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge		Hard Materials (Finishing)	○	●
					Hard Materials (Chip Control)		
					Powdered Steel		

Insert		ANSI Part Number	Edge Prep (in)	CW±0.0020 (in)	Dimensions (mm) CW±0.05	RE	INSL	S	LE	No. of Edges	CBN KBN510	KBN525	Toolholder Page
External Grooving		GMN 2	E003	0.079	2	0.2	20	4.3	2.9	1	●	●	G48,G49
		3	E003	0.118	3	0.4	20	4.3	2.9	1	●	●	G48
		4	E003	0.157	4	0.4	20	4.3	2.9	1	●	●	G49
		5	E003	0.197	5	0.4	20	4.3	2.9	1	●	●	G50
		6	E003	0.236	6	0.4	20	4.3	2.9	1	●	●	G48,G49

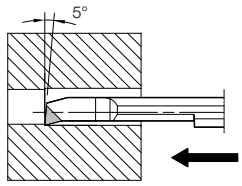
CBN & PCD Inserts sold in 1 piece boxes.

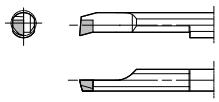
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

EZ Bars

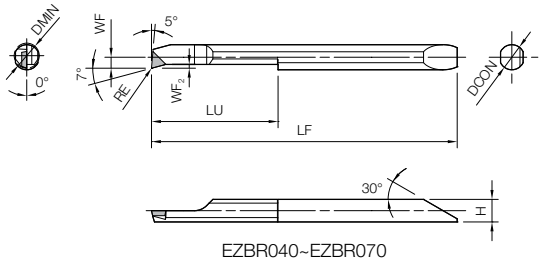
EZB-NB: CBN

How to read this page B15





EZBR030 Type



EZBR040~EZBR070

• Righ-Hand Insert Shown

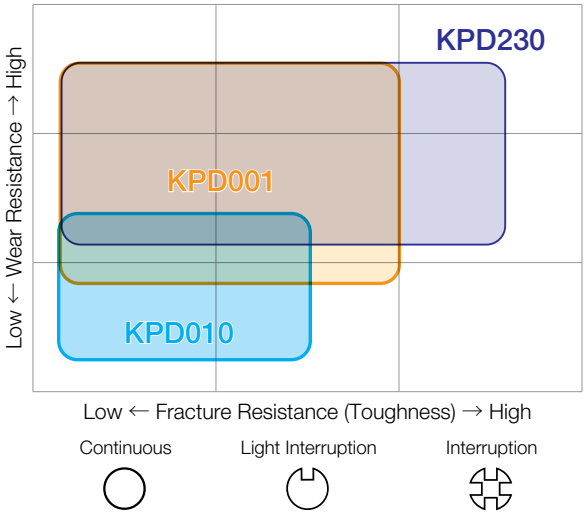
EZ Bar Dimensions

Edge Prep.			
Symbol	Cutting Edge Spec.	Example	
E	Rounded Cutting Edge (Hone)	E003	R0.003" Honed
T	Chamfered Cutting Edge	T00315	0.003" X 15° Chamfered Cutting Edge
S	Chamfered and Honed Cutting Edge	S00525	0.005" X 25° Chamfered and Honed Cutting Edge

K	Gray Cast Iron (with Scale)	
	Nodular Cast Iron (without Scale)	
	Nodular Cast Iron (with Scale)	
H	Hard Materials (Roughing)	
	Hard Materials (Finishing)	●
	Hard Materials (Chip Control)	
	Powdered Steel	

ANSI Part Number		Edge Prep (in)	Min. Bore Dia. DMIN	DCON	H	LF	LU	WF	WF_2	RE	No. of Edges	MEGA CBN KBN05M	Applicable Sleeves Page
EZBR	030030-003NB	T00315	3	3	2.6	38.8	13	1.25	0.3	$0.035^{+0.015}$	1	●	F30 ~ F34
	040040-003NB	T00315	4	4	3.6	48.8	20	1.75	0.5			●	
	050050-003NB	T00315	5	5	4.6	58.1	25	2.25	0.5			●	
	060060-003NB	T00315	6	6	5.6	66.1	30	2.75	0.5			●	
	070070-003NB	T00315	7	7	6.6	74.1	35	3.25	0.5			●	

Application Map



About Insert Grades

Grades	Applications	Advantages
KPD001 (Average grain size under 1µm)	• High speed machining of non-ferrous metals and brass • High speed machining of glass fiber and plastics • Machining of carbide and ceramics	• Smallest micro-grain possible in PCD • High edge strength with superior wear resistance, fracture resistance, and edge sharpening performance
KPD010 (Average grain size 10µm)	• High speed machining of non-ferrous metals and brass • High speed machining of glass fiber and plastics • Machining of carbide and ceramics	• Well balanced wear resistance and flexural strength • General Purpose
KPD230 (Mixture of fine grain with average grain size 2-30µm and rough)	• High speed milling of aluminum alloy and non-ferrous metals such as brass • High speed milling of glass fiber and plastics	• High density PCD with mixture of both rough and fine grains with excellent abrasive wear and chipping resistance
KPD250 (Average grain size 25µm (Made to order))	• High speed machining of high silicon aluminium alloy • Machining of carbide	• Rough grain PCD (Average grain size 25µm) • Superior to wear resistance

Turning Insert Identification System

C	N	M	M	12	04	02	M	SE
C	C	G	W	04	01	01		SE

Refer to B2 for "Turning Indexable Inserts Identification System"

Insert Type	Part Number	Manufacture's Option 1	Manufacture's Option 2	Series Name	Cutting Edge Length	No. of Edges	Regrinding
Negative	**CNMM120402M-SE**	M (Indicates the insert is for negative toolholders)	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CNMM120402M-NE		NE	New Value Edge	Long (85% length compared to no indication's cutting edge)	1	Possible
	CNMM120402M		No Indication	-	Long	1	
Positive	**CCGW040101SE**	-	SE	Small Edge	Short (Small Edge)	1	Not Recommended
	CCGW040101NE		NE	New Value Edge	Long (85% length compared to no indication's cutting edge)	1	Possible
	CCGW040101		No Indication	-	Long	1	

Note) 1. No edge preparation symbols for PCD inserts. Most of the PCD inserts' edge preparations are sharp edge.
2. "M" in manufacturer's option 1 indicates the inserts are applicable to negative toolholders.
3. Refer to **Page** B3 for insert color.

• About Regrinding
1) Regrinding is possible with the inserts with "NE" and no symbol in manufacturer's option 2. Regrinding may not be possible depending on the condition of the used edge.
2) Regrinding is not recommended for inserts with "SE" in manufacturer's option 2.

Recommended Cutting Conditions (Turning)

Workpiece Material	Insert Grades		Cutting Conditions				Remarks
	KPD001	KPD010	Cutting Speed (sfm)	D.O.C. (in) Small Edge and Positive Inserts	D.O.C. (in) Negative Inserts	Feed Rate (ipr)	
Aluminum Alloys Zinc Alloys	★	☆	975 - 4925	~0.039	~0.079	0.001~0.020	Both Dry and Wet Cutting Available
Copper, Brass, Bronze	★	☆	975 - 3275	~0.039	~0.079	0.001~0.020	
Magnesium Alloys	★	☆	1300 - 3925	~0.039	~0.079	0.001~0.020	
Carbide	★	☆	25 - 100	~0.012	~0.012	0.001~0.004	
Titanium Alloys	★	☆	325 - 650	~0.039	~0.079	0.002~0.008	Wet
Glass Fiber Reinforced Plastics Carbon Fiber	★	☆	325 - 1975	~0.039	~0.079	0.002~0.020	Dry
Silica Filled Plastic Particle Board	★	☆	1300 - 2625	~0.039	~0.079	0.002~0.020	

★: 1st Recommendation ☆: 2nd Recommendation

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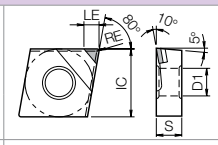
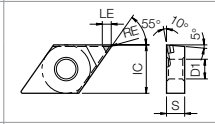
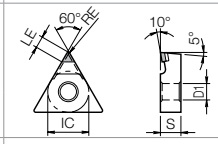
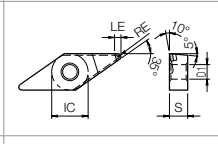
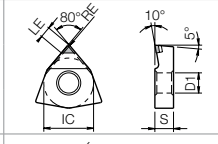
Negative

Negative Insert with Hole

How to read this page ➔ B15

Edge Prep.																
All PCD Items		Sharp Edge														
Insert		ANSI Part Number	ISO Part Number	Dimensions (in)					No. of Edges	PCD		Toolholder Page
				IC	S	D1	RE	LE		KPD001	KPD010	
Small Edge		CNMM 4305M-SE	CNMM 120402M-SE	1/2	3/16	0.203	0.008	0.110		●	●	D8 D9 F81 F85 F86
		431M-SE	120404M-SE	1/2	3/16	0.203	1/64	0.110	1	●	●	
		432M-SE	120408M-SE	1/2	3/16	0.203	1/32	0.106		●	●	
		CNMM 4305M-NE	CNMM 120402M-NE	1/2	3/16	0.203	0.008	0.201		●		
		431M-NE	120404M-NE	1/2	3/16	0.203	1/64	0.197	1	●		
		432M-NE	120408M-NE	1/2	3/16	0.203	1/32	0.193		●		
		CNMM 4305M	CNMM 120402M	1/2	3/16	0.203	0.008	0.228		●	●	
		431M	120404M	1/2	3/16	0.203	1/64	0.228	1	●		
		432M	120408M	1/2	3/16	0.203	1/32	0.224		●	●	
		433M	120412M	1/2	3/16	0.203	3/64	0.220		●	●	
Small Edge		DNMM 4305M-SE	DNMM 150402M-SE	1/2	3/16	0.203	0.008	0.110		●	●	D12 D13 F82 F88 F89
		431M-SE	150404M-SE	1/2	3/16	0.203	1/64	0.102	1	●	●	
		432M-SE	150408M-SE	1/2	3/16	0.203	1/32	0.087		●	●	
		DNMM 4305M-NE	DNMM 150402M-NE	1/2	3/16	0.203	0.008	0.205		●		
		431M-NE	150404M-NE	1/2	3/16	0.203	1/64	0.197	1	●		
		432M-NE	150408M-NE	1/2	3/16	0.203	1/32	0.181		●		
		DNMM 4305M	DNMM 150402M	1/2	3/16	0.203	0.008	0.232		●	●	
		431M	150404M	1/2	3/16	0.203	1/64	0.228	1	●	●	
		432M	150408M	1/2	3/16	0.203	1/32	0.213		●	●	
		433M	150412M	1/2	3/16	0.203	3/64	0.197		△		
Small Edge		TNMM 3305M-SE	TNMM 160402M-SE	3/8	3/16	0.150	0.008	0.106		●	●	D16 D17 D18 F82 F92 F93
		331M-SE	160404M-SE	3/8	3/16	0.150	1/64	0.102	1	●	●	
		332M-SE	160408M-SE	3/8	3/16	0.150	1/32	0.091		●	●	
		TNMM 3305M-NE	TNMM 160402M-NE	3/8	3/16	0.150	0.008	0.126		●		
		331M-NE	160404M-NE	3/8	3/16	0.150	1/64	0.122	1	●		
		332M-NE	160408M-NE	3/8	3/16	0.150	1/32	0.110		●		
		TNMM 3305M	TNMM 160402M	3/8	3/16	0.150	0.008	0.150		●	●	
		331M	160404M	3/8	3/16	0.150	1/64	0.142	1	●	●	
		332M	160408M	3/8	3/16	0.150	1/32	0.130		●	●	
		333M	160412M	3/8	3/16	0.150	3/64	0.118			●	
Small Edge		VNMM 3305M-SE	VNMM 160402M-SE	3/8	3/16	0.150	0.008	0.114		●	●	D20 D21 D22
		331M-SE	160404M-SE	3/8	3/16	0.150	1/64	0.098	1	●	●	
		332M-SE	160408M-SE	3/8	3/16	0.150	1/32	0.062		●	●	
		VNMM 3305M-NE	VNMM 160402M-NE	3/8	3/16	0.150	0.008	0.185		●		
		331M-NE	160404M-NE	3/8	3/16	0.150	1/64	0.165	1	●		
		332M-NE	160408M-NE	3/8	3/16	0.150	1/32	0.134		●		
		VNMM 3305M	VNMM 160402M	3/8	3/16	0.150	0.008	0.209		●	●	
		331M	160404M	3/8	3/16	0.150	1/64	0.189	1	●	●	
		332M	160408M	3/8	3/16	0.150	1/32	0.157		●	●	
		333M	160412M	3/8	3/16	0.150	3/64	0.122			△	
Small Edge		WNMM 4305M-SE	WNMM 080402M-SE	1/2	3/16	0.203	0.008	0.110		●	●	D24 D25 F95 F96
		431M-SE	080404M-SE	1/2	3/16	0.203	1/64	0.110	1	●	●	
		432M-SE	080408M-SE	1/2	3/16	0.203	1/32	0.106			●	
		WNMM 4305M-NE	WNMM 080402M-NE	1/2	3/16	0.203	0.008	0.197		●		
		431M-NE	080404M-NE	1/2	3/16	0.203	1/64	0.197	1	●		
		WNMM 431M	WNMM 080404M	1/2	3/16	0.203	0.008	0.228	1		●	

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

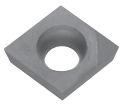
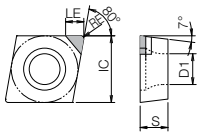
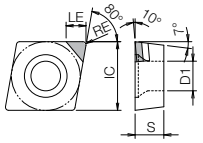
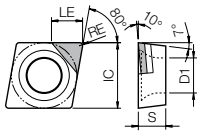
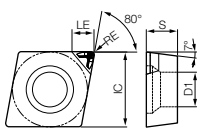
Positive

Positive Insert with Hole

How to read this page B15

Part Number	Applicable Toolholder Page
CC..215_	E24~E25, E41, E48, F27, F45, F47
CC..325_	E24~E25, E41, E48, F45, F83

Edge Prep.		N	Non-Ferrous Metals (with Interruption)	●		
All PCD Items	Sharp Edge		Non-Ferrous Metals (without Interruption)	●		
		S	Titanium Alloys (with Interruption)	●		
			Titanium Alloys (without Interruption)	●		

Insert	ANSI Part Number	ISO Part Number	Dimensions (in) IC	S	D1	RE	LE	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
 	CCGW 141102SE	CCGW 040101SE	0.169	0.071	0.091	0.004	0.051	1	●		F27 F45
	CCGW 141105SE	CCGW 040102SE				0.008	0.051		●		
	CCGW 14111SE	CCGW 040104SE				1/64	0.051		●		
	CCGW 21502SE	CCGW 060201SE	1/4	3/32	0.110	0.004	0.091	1	●		Reference Table Above
	CCGW 21505SE	CCGW 060202SE				0.008	0.091		●		
	CCGW 2151SE	CCGW 060204SE				1/64	0.091		●		
	CCGW 32505SE	CCGW 09T302SE	3/8	5/32	0.173	0.008	0.106	1	●		
	CCGW 3251SE	CCGW 09T304SE				1/64	0.106		●		
	CCGW 3252SE	CCGW 09T308SE				1/32	0.106		●		
	CCGW 141102NE	CCGW 040101NE	0.169	0.071	0.091	0.004	0.067	1	●		F27 F45
	CCGW 141105NE	CCGW 040102NE				0.008	0.062		●		
	CCGW 14111NE	CCGW 040104NE				1/64	0.062		●		
	CCGW 21502NE	CCGW 060201NE	1/4	3/32	0.110	0.004	0.122	1	●		Reference Table Above
	CCGW 21505NE	CCGW 060202NE				0.008	0.118		●		
	CCGW 2151NE	CCGW 060204NE				1/64	0.118		●		
	CCGW 32502NE	CCGW 09T301NE	3/8	5/32	0.173	0.004	0.134	1	●		
	CCGW 32505NE	CCGW 09T302NE				0.008	0.134		●		
	CCGW 3251NE	CCGW 09T304NE				1/64	0.134		●		
	CCGW 3252NE	CCGW 09T308NE				1/32	0.130		●		
	CCGW 141102	CCGW 040101	0.169	0.071	0.091	0.004	0.075	1	●	●	F27 F45
	CCGW 141105	CCGW 040102				0.008	0.075		●	●	
	CCGW 14111	CCGW 040104				1/64	0.075		●	●	
	CCGW 21502	CCGW 060201	1/4	3/32	0.110	0.004	0.138	1		●	Reference Table Above
	CCGW 21505	CCGW 060202				0.008	0.138			●	
	CCGW 2151	CCGW 060204				1/64	0.138			●	
	CCGW 32502	CCGW 09T301	3/8	5/32	0.173	0.004	0.150	1	●	△	
	CCGW 32505	CCGW 09T302				0.008	0.150		●	●	
	CCGW 3251	CCGW 09T304				1/64	0.146		●	●	
	CCGW 3252	CCGW 09T308				1/32	0.142			●	
	CCMT 21505SE	CCMT 060202SE	1/4	3/32	0.110	0.008	0.087	1	●		
	CCMT 2151SE	CCMT 060204SE				1/64	0.087		●		
	CCMT 32502SE	CCMT 09T301SE	3/8	5/32	0.173	0.004	0.106	1	●		
	CCMT 32505SE	CCMT 09T302SE				0.008	0.106		●		
	CCMT 3251SE	CCMT 09T304SE				1/64	0.106		●		
	CCMT 3252SE	CCMT 09T308SE				1/32	0.106		●		
	CCMT 21502NE	CCMT 060201NE	1/4	3/32	0.110	0.004	0.110	1	●		Reference Table Above
	CCMT 21505NE	CCMT 060202NE				0.008	0.110		●		
	CCMT 2151NE	CCMT 060204NE				1/64	0.110		●		
	CCMT 32502NE	CCMT 09T301NE	3/8	5/32	0.173	0.004	0.134	1	●		
	CCMT 32505NE	CCMT 09T302NE				0.008	0.134		●		
	CCMT 3251NE	CCMT 09T304NE				1/64	0.134		●		
	CCMT 21502	CCMT 060201	1/4	3/32	0.110	0.004	0.130	1	●	●	
	CCMT 21505	CCMT 060202				0.008	0.130		●	●	
	CCMT 2151	CCMT 060204				1/64	0.126		●	●	
	CCMT 32502	CCMT 09T301	3/8	5/32	0.173	0.004	0.154	1	●	●	
	CCMT 32505	CCMT 09T302				0.008	0.154		●	●	
	CCMT 3251	CCMT 09T304				1/64	0.154		●	●	
	CCMT 3252	CCMT 09T308				1/32	0.150			●	
NEW 	CCMT 32505APD	CCMT 09T302APD	3/8	5/32	0.173	0.008	0.106	1	●		
	3251APD	09T304APD				1/64	0.106		●		
	3252APD	09T308APD				1/32	0.106		●		

CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

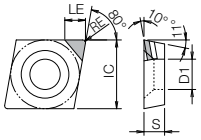
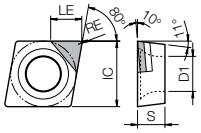
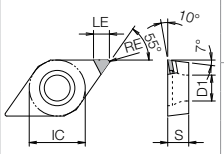
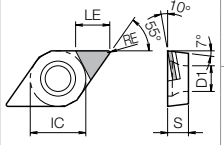
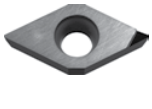
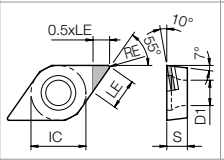
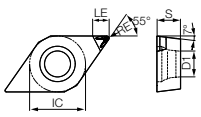
Positive

Positive Insert with Hole

How to read this page ➔ B15

Part Number	Applicable Toolholder Page
DC..215_	E26~E27, E30~E31, E42, E48, F53~F57
DC..325_	E22, E26~E31, E42, E48, F53~F57, F83

Edge Prep.			N	Non-Ferrous Metals (with Interruption)	●									
				Non-Ferrous Metals (without Interruption)	●									
All PCD Items		Sharp Edge	S	Titanium Alloys (with Interruption)	●									
				Titanium Alloys (without Interruption)	●									

Insert		ANSI Part Number	ISO Part Number	Dimensions (in) IC	S	D1	RE	LE	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
		CPMH 3205SE	CPMH 090302SE	3/8	1/8	0.177	0.008	0.106	1	●		F49 F51
		321SE	090304SE				1/64	0.106		●		
		CPMH 251505NE	CPMH 080202NE	5/16	3/32	0.138	0.008	0.126	1	●		
		25151NE	080204NE				1/64	0.126		●		
		CPMH 3202NE	CPMH 090301NE	3/8	1/8	0.177	0.004	0.134	1	●		
		3205NE	090302NE				0.008	0.134		●		
		321NE	090304NE				1/64	0.134		●		
		322NE	090308NE				1/32	0.130		●		
		CPMH 251502	CPMH 080201	5/16	3/32	0.138	0.004	0.146	1	●	○	
		251505	080202				0.008	0.146		●	●	
		25151	080204				1/64	0.146		●	●	
		CPMH 3202	CPMH 090301	3/8	1/8	0.177	0.004	0.157	1		●	
		3205	090302				0.008	0.154		●	●	
		321	090304				1/64	0.154		●	●	
		322	090308				1/32	0.150			●	
		DCMT 21502SE	DCMT 070201SE	1/4	3/32	0.110	0.004	0.106	1	●		Reference Table Above
		21505SE	070202SE				0.008	0.106		●		
		2151SE	070204SE				1/64	0.106		●		
		DCMT 32502SE	DCMT 11T301SE	3/8	5/32	0.173	0.004	0.106	1	●		
		32505SE	11T302SE				0.008	0.106		●		
		3251SE	11T304SE				1/64	0.106		●		
		3252SE	11T308SE				1/32	0.106		●		
		DCMT 21502NE	DCMT 070201NE	1/4	3/32	0.110	0.004	0.134	1	●		
		21505NE	070202NE				0.008	0.134		●		
		2151NE	070204NE				1/64	0.126		●		
		DCMT 32502NE	DCMT 11T301NE	3/8	5/32	0.173	0.004	0.134	1	●		
		32505NE	11T302NE				0.008	0.130		●		
		3251NE	11T304NE				1/64	0.126		●		
		3252NE	11T308NE				1/32	0.110		●		
		DCMT 21502	DCMT 070201	1/4	3/32	0.110	0.004	0.157	1	●	●	
		21505	070202				0.008	0.154		●	●	
		2151	070204				1/64	0.146		●	●	
		DCMT 32502	DCMT 11T301	3/8	5/32	0.173	0.004	0.157	1	●	●	
		32505	11T302				0.008	0.154		●	●	
		3251	11T304				1/64	0.146		●	●	
		3252	11T308				1/32	0.130		●	●	
		DCMT 32505R-NE	DCMT 11T302R-NE	3/8	5/32	0.173	0.008	0.130	1	●		
		3251L-NE	11T304L-NE				1/64	0.126		●		
NEW		DCMT 32505APD	DCMT 09T302APD	3/8	5/32	0.173	0.008	0.106	1	●		
		3251APD	09T304APD				1/64	0.106		●		
		3252APD	09T308APD				1/32	0.106		●		

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

Positive

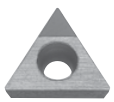
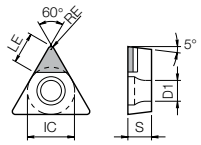
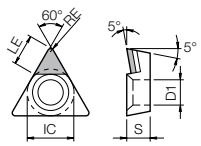
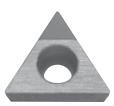
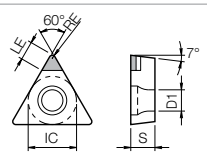
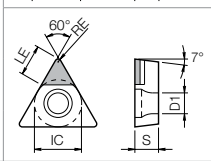
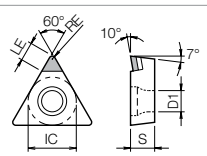
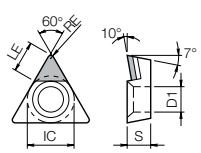
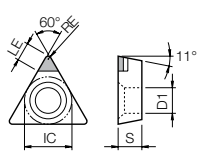
Positive Insert with Hole

How to read this page ➡ B15

Part Number	Applicable Toolholder Page
TP..1815_	E33, F28, F61, F63, F65

Part Number	Applicable Toolholder Page
TP..22_	E33, F61, F63, F64
TP..32_	F61, F64

Edge Prep.			
All PCD Items	Sharp Edge		
N	Non-Ferrous Metals (with Interruption)	●	
	Non-Ferrous Metals (without Interruption)	●	
S	Titanium Alloys (with Interruption)	●	
	Titanium Alloys (without Interruption)	●	

Insert		ANSI Part Number	ISO Part Number	Dimensions (in) IC	S	D1	RE	LE	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
		TBGW 12105NE	TBGW 060102NE	5/32	1/16	0.091	0.008	0.083	1	●		F28 F61 F63 F65
		1211NE	060104NE				1/64	0.075		●		
		TBGW 12105	TBGW 060102	5/32	1/16	0.091	0.008	0.094	1	●	●	
		1211	060104				1/64	0.087		●		
		TBMT 12102NE	TBMT 060101NE	5/32	1/16	0.091	0.004	0.087	1	●		
		1211NE	060104NE				1/64	0.079		●		
		1212NE	060108NE				1/32	0.067		●		
		TBMT 12105	TBMT 060102	5/32	1/16	0.091	0.008	0.098	1	●	●	
		1211	060104				1/64	0.091			●	
		1212	060108				1/32	0.079		●		
		TCGW 2205SE	TCGW 110302SE	1/4	1/8	0.110	0.008	0.098	1		●	E33
		221SE	110304SE				1/64	0.094			●	
		TCGW 2205NE	TCGW 110302NE	1/4	1/8	0.110	0.008	0.130	1	●		
		221NE	110304NE				1/64	0.126		●		
		TCGW 2205	TCGW 110302	1/4	1/8	0.110	0.008	0.154	1		●	
		TCMT 2202SE	TCMT 110301SE	1/4	1/8	0.110	0.004	0.102	1		●	
		2205SE	110302SE				0.008	0.098			●	
		221SE	110304SE				1/64	0.094			●	
		TCMT 151505NE	TCMT 080202NE	3/16	3/32	0.091	0.008	0.083	1	●		
		TCMT 2205NE	TCMT 110302NE	1/4	1/8	0.110	0.008	0.134	1	●		
		221NE	110304NE				1/64	0.130		●		
		TCMT 151505	TCMT 080202	3/16	3/32	0.091	0.008	0.094	1		●	
		15151	080204				1/64	0.087			●	
		TCMT 2205	TCMT 110302	1/4	1/8	0.110	0.008	0.154	1		●	
		TPGB 181505SE	TPGB 090202SE	7/32	3/32	0.118	0.008	0.083	1	●		Reference Table Above
		18151SE	090204SE				1/64	0.083		●		
		18152SE	090208SE				1/32	0.083		●		
		TPGB 2202SE	TPGB 110301SE	1/4	1/8	0.130	0.004	0.106	1	●	●	
		2205SE	110302SE				0.008	0.102		●	●	
		221SE	110304SE				1/64	0.098		●	●	
		TPGB 3205SE	TPGB 160302SE	3/8	1/8	0.177	0.008	0.102	1	●	●	
		321SE	160304SE				1/64	0.094		●	●	

KYOCERA

CBN & PCD Inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

Positive

Positive Insert with Hole

How to read this page B15

Part Number	Applicable Toolholder Page	Part Number	Applicable Toolholder Page
TP..1515_	E33, F59, F61, F63, F65	TP..22_	E33, F61, F63, F64
TP..1815_	E33, F28, F61, F63, F65	TP..32_	F61, F64

Edge Prep.															
All PCD Items		Sharp Edge													
Insert		ANSI Part Number		ISO Part Number		Dimensions (in) IC	S	D1	RE	LE	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page	
		TPGB	151505NE	TPGB	080202NE	3/16	3/32	0.098	0.008	0.087	1	●		Reference Table Above	
			15151NE		080204NE				1/64	0.083		●			
			15152NE		080208NE				1/32	0.071		●			
		TPGB	181505NE	TPGB	090202NE	7/32	3/32	0.118	0.008	0.106	1	●			
			18151NE		090204NE				1/64	0.102		●			
			18152NE		090208NE				1/32	0.091		●			
		TPGB	2205NE	TPGB	110302NE	1/4	1/8	0.130	0.008	0.134	1	●			
			221NE		110304NE				1/64	0.130		●			
			222NE		110308NE				1/32	0.118		●			
		TPGB	321NE	TPGB	160304NE	3/8	1/8	0.177	1/64	0.126	1	●			
			322NE		160308NE				1/32	0.114		●			
		TPGB	151505	TPGB	80202	3/16	3/32	0.098	0.008	0.102	1	●	●		
			15151		80204				1/64	0.094		●	●		
		TPGB	181505	TPGB	90202	7/32	3/32	0.118	0.008	0.126	1	●	●		
			18151		90204				1/64	0.118		●	●		
		TPGB	2205	TPGB	110302	1/4	1/8	0.130	0.008	0.154	1	●	●		
			221		110304				1/64	0.146		●	●		
			222		110308				1/32	0.134			●		
		TPMH	151505SE	TPMH	080202SE	3/16	3/32	0.098	0.008	0.079	1	●			
			15151SE		080204SE				1/64	0.071		●			
		TPMH	181505SE	TPMH	090202SE	7/32	3/32	0.118	0.008	0.094	1	●			
			18151SE		090204SE				1/64	0.087		●			
		TPMH	2202SE	TPMH	110301SE	1/4	1/8	0.130	0.004	0.106	1		●		
			2205SE		110302SE				0.008	0.102		●	●		
			221SE		110304SE				1/64	0.098		●	●		
		TPMH	3205SE	TPMH	160302SE	3/8	1/8	0.177	0.008	0.102	1	●			
			321SE		160304SE				1/64	0.094		●	●		
		TPMH	151502NE	TPMH	080201NE	3/16	3/32	0.098	0.004	0.091	1	●			
			151505NE		080202NE				0.008	0.087		●			
			15151NE		080204NE				1/64	0.083		●			
		TPMH	181502NE	TPMH	090201NE	7/32	3/32	0.118	0.004	0.106	1	●			
			181505NE		090202NE				0.008	0.102		●			
			18151NE		090204NE				1/64	0.098		●			
			18152NE		090208NE				1/32	0.087		●			
		TPMH	2202NE	TPMH	110301NE	1/4	1/8	0.130	0.004	0.134	1	●			
			2205NE		110302NE				0.008	0.130		●			
			221NE		110304NE				1/64	0.126		●			
			222NE		110308NE				1/32	0.114		●			
		TPMH	321NE	TPMH	160304NE	3/8	1/8	0.177	1/64	0.130	1	●			
			322NE		160308NE				1/32	0.118		●			
		TPMH	151505	TPMH	80202	3/16	3/32	0.098	0.008	0.098	1	●	●		
			15151		80204				1/64	0.091		●	●		
		TPMH	181502	TPMH	90201	7/32	3/32	0.118	0.004	0.118	1	●	●		
			181505		90202				0.008	0.114		●	●		
			18151		90204				1/64	0.110		●	●		
			18152		90208				1/32	0.098			●		
		TPMH	2202	TPMH	110301	1/4	1/8	0.130	0.004	0.154	1	●	●		
			2205		110302				0.008	0.154		●			
			221		110304				1/64	0.146		●	●		
			222		110308				1/32	0.134			●		
		TPMH	3205	TPMH	160302	3/8	1/8	0.177	0.008	0.157	1	●	●		
			321		160304				1/64	0.150		●	●		
			322		160308				1/32	0.142			●		
NEW		TPMT	2205APD	TPMT	110302APD	1/4	1/8	0.130	0.008	0.102	1	●			
			221APD		110304APD				1/64	0.098		●			
			222APD		110308APD				1/32	0.098		●			

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

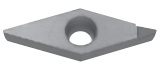
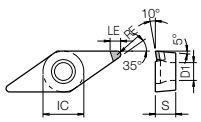
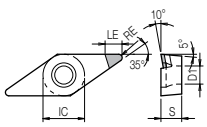
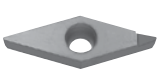
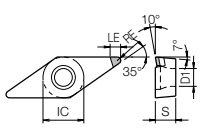
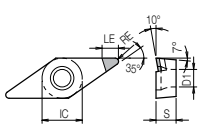
Positive

Positive Insert with Hole

How to read this page ➡ B15

Part Number	Applicable Toolholder Page
VB..22_	E34~E36, E43, E48, F66~F73
VB..33_	E34~E36, F66~F73

Edge Prep.			
All PCD Items	Sharp Edge	N	Non-Ferrous Metals (with Interruption) ●
			Non-Ferrous Metals (without Interruption) ●
		S	Titanium Alloys (with Interruption) ●
			Titanium Alloys (without Interruption) ●

Insert		ANSI Part Number	ISO Part Number	Dimensions (in) IC	S	D1	RE	LE	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
		VBMT 2202SE	VBMT 110301SE	1/4	1/8	0.110	0.004	0.098	1	●		Reference Table Above
		2205SE	110302SE				0.008	0.091		●		
		221SE	110304SE				1/64	0.075		●		
		222SE	110308SE				1/32	0.075		●		
		VBMT 3302SE	VBMT 160401SE	3/8	3/16	0.173	0.004	0.106	1	●		
		3305SE	160402SE				0.008	0.098		●		
		331SE	160404SE				1/64	0.083		●		
		332SE	160408SE				1/32	0.079		●		
		VBMT 2202NE	VBMT 110301NE	1/4	1/8	0.110	0.004	0.102	1	●		
		2205NE	110302NE				0.008	0.094		●		
		221NE	110304NE				1/64	0.079		●		
		222NE	110308NE				1/32	0.122		●		
		VBMT 3302NE	VBMT 160401NE	3/8	3/16	0.173	0.004	0.110	1	●		
		3305NE	160402NE				0.008	0.102		●		
		331NE	160404NE				1/64	0.087		●		
		332NE	160408NE				1/32	0.118		●		
		VBMT 2202	VBMT 110301	1/4	1/8	0.110	0.004	0.118	1	●	●	
		2205	110302				0.008	0.110		●	●	
		221	110304				1/64	0.094		●	●	
		222	110308				1/32	0.138		●	●	
		VBMT 3302	VBMT 160401	3/8	3/16	0.173	0.004	0.126	1	●	△	
		3305	160402				0.008	0.118		●	●	
		331	160404				1/64	0.102		●	●	
		332	160408				1/32	0.138		●	●	
		VCMT 151505SE	VCMT 080202SE	3/16	3/32	0.091	0.008	0.055	1	●		E43 F66 F68~F73
		15151SE	080204SE				1/64	0.055		●		
		15152SE	080208SE				1/32	0.055		●		
		VCMT 151502NE	VCMT 080201NE	3/16	3/32	0.091	0.004	0.067	1	●		
		151505NE	080202NE				0.008	0.067		●		
		15151NE	080204NE				1/64	0.071		●		
		15152NE	080208NE				1/32	0.075		●		
		VCMT 151502	VCMT 080201	3/16	3/32	0.091	0.004	0.079	1		●	
		151505	080202				0.008	0.079		●	●	
		15151	080204				1/64	0.083		●	●	
		15152	080208				1/32	0.087		●	●	

KYOCERA
CBN & PCD Inserts sold in 1 piece boxes.

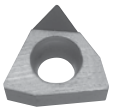
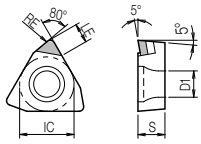
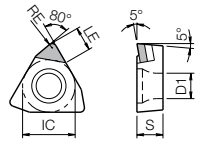
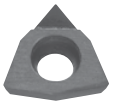
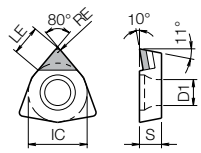
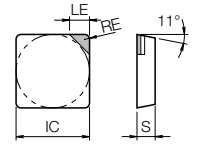
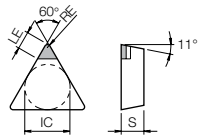
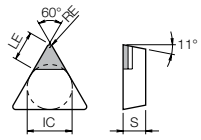
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Positive

Positive Insert with & without Hole

How to read this page B15

Edge Prep.				N	Non-Ferrous Metals (with Interruption)	●		Toolholder Page
					Non-Ferrous Metals (without Interruption)	●		
All PCD Items		Sharp Edge		S	Titanium Alloys (with Interruption)	●		
					Titanium Alloys (without Interruption)	●		

Insert		ANSI Part Number	ISO Part Number	Dimensions (in) IC	S	D1	RE	LE	No. of Edges	PCD KPD001	PCD KPD010	Toolholder Page
		WBMT 12105L-SE	WBMT 060102L-SE	5/32	1/16	0.091	0.008	0.051	1	●		F29 F75 F76 F77
		WBMT 151505L-SE	WBMT 080202L-SE	3/16	3/32	0.091	0.008	0.062	1	●		
		WBMT 12102L	WBMT 060101L	5/32	1/16	0.091	0.004	0.075	1	●		
		12105L	060102L				0.008	0.075		●	●	
		1211L	060104L				1/64	0.075		●	●	
		WBMT 151505L	WBMT 080202L	3/16	3/32	0.091	0.008	0.094	1	●	●	
		15151L	080204L				1/64	0.091		●	●	
		WPMT 21505SE	WPMT 110202SE	1/4	3/32	0.110	0.008	0.083	1	●		
		WPMT 21505NE	WPMT 110202NE	1/4	3/32	0.110	0.008	0.106	1	●		
		WPMT 21505	WPMT 110202	1/4	3/32	0.110	0.008	0.122	1		●	
		SPG 421NE	SPGN 120304NE	1/2	1/8	-	1/64	0.142	1	●		F78
		SPG 421	SPGN 120304	1/2	1/8	-	1/64	0.165	1		●	
		TPG 2202SE	TPGN 110301SE	1/4	1/8	-	0.004	0.102	1	●		F79
		2205SE	110302SE				0.008	0.098		●	●	
		221SE	110304SE				1/64	0.094		●	●	
		TPG 3202SE	TPGN 160301SE	3/8	1/8	-	0.004	0.102	1		●	
		3205SE	160302SE				0.008	0.102		●	●	
		321SE	160304SE				1/64	0.094		●	●	
		TPG 321NE	TPGN 160304NE	3/8	1/8	-	1/64	0.126	1	●		
		322NE	160308NE				1/32	0.114		●		
		TPG 2205	TPGN 110302	1/4	1/8	-	0.008	0.154	1	●	●	
		221	110304				1/64	0.146		●	●	
		222	110308				1/32	0.134			●	
		TPG 3205	TPGN 160302	3/8	1/8	-	0.008	0.154	1	△		
		321	160304				1/64	0.146		●	●	
		322	160308				1/32	0.134			●	

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

Grooving Inserts

How to read this page ➔ B15

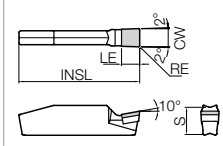
Grooving Inserts (1-edge)

| Edge Prep. | | |

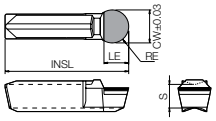
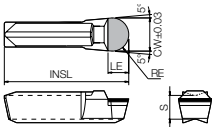
Grooving Inserts

How to read this page B15

Deep Grooving Inserts (1-edge)

Edge Prep.				N	Non-Ferrous Metals (with Interruption)								
					Non-Ferrous Metals (without Interruption)								
All PCD Items		Sharp Edge		S	Titanium Alloys (with Interruption)								
					Titanium Alloys (without Interruption)								
Insert		ANSI Part Number		CW±0.0012 (in)	Dimensions (mm)					No. of Edges	PCD	Toolholder Page
					CW±0.03	RE	INSL	S	LE		KPD001	
External Deep Grooving		GDGS	2020N-020NB	0.079	2.0	0.2	20	4.3	2.9	1	●	G28 ~ G36
			3020N-020NB	0.118	3.0						●	
			4020N-020NB	0.157	4.0						●	
			5020N-020NB	0.197	5.0						●	
			6020N-020NB	0.236	6.0						●	

For Aluminum Wheel (1-edge)

Edge Prep.				N	Non-Ferrous Metals (with Interruption)								
					Non-Ferrous Metals (without Interruption)								
GMGW		Honed Cutting Edge		S	Titanium Alloys (with Interruption)								
					Titanium Alloys (without Interruption)								
Insert		ANSI Part Number		CW±0.0012 (in)	Dimensions (mm)					No. of Edges	PCD	Toolholder Page
					CW±0.03	RE	INSL	S	LE		KPD001	
		GMGW	6030-30R	0.236	6	3	30	5.5	4.5	1	●	G56
			8030-40R	0.315	8	4	30	5.5	6.0		●	
		GMGW	8030-40R-HR	0.315	8	4	30	5.5	5.0	1	●	

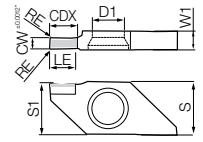
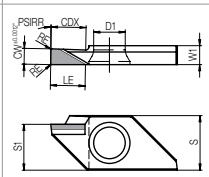
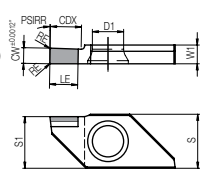
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

Grooving / Traversing

1 - E d g e

How to read this page B15

Edge Prep.			N	Non-Ferrous Metals (with Interruption)															
All PCD Items		Sharp Edge		Non-Ferrous Metals (without Interruption)															
			S	Titanium Alloys (with Interruption)															
				Titanium Alloys (without Interruption)															
Insert		ANSI Part Number	CW±0.0012 (in)	Dimensions (mm)										Angle (°)	No. of Edges	PCD		Toolholder Page
				CW±0.03	CDX	RE	W1	S	S1	D1	LE	PSIR R/L		KPD001 R	KPD001 L	
Traversing / Grooving NEW		TKF12R 200-AGT	0.079	2.0	4.8	+0.00 -0.05 0.1	3	8.7	8.3	5	4.2	0°	1	●		E12 E14
		250-AGT	0.098	2.5										●		
Traversing / Grooving		TKF12R/L 200-AS	0.079	2.0	5.0	+0.00 -0.05 0.1	3	8.7	7.3	5	5.3	0°	1	●		
		TKF16R/L 250-AS	0.098	2.5	8		4	9.5	8.0		6.3			●		
External Grooving (Traversing is Possible)		TKF12R/L 150-NB	0.059	1.5	3.5	+0.00 -0.05 0.1	3	8.7	8.3	5	2.0	0°	1	●	●	
		200-NB	0.079	2.0	4.0						3.0			●	●	
		250-NB	0.098	2.5	4.0						3.0			●		
		250-NB4.5	0.098	2.5	5.0						4.5			●		

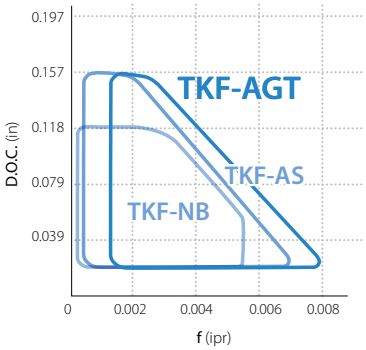
- Lead angle (front cutting edge angle: **PSIR R/L**) shows the angle when installed into toolholder
- TKF PCD inserts are only for turning and grooving
- Cut-off is not recommended.
- Dimension **CDX** shows available grooving depth

Insert Identification System

TKF	12	R	200	-	AS
TKF	12	L	200	-	AS

- Insert Type
- Insert Size
- Insert Hand
  - **R** : Right-hand
  - **L** : Left-hand
- Width (Edge Width)
- Name of Chipbreaker
  - **AS** : AS Chipbreaker
  - **NB** : Without Chipbreaker

Applicable Range



- TKF PCD inserts are only for turning and grooving
- Cut-off is not recommended

Note) 1. The cutting edge of the TKF-AS will be 0.04" lower than the center line when attached to the KTKF toolholder (Ref. **Fig.1**). Adjust the height by making NC lathe parameter settings or inserting a plate.

2. If the 0.04" adjustment is not possible on your automatic lathe, use the TKF-NB (Ref. **Fig.2**).

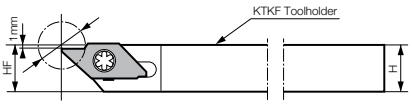


Fig.1 When a TKF-AS/-ASR insert is attached
(The cutting edge is 0.04" lower than the center line.)

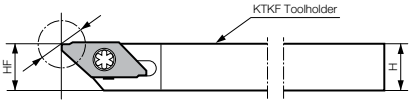


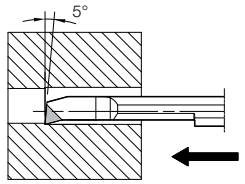
Fig.2 When a TKF-NB insert is attached

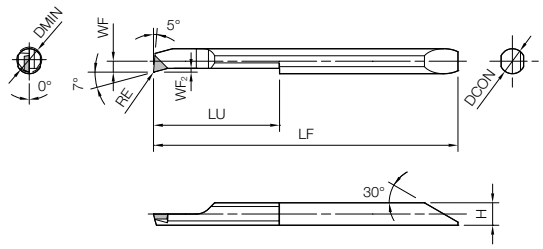
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

EZ Bar

EZB-NB : PCD

How to read this page ➡ B15





• Righ-Hand Insert Shown

● EZ Bar Dimensions

Edge Prep.		N	Non-Ferrous Metals (with Interruption)	●
			Non-Ferrous Metals (without Interruption)	●
All PCD Items	Sharp Edge	S	Titanium Alloys (with Interruption)	●
			Titanium Alloys (without Interruption)	●

ANSI Part Number		Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LU	WF	WF_2	RE	No. of Edges	PCD KPD001	Applicable Sleeves Page
EZBR	040040-003NB	4	4	3.6	48.8	20	1.75	0.5	$0.035^{\pm0.015}$	1	●	F30 ~ F34
	050050-003NB	5	5	4.6	58.1	25	2.25	0.5			●	
	060060-003NB	6	6	5.6	66.1	30	2.75	0.5			●	
	070070-003NB	7	7	6.6	74.1	35	3.25	0.5			●	

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CBN & PCD Inserts sold in 1 piece boxes.

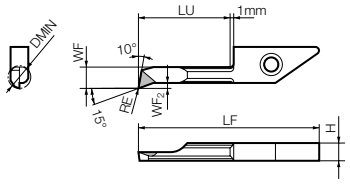
System Tip-Bars

Micro Boring / Micro Grooving

How to read this page B15

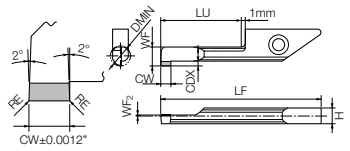
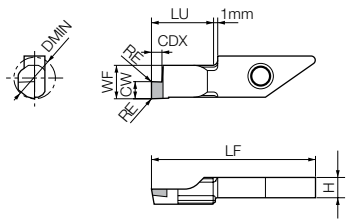
System Tip-Bars

Edge Prep.			N	Non-Ferrous Metals (with Interruption)	●	
				Non-Ferrous Metals (without Interruption)	●	
All PCD Items	Sharp Edge		S	Titanium Alloys (with Interruption)	●	
				Titanium Alloys (without Interruption)	●	

Insert	ANSI Part Number		Min. Bore Dia.	Dimensions (mm)						No. of Edges	PCD		Toolholder Page
			DMIN	H	LF	LU	WF	WF_2	RE		KPD001	KPD010	
Micro Boring 	VNBR	0411-02NB	4	3.9	30.8	11	3.5	0.5	0.2	1	●	●	F38 F39
		0420-02NB			39.8	20					●	●	
	VNBR	0511-02NB	5	3.9	30.8	11	4.5	0.7	0.2	1	●	●	
		0520-02NB			39.8	20					●	●	
	VNBR	0620-02NB	6	3.9	39.8	20	5.3	1.0	0.2	1	●	●	
		0630-02NB			49.8	30					●	●	
	VNBR	0720-02NB	7	3.9	39.8	20	6.2	1.0	0.2	1	●	●	
		0730-02NB			49.8	30					●		

System Tip-Bars

Edge Prep.			N	Non-Ferrous Metals (with Interruption)	●	
				Non-Ferrous Metals (without Interruption)	●	
All PCD Items	Sharp Edge		S	Titanium Alloys (with Interruption)	●	
				Titanium Alloys (without Interruption)	●	

Insert	ANSI Part Number		Min. Bore Dia.	Dimensions (mm)										No. of Edges	PCD		Toolholder Page
			DMIN DAXN	CW (in)	CW (mm)	RE	H	LF	LU	WF	WF_2	CDX		KPD001	KPD010	
Micro Grooving 	VNGR	0410-11NB	4	0.039	1.0	0.05	3.9	30.8	11	3.5	0.1	0.8	1	□		G61 G92
		0420-11NB		0.079	2.0	0.10								□		
	VNGR	0510-11NB	5	0.039	1.0	0.05	3.9	30.8	11	4.4	0.1	1.0	1	□		
		0520-11NB		0.079	2.0	0.10								□		
	VNGR	0610-20NB	6	0.039	1.0	0.05	3.9	39.8	20	5.2	0.3	1.8	1	□	□	
		0620-20NB		0.079	2.0	0.10								□	□	
	VNGR	0710-20NB	7	0.039	1.0	0.05	3.9	39.8	20	6.2	0.3	2.0	1	□	□	
		0720-20NB		0.079	2.0	0.10								□		
Micro Face Grooving 	VNFGR	0820-10NB	8	0.079	2.0	0.05	3.9	39.8	10	7.3	-	2.0	1	□	□	
		0830-10NB		0.118	3.0							3.0		□		

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

EXTERNAL TURNING TOOLHOLDERS

D

D1 - D40

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	PSBN / PSKN / PSSN / PSDN	D15
TN□□ INSERT	DTGN/ MTGN	D16
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VN□□ INSERT	DVJN / DVLN / DVPN / DVVN	D20
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DN□□ INSERT	CDJN	D27
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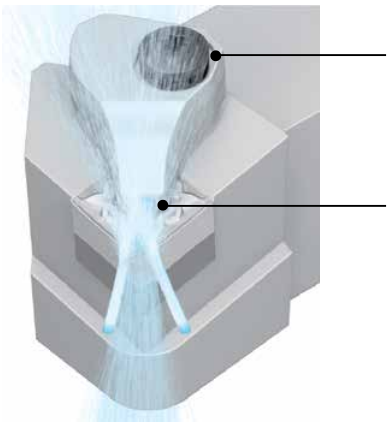
Double-Clamp-JCT

Coolant-Through Turning Holders

Discharges coolant in three directions to improve chip control and lengthen tool life for a wide variety of workpieces including steel, hardened material and difficult-to-cut material

1 Superior Chip Control Performance

Special coolant-through structure designed by careful simulation and analysis technology



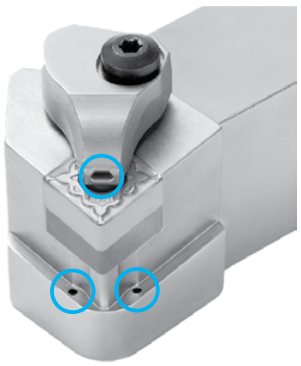
Double-Clamp

Firm insert clamp and easy to use in single operations
High-density coolant supply close to the cutting edge

Unique Nozzle Shape

Provides coolant to a wide area of the insert surface

○ : Coolant Hole



Discharges coolant in three directions and the cutting edge stays cool

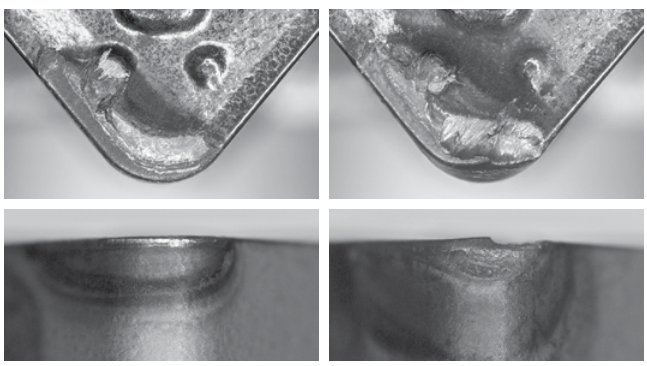
2 Advantages of Internal Coolant

Discharges Coolant towards the Cutting Edge
Internal Coolant Provides Longer Tool Life and Excellent Chip Control

Extended Tool Life

Wear Resistance Comparison (Internal Evaluation)

Internal Coolant (1,015 psi) External Coolant (58 psi)



Cutting Conditions: Vc = 820 sfm, f = 0.079 ipr, D.O.C. = 0.079", Wet
CNMG432 Insert Workpiece: 4137
External Turning After Machining 42.2 min

Improved Chip Control

Chip Control Comparison (Internal Evaluation)

Internal Coolant (1,015 psi) External Coolant (58 psi)

Cutting Conditions: Vc = 660 sfm, f = 0.002 ipr, D.O.C. = 0.020", Wet
DNMG432 Insert Workpiece: 4131 External Turning

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EXTERNAL TOOLHOLDER IDENTIFICATION SYSTEM

LENGTH AND WIDTH	LENGTH AND SIDE
A - 4.000 Back and End	M - 4.000 Front and End
B - 4.500 Back and End	N - 4.500 Front and End
C - 5.000 Back and End	P - 5.000 Front and End
D - 6.000 Back and End	R - 6.000 Front and End
E - 7.000 Back and End	S - 7.000 Front and End
F - 8.000 Back and End	T - 8.000 Front and End
G - 5.500 Back and End	U - 5.500 Front and End

* NOTE: All qualified dimensions are given to a tolerance of 0.003" over a master gauge insert radius based on the standard shown.

Insert I.C.	Radius
1/4" - 5/16"	0.015"
3/8" - 1/2"	0.031"
5/8" - 3/4"	0.047"
1"	0.062"

⑧ Qualified Control

Number of 1/8ths on 1/4" I.C. and over.

⑦ Insert Size I.C.

This position shall be a significant number which indicates the holder cross section. For square shanks this number will represent the number of sixteenths of width and height. For rectangular holders the first digit represents the number of eighths of width and the second digit the number of quarters of height, except the following toolholder: 1-1/4 x 1-1/2 which is given the number 91.

⑥ Toolholder Shank Size

- R : Round
- S : Square
- T : Triangle
- C : 80° Diamond
- D : 55° Diamond
- V : 35° Diamond
- W : 80° Trigon
- R : Round

② Insert Shape

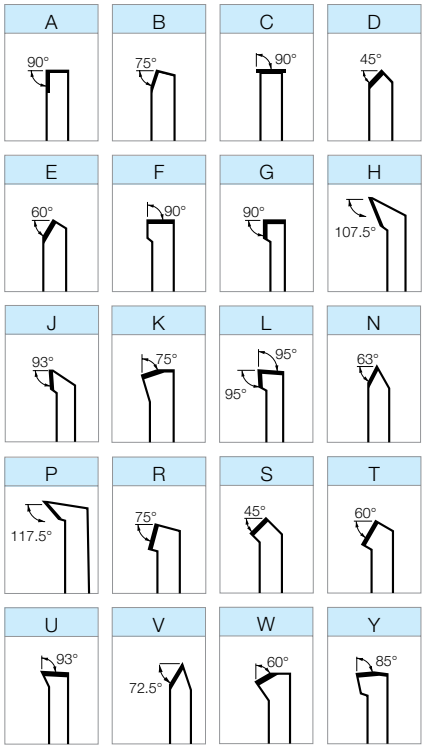
- A : Anchor Pin Style
- C : Clamp Only
- D : Double Clamp
- M : Clamp and Lock Pin
- P : Lock Pin Only (or Lever Lock)
- S : Screw Only
- W : Wedge Only

① Clamping System

	①	②	③	④	⑤	⑥	⑦	⑧
ANSI (inch)	D	C	L	N	R	16	4	D
ISO (metric)	D	C	L	N	R	20	20	K

	⑨	⑩
ANSI (inch)	12	
ISO (metric)		

③ Cutting Edge Angle



④ Insert Relief Angle

- B : 5° Positive
- C : 7° Positive
- D : 15° Positive
- E : 20° Positive
- N : 0° Negative
- P : 11° Positive

⑤ Hand of Tool

- R : Right-hand
- L : Left-hand
- N : Neutral

⑥ Shank Height

Shank Height (mm)

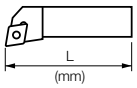
⑦ Shank Width

Shank Width (mm)

⑩ Others

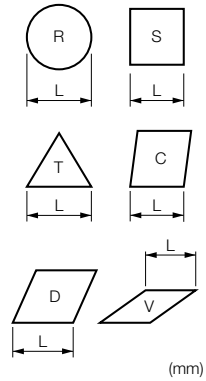
- Optional Code
- Optional Mark or Number

⑧ Toolholder Length (mm)



A : 32	J : 110	R : 200
B : 40	JX : 120	S : 250
C : 50	K : 125	T : 300
D : 60	L : 140	U : 350
E : 70	M : 150	V : 400
F : 80	N : 160	W : 450
G : 90	P : 170	Y : 500
H : 100	Q : 180	X : Special

⑨ Insert Size



- Specifications may change without prior notice.
- Due to the installation size constraints on the machine, the toolholder length of some products may not match with the symbol.

General Purpose Turning Holders

Applicable Insert Shape	CN..	WN..	TN..	DN..	RC..		RN..	VN..
Application	External / Facing		External / Facing / Copying					External / Facing / Copying / Undercutting
Cutting Edge Angle	95°		105°	107.5°	Special			117.5°
Lever Lock (Pin Lock)	PCLN	PWLN		PDHN	PRGC	PRXC	PRGN	PVPN (Pin Lock)
Ref. Page	D9	D25		D13	D23	D23	D23	D22
Wedge Lock		WWLN	WTKN					
Ref. Page		D25	D18					
Double Clamp	DCLN (-JCT)	DWLN (-JCT)		DDHN				DVPN
Ref. Page	D8	D24		D12				D20
Multi-Lock	MCLN	MWLN						
Ref. Page	D8	D24						

Applicable Insert Shape	VN..	DN.. / TN..	SN..	TN..	SN..	SN..	TN..	SN..	TN..
Application	External / Copying		External / Chamfering		External / Facing / Chamfering	External		Facing	
Cutting Edge Angle	72.5°	95°	93°	45°	60°	45°	75°	91°	15°	-1°
Lever Lock (Pin Lock)	PVVN (Pin Lock)	PVLN (Pin Lock)	PDJN	PSDN		PSSN	PSBN	PTGN	PSKN	PTFN
Ref. Page	D22	D22	D13	D15		D15	D15	D17	D15	D17
Wedge Lock			WTJN		WTEN					
Ref. Page			D18		D18					
Double Clamp	DVVN	DVJN / DVLN	DDJN (-JCT)				DSBN	DTGN		
Ref. Page	D20	D20	D12				D14	D16		
Multi-Lock	MVVN	MVJN / MVLN	MDJN			MSSN		MTGN		
Ref. Page	D21	D21	D13			D14		D16		

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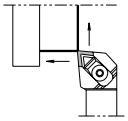
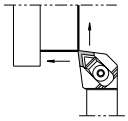
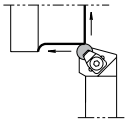
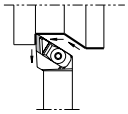
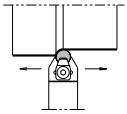
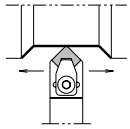
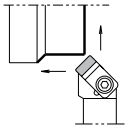
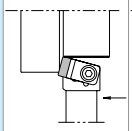
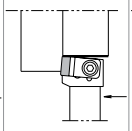
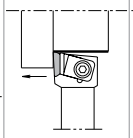
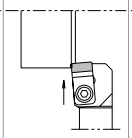
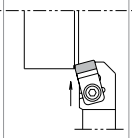
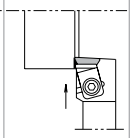
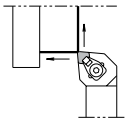
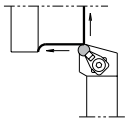
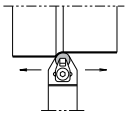
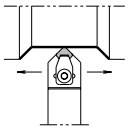
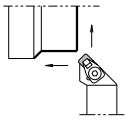
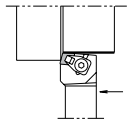
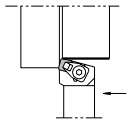
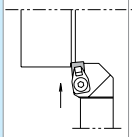
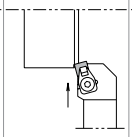
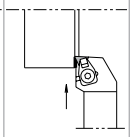
Toolholders for Ceramic Tools

Application	External / Facing			External / Copying		External / Chamfering	External / Facing / Chamfering
Cutting Edge Angle	95°	97.5°	Special	93°	Special	45°	45°
Top Clamp							
	CCLN / HCLN	CELN	CRSN / HRSN	CDJN	CRDN / CRDC	CSDN / HSDN	CSSN
Ref. Page	D26	D27	D29	D27	D31	D29	D28

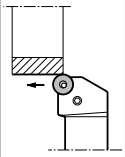
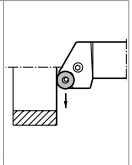
Application	External			Facing		
Cutting Edge Angle	75°	85°	93°	5°	15°	-3°
Top Clamp						
	CSRN / HSRN	CS-N	CTJN	CSYN	CSKN	CTUN
Ref. Page	D28	D28	D30	D28	D28	D30

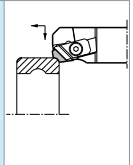
Toolholders for Solid CBN Tools

Application	External / Facing		External / Copying	External / Chamfering	External / Facing / Chamfering	External	
Cutting Edge Angle	95°	Special	Special	45°	45°	75°	93°
Top Clamp							
	CCLN-A	CRSN-A	CRDN-A	CSDN-A	CSSN-A	CCRN-A	CSRN-A
Ref. Page	D32	D33	D33	D35	D35	D32	D34

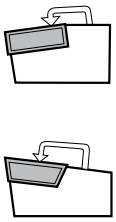
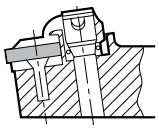
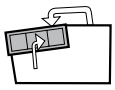
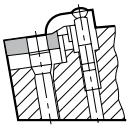
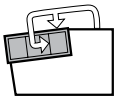
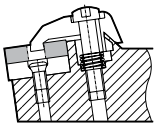
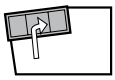
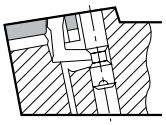
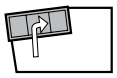
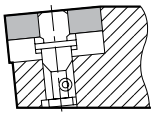
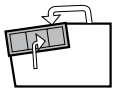
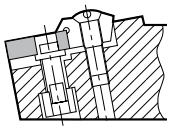
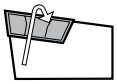
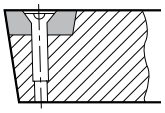
Application	Facing		
Cutting Edge Angle	5°	15°	-3°
Top Clamp			
	CSYN-A	CSKN-A	CTUN-A
Ref. Page	D34	D34	D36

Toolholders for Bearing Machining

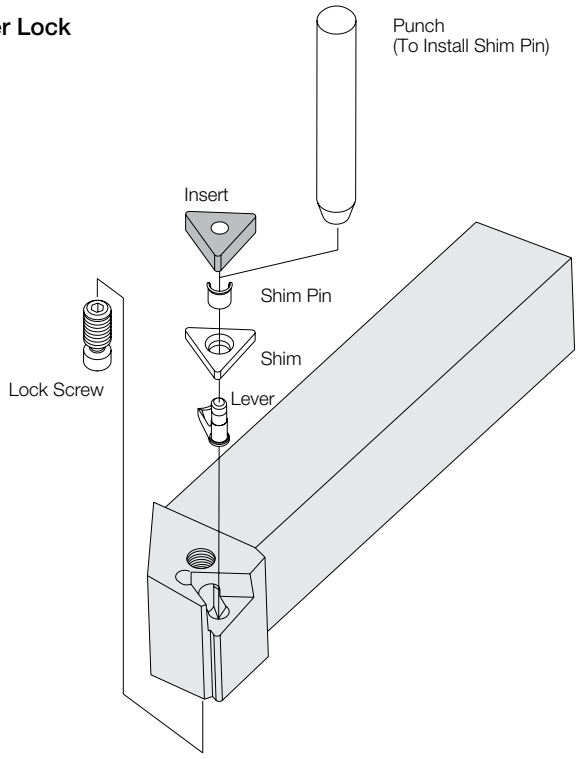
Application	External	Facing
Cutting Edge Angle	Special	Special
Lever Lock		
	PRGC-BE	PRGC-BF
Ref. Page	D37	D37

Application	Round Chamfering
Cutting Edge Angle	Special
Top Clamp	
	CBSN
Ref. Page	D38

Clamping System

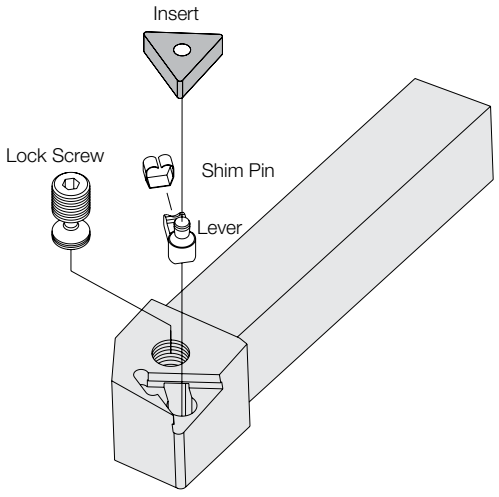
Series	Design		Features	Series	Design		Features
Top Clamp (C)			• Rigid Clamping • Negative Insert : Medium to Heavy Machining (Mainly for Ceramic Insert) • Positive Insert : Low Cutting Force	**Multi-Lock (M)**			• Combination of Top Clamp and Pin Lock • Rigid Clamping • Heavy Machining
Double Clamp (D)			• Firmly clamp the insert in two directions with one action.	**Lever Lock (P)**			• Easy Insert Replacement • General Use
Pin Lock (P)			• Easy Insert Replacement	**Wedge Lock (W)**			• Rigid Clamping • Heavy Machining
Screw Clamp (S)			• Simple Mechanism • Fewer Parts • Finishing to Medium Machining				

Lever Lock



With Shim

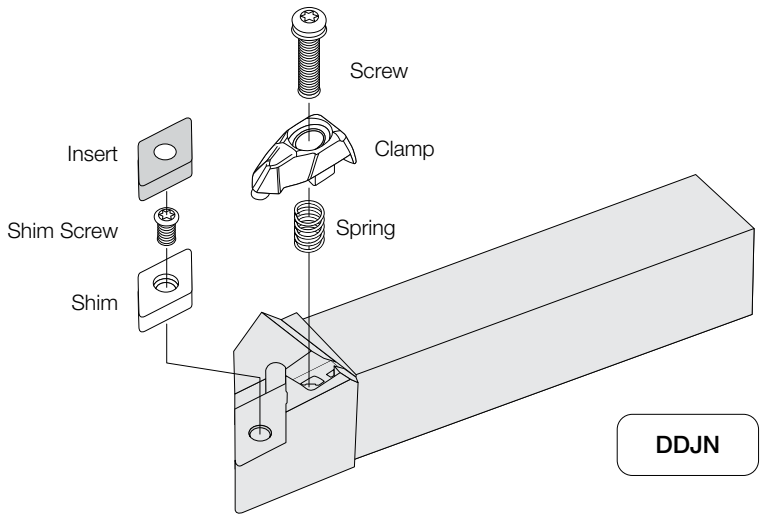
PCLN
PWLN
PTGN / PTFN / PTLN
PDJN / PDHN
PSBN / PSKN / PSSN / PSDN
PRGN
PRGC / PRXC



Without Shim

PTGN-11 / PTFN-11

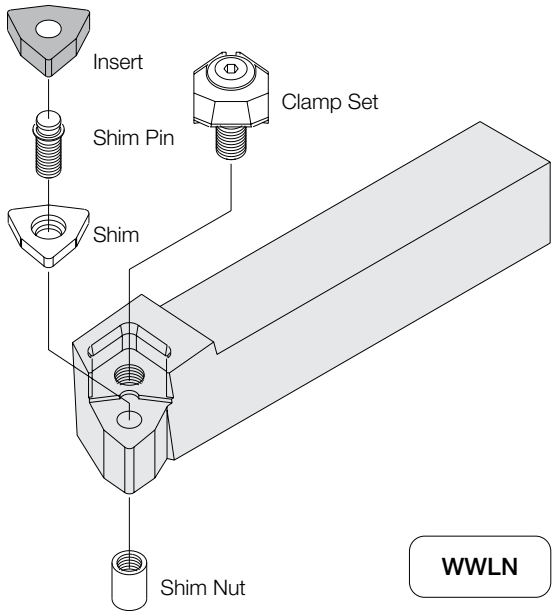
Double Clamp



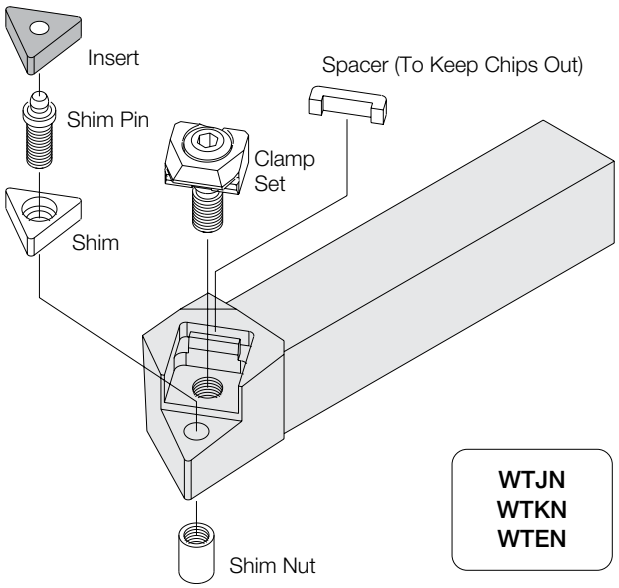
DDJN

DCLN
DDJN / DDHN
DSBN
DTGN
DVLN / DVJN / DVPN / DVVN
DWLN

Wedge Lock

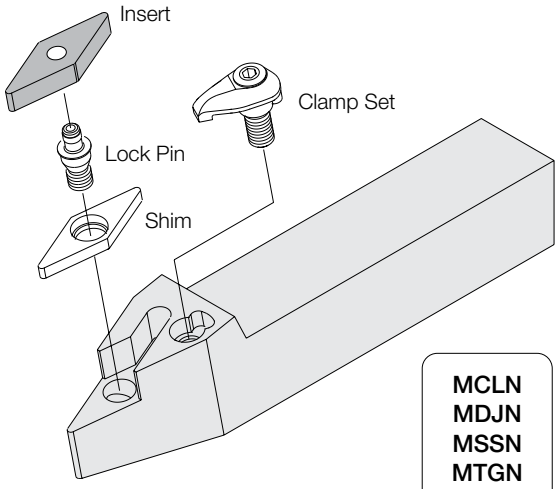


WWLN



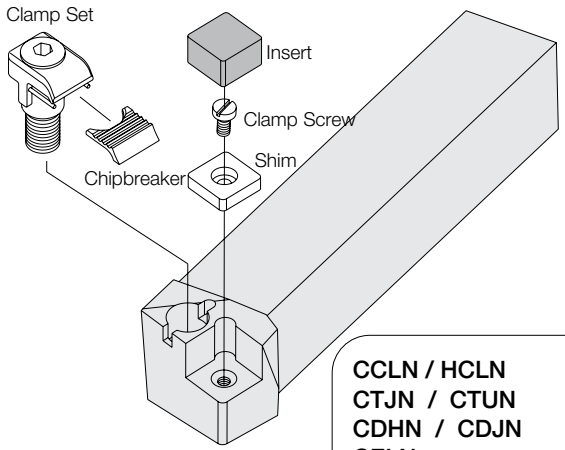
WTJN
WTKN
WTEN

Multi Lock



MCLN
MDJN
MSSN
MTGN
MVJN
MVVN
MWLN

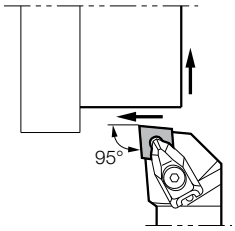
Top Clamp

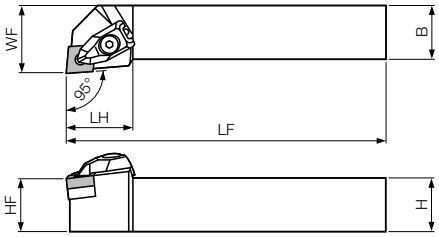


CCLN / HCLN
CTJN / CTUN
CDHN / CDJN
CELN
CSRN / HSRN / CS-N / CSKN
CSYN / CSSN / CSDN / HSDN
***CRSN / HRSN / *CRDN / CRDC**

* Chipbreaker is not included with CRSN / CRDN.

DCLN (External / Facing)





• Right-hand shown

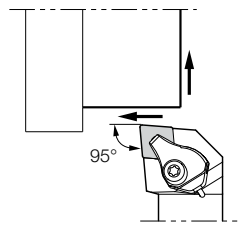
Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts

Toolholder	Insert	
DCLN□...12-4B	CN□A CN□G CN□M	43..
DCLN□...16-4D		
DCLN□...-12		

DCLN-JCT (External / Facing, Jet Coolant-Through) NEW

Pressure Resistance: up to 4,350 psi



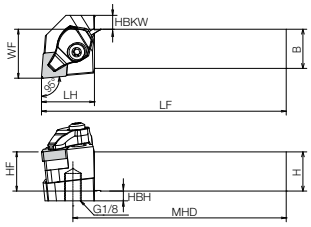


Fig.1

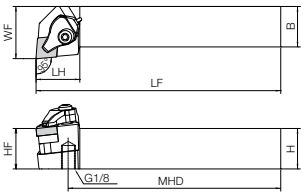


Fig.2

• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts

Toolholder	Insert	
DCLN□...-12JCT	CN□A CN□G CN□M	43..

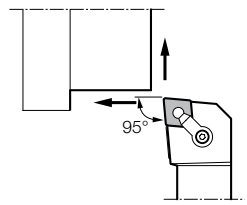
Toolholder Dimensions

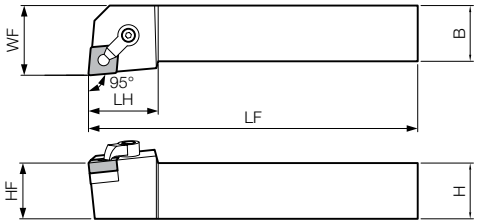
JCT Coolant Connections and Pipe Parts D11

Part Number		Stock		Unit	Dimensions									Standard Corner-R (RE)	Drawing	Spare Parts							
		R	L		H	HF	HBH	B	HBKW	LF	LH	WF	MHD			Clamp	Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (Sold Separately)
																...JCT						For Clamp	For Shim
DCLN□	**12-4B**	●	●	inch	0.75	0.75	-	0.75	-	4.50	1.30	1.00	-	1/32	-	CP-3D	-	CS-3D	SP-3D	*2 DC-44 *3 DC-44-C	SB-4085TR	LW-3	FT-15
	16-4D	●	●		1.00	1.00		1.00		6.00	1.26	1.25											
DCLN□	**2020K-12**	●	●	mm	20	20	-	20	-	125	33	25	-	0.8	-	CP-3D	-	CS-3D	SP-3D	*2 DC-44 *3 DC-44-C	SB-4085TR	LW-3	FT-15
	2525M-12	●	●		25	25		25		150	32	32											
DCLN□	**12-4BJCT**	●	●	inch	0.75	0.75	0.23	0.75	0.26	4.50	1.06	1.00	3.87	1/32	Fig.1	CP-3D-□-JCT	FP-12	CS-3D-TR	SP-3D	*2 DC-44 *3 DC-44-C	SB-4085TR	-	FT-15
NEW	**16-4DJCT**	●	●		1.00	1.00	-	1.00	-	6.00	1.06	1.25	5.37		Fig.2								
DCLN□	**2020K-12JCT**	●	●	mm	25	25	5	20	7	125	27	25	109	0.8	Fig.1	CP-3D-□-JCT	FP-12	CS-3D-TR	SP-3D	*2 DC-44 *3 DC-44-C	SB-4085TR	-	FT-15
NEW	**2525M-12JCT**	●	●		25	25	-	25	-	150	27	32	134		Fig.2								

*1 O-ring (**SS-035**) is available to order separately
*2 When using inserts with a corner-R (RE) greater than 1/16", additional modifications of the shim are necessary in order to prevent workpiece and shim from interfering with each other
*3 This shim is required for SX chipbreaker inserts (sold separately)

MCLN (External / Facing)





• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts

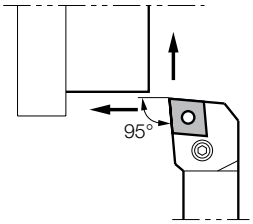
Toolholder	Insert	
MCLN□...-12-4B	CN□A CN□G CN□M	43..
MCLN□...-16-4D		
MCLN□...-16-5D		54..
MCLN□...-20-5D		
MCLN□...-20-6D		64..

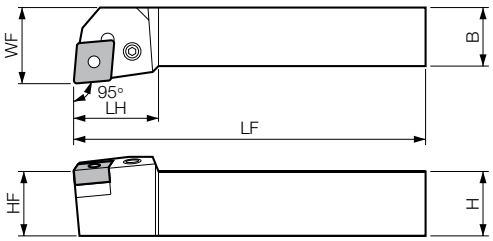
Toolholder Dimensions

Part Number		Stock		Unit	Dimensions						Standard Corner-R (RE)	Spare Parts						
		R	L		H	HF	B	LF	LH	WF		Clamp	Clamp Screw	Wrench	Shim	Shim Screw	Lock Pin	Wrench
MCLN□	**12-4B**	●	●	inch	0.75	0.75	0.75	4.00	1.190	1.00	1/32	CL-20	XNS-48	LW-125	ICSN433	S-46	NL46	LW-094
	16-4D	●	●		1.00	1.00	1.00	6.00	1.260	1.25								
	16-5D	●	●		1.00	1.00	1.00	6.00	1.375	1.25	1/32	CL-12	XNS-510	LW-156	ICSN533	S-58	NL58	LW-125
	20-5D	●	●		1.25	1.25	1.25	6.00	1.375	1.50								
	20-6D	●	●		1.25	1.25	1.25	6.00	1.500	1.50	1/32	CL-12	XNS-510	LW-156	ICSN633	S-68	NL68	LW-140

Applicable Inserts D9

PCLN (External / Facing)





• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts

Toolholder	Insert	
PCLNR/L...12-3B	CN□G	33..
PCLNR/L...16-3D		
PCLNR/L...12-4B	CN□A CN□G CN□M	43..
PCLNR/L...16-4D		
PCLNR/L...-09	CN□G	33..
PCLNR/L...-12	CN□A CN□G CN□M	43..
PCLNR/L...-16		54..

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R(RE)	Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PCLNR/L 12-3B	●		inch	0.75	0.75	0.75	4.50	0.87	1.00	1/32	LL-1N	LS-1N	LC-32N	LSP-1	PC-1	FH-2.5
PCLNR/L 12-4B	●		inch	0.75	0.75	0.75	4.50	1.06	1.00	1/32	LL-2N	LS-2N	LC-42N *2 LC-42N-20 *3 LC-42N-C	LSP-2	PC-2	LW-3
16-4D	●		inch	1.00	1.00	1.00	6.00	1.06	1.25							
PCLNR/L 1616H-09	●	●	mm	16	16	16	100	22	20	0.8	LL-1N	LS-1N	LC-32N	LSP-1	PC-1	FH-2.5
2020K-09	●	●	mm	20	20	20	125	22	25							
2525M-09	●	●	mm	25	25	25	150	22	32							
PCLNR/L 1616H-12	●		mm	16	16	16	100	27	20	0.8	LL-2N	LS-2N	LC-42N *2 LC-42N-20 *3 LC-42N-C	LSP-2	PC-2	LW-3
2020H-12*1	●		mm	20	20	20	100	27	25							
2020K-12	●	●	mm	20	20	20	125	27	25							
2525M-12	●	●	mm	25	25	25	150	27	32							
3225P-12	●	●	mm	32	32	25	170	27	32							
PCLNR/L 2525M-16	●	●	mm	25	25	25	150	32	32	0.8	LL-5N	LS-4N	LC-53N *3 LC-53N-C	LSP-3	-	LW-3
3232P-16	●	●	mm	32	32	32	170	32	40							

*1 Short shank type.
*2 When using inserts whose corner-R(RE) is greater than 1/16", additional modifications of the shim are necessary in order to prevent workpiece and shim from interfering with each other.
*3 This shim is required for SX chipbreaker inserts.

Applicable Inserts

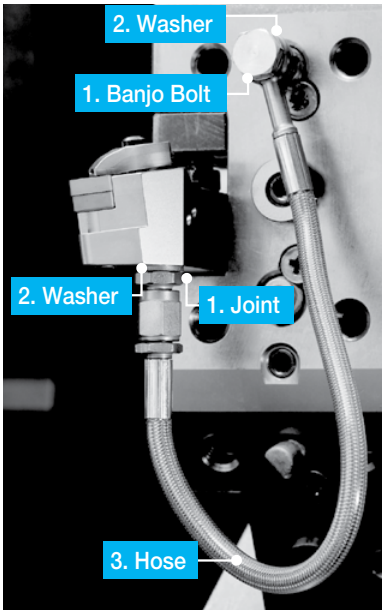
Application	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate
Insert	WF (Wiper)	WE (Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT
Size	43..	43..	43..	43..	43.., 54..	43.., 54..	33.., 43..	43..	43.., 54..	43.., 54..
Ref. Page	B16	B16	B16	B16	B17	B17	B17	B17	B17	B18
Application	Roughing	Roughing	Single Sided / Roughing / High Feed Rate	Finishing	Medium	Soft Steel / Small D.O.C.	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing
Insert	Standard	PH	PX	R/L-S	R/L	XF	XP	XQ	XS	MQ
Size	43.., 54.., 64..	43.., 54.., 64..	43.., 54.., 64..	33..	33.., 43..	43..	43..	43..	43..	43..
Ref. Page	B18	B18	B19	B22	B22	B19	B19	B19	B19	B20
Application	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Insert	MS	MU	KQ	KG	KH	C	ZS	GC	Without Chipbreaker	Ceramic
Size	43..	43.., 54.., 64..	43..	43..	43..	43..	43..	43..	43..	43..
Ref. Page	B20	B20	B21	B21	B21	B21	B21	B21	B21	B106
Application	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Heat-Resistant Alloys	Heat-Resistant Alloy Roughing	Heat-Resistant Alloy Roughing	Hard Materials			
Insert	A3	AH	PCD	SQ	SG	R/L-SX	CBN			
Size	43..	43..	43..	43.., 54.., 64..	43.., 54.., 64..	43.., 54.., 64..	43..			
Ref. Page	B22	B22	C23	B20	B20	B21	C6, C7			

Recommended Cutting Conditions D39-D40

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

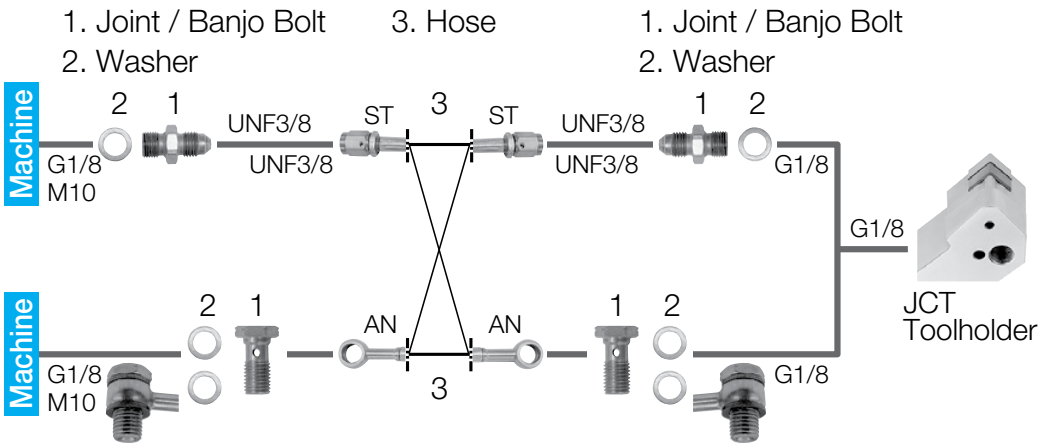
Easy Coolant Connections

Easy Connection with High Pressure Hose and Joint



- Even without a high pressure pump, internal coolant can be used at a normal pressure
- Banjo bolt available for angled hose connection and can be used in a variety of machines

Piping Installation Guide



● **Improved performance and stable machining with internal coolant even with low pressure**

Pressure Range	Tool Life	Chip Control	Notes
~ 290 psi (Low Pressure)	**Good**	Poor	Tool life is improved even when machining with low pressure coolant systems
290 psi ~ 1,015 psi (Medium Pressure)	**Excellent**	**Good**	Improved tool life and chip control performance
1,015 psi ~ 2,175 psi (High Pressure)	**Excellent**	**Excellent**	Chips become smaller and are easily evacuated
2,175 psi ~ 4,350 psi (Extra High Pressure)	**Excellent**	**Excellent**	Chips are smaller and high-speed machining of heat-resistant alloys is possible

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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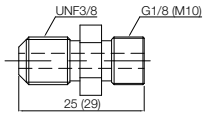
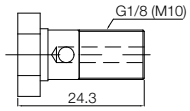
Piping Parts

Optional Piping Parts Available
Choose from parts below to match your machine specifications

1. Joint / Banjo bolt × 2
2. Washer × 2-4
3. Hose × 1

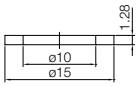
1. Joint / Banjo Bolt

Pressure Resistance: up to 4,350 psi

Shape		Part Number	Stock	Thread Standard Holder / Machine Connection
		**J-G1/8-UNF3/8**	●	G1/8
		J-10X1.5-UNF3/8	●	M10X1.5
Banjo Bolt (for Angle Hose) 		**BB-G1/8**	●	G1/8
		BB-M10X1.5	●	M10X1.5

2. Washer

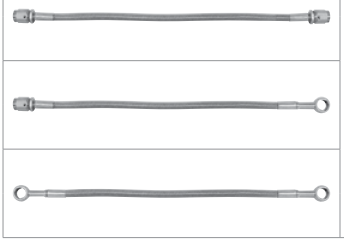
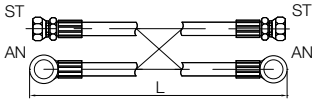
Pressure Resistance: up to 4,350 psi

Shape		Part Number	Stock
		**WS-10**	●

* Use 2 washers for a banjo bolt

3. Hose

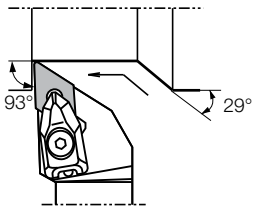
Pressure Resistance: up to 4,350 psi

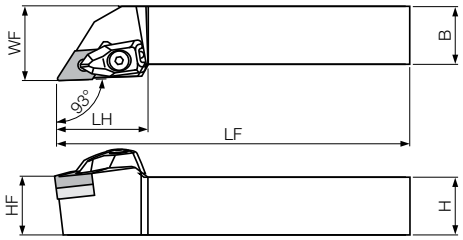
Shape		Part Number	Stock	Thread Standard		Dimensions (mm) L
		**HS-ST-ST-200**	●	UNF3/8	UNF3/8	200
		HS-ST-ST-250	●			250
		HS-ST-AN-200	●	UNF3/8	- (Banjo Bolt)	200
		HS-ST-AN-250	●			250
		HS-AN-AN-200	●	- (Banjo Bolt)	- (Banjo Bolt)	200
		HS-AN-AN-250	●			250

Precautions

1. Make sure machine door is completely closed before use of these parts.
2. Use appropriate seal for the male thread of the piping parts and make sure the connection is secure. Use plugs to seal off unused coolant holes.
3. Connect and fasten the coolant hose firmly.
4. The use of copper washers may cause leakage but will have no effect on the performance.
5. Commercial piping parts can be used if the thread standards are the same. Check the pressure resistance before use.
6. Regularly changing the coolant filter is recommended.

DDJN (External / Copying)





• Right-hand shown

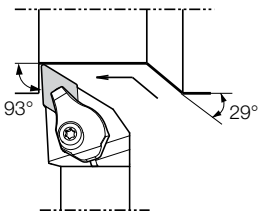
Side Rake Angle: -6°
Angle of Inclination: -7°

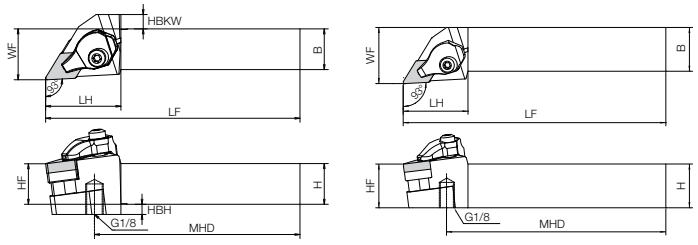
Applicable Inserts

Toolholder	Insert	
DDJNR/L**... 12-4B**	DN□A DN□G DN□M DN□X	43.. (44..)
DDJNR/L**...16-4D**		43.. (44..)
DDJNR/L**...-1504**	DN□A DN□G DN□M DN□X	43.. (44..)
DDJNR/L**...-1506**		44.. (43..)

DDJN-JCT (External / Copying, Jet Coolant-Through) NEW

Pressure Resistance: up to 4,350 psi





• Right-hand shown

Fig.1

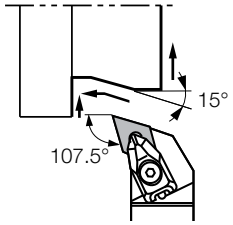
Fig.2

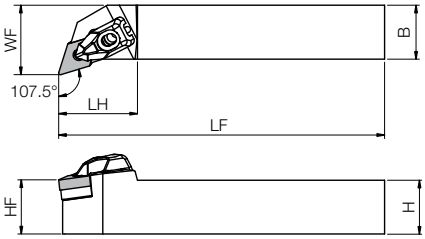
Side Rake Angle: -6°
Angle of Inclination: -7°

Applicable Inserts

Toolholder	Insert	
DDJNR/L**...-15JCT**	DN□A DN□G DN□M DN□X	44.. (43..)

DDHN (External / Face Grooving / Copying)





• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts

Toolholder	Insert	
DDHNR/L**...-1504**	DN□A DN□G DN□M DN□X	43.. (44..)
DDHNR/L**...-1506**		44.. (43..)

Toolholder Dimensions

JCT Coolant Connections and Pipe Parts ➔ **D11**

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	HBKW	LF	LH	WF	MHD	Standard Corner-R(RE)	Drawing	Spare Parts: Clamp	Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench: For Clamp	Wrench: For Shim
DDJNR/L **12-4B**	●	●	inch	0.75	0.75		0.75	-	4.50	1.54	1.00	-	1/32	-	CP-3D	-	CS-3D	SP-3D	*DD-44 (DD-43)	SB-4085TR	LW-3	
16-4D	●	●		1.00	1.00		1.00		6.00	1.54	1.25											
DDJNR/L **2020K-1504**	●	●	mm	20	20		20	-	125	39	25	-	0.8	-	CP-3D	-	CS-3D	SP-3D	*DD-44 (DD-43)	SB-4085TR	LW-3	FT-15 Sold Separately
2525M-1504	●	●		25	25		25		150	39	32											
DDJNR/L **2020K-1506**	●	●		20	20		20	-	125	39	25	-	0.8	-	CP-3D	-	CS-3D	SP-3D	DD-43 (*DD-44)	SB-4085TR	LW-3	
2525M-1506	●	●		25	25		25		150	39	32											
NEW **DDJN**R/L **12-4BJCT**	●	●	inch	0.75	0.75	0.23	0.75	0.26	4.50	1.46	1.00	3.56	1/32	Fig.1	CP-4D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	*DD-44 (DD-43)	SB-4085TR	-	FT-15
NEW **16-4DJCT**	●	●		1.00	1.00	-	1.00	-	6.00	1.46	1.25	5.06		Fig.2								
NEW **DDJN**R/L **2020K-15JCT**	●	●	mm	20	20	5	20	7	125	37	25	101	0.8	Fig.1	CP-4D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	*DD-44 (DD-43)	SB-4085TR	-	FT-15
NEW **2525M-15JCT**	●	●		25	25	-	25	-	150	37	32	126		Fig.2								
DDHNR/L **2020K-1504**	●	●	mm	20	20		20	-	125	37	25	-	0.8	-	CP-3D	-	CS-3D	SP-3D	*2DD-44 (DD-43)	SB-4085TR	LW-3	FT-15 Sold Separately
2525M-1504	●	●		25	25		25		150	37	32											
DDHNR/L **2020K-1506**	●	●		20	20		20	-	125	37	25	-	0.8	-	CP-3D	-	CS-3D	SP-3D	DD-43 (*2DD-44)	SB-4085TR	LW-3	
2525M-1506	●	●		25	25		25		150	37	32											

Shims indicated within ( ) are not included with the toolholder. To change insert thickness, please purchase it separately.

Applicable Inserts ➔ **D13**

*1 O-ring (**SS-035**) is available to order separately

*2 When using inserts with a corner-R (RE) greater than 1/16", additional modifications of the shim are necessary in order to prevent workpiece and shim from interfering with each other

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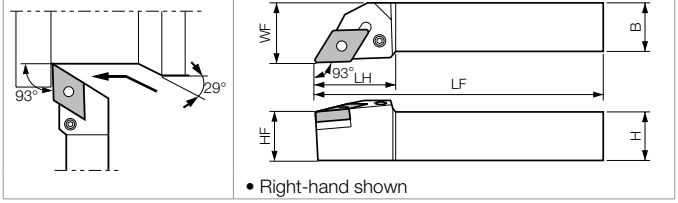
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

PDJN (External / Copying)

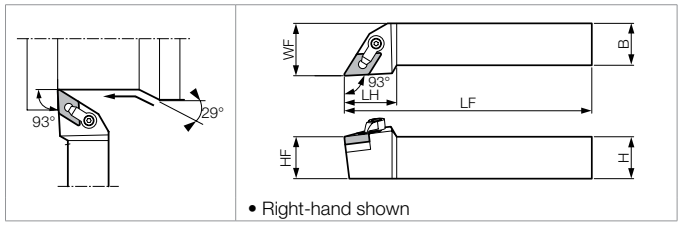
Side Rake Angle: -6°
Angle of Inclination: -7°



• Right-hand shown

MDJN (External / Copying)

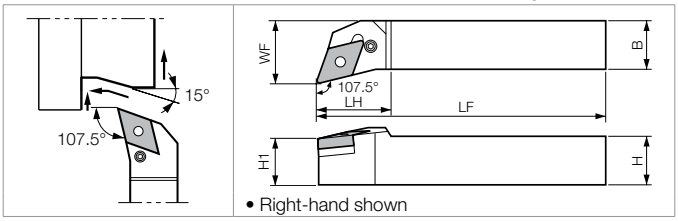
Side Rake Angle: -6°
Angle of Inclination: -6°



• Right-hand shown

PDHN (External / Face Grooving / Copying)

Side Rake Angle: -6°
Angle of Inclination: -6°



• Right-hand shown

PDHN Applicable Inserts

Toolholder	Insert	
PDHN□...-15	DN□A DN□G DN□M DN□X	43.. (44..)

PDJN / MDJN Applicable Inserts

Toolholder	Insert	
PDJN□...-3□ PDJN□...-11	DN□A DN□G	33..
PDJN□...-4□ PDJN□...-15	DN□A DN□G DN□M DN□X	43..
PDJN□...-15U		44.. (43..)
MDJN□...-4□		43..

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Clamp	Clamp Screw	Shim Screw	Lock Pin
PDJN□	12-3B	●		inch	0.75	0.75	0.75	4.50	0.87	1.00	1/64	LL-1N	LS-1N	LD-32N	LSP-1	PC-1	FH-2.5	-	-	-	-
	16-3D	●	●		1.00	1.00	1.00	6.00	0.87	1.25											
PDJN□	16-4D	●	●		1.00	1.00	0.75	4.50	1.06	1.00	1/32	LL-3N	LS-2N	LD-42 *2 LD-42-20	LSP-2	PC-2	LW-3	-	-	-	-
PDJN□	1616H-11	●	●	mm	16	16	16	100	28	20	0.4	LL-1DN	LS-1N	LD-32N	LSP-1	PC-1	FH-2.5	-	-	-	-
	2020K-11	●	●		20	20	20	125	28	25											
	2525M-11	●	●		25	25	25	150	28	32											
PDJN□	2020H-15*1	●			20	20	20	100	36	25	0.8	LL-3N	LS-2N	LD-42 *2 LD-42-20	LSP-2	PC-2	LW-3	-	-	-	-
	2020K-15	●	●		20	20	20	125	36	25											
	2525M-15	●	●		25	25	25	150	36	32											
	3225P-15	●	●		32	32	25	170	36	32											
PDJN□	2525M-15U	●	●		25	25	25	150	34	32	0.8	LL-4	LS-3	LD-42 *2 LD-42-20 (LD-43) (*2 LD-43-20)	LSP-2	PC-2	LW-3	-	-	-	-
	3232P-15U	●	●		32	32	32	170	36	40											
PDHN□	2020K-15	●	●		20	20	20	125	35	25	0.8	LL-4	LS-3	LD-43 *2 LD-43-20 (LD-42) (*2 LD-42-20)	LSP-2	PC-2	LW-3	-	-	-	-
	2525M-15	●	●		25	25	25	150	34	32											
MDJN□	12-4B	●	●	inch	0.75	0.75	0.75	4.50	1.25	1.00	1/32	-	-	IDSN443	-	-	LW-125, LW-094	CL-20	XNS-48	S-46	NL46
	16-4D	●	●		1.00	1.00	1.00	6.00	1.25	1.25											

*1 Short shank type.

• Shim: PDJN□-15U...LD-42 is attached to PDJN□-15U. When using DN□□43 type insert, please purchase LD-43 separately.
PDHN ...LD-43 is attached to PDHN. When using DN□□44 type Insert, please purchase LD-42 separately.

*2 When using inserts whose corner-R(RE) is greater than 1/16", please purchase this shim in order to prevent workpiece and shim from interfering each other.

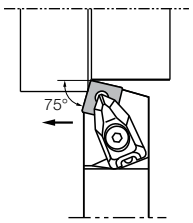
Applicable Inserts

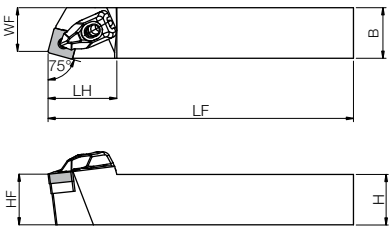
Application	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Insert	WF (Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
Size	43.., 44..	43.., 44..	43.., 44..	43.., 44..	43.., 44..	33.., 43.., 44..	43.., 44..	43.., 44..	43.., 44..	43.., 44..
Ref. Page	B23	B23	B23	B24	B24	B24	B25	B25	B25	B26
Application	Roughing	Single Sided Roughing High Feed Rate	Finishing	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Insert	PH	PX	□-S	□	XP	XQ	XS	MQ	MS	MU
Size	43.., 44..	43.., 44..	33..	33.., 43..	43.., 44..	43.., 44..	43..	43.., 44..	43.., 44..	43.., 44..
Ref. Page	B26	B26	B30	B30	B26	B26	B26	B27	B28	B28
Application	Heat-Resistant Alloy Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals
Insert	SG	TK	C	KQ	KG	KH	ZS	GC	Ceramic	□-A3
Size	43..	43.., 44..	43.., 44..	43.., 44..	43.., 44..	43.., 44..	43.., 44..	43.., 44..	43.., 44..	43..
Ref. Page	B28	B27	B29	B29	B29	B29	B29	B29	B107	B30
Application	Non-ferrous Metals	Non-ferrous Metals	Heat-Resistant Alloys	Hard Materials						
Insert	AH	PCD	SQ	CBN						
Size	43.., 44..	43..	43.., 44..	43.., 44..						
Ref. Page	B30	C23	B28	C8, C9						

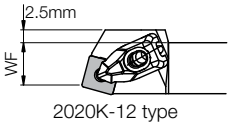
Recommended Cutting Conditions D39-D40

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DSBN (External)







2020K-12 type

Side Rake Angle: -6°
Angle of Inclination: -6°

• Right-hand shown

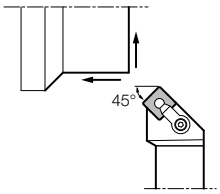
Applicable Inserts

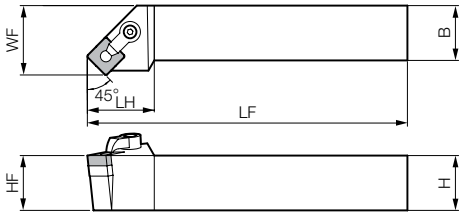
Toolholder	Insert	
DSBNR/L...-12	SN□A SN□G SN□M	43..

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (Sold Separately)
DSBNR/L 2020K-12		●	●	mm	20	20	20	125	34	17	0.8	CP-3D	CS-3D	SP-3D	DS-44	SB-4085TR	LW-3	FT-15
DSBNR/L 2525M-12		●	●		25	25	25	150	34	22								

MSSN (External / Facing / Chamfering)





• Right-hand shown

Applicable Inserts

Toolholder	Insert	
MSSNR/L...-12-4B **MSSNR/L...-16-4D**	SN□A SN□G SN□M	43..

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp	Clamp Screw	Wrench	Shim	Shim Screw	Lock Pin	Wrench
MSSNR/L 12-4B		●	□	inch	0.75	0.75	0.75	4.50	1.23	0.675	1/32	CL-9	XNS59	LW-156	ISSN433	S-46	NL46	LW-094
16-4D		●	□		1.00	1.00	1.00	6.00	1.23	0.925								

Applicable Inserts ➔ **D15**

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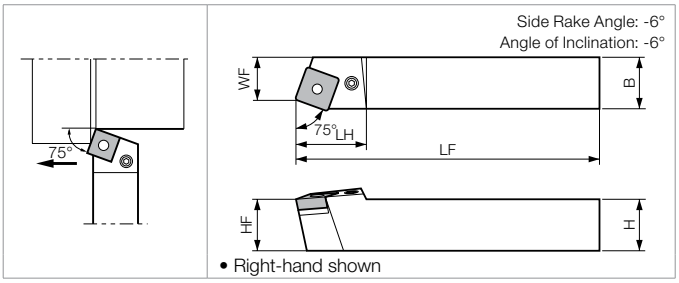
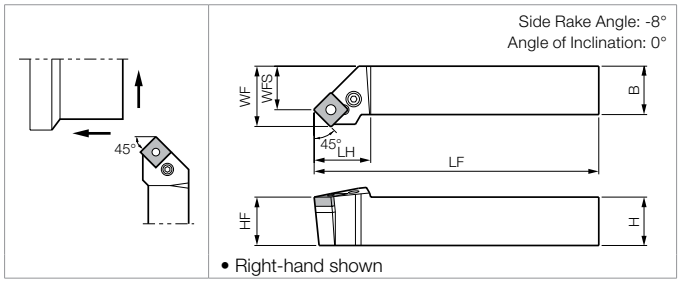
Contact your local Kyocera sales engineer to upgrade old products to new technology

PSBN (External)



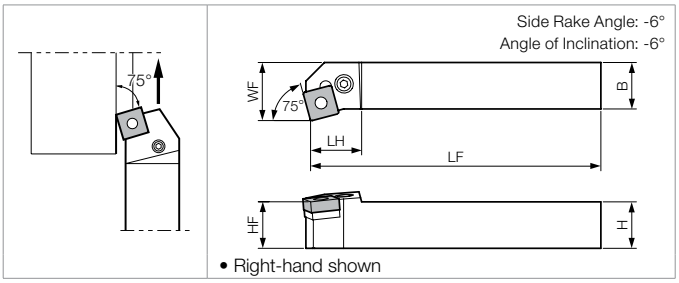
• Right-hand shown

PSSN (External / Facing / Chamfering)



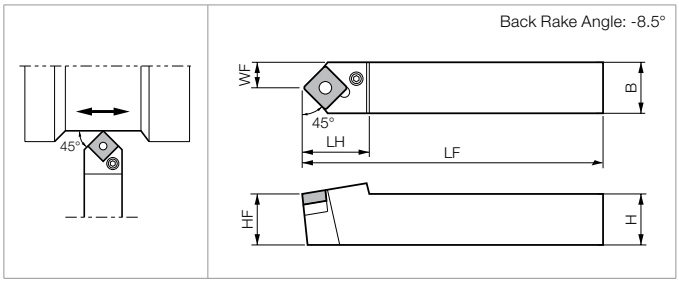
• Right-hand shown

PSKN (Facing)



• Right-hand shown

PSDN (External / Chamfering)



Toolholder Dimensions

Part Number		Stock R	Stock N	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	WFS	Standard Corner-R (RE)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PSBN[R/L]	1616H-09	●		●	mm	16	16	16	100	21.0	13	-	0.8	LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5
	2020K-12	●		●		20	20	20	125	27.0	17	-	0.8	LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3
	2525M-12	●		●		25	25	25	150	24.0	22	-							
PSKN[R/L]	1616H-09	●		●		16	16	16	100	19.0	20	-	0.8	LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5
	2020K-12	●		●		20	20	20	125	22.5	25	-	0.8	LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3
	2525M-12	●		●		25	25	25	150	22.5	32	-							
PSSN[R/L]	1616H-09	●		●		16	16	16	100	22	20	13.6	0.8	LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5
	2020K-12	●		●		20	20	20	125	29	25	16.4	0.8	LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3
	2525M-12	●		●		25	25	25	150	29	32	23.4							
PSDNN	1616H-09		●			16	16	16	100	21	8	-	0.8	LL-1N	LS-1N	LS-32	LSP-1	PC-1	FH-2.5
	2020K-12		●			20	20	20	125	30	10	-	0.8	LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3
	2525M-12		●			25	25	25	150	30	12.5	-							

Applicable Inserts

Toolholder	Insert	
PSBN[R/L]...-09	SN□G	32..
PSKN[R/L]...-09		
PSSN[R/L]...-09		
PSDNN...-09		
PSBN[R/L]...-12	SN□A SN□G SN□M	43..
PSKN[R/L]...-12		
PSSN[R/L]...-12		
PSDNN...-12		

Application	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Sided Roughing High Feed
Insert	PQ	PG	PS	HS	PT	Standard	PH	PX
Size	43..	43..	43..	43..	43..	32.., 43..	43..	43..
Ref. Page	B32	B32	B32	B32	B32	B32	B33	B33
Application	Finishing-Roughing	Medium-Roughing / Low Cutting Force	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Heat-Resistant Alloy Roughing
Insert	[R/L]-□	[R/L]-25R	XP	XQ	XS	MQ	MS	SG
Size	32.., 43..	43..	43..	43..	43..	43..	43..	43..
Ref. Page	B35	B35	B33	B33	B33	B34	B34	B34
Application	Cast Iron	Cast Iron / Roughing	Cast Iron / Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Hard Materials
Insert	C	KG	KH	ZS	GC	Without Chipbreaker	Ceramic	CBN
Size	43..	43..	43..	43..	43..	43..	43..	43..
Ref. Page	B34	B34	B34	B34	B34	B35	B109	C10

• PSKN[R/L]: Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.
• PSSN[R/L]: For External Turning, Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder
For Facing, Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Recommended Cutting Conditions ➔ D39-D40

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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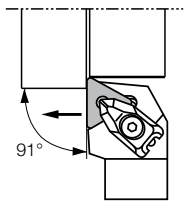
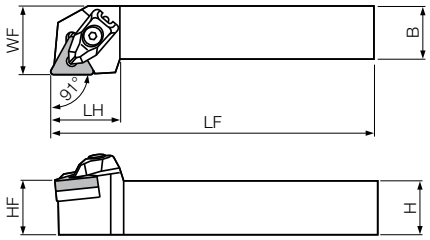
DTGN (External)





• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts D19

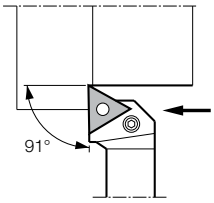
Toolholder	Insert	
DTGN□...-16	TN□A TN□G TN□M TN□X	33..

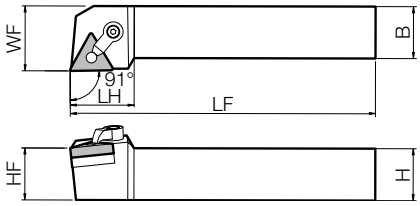
Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)
				Dimensions							Spare Parts						
DTGN□ 2020K-16	●	●	mm	20	20	20	125	25	25	0.8	CP-2D	CS-2D	SP-2D	*DT-32	SB-3080TR	LW-2.5	FT-10
2525M-16	●	●		25	25	25	150	25	32								

* When using inserts whose corner-R(RE) is greater than 1/16", additional modifications of the shim are necessary in order to prevent workpiece and shim from interfering with each other.
• When using WF chipbreaker (wiper insert), tool edge offset or program corrections are required. See R50

MTGN (External)





• Right-hand shown

Side Rake Angle: -5°
Angle of Inclination: -5°

Applicable Inserts D19

Toolholder	Insert	
MTGN□...-12-3B	TN□A TN□G TN□M TN□X	33..
MTGN□...-16-3D		
MTGN□...-16-4D		43..

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Clamp	Clamp Screw	Wrench	Shim	Shim Screw	Lock Pin	Wrench
				Dimensions							Spare Parts						
MTGN□ 12-3B	●	●		0.75	0.75	0.75	4.50	0.94	1.00	1/64	CL-6	XNS36	LW-094	ITSN333 (ITSN323)	S-34	NL34L	(5/64 Hex)
16-3D	●	●	inch	1.00	1.00	1.00	6.00	0.94	1.25								
16-4D	●	●		1.00	1.00	1.00	6.00	1.19	1.25	1/32	CL-9	XNS48	LW-156	ITSN432	S-46	NL46	LW0

• Shim: ITSN333 is included with MTGN□12-3B. When using TN__33_ insert, please purchase ITSN323 separately.

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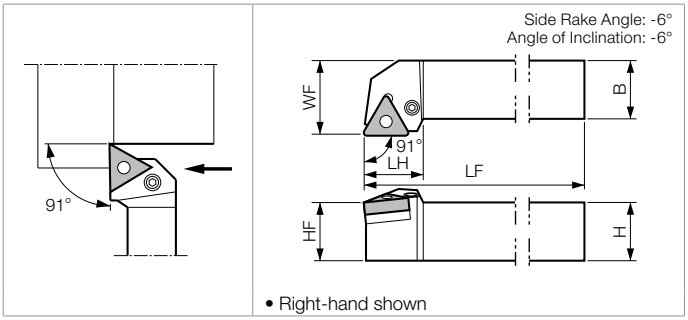
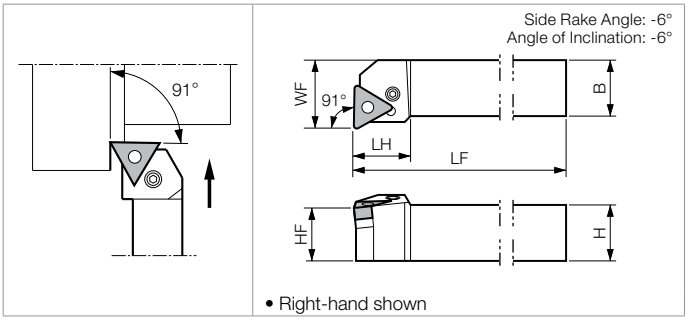
PTGN (External)



• Right-hand shown

PTFN (Facing)



• Right-hand shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PTGN□ 12-3B	●		inch	0.75	0.75	0.75	4.50	0.96	1.00	1/32	LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	LW-2.5
PTGN□ 1212F-11	●	●	mm	12	12	12	80	18.0	16	0.8	LL-03N	LS-03N	-	P-03	-	FH-2
1616H-11	●	△		16	16	16	100	22.0	20	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5
2020K-11	●	●		20	20	20	125	22.0	25							
2525M-11	●	●		25	25	25	150	22.0	32							
PTGN□ 1616H-16	●	●		16	16	16	100	24.0	20	0.8	LL-1N	LS-1N	LT-32N *2 LT-32N-20	LSP-1	PC-1	FH-2.5
2020H-16*	●			20	20	20	100	24.0	25							
2020K-16	●	●		20	20	20	125	24.0	25							
2525M-16	●	●		25	25	25	150	24.0	32							
PTGN□ 2525M-22	●	●		25	25	25	150	29.0	32	0.8	LL-2N	LS-2N	LT-42N *2 LT-42N-20	LSP-2	PC-2	LW-3
PTFN□ 12-3C	●	●	inch	0.75	0.75	0.75	5.00	0.88	1.00	1/32	LL-1N	LS-1N	LT-32N *2 LT-32N-20	LSP-1	PC-1	FH-2.5
16-3D	●	●		1.00	1.00	1.00	6.00	0.88	1.25							
16-4D	●			1.00	1.00	1.00	6.00	1.10	1.25	1/32	LL-2N	LS-2N	LT-42N *2 LT-42N-20	LSP-2	PC-2	LW-3
PTFN□ 1212F-11	●	●	mm	12	12	12	80	15.0	16	0.8	LL-03N	LS-03N	-	P-03	-	FH-2
PTFN□ 1616H-11	●	●		16	16	16	100	22.5	20	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5
2020K-11	●	△		20	20	20	125	22.5	25							
2525M-11	●	●		25	25	25	150	22.5	32							
PTFN□ 2020K-16	●	●		20	20	20	125	22.0	25	0.8	LL-1N	LS-1N	LT-32N *2 LT-32N-20	LSP-1	PC-1	FH-2.5
2525M-16	●	●		25	25	25	150	23.0	32							
PTFN□ 2525M-22	●	●		25	25	25	150	28.0	32	0.8	LL-2N	LS-2N	LT-42N *2 LT-42N-20	LSP-2	PC-2	LW-3

*1 Short shank type.
*2 When using inserts whose corner-R(RE) is greater than 1/16", please purchase this shim in order to prevent workpiece and shim from interfering each other.
• When using WF chipbreaker (wiper insert), tool edge offset or program corrections are required. See R50

Applicable Inserts D19

Toolholder	Insert	
PTGN□...12-3B	TN□A TN□G TN□M TNMX	33..
PTFN□...12-3C	TN□A TN□G TNMX	33..
PTFN□...16-3D		
PTFN□...16-4D		43..
PT□N□12...-11	TN□□	22..
PT□N□...-11		23..
PT□N□...-16	TN□A TN□G TN□M TNMX*3	33..
PT□N□...-22		43..

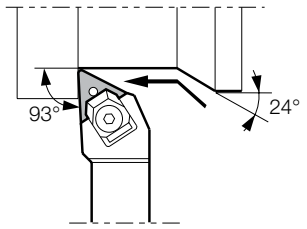
PTGN□1212F-11
PTFN□1212F-11
} Insert applicable for above

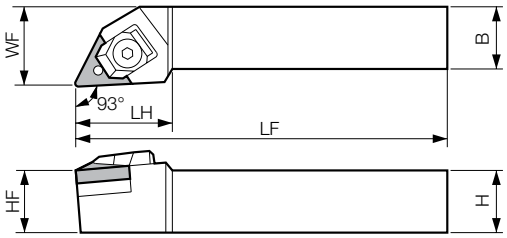
TN□□1103-type Insert is applicable.

• PTFN□: Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

*3 TNMX insert is **NOT** applicable for PT□N□...-22 type toolholders.

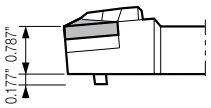
WTJN (External / Copying)





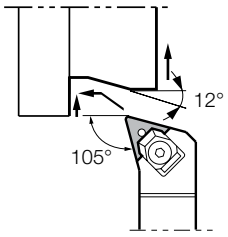
Side Rake Angle: -6°
Angle of Inclination: -6°

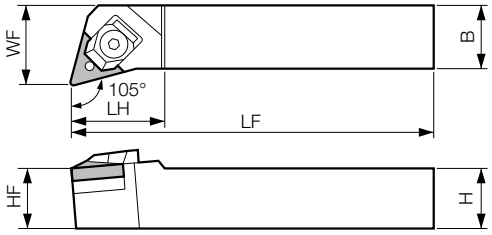
WTJN□2020K type:
Shim Nut sticks out as shown below.



• Right-hand shown

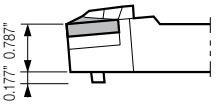
WTKN (External / Facing / Copying)





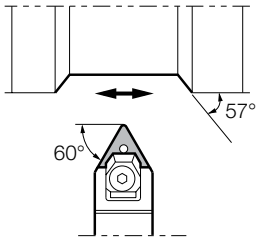
Side Rake Angle: -6°
Angle of Inclination: -6°

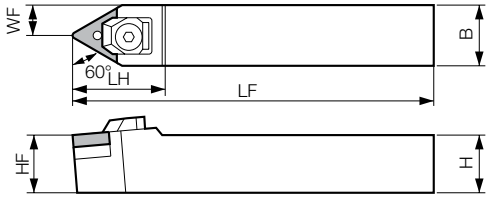
WTKN□2020K type:
Shim Nut sticks out as shown below.



• Right-hand shown

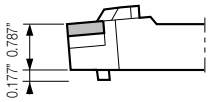
WTEN (External / Chamfering)





Back Rake Angle: -8.5°

WTENN2020K type:
Shim Nut sticks out as shown below.



• Right-hand shown

Toolholder Dimensions

Part Number	Stock			Unit	Dimensions						Standard Corner-R (RE)	Spare Parts					
												Clamp Set	Shim	Shim Pin	Shim Nut	Wrench	Spacer
	R	N	L		H	HF	B	LF	LH	WF							
WTJN□ 12-3C	●		●	inch	0.75	0.75	0.75	5.00	1.26	1.00	1/32	WCS-1N	WTN-33 *WTN-33-20	WP-1S	WN-1	LW-3	WSP-1
16-3D	●		●		1.00	1.00	1.00	6.00	1.26	1.25							
WTJN□ 2020K-16N	●		●	mm	20	20	20	125	32	25.0	0.8	WCS-1N	WTN-33 *WTN-33-20	WP-1S	WN-1	LW-3	WSP-1
2525M-16N	●		●		25	25	25	150	32	32.0							
WTKN□ 12-3C	●		●	inch	0.75	0.75	0.75	5.00	1.26	1.00	1/32	WCS-1N	WTN-33 *WTN-33-20	WP-1S	WN-1	LW-3	WSP-1
WTKN□ 2020K-16N	●		●	mm	20	20	20	125	32	25.0	0.8	WCS-1N	WTN-33 *WTN-33-20	WP-1S	WN-1	LW-3	WSP-1
2525M-16N	●		●		25	25	25	150	32	32.0							
WTENN 2020K-16N		●		mm	20	20	20	125	32	10.0	0.8	WCS-1N	WTN-33 *WTN-33-20	WP-1S	WN-1	LW-3	WSP-1
2525M-16N		●			25	25	25	150	32	12.5							

* When using inserts whose corner-R (RE) is greater than 1/16", please purchase a shim (WTN-33-20) with * mark and use it in order to prevent workpiece and shim from interfering with each other.

Applicable Inserts D19

Toolholder	Insert	
WTJN□...12-3C	TN□A TN□G TN□M	33..
WTJN□...16-3D		
WTJN□...-16N		
WTKN□...12-3C		
WTKN□...16-3D		
WTKN□...-16N		

Toolholder	Insert	
WTENN...-16N	TN□A TN□G TN□M	33..

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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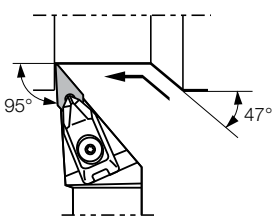
Applicable Inserts

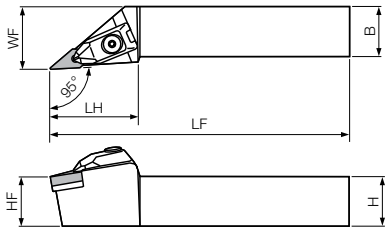
Application	Finishing	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Medium-Roughing / High Feed Rate	Medium-Roughing	Single Sided / Roughing / High Feed	Roughing
Insert	PP	PQ	CQ	GS	PG	PS	PT	GT	PH	PX	Standard
Size	33..	33..	33.., 43..	23.., 33..	33..	33.., 43..	33..	33..	33.., 43..	33.., 43..	23.., 33..
Ref. Page	B36	B36	B36	B36	B36	B37	B37	B37	B37	B38	B37
Application	Finishing	Finishing-Roughing	Medium-Roughing Low Cutting Force	Soft Steel / Small D.O.C.	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Heat-Resistant Alloy Roughing
Insert	-S	-□	-25R	XF	XP	XQ	XS	MQ	MS	MU	SG
Size	23.., 33..	22.., 23.., 33.., 43..	33..	33..	33..	33..	33..	33..	33..	33..	33.., 43..
Ref. Page	B42	B42, B43	B43	B38	B38	B38	B38	B39	B39	B39	B39
Application	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials		
Insert	KQ	KG	KH	ZS	Ceramic	-A3	AH	PCD	CBN		
Size	33..	33..	33..	33..	33..	33..	33..	33..	33..		
Ref. Page	B40	B40	B40	B40	B111	B41	B41	C23	C10, C11		

• In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restrain force.

Recommended Cutting Conditions D39-D40

DVJN / DVLN (External / Copying)





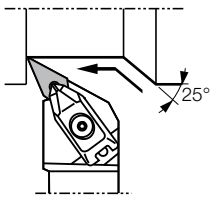
• Right-hand shown

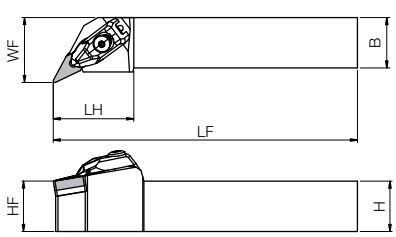
Side Rake Angle: -6°
Angle of Inclination: -9°

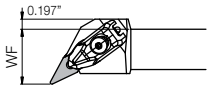
Applicable Inserts D21

Toolholder	Insert	
DVJN R/L...12-3B	VN□A VN□G VN□M	33..
DVJN R/L...16-3D		
DVLN R/L...-16		

DVPN (External / Facing / Copying / Undercutting)







2020K-16 type

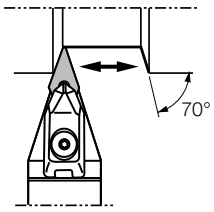
• Right-hand shown

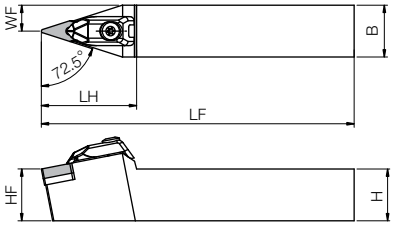
Side Rake Angle: -13°
Angle of Inclination: -10°

Applicable Inserts D21

Toolholder	Insert	
DVPN R/L...12-3B	VN□A VN□G VN□M	33..
DVPN R/L...16-3D		
DVPN R/L...-16		

DVVN (External / Copying)





• Right-hand shown

Back Rake Angle: -11°

Applicable Inserts D21

Toolholder	Insert	
DVVNN...12-3B	VN□A VN□G VN□M	33..
DVVNN...16-3D		
DVVNN...-16		

Toolholder Dimensions

Part Number		Stock R	Stock N	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)
DVJN R/L	12-3B	●		●	inch	0.75	0.75	0.75	4.50	1.77	1.00	1/32	CP-5D	CS-5D	SP-5D	DV-33	SB-4085TR	LW-3	FT-15
	16-3D	●		●		1.00	1.00	1.00	6.00	1.77	1.25								
DVLN R/L	2020K-16	●		●	mm	20	20	20	125	45	25.0	0.8	CP-5D	CS-5D	SP-5D	DV-33	SB-4085TR	LW-3	FT-15
	2525M-16	●		●		25	25	25	150	45	32.0								
DVPN R/L	12-3B	●		●	inch	0.75	0.75	0.75	4.50	1.58	1.00	1/32	CP-5D	CS-5D	SP-5D	DV-33	SB-4085TR	LW-3	FT-15
	16-3D	●		●		1.00	1.00	1.00	6.00	1.58	1.25								
DVPN R/L	2020K-16	●		●	mm	20	20	20	125	40	27.0	0.8	CP-5D	CS-5D	SP-5D	DV-33	SB-4085TR	LW-3	FT-15
	2525M-16	●		●		25	25	25	150	40	32.0								
DVVNN	12-3B		●		inch	0.75	0.75	0.75	4.50	1.81	0.40	1/32	CP-5D	CS-5D	SP-5D	DV-33	SB-4085TR	LW-3	FT-15
	16-3D		●			1.00	1.00	1.00	6.00	1.81	0.52								
DVVNN	2020K-16		●		mm	20	20	20	125	46	10.0	0.8	CP-5D	CS-5D	SP-5D	DV-33	SB-4085TR	LW-3	FT-15
	2525M-16		●			25	25	25	150	46	12.5								

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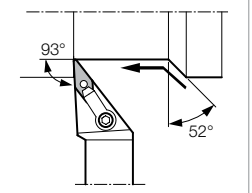
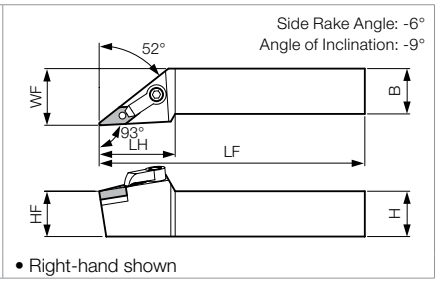
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

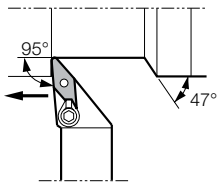
MVJN (External / Copying)

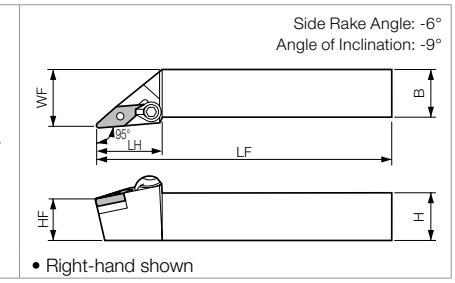




• Right-hand shown

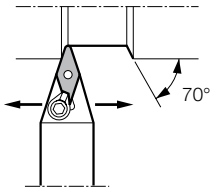
MVLN (External / Copying)

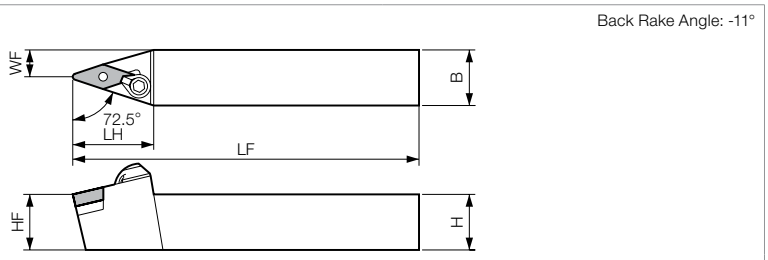




• Right-hand shown

MVVN (External / Copying)





Toolholder Dimensions

Part Number	Stock R	Stock N	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp Set	Wrench	Shim	Shim Screw	Lock Pin	Wrench	Clamp	Clamp Screw
MVJN□L 12-3B	●		●	inch	0.75	0.75	0.75	4.5	1.69	1.00	1/64	-	(5/64 hex)	IVSN322	S-34	NL34L	LX-156	CL-30	XNS48
16-3C	●		●		1.00	1.00	1.00	5.0	1.69	1.25									
MVLN□L 2020K-16	●		●	mm	20	20	20	125	38	25.0	0.8	CPS-5□L	FH-2.5	MVN-32	-	TS-3S	FH-2	-	-
2525M-16	●		●		25	25	25	150	38	32.0									
MVVNN 12-3B		●		inch	0.75	0.75	0.75	4.50	1.67	0.375	1/32	-	(5/64 Hex)	IVSN322	-	NL34L	LW-156	CL-12	XNS510
16-3D		●			1.00	1.00	1.00	6.00	1.67	0.500									
MVVNN 2020K-16		●		mm	20	20	20	125	39	10.0	0.8	CPS-5R	FH-2.5	MVN-32	-	TS-3S	FH-2	-	-
2525M-16		●			25	25	25	150	39	12.5									

• Clamp Set: CPS-5R for Right-hand Toolholder, CPS-5L for Left-hand Toolholder.

Applicable Inserts

Toolholder	Insert	
MVJN□L...12-3B	VN□A VN□G VN□M	33..
MVJN□L...16-3C		
MVLN□L...-16		
MVVNN...12-3B		
MVVNN...16-3D		
MVVNN...-16		

Application	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium	Roughing	Finishing-Medium	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing
Insert	PP	□L -VC	VF	PQ	TN-V	Standard	□L	MQ	MS
Size	33..	33..	33..	33..	33..	33..	33..	33..	33..
Ref. Page	B44	B44	B44	B44	B44	B44	B45	B45	B45

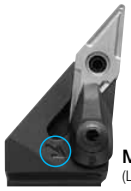
Application	Stainless Steel / Medium-Roughing	Heat-Resistant Alloy Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Hard Materials
Insert	MU	SG	KG	KH	Without Chipbreaker	Ceramic	PCD	CBN
Size	33..	33..	33..	33..	33..	33..	33..	33..
Ref. Page	B45	B45	B45	B45	B45	B112	C23	C12

Rotation Directions of the Clamp Set

Recommended Cutting Conditions ➡ D39-D40

MVVNN type
(Neutral)

MVLNR type
(Right-hand Toolholder)



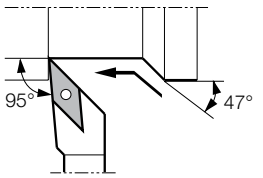
MVLNL type
(Left-hand Toolholder)

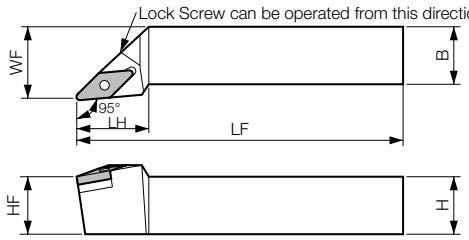
Clamp set: (CPS-5R) has Right-hand thread.
When clamping the insert, turn the screw in the arrow direction (clockwise).
When removing the insert, turn the screw away from the arrow (counterclockwise).

Clamp set: (CPS-5L) has Left-hand thread.
When clamping the insert, turn the screw in the arrow direction (counterclockwise).
When removing the insert, turn the screw away from the arrow (clockwise).

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

PVLN (External / Copying)

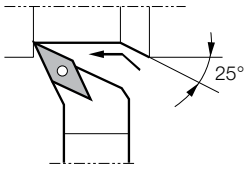


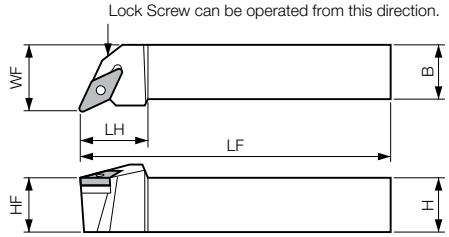


Side Rake Angle: -6°
Angle of Inclination: -9°

• Right-hand shown

PVPN (External / Facing / Copying / Undercutting)

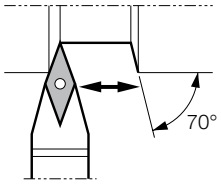


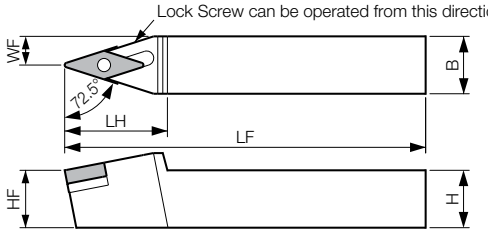


Side Rake Angle: -13°
Angle of Inclination: -10°

• Right-hand shown

PVVN (External / Copying)





Back Rake Angle: -11°

Toolholder Dimensions

Part Number		Stock R	Stock N	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Lock Pin	Lock Screw	Shim	Wrench
PVLN[R/L]	2525M-16Q	●		●	mm	25	25	25	150	37	32.0	0.8	LP-6S	LS-15	KVN-32	LW-3
PVPN[R/L]	2020K-16Q	●		●		20	20	20	125	30	25.0	0.8	LP-2S	LS-11	KVN-32	LW-3
	2525M-16Q	●		●		25	25	25	150	30	32.0		LP-6S			
PVVNN	2020K-16Q		●			20	20	20	125	35	10.0	0.8	LP-2S	LS-15	KVN-32	LW-3
	2525M-16Q		●			25	25	25	150	40	12.5		LP-6S			

Applicable Inserts

Toolholder	Insert	
PVLN[R/L]...-16Q	VN□A VN□G VN□M	33..
PVPN[R/L]...-16Q		
PVVNN...-16Q		

Application	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium	Roughing	Finishing-Medium	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing
Insert	PP	[R/L] -VC	VF	PQ	TN-V	Standard	[R/L]	MQ	MS
Size	33..	33..	33..	33..	33..	33..	33..	33..	33..
Ref. Page	B44	B44	B44	B44	B44	B44	B45	B45	B45

Application	Stainless Steel / Medium-Roughing	Heat-Resistant Alloy Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Hard Materials
Insert	MU	SG	KG	KH	Without Chipbreaker	Ceramic	PCD	CBN
Size	33..	33..	33..	33..	33..	33..	33..	33..
Ref. Page	B45	B45	B45	B45	B45	B112	C23	C12

Recommended Cutting Conditions ➡ **D39-D40**

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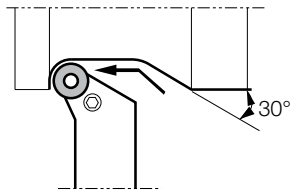
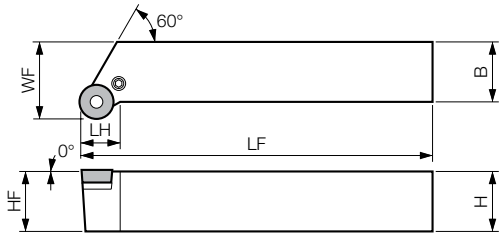
PRGC (External / Facing / Undercutting)

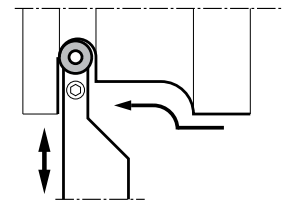


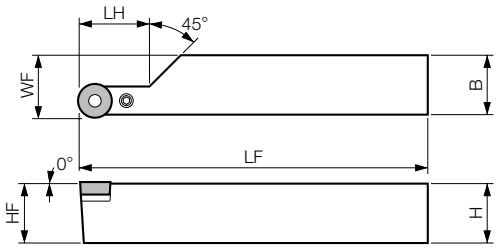


Side Rake Angle: 0°
Angle of Inclination: 0°

• Right-hand shown

PRXC (External / Facing / Undercutting)

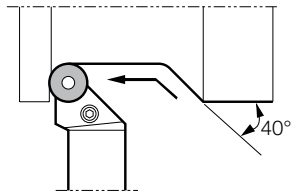


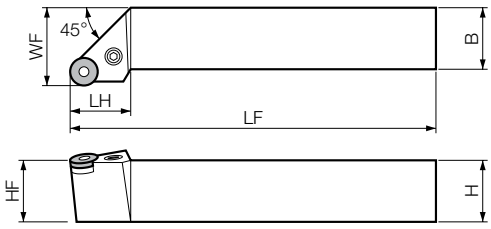


Side Rake Angle: 0°
Angle of Inclination: 0°

• Right-hand shown

PRGN (External / Facing / Undercutting)





Side Rake Angle: -6°
Angle of Inclination: -6°

• Right-hand shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PRGC□ 12-10MC	●	●	inch	0.75	0.75	0.75	5.00	0.60	1.00	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
16-10MD	●	●		1.00	1.00	1.00	6.00	0.60	1.25							
PRGC□ 12-12MC	●	●		0.75	0.75	0.75	5.00	0.60	1.00	-	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
16-12MD	●	●		1.00	1.00	1.00	6.00	0.60	1.25							
PRGC□ 2020K-10	●	●	mm	20	20	20	125	15	25.0	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
2525M-10	●	●		25	25	25	150	15	32.0							
PRGC□ 2020K-12	●	●		20	20	20	125	14	25.0	-	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
2525M-12	●	●		25	25	25	150	17	32.0							
PRXC□ 12-10MC	●	●	inch	0.75	0.75	0.75	5.00	1.00	0.77	-	LL-05C	LX-05	LR-10C	LSP-1	PC-1	FH-2
16-10MD	●	●		1.00	1.00	1.00	6.00	1.00	1.02							
PRXC□ 12-12MC	●	●		0.75	0.75	0.75	5.00	1.00	0.77	-	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
16-12MD	●	●		1.00	1.00	1.00	6.00	1.00	1.02							
PRXC□ 2020K-10	●	●	mm	20	20	20	125	25	20.5	-	LL-05C	LS-05	LR-10C	LSP-1	PC-1	FH-2
2525M-10	●	●		25	25	25	150	30	25.5							
2525Q-10	●	●		25	25	25	180	30	25.5							
PRXC□ 2525M-12	●	●		25	25	25	150	30	25.7	-	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
PRGN□ 2020K-09	●	●		20	20	20	125	19	25.0	-	LL-1N	LS-1N	LR-80	LSP-1	PC-1	FH-2.5
2525M-12	●	●		25	25	25	150	26	32.0		LL-2N	LS-2N	LR-81	LSP-2	PC-2	LW-3

Applicable Inserts

Toolholder	Insert	
PR□C□...12-10..	RCGX RCMX	1003M0
PR□C□...16-10..		
PR□C□...12-12..	RCGX RCMX	1204M0
PR□C□...16-12..		

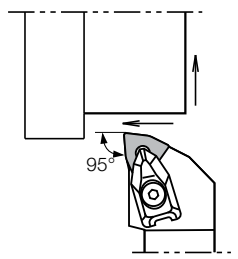
Toolholder	Insert	
PRGC□...-10	RCGX RCMX	1003M0
PRGC□...-12		1204M0
PRXC□...-10		1003M0
PRXC□...-12		1204M0
PRGN□...-09	RNMG	32
PRGN□...-12		43

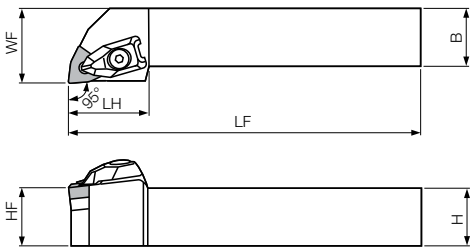
Application	Medium	Non-ferrous Metals	Medium-Roughing
Insert	Standard	AQ	Standard
Size	RC□X10.., RC□X12..	RC□X10..	RNMG32, RNMG43..
Ref. Page	B74	B74	B31

Recommended Cutting Conditions D39-D40

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DWLN (External / Facing)





• Right-hand shown

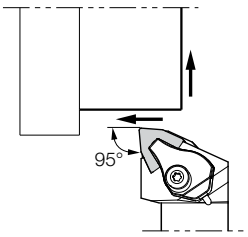
Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts D25

Toolholder	Insert	
DWLNR/L 12-3B	WN□G WN□M	33..
DWLNR/L 16-3D		
DWLNR/L 12-4B	WN□A WN□G WN□M	43..
DWLNR/L 16-4D		
DWLNR/L ...-08		

DWLN-JCT (External / Facing, Jet Coolant-Through) NEW

Pressure Resistance: up to 4,350 psi



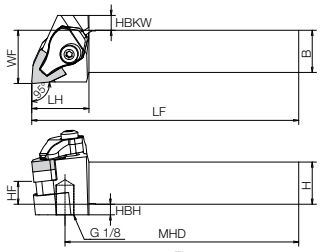


Fig.1

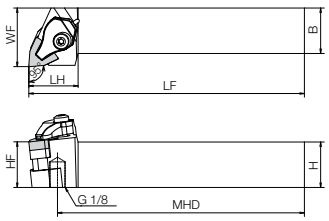


Fig.2

• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts D25

Toolholder	Insert	
DWLNR/L 12-4BJCT	WN□A WN□G WN□M	43..
DWLNR/L 16-4DJCT		
DWLNR/L ...-08JCT		

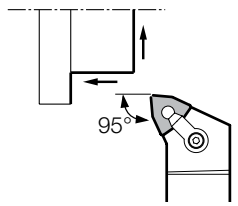
Toolholder Dimensions

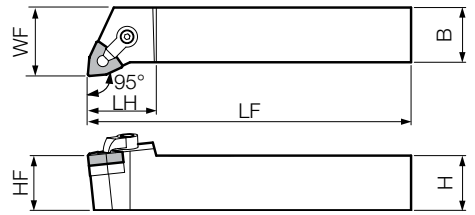
JCT Coolant Connections and Pipe Parts D11

Part Number		Stock R	Stock L	Unit	H	HF	HBH	B	HBKW	LF	LH	WF	MHD	Standard Corner-R (RE)	Drawing	Clamp	Pipe Connection (*1 with O-Ring)	Screw	Spring	Shim	Shim Screw	Wrench	Wrench
DWLNR/L	12-3B	●	●	inch	0.75	0.75	-	0.75	-	4.50	1.06	1.00	-	1/32	-	CP-2D	-	CS-2D	SP-2D	DW-32	SB-3080TR	LW-2.5	FT-10 Sold Separately
	16-3D	●	●		1.00	1.00		1.00		6.00	1.06	1.25											
DWLNR/L	12-4B	●	●		0.75	0.75	-	0.75	-	4.50	1.34	1.25	-	1/32	-	CP-3D	-	CS-3D	SP-3D	DW-44	SB-4085TR	LW-3	FT-15 Sold Separately
	16-4D	●	●		1.00	1.00		1.00		6.00	1.34	1.25											
DWLNR/L	2020K-08	●	●	mm	20	20	-	20	-	125	34	25	-	0.8	-	CP-3D	-	CS-3D	SP-3D	DW-44	SB-4085TR	LW-3	
	2525M-08	●	●		25	25		25		150	34	32											
DWLNR/L	12-4BJCT	●	●	inch	0.75	0.75	0.23	0.75	0.26	4.50	1.06	1.00	0.39	1/32	Fig.1	CP-3D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	DW-44	SB-4085TR	-	FT-15
NEW	16-4DJCT	●	●		1.00	1.00	-	1.00	-	6.00	1.06	1.25	5.38		Fig.2								
DWLNR/L	2020K-08JCT	●	●	mm	20	20	5	20	7	125	27	25	109	0.8	Fig.1	CP-3D-R/L-JCT	FP-12	CS-3D-TR	SP-3D	DW-44	SB-4085TR		
NEW	2525M-08JCT	●	●		25	25	-	25	-	150	27	32	134		Fig.2								

*1 O-ring (**SS-035**) is available to order separately

MWLN (External / Facing)





• Right-hand shown

Side Rake Angle:-5°
Angle of Inclination:-5°

Applicable Inserts D25

Toolholder	Insert	
MWLNR/L ...-12-4B	WN□A WN□G WN□M	43..
MWLNR/L ...-16-4D		

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Clamp	Clamp Screw	Wrench	Shim	Shim Screw	Lock Pin	Wrench
MWLNR/L	12-4B	□	□	inch	0.75	0.75	0.75	4.50	1.19	1.00	1/32	CL-20	XNS-48	LW-156	IWSN432	S-46	NL46	LW-094
	16-4D	●	●		1.00	1.00	1.00	6.00	1.19	1.25								

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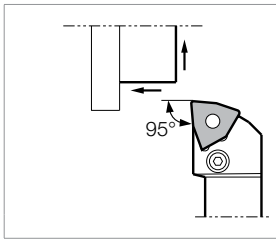
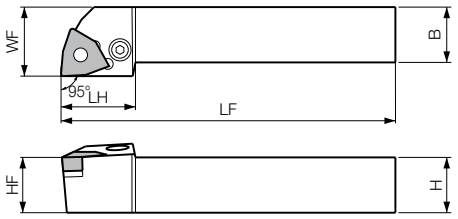
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

PWLN (External / Facing)





• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

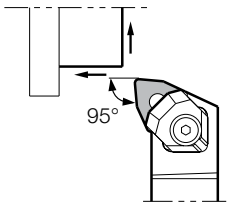
Applicable Inserts

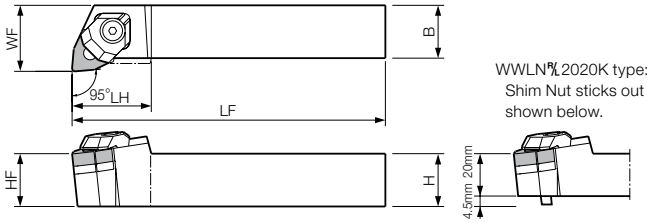
Toolholder	Insert	
PWLN□...12-3B	WN□G	33..
PWLN□...16-3D		
PWLN□...-06	WN□A WN□G WN□M	33..
PWLN□...-08		43..

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PWLN□ 12-3B	●		inch	0.75	0.75	0.75	4.50	0.87	1.00	1/32	LL-1N	LS-1N	LW-32N	LSP-1	PC-1	FH-2.5
16-3D	●			1.00	1.00	1.00	6.00	0.87	1.25							
PWLN□ 1616H-06	●	●	mm	16	16	16	100	22	20	0.8	LL-1N	LS-1N	LW-32N	LSP-1	PC-1	FH-2.5
2020K-06	●	●		20	20	20	125	22	25							
2525M-06	●	●		25	25	25	150	22	32							
2020K-08	●	●		20	20	20	125	26	25	0.8	LL-2N	LS-2N	LW-42N	LSP-2	PC-2	LW-3
2525M-08	●	●		25	25	25	150	26	32							

WWLN (External / Facing)





WWLN□2020K type:
Shim Nut sticks out as shown below.

• Right-hand shown

Side Rake Angle: -6°
Angle of Inclination: -6°

Applicable Inserts

Toolholder	Insert	
WWLN□...-08	WN□A WN□G WN□M	43..

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp Set	Shim	Shim Pin	Shim Nut	Wrench
WWLN□ 2020K-08	●	●	mm	20	20	20	125	30	25	1.2	WCS-8	WWN-42	WP5X15	WN-1	LW-3
2525M-08	●	●		25	25	25	150	30	32						

Applicable Inserts

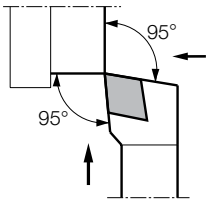
Application	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate
Insert	WF (Wiper)	WE (Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT
Size	43..	43..	43..	43..	43..	43..	33.., 43..	43..	43..	43..
Ref. Page	B46	B46	B46	B46	B47	B47	B47	B47	B47	B47
Application	Roughing	Finishing	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel Medium-Roughing	Stainless Steel Medium-Roughing	Heat-Resistant Alloy Roughing
Insert	Standard	□-S	□	XP	XQ	XS	MQ	MS	MU	SG
Size	43..	33..	33..	43..	43..	43..	43..	43..	43..	43..
Ref. Page	B47	B49	B49	B48	B48	B48	B48	B48	B48	B48
Application	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials		
Insert	KQ	KG	KH	ZS	GC	AH	PCD	CBN		
Size	43..	43..	43..	43..	43..	43..	43..	43..		
Ref. Page	B49	B49	B49	B49	B49	B49	C23	C13		

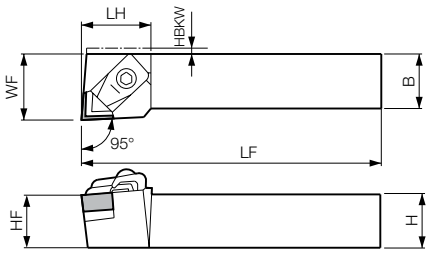
• In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restrain force.

Recommended Cutting Conditions ➔ D39-D40

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CCLN / HCLN (External / Facing)





Side Rake Angle: -6°
Angle of Inclination: -6°

• Right-hand shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	HBKW	Standard Corner-R (RE)	Spare Parts: Chipbreaker	Clamp Set (CE / HCL)	Wrench	Shim	Shim Screw (M / S)	Lock Pin	Wrench
CCLN□ 2020K-12	●	●	mm	20	20	20	125	32	27	5	0.8	CB-16	CE-010	LW-4	SP-441 (SP-443)	M3X8 (M3X12)	-	-
2525M-12	●	●		25	25	25	150	32	32	-								
CCLN□ 3225P-16	●	●		32	32	25	170	35	32	-	0.8	CB-17	CE-220	LW-4	SP-454	M4X10	-	-
HCLN□ 16-4D	●	□	inch	1.00	1.00	1.00	6.00	1.26	1.25	-	1/32	HCB318	HCL008	LW-4	ICSN433 (ICSN453)	S-46	NL46L	LW-094

• Shim & Shim Screw: When using CN□□43 Insert, purchase spare parts in ( ) separately.

Applicable Inserts

Application	Cast Iron / Hard Materials	Hard Materials / Cast Iron
Ref. Page	B106	C19
Shape / Toolholder	Ceramic	CBN (KBN900)
CCLN□...-12	CNG45.., (CNG43..) CNM45	(CNM43..)
CCLN□...-16	CNG55..	-

Application	Cast Iron / Hard Materials	Cast Iron / Hard Materials
Ref. Page	B106	B106
Shape / Toolholder	Ceramic	Ceramic
HCLN□...16-4D	CNG 45.. (43..)	CN□A 45.. (43..)

Recommended Cutting Conditions **D39-D40**

Ceramic Insert Selection Guide

Select the suitable ceramic specifications (Corner-R(RE), Feed Rate, Chamfer, etc.) from the table below. (No.45, Cutting Edge Angle: 0°~15)

Insert Shape	Corner-R (RE)	f (ipr) 0.004	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020	0.024	D.O.C.
RN	–	●	●	●	●	●	●	●	●	●	●	0.012~0.157
SN	2.0	●	●	●	●	●	●	●	●	●	●	0.012~0.157
	1.6	●	●	●	●	●	●	●	●			
EN	1.2	●	●	●	●	●	●					
CN	0.8	●	●	●	●							
	0.4	●	●									
TN	1.6	●	●	●	●	●	For Finishing					0.012~0.079
DN	1.2	●	●	●	●							
	0.8	●	●	●								
Chamfer		0.002"×20°		(0.004"~0.008")×(20°~25°)				0.012"×30°				–
Insert Thickness		5/16"										

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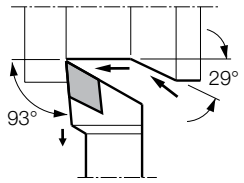
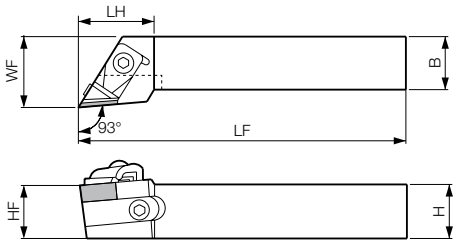
CDJN (External / Copying / Back Turning)





Side Rake Angle: -5°
Angle of Inclination: -8°

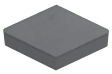
• Right-hand shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
CDJN□ 2525M-15	●	●	mm	25	25	25	150	32	32	0.8	CB-14/15	CE-010	LW-4	556C□	HH5X16
3225P-15	●	●		32	32	25	170	32	32						

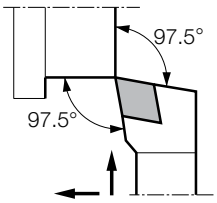
• Chipbreaker: CB-14 for Right-hand Toolholder, and CB-15 for Left-hand Toolholder.
• Shim: 556CR for Right-hand Toolholder, and 556CL for Left-hand Toolholder.

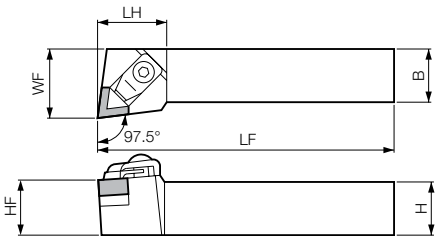
Applicable Inserts

Application	Cast Iron / Hard Materials
Ref. Page	B107
Shape / Toolholder	Ceramic 
CDJN□...-15	DNG45..

Recommended Cutting Conditions **D39-D40**

CELN (External / Facing)





Side Rake Angle: -6°
Angle of Inclination: -6°

• Right-hand shown

Toolholder Dimensions

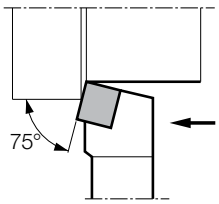
Part Number	Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
CELN□ 2525M-13	●	●	mm	25	25	25	150	32	32	0.8	CB-16	CE-010	LW-4	SP-342	M3X8

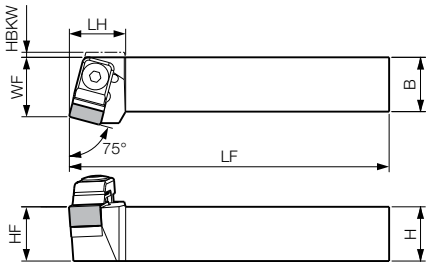
Applicable Inserts

Application	Cast Iron / Hard Materials
Ref. Page	B107
Shape / Toolholder	Ceramic
CELN□...-13	**ENG45..**

Recommended Cutting Conditions **D39-D40**

CSRN / HSRN (External)

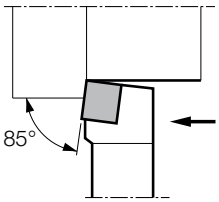


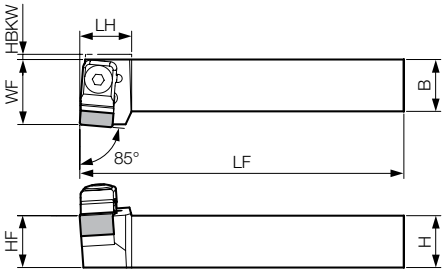


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CS-N (External)

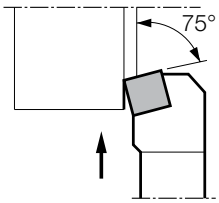


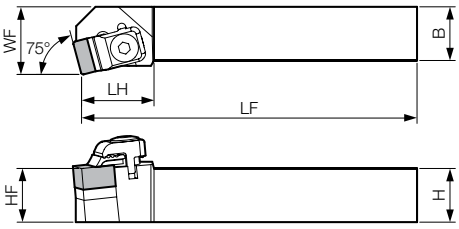


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CSKN (Facing)

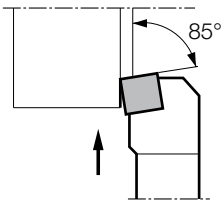


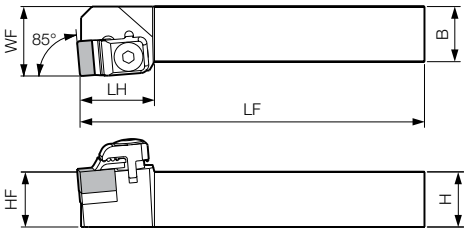


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CSYN (Facing)

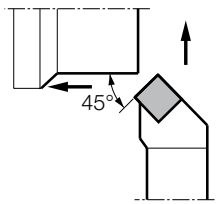


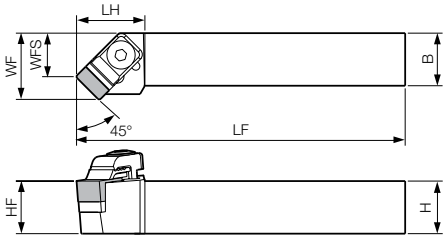


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CSSN (External / Facing / Chamfering)

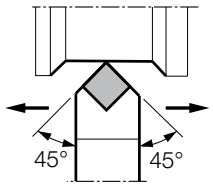


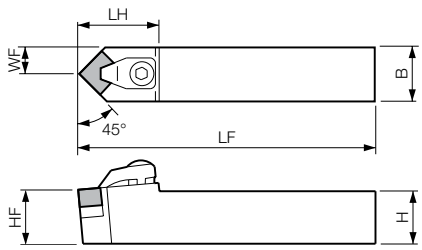


Side Rake Angle: -6°
Angle of Inclination: 0°

• Right-hand shown

CSDN / HSDN (External / Chamfering)





Back Rake Angle: -8.5°

Toolholder Dimensions

Part Number	Stock R	Stock N	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	HBKW	WFS	Standard Corner-R (RE)	Spare Parts: Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw	Lock Pin	Wrench
															020 220 040 HCL			M3 S		
CSRN□□ 20-4E	●		●	inch	1.25	1.25	1.25	7.00	0.88	1.50	-	-	1/32	CB-11	CE-020	LW-4	SP-141	M3X8	-	-
CSRN□□ 2020K-12	●		●	mm	20	20	20	125	22	22.0	2	-	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	-	-
2525M-12	●		●		25	25	25	150	22	27.0	-	-								
3225P-12	●		●		32	32	25	170	22	27.0	-	-								
3225P-15	●				32	32	25	170	30	32.4	-	-	0.8	CB-51	CE-220	LW-4	SP-162	M4X10	-	-
4040R-15	●		●		40	40	40	200	30	43.0	-	-								
CS-N□□ 2525M-12	●		●		25	25	25	150	20	32.0	-	-	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	-	-
CSKN□□ 2020K-12	●				20	20	20	125	27	25.0	-	-	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	-	-
2525M-12	●		●		25	25	25	150	27	32.0	-	-								
3225P-15	●				32	32	25	170	37	32.0	-	-	0.8	CB-51	CE-220	LW-4	SP-162	M4X10	-	-
CSYN□□ 2525M-12	●		●		25	25	25	150	27	32.0	-	-	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	-	-
CSSN□□ 16-4D	●		●	inch	1.00	1.00	1.00	6.00	1.00	1.25	-	-	1/32	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	-	-
CSSN□□ 2020K-12	●			mm	20	20	20	125	26	25.0	-	16	0.8	CB-11	CE-020	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	-	-
2525M-12	●		●		25	25	25	150	26	32.0	-	23								
CSDNN 2020K-12		●			20	20	20	125	32	10.0	-	-	0.8	-	CE-040	LW-4	SP-141 (SP-143)	M3X8 (M3X12)	-	-
2525M-12		●			25	25	25	150	32	12.5	-	-								
3225P-12		●			32	32	25	170	32	12.5	-	-								
HSRN□□ 16-4D	●		●	inch	1.00	1.00	1.00	6.00	0.87	1.13	-	-	1/32	HCB300	HCL-000 (HCL-001)	LW-4	ISSN433 (ISSN453)	S-46	NL46L	LW-094
HSDNN 16-4D		●			1.00	1.00	1.00	6.00	1.30	0.500	-	-	1/32	-	HCL-002	LW-4	ISSN433 (ISSN453)	S-46	NL46L	LW-094
20-4D		●			1.25	1.25	1.25	6.00	1.30	0.625	-	-								

• Shim & Shim Screw : When using SN□□43 Insert, purchase spare parts in ( ) separately.

Applicable Inserts

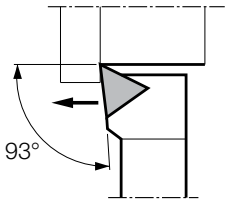
Application	Cast Iron / Hard Materials	Cast Iron / Hard Materials	Cast Iron	Hard Materials / Cast Iron	When using as toolholder for CBN tools (KBN900), prepare spare parts below separately.		
Ref. Page	B109, B110	B109	B35	C19			
Shape / Toolholder	Ceramic	Ceramic	Coated Carbide	CBN (KBN900)	Clamp Set	Shim	Shim Screw M3 S
CSRN□□...-4E CSRN□□...-12	SNG45.. (SNG43..) SNM45..	-	(SNM43..)	(SNM43..)	CE-030A	SP-143	M3X12
CSRN□□...-15	SNG55..	-	-	-	-	-	-
CS-N□□...-12	SNG45.. (SNG43..) SNM45..	-	(SNM43..)	(SNM43..)	CE-030A	SP-143	M3X12
CSKN□□...-12	SNG45.. (SNG43..) SNM45..	-	(SNM43..)	(SNM43..)	CE-030A	SP-143	M3X12
CSKN□□...-15	SNG55..	-	-	-	-	-	-
CSYN□□...-12	SNG45.. (SNG43..) SNM45..	-	(SNM43..)	(SNM43..)	CE-030A	SP-143	M3X12
CSSN□□...-4D CSSN□□...-12	SNG45.. (SNG43..) SNM45..	-	(SNM43..)	(SNM43..)	CE-030A	SP-143	M3X12
CSDNN...-12	SNG45.. (SNG43..) SNM45..	-	(SNM43..)	(SNM43..)	*-	SP-143	M3X12
HSRN□□...-4D	SNG45.. (SNG43..) SNM45..	(SNGA43..) (SNMA43..)	(SNM43..)	(SNM43..)	HCL-001	ISSN453	S-46
HSDNN...-4D	SNG45.. (SNG43..) SNM45..	(SNGA43..) (SNMA43..)	(SNM43..)	(SNM43..)	*-	ISSN453	S-46

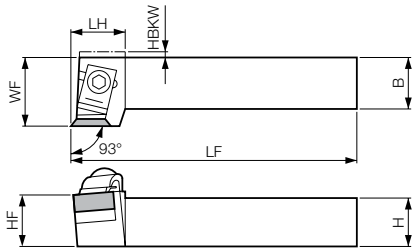
• Shim & Shim Screw : When using SN□□43 Insert, purchase spare parts in ( ) separately.
*CSDNN...-12: Clamp Set CE-040 is used continuously.

Recommended Cutting Conditions ➔ **D39-D40**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CTJN (External)

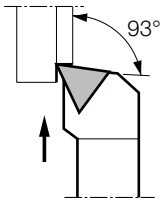


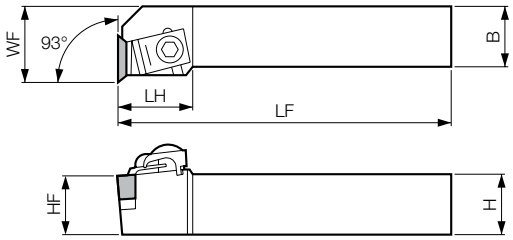


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CTUN (Facing)





Side Rake Angle: -6°
Angle of Inclination: -4°

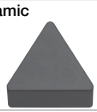
• Right-hand shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	HBKW	Standard Corner-R (RE)	Spare Parts: Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
CTJN□□ 16-3D	●	●	inch	1.00	1.00	1.00	6.00	0.88	1.25	-	1/32	CB-12/13	CE-020	LW-4	SP-221 (SP-223)	M3X8 (M3X12)
16-4D	●	●		1.00	1.00	1.00	6.00	0.88	1.25	-						
CTJN□□ 2020K-16	●	●	mm	20	20	20	125	21	25	2	0.8	CB-12/13	CE-020	LW-4	SP-221 (SP-223)	M3X8 (M3X12)
2525M-16	●	●		25	25	25	150	21	32	-						
CTUN□□ 2020K-16	●	●		20	20	20	125	27	25	-	0.8	CB-13/12	CE-020	LW-4	SP-221 (SP-223)	M3X8 (M3X12)
2525M-16	●	●		25	25	25	150	27	32	-						

• CTJN (Chipbreaker): CB-12 for Right-hand Toolholder, CB-13 for Left-hand Toolholder.
CTUN (Chipbreaker): CB-13 for Right-hand Toolholder, CB-12 for Left-hand Toolholder.
• Shim & Shim Screw: When using TN□□33 Insert, purchase spare parts in ( ) separately.

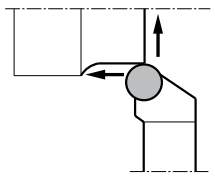
Applicable Inserts

Application	Cast Iron / Hard Materials	Hard Materials / Cast Iron
Ref. Page	B111	C19
Shape / Toolholder	Ceramic 	CBN (KBN900)
CTJN□□...-3D	TNG35.. (TNG33..) (TNM33..)	(TNM33..)
CTJN□□...-4D	TNG45.. (TNG43..) (TNM43..)	(TNM43..)
CTJN□□...-16	TNG35.. (TNG33..) (TNM33..)	(TNM33..)
CTUN□□...-16		

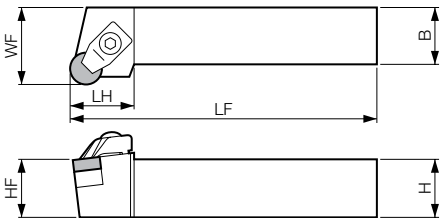
Recommended Cutting Conditions ➡ **D39-D40**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CRSN / HRSN (External / Facing)

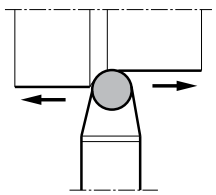


Side Rake Angle: -6°
Angle of Inclination: -6°

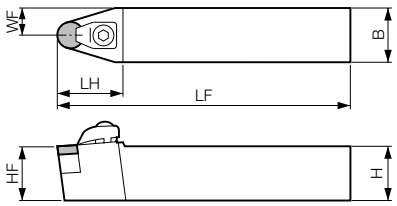


• Right-hand shown

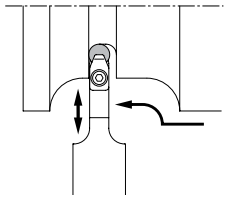
CRDN (External / Copying)

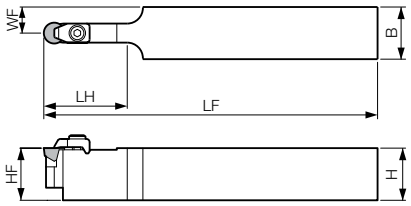


Back Rake Angle: -8.5°



CRDC (External / Copying)





Toolholder Dimensions

Part Number		Stock R	Stock N	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp Set CE / HCL	Wrench	Shim SP / HSH	Shim Screw M / S	Lock Pin	Wrench
CRSN□	2020K-12	●		●	mm	20	20	20	125	26	25.0	-	CE-030	LW-4	SP-841 (SP-843)	M3X8 (M3X12)	-	-
	2525M-12	●		●		25	25	25	150	26	32.0	-						
	3225P-12	●		●		32	32	25	170	26	32.0	-						
CRDNN	16-4D		●		inch	1.00	1.00	1.00	6.00	1.13	0.500	-	CE-030	LW-4	SP-841 (SP-843)	M3X8	-	-
	20-4E		●			1.25	1.25	1.25	7.00	1.13	0.625	-						
CRDNN	2020K-12		●		mm	20	20	20	125	28	10.0	-	CE-030	LW-4	SP-841 (SP-843)	M3X8 (M3X12)	-	-
	2525M-12		●			25	25	25	150	28	12.5	-						
	3225P-12		●			32	32	25	170	28	12.5	-						
	3232P-15		●			32	32	32	170	35	16.0	-	CE-040	LW-4	SP-861	M4X10	-	-
	4040R-15		●			40	40	40	200	35	20.0	-						
HRSN□	16-4D	●		□	inch	1.00	1.00	1.00	6.00	1.03	1.250	-	HCL-001	LW-4	IRSN43 (IRSN45)	S-46	NL46L	LW-094
	20-4D	●		□		1.25	1.25	1.25	6.00	1.03	1.500	-						
CRDCN	16-2		●		inch	1.00	1.00	1.00	8.00	1.00	0.500	-	HCL-017C	LW-2	HSH665A	-	-	-
	16-3		●			1.00	1.00	1.00	8.00	1.50	0.500	-	HCL-016	LW-3	HSH655			
	20-3		●			1.25	1.25	1.25	8.00	1.50	0.625	-						
	20-4		●			1.25	1.25	1.25	8.00	2.00	0.625	-	HCL-007	LW-4	HSH657			
	20-6		●			1.25	1.25	1.25	8.00	2.00	0.625	-	HCL-013	LW-4	HSH661			

• Shim & Shim Screw : When using RN□43 Insert, purchase spare parts in ( ) separately.

Applicable Inserts

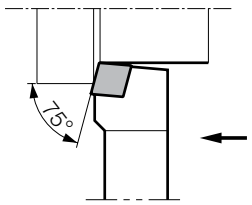
Application	Cast Iron / Hard Materials
Ref. Page	B108
Shape / Toolholder	Ceramic
CRSN□...-12	RNG45.. (RNG43..)
CRDNN...-4D/4E CRDNN...-12	RNG45.. (RNG43..)
CRDNN...-15	RNG55..
HRSN□...-4D	RNG45.. (RNG43..)

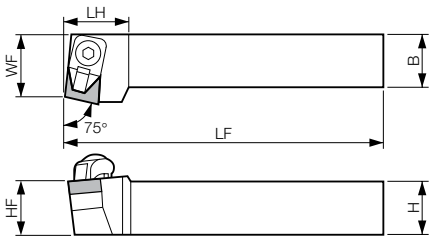
Hard Materials / Cast Iron	When using as toolholder for CBN tools (KBN900), prepare spare parts below separately.		
C19			
CBN (KBN900)	Clamp Set	Shim	Shim Screw M S
(RNM43..)	CE-030A	SP-843	M3X12
(RNM43..)	CE-030A	SP-843	M3X12
-	-	-	-
(RNM43..)	HCL-001	IRSN45	S-46

Application	Cast Iron / Hard Materials
Ref. Page	B114
Shape / Toolholder	Ceramic
CRDCN...-2	RCGX 102..
CRDCN...-3	RCGX 35.., 103..
CRDCN...-4	RCGX 45.., 104..
CRDCN...-6	RCGX 106..

Recommended Cutting Conditions D39-D40

CCRN-A (External)

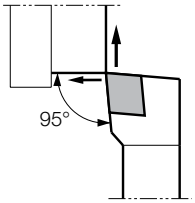


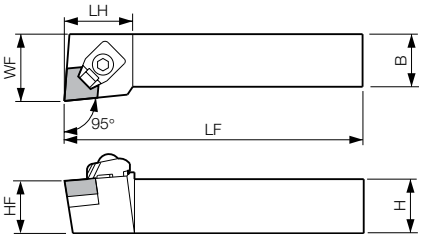


Side Rake Angle: -6°
Angle of Inclination: -6°

• Right-hand shown

CCLN-A (External / Facing)





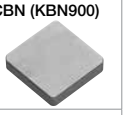
Side Rake Angle: -5°
Angle of Inclination: -5°

• Right-hand shown

Toolholder Dimensions

Part Number	Stock		Unit	Dimensions						Standard Corner-R (RE)	Spare Parts			
	R	L		H	HF	B	LF	LH	WF		Clamp Set	Wrench	Shim	Shim Screw
CCRN□ 2525M-09A	●	●	mm	25	25	25	150	27	27	0.8	CE-030A	LW-4	SP-429	HH3X12
CCLN□ 2525M-09A	●	●		25	25	25	150	28	32	0.8	CE-030A	LW-4	SP-429	HH3X12

Applicable Inserts

Application	Hard Materials / Cast Iron
Ref. Page	C19
Shape / Toolholder	CBN (KBN900) 
CCRN□...-09A	CNM32..
CCLN□...-09A	

* For CNM43 Insert toolholder D26

Recommended Cutting Conditions **D39-D40**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
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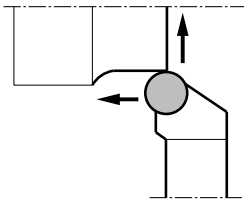
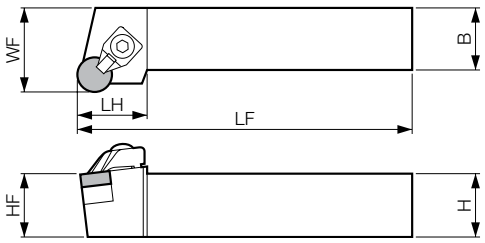
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CRSN-A (External / Facing)

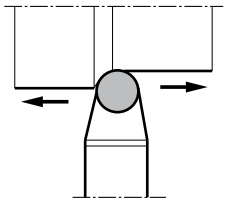


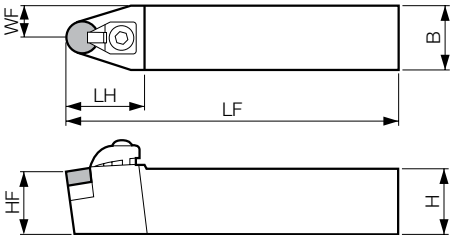


Side Rake Angle: -6°
Angle of Inclination: -6°

• Right-hand shown

CRDN-A (External / Copying))





Back Rake Angle: -8.5°

Toolholder Dimensions

Part Number		Stock R	Stock N	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp Set	Wrench	Shim	Shim	Shim Screw
CRSN/L	2525M-09A	●		●	mm	25	25	25	150	26	32.0	-	CE-030A	LW-4	SP-829	-	HH3X12
	3225P-09A	●		●		32	32	25	170	26	32.0						
	2525M-12A	●		●		25	25	25	150	26	32.0	-	CE-030A	LW-4	-	SP-849 (SP-843)	BH3X12
	3225P-12A	●		●		32	32	25	170	26	32.0						
CRDNN	2525M-09A		●			25	25	25	150	29	12.5	-	CE-030A	LW-4	SP-829	-	HH3X12
	3225P-09A		●			32	32	25	170	29	12.5						
	2525M-12A		●			25	25	25	150	28	12.5	-	CE-030A	LW-4	-	SP-849 (SP-843)	BH3X12
	3225P-12A		●			32	32	25	170	28	12.5						

Shim Screw: HH, BH

• -12A toolholder Shim: When using RN□□1204 Insert, purchase spare parts: SP-843 in ( ) separately.

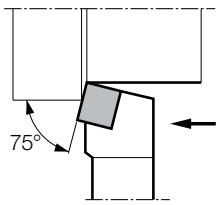
Applicable Inserts

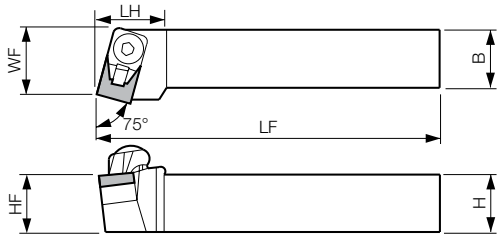
Application	Hard Materials / Cast Iron
Ref. Page	C19
Shape / Toolholder	CBN (KBN900)
CRSN/L...-09A	RNM32
CRSN/L...-12A	RNM42 (RNM43)
CRDNN...-09A	RNM32
CRDNN...-12A	RNM42 (RNM43)

Cast Iron / Hard Materials	When using as toolholder for ceramic tools, prepare spare parts below separately.	
B108	Shim	Shim Screw
Ceramic		
(RNG33)	SP-826	-
(RNG43)	SP-843	M3X12
(RNG45)	SP-841	M3X8
(RNG33)	SP-826	-
(RNG43)	SP-843	M3X12
(RNG45)	SP-841	M3X8

Recommended Cutting Conditions **D39-D40**

CSRN-A (External)

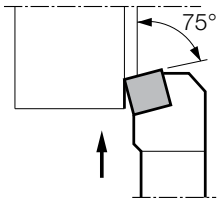


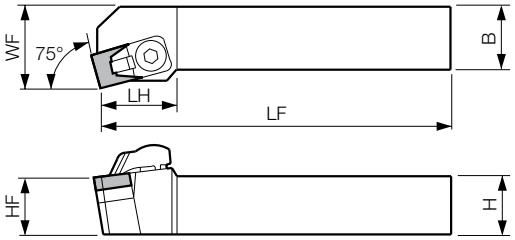


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CSKN-A (Facing)

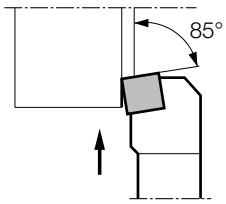


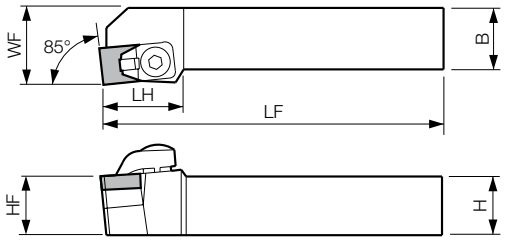


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CSYN-A (Facing)





Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp Set	Spare Parts: Wrench	Spare Parts: Shim	Spare Parts: Shim	Spare Parts: Shim Screw
CSRN R/L 2525M-09A	△	△	mm	25	25	25	150	22	27	0.8	CE-030A	LW-4	SP-129	-	HH3X12
2525M-12A	●	●		25	25	25	150	22	27				-	SP-148 (SP-143)	BH3X12
CSKNR 2525M-09A	●			25	25	25	150	27	32	0.8	CE-030A	LW-4	SP-129	-	HH3X12
2525M-12A	△			25	25	25	150	29	32				-	SP-148 (SP-143)	BH3X12
CSYN R/L 2525M-09A	△	△		25	25	25	150	27	32	0.8	CE-030A	LW-4	SP-129	-	HH3X12
2525M-12A	△	△		25	25	25	150	27	32				-	SP-148 (SP-143)	BH3X12

• -12A toolholder Shim: When using SN□□43 Insert, purchase spare parts: SP-143 in ( ) separately.

Applicable Inserts

Application	Hard Materials / Cast Iron	Cast Iron
Ref. Page	C19	B35
Shape / Toolholder	CBN (KBN900)	Coated Carbide
CSRN R/L ...-09A	SNM32..	-
CSRN R/L ...-12A	SNM42.. (SNM43..)	(SNM43..)
CSKN R/L ...-09A	SNM32..	-
CSKN R/L ...-12A	SNM42.. (SNM43..)	(SNM43..)
CSYN R/L ...-09A	SNM32..	-
CSYN R/L ...-12A	SNM42.. (SNM43..)	(SNM43..)

Cast Iron / Hard Materials	When using as toolholder for ceramic tools, prepare spare parts below separately. Chipbreaker	Clamp Set	Shim	Shim Screw
B109, B110				
Ceramic				
-	-	-	-	-
(SNG43..) (SNM43..)	CB-11	CE-020	SP-143	M3X12
(SNG45..) (SNM45..)			SP-141	M3X8
-	-	-	-	-
(SNG43..) (SNM43..)	CB-11	CE-020	SP-143	M3X12
(SNG45..) (SNM45..)			SP-141	M3X8
-	-	-	-	-
(SNG43..) (SNM43..)	CB-11	CE-020	SP-143	M3X12
(SNG45..) (SNM45..)			SP-141	M3X8

Recommended Cutting Conditions ➡ D39-D40

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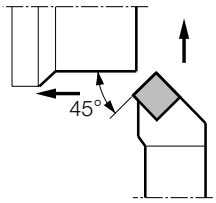
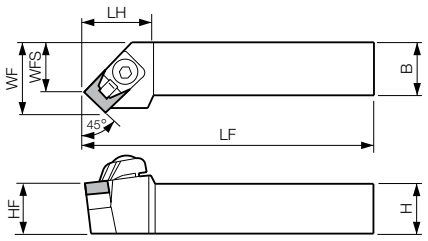
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CSSN-A (External / Facing / Chamfering)

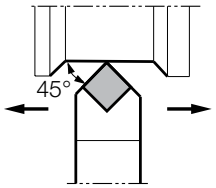


Side Rake Angle: -6°
Angle of Inclination: 0°

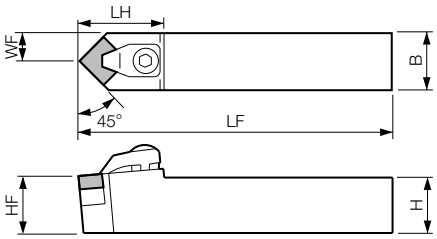


• Right-hand shown

CSDN-A (External / Chamfering)



Back Rake Angle: -8.5°



Toolholder Dimensions

Part Number		Stock R	Stock N	Stock L	Unit	H	HF	B	LF	LH	WF	WFS	Standard Corner-R (RE)	Spare Parts: Clamp Set	Spare Parts: Wrench	Spare Parts: Shim	Spare Parts: Shim	Spare Parts: Shim Screw
														030A 040				HH BH
CSSN□	2525M-09A	●		●	mm	25	25	25	150	26	32.0	25	0.8	CE-030A	LW-4	SP-129	-	HH3X12
	2525M-12A	●		●		25	25	25	150	26	32.0	23				-	SP-148 (SP-143)	BH3X12
CSDNN	2525M-09A		●			25	25	25	150	32	12.5	-	0.8	CE-040	LW-4	SP-129	-	HH3X12
	3225P-09A		△			32	32	25	170	32	12.5	-						
	2525M-12A		●			25	25	25	150	32	12.5	-				-	SP-148 (SP-143)	BH3X12

• -12A toolholder Shim: When using SN□□43 Insert, purchase spare parts: SP-143 in ( ) separately.

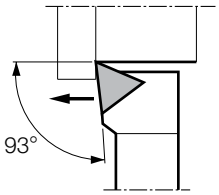
Applicable Inserts

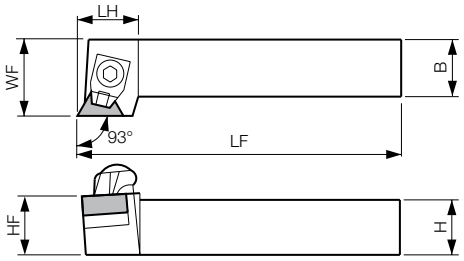
Application	Hard Materials / Cast Iron	Cast Iron
Ref. Page	C19	B35
Shape / Toolholder	CBN (KBN900)	Coated Carbide
CSSN□...-09A	SNM32..	-
CSSN□...-12A	SNM42.. (SNM43..)	(SNM43..)
CSDNN...-09A	SNM32..	-
CSDNN...-12A	SNM42.. (SNM43..)	(SNM43..)

Cast Iron / Hard Materials	When using as toolholder for ceramic tools, prepare spare parts below separately. Chipbreaker	Clamp Set	Shim	Shim Screw
B109, B110				
Ceramic				
-	-	-	-	-
(SNG43..) (SNM43..)	CB-11	CE-020	SP-143	M3X12
(SNG45..) (SNM45..)			SP-141	M3X8
-	-	-	-	-
(SNG43..) (SNM43..)	-	-	SP-143	M3X12
(SNG45..) (SNM45..)			SP-141	M3X8

Recommended Cutting Conditions → **D39-D40**

CTJN-A (External)

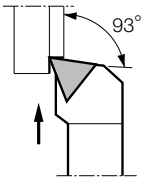


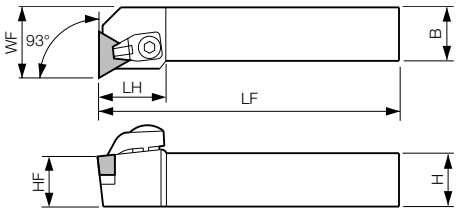


Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

CTUN-A (Facing)





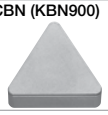
Side Rake Angle: -6°
Angle of Inclination: -4°

• Right-hand shown

Toolholder Dimensions

Part Number	Stock		Unit	Dimensions						Standard Corner-R(RE)	Spare Parts			
	R	L		H	HF	B	LF	LH	WF		Clamp Set	Wrench	Shim	Shim Screw
CTJN□ 2525M-11A	●	●	mm	25	25	25	150	22	32	0.8	CE-030A	LW-4	SP-219	HH3X12
CTUN□ 2525M-11A	△	△		25	25	25	150	27	32	0.8	CE-030A	LW-4	SP-219	HH3X12

Applicable Inserts

Application	Hard Materials / Cast Iron	Cast Iron / Hard Materials
Ref. Page	C19	B111
Shape / Toolholder	CBN (KBN900) 	Ceramic
CTJN□...-11A	TNM22..	TNG22..
CTUN□...-11A		

* TNM33 Insert toolholder is described in **D30**

Recommended Cutting Conditions **D39-D40**

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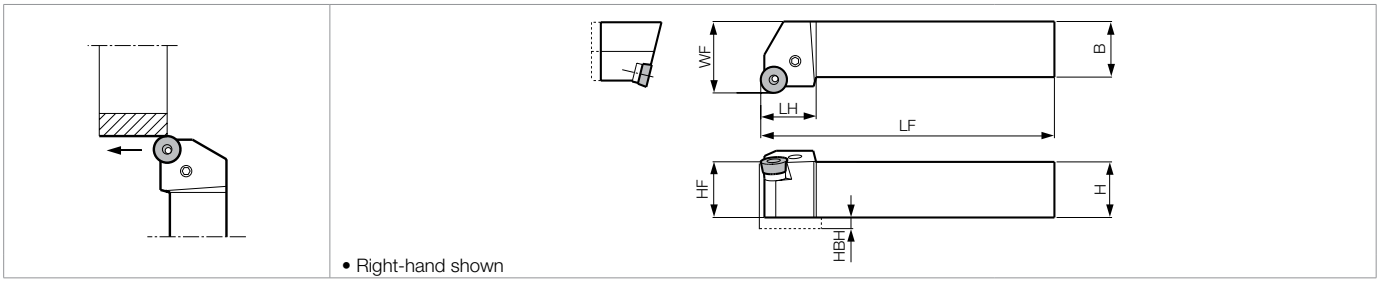
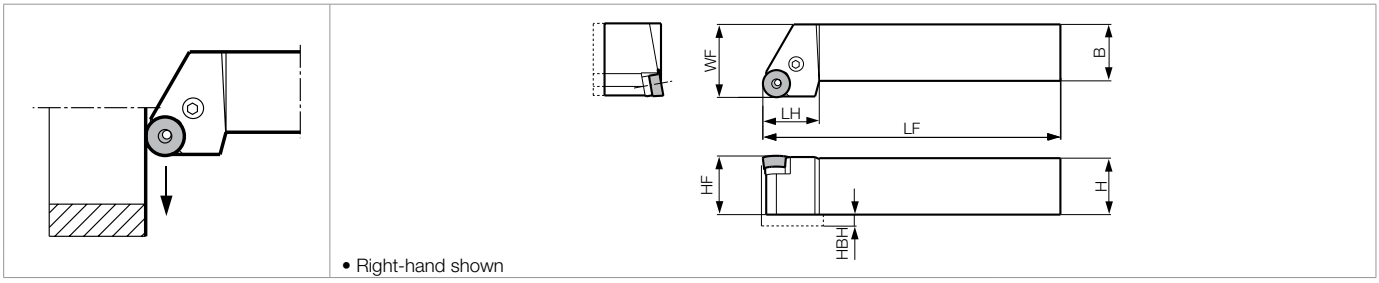
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

PRGC-BE (External)



• Right-hand shown

PRGC-BF (Facing)



• Right-hand shown

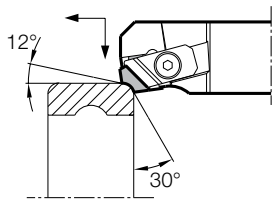
Toolholder Dimensions

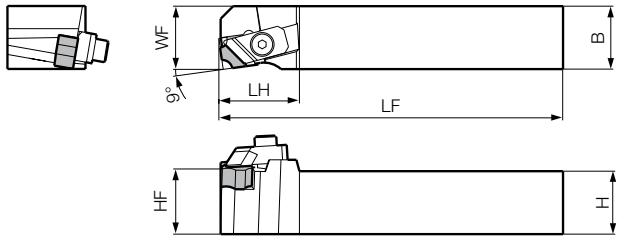
Part Number		Stock	Unit	Dimensions							Spare Parts						Applicable Inserts B103
				H	HF	HBH	B	LF	LH	WF	Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	
PRGCR	2020K-12BE	△	mm	20	20	-	20	125	22	25	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5	RCMT 1204M0-BB
	2525M-12BE	●		25	25	-	25	150	25	32							
	2020K-16BE	△		20	20	5	20	125	27	29	LL-2C	LS-1T	LR-16C	LSP-2	PC-2	FH-2.5	RCMT 1606M0-BB
	2525M-16BE	△		25	25	-	25	150	27	32							
PRGCR	2020K-12BF	△		20	20	-	20	125	22	25	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5	RCMT 1204M0-BB
	2525M-12BF	△		25	25	-	25	150	25	32							
	2020K-16BF	△		20	20	5	20	125	27	25	LL-2C	LS-1T	LR-16C	LSP-2	PC-2	FH-2.5	RCMT 1606M0-BB
	2525M-16BF	△		25	25	-	25	150	27	32							

Recommended Cutting Conditions D39-D40

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CBSN (External Corner Filleting)





• Right-hand shown

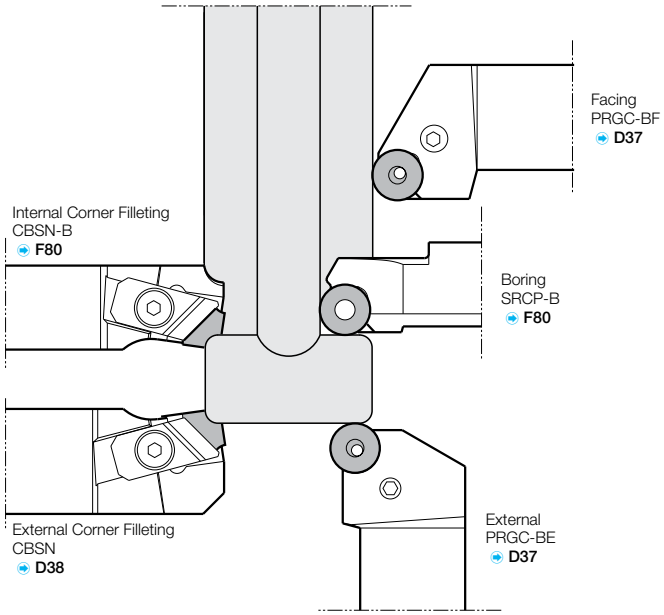
Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Spare Parts: Clamp Set	Wrench	Shim	Shim Screw	Applicable Inserts
CBSN℞	2020K-12	●	●	mm	20	20	20	125	32	20	CP-RC℞	LW-5	SP-RC	SP3X8	SNMF1204○○-21
	2525M-12	●	●		25	25	25	150	32	25					

• Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

Recommended Cutting Conditions ➡ **D39-D40**

Tooling for Bearing Machining



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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Recommended Cutting Conditions - External Turning (Negative Insert) [D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R (RE)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (in)	Feed Rate (ipr)
P	Low Carbon Steel Low Carbon Alloy	HB ≦ 300	Finishing (High Speed)	Continuous	XP	CCX	1/32	980 - **1970** - 2620	0.008 - **0.020** - 0.028	0.003 - **0.005** - 0.008
			Finishing (Small D.O.C.)	Continuous	XF	PV710	1/64	820 - **1150** - 1710	0.002 - **0.005** - 0.024	0.001 - **0.004** - 0.009
				Interruption		PV720	1/32	790 - **1050** - 1570	0.002 - **0.006** - 0.024	0.002 - **0.005** - 0.010
			Finishing (Gloss Oriented)	Continuous	XP	TN610	1/64	820 - **1050** - 1310	0.008 - **0.020** - 0.028	0.003 - **0.005** - 0.008
				Interruption		TN620	1/32	790 - **1020** - 1210	0.008 - **0.020** - 0.028	0.003 - **0.005** - 0.008
			Finishing (Tool Life Oriented)	Continuous	XP	PV710	1/64	820 - **980** - 1210	0.008 - **0.020** - 0.028	0.003 - **0.005** - 0.008
				Interruption		PV720	1/32	790 - **950** - 1120	0.008 - **0.020** - 0.028	0.003 - **0.005** - 0.008
			Finishing-Medium (Gloss Oriented)	Continuous	XQ	TN610	1/64	820 - **1050** - 1310	0.020 - **0.039** - 0.059	0.007 - **0.010** - 0.012
				Interruption		TN620	1/32	790 - **920** - 1120	0.020 - **0.039** - 0.059	0.007 - **0.010** - 0.012
			Finishing-Medium (Tool Life Oriented)	Continuous	XQ	PV710	1/32	820 - **980** - 1210	0.020 - **0.039** - 0.059	0.007 - **0.010** - 0.012
				Interruption		PV720	1/32	790 - **920** - 1120	0.020 - **0.039** - 0.059	0.007 - **0.010** - 0.012
			Medium-Roughing	Continuous	XS	PV720	1/32	720 - **850** - 1050	0.031 - **0.059** - 0.079	0.010 - **0.012** - 0.016
				Interruption		CA515	1/32	520 - **690** - 850	0.031 - **0.059** - 0.079	0.010 - **0.012** - 0.016
			Roughing	Continuous	PG	CA515	1/32	590 - **720** - 850	0.039 - **0.098** - 0.138	0.008 - **0.012** - 0.016
				Interruption		CA025P	3/64	490 - **660** - 790	0.039 - **0.098** - 0.138	0.008 - **0.012** - 0.016
			Medium-Roughing High Feed Rate	Continuous	PT	CA515	1/32	490 - **660** - 790	0.059 - **0.118** - 0.177	0.010 - **0.014** - 0.018
				Interruption		CA025P	3/64	390 - **590** - 720	0.059 - **0.118** - 0.177	0.010 - **0.014** - 0.018
			Roughing High Feed Rate	Continuous	PH	CA515	3/64	490 - **660** - 790	0.079 - **0.197** - 0.315	0.016 - **0.024** - 0.031
				Interruption		CA025P	1/16	390 - **590** - 720	0.079 - **0.197** - 0.315	0.012 - **0.020** - 0.028
			Roughing (Low Cutting Force)	Continuous	PX (Single Side)	CA515	3/64	490 - **660** - 790	0.079 - **0.197** - 0.315	0.016 - **0.024** - 0.031
				Interruption		CA025P	1/16	390 - **590** - 720	0.079 - **0.197** - 0.315	0.012 - **0.020** - 0.028
	Medium Carbon Steel Medium Carbon Alloy	HB ≦ 300	Finishing (Time Oriented)	Continuous	WF (Wiper)	PV710	1/32	660 - **820** - 1050	0.012 - **0.020** - 0.039	0.008 - **0.012** - 0.016
				Interruption		CA515	1/32	520 - **720** - 920	0.012 - **0.020** - 0.039	0.008 - **0.012** - 0.016
			Finishing-Medium (Time Oriented)	Continuous	WE (Wiper)	PV710	1/32	590 - **720** - 920	0.039 - **0.079** - 0.118	0.008 - **0.012** - 0.016
				Interruption		CA025P	1/32	430 - **590** - 790	0.039 - **0.079** - 0.118	0.008 - **0.012** - 0.016
			Finishing (High Speed)	Continuous	PP	CCX	1/32	660 - **980** - 1480	0.008 - **0.020** - 0.059	0.002 - **0.006** - 0.011
			Finishing (Gloss Oriented)	Continuous	PP	TN610	1/64	660 - **820** - 1050	0.008 - **0.020** - 0.059	0.002 - **0.006** - 0.011
				Interruption			1/32	590 - **750** - 980	0.008 - **0.020** - 0.059	0.002 - **0.008** - 0.014
			Finishing (Tool Life Oriented)	Continuous	PP	PV710	1/64	660 - **820** - 1050	0.008 - **0.020** - 0.059	0.002 - **0.006** - 0.011
				Interruption		PV720	1/32	660 - **790** - 950	0.008 - **0.020** - 0.059	0.002 - **0.008** - 0.014
			Finishing-Medium (Gloss Oriented)	Continuous	PQ	TN610	1/32	590 - **750** - 980	0.020 - **0.059** - 0.098	0.004 - **0.008** - 0.012
				Interruption		TN620	3/64	520 - **720** - 850	0.020 - **0.059** - 0.098	0.004 - **0.007** - 0.010
			Finishing-Medium (Tool Life Oriented)	Continuous	PQ	PV710	1/32	520 - **690** - 920	0.020 - **0.059** - 0.098	0.004 - **0.008** - 0.012
				Interruption		CA025P	1/32	460 - **660** - 790	0.020 - **0.059** - 0.098	0.004 - **0.007** - 0.010
			Medium-Roughing	Continuous	PG	CA515	1/32	490 - **660** - 790	0.039 - **0.098** - 0.138	0.008 - **0.012** - 0.016
				Interruption		CA025P	3/64	390 - **530** - 660	0.039 - **0.098** - 0.138	0.008 - **0.012** - 0.016
			Medium-Roughing High Feed Rate	Continuous	PT	CA515	1/32	390 - **590** - 750	0.059 - **0.118** - 0.177	0.010 - **0.014** - 0.018
				Interruption		CA025P	3/64	330 - **490** - 660	0.059 - **0.118** - 0.177	0.010 - **0.014** - 0.018
			Roughing High Feed Rate	Continuous	PH	CA515	3/64	390 - **590** - 750	0.079 - **0.197** - 0.315	0.016 - **0.024** - 0.031
				Interruption		CA025P	1/16	330 - **490** - 660	0.079 - **0.197** - 0.315	0.012 - **0.020** - 0.028
			Roughing (Low Cutting Force)	Continuous	PX (Single Side)	CA515	3/64	390 - **590** - 750	0.079 - **0.197** - 0.315	0.016 - **0.024** - 0.031
				Interruption		CA025P	1/16	330 - **490** - 660	0.079 - **0.197** - 0.315	0.012 - **0.020** - 0.028
	High Carbon Alloy	HB ≦ 280	Finishing (High Speed)	Continuous	PP	CCX	1/32	660 - **980** - 1310	0.008 - **0.020** - 0.059	0.002 - **0.006** - 0.011
			Finishing (Gloss Oriented)	Continuous	PP	TN610	1/64	490 - **660** - 920	0.008 - **0.020** - 0.059	0.002 - **0.006** - 0.011
				Interruption		TN620	1/32	460 - **590** - 790	0.008 - **0.020** - 0.059	0.002 - **0.008** - 0.014
			Finishing (Tool Life Oriented)	Continuous	PP	PV710	1/64	390 - **590** - 850	0.008 - **0.020** - 0.059	0.002 - **0.006** - 0.011
				Interruption		CA515	1/32	330 - **490** - 660	0.008 - **0.020** - 0.059	0.002 - **0.008** - 0.014
			Finishing-Medium	Continuous	PQ	CA515	1/32	390 - **520** - 720	0.020 - **0.059** - 0.098	0.006 - **0.010** - 0.012
				Interruption		CA025P	1/32	330 - **460** - 590	0.020 - **0.059** - 0.098	0.006 - **0.008** - 0.010
			Medium-Roughing	Continuous	PG	CA515	1/32	390 - **490** - 660	0.039 - **0.079** - 0.118	0.008 - **0.012** - 0.020
				Interruption		CA025P	1/32	330 - **430** - 590	0.039 - **0.079** - 0.118	0.006 - **0.008** - 0.012
			Medium-Roughing High Feed Rate	Continuous	PT	CA515	1/32	330 - **460** - 590	0.059 - **0.118** - 0.177	0.010 - **0.014** - 0.018
				Interruption		CA025P	3/64	260 - **390** - 520	0.059 - **0.118** - 0.177	0.010 - **0.014** - 0.018
			Roughing High Feed Rate	Continuous	PH	CA515	3/64	330 - **460** - 590	0.079 - **0.197** - 0.315	0.016 - **0.024** - 0.031
				Interruption		CA025P	1/16	260 - **390** - 520	0.079 - **0.197** - 0.315	0.012 - **0.020** - 0.028
			Roughing (Low Cutting Force)	Continuous	PX (Single Side)	CA515	3/64	330 - **460** - 590	0.079 - **0.197** - 0.315	0.016 - **0.024** - 0.031
				Interruption		CA025P	1/16	260 - **390** - 520	0.079 - **0.197** - 0.315	0.012 - **0.020** - 0.028

Recommended Cutting Conditions - External Turning (Negative Insert) [D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R (RE)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (in)	Feed Rate (ipr)
M	Stainless Steel (Austenitic)	HB ≦ 220	Finishing (Gloss Oriented)	Continuous	PQ	TN620	1/32	390 - **520** - 660	0.020 - **0.039** - 0.059	0.003 - **0.006** - 0.008
				Interruption			1/32	330 - **390** - 490	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.006
			Finishing	Continuous	MQ	CA6515	1/64	390 - **590** - 790	0.020 - **0.039** - 0.059	0.003 - **0.006** - 0.008
				Interruption		CA6525	1/32	330 - **520** - 720	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.006
			Medium-Roughing (Chip Control Oriented)	Continuous	MS	CA6515	1/64	390 - **520** - 660	0.039 - **0.079** - 0.118	0.004 - **0.008** - 0.012
				Interruption		CA6525	1/32	260 - **460** - 590	0.039 - **0.079** - 0.118	0.008 - **0.012** - 0.016
			Medium-Roughing (Sharpness Oriented)	Continuous	MU	CA6515	1/64	390 - **520** - 660	0.039 - **0.079** - 0.118	0.006 - **0.010** - 0.014
				Interruption		CA6525	1/32	260 - **460** - 590	0.039 - **0.079** - 0.118	0.006 - **0.010** - 0.012
			Roughing	Continuous	Standard	CA6515	1/32	330 - **460** - 590	0.039 - **0.079** - 0.157	0.008 - **0.012** - 0.016
				Interruption		CA6525	3/64	260 - **390** - 490	0.039 - **0.079** - 0.157	0.008 - **0.012** - 0.016
	Stainless Steel (Precipitation Hardened)	HB ≦ 300	Finishing (Gloss Oriented)	Continuous	PQ	TN620	1/32	330 - **390** - 490	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.006
				Interruption			1/32	260 - **330** - 390	0.020 - **0.039** - 0.059	0.002 - **0.003** - 0.004
			Finishing	Continuous	MQ	CA6515	1/64	330 - **390** - 490	0.020 - **0.039** - 0.059	0.003 - **0.006** - 0.008
				Interruption		CA6525	1/32	260 - **330** - 390	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.006
			Medium-Roughing (Chip Control Oriented)	Continuous	MS	CA6515	1/64	330 - **390** - 490	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.010
				Interruption		CA6525	1/32	260 - **330** - 390	0.039 - **0.079** - 0.118	0.004 - **0.006** - 0.008
			Medium-Roughing (Sharpness Oriented)	Continuous	MU	CA6515	1/64	330 - **390** - 490	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.010
				Interruption		CA6525	1/32	260 - **330** - 390	0.039 - **0.079** - 0.118	0.004 - **0.006** - 0.008
			Roughing	Continuous	Standard	CA6515	1/32	260 - **330** - 390	0.039 - **0.079** - 0.118	0.008 - **0.012** - 0.016
				Interruption		CA6525	3/64	200 - **260** - 330	0.039 - **0.079** - 0.157	0.008 - **0.012** - 0.016
K	Gray Cast Iron	HB ≦ 250	High Speed Machining	Continuous	Without Chipbreaker	KBN475	1/32	1310 - **2620** - 3940	0.002 - **0.008** - 0.020	0.004 - **0.008** - 0.012
				Continuous		KBN900	3/64	1640 - **2950** - 3940	0.004 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		KBN900	3/64	1640 - **2300** - 2950	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
			Finishing (Gloss Oriented)	Continuous	Standard	PV7005	1/32	980 - **1150** - 1310	0.020 - **0.039** - 0.059	0.004 - **0.008** - 0.012
				Interruption		PV720	1/32	490 - **660** - 980	0.020 - **0.039** - 0.059	0.003 - **0.006** - 0.008
			Finishing (Ceramic)	Continuous	Without Chipbreaker	KA30	3/64	980 - **1640** - 2300	0.012 - **0.020** - 0.039	0.004 - **0.008** - 0.012
				Continuous		PT600M	1/32	980 - **1480** - 1970	0.012 - **0.020** - 0.039	0.004 - **0.008** - 0.012
			Medium (Ceramic)	Continuous		CS7050	3/64	980 - **1480** - 1800	0.039 - **0.079** - 0.118	0.006 - **0.010** - 0.014
				Interruption		KS6050	3/64	820 - **1310** - 1640	0.039 - **0.079** - 0.118	0.006 - **0.008** - 0.012
			Medium	Continuous	KH	CA310	1/32	660 - **820** - 980	0.020 - **0.079** - 0.098	0.004 - **0.008** - 0.012
				Interruption		CA315	3/64	490 - **660** - 820	0.020 - **0.079** - 0.098	0.003 - **0.006** - 0.008
			Roughing	Continuous	KH	CA310	1/32	660 - **820** - 980	0.039 - **0.079** - 0.157	0.008 - **0.012** - 0.016
				Interruption		CA315	3/64	490 - **660** - 820	0.039 - **0.079** - 0.157	0.008 - **0.012** - 0.016
	Nodular Cast Iron	HB ≦ 270	High Speed Machining	Continuous	Without Chipbreaker	KBN60M	1/64	660 - **980** - 1310	0.004 - **0.012** - 0.020	0.004 - **0.006** - 0.008
				Continuous		PT600M	1/32	660 - **820** - 1150	0.004 - **0.020** - 0.039	0.004 - **0.008** - 0.016
			Finishing (Gloss Oriented)	Continuous	Standard	PV7005	1/32	490 - **820** - 980	0.020 - **0.039** - 0.059	0.004 - **0.008** - 0.012
				Interruption		PV720	1/32	390 - **660** - 820	0.020 - **0.039** - 0.059	0.003 - **0.006** - 0.008
			Medium	Continuous	KG	CA310	1/32	490 - **660** - 820	0.020 - **0.079** - 0.098	0.004 - **0.008** - 0.012
				Interruption		CA315	3/64	390 - **590** - 720	0.020 - **0.079** - 0.098	0.003 - **0.006** - 0.008
			Roughing	Continuous	KG	CA315	1/32	490 - **660** - 820	0.039 - **0.079** - 0.157	0.008 - **0.012** - 0.016
				Interruption	KH	CA320	3/64	390 - **590** - 720	0.039 - **0.079** - 0.157	0.008 - **0.012** - 0.016
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB ≦ 100	High Speed Machining (Glossy Surface)	Continuous	Without Chipbreaker	KPD001	1/64	980 - **2620** - 6560	0.002 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Finishing (Long Tool Life)	Continuous	A3	PDL025	1/64	1310 - **1640** - 2300	0.020 - **0.039** - 0.079	0.004 - **0.008** - 0.010
				Interruption			1/32	1310 - **1640** - 2300	0.020 - **0.039** - 0.079	0.004 - **0.008** - 0.010
			Finishing	Continuous	A3	KW10	1/32	1310 - **1640** - 2300	0.020 - **0.039** - 0.079	0.004 - **0.008** - 0.010
				Interruption			1/32	1310 - **1640** - 2300	0.020 - **0.039** - 0.079	0.004 - **0.008** - 0.010
			Medium	Continuous	AH	KW10	1/32	660 - **980** - 1640	0.039 - **0.079** - 0.138	0.004 - **0.012** - 0.016
				Interruption			1/32	660 - **980** - 1640	0.039 - **0.079** - 0.138	0.004 - **0.012** - 0.016
S	Titanium Alloys	HB ≦ 400	Precision Finishing (Glossy Surface)	Continuous	Without Chipbreaker	KPD001	1/64	330 - **490** - 590	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
				Interruption			1/64	230 - **390** - 490	0.002 - **0.012** - 0.020	0.001 - **0.003** - 0.004
			Finishing	Continuous	MQ	SW05	1/64	130 - **230** - 330	0.008 - **0.020** - 0.039	0.002 - **0.008** - 0.012
				Interruption			1/64	130 - **230** - 330	0.008 - **0.020** - 0.039	0.002 - **0.006** - 0.008
			Medium	Continuous	MU	SW05	1/32	130 - **200** - 260	0.020 - **0.039** - 0.118	0.004 - **0.010** - 0.014
				Interruption			1/32	130 - **200** - 260	0.020 - **0.039** - 0.118	0.004 - **0.008** - 0.012
	Heat-resistant Alloys	HB ≦ 350	Finishing	Continuous	MQ	PR005S	1/64	100 - **180** - 300	0.008 - **0.012** - 0.039	0.002 - **0.003** - 0.006
				Interruption		PR015S	1/32	80 - **150** - 230	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Medium	Continuous	SQ	PR005S	1/32	100 - **180** - 300	0.012 - **0.020** - 0.059	0.004 - **0.007** - 0.014
				Interruption		PR015S	1/32	80 - **150** - 230	0.012 - **0.020** - 0.059	0.004 - **0.007** - 0.014
			Roughing	Continuous	SG	PR005S	1/32	100 - **180** - 300	0.020 - **0.079** - 0.157	0.004 - **0.012** - 0.016
				Interruption		PR015S	1/32	80 - **150** - 230	0.020 - **0.079** - 0.157	0.004 - **0.012** - 0.016
				Continuous	SX	PR005S	-	100 - **180** - 300	0.020 - **0.079** - 0.157	0.006 - **0.012** - 0.018
				Interruption		PR015S	-	80 - **150** - 230	0.020 - **0.079** - 0.157	0.006 - **0.012** - 0.018
H	Hardened Steel Hard Materials	40~50 HRC	Finishing	Continuous	PQ Standard	CA515	1/32	200 - **330** - 390	0.004 - **0.012** - 0.020	0.002 - **0.003** - 0.004
				Interruption			1/32	100 - **160** - 230	0.004 - **0.012** - 0.020	0.002 - **0.003** - 0.004
		40~50 HRC	Finishing	Continuous	Without Chipbreaker	PT600M	1/32	200 - **250** - 325	0.008 - **0.020** - 0.028	0.002 - **0.004** - 0.006
		50~65 HRC		Continuous			3/64	100 - **125** - 200	0.008 - **0.020** - 0.028	0.002 - **0.004** - 0.006
		50~68 HRC	Finishing	Continuous	ME MET	KBN05M	1/32	325 - **500** - 650	0.002 - **0.012** - 0.020	0.002 - **0.003** - 0.004
				Interruption			3/64	300 - **450** - 600	0.002 - **0.012** - 0.020	0.002 - **0.003** - 0.004
			Medium	Continuous	Without Chipbreaker	KBN900	3/64	250 - **325** - 400	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.008
				Interruption			Radius	225 - **300** - 350	0.012 - **0.028** - 0.039	0.002 - **0.004** - 0.006

SMALL TOOLS

E

E1 - E56

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DC INSERT	(Goose-neck Holder)	E22
VP INSERT	(Goose-neck Holder)	E23
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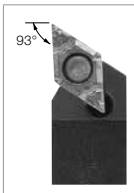
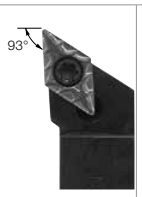
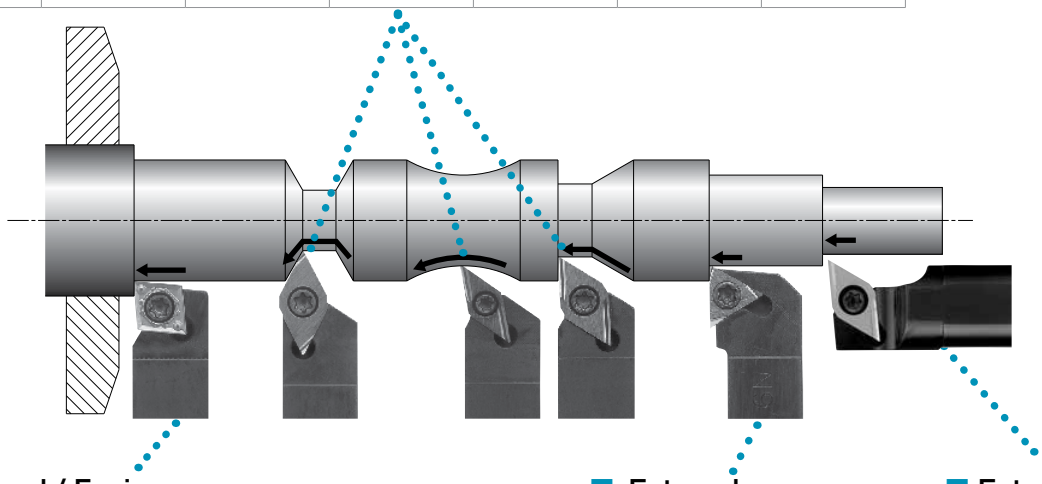
External / Copying

						
ADJC-FF	**SDJC-FF(JCT) SDJC-FF-Y**	**SDJC**	**SDLC-FF SDLP-FF**	**SDLN**	**SDNC-F**	**SDNC**
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp
E26	E26, E27, E28	E27	E30, E32	E44	E31	E31



External / Facing

ACLC-FF	**SCLC-FF(JCT)**	**SCLC**	**SCLN-FF**
Back Clamp Without Offset	Screw Clamp Without Offset	Screw Clamp	Screw Clamp Without Offset
E24	E24, E25	E25	E44

External

STGC(P)	**STLN-FF**
Screw Clamp	Screw Clamp Without Offset
E33	E45

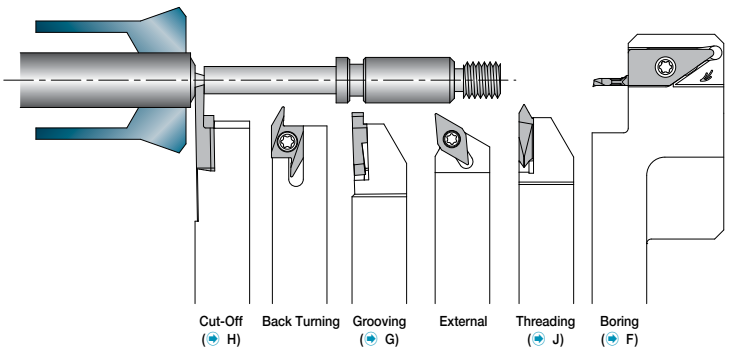
External Sleeve Holder

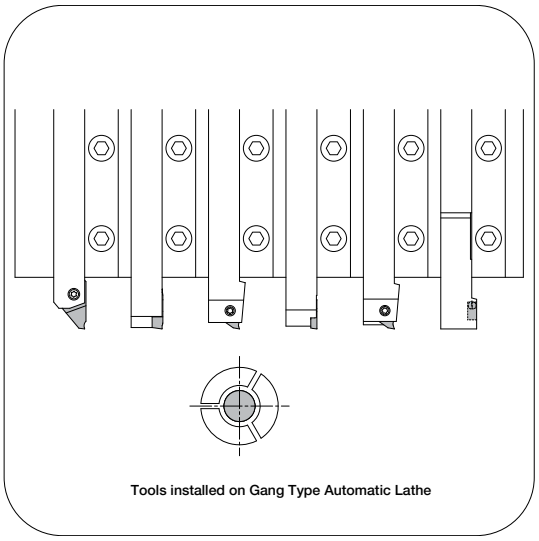
S...SDLC

Screw Clamp Shank Dia.
Ø0.625"~Ø1.000"
Ø12.0mm~Ø25.4mm

E42

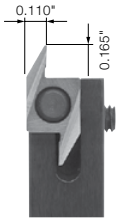
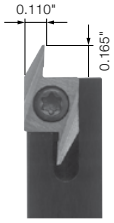
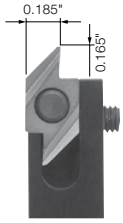
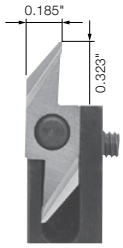
Tooling Example ① - CNC Automatic Lathe (Gang Type)

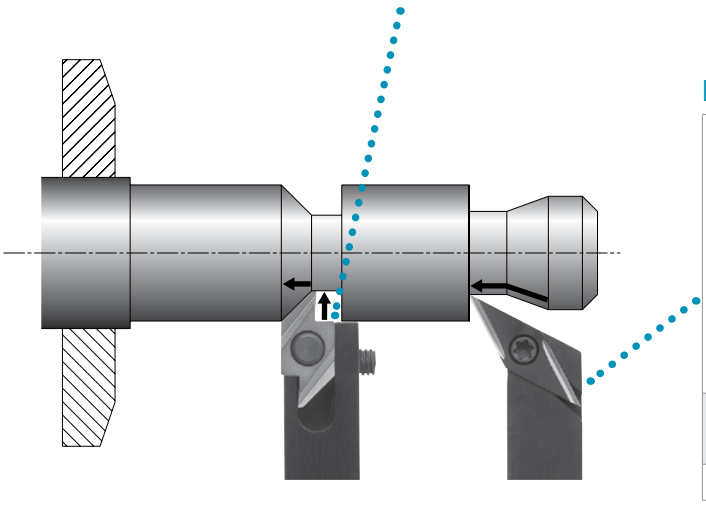




Tools installed on Gang Type Automatic Lathe

Back Turning

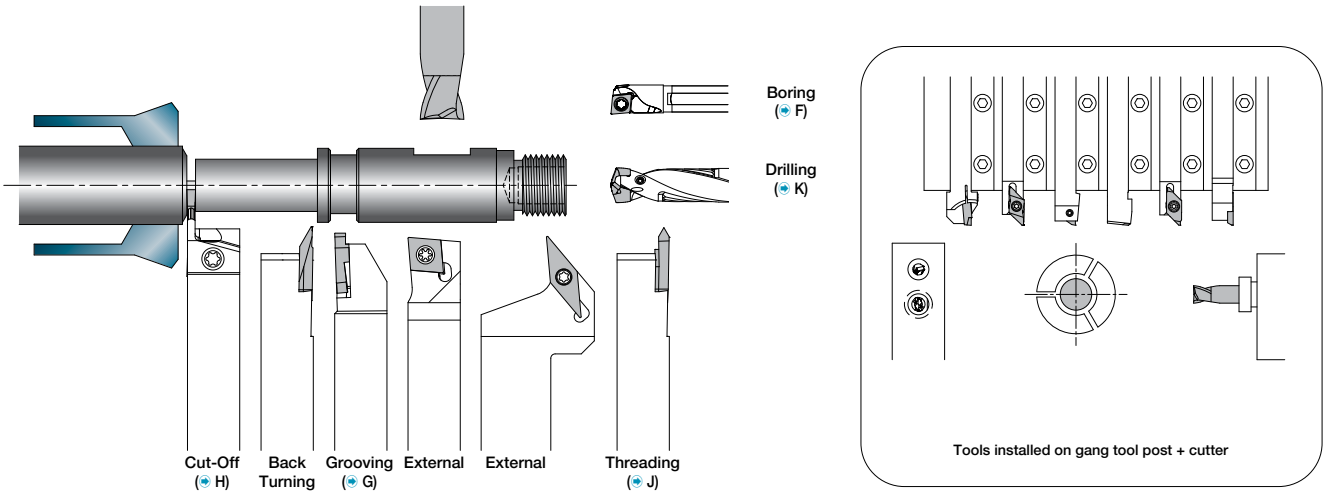
AABS-40F	SABS-40F	AABW-40F	SABW-40F	AABW-50F	SABW-50F	KTKF
						
Back Clamp Edge Width: 0.110" / 2.8mm D.O.C. ~0.158" / ~4.0mm	Screw Clamp Edge Width: 0.110" / 2.8mm D.O.C. ~0.158" / ~4.0mm	Back Clamp Edge Width: 0.185" / 4.7mm D.O.C. ~0.158" / ~4.0mm	Screw Clamp Edge Width: 0.185" / 4.7mm D.O.C. ~0.158" / ~4.0mm	Back Clamp Edge Width: 0.185" / 4.7mm D.O.C. ~0.197" / ~5.0mm	Screw Clamp Edge Width: 0.185" / 4.7mm D.O.C. ~0.197" / ~5.0mm	Screw Clamp Edge Width: 0.059"~0.150" / 1.5mm~3.8mm D.O.C. 0.071"~0.217" / 1.8mm~5.5mm
E19	E19	E20	E20	E21	E21	E12



External / Facing / Copying / Undercutting

SVPB	SVPP-FF
Screw Clamp	Screw Clamp (Without Offset)
E35	E40

Tooling Example ② - CNC Automatic Lathe (Gang Type)



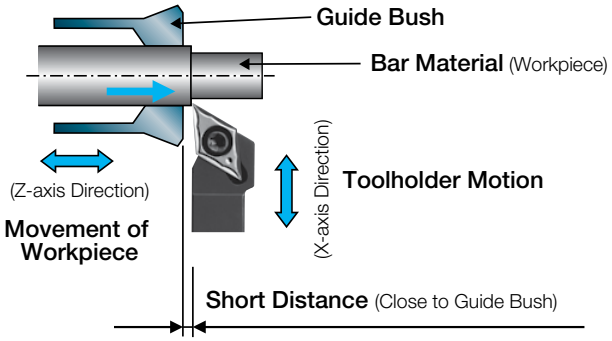
Goose-Neck Toolholder

for Swiss Tool Automatic Lathe (Gang Edge Tool Post)

Swiss Tool Automatic Lathe (Guide Bush System)

The Goose-neck Holder works with automatic lathes that do not move toolholders in longitudinal direction (Z-axis)

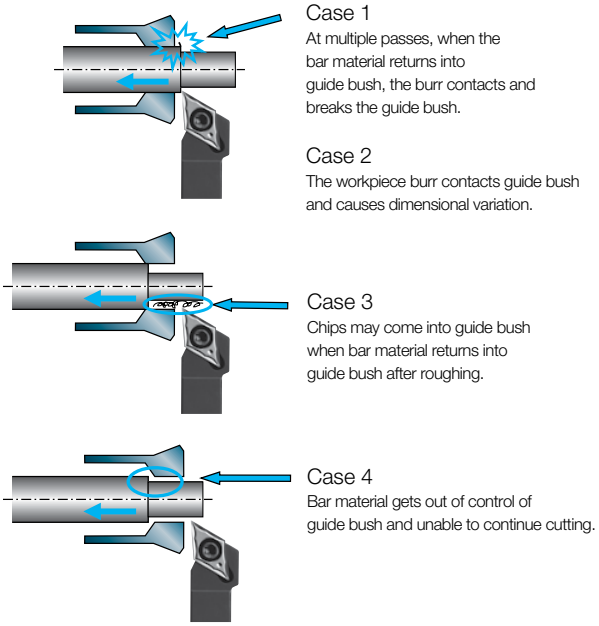
When Using a Conventional Toolholder



Tool position is fixed and workpiece moves longitudinally

Problems When Using a Conventional Toolholder

Problems When Machining with a Conventional Toolholder



Case 1
At multiple passes, when the bar material returns into guide bush, the burr contacts and breaks the guide bush.

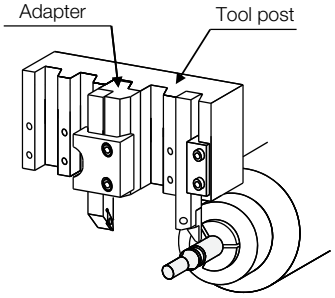
Case 2
The workpiece burr contacts guide bush and causes dimensional variation.

Case 3
Chips may come into guide bush when bar material returns into guide bush after roughing.

Case 4
Bar material gets out of control of guide bush and unable to continue cutting.

Toolholder Installation Problems When Using a Conventional Toolholder

1) Additional space is required for an adapter.
2) Toolholder's handling is difficult due to limited space.
3) It is necessary to buy an adapter.
4) An adapter may interfere with the next toolpost



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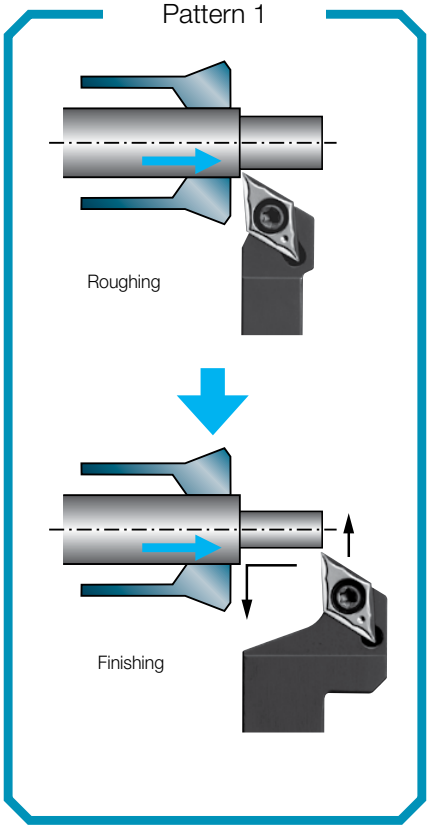
ADVANTAGES

of the Goose-Neck Holder

1) Additional finishing process improves machining precision
2) Chips do not enter guide bushing
3) Large chip evacuation space produces better chip control

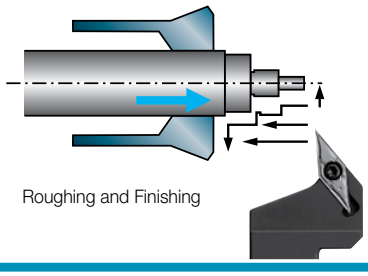
Available for machining after roughing without returning bar material into guide bushing, prevents damages and improves precision.

Pattern 1

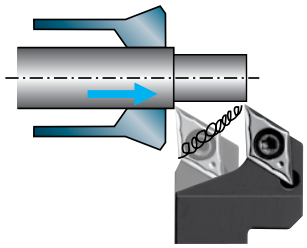


Available for machining from roughing to finishing with a single Goose-neck Holder.

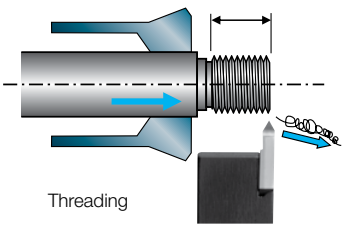
Pattern 2



For smooth chip control



Optimized location of the cutting edge makes enough space for smooth chip evacuation of long chipping materials

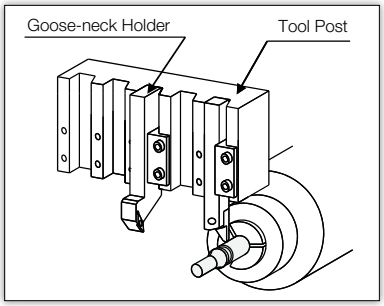


With conventional toolholders, chips can be entangled in guide bushing and damage workpiece

Advantages of Toolholder Installation

Using Goose-neck Holder

1) Maximum number of toolholders can be attached
2) No interference with next tool post

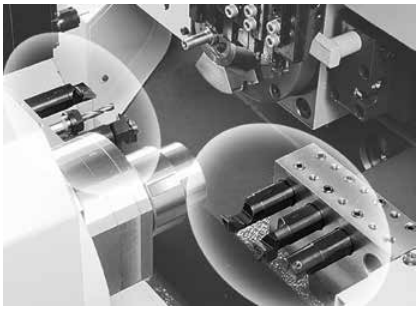


External Sleeve Holder

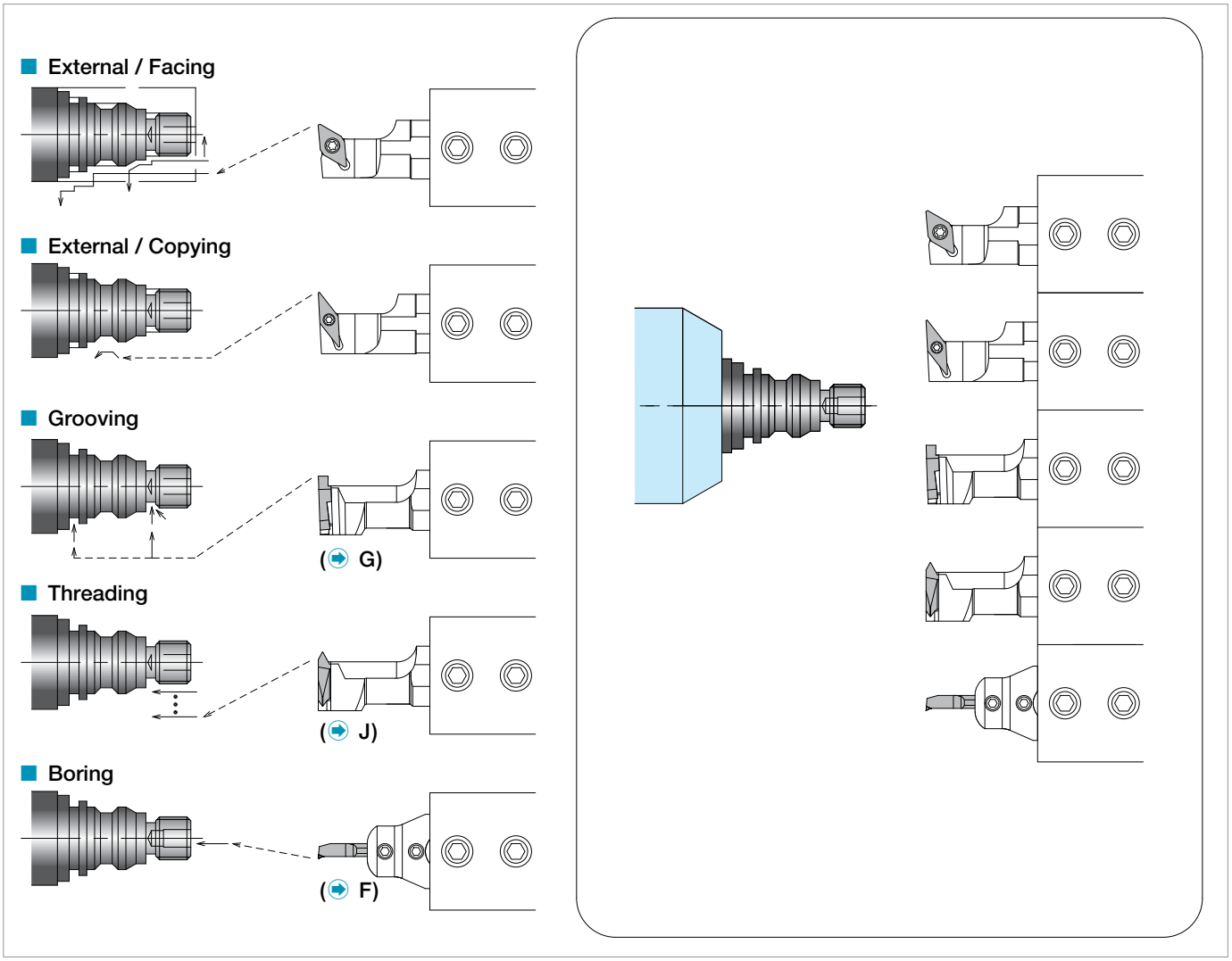
More Tools for CNC Automatic Lathe

Use External Sleeve Holders ➡➡➡ With Attachable Tools During Intricate Part Machining

S...SCLC	**S...SDUC**	**S...SDLC**	**S...SVUB(C)**
Screw Clamp Shank Dia. Ø0.625"~Ø1.000" Ø12.0mm~Ø25.4mm	Screw Clamp Shank Dia. Ø0.625"~Ø1.000" Ø14.0mm~Ø25.4mm	Screw Clamp Shank Dia. Ø0.625"~Ø1.000" Ø12.0mm~Ø25.4mm	Screw Clamp Shank Dia. Ø0.625"~Ø1.000" Ø12.0mm~Ø25.4mm
E41	E42	E42	E43



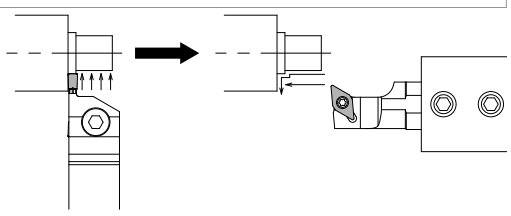
Tooling Example ③ - CNC Automatic Lathe (Opposed Gang Type)



See **Page** R66~R71 for Automatic Lathe List of Machine Manufacturer and Tooling Examples

Examples of Finishing with Sleeve Holder

1) Roughing by Grooving Toolholder
2) Finishing by Sleeve Holder Improves Chip Control and Reduces Cutting Time



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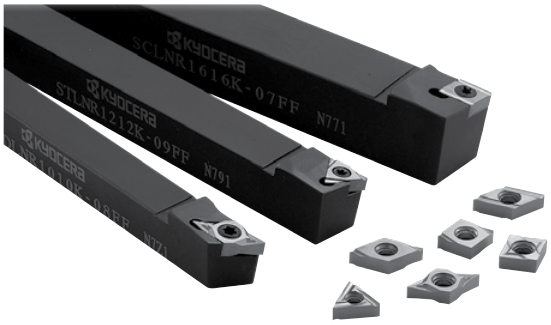
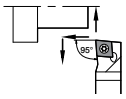
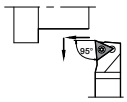
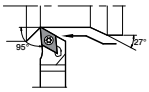
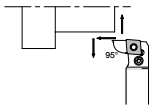
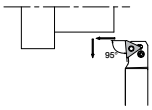
Double-Sided Swiss Tools (Screw Clamp)



Application	External / Facing	External / Up Facing	External / Copying
Cutting Edge Angle	95°	95°	95°
Screw Clamp (Without Offset)	 SCLN	 STLN	 SDLN
Ref. Page	E44	E45	E44

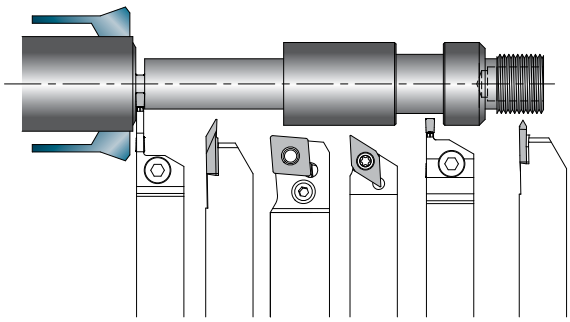
The double-sided design offers less cost per insert and more stability.
Sharp cutting performance equivalent to conventional positive inserts.

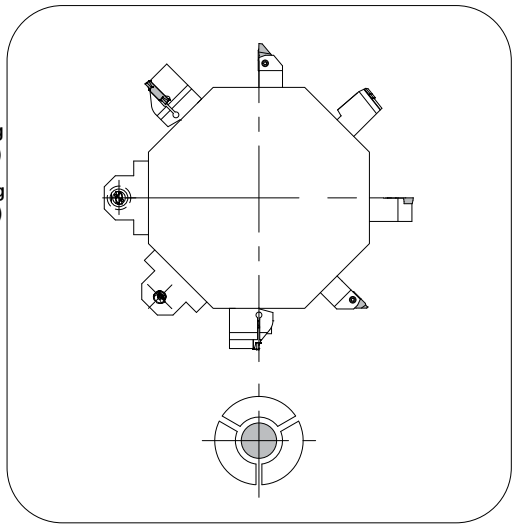
Double-Sided Toolholder for Automatic Lathe (Without Offset / Lever Lock)

Application	External / Facing	External / Up Facing
Cutting Edge Angle	95°	95°
Lever Lock (Without Offset)	 PCLN-FF	 PTLN-FF
Ref. Page	E46	E47

The Lever Lock type is available for small tools with external turning.

Double-Sided Toolholder for Automatic Lathe (Without Offset / Lever Lock)





See Page R66~R71 for Automatic Lathe List of Machine Manufacturer and Tooling Examples

Screw-Clamp-JCT

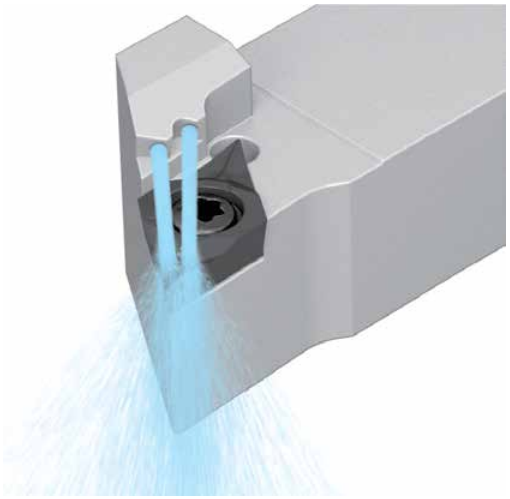
Coolant-Through Turning Holders for Small Parts Machining

Double Coolant Hole Design Delivers an Ample Supply of Coolant to the Cutting Edge
Excellent Chip Control and Longer Tool Life

1 Superior Chip Control Performance

2 Sufficient Cooling of the Cutting Edge Leads to Longer Tool Life

Double coolant hole design provides coolant to the insert cutting edge surface



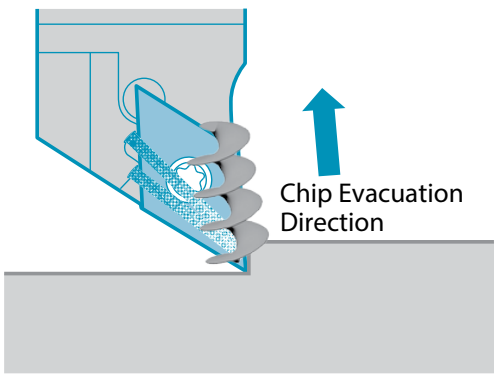
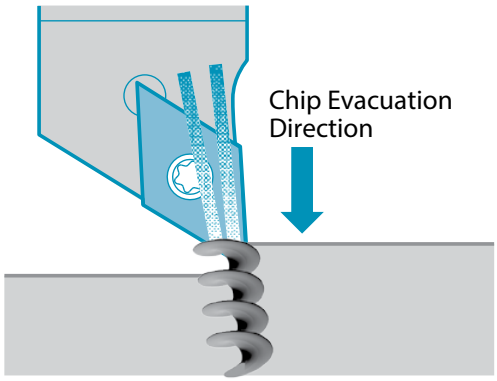
Double Coolant Holes

Provides stable chip curls for superior chip control

The cutting edge stays cool increasing tool life

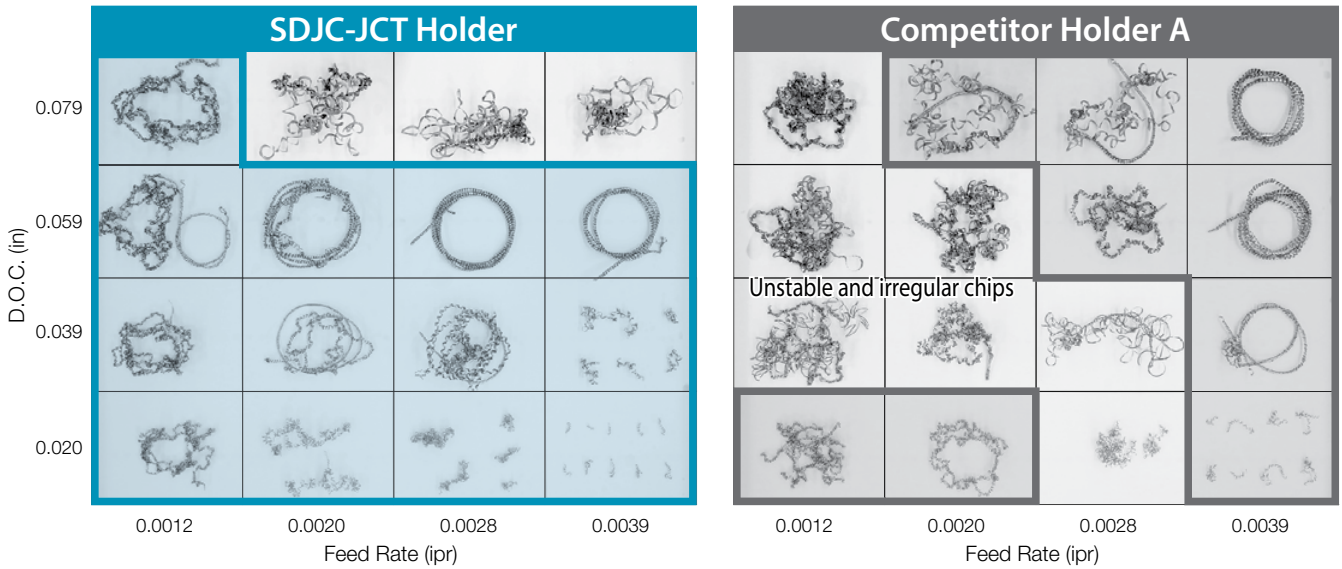
Insert cross-section

Coolant System Comparison (Internal Evaluation)

	Screw-Clamp-JCT Holder	Competitor A Holder
Coolant System	Discharges coolant towards the rake surface of insert 	Discharges coolant down onto the chip forcing the chip into the part 
Superior Chip Control	Excellent : Provides stable chip curls	Poor : Chip becomes unstable
Coolant Effects	Excellent : Ensures proper cooling of the cutting edge	Poor : Chip can cause interference with the workpiece

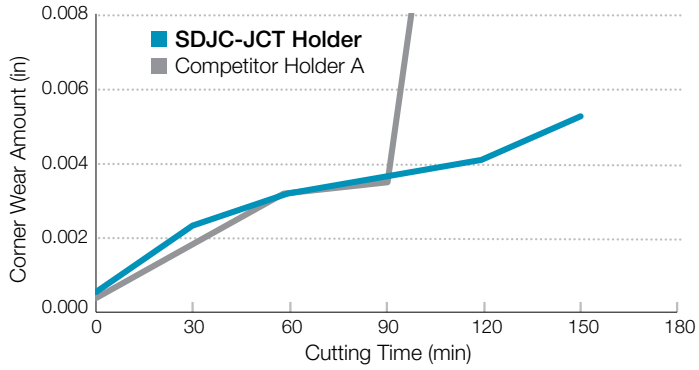
Chip Control Comparison (Internal Evaluation)

SDJC-JCT holder allows excellent chip control in a wide range of cutting conditions



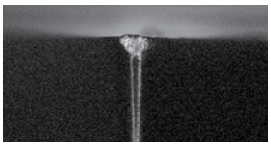
Cutting Conditions: Vc = 260 sfm, DCGT32505MP-CK PR1535 (Same inserts were used) Workpiece: Ti-6Al-4V External and Internal Coolant (218 psi) Turning

Great for High Pressure Coolant Wear Resistance Comparison (Internal Evaluation)

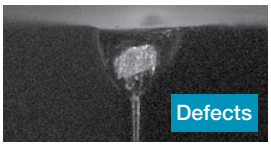


Cutting Edge

SDJC-JCT Holder (After Machining 150 min)



Competitor A Holder (After Machining 106 min)

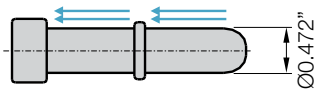


Cutting Conditions: Vc = 660 sfm, External Turning: D.O.C. = 0.079", f = 0.0020 ipr, Facing: D.O.C. = 0.008", f = 0.0012 ipr
DCGT32505MFP-GQ PR1535 (Same inserts were used) Workpiece: 304 External and Internal Coolant (218 psi)
External Turning and Facing

Case Studies

Pipe - Stainless Steel

Vc = 525 sfm
D.O.C. = 0.035" / 0.047"
f = 0.007 ipr
Wet (Internal Coolant: 14MPa)
DCMT3251 Insert



Chip Control

SDJC-JCT Holder (Internal Coolant)

Good Chip Control

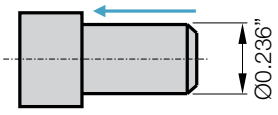
Competitor Holder B (Internal Coolant)

Change to SDJC-JCT improved chip control and tool life.

(User Evaluation)

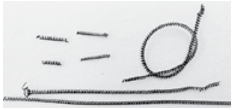
Pin - Tool Steel

Vc = 590 sfm
D.O.C. = 0.055"
f = 0.005 ipr
Wet
DCMT3251 Insert



Chip Control

SDJC-JCT Holder (Internal Coolant: 360 psi)



Good Chip Control

Conventional Holder (External Coolant)

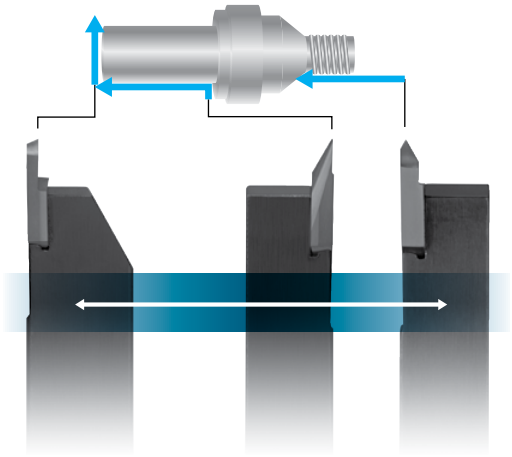
SDJC-JCT holder with internal coolant improved chip control.
Reduced chip entanglement

(User Evaluation)

Small Parts Machining

KTKF

E12



Back Turning

TKFB

E12

GQ Chipbreaker

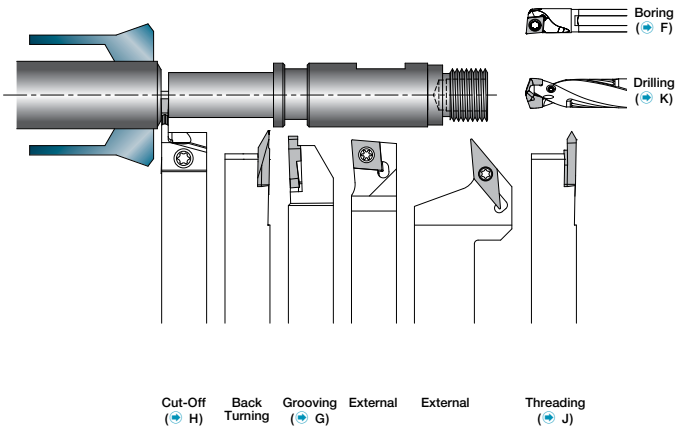
Double function chipbreaker
for improved chip control

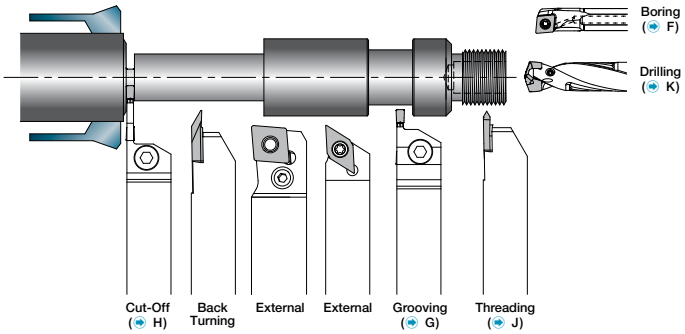
TKFB-GQ

NEW **PR1725**
Insert grade for Steel and Stainless

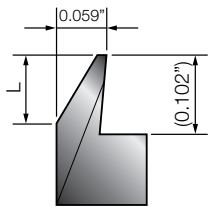
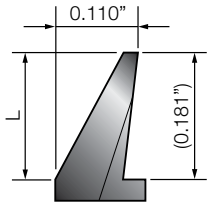
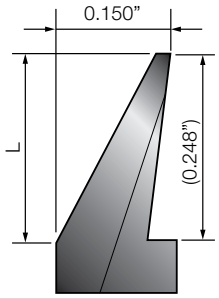
PR1535
Insert grade for Stainless and HRSA

Tooling Examples of KTKF Toolholders





Cutting Edge Shape

For Small D.O.C.		For General Purpose		For Large D.O.C.	
					
Part Number	Cutting Edge Length **L**	Part Number	Cutting Edge Length **L**	Part Number	Cutting Edge Length **L**
TKFB12R15..	0.083"	**TKFB12R28..**	0.165"	**TKFB16R38..**	0.228"
-	-	**TKFB12L28..**	0.173"	**TKFB16L38..**	0.244"
For small diameter workpieces or shorter lengths Minimum overhang length of toolholder, stable machining		For General Purpose Good Chip Control		Large D.O.C. Per Pass	

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Square / Rectangle Shank Identification System

Note: JCT-Series holders for small parts machining have rectangle shanks
See below for part number identification examples

Square Shank:
This number will represent the number of sixteenths of width and height.
Ex. 6/16 = 3/8" Square
Rectangle Shank:
the first digit represents the number of eighths of width and the second digit the number of quarters of height.
Ex. **Width** = 6/8 = 3/4"
Height = 2/4 = 1/2"

Number of 1/8ths on 1/4" I.C. and over.

Optional Code
Manufacturer Options
(**FF** : Without Offset)
(**JCT** : Jet Coolant-Through Series)

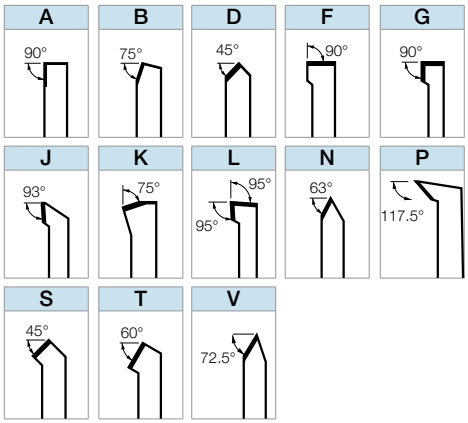
	Clamping System	Insert Shape	Hand of Tool	Shank Size	Insert Size I.C.	Others
ANSI (inch)	S	C	L	C	R	6 – 2	JX	FF	(JCT)
ISO (metric)	S	C	L	C	R	12	12	JX – 09	FF	(JCT)

Clamping System
A : Back Clamp
C : Top Clamp
P : Level Lock
S : Screw Clamp

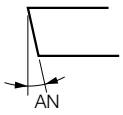
Insert Shape
C : 80° Rhombic
D : 55° Rhombic
S : 90° Square
T : 60° Triangle
V : 35° Rhombic

Hand of Tool
R : Right-Hand
L : Left-Hand
N : Neutral

Cutting Edge Angle



Insert Relief Angle

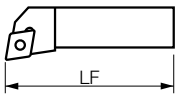


B : 5° Positive
C : 7° Positive
N : 0° Negative
P : 11° Positive

Shank Height
Shank Height (mm)

Shank Width
Shank Width (mm)

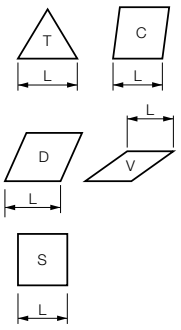
Toolholder Length



F : 80 (85)
H : 100

JX : 4.750" 120mm
K : 125mm
M : 150

Insert Size



• Some back turning toolholders have Kyocera's unique descriptions

External Sleeve Holder Identification System

	ANSI (in)	ISO (mm)		ANSI (in)	ISO (mm)
F:	3.00	80	Q:	7.00	180
G:	3.50	90	R:	8.00	200
H:	4.00	100	S:	10.00	250
J:	4.50	110	T:	12.00	300
K:	5.00	125	U:	14.00	350
L:	5.50	140	V:	16.00	400
M:	6.00	150	W:	18.00	450
N:	6.50	160	Y:	20.00	500
P:	6.75	170	X:	Special	

	Shank	Toolholder Length	Clamping System	Insert Shape	Hand of Tool	Shank Diameter	Cutting Edge Angle	Insert Relief Angle	Insert Size (mm)
ANSI (inch)	S	19	K –	S	C	L	C	L	09				
ISO (metric)	S	20	K –	S	C	L	C	L	09				

Shank
S : Steel

Toolholder Length
See table above

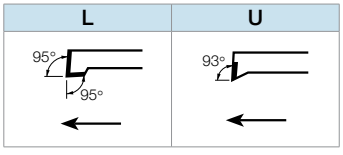
Clamping System
S : Screw Clamp

Insert Shape
C : 80° Rhombic
D : 55° Rhombic
V : 35° Rhombic

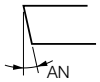
Hand of Tool
L : Left-Hand

Shank Diameter
ANSI
A two-digit number that indicates the shank diameter in 1/16" increments.
ISO
Shank diameter in mm

Cutting Edge Angle

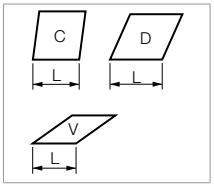


Insert Relief Angle



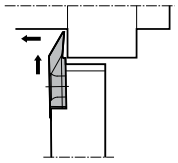
B : 5° Positive
C : 7° Positive

Insert Size (mm)



• The dimensions and specifications are subject to change for improvement without notice.
• Depending on the machine specifications such as attachment Dimensions, the symbol may not match the actual toolholder length.

KTKF / KTKF Goose-neck Holder



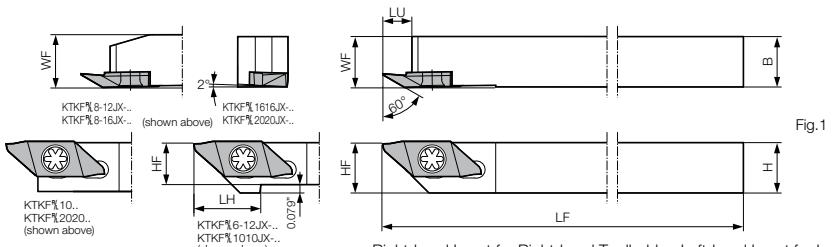
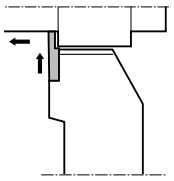


Fig.1

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder



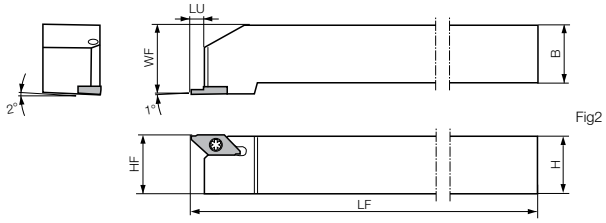
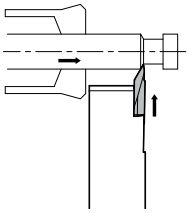


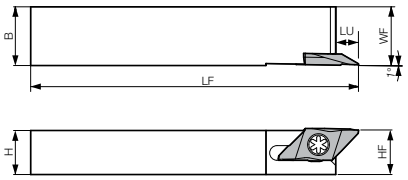
Fig2

• Right-hand shown

Right-hand Insert for Right-hand Toolholder



(Goose-neck Holder)



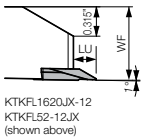


Fig.3

• Left-hand Shown

Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	LU	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
KTKF□	6-12JX	●	●	inch	0.375	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKFB12□… TKF12□…
	8-12JX	●	●		0.500	0.500	0.500	4.750	-	0.500	0.236				
	10-12JX	●	●		0.625	0.625	0.625	4.750	-	0.625	0.236				
KTKF□	6-16JX	●	●		0.375	0.375	0.375	4.750	0.787	0.375	0.315	Fig.1	SB-4590TRWN	LTW-10S	TKFB16□… TKF16□…
	8-16JX	●	●		0.500	0.500	0.500	4.750	-	0.500	0.315				
	10-16JX	●	●		0.625	0.625	0.625	4.750	-	0.625	0.315				
KTKF□	1010JX-12	●	●	mm	10	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKFB12□… TKF12□…
	1212JX-12	●	●		12	12	12	120	-	12	6				
	1616JX-12	●	●		16	16	16	120	-	16	6				
	2020JX-12	●	●		20	20	20	120	-	20	6				
KTKF□	1010JX-16	●	●		10	10	10	120	20	10	8	Fig.1	SB-4590TRWN	LTW-10S	TKFB16□… TKF16□…
	1212JX-16	●	●		12	12	12	120	-	12	8				
	1616JX-16	●	●		16	16	16	120	-	16	8				
	2020JX-16	●	●		20	20	20	120	-	20	8				
KTKFR	1212F-12	●			12	12	12	85	-	12	6	Fig.1	SB-4590TRWN	LTW-10S	TKFB12R… TKF12R…
	1212F-16	●			12	12	12	85	-	12	8				TKFB16R… TKF16R…
KTKFR	2525M-12	●			25	25	25	150	-	30	6	Fig.2	SB-4590TRWN	LTW-10S	TKFB12R… TKF12R…
NEW	2525M-16	●			25	25	25	150	-	30	8				TKFB16R… TKF16R…
KTKFL	52-12JX		●	inch	0.500	0.500	0.625	4.750	-	0.625	0.236	Fig.3	SB-4590TRWN	LTW-10S	TKFB12L… TKF12L…
	62.5-12JX		●		0.625	0.625	0.750	4.750	-	0.750	0.236				
KTKFL	1216JX-12		●	mm	12	12	16	120	-	16	6	Fig.3	SB-4590TRWN	LTW-10S	
	1620JX-12		●		16	16	20	120	-	20	6				

• Dimensions LU shows the distance from the toolholder to the cutting edge

Recommended Cutting Conditions ➡ **E52**

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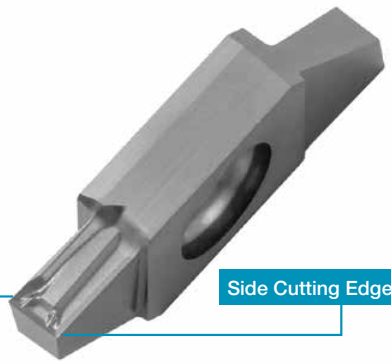
NEW ITEMS!

GTP Chipbreaker NEW

KTKF Insert for Small Parts Machining

Reduce Cycle Time with Grooving and Traversing Capabilities



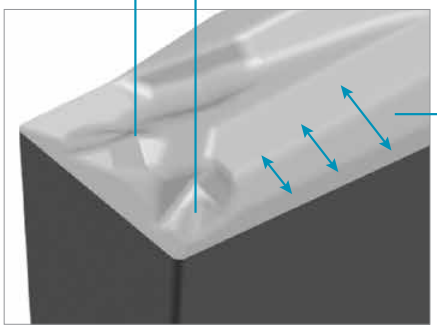
Dots for Grooving

Dots for Traversing

Dots utilized for each machining application
Maintains good chip control in small D.O.C.

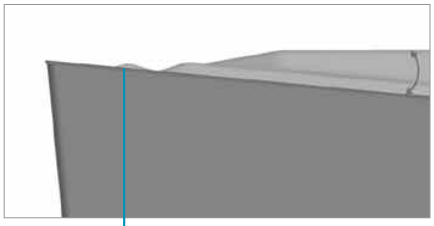
Side Cutting Edge (Back)

Side Cutting Edge (Front)



Chipbreaker Width

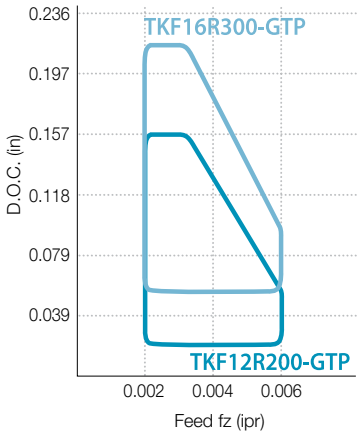
Width is optimized for depth of cut
Maintains good chip control for a wide range of machining applications



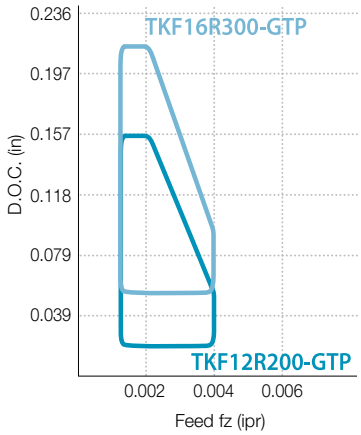
Sloped Cutting Edge

Sloped cutting edge reduces radial force
Great chattering resistance

Chipbreaker Range
(Steel)

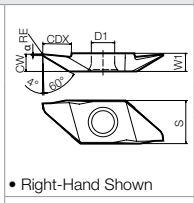
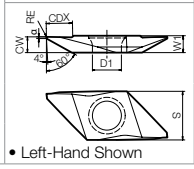


Chipbreaker Range
(Stainless Steel)



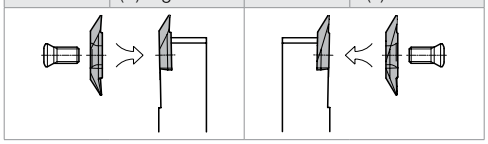
KTKF Applicable Back Turning Inserts B100-B101

TKFB

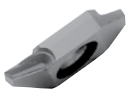
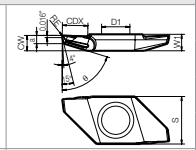
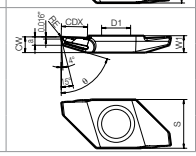
Insert (Photo Shows Right-Hand)	Part Number	Corner-R (RE) : mm (inch)
 • Right-Hand Shown  • Left-Hand Shown	TKFB 12R15005M	<0.05 (<0.002)
	12R28005M	<0.05 (<0.002)
	12R28010M	<0.10 (<0.004)
	TKFB 16R38005M	<0.05 (<0.002)
	16R38010M	<0.10 (<0.004)
	TKFB 12L28005MR	<0.05 (<0.002)
	12L28010MR	<0.10 (<0.004)
	TKFB 16L38005MR	<0.05 (<0.002)
	16L38010MR	<0.10 (<0.004)

Combination of Toolholders & Inserts (See Fig Below)

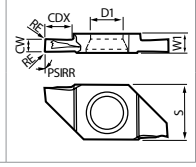
Toolholders	(R) Right-hand	Toolholders	(L) Left-hand
Inserts	(R) Right-hand	Inserts	(L) Left-hand



TKFB-GQ

Insert (Photo Shows Right-Hand)	Part Number	Corner-R (RE) : mm (inch)
 Polished 	TKFB 12R28005P-GQ	0.05 (<0.002)
	12R28015P-GQ	0.15 (<0.006)
	TKFB 16R38005P-GQ	0.05 (<0.002)
	16R38015P-GQ	0.15 (<0.006)
	TKFB 12R28005-GQ	0.05 (<0.002)
	12R28015-GQ	0.15 (<0.006)
	TKFB 16R38005-GQ	0.05 (<0.002)
	16R38015-GQ	0.15 (<0.006)

TKF-GTP

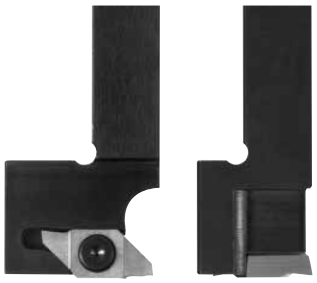
Insert (Photo Shows Right-Hand)	Part Number	Corner-R (RE) : mm (inch)
	TKF 12R200-GTP	0.08 (0.003)
	TKF 16R300-GTP	0.08 (0.003)

Recommended Cutting Conditions E52

Y-axis Toolholders NEW

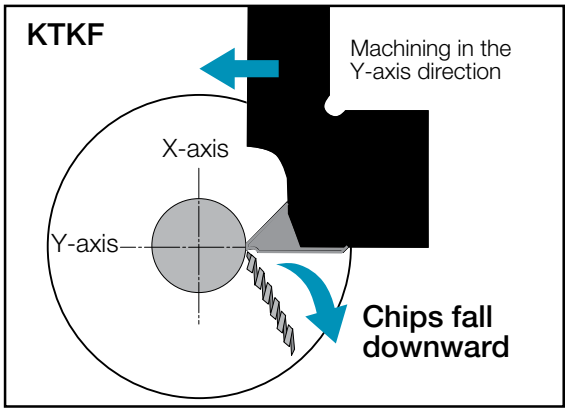
Improved Chip Control

New Toolholder Designs for Better Chip Evacuation in Small Parts Machining



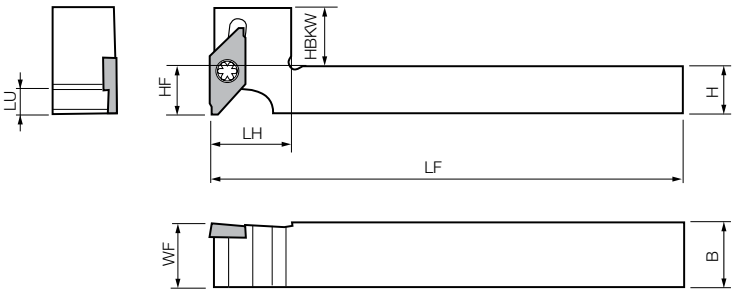
KTKFR-Y SDJCR-Y
E28

1 Controlled Chip Evacuation for Stable Machining



The Y-axis machining direction allows the chips to fall down and away from the workpiece, improving chip evacuation.

KTKF-Y (Y-axis Holder) NEW



• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock		Dimensions (mm)								Spare Parts		Applicable Inserts
												Clamp Screw	Wrench	
		R	L	H	HF	B	LF	LH	WF	LU	HBKW			
KTKFR	1216JX-12-Y	●		12	12	16	120	20	16	6	15	SB-4590TRWN	FT-10	TKFB12R...
	1616JX-12-Y	●		16	16	16		25	16		11			

• Dimensions LU shows the distance from the toolholder to the cutting edge

Recommended Cutting Conditions E52

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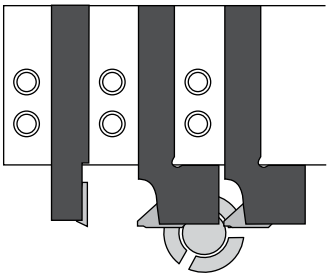
NEW ITEMS!

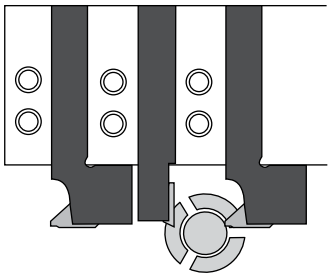
Precautions

Do not use Y-axis toolholders side-by-side to prevent interference (Only two Y-axis holders can be used at the same time)

Interference

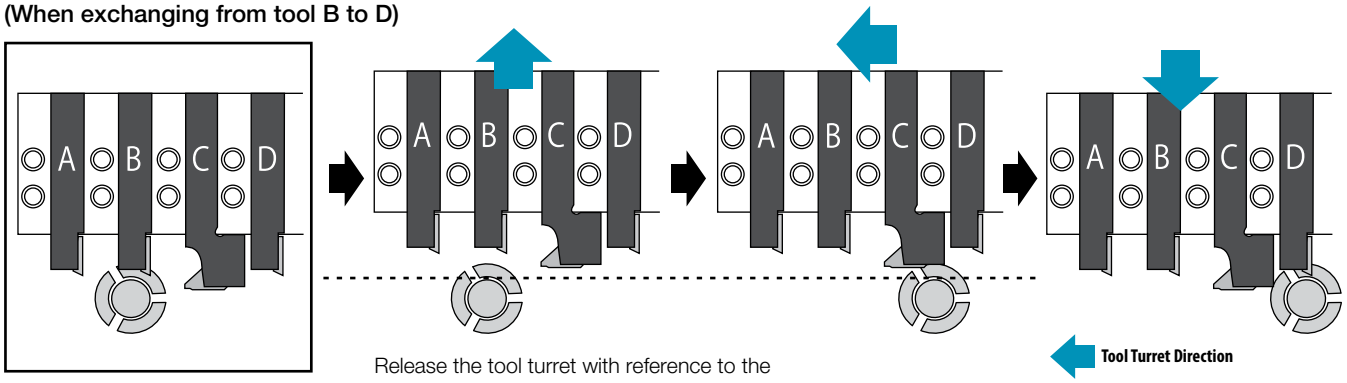


Without Interference



Standard toolholders may be mounted between two Y-axis toolholders

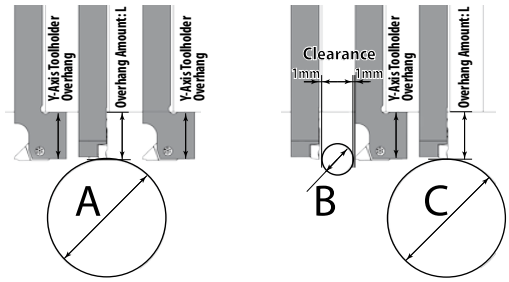
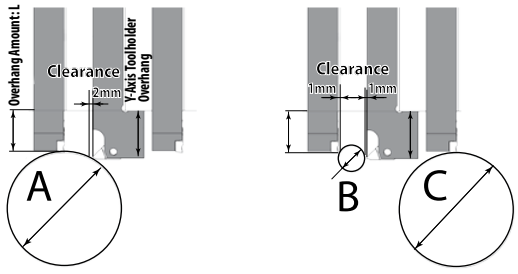
When changing the tool, set the retracted position with reference to the cutting edge of the Y-axis holder (When exchanging from tool B to D)



Release the tool turret with reference to the overhang amount of the Y-axis toolholder

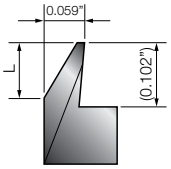
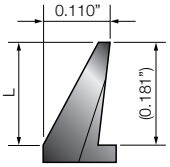
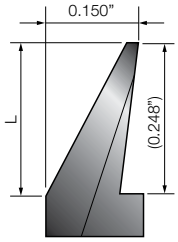
Note that using other toolholder styles together will result in different outside diameters

(Unit: mm)

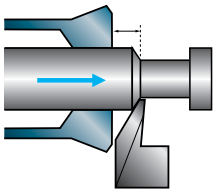
Y-axis Toolholder Overhang	Examples	Overhang Amount : L / Available Outside Cutting Dia. (Ø)	20	22	25
20		A	Without Restriction	Without Restriction	Without Restriction
		B	13.0	13.0	13.0
		C	Without Restriction	Without Restriction	Without Restriction
25		A	38.0	58.0	Without Restriction
		B	14.9	13.6	13.0
		C	45.0	60.0	Without Restriction

Edge Tips Details and Selection Guide

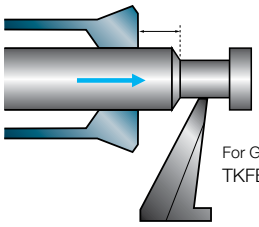
Cutting Edge Shape

For Small D.O.C.		For General Purpose		For Large D.O.C.	
					
Part Number	Cutting Edge Length **L**	Part Number	Cutting Edge Length **L**	Part Number	Cutting Edge Length **L**
TKFB12R15..	0.083"	**TKFB12R28..**	0.165"	**TKFB16R38..**	0.228"
-	-	**TKFB12L28..**	0.173"	**TKFB16L38..**	0.244"
For small diameter workpieces or short length Minimum overhang length of toolholder, stable machining		For general purpose Good chip control		D.O.C. per pass is large.	

How to Select



For Small D.O.C.
TKFB12R15..

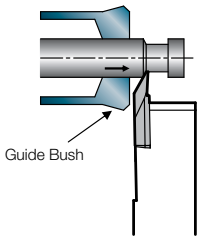
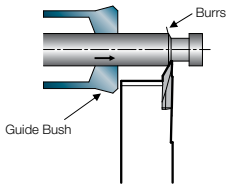


For General Purpose
TKFB12R28..

In case D.O.C. is same, if insert with narrower edge width is used, overhang length from guide bushing is shorter, which enables better stability due to less workpiece vibration.

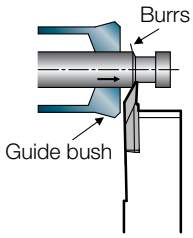
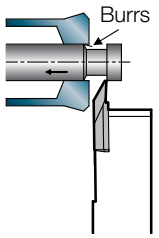
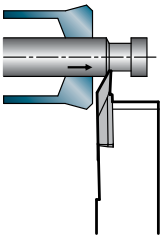
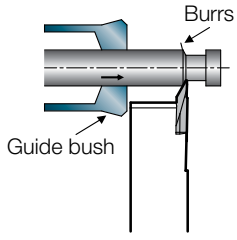
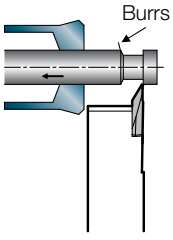
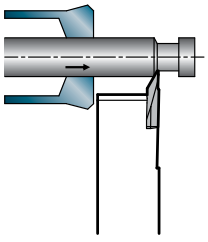
➡High Precision Cutting

Choosing Hand of Back Turning Toolholder

(R) Right-hand		Cutting close to guide bushing is possible Since TKFB12R15005M has a narrow cutting edge (width=0.059"), cutting close to guide bushing is possible ➡Good for small parts and high precision cutting
(L) Left-hand	Even if burrs occur, they will not return into the guide bush. 	Cutting with distance from guide bushing Good chip control due to large space between the guide bushing and the tool. ➡How to improve chip control for roughing to finishing In case of using a left-hand toolholder in finishing, the burred portions of workpiece do not return into the guide bushing, which enables stability of external diameter. Also, a Left-hand toolholder prevents wear of guide bushing due to chip biting.

Workpiece Material Motion & How to Select Hand of Tool

When Roughing, Medium, & Finishing

	Roughing	Workpiece position after roughing	Finishing
(R) Right-hand			
(L) Left-hand			

※Good dimensional accuracy: If a Left-hand toolholder is used, burrs on workpiece generated during roughing do not damage the guide bushing during finishing.

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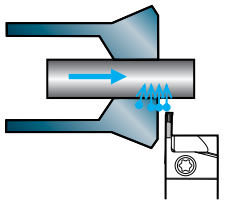
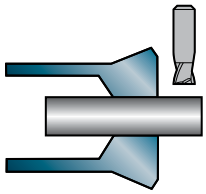
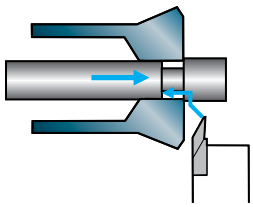
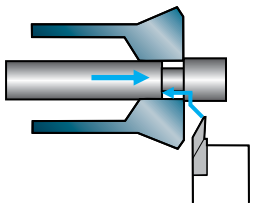
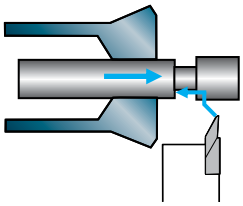
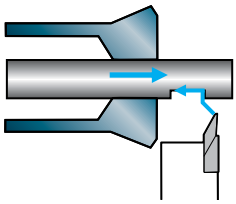
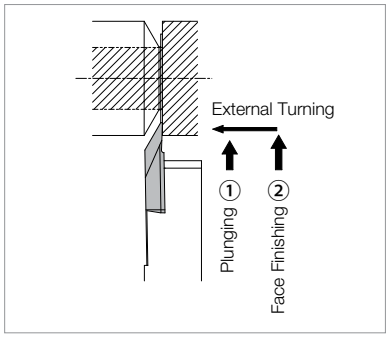
Chip Control Improvement During Back Turning

	① Chip control improvement by tool pass changes	② Chip control improvement by tool pass changes
Roughing / Pre-Stage Machining	● Roughing (1) GMM2420-020MW (Grooving) 	● Pre-stage Machining is Processed with Solid End Mill (1) 2FESW040-040-04 (Solid End Mill) 
Finishing (Countermeasure 1) Use Right-Hand Toolholder	(1) When Using TKFB12R28010M (Back Turning / Righ-hand)  **Advantages :** Smooth Surface Finish **Disadvantages :** If machining pass is long, the guide bushing can not support the workiece	(1) When Using TKFB12R28010M (Back Turning / Righ-hand)  **Advantages :** 1. Minimal deflection during long machining passes 2. Chips are broken into small pieces, though the workpiece material is elastic. **Disadvantages :** The pre-stage machining may cause fractures, because of interruption
Finishing (Countermeasure 2) Use Left-Hand Toolholder	(2) When Using TKFB12L28010M (Back Turning / Left-hand)  **Advantages :** 1. Smooth Surface Finish 2. High precision cutting if the machined portion does not contact the guide bushing **Disadvantages :** If machining pass is long, the guide bushing can not support the workiece	(2) When Using TKFB12L28010M (Back Turning / Left-hand)  **Advantages :** 1. Minimal deflection during long machining passes 2. Chips are broken into small pieces, though the workpiece material is elastic 3. High precision cutting if the machined portion does not contact the guide bushing **Disadvantages :** The pre-stage machining may cause fractures, because of interruption

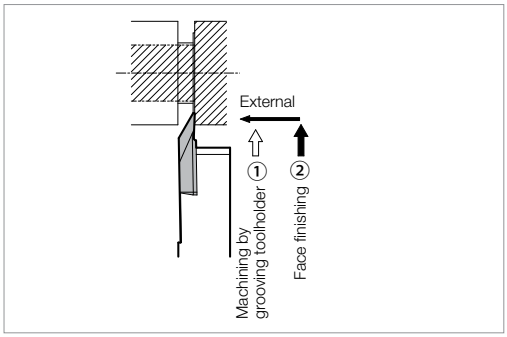
Peeled Surface Countermeasures During Face Back Turning

When peeled surface occurs on the workpiece face, please apply the countermeasures below.

● **Countermeasure 1** (Face Finishing)

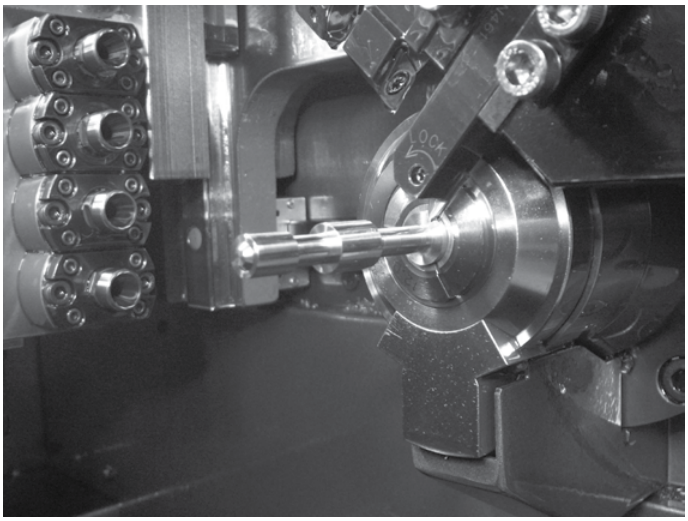


● **Countermeasure 2** (Face Finishing After Grooving)



TKF PCD Inserts for Non-Ferrous

The KTKF toolholder can be used as multi-functional tooling for non-ferrous and non-metal when combined with a TKF-AGT and TKF-AS insert. (See Fig. 1)



Example of Spool Cutting

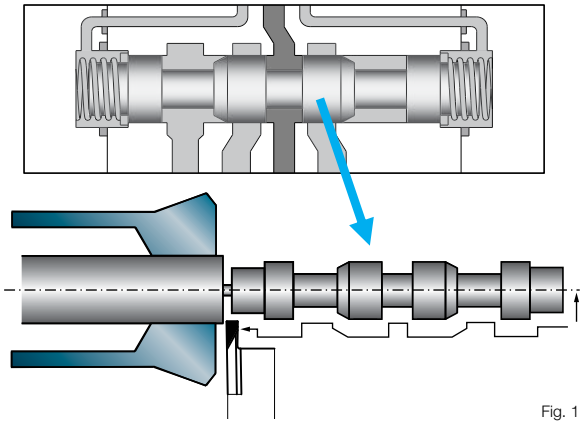
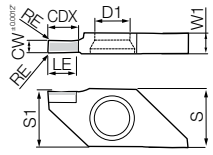
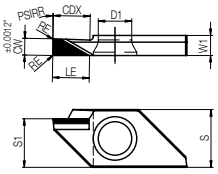
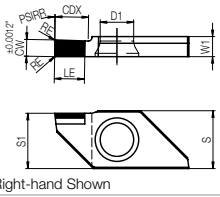


Fig. 1

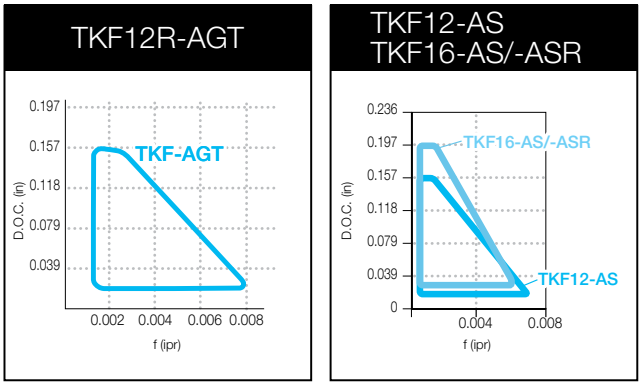
Example of the pass of KTKF toolholder + TKF-AS insert

Applicable Inserts C32

Inserts (Photo Shows Right-hand)		Part Number	
NEW Traversing / Grooving	 • Right-hand Shown	TKF12R	200-AGT
			250-AGT
Traversing / Grooving	 • Right-hand Shown	TKF12R/L	200-AS
		TKF16R/L	250-AS
Grooving Inserts (Traversing possible)	 • Right-hand Shown	TKF12R/L	150-NB
			200-NB
			250-NB
			250-NB4.5

Applicable Toolholder E12, E14
Recommended Cutting Conditions E52

Applicable Range



- TKF PCD inserts are only for turning and grooving
- Cut-off is not recommended

Insert Identification System

TKF	12	R	200	-	AS
TKF	12	L	200	-	AS

- TKF: Insert Type
- 12: Insert Size
- 200: Width (Edge Width)
- R / L: Insert Hand (R : Right-hand, L : Left-hand)
- AS / NB: Name of Chipbreaker (AS : AS Chipbreaker, NB : Without Chipbreaker)

Note 1) When using TKF-AS insert with KTKF toolholder, the edge position is 1.0mm below the center. (See **Fig.2**) Please adjust the edge height at the parameter of the NC lathe or using soleplates.

2) When the edge height can not be adjusted, please use TKF-AGT or TKF-NB insert. (**Fig.3**)

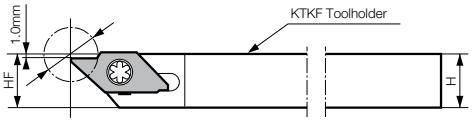


Fig.2 When TKF-AS/-ASR installed (the edge position: 1.0mm below the center)

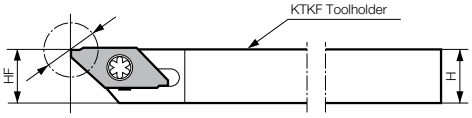


Fig.3 When TKF-NB / TKF-AGT installed

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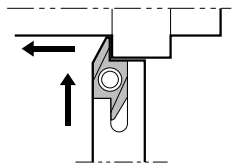
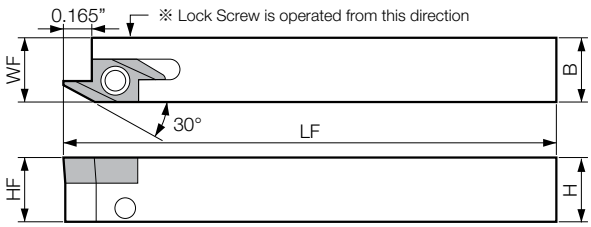
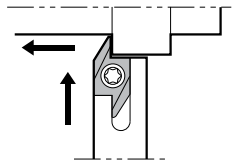
AABS Back Clamp (Edge Width: 0.110" • Depth 0.158" MAX)

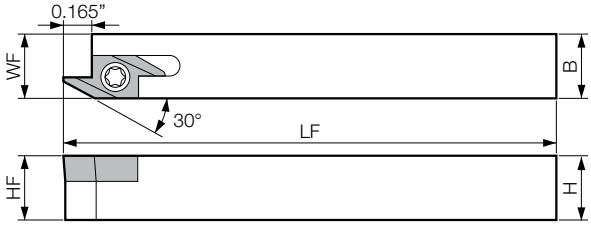




• Right-hand Shown

SABS Screw Clamp (Edge Width: 0.110" • Depth 0.158" MAX)



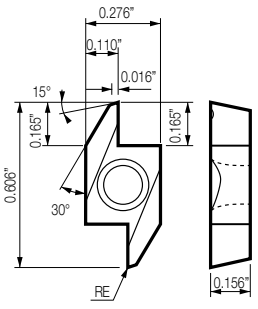


• Right-hand Shown

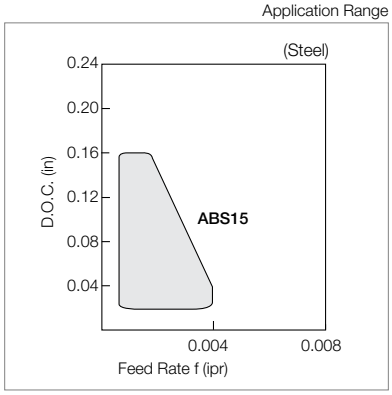
Toolholder Dimensions

Part Number		Stock	Unit	Dimensions H	HF	B	LF	WF	Standard Corner-R (RE)	Spare Parts: Anchor Pin	Lock Screw	Clamp Screw	Wrench
AABSR	6-15JXF	●	inch	0.375	0.375	0.375	4.750	0.383	0.006	LPA-11	HSB4X8R	-	FH-2
	8-15JXF	●		0.500	0.500	0.500	4.750	0.508	0.006	LPA-13			
	10-15JXF	●		0.625	0.625	0.625	4.750	0.633	0.006	LPA-17			
AABSR	1010JX-40F	●	mm	10	10	10	120	10.2	0.15	LPA-11	HSB4X8R	-	FH-2
	1212JX-40F	●		12	12	12	120	12.2	0.15	LPA-13			
	1616JX-40F	●		16	16	16	120	16.2	0.15	LPA-17			
SABSR	6-15JXF	●	inch	0.375	0.375	0.375	4.750	0.383	0.006	-	-	SB-3080TR	FT-10
	8-15JXF	●		0.500	0.500	0.500	4.750	0.508					
	10-15JXF	●		0.625	0.625	0.625	4.750	0.633					
SABSR	1010JX-40F	●	mm	10	10	10	120	10.2	0.15	-	-	SB-3080TR	FT-10
	1212JX-40F	●		12	12	12	120	12.2					
	1616JX-40F	●		16	16	16	120	16.2					
SABSR	1212F-40F	●		12	12	12	85	12.2	0.15	-	-	SB-3080TR	FT-10
	2020K-40F	●		20	20	20	125	20.2					

Applicable Inserts

Insert		Part Number	Corner-R (RE) : mm (inch)	Reference Page
		ABS 15R4005	0.05 (0.002)	➔ B102
		15R4015	0.15 (0.006)	
		ABS 15R4005M	<0.05 (<0.002)	
		15R4015M	<0.15 (<0.006)	

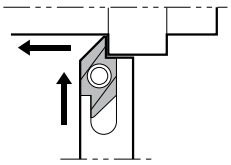
Application Range

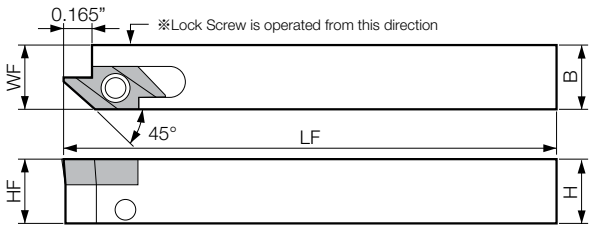


Recommended Cutting Conditions ➔ **E52**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

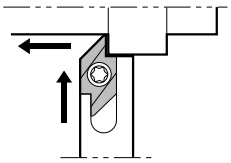
AABW Back Clamp (Edge Width: 0.185" • Depth 0.158" MAX)

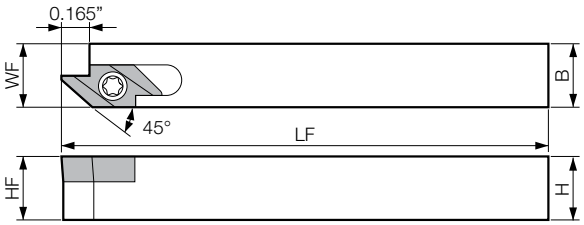




• Right-hand Shown

SABW Screw Clamp (Edge Width: 0.185" • Depth 0.158" MAX)



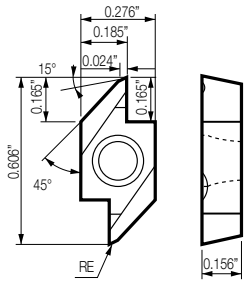


• Right-hand Shown

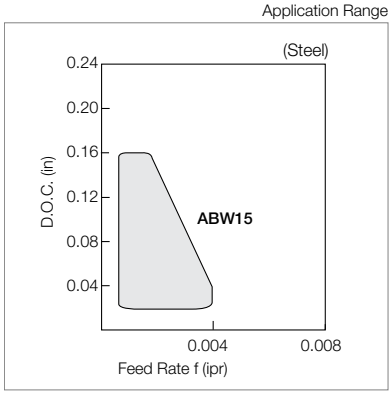
Toolholder Dimensions

Part Number	Stock	Unit	Dimensions					Standard Corner-R (RE)	Spare Parts			
			H	HF	B	LF	WF		Anchor Pin	Lock Screw	Clamp Screw	Wrench
AABWR 6-15JXF	●	inch	0.375	0.375	0.375	4.750	0.383	0.006	LPA-11	HSB4X8R	-	FH-2
8-15JXF	●		0.500	0.500	0.500	4.750	0.508	0.006	LPA-13			
10-15JXF	●		0.625	0.625	0.625	4.750	0.633	0.006	LPA-17			
AABWR 1010JX-40F	●	mm	10	10	10	120	10.2	0.15	LPA-11	HSB4X8R	-	FH-2
1212JX-40F	●		12	12	12	120	12.2	0.15	LPA-13			
1616JX-40F	●		16	16	16	120	16.2	0.15	LPA-17			
SABWR 6-15JXF	●	inch	0.375	0.375	0.375	4.750	0.383	0.006	-	-	SB-3080TR	FT-10
8-15JXF	●		0.500	0.500	0.500	4.750	0.508					
10-15JXF	●		0.625	0.625	0.625	4.750	0.633					
SABWR 1010JX-40F	●	mm	10	10	10	120	10.2	0.15	-	-	SB-3080TR	FT-10
1212JX-40F	●		12	12	12	120	12.2					
1616JX-40F	●		16	16	16	120	16.2					
SABWR 2020K-40F	●		20	20	20	125	20.2	0.15	-	-	SB-3080TR	FT-10

Applicable Inserts

Insert		Part Number	Corner-R (RE) : mm (inch)	Reference Page
		**ABW 15R4005**	0.05 (0.002)	**B102**
		15R4015	0.15 (0.006)	
		ABW 15R4005M	<0.05 (<0.002)	
		15R4015M	<0.15 (<0.006)	

Application Range

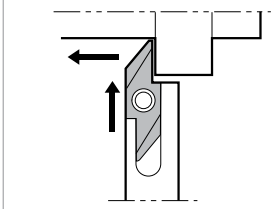


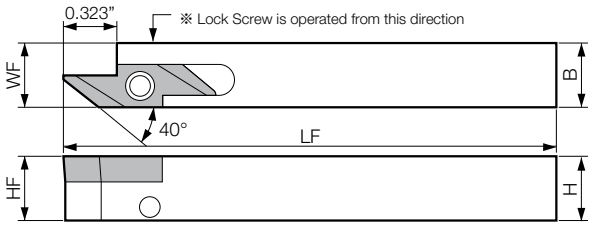
Recommended Cutting Conditions **E52**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

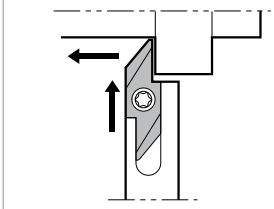
AABW Back Clamp (Edge Width: 0.185" • Depth 0.197" MAX)

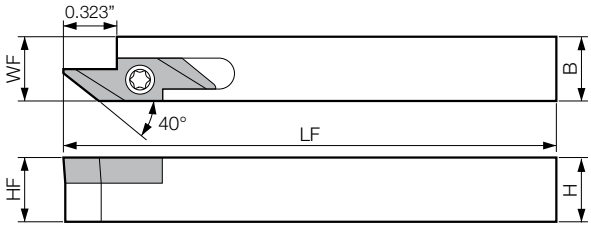




• Right-hand Shown

SABW Screw Clamp (Edge Width: 0.185" • Depth 0.197" MAX)



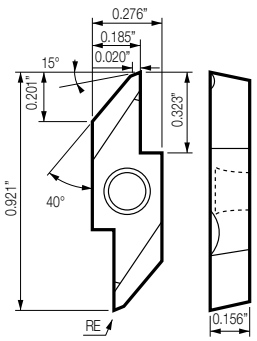


• Right-hand Shown

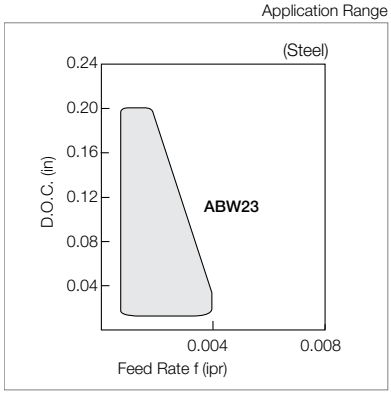
Toolholder Dimensions

Part Number	Stock	Unit	Dimensions H	HF	B	LF	WF	Standard Corner-R (RE)	Spare Parts: Anchor Pin	Lock Screw	Clamp Screw	Wrench
AABWR 6-23JXF	●	inch	0.375	0.375	0.375	4.750	0.383	0.006	LPA-11	HSB4X8R	-	FH-2
8-23JXF	●		0.500	0.500	0.500	4.750	0.508	0.006	LPA-13			
10-23JXF	●		0.625	0.625	0.625	4.750	0.633	0.006	LPA-17			
AABWR 1010JX-50F	●	mm	10	10	10	120	10.2	0.15	LPA-11	HSB4X8R	-	FH-2
1212JX-50F	●		12	12	12	120	12.2	0.15	LPA-13			
1616JX-50F	●		16	16	16	120	16.2	0.15	LPA-17			
SABWR 6-23JXF	●	inch	0.375	0.375	0.375	4.750	0.383	0.006	-	-	SB-3080TR	FT-10
8-23JXF	●		0.500	0.500	0.500	4.750	0.508					
10-23JXF	●		0.625	0.625	0.625	4.750	0.633					
SABWR 1010JX-50F	●	mm	10	10	10	120	10.2	0.15	-	-	SB-3080TR	FT-10
1212JX-50F	●		12	12	12	120	12.2					
1616JX-50F	●		16	16	16	120	16.2					
SABWR 2020K-50F	●		20	20	20	125	20.2	0.15	-	-	SB-3080TR	FT-10

Applicable Inserts

Insert	Part Number	Corner-R (RE) : mm (inch)	Reference Page
	**ABW 23R5005**	0.05 (0.002)	➡ **B102**
	23R5015	0.15 (0.006)	
	ABW 23R5005M	<0.05 (<0.002)	
	23R5015M	<0.15 (<0.006)	

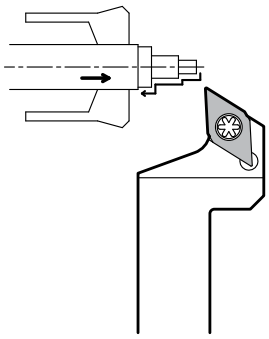
Application Range

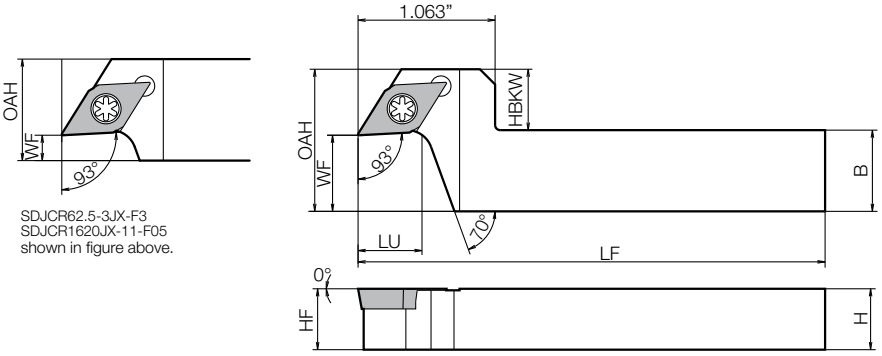


Recommended Cutting Conditions ➡ **E52**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

SDJC (External / Copying)





SDJCR62.5-3JX-F3
SDJCR1620JX-11-F05
shown in figure above.

• Right-hand Shown

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions								Standard Corner-R (RE)	Spare Parts	
			H	HF	B	LF	LU	OAH	HBKW	WF		Clamp Screw	Wrench
SDJCR 52-3JX-F3	●	inch	0.500	0.500	0.625	4.750	0.488	0.687	0.062	0.187	0.008	SB-4085TR	FT-15
52-3JX-F9	●		0.500	0.500	0.625	4.750	0.488	1.125	0.500	0.562			
62.5-3JX-F3	●		0.625	0.625	0.750	4.750	0.488	0.750	-	0.187			
62.5-3JX-F9	●		0.625	0.625	0.750	4.750	0.488	1.125	0.375	0.562			
SDJCR 1216JX-11-F05	●	mm	12	12	16	120	12.6	18	2	5	0.2	SB-4085TR	FT-15
1216JX-11-F15	●		12	12	16	120	12.6	28	12	15			
1620JX-11-F05	●		16	16	20	120	12.6	20	-	5			
1620JX-11-F15	●		16	16	20	120	12.6	28	8	15			

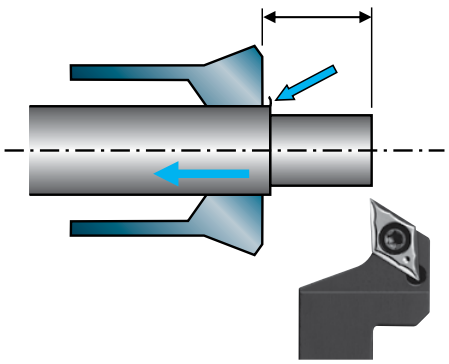
Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B62	B62	B62	B62	B63	B63	B64	B63	B67	B66	B68, B69	B68
Insert / Toolholder	**CF**	**GF**	**SKS**	**SK**	**WP** (Wiper)	**PP**	**GK**	**GQ**	**R-F**	**R-FSF**	**(E/F) R-U**	**FR-USF**
SDJCR..-3JX-F.. SDJCR..-11-F..	DCGT325..	DCGT325..	DCGT325..	DCGT325..	DCMX325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..
Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
Ref. Page	B70, B71	B70	B65	B65	B65	B71	B71	B71	C25	C25	C15	
Insert / Toolholder	**(E/F)R-J**	**FR-JSF**	**XP**	**XQ**	**MQ**	No Chipbreaker	**AH**	**R-A3**	**PCD**	**APD**	**CBN**	
SDJCR..-3JX-F.. SDJCR..-11-F..	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCMW325..	

When using **WP** chipbreaker, program corrections are required. ➡ **R51**

Recommended Cutting Conditions ➡ **E51**

Goose-neck Designed for Multiple Passes, Both Roughing & Finishing!

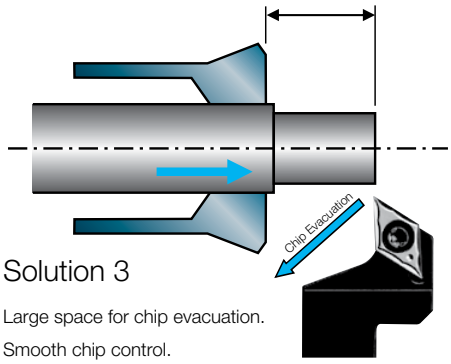


Solution 1

No breakage will occur because the burrs do not contact the guide bushing.

Solution 2

Longitudinal dimensions will be stable. External diameter will be stable by multiple pass machining (roughing and finishing).



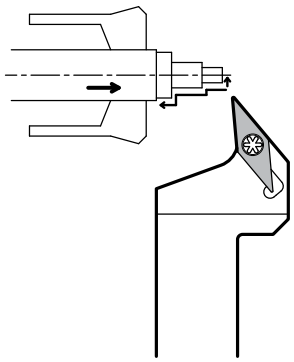
Solution 3

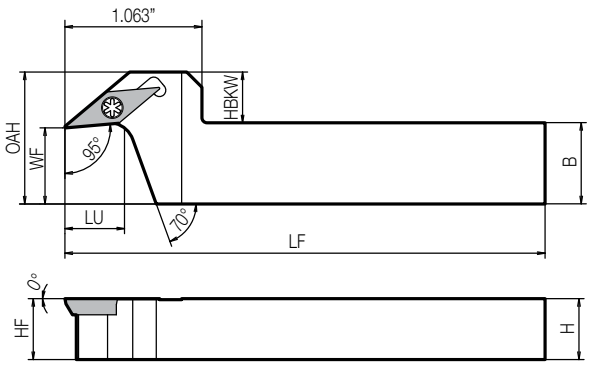
Large space for chip evacuation. Smooth chip control.

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

SVLP (External / Copying)





• Right-hand Shown

Toolholder Dimensions

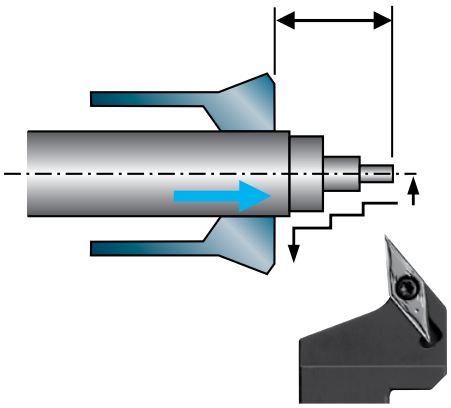
Part Number		Stock	Unit	Dimensions								Standard Corner-R (RE)	Spare Parts	
				H	HF	B	LF	LU	OAH	HBKW	WF		Clamp Screw	Wrench
SVLPR	**52-2JX-F9**	●	inch	0.500	0.500	0.625	4.750	0.472	1.000	0.375	0.562	0.008	SB-2570TR	FT-15
	62.5-2JX-F9	●		0.625	0.625	0.750	4.750	0.472	1.000	0.250	0.562			
SVLPR	**1216JX-11-F15**	●	mm	12	12	16	120	12	26	10	15	0.2	SB-2570TR	FT-8
	1620JX-11-F15	●		16	16	20	120	12	26	6	15			

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B94	B94	B94	B95	B96	B96
Insert / Toolholder	**CF**	**CK**	**GF**	**R-FSF**	**FR-U**	**FR-USF**
SVLPR..-2JX-F.. **SVLPR..-11-F..**	VPGT22..	VPGT22..	VPGT22..	VPET22..	VPET22..	VPET22..

Recommended Cutting Conditions **E51**

One Toolholder for Complex Workpieces

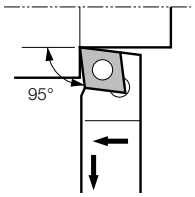


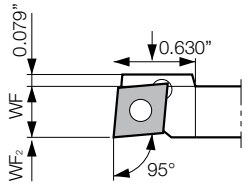
Toolholder for VP type inserts.

Complex workpieces can be processed with one toolholder.

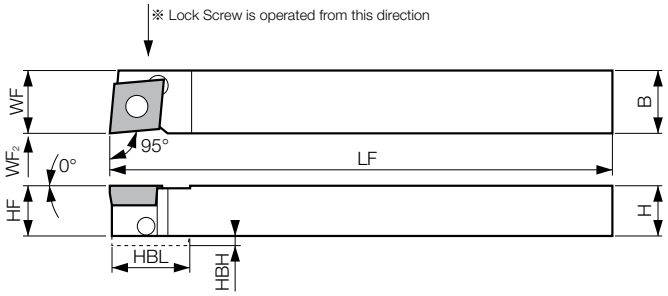
It is available for undercutting and external/face finishing.

ACLC-FF (Without Offset • External / Facing)





ACLC□6-3JXFF
ACLC□1010JX-06FF
shown above



• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	HBL	WF	WF_2	Standard Corner-R (RE)	Spare Parts: Anchor Pin	Lock Screw	Wrench
ACLC□	6-2JXFF	●	●	inch	0.375	0.375	-	0.375	4.750	-	0.375	0	0.008	LPF-11	HSB4X8□	FH-2
	6-3JXFF	●	●		0.375	0.375	0.097	0.375	4.750	0.630	0.375	0	0.008	LPF-13		
	8-3JXFF	●	●		0.500	0.500	-	0.500	4.750	-	0.500	0				
	10-3JXFF	●	●		0.625	0.625	-	0.625	4.750	-	0.625	0	0.008	LPF-17		
ACLC□	1010JX-06FF	●	●	mm	10	10	-	10	120	-	10	0	0.2	LPF-11	HSB4X8□	FH-2
	1010JX-09FF	●	●		10	10	2	10	120	16	10	0	0.2	LPF-13		
	1212JX-09FF	●	●		12	12	-	12	120	-	12	0				
	1616JX-09FF	●	●		16	16	-	16	120	-	16	0	0.2	LPF-17		

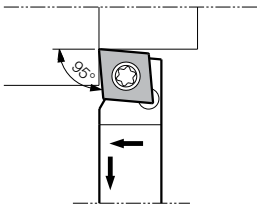
• Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder

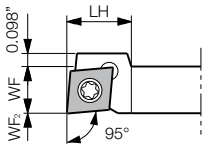
Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Low Feed	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Material
Ref. Page	B53	B53	B54	B58, B59	B55	B60	B60	B60	C24	C14
Insert / Toolholder	SKS	SK	GK	(E/F)□-U	MQ	No Chipbreaker	AH	□-A3	PCD	CBN
ACLC□..-2JXFF ACLC□..-06FF	CCGT215..	CCGT215..	CCMT215..	CCGT215..	-	CCGW215..	-	-	CCMT215.. CCGW215..	CCMW215..
ACLC□..-3JXFF ACLC□..-09FF	CCGT325..	CCGT325..	CCMT325..	CCGT325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..

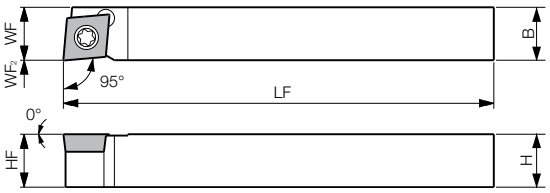
Recommended Cutting Conditions ➡ **E51**

SCLC-FF (Without Offset • External / Facing)





SCLC□6-3JXFF
SCLC□1010JX-09FF
shown above



• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	WF_2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Wrench
SCLC□	6-2JXFF	●	●	inch	0.375	0.375	0.375	4.750	-	0.375	0	0.008	SB-2570TR	FT-8
	6-3JXFF	●	●		0.375	0.375	0.375	4.750	0.590	0.375	0	0.008	SB-4085TR	FT-15
	8-3JXFF	●	●		0.500	0.500	0.500	4.750	-	0.500	0			
	10-3JXFF	●	●		0.625	0.625	0.625	4.750	-	0.625	0			
SCLC□	0808F-06FF	●	●	mm	8	8	8	85	-	8	0	0.2	SB-2570TR	FT-8
	1212F-09FF	●	●		12	12	12	85	-	12	0	0.2	SB-4085TR	FT-15
SCLC□	1010JX-06FF	●	●		10	10	10	120	-	10	0	0.2	SB-2570TR	FT-8
	1010JX-09FF	●	●		10	10	10	120	15	10	0	0.2	SB-4085TR	FT-15
	1212JX-09FF	●	●		12	12	12	120	-	12	0			
	1616JX-09FF	●	●		16	16	16	120	-	16	0			
	2020JX-09FF	●	●		20	20	20	120	-	20	0	0.2		

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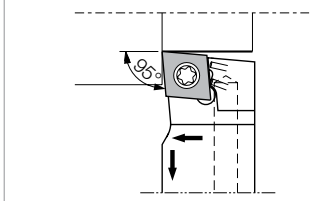
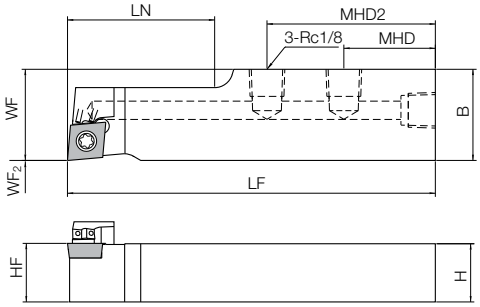
SCLC-FFJCT (Without Offset • External / Copying, Jet Coolant-Through) NEW





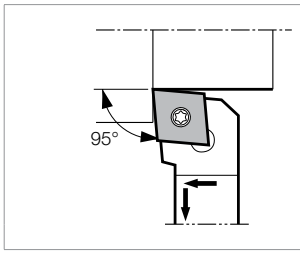
• Right-hand Shown

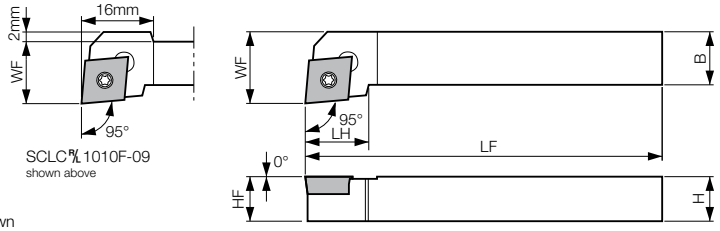
Toolholder Dimensions

Coolant Connections and Pipe Parts ➡ **H14-H15**

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LN	WF	WF2	MHD	MHD2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Plug
SCLCR 62-3FFJCT	●		inch	0.500	0.500	0.750	4.750	1.110	0.750	0	1.378	-	0.008	SB-4085TR	FT-15	GP-1
NEW 82.5-3FFJCT	●		inch	0.625	0.625	1.000	4.750	1.582	1.000	0	0.984	1.811	0.008	SB-4085TR	FT-15	GP-1
SCLCR 1220H-09FFJCT	●		mm	12	12	20	100	28	20	0	35	-	0.2	SB-4085TR	FT-15	GP-1
1625H-09FFJCT	●		mm	16	16	25	100	40	25	0	25	46	0.2	SB-4085TR	FT-15	GP-1
2025H-09FFJCT	●		mm	20	20	25	100	40	25	0	25	46	0.2	SB-4085TR	FT-15	GP-1

SCLC (External / Facing)





• Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Wrench
SCLC□ 6-2X	●	●	inch	0.375	0.375	0.375	3.000	0.354	0.500	0.004	SB-2570TR	FT-8	-
SCLC□ 8-3A	●	●	inch	0.500	0.500	0.500	4.000	0.551	0.625	0.004	SB-4085TR	FT-15	-
10-3C	●	●	inch	0.625	0.625	0.625	5.000	0.572	0.750	0.004	SB-4085TR	FT-15	-
12-3C	●	●	inch	0.750	0.750	0.750	5.000	0.572	0.875	0.004	SB-4085TR	FT-15	-
16-3D	●		inch	1.000	1.000	1.000	6.000	0.790	1.250	0.008	SB-4085TR	FT-15	-
SCLC□ 1010F-06	●	●	mm	10	10	10	80	9	12	0.2	SB-2570TR	FT-8	-
1010F-09	●	●	mm	10	10	10	80	14	14	0.2	SB-4085TR	FT-15	-
1212H-09	●	●	mm	12	12	12	100	14	16	0.2	SB-4085TR	FT-15	-
1616H-09	●	●	mm	16	16	16	100	15	20	0.2	SB-4085TR	FT-15	-
2020K-09	●	●	mm	20	20	20	125	20	25	0.2	SB-4085TR	FT-15	-
2525M-09	●	●	mm	25	25	25	150	22	32	0.2	SB-4085TR	FT-15	-
SCLC□ 1616H-12	●	●	mm	16	16	16	100	20	20	0.4	SB-5090TR	-	LTW-20
2020K-12	●	●	mm	20	20	20	125	22	25	0.4	SB-5090TR	-	LTW-20
2525M-12	●	●	mm	25	25	25	150	22	32	0.4	SB-5090TR	-	LTW-20

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Low Feed	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Material
Ref. Page	➡ B53	➡ B53	➡ B54	➡ B58, B59	➡ B55	➡ B60	➡ B60	➡ B60	➡ C24	➡ C14
Insert / Toolholder	SKS	SK	GK	(E/F)□-U	MQ	No Chipbreaker	AH	□-A3	PCD	CBN
SCLC□..-2.. SCLC□..-2JXFF SCLC□..-06FF/-06	CCGT215..	CCGT215..	CCMT215..	CCGT215..	-	CCGW215..	-	-	CCMT215.. CCGW215..	CCMW215..
SCLC□..-3..(JCT) SCLC□..-3JXFF SCLC□..-09FF(JCT)/-09	CCGT325..	CCGT325..	CCMT325..	CCGT325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..
SCLC□..-12	-	-	CCMT43..	-	-	-	-	CCGT43..	-	-

Recommended Cutting Conditions ➡ **E51**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

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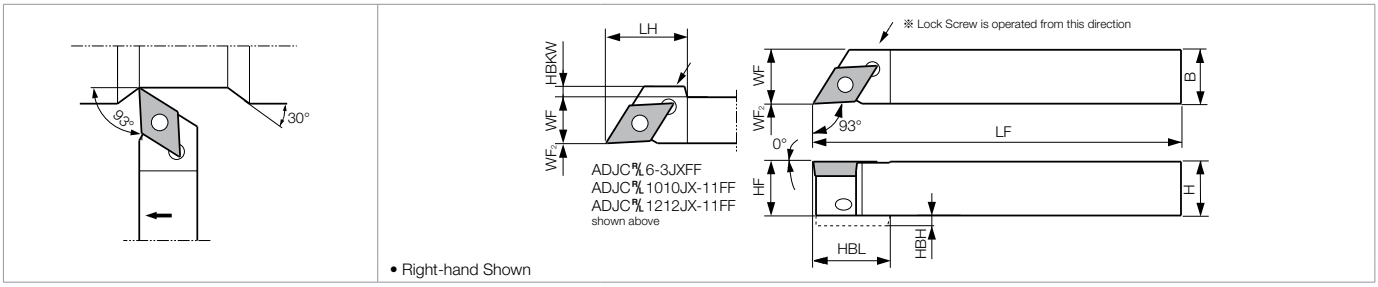
ADJC-FF (Without Offset • External / Copying)



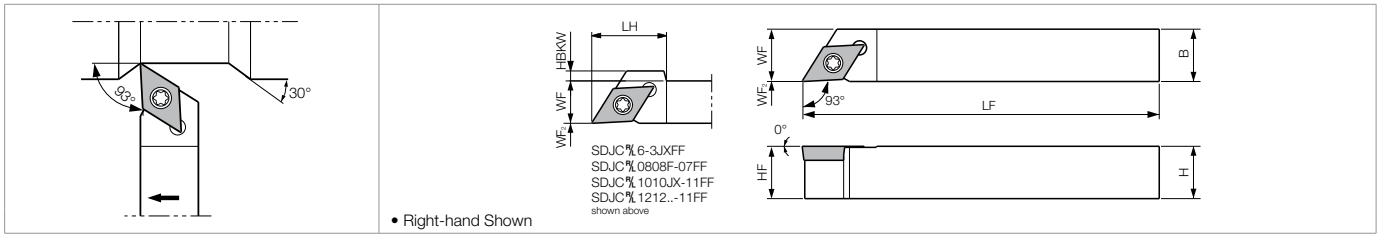
• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH HBL	WF	HBKW	WF_2	Standard Corner-R (RE)	Spare Parts: Anchor Pin	Lock Screw	Wrench
ADJCR/L	6-2JXFF	●	●	inch	0.375	0.375	-	0.375	4.750	-	0.375	-	0	0.008	LPF-11	HSB4X8R/L	FH-2
	6-3JXFF	●	●		0.375	0.375	0.097	0.375	4.750	0.787	0.375	0.137	0	0.008	LPF-13		
	8-3JXFF	●	●		0.500	0.500	-	0.500	4.750	-	0.500	-	0				
	10-3JXFF	●	●		0.625	0.625	-	0.625	4.750	-	0.625	-	0	0.008	LPF-17		
ADJCR/L	1010JX-07FF	●	●	mm	10	10	-	10	120	-	10	-	0	0.2	LPF-11	HSB4X8R/L	FH-2
	1010JX-11FF	●	●		10	10	2	10	120	20	10	3	0	0.2	LPF-13		
	1212JX-11FF	●	●		12	12	-	12	120	20	12	1	0				
	1616JX-11FF	●	●		16	16	-	16	120	-	16	-	0	0.2	LPF-17		

• Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder

SDJC-FF (Without Offset • External / Copying)



• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	HBKW	WF_2	Standard Corner-R (RE)	Drawing	Spare Parts: Clamp Screw	Wrench
SDJCR/L	6-2JXFF	●	●	inch	0.375	0.375	0.375	4.750	-	0.375	-	0	0.008	Fig.1	SB-2570TR	FT-8
	6-3JXFF	●	●		0.375	0.375	0.375	4.750	0.787	0.375	0.137				SB-4085TR	FT-15
	8-3JXFF	●	●		0.500	0.500	0.500	4.750	-	0.500	-					
	10-3JXFF	●	●		0.625	0.625	0.625	4.750	-	0.625	-					
SDJCR/L	0808F-07FF	●	●	mm	8	8	8	85	14	8	0.5	0	0.2	Fig.1	SB-2570TR	FT-8
	1212F-11FF	●	●		12	12	12	85	20	12	1.0				SB-4085TR	FT-15
SDJCR/L	1010JX-07FF	●	●		10	10	10	120	-	10	-	0	0.2	Fig.1	SB-2570TR	FT-8
	1010JX-11FF	●	●		10	10	10	120	20	10	3.0				SB-4085TR	FT-15
	1212JX-11FF	●	●		12	12	12	120	20	12	1.0					
	1616JX-11FF	●	●		16	16	16	120	-	16	-					
	2020JX-11FF	●	●		20	20	20	120	-	20	-					

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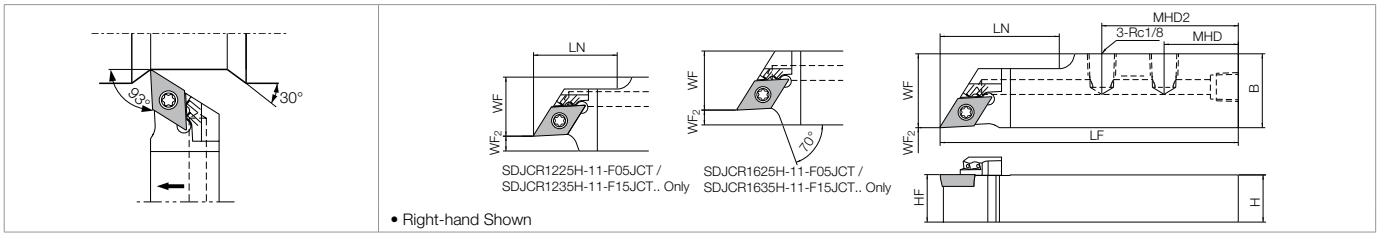
Contact your local Kyocera sales engineer to upgrade old products to new technology

SDJC-JCT (Without Offset • External / Copying, Jet Coolant-Through) NEW



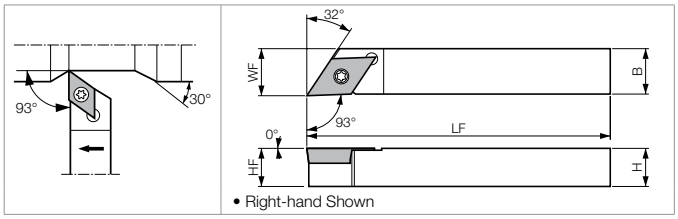
• Right-hand Shown

Toolholder Dimensions

Coolant Connections and Pipe Parts ➡ **H14-H15**

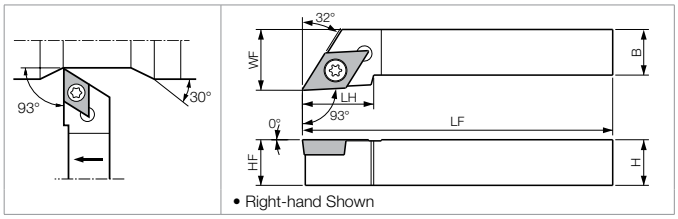
Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LN	WF	WF_2	MHD	MHD2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Plug
SDJCR 62-3FFJCT	●		in	0.500	0.500	0.750	4.750	1.110	0.750	0	1.378	-	0.008	SB-4085TR	FT-15	GP-1
NEW SDJCR 82.5-3FFJCT	●		in	0.625	0.625	1.000	4.750	1.582	1.000	0	0.984	1.811	0.008	SB-4085TR	FT-15	GP-1
SDJCR 1220H-11FFJCT	●		mm	12	12	20	100	28	20	0	35	-	0.2	SB-4085TR	FT-15	GP-1
SDJCR 1625H-11FFJCT	●		mm	16	16	25	100	40	25	0	25	46	0.2	SB-4085TR	FT-15	GP-1
SDJCR 2025H-11FFJCT	●		mm	20	20	25	100	40	25	0	25	46	0.2	SB-4085TR	FT-15	GP-1
SDJCR 1225H-11-F05JCT	●		mm	12	12	25	100	28	20	5	35	-	0.2	SB-4085TR	FT-15	GP-1
SDJCR 1235H-11-F15JCT	●		mm	12	12	35	100	28	20	15	35	-	0.2	SB-4085TR	FT-15	GP-1
SDJCR 1625H-11-F05JCT	●		mm	16	16	25	100	-	20	5	25	46	0.2	SB-4085TR	FT-15	GP-1
SDJCR 1635H-11-F15JCT	●		mm	16	16	35	100	-	20	15	25	46	0.2	SB-4085TR	FT-15	GP-1

SDJC-F (External / Copying)



• Right-hand Shown

SDJC (External / Copying)



• Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	HBKW	WF_2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDJC□ 6-2CF	●	●	inch	0.375	0.375	0.375	5.000	-	0.395	-	-	0.004	SB-2570TR	FT-8
SDJC□ 8-3DF	●	●	inch	0.500	0.500	0.500	6.000	-	0.520	-	-	1/32	SB-4085TR	FT-15
SDJC□ 6-2X	●	●	inch	0.375	0.375	0.375	3.000	0.472	0.500	-	-	0.004	SB-2570TR	FT-8
SDJC□ 8-3A	●	●	inch	0.500	0.500	0.500	4.000	0.709	0.625	-	-	0.004	SB-4085TR	FT-15
10-3C	●	●	inch	0.625	0.625	0.625	5.000	0.709	0.750	-	-	0.004	SB-4085TR	FT-15
12-3C	●	●	inch	0.750	0.750	0.750	5.000	0.709	0.875	-	-	0.004	SB-4085TR	FT-15
16-3D	●		inch	1.000	1.000	1.000	6.000	0.810	1.250	-	-	0.008	SB-4085TR	FT-15
SDJC□ 1010F-07	●	●	mm	10	10	10	80	12	12	-	-	0.2	SB-2570TR	FT-8
SDJC□ 1010F-11	●	●	mm	10	10	10	80	18	12	-	-	0.2	SB-4085TR	FT-15
1212H-11	●	●	mm	12	12	12	100	18	16	-	-	0.2	SB-4085TR	FT-15
1616H-11	●	●	mm	16	16	16	100	18	20	-	-	0.2	SB-4085TR	FT-15
2020K-11	●	●	mm	20	20	20	125	18	25	-	-	0.2	SB-4085TR	FT-15
2525M-11	●	●	mm	25	25	25	150	23	32	-	-	0.2	SB-4085TR	FT-15

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. Page	➡ B62	➡ B62	➡ B62	➡ B63	➡ B63	➡ B64	➡ B63	➡ B67	➡ B66	➡ B68, B69
Insert / Toolholder	CF	SKS	SK	WP (Wiper)	PP	GK	GQ	□-F	□-FSF	(E/F) □-U
□DJC□..-2.. □DJC□..-07...	DCGT215..	DCGT215..	DCGT215..	DCMX215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..
□DJC□..-3.. □DJC□..-11...	DCGT325..	DCGT325..	DCGT325..	DCMX325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..
Application	Low Feed / Precision	Low Feed	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	➡ B68	➡ B70, B71	➡ B65	➡ B65	➡ B65	➡ B71	➡ B71	➡ B71	➡ C25	➡ C15
Insert / Toolholder	F□-USF	(E/F)□-J	XP	XQ	MQ	No Chipbreaker	AH	□-A3	PCD	CBN
□DJC□..-2.. □DJC□..-07...	DCET215..	DCET215..	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
□DJC□..-3.. □DJC□..-11...	DCET325..	DC_T325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

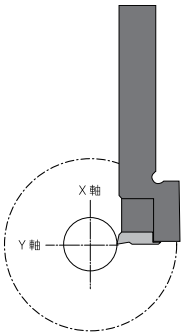
When using **WP** chipbreaker, program corrections are required. ➡ **R51**

Recommended Cutting Conditions ➡ **E51**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

SDJC-FF-Y (Y-axis External / Copying) NEW



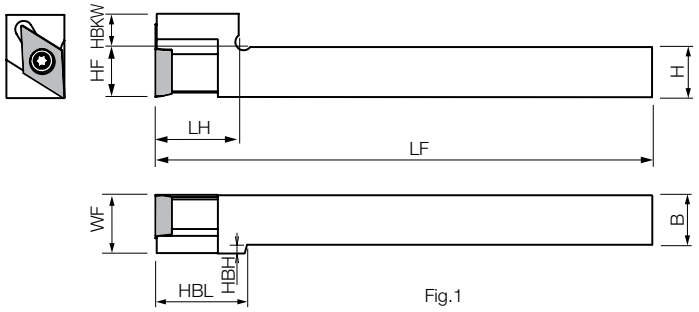


Fig.1

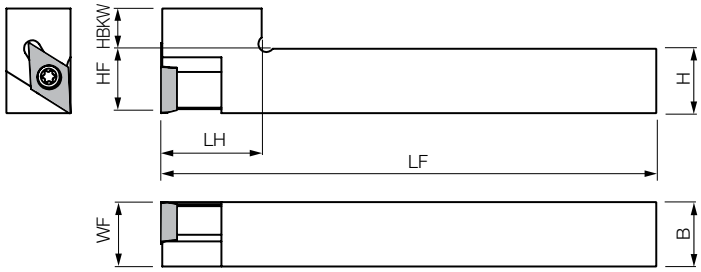


Fig.2

• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	H	HF	B	LF	LH	WF	HBKW	HBL	HBH	WF_2	Standard Corner-R (RE)	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDJCR	1212JX-11FF-Y	●		mm	12	12	12	120	20	14	8	22	2	0	0.2	Fig.1	SB-4085TR	FT-15
	1616JX-11FF-Y	●		mm	16	16	16	120	25	16	10	-	-	0	0.2	Fig.2	SB-4085TR	FT-15

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B62	B62	B62	B62	B63	B63	B64	B63	B67	B66	B68, B69	B68
Insert / Toolholder	**CF**	**GF**	**SKS**	**SK**	**WP** (Wiper)	**PP**	**GK**	**GQ**	**R-F**	**R-FSF**	**(E/F) R-U**	**FR-USF**
SDJCR..-3JX-F.. SDJCR..-11-F..	DCGT325..	DCGT325..	DCGT325..	DCGT325..	DCMX325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..

Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
Ref. Page	B70, B71	B70	B65	B65	B65	B71	B71	B71	C25	C25	C15	
Insert / Toolholder	**(E/F)R-J**	**FR-JSF**	**XP**	**XQ**	**MQ**	No Chipbreaker	**AH**	**R-A3**	**PCD**	**APD**	**CBN**	
SDJCR..-3JX-F.. SDJCR..-11-F..	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCMW325..	

When using **WP** chipbreaker, program corrections are required. R51

Recommended Cutting Conditions **E51**

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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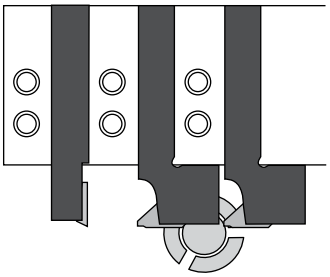
NEW ITEMS!

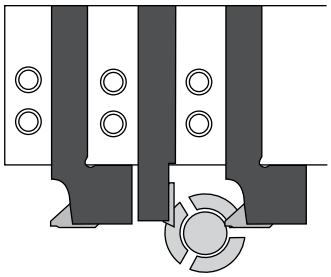
Precautions

Do not use Y-axis toolholders side-by-side to prevent interference (Only two Y-axis holders can be used at the same time)

Interference

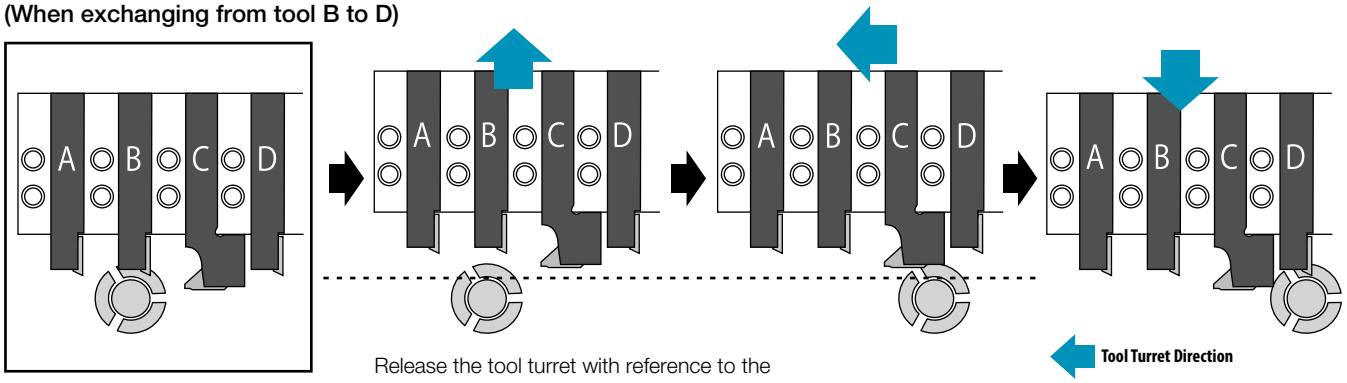


Without Interference



Standard toolholders may be mounted between two Y-axis toolholders

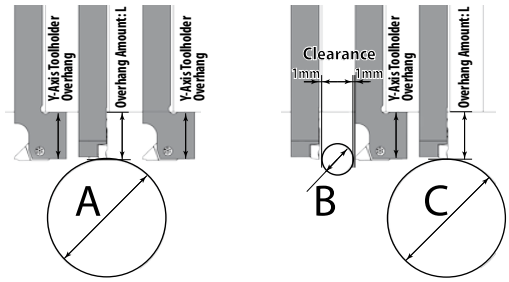
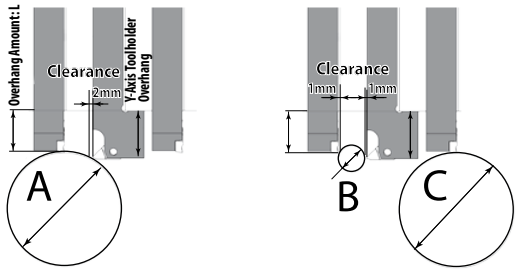
When changing the tool, set the retracted position with reference to the cutting edge of the Y-axis holder (When exchanging from tool B to D)



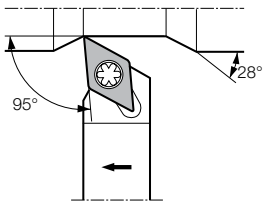
Release the tool turret with reference to the overhang amount of the Y-axis toolholder

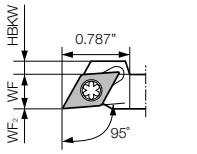
Note that using other toolholder styles together will result in different outside diameters

(Unit: mm)

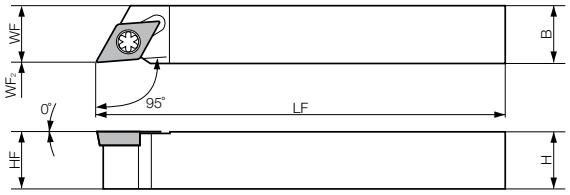
Y-axis Toolholder Overhang	Examples	Overhang Amount : L / Available Outside Cutting Dia. (Ø)	20	22	25
20		A	Without Restriction	Without Restriction	Without Restriction
		B	13.0	13.0	13.0
		C	Without Restriction	Without Restriction	Without Restriction
25		A	38.0	58.0	Without Restriction
		B	14.9	13.6	13.0
		C	45.0	60.0	Without Restriction

SDLC-FF (Without Offset • External / Copying)





SDLC□6-3JXFF
SDLC□8-3JXFF
SDLC□1010..-11FF
SDLC□1212..-11FF
shown above

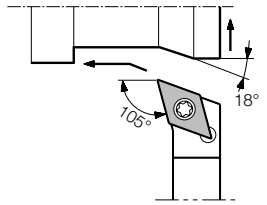


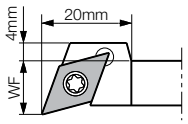
• Right-hand Shown

Toolholder Dimensions

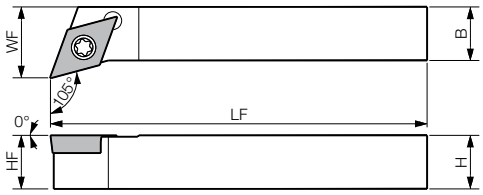
Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	WF	HBKW	WF_2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDLC□	6-2JXFF	●	●	inch	0.375	0.375	0.375	4.750	0.375	-	0	0.008	SB-2570TR	FT-8
	6-3JXFF	●	●		0.375	0.375	0.375	4.750	0.375	0.176	0	0.008	SB-4085TR	FT-15
	8-3JXFF	●	●		0.500	0.500	0.500	4.750	0.500	0.051	0			
	10-3JXFF	●	●		0.625	0.625	0.625	4.750	0.625	-	0			
SDLC□	1010JX-07FF	●	●	mm	10	10	10	120	10	-	0	0.2	SB-2570TR	FT-8
	1212JX-07FF	●	●		12	12	12	120	12	-	0			
	1616JX-07FF	●	●		16	16	16	120	16	-	0			
SDLC□	1010JX-11FF	●	●		10	10	10	120	10	4	0	0.2	SB-4085TR	FT-15
	1212JX-11FF	●	●		12	12	12	120	12	2	0			
	1616JX-11FF	●	●		16	16	16	120	16	-	0			
SDLC□	1212F-07FF	●			12	12	12	85	12	-	0	0.2	SB-2570TR	FT-8
SDLC□	1010F-11FF	●	△		10	10	10	80	10	4	0	0.2	SB-4085TR	FT-15
	1212F-11FF	●			12	12	12	85	12	2	0			
	1616H-11FF	●			16	16	16	100	16	-	0			

SDXC (External / Facing / Copying)





SDXC□1010JX-11
shown above



• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Dimensions (mm) H	HF	B	LF	WF	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDXC□	1010JX-07	●	●	10	10	10	120	12	0.2	SB-2570TR	FT-8
	1010JX-11	●	●	10	10	10	120	12	0.2	SB-4085TR	FT-15
	1212JX-11	●	●	12	12	12	120	16	0.2		
	1616JX-11	●	●	16	16	16	120	20	0.2		

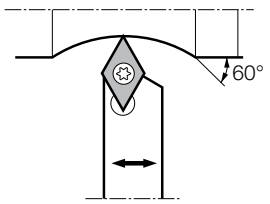
Applicable Inserts

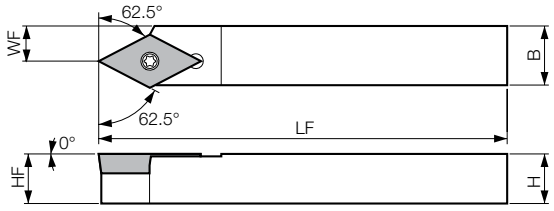
Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B62	B62	B62	B62	-	B63	B64	B63	B67	B66	B68, B69	B68
Insert / Toolholder	CF	GF	SKS	SK	WP (Wiper)	PP	GK	GQ	R-F	R-FSF	(E/F) R-U	FR-USF
SDLC□..-2... / -07... SDXC□..-07	DCGT215..	DCGT215..	DCGT215..	DCGT215..	-	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..
SDLC□..-3... / -11... SDXC□..-11	DCGT325..	DCGT325..	DCGT325..	DCGT325..	-	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..

Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
Ref. Page	B70, B71	B70	B65	B65	B65	B71	B71	B71	C25	C25	C15	
Insert / Toolholder	(E/F)R-J	FR-JSF	XP	XQ	MQ	No Chipbreaker	AH	R-A3	PCD	APD	CBN	
SDLC□..-2... / -07... SDXC□..-07	DCET215..	DCET215..	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMT215..	DCMW215..	
SDLC□..-3... / -11... SDXC□..-11	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCMW325..	

Recommended Cutting Conditions ➡ **E51**

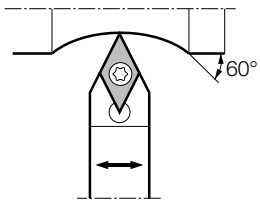
SDNC-F (External / Copying)

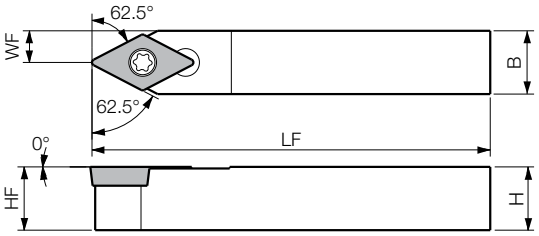




• Right-hand Shown

SDNC (External / Copying)





Toolholder Dimensions

Part Number		Stock R	Stock N	Stock L	Unit	Dimensions H	Dimensions HF	Dimensions B	Dimensions LF	Dimensions WF	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDNC⁵⁄₈	6-2JXF	●		●	inch	0.375	0.375	0.375	4.750	0.257	0.008	SB-2570TR	FT-8
SDNC⁵⁄₈	1010JX-07F	●		●	mm	10	10	10	120	7	0.2	SB-2570TR	FT-8
SDNCN	6-2JX		●		inch	0.375	0.375	0.375	4.750	0.187	0.008	SB-2570TR	FT-8
	8-2JX		●			0.500	0.500	0.500	4.750	0.250			
	6-3JX		●			0.375	0.375	0.375	4.750	0.187	0.008	SB-4085TR	FT-15
	8-3JX		●			0.500	0.500	0.500	4.750	0.250			
	10-3JX		●			0.625	0.625	0.625	4.750	0.312			
SDNCN	1010JX-07		●		mm	10	10	10	120	5	0.2	SB-2570TR	FT-8
	1212JX-07		●			12	12	12	120	6			
SDNCN	1010JX-11		●			10	10	10	120	5	0.2	SB-4085TR	FT-15
	1212JX-11		●			12	12	12	120	6			
	1616JX-11		●			16	16	16	120	8			
SDNCN	1010F-11		●			10	10	10	80	5	0.2	SB-4085TR	FT-15
	1616H-11		●			16	16	16	100	8			

Applicable Inserts

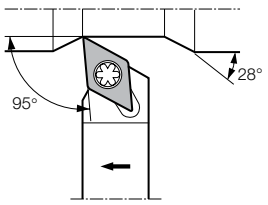
Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B62	B62	B62	B62	-	B63	B64	B63	B67	B66	B68, B69	B68
Insert / Toolholder	CF	GF	SKS	SK	WP (Wiper)	PP	GK	GQ	R-F	R-FSF	(E/F) R-U	FR-USF
SDNC⁵⁄₈...-2... / -07.. SDNCN..-07	DCGT215..	DCGT215..	DCGT215..	DCGT215..	-	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..	DCET215..
SDNCN..-... / -11	DCGT325..	DCGT325..	DCGT325..	DCGT325..	-	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..	DCET325..

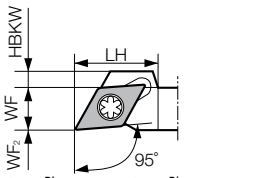
Application	Low Feed	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials	
Ref. Page	B70, B71	B70	B65	B65	B65	B71	B71	B71	C25	C25	C15	
Insert / Toolholder	(E/F)R-J	FR-JSF	XP	XQ	MQ	No Chipbreaker	AH	R-A3	PCD	APD	CBN	
SDNC⁵⁄₈...-2... / -07.. SDNCN..-07	DCET215..	DCET215..	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMT215..	DCMW215..	
SDNCN..-... / -11	DC_T325..	DCET325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMT325..	DCMW325..	

Recommended Cutting Conditions ➡ **E51**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

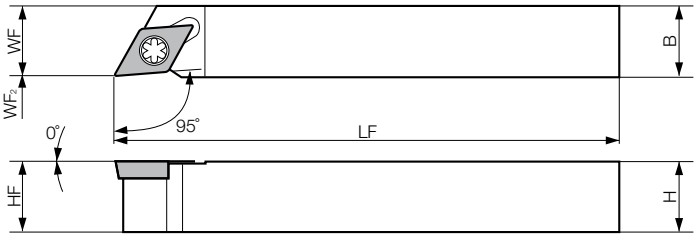
SDLP-FF (Without Offset • External / Copying)





SDLP[R/L]6-3JXFF
SDLP[R/L]8-3JXFF
shown above

SDLP[R/L]0808F-07FF
SDLP[R/L]1212F-11FF
SDLP[R/L]1010JX-11FF
SDLP[R/L]1212JX-11FF
shown above



• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	HBKW	WF_2	Standard Corner-R(RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SDLP[R/L]	6-2JXFF	●	●	inch	0.375	0.375	0.375	4.750	-	0.375	-	0	0.008	SB-2570TR	FT-8
	6-3JXFF	●	●		0.375	0.375	0.375	4.750	-	0.375	0.176	0	0.008	SB-4085TR	FT-15
	8-3JXFF	●	●		0.500	0.500	0.500	4.750	0.375	0.500	0.051	0			
	10-3JXFF	●	●		0.625	0.625	0.625	4.750	-	0.625	-	0			
SDLP[R/L]	0808F-07FF	●	●	mm	8	8	8	85	14	8	0.5	0	0.2	SB-2570TR	FT-8
SDLP[R/L]	1010JX-07FF	●	●		10	10	10	120	-	10	-	0	0.2	SB-2570TR	FT-8
	1010JX-11FF	●	●		10	10	10	120	20	10	4.0	0	0.2	SB-4085TR	FT-15
	1212JX-11FF	●	●		12	12	12	120	20	12	2.0	0			
	1616JX-11FF	●	●		16	16	16	120	-	16	-	0			

Applicable Inserts

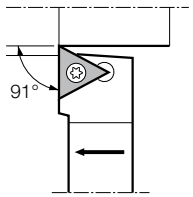
Application	Finishing / Precision	Low Feed / Precision
Ref. Page	B72	B72
Insert / Toolholder	[R/L]-FSF	F[R/L]-USF
SDLP[R/L]..-2JXFF SDLP[R/L]..-07FF	DPET215..	DPET215..
SDLP[R/L]..-3JXFF SDLP[R/L]..-11FF	DPET325..	DPET325..

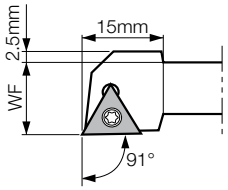
Recommended Cutting Conditions **E51**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

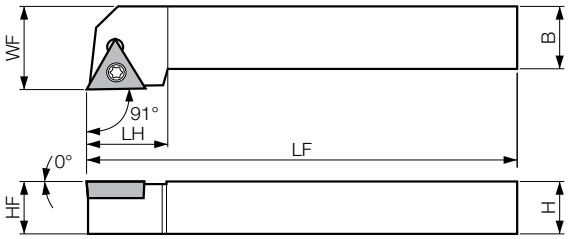
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

STGC(P) (External)





STGC(P)R/L 1010F-11
shown above



• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Standard Corner-R(RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
STGCR/L	6-1.5X	●		inch	0.375	0.375	0.375	3.00	0.453	0.500	0.008	SB-2060TR	FT-8
	8-2A	●	●		0.500	0.500	0.500	4.00	0.590	0.625	1/64	SB-2570TR	
STGCR/L	0808E-08	●		mm	8	8	8	70	12	10	0.2	SB-2050TR	FT-6
	1010F-08	●	●		10	10	10	80	12	12			
STGCR/L	1010F-11	●	●		10	10	10	80	15	14	0.4	SB-2570TR	FT-8
	1212H-11	●	●		12	12	12	100	15	16			
	1616H-11	●	●		16	16	16	100	15	20			
	2020K-11	●	●		20	20	20	125	15	25			
	2525M-11	●	●		25	25	25	150	20	32			
STGPR/L	0808E-08	●			8	8	8	70	12	10	0.2	SB-2050TR	FT-6
STGPR/L	1010F-11	●	●		10	10	10	80	15	14	0.2	SB-3080TR	FT-10
	1212H-11	●	●		12	12	12	100	15	16			
	1616H-11	●	●		16	16	16	100	15	20			

Applicable Inserts (STGC)

Application	Low Feed	Low Feed / Precision	Cast Iron	Non-ferrous Metals	Non-ferrous Metals
Ref. Page	B78	B77	B79	B79	C26
Insert / Toolholder	(E/F) R/L-U	FR/L-USF	Without Chipbreaker R/L-A3		PCD
STGCR/L..-1.5X STGCR/L..-08	TCGT1515..	TCET1515..	TCGW1515..	-	TCMT1515..
STGCR/L..-2A STGCR/L..-11	TCGT22..	TCET22..	TCGW22..	TCGT22..	TCMT22.. TCGW22..

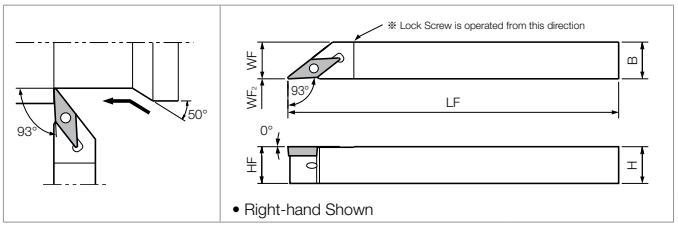
Applicable Inserts (STGP)

Application	Minute D.O.C.	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Medium	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Cast Iron
Ref. Page	B80	B80	B81	B82, B83	B85	B86	B84	B81	B81	B86
Insert / Toolholder	CF	PP	HQ	R/L	R/L-FSF	FR/L-USF	R/L-H	XP	XQ	No Chipbreaker
STGPR/L..-08	TPGT1515..	-	-	TPGH1515..	TPET1515..	TPET1515..	-	-	-	TPGB1515..
STGPR/L..-11	-	TPMT22..	TPMT22..	TPGH22..	TPET22..	TPET22..	TPGH22..	TPMT22..	TPMT22..	TPGB22..

Application	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	C26 ~ C28	C27	C16
Insert / Toolholder	PCD	APD	CBN
STGPR/L..-08	TPMH1515.. TPGB1515..	-	TPGB1515..
STGPR/L..-11	TPMH22.. TPGB22..	TPMT22..	TPGB22..

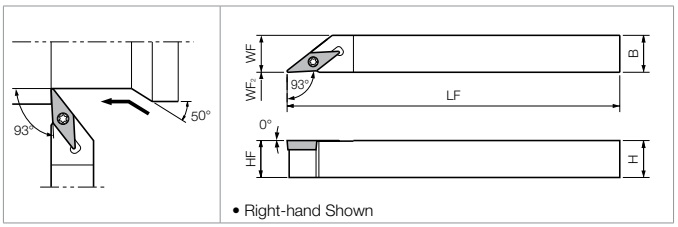
Recommended Cutting Conditions ➡ E51

AVJB-FF (Without Offset • External / Copying)



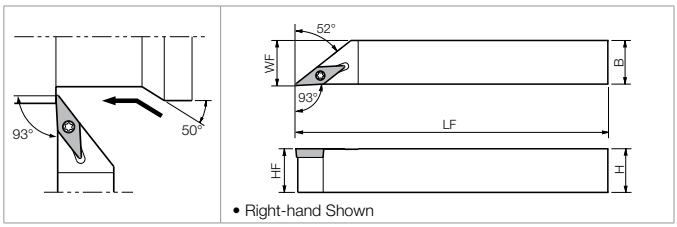
• Right-hand Shown

SVJB-FF (Without Offset • External / Copying)



• Right-hand Shown

SVJB-F (External / Copying)



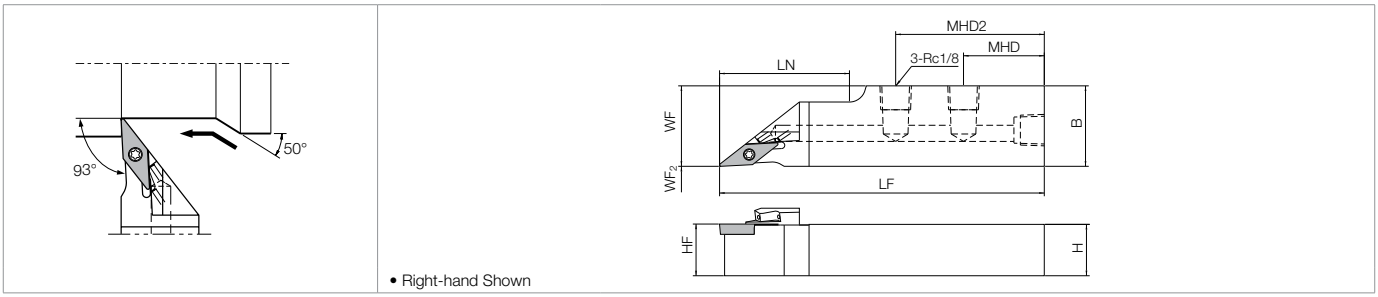
• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	H	HF	B	LF	WF	WF_2	Standard Corner-R (RE)	Spare Parts: Anchor Pin	Spare Parts: Lock Screw	Spare Parts: Clamp Screw	Spare Parts: Wrench
AVJB**R/L**	6-2JXFF	●	●	inch	0.375	0.375	0.375	4.750	0.375	0	1/64	LPF-11	HSB4X8**R/L**	-	FH-2
	8-2JXFF	●	●		0.500	0.500	0.500	4.750	0.500			LPF-1113			
	10-2JXFF	●	●		0.625	0.625	0.625	4.750	0.625			LPF-1117			
AVJB**R/L**	1010JX-11FF	●	●	mm	10	10	10	120	10	0	0.4	LPF-11	HSB4X8**R/L**	-	FH-2
	1212JX-11FF	●	●		12	12	12	120	12			LPF-1113			
	1616JX-11FF	●	●		16	16	16	120	16			LPF-1117			
SVJB**R/L**	6-2JXFF	●	●	inch	0.375	0.375	0.375	4.750	0.375	0	1/64	-	-	SB-2570TR	FT-8
	8-2JXFF	●	●		0.500	0.500	0.500	4.750	0.500						
	10-2JXFF	●	●		0.625	0.625	0.625	4.750	0.625						
SVJB**R/L**	1010JX-11FF	●	●	mm	10	10	10	120	10	0	0.4	-	-	SB-2570TR	FT-8
	1212JX-11FF	●	●		12	12	12	120	12						
	1616JX-11FF	●	●		16	16	16	120	16						
	2020JX-11FF	●	●		20	20	20	120	20						
SVJB**R/L**	6-2CF	●	●	inch	0.375	0.375	0.375	5.000	0.395	-	1/64	-	-	SB-2570TR	FT-8
	8-2DF	●	●		0.500	0.500	0.500	6.000	0.520						

• Lock Screw : HSB4X8R for Right-hand Toolholder, HSB4X8L for Left-hand Toolholder

SVJB-FFJCT (Without Offset • External / Copying, Jet Coolant-Through) NEW



• Right-hand Shown

Toolholder Dimensions

Coolant Connections and Pipe Parts ➡ **H14-H15**

Part Number		Stock R	Stock L	Unit	H	HF	B	LF	LN	WF	WF_2	MHD	MHD2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Plug
SVJBR	62-2FFJCT	●		inch	0.500	0.500	0.750	4.750	1.110	0.750	0	1.378	-	1/64	SB-2570TR	FT-8	GP-1
NEW	82.5-2FFJCT	●			0.625	0.625	1.000	4.750	1.110	1.000		0.984	1.811				
SVJBR	1220H-11FFJCT	●		mm	12	12	20	100	28	20	0	35	-	0.4	SB-2570TR	FT-8	GP-1
	1625H-11FFJCT	●			16	16	25		40	25		25	46				
	2025H-11FFJCT	●			20	20	25		40	25		25	46				

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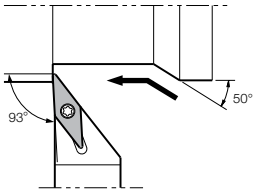
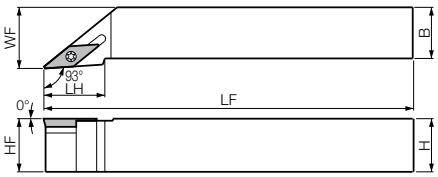
SVJB (External / Copying)





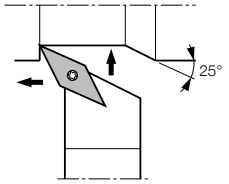
• Right-hand Shown

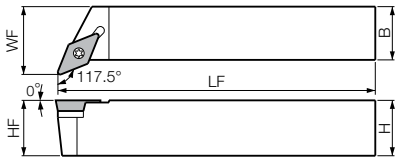
Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	B	LF	WF	WF_2	Standard Corner-R (RE)	Clamp Screw	Wrench	Shim	Shim Screw	Wrench
SVJB□ 6-2X	●	●	inch	0.375	0.375	0.375	3.000	0.500	-	1/64	SB-2570TR	FT-8	-	-	-
SVJB□ 8-2A	●	●		0.500	0.500	0.500	4.000	0.625		1/64	SB-2570TR	FT-8			
12-3C	●	●		0.750	0.750	0.750	5.000	0.875	-	1/32	SB-4085TR	T-15	-	-	-
16-3D	●			1.000	1.000	1.000	6.000	1.250		1/32					
SVJB□ 2020K-11	●	●	mm	20	20	20	125	25	-	0.4	SB-2570TR	FT-8	-	-	-
2525M-11	●	●		25	25	25	150	32							
SVJB□ 2020K-16N	●	●		20	20	20	125	25	-	0.8	SB-40125TRN	FT-15	SVN-32N (SVN-32S)	SS-4N	LW-4
2525M-16N	●	●		25	25	25	150	32							

• For insert with corner-R (RE) = 0.008" or 1/64", shim in parenthese is recommended (sold separately)

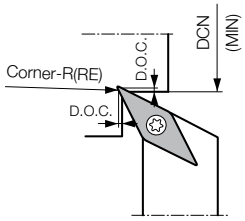
SVPB (External / Facing / Copying / Undercutting)





• Right-hand Shown

Undercutting Diameter of SVPB



Corner-R (RE)	D.O.C.	DCN (MIN)
0.016	0.020	Ø0.984
	0.039	Ø1.181
0.032	0.020	Ø1.772
	0.039	Ø2.165

Toolholder Dimensions

Part Number	Stock R	Stock L	Dimensions (mm) H	HF	B	LF	WF	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Wrench	Shim	Shim Screw	Wrench
SVPB□ 1010JX-11	●	●	10	10	10	120	14.5	0.4	SB-2570TR	FT-8	-	-	-
1212JX-11	●	●	12	12	12	120	16.5						
1616JX-11	●	●	16	16	16	120	20.5						
SVPB□ 2020K-11	●	●	20	20	20	125	25.0	0.4	SB-2570TR	FT-8	-	-	-
2525M-11	●	●	25	25	25	150	32.0						
SVPB□ 2020K-16N	●	●	20	20	20	125	25.0	0.8	SB-40125TRN	FT-15	SVN-32N (SVN-32S)	SS-4N	LW-4
2525M-16N	●	●	25	25	25	150	32.0						

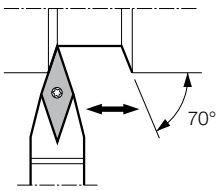
• For insert with corner-R (RE) = 0.008" or 1/64", shim in parenthese is recommended (sold separately)

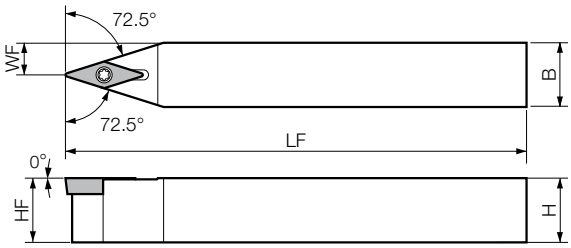
Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	B89	B89	B89	B90	B89	B91	B93	B93	C28	C17
Insert / Toolholder	GP	VF	HQ	□-F	□-FSF	□-Y	AH	□-A3	PCD	CBN
□VJB□..-2... □VJB□..-11... SVPB□..-11	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-	VBMT22..	VBGW22..
SVJB□..-3.. SVJB□..-16N SVPB□..-16N	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	VCGT33..	VCGT33..	VBMT33..	VBGW33..

Recommended Cutting Conditions ➡ **E51**

SVVB (External / Copying)





Toolholder Dimensions

Part Number		Stock	Unit	Dimensions					Standard Corner-R(RE)	Spare Parts				
				H	HF	B	LF	WF		Clamp Screw	Wrench	Shim	Shim Screw	Wrench
SVVBN	**6-2JX**	●	inch	0.375	0.375	0.375	4.750	0.187	0.016	SB-2570TR	FT-8	-	-	-
	8-2JX	●		0.500	0.500	0.500	4.750	0.250						
	10-2JX	●		0.625	0.625	0.625	4.750	0.312						
SVVBN	**1010JX-11**	●	mm	10	10	10	120	5.0	0.4	SB-2570TR	FT-8	-	-	-
	1212JX-11	●		12	12	12	120	6.0						
	1616JX-11	●		16	16	16	120	8.0						
SVVBN	**1010F-11**	●		10	10	10	80	5.0	0.4	SB-2570TR	FT-8	-	-	-
	1616H-11	●		16	16	16	100	8.0						
	2020K-11	●		20	20	20	125	10.0						
	2525M-11	●		25	25	25	150	12.5						
SVVBN	**2020K-16N**	●		20	20	20	125	10.0	0.8	SB-40125TRN	FT-15	SVN-32N (SVN-32S)	SS-4N	LW-4
	2525M-16N	●		25	25	25	150	12.5						

• For insert with corner-R (RE) = 0.008" or 1/64", shim in parenthese is recommended (sold separately)

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	B89	B89	B89	B90	B89	B91	B93	B93	C28	C17
Insert / Toolholder	**GP**	**VF**	**HQ**	**-F**	**-FSF**	**-Y**	**AH**	**-A3**	**PCD**	**CBN**
SVVBN..-2JXFF **SVVBN..-11**	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-	VBMT22..	VBGW22..
SVVBN..-16N	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	VCGT33..	VCGT33..	VBMT33..	VBGW33..

Recommended Cutting Conditions ➡ **E51**

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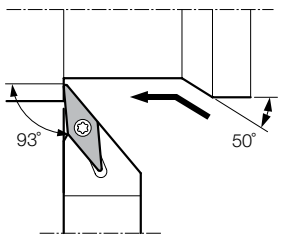
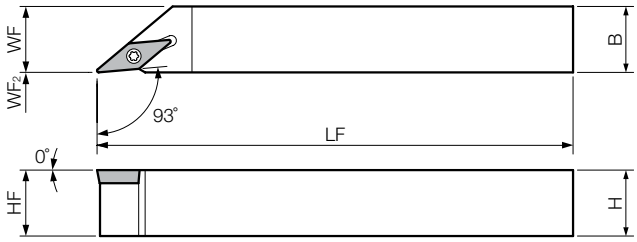
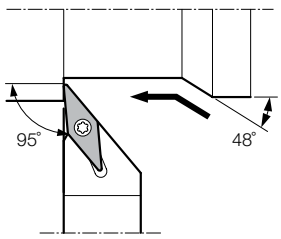
SVJC-FF (Without Offset • External / Copying)

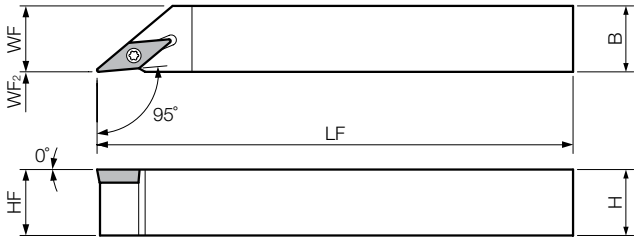




• Right-hand Shown

SVLC-FF (Without Offset • External / Copying)





• Right-hand Shown

Toolholder Dimensions

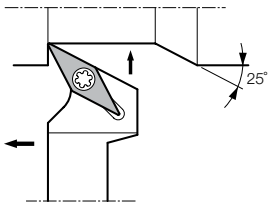
Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	WF	WF_2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SVJC□□	1010JX-11FF	●	●	mm	10	10	10	120	10	0	0.2	SB-2570TR	FT-8
	1212F-11FF	●	●		12	12	12	85	12				
	1212JX-11FF	●	●		12	12	12	120	12				
	1616JX-11FF	●	●		16	16	16		16				
	2020JX-11FF	●	●		20	20	20		20				
SVLC□□	1212F-11FF	●	●		12	12	12	85	12	0	0.2	SB-2570TR	FT-8
	1212JX-11FF	●	●		12	12	12	120	12				
	1616JX-11FF	●	●		16	16	16		16				

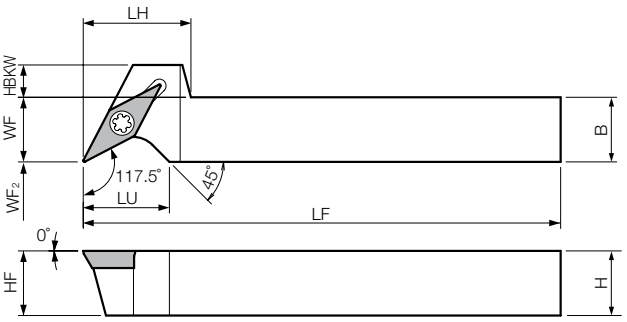
Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium
Ref. Page	B92	B92	B92	B93	B93
Insert / Toolholder	CF	GF	SKS	□-F	□-Y
SVJC□□...11FF	VCGT22..	VCGT22..	VCGT22..	VCET22..	VCET22..
SVLC□□...11FF					

Recommended Cutting Conditions → **E51**

SVPC-FF (Without Offset • External / Facing / Copying / Undercutting)



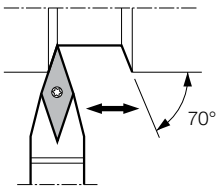


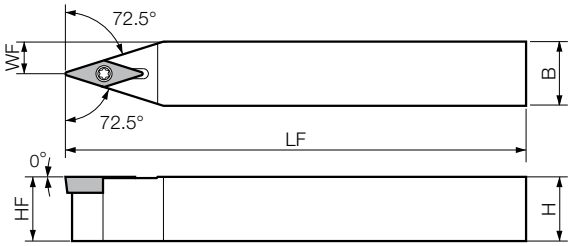
• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LU	LH	WF	HBKW	WF_2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SVPCR	**1010JX-11FF**	●		mm	10	10	10	120	16	20	10	8	0	0.2	SB-2570TR	FT-8
	1212F-11FF	●			12	12	12	85	16		12	6				
	1212JX-11FF	●			12	12	12	120	16		12	6				
	1616JX-11FF	●			16	16	16	120	20		16	2				

SVVC (External / Copying)





Toolholder Dimensions

Part Number		Stock	Unit	Dimensions H	HF	B	LF	WF	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench
SVVCN	**1010JX-11**	●	mm	10	10	10	120	5	0.2	SB-2570TR	FT-8
	1212JX-11	●		12	12	12		6			
	1616JX-11	●		16	16	16		8			

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium
Ref. Page	B92	B92	B92	B93	B93
Insert / Toolholder	CF	GF	SKS	-F	-Y
SVPCR...11FF	VCGT22..	VCGT22..	VCGT22..	VCET22..R-F	VCET22..R-Y
SVVCN...11				VCET22..-F	VCET22..-Y

Recommended Cutting Conditions **E51**

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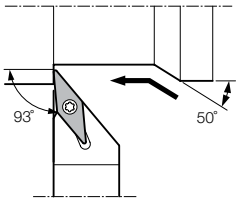
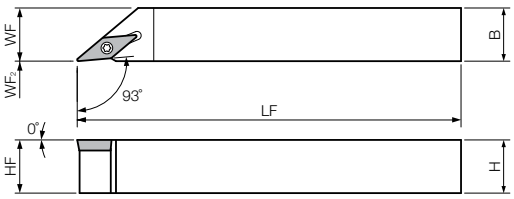
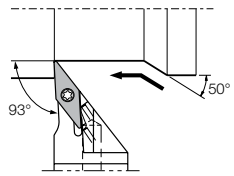
SVJP-FF (Without Offset • External / Copying)

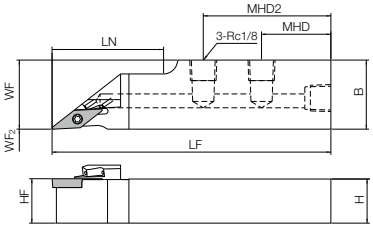




• Right-hand Shown

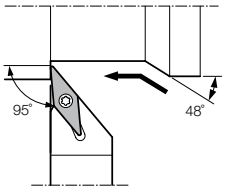
SVJP-FFJCT (Without Offset • External / Copying, Jet Coolant-Through) NEW

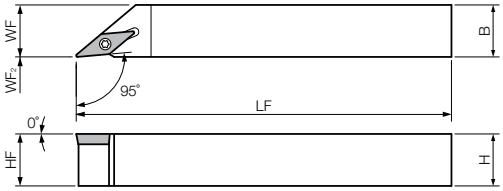




• Right-hand Shown

SVLP-FF (Without Offset • External / Copying)





• Right-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	H	HF	B	LF	LN	WF	WF_2	MHD	MHD2	Standard Corner-R (RE)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Plug
SVJP□	8-2JXFF	●	●	inch	0.500	0.500	0.500	4.750	-	0.500	0	-	-	0.008	SB-2570TR	FT-8	-
	10-2JXFF	●	●		0.625	0.625	0.625	4.750		0.625							
SVJP□	1212F-11FF	●	●	mm	12	12	12	85	-	12	0	-	-	0.2	SB-2570TR	FT-8	-
	1212JX-11FF	●	●		12	12	12	120		12							
	1616JX-11FF	●	●		16	16	16	120		16							
	2020JX-11FF	●	●		20	20	20	120		20							
NEW SVJPR	1220H-11FFJCT	●		mm	12	12	20	100	28	20	0	35	-	0.2	SB-2570TR	FT-8	GP-1
	1625H-11FFJCT	●			16	16	25	100	40	25		25	46				
	2025H-11FFJCT	●			20	20	25	100	40	25		25	46				
SVLP□	6-15JXFF	●	●	inch	0.375	0.375	0.375	4.750	-	0.375	0	-	-	0.004	SB-2550TR	FT-6	-
	8-15JXFF	●	●		0.500	0.500	0.500	4.750		0.500							
	10-15JXFF	●	●		0.625	0.625	0.625	4.750		0.625							
	8-2JXFF	●	●		0.500	0.500	0.500	4.750		0.500				0.008	SB-2570TR	FT-8	-
	10-2JXFF	●	●		0.625	0.625	0.625	4.750		0.625							
SVLP□	1010JX-08FF	●	●	mm	10	10	10	120	-	10	0	-	-	0.1	SB-2050TR	FT-6	-
	1212JX-08FF	●	●		12	12	12	120		12							
	1616JX-08FF	●	●		16	16	16	120		16							
SVLP□	1212JX-11FF	●	●	mm	12	12	12	120	-	12	0	-	-	0.2	SB-2570TR	FT-8	-
	1616JX-11FF	●	●		16	16	16	120		16							
SVLP□	1212F-08FF	●		mm	12	12	12	85	-	12	0	-	-	0.1	SB-2050TR	FT-6	-
	1212F-11FF	●			12	12	12	85		12				0.2	SB-2570TR	FT-8	

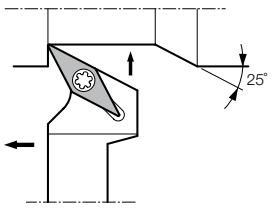
Applicable Inserts

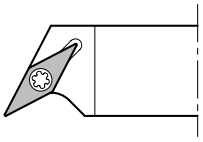
Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B94	B94	B94	B94	B95	B96	B96
Insert / Toolholder	CF	SKS	CK	GF	□-FSF	F□-U	F□-USF
SVLP□...-15JXFF SVLP□...-08FF	-	-	VPGT1515..	-	VPET1515..	-	VPET1515..
SV□P□...-2JXFF SV□P□...-11FF(JCT)	VPGT22..	VPGT22..	VPGT22..	VPGT22..	VPET22..	VPET22..	VPET22..

Recommended Cutting Conditions E51

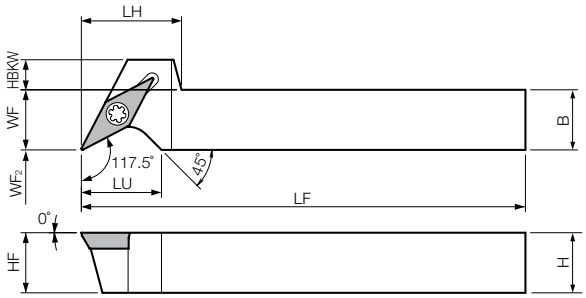
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

SVPP-FF (Without Offset • External / Facing / Copying / Undercutting)





SVPPR10-15JXFF
SVPPR1616..-08FF
shown above



• Right-hand Shown

Toolholder Dimensions

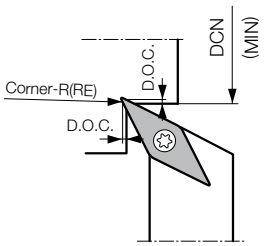
Part Number	Stock	Unit	Dimensions									Standard Corner-R(RE)	Spare Parts	
			H	HF	B	LF	LU	LH	WF	HBKW	WF_2		Clamp Screw	Wrench
SVPPR 6-15JXFF	●	inch	0.375	0.375	0.375	4.750	0.472	0.630	0.375	0.176	0	0.004	SB-2050TR	FT-6
8-15JXFF	●		0.500	0.500	0.500	4.750	0.551	0.630	0.500	0.051	0			
10-15JXFF	●		0.625	0.625	0.625	4.750	0.787	-	0.625	-	0			
SVPPR 6-2JXFF	●		0.375	0.375	0.375	4.750	0.630	0.787	0.375	0.334	0	0.008	SB-2570TR	FT-8
8-2JXFF	●		0.500	0.500	0.500	4.750	0.630	0.787	0.500	0.209	0			
10-2JXFF	●		0.625	0.625	0.625	4.750	0.787	0.787	0.625	0.084	0			
SVPPR 1010JX-08FF	●	mm	10	10	10	120	12	16	10.0	4	0	0.1	SB-2050TR	FT-6
1212JX-08FF	●		12	12	12	120	12	16	12.0	2	0			
1616JX-08FF	●		16	16	16	120	12	-	16.0	-	0			
SVPPR 1010JX-11FF	●		10	10	10	120	16	20	10.0	8	0	0.2	SB-2570TR	FT-8
1212JX-11FF	●		12	12	12	120	16	20	12.0	6	0			
1616JX-11FF	●		16	16	16	120	16	20	16.0	2	0			
SVPPR 1212F-08FF	●		12	12	12	85	12	16	12.0	2	0	0.1	SB-2050TR	FT-6
1212F-11FF	●		12	12	12	85	16	20	12.0	6	0	0.2	SB-2570TR	FT-8

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B94	B94	B94	B94	B95	B96	B96
Insert / Toolholder	**CF**	**SKS**	**CK**	**GF**	**F-FSF**	**F-U**	**F-USF**
SVPPR...-15JXFF SVPPR...-08FF	-	-	VPGT1515..	-	VPET1515..	-	VPET1515..
SVPPR...-2JXFF SVPPR...-11FF	VPGT22..	VPGT22..	VPGT22..	VPGT22..	VPET22..	VPET22..	VPET22..

Recommended Cutting Conditions **E51**

Undercutting Diameter of SVPP-FF



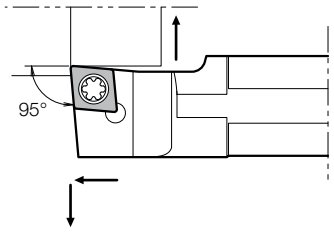
(in)

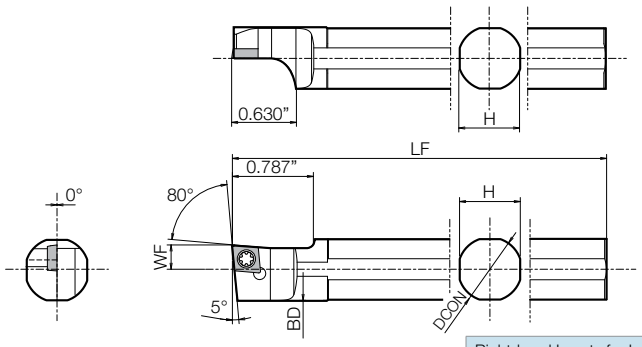
Corner-R (RE)	D.O.C.	DCN (MIN)
0.008	0.020	Ø0.787
	0.039	Ø0.984

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S...SCLC (External / Facing)





• Left-hand Shown

Right-hand Inserts for Left-hand Toolholders.

Toolholder Dimensions

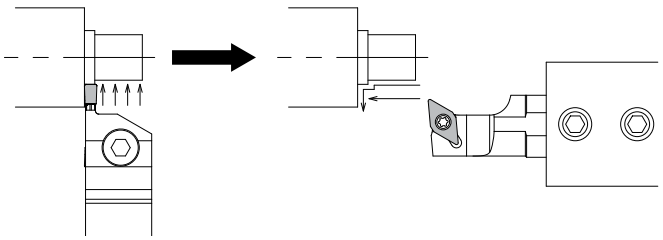
Part Number	Stock	Unit	Dimensions					Standard Corner-R(RE)	Spare Parts	
			DCON	LF	WF	BD	H		Clamp Screw	Wrench
S15F -SCLCL06	●	inch	0.625	3.346	0.236	0.606	0.590	0.016	SB-2570TR	FT-8
S19G -SCLCL06	●		0.750	3.543	0.236	0.724	0.669			
S19K -SCLCL06	●		0.750	4.724	0.236	0.724	0.669			
S19G -SCLCL09	●		0.750	3.543	0.393	0.724	0.669	0.016	SB-4065TR	FT-5
S19K -SCLCL09	●		0.750	4.724	0.393	0.724	0.669			
S25K -SCLCL09	●		1.000	4.724	0.393	0.976	0.905			
S12F -SCLCL06	●	mm	12	80	6	13.4	11	0.4	SB-2560TR	FT-8
S14H -SCLCL06	●		14	100	6	13.4	13			
S16F -SCLCL06	●		16	85	6	15.4	15	0.4	SB-2570TR	
S20G -SCLCL06	●		20	90	6	19.4	18			
S20K -SCLCL06	●		20	120	6	19.4	18			
S20G -SCLCL09	●		20	90	10	19.4	18	0.4	SB-4065TR	FT-15
S20K -SCLCL09	●		20	120	10	19.4	18			
S25.0H -SCLCL09	●		25	100	10	24.4	23			

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Low Feed	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. Page	B53	B53	B54	B58, B59	B55	B60	B60	B60	C24	C14
Insert / Toolholder	SKS	SK	GK	(E/F)R-U	MQ	No Chipbreaker	AH	R-A3	PCD	CBN
S...SCLCL06	CCGT215..	CCGT215..	CCMT215..	CCGT215..	-	CCGW215..	-	-	CCMT215.. CCGW215..	CCMW215..
S...SCLCL09	CCGT325..	CCGT325..	CCMT325..	CCGT325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..

Recommended Cutting Conditions E51

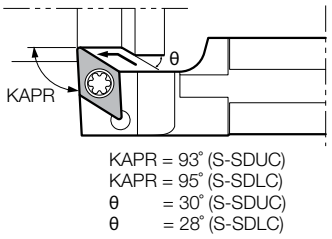
Finishing with Sleeve Holder



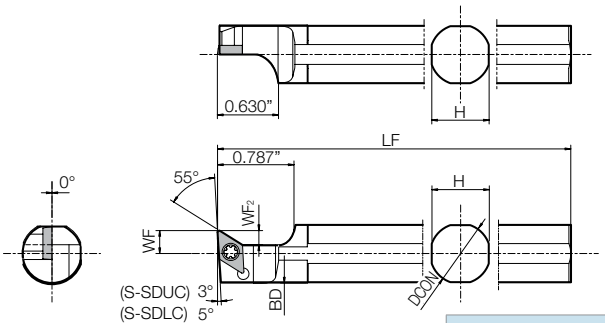
1) Roughing by grooving toolholder

2) Finishing by Sleeve Holder improves chip control and reduces cutting time

S...SDUC (External / Copying) / S...SDLC (External / Copying)



KAPR = 93° (S-SDUC)
KAPR = 95° (S-SDLC)
θ = 30° (S-SDUC)
θ = 28° (S-SDLC)



• Left-hand Shown

Right-hand Inserts for Left-hand Toolholders.

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions						Standard Corner-R (RE)	Spare Parts	
			DCON	LF	WF	BD	H	WF_2		Clamp Screw	Wrench
S15F -SDUCL07	●	inch	0.625	3.346	0.236	0.606	0.590	0.150	1/64	SB-2560TR	FT-8
S19G -SDUCL07	●		0.750	3.543	0.236	0.724	0.669	0.150			
S19K -SDUCL07	●		0.750	4.724	0.236	0.724	0.669	0.150			
S19G -SDUCL11	●		0.750	3.543	0.393	0.724	0.669	0.228	1/64	SB-4085TR	FT-15
S19K -SDUCL11	●		0.750	4.724	0.393	0.724	0.669	0.228			
S25K -SDUCL11	●		1.000	4.724	0.393	0.976	0.905	0.228			
S15F -SDLCL07	●		0.625	3.346	0.236	0.606	0.590	0.150	1/64	SB-2560TR	FT-8
S19G -SDLCL07	●		0.750	3.543	0.236	0.724	0.669	0.150			
S19K -SDLCL07	●		0.750	4.724	0.236	0.724	0.669	0.150			
S19G -SDLCL11	●		0.750	3.543	0.393	0.724	0.669	0.228	1/64	SB-4085TR	FT-15
S19K -SDLCL11	●		0.750	4.724	0.393	0.724	0.669	0.228			
S25K -SDLCL11	●		1.000	4.724	0.393	0.976	0.905	0.228			
S14H -SDUCL07	●	mm	14	100	6	13.4	13	3.8	0.4	SB-2560TR	FT-8
S20G -SDUCL07	●		20	90	6	19.4	18	3.8			
S20K -SDUCL07	●		20	120	6	19.4	18	3.8			
S20G -SDUCL11	●		20	90	10	19.4	18	5.8	0.4	SB-4085TR	FT-15
S20K -SDUCL11	●		20	120	10	19.4	18	5.8			
S22K -SDUCL11	●		22	120	10	21.4	20	5.8			
S25.0H -SDUCL11	●		25	100	10	24.4	23	5.8			
S12F -SDLCL07	●		12	80	6	13.4	11	3.8	0.4	SB-2560TR	FT-8
S14H -SDLCL07	●		14	100	6	13.4	13	3.8			
S16F -SDLCL07	●		16	85	6	15.4	15	3.8			
S20G -SDLCL07	●		20	90	6	19.4	18	3.8			
S20K -SDLCL07	●		20	120	6	19.4	18	3.8			
S20G -SDLCL11	●		20	90	10	19.4	18	5.8	0.4	SB-4085TR	FT-15
S20K -SDLCL11	●		20	120	10	19.4	18	5.8			
S22K -SDLCL11	●		22	120	10	21.4	20	5.8			
S25.0H -SDLCL11	●		25	100	10	24.4	23	5.8			

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. Page	B62	B63	B63	B63	B63	B64	B63	B67	B66	B68, B69
Insert / Toolholder	**CF**	**SKS**	**SK**	**WP** (Wiper)	**PP**	**GK**	**GQ**	**R-F**	**R-FSF**	**(E/F) R-U**
S...SD□CL07	DCGT215..	DCGT215..	DCGT215..	DCMX215..	DCMT215..	DCMT215..	DCGT215..	DCGT215..	DCET215..	DCGT215..
S...SD□CL11	DCGT325..	DCGT325..	DCGT325..	DCMX325..	DCMT325..	DCMT325..	DCGT325..	DCGT325..	DCET325..	DCGT325..
Application	Low Feed / Precision	Low Feed	Low Carbon Steel / Finishing	Low Carbon Steel/ Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard materials
Ref. Page	B68	B70, B71	B65	B65	B65	B71	B71	B71	C25	C15
Insert / Toolholder	**FR-USF**	**(E/F)R-J**	**XP**	**XQ**	**MQ**	**Without Chipbreaker**	**AH**	**R-A3**	**PCD**	**CBN**
S...SD□CL07	DCET215..	DCET215..	DCMT215..	-	DCMT215..	DCGW215..	-	-	DCMT215..	DCMW215..
S...SD□CL11	DCET325..	DC_T325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

When using **WP** chipbreaker, program corrections are required. (S...SDLC type cannot be used) R51

Recommended Cutting Conditions E51

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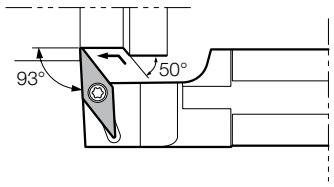
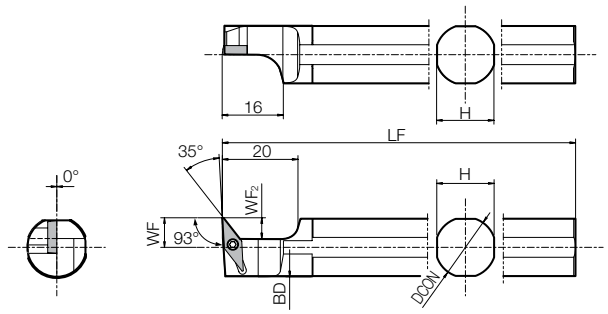
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S...SVUB(C) (External / Copying)





• Left-hand Shown

Right-hand Inserts for Left-hand Toolholders.

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions						Standard Corner-R (RE)	Spare Parts	
			DCON	LF	WF	BD	H	WF_2		Clamp Screw	Wrench
S15F -SVUCL08	●	inch	0.625	3.346	0.315	0.606	0.591	0.217	1/64	SB-2050TR	FT-6
S19G -SVUCL11	●		0.750	3.543	0.413	0.724	0.669	0.315	0.008	SB-2570TR	FT-8
S19K -SVUCL11	●		0.750	4.724	0.413	0.724	0.669	0.315			
S25K -SVUCL11	●		1.000	4.724	0.413	0.976	0.906	0.315			
S19K -SVUBL11	●		0.750	4.724	0.413	0.724	0.669	0.315	1/64	SB-2570TR	FT-8
S25K -SVUBL11	●		1.000	4.724	0.413	0.976	0.906	0.315			
S12F -SVUCL08	●	mm	12	80	7.5	13.4	11	5.5	0.4	SB-2050TR	FT-6
S14H -SVUCL08	●		14	100	7.5	13.4	13	5.5			
S16F -SVUCL08	●		16	85	8	15.4	15	5.5			
S20G -SVUCL11	●		20	90	10.5	19.4	18	8	0.2	SB-2570TR	FT-8
S20K -SVUCL11	●		20	120	10.5	19.4	18	8			
S25.0H -SVUCL11	●		25	100	10.5	24.4	23	8			
S20G -SVUBL11	●		20	90	10.5	19.4	18	8	0.4	SB-2570TR	FT-8
S20K -SVUBL11	●		20	120	10.5	19.4	18	8			
S25.0H -SVUBL11	●		25	100	10.5	24.4	23	8			

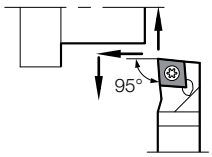
Applicable Inserts

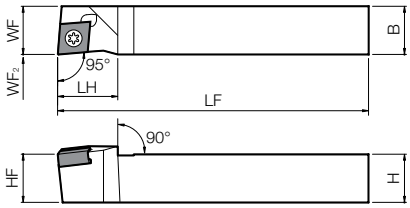
Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium
Ref. Page	B92	B92	B92	B89	B89, B92	B89, B92	B90, B93	B89	B91, B93
Insert / Toolholder	**CF**	**GF**	**SKS**	**GP**	**VF**	**HQ**	**R-F**	**R-FSF**	**R-Y**
S...SVUCL08	-	-	-	-	VCMT1515..	VCMT1515..	-	-	-
S...SVUBL11	-	-	-	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..
S...SVUCL11	VCGT22..	VCGT22..	VCGT22..	-	-	-	VCET22..	-	VCET22..

Application	Non-ferrous Metals	Hard Materials
Ref. Page	C28	C17
Insert / Toolholder	**PCD**	**CBN**
S...SVUCL08	VCMT1515..	VCGW1515..
S...SVUBL11	VBMT22..	VBGW22..
S...SVUCL11	-	-

Recommended Cutting Conditions **E51**

SCLN (Without Offset • External / Facing)





Side Rake Angle : - 6°
Inclination Angle : - 6°

• Right-hand Shown

Toolholder Dimensions

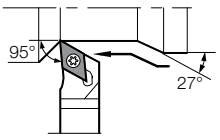
Part Number	Stock	Unit	Dimensions							Standard Corner-R (RE)	Spare Parts		Applicable Inserts
			H	HF	B	LF	LH	WF	WF_2		Clamp Screw	Wrench	
SCLNR 6-2.4FF	●	inch	0.375	0.375	0.375	6.00	0.590	0.375	0	0.008	SB-3080TR	LTW-10SS	CNGU242.. CNMU242..
8-2.4DF	●		0.500	0.500	0.500	6.00	0.590	0.500	0				
10-2.4CF	●		0.625	0.625	0.625	5.00	0.590	0.625	0				
SCLNR 1010K-07FF	●	mm	10	10	10	120	15	10	0	0.2	SB-3080TR	LTW-10SS	CNGU242.. CNMU242..
1212F-07FF	●		12	12	12	85	15	12	0				
1212K-07FF	●		12	12	12	120	15	12	0				
1616K-07FF	●		16	16	16	120	15	16	0				

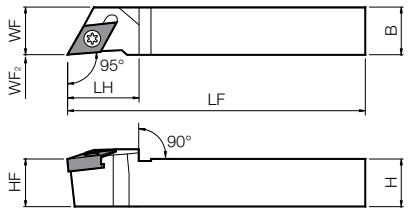
Applicable Inserts

Application	Finishing-Medium	Medium-Roughing	Finishing	Low Feed
Ref. Page	B50	B50	B50	B50
Insert / Toolholder	SK	GK	FR-F	(F/E)R-U
SCLNR...-2.4... SCLNR...-07FF	CNGU242..	CNMU242..	CNGU242..	CNGU242..

Recommended Cutting Conditions **E45**

SDLN (Without Offset • External / Copying)





Side Rake Angle : - 6°
Inclination Angle : - 7°

• Right-hand Shown

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions							Standard Corner-R (RE)	Spare Parts		Applicable Inserts
			H	HF	B	LF	LH	WF	WF_2		Clamp Screw	Wrench	
SDLNR 6-2.2FF	●	inch	0.375	0.375	0.375	6.00	0.708	0.375	0	0.008	SB-3080TR	LTW-10SS	DNGU222.. DNMU222..
8-2.2DF	●		0.500	0.500	0.500	6.00	0.708	0.500	0				
10-2.2CF	●		0.625	0.625	0.625	5.00	0.708	0.625	0				
SDLNR 1010K-08FF	●	mm	10	10	10	120	18	10	0	0.2	SB-3080TR	LTW-10SS	DNGU222.. DNMU222..
1212F-08FF	●		12	12	12	85	18	12	0				
1212K-08FF	●		12	12	12	120	18	12	0				
1616K-08FF	●		16	16	16	120	18	16	0				

Applicable Inserts

Application	Finishing-Medium	Medium-Roughing	Finishing	Low Feed
Ref. Page	B51	B51	B51	B51
Insert / Toolholder	SK	GK	FR-F	(F/E)R-U
SDLNR...2.2... SDLNR...-08FF	DNGU222..	DNMU222..	DNGU222..	DNGU222..

Recommended Cutting Conditions **E45**

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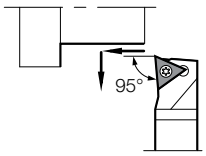
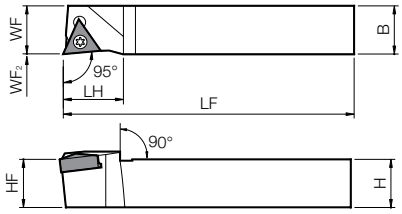
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

STLN (Without Offset • External / Up Facing)





Side Rake Angle : - 6°
Inclination Angle : - 7°

• Right-hand Shown

Toolholder Dimensions

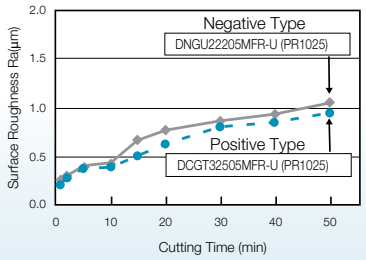
Part Number		Stock	Unit	Dimensions							Standard Corner-R (RE)	Spare Parts		Applicable Inserts
				H	HF	B	LF	LH	WF	WF_2		Clamp Screw	Wrench	
STLNR	6-1.8FF	●	inch	0.375	0.375	0.375	6.00	0.590	0.375	0	0.008	SB-2570TR	LTW-8SS	TNGU182..
	8-1.8DF	●		0.500	0.500	0.500	6.00	0.590	0.500	0				
	10-1.8CF	●		0.625	0.625	0.625	5.00	0.590	0.625	0				
STLNR	1010K-09FF	●	mm	10	10	10	120	15	10	0	0.2	SB-2570TR	LTW-8SS	TNGU182..
	1212F-09FF	●		12	12	12	85	15	12	0				
	1212K-09FF	●		12	12	12	120	15	12	0				
	1616K-09FF	●		16	16	16	120	15	16	0				

Applicable Inserts

Application	Finishing	Low Feed
Ref. Page	B52	B52
Insert / Toolholder	FR-F	(E/F)R-U
STLNR...1.8... STLNR...-09FF	TNGU182..	TNGU182..

Double-sided design allows both edges to be used. Compared to the positive type, the double-sided design offers less cost per insert and more stability.

Surface roughness comparison (Sharp edge)



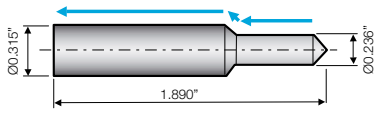
<Cutting Conditions>
Workpiece Material : 1045 Steel Vc = 325 sfm, D.O.C. = 0.059", f = 0.0012 ipr, Wet

(Internal Evaluation)

Case Studies

303 Stainless Steel

• Spool
<0.236" Dia. portion>
• Vc = 225 sfm
• D.O.C. = 0.049"
• f = 0.001 ipr
• Wet
<0.315" Dia. portion>
• Vc = 425 sfm
• D.O.C. = 0.001"
• f = 0.001 ipr
• Wet



Required Surface 0.8μmRa

DNGU22205MF-SK (PR1025)	60,000 pcs/Insert (4 edges)
Competitor D (DCGT)	20,000 pcs/Insert (2 edges)

Competitor D (DCGT) machined 10,000 pcs/edge. PR1025 machined 15,000 pcs/edge resulting in 3 times longer tool life per insert.

(User Evaluation)

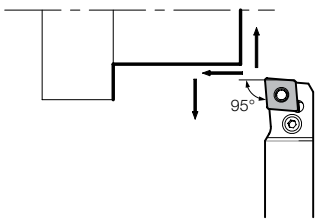
Recommended Cutting Conditions

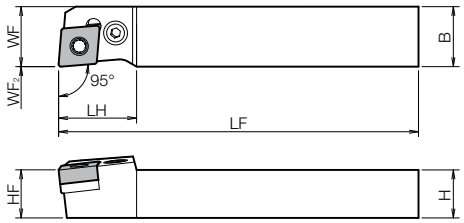
Workpiece Material	PR1225	PR1535	PR1705	PR1725
Free-Cutting Steel	-	-	● Vc=330sfm (200~490)	◔ Vc=330sfm (200~490)
Carbon Steel / Alloy Steel	◔ Vc=330sfm (200~500)	◔ Vc=330sfm (200~490)	◔ Vc=430sfm (200~720)	● Vc=430sfm (200~660)
Stainless Steel	◔ Vc=260sfm (160~490)	◔ Vc=330sfm (200~590)	-	◔ Vc=330sfm (260~490)

● : Continuous to Light interruption / 1st Recommendation
◔ : Continuous to Light interruption / 2nd Recommendation

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

PCLN-FF (Without Offset • External / Facing)





Side Rake Angle : - 6°
Inclination Angle : - 6°

• Right-hand Shown

Toolholder Dimensions

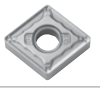
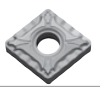
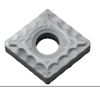
Part Number		Stock	Dimensions (mm)							Standard Corner-R (RE)	Spare Parts					
			H	HF	B	LF	LH	WF	WF_2		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PCLNR	**1620JX-12FF**	●	16	16	20	120	26	20	0	0.8	LL-2N	LS-2N	LC-42N	LSP-2	PC-2	LW-3
	2020JX-12FF	●	20	20												

Applicable Inserts (1st Recommendation)

Application	Finishing-Medium	Medium-Roughing
Ref. Page	B19	B19
Insert / Toolholder	**FP-SK**	**FP-TK**
PCLNR...-12FF	CNGG43..FP-SK	CNGG43..FP-TK

Recommended Cutting Conditions ➡ **E45**

Applicable Inserts (CN□□ Optional)

Application	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate
Insert	**WF** (Wiper)	**WE** (Wiper)	**PP**	**PQ**	**CQ**	**CJ**	**GS**	**PG** 	**PS**	**PT**
Size	43..	43..	43..	43..	43..	43..	43..	43..	43..	43..
Ref. Page	B16	B16	B16	B16	B17	B17	B17	B17	B17	B18
Application	Roughing	Roughing	Single Sided / Roughing / High Feed Rate	Finishing	Medium	Soft Steel / Small D.O.C.	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing
Insert	**Standard**	**PH**	**PX**	**R/L-S**	**R/L**	**XF**	**XP** 	**XQ** 	**XS**	**MQ**
Size	43..	43..	43..	-	43..	43..	43..	43..	43..	43..
Ref. Page	B18	B18	B19	-	B22	B19	B19	B19	B19	B20
Application	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Insert	**MS**	**MU**	**KQ**	**KG**	**KH**	**C**	**ZS**	**GC**	**Without Chipbreaker**	**Ceramic**
Size	43..	43..	43..	43..	43..	43..	43..	43..	43..	43..
Ref. Page	B20	B20	B21	B21	B21	B21	B21	B21	B21	B106
Application	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Heat-Resistant Alloys	Heat-Resistant Alloy Roughing	Heat-Resistant Alloy Roughing	Hard Materials			
Insert	**A3**	**AH**	**PCD**	**SQ**	**SG**	**R/L-SX**	**CBN**			
Size	43..	43..	43..	43..	43..	43..	43..			
Ref. Page	B22	B22	C23	B20	B20	B21	C6, C7			

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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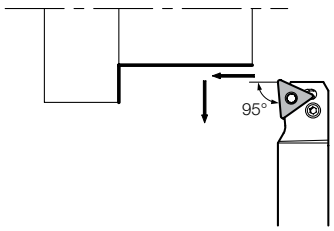
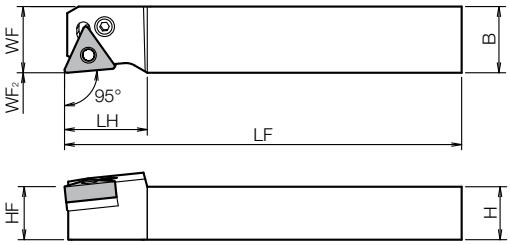
PTLN-FF (Without Offset • External / Up Facing)





Side Rake Angle : - 6°
Inclination Angle : - 6°

• Right-hand Shown

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)							Standard Corner-R (RE)	Spare Parts					
			H	HF	B	LF	LH	WF	WF_2		Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PTLNR	**1620JX-16FF**	●	16	16	20	120	24	20	0	0.8	LL-1N	LS-1N	LT-32N ※LT-32N-20	LSP-1	PC-1	FH-2.5
	2020JX-16FF	●	20	20												

※ When using inserts whose corner R (RE) is greater than 1.6mm, please purchase and use **LT-32N-20** shim to prevent workpiece and shim interference

Applicable Inserts (1st Recommendation)

Application	Finishing-Medium	Medium-Roughing	Large D.O.C.
Ref. Page	B38	B39	B38
Insert / Toolholder	**FP-SK**	**FP-TK**	**R-LD**
PTLNR...-16FF	TNGG33..FP-SK	TNGG33..FP-TK	TNMG33..R-LD

Recommended Cutting Conditions **E45**

Applicable Inserts (TN□□ Optional)

Application	Finishing	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Medium-Roughing / High Feed Rate	Medium-Roughing	Single Sided / Roughing / High Feed	Roughing
Insert	**PP**	**PQ**	**CQ**	**GS**	**PG**	**PS**	**PT**	**GT**	**PH**	**PX**	**Standard**
Size	33..	33..	33..	33..	33..	33..	33..	33..	33..	33..	33..
Ref. Page	B36	B36	B36	B36	B36	B37	B37	B37	B37	B38	B37
Application	Finishing	Finishing-Roughing	Medium-Roughing Low Cutting Force	Soft Steel / Small D.O.C.	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Heat-Resistant Alloy Roughing
Insert	**R-S**	**R-□**	**R-25R**	**XF**	**XP**	**XQ**	**XS**	**MQ**	**MS**	**MU**	**SG**
Size	33..	33..	33..	33..	33..	33..	33..	33..	33..	33..	33..
Ref. Page	B42	B42, B43	B43	B38	B38	B38	B38	B39	B39	B39	B39
Application	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials		
Insert	**KQ**	**KG**	**KH**	**ZS**	**Ceramic**	**R-A3**	**AH**	**PCD**	**CBN**		
Size	33..	33..	33..	33..	33..	33..	33..	33..	33..		
Ref. Page	B40	B40	B40	B40	B111	B41	B41	C23	C10, C11		

KSTB...CCET

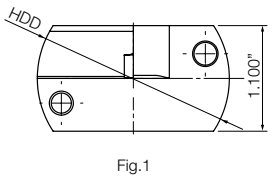


Fig.1

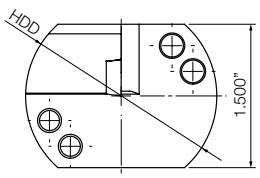
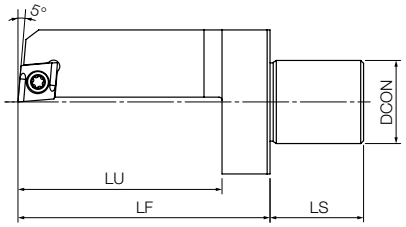


Fig.2



Toolholder Dimensions

Part Number	Stock	Dimensions (in)					Drawing	Spare Parts		Applicable Inserts ➔ B53~B60		Reference Machine
		DCON	HDD	LF	LU	LS		Clamp Screw	Wrench			
KSTB SR16/20 CCET215	●	0.866	2.000	2.250	1.875	1.073	Fig.1	SB-2560TR	FT-8	CCET CCGT	215	SR16, SR20
KSTB SR16/20 CCET325	●	0.866	2.000	2.250	1.875	1.073	Fig.1	SB-4085TR	FT-15		325	SR16, SR20
KSTB SR32J CCET325	●	0.866	2.000	2.625	2.125	0.980	Fig.2	SB-4085TR	FT-15		325	SR32J

KSTB...DCET

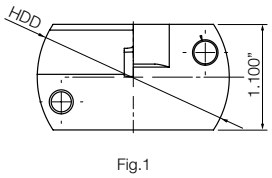


Fig.1

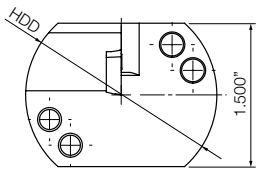
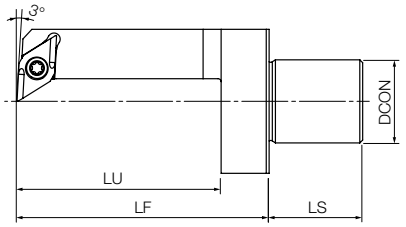


Fig.2



Toolholder Dimensions

Part Number	Stock	Dimensions (in)					Drawing	Spare Parts		Applicable Inserts ➔ B62~B71		Reference Machine
		DCON	HDD	LF	LU	LS		Clamp Screw	Wrench			
KSTB SR16/20 DCET215	●	0.866	2.000	2.250	1.875	1.073	Fig.1	SB-2560TR	FT-8	DCET DCGT	215	SR16, SR20
KSTB SR16/20 DCET325	●	0.866	2.000	2.250	1.875	1.073	Fig.1	SB-4085TR	FT-15		325	SR16, SR20
KSTB SR32J DCET325	●	0.866	2.000	2.625	2.125	0.980	Fig.2	SB-4085TR	FT-15		325	SR32J

KSTB...VBET

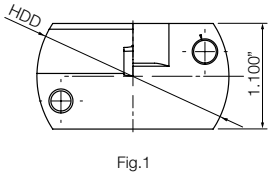


Fig.1

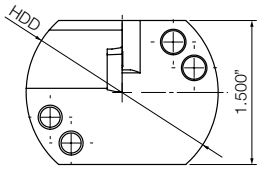
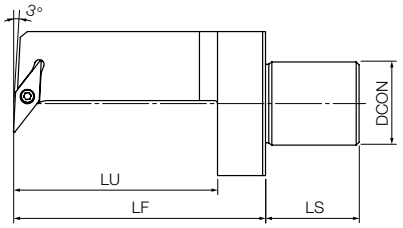


Fig.2



Toolholder Dimensions

Part Number	Stock	Dimensions (in)					Drawing	Spare Parts		Applicable Inserts ➔ B89~B90		Reference Machine
		DCON	HDD	LF	LU	LS		Clamp Screw	Wrench			
KSTB SR16/20 VBET22	●	0.866	2.000	2.250	1.875	1.073	Fig.1	SB-2570TR	FT-8	VBET	22	SR16, SR20
KSTB SR32J VBET22	●	0.866	2.000	2.625	2.125	0.980	Fig.2	SB-2570TR	FT-8		22	SR32J

Note: All KSTB holders are right-hand, which require neutral or left-hand inserts

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KSTB...TGF

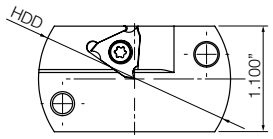


Fig.1

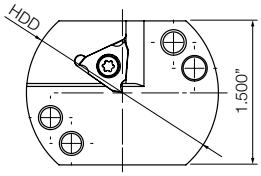
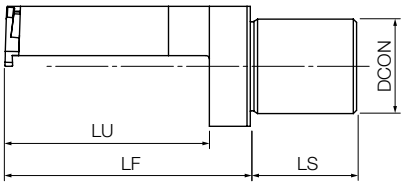


Fig.2



Toolholder Dimensions

Part Number	Stock	Dimensions (in)					Drawing	Spare Parts		Applicable Inserts	Reference Machine
		DCON	HDD	LF	LU	LS		Clamp Screw	Wrench		
KSTB SR16/20 TGF32	●	0.866	2.000	2.250	1.875	1.073	Fig.1	SB-4070TRS	FT-10	TGF32L..	SR16, SR20
KSTB SR32J TGF32	●	0.866	2.000	2.625	2.125	0.980	Fig.2	SB-4070TRS	FT-10		SR32J

KSTB...TT

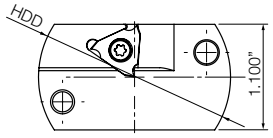


Fig.1

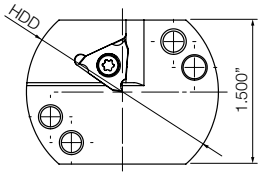
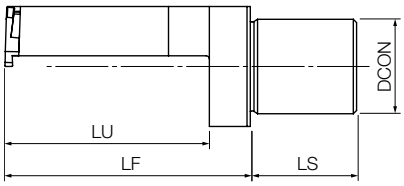


Fig.2

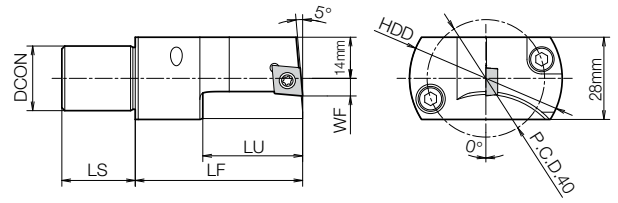


Toolholder Dimensions

Part Number	Stock	Dimensions (in)					Drawing	Spare Parts		Applicable Inserts	Reference Machine
		DCON	HDD	LF	LU	LS		Clamp Screw	Wrench		
KSTB SR16/20 TT32	●	0.866	2.000	2.250	1.875	1.073	Fig.1	SB-4070TRS	FT-10	TT32..	SR16, SR20
KSTB SR32J TT32	●	0.866	2.000	2.625	2.125	0.980	Fig.2	SB-4070TRS	FT-10		SR32J

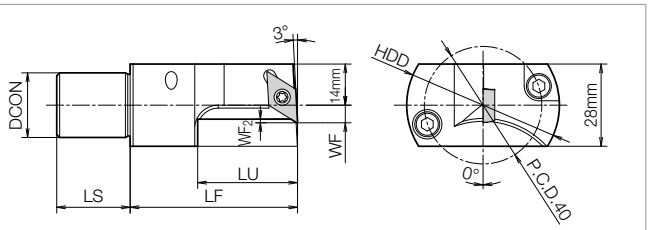
Note: All KSTB holders are right-hand, which require neutral or left-hand inserts

SF22F-SCLC (External / Facing) [for CC..32.. Inserts B53~B60]



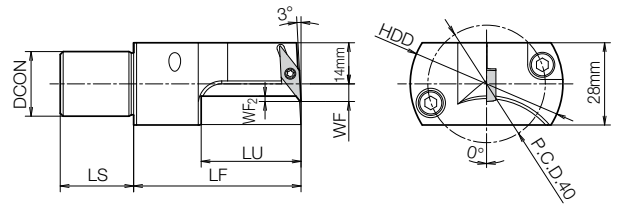
• Left-hand Shown

SF22F-SDUC (External / Facing) [for DC..32.. Inserts B62~B71]



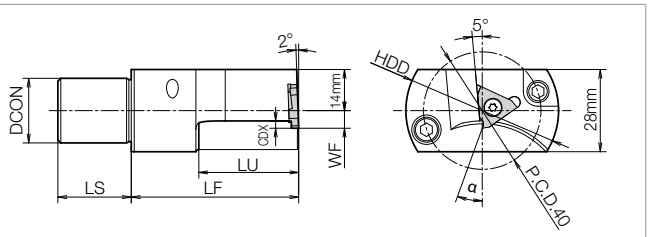
• Left-hand Shown

SF22F-SVUB (External / Copying) [for VB..22.. Inserts B89~B91]



• Left-hand Shown

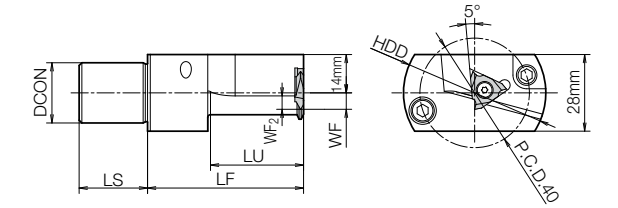
SF22F-KTGF (External Grooving) [for TGF32R... Inserts G21]



• Left-hand Shown

*Dimension **CDX** shows the available grooving depth

SF22F-KTTX (External Threading) [for TTX32R... Inserts J29]



• Left-hand Shown

α (°)	Insert Grade
20°	PR1115, PR1215 PR930, KW10
11°	KPD001
6°	TC40

Toolholder Dimensions

Part Number	Stock	Dimensions (mm)							Standard Corner-R (RE)	Spare Parts					
		DCON	HDD	LF	LS	LU	WF	WF_2 CDX		Insert Screw	Wrench	Mounting Bolt	Wrench	Adjustment Screw	Wrench
SF22F-SCLCL09-40P	△	22	52	57	25	34	6	-	0.2	SB-4085TR	FT-15	HH5X30	LW-4	HS3X4	LW-1.5
SF22F-SDUCL11-40P	△							1.5	0.2						
SF22F-SVUBL11-40P	△							3.0	0.2	SB-2570TR	FT-8				
SF22F-KTGFL16-40P	△							2.5	-	SB-4070TRS	FT-10				
SF22F-KTTXL16-40P	△							4.0	-	SB-4070TRW	FT-8				

Note: All SF22F holders are left-hand, which require neutral or right-hand inserts

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(Technical Support) 800.823.7284 - Option 2
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Recommended Cutting Conditions - External Turning (Positive Insert)

[D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Application	Recommended Chipbreaker	Recommended Grade	Corner-R (RE)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (in)	Feed Rate f (ipr)
※P	Low-carbon Steel Low-carbon Alloy	HB ≦ 300	Precision Finishing	Continuous	F	PR1725	0.002	330 - **490** - 660	0.002 - **0.003** - 0.006	0.001 - **0.002** - 0.004
				Interrupted		PR1725	0.008	260 - **390** - 520	0.002 - **0.004** - 0.008	0.001 - **0.004** - 0.006
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1725	0.008	330 - **490** - 660	0.001 - **0.002** - 0.004	0.001 - **0.002** - 0.005
			Finishing	Continuous	GF	PR1725	0.008	330 - **460** - 590	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted		PR1725	1/64	260 - **390** - 520	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	GQ	PR1725	0.008	260 - **390** - 520	0.031 - **0.118** - 0.197	0.001 - **0.002** - 0.004
				Interrupted		PR1725	1/64	200 - **330** - 460	0.031 - **0.079** - 0.118	0.001 - **0.002** - 0.004
			Low Feed & Large D.O.C.	Continuous	J, U	PR1725	0.008	260 - **330** - 460	0.020 - **0.079** - 0.138	0.001 - **0.002** - 0.004
	Medium-carbon Steel Medium-carbon Alloy	HB ≦ 330	Precision Finishing	Continuous	F	PR1725	0.002	330 - **490** - 660	0.002 - **0.003** - 0.006	0.001 - **0.002** - 0.004
				Interrupted		PR1725	0.008	260 - **390** - 520	0.002 - **0.004** - 0.008	0.001 - **0.004** - 0.006
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1725	0.008	330 - **490** - 660	0.001 - **0.002** - 0.004	0.001 - **0.002** - 0.005
			Finishing	Continuous	GF	PR1725	0.008	330 - **460** - 590	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted		PR1725	1/64	260 - **390** - 520	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	GQ	PR1725	0.008	260 - **390** - 520	0.031 - **0.118** - 0.197	0.001 - **0.002** - 0.004
				Interrupted		PR1725	1/64	200 - **330** - 460	0.031 - **0.079** - 0.118	0.001 - **0.002** - 0.004
			Low Feed & Large D.O.C.	Continuous	J, U	PR1725	0.008	260 - **330** - 460	0.020 - **0.079** - 0.138	0.001 - **0.002** - 0.004
	High-carbon Alloy	HB ≦ 280	Precision Finishing	Continuous	F	PR1725	0.002	330 - **490** - 660	0.002 - **0.003** - 0.006	0.001 - **0.002** - 0.004
				Interrupted		PR1725	0.008	260 - **390** - 520	0.002 - **0.004** - 0.008	0.001 - **0.004** - 0.006
			Precision Finishing (Molded Chipbreaker)	Continuous	CF	PR1725	0.008	330 - **490** - 660	0.001 - **0.002** - 0.004	0.001 - **0.002** - 0.005
			Finishing	Continuous	GF	PR1725	0.008	330 - **460** - 590	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interrupted		PR1725	1/64	260 - **390** - 520	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	GQ	PR1725	0.008	260 - **390** - 520	0.012 - **0.059** - 0.118	0.001 - **0.002** - 0.004
				Interrupted		PR1725	1/64	200 - **330** - 460	0.012 - **0.039** - 0.079	0.001 - **0.002** - 0.004
			Low Feed & Large D.O.C.	Continuous	J, U	PR1725	0.008	260 - **330** - 460	0.020 - **0.079** - 0.138	0.001 - **0.002** - 0.004
M	Stainless Steel (Austenitic)	HB ≦ 220	Finishing	Continuous	GF	PR1225	0.008	260 - **330** - 390	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted		PR1535	1/64	200 - **260** - 330	0.012 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	GQ	PR1225	0.008	260 - **330** - 390	0.020 - **0.059** - 0.118	0.001 - **0.003** - 0.005
				Interrupted		PR1535	1/64	200 - **260** - 330	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
	Stainless Steel (Precipitation Hardend)	HB ≦ 300	Finishing	Continuous	GF	PR1225	0.008	130 - **200** - 260	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted		PR1535	1/64	100 - **160** - 230	0.012 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	GQ	PR1225	0.008	130 - **200** - 260	0.020 - **0.039** - 0.079	0.001 - **0.003** - 0.005
				Interrupted		PR1535	1/64	100 - **160** - 230	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.006
K	Gray Cast Iron	HB ≦ 250	Finishing	Continuous	Standard	CA310	1/64	330 - **390** - 490	0.008 - **0.020** - 0.039	0.004 - **0.006** - 0.008
				Interrupted		CA315	1/64	260 - **330** - 390	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	Standard	CA310	1/64	330 - **390** - 490	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.008
				Interrupted		CA315	1/32	260 - **330** - 390	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
	Nodular Cast Iron	HB ≦ 270	Finishing	Continuous	Standard	CA310	1/64	260 - **330** - 390	0.008 - **0.020** - 0.039	0.004 - **0.006** - 0.008
				Interrupted		CA315	1/64	200 - **260** - 330	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	Standard	CA315	1/64	260 - **330** - 390	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.008
				Interrupted		CA320	1/32	200 - **260** - 330	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
N	Non-ferrous Metals Copper Alloy Aluminum Alloy (Si 10% Under) etc.	HB ≦ 100	High Speed Finishing (Glossy Surface Finish)	Continuous	Without Chipbreaker	KPD001	0.008	490 - **820** - 1150	0.002 - **0.004** - 0.012	0.002 - **0.004** - 0.006
			Finishing (Long Tool Life)	Continuous	F	PDL025	0.008	330 - **490** - 660	0.002 - **0.012** - 0.020	0.001 - **0.003** - 0.004
				Interrupted		PDL025	1/64	330 - **490** - 660	0.002 - **0.012** - 0.020	0.001 - **0.003** - 0.004
			Finishing	Continuous	F	KW10	0.008	330 - **490** - 660	0.002 - **0.012** - 0.020	0.001 - **0.003** - 0.004
				Interrupted		KW10	1/64	330 - **490** - 660	0.002 - **0.012** - 0.020	0.001 - **0.003** - 0.004
			Medium	Continuous	U	KW10	0.008	330 - **490** - 660	0.008 - **0.020** - 0.059	0.001 - **0.004** - 0.008
				Interrupted		KW10	1/64	330 - **490** - 660	0.008 - **0.020** - 0.059	0.001 - **0.004** - 0.008
S	Titanium Alloys	HB ≦ 400	Precision Finishing (Glossy Surface Finish)	Continuous	Without Chipbreaker	KPD001	0.008	330 - **390** - 490	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
				Interrupted		KPD001	1/64	230 - **330** - 390	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
			Medium	Continuous	F, U	KW10	1/64	100 - **160** - 230	0.004 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interrupted		KW10	1/64	100 - **160** - 230	0.004 - **0.020** - 0.039	0.001 - **0.004** - 0.008
	Heat-restistant Alloys	HB ≦ 350	Finishing	Continuous	F, U	KW10	1/64	30 - **100** - 160	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted	Without Chipbreaker	KW10	1/32	30 - **100** - 160	0.008 - **0.020** - 0.028	0.001 - **0.002** - 0.004
			Finishing	Continuous	MQ	PR1535	1/64	130 - **200** - 260	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interrupted		PR1535	1/32	130 - **200** - 260	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
H	Hardened Steel Hard Materials	40 ~ 50 HRC	Finishing	Continuous	GK	PR1425	0.008	130 - **200** - 260	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004
				Interrupted		PR1425	1/64	130 - **200** - 260	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004
		50 ~ 68 HRC	Finishing	Continuous	ME MET	KBN05M	0.008	260 - **390** - 490	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004
				Interrupted		KBN05M	1/64	200 - **330** - 390	0.004 - **0.012** - 0.020	0.001 - **0.003** - 0.004

※ For machining free-cutting steels, use PR1005 at Vc=650sfm or less. For D.O.C. and feed rate (f), refer to specs for low carbon steels.

Recommended Cutting Conditions - Back Turning

KTKF E12

Workpiece Material		MEGACOAT NANO PLUS		MEGACOAT NANO				MEGACOAT		Notes
		PR1725		PR1535		PR1425		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	★ 200 ~ 660		☆ 200 ~ 500		☆ 250 ~ 650		☆ 200 ~ 500		Wet
	Feed (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0059	0.0004 ~ 0.0012	0.0008 ~ 0.0059	0.0004 ~ 0.0012	0.0008 ~ 0.0059	0.0004 ~ 0.0012	0.0008 ~ 0.0059	
Stainless Steel	Vc (sfm)	☆ 200 ~ 490		★ 200 ~ 425		☆ 200 ~ 500		☆ 200 ~ 425		
	Feed (ipr)	0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	

Workpiece Material		PVD Coated Carbide		Carbide		PCD		Notes
		PR1025		KW10		KPD001		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	☆ 200 ~ 500		-		-		Wet
	Feed (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0059	-		-		
Stainless Steel	Vc (sfm)	☆ 175 ~ 400		-		-		
	Feed (ipr)	0.0004 ~ 0.0008	0.0008 ~ 0.0039	-		-		
Cast Iron	Vc (sfm)	-		175 ~ 325		-		
	Feed (ipr)	-		0.0004 ~ 0.0012	0.0008 ~ 0.00395	-		
Aluminum	Vc (sfm)	-		650 ~ 1475		200 ~ 500		
	Feed (ipr)	-		0.0004 ~ 0.0012	0.0008 ~ 0.00395	0.0004 ~ 0.0012	0.0008 ~ 0.00395	
Brass	Vc (sfm)	-		325 ~ 650		200 ~ 425		
	Feed (ipr)	-		0.0004 ~ 0.0008	0.0008 ~ 0.0039	0.0004 ~ 0.0008	0.0008 ~ 0.0039	

KTKF (GTP Chipbreaker) E12

Workpiece Material		MEGACOAT NANO PLUS		MEGACOAT NANO		Notes
		PR1725		PR1535		
		Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	★ 200 ~ 660		☆ 200 ~ 490		Wet
	Feed (ipr)	0.001 ~ 0.003	0.002 ~ 0.006	0.001 ~ 0.003	0.002 ~ 0.006	
Stainless Steel	Vc (sfm)	☆ 200 ~ 490		★ 200 ~ 430		
	Feed (ipr)	0.001 ~ 0.002	0.001 ~ 0.004	0.001 ~ 0.002	0.001 ~ 0.004	

KTKF (GQ Chipbreaker) E12

Workpiece Material		MEGACOAT NANO PLUS		MEGACOAT NANO				MEGACOAT		Notes
		PR1725		PR1535		PR1425		PR1225		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	★ 200 ~ 660		☆ 200 ~ 500		☆ 250 ~ 650		☆ 200 ~ 500		Wet
	Feed (ipr)	0.0004 ~ 0.0016	0.0008 ~ 0.0059	0.0004 ~ 0.0015	0.0008 ~ 0.0059	0.0004 ~ 0.0015	0.0008 ~ 0.0059	0.0004 ~ 0.0015	0.0008 ~ 0.0059	
Stainless Steel	Vc (sfm)	☆ 200 ~ 490		★ 200 ~ 425		☆ 200 ~ 500		☆ 200 ~ 425		
	Feed (ipr)	0.0004 ~ 0.0012	0.0008 ~ 0.0039	0.0004 ~ 0.0012	0.0008 ~ 0.0039	0.0004 ~ 0.0012	0.0008 ~ 0.0039	0.0004 ~ 0.0012	0.0008 ~ 0.0039	

KTKF (AGT Chipbreaker) E12

Workpiece Material		PCD		Notes
		KPD001		
		Grooving	Turning	
Aluminum	Vc (sfm)	660 ~ 1,640		Wet
	Feed (ipr)	0.001 ~ 0.006	0.001 ~ 0.008	
Brass	Vc (sfm)	330 ~ 1,150		
	Feed (ipr)	0.001 ~ 0.006	0.001 ~ 0.008	

ABS15, ABW15, ABW23 E19~E21

Workpiece Material		MEGACOAT NANO PLUS				MEGACOAT NANO		MEGACOAT		PVD Coated Carbide		Notes
		PR1725		PR1705		PR1425		PR1225		PR930		
		Grooving	Turning	Grooving	Turning	Grooving	Turning	Grooving	Turning	Grooving	Turning	
Carbon Steel / Alloy Steel	Vc (sfm)	★ 200 ~ 590		☆ 260 ~ 660		☆ 250 ~ 600		☆ 200 ~ 500		☆ 250 ~ 325		Wet
	Feed (ipr)	0.0008	0.0008~0.0028	0.0008	0.0008~0.0028	0.0008	0.0008~0.0028	0.0008	0.0008~0.0028	0.0008	0.0008~0.0028	
Stainless Steel	Vc (sfm)	☆ 100 ~ 430		☆ 130 ~ 490		☆ 125 ~ 425		★ 125 ~ 400		☆ 100 ~ 175		
	Feed (ipr)	0.0008	0.0008~0.0020	0.0008	0.0008~0.0020	0.0008	0.0008~0.0020	0.0008	0.0008~0.0020	0.0008	0.0008~0.0020	

Workpiece Material		Carbide		Notes
		KW10		
		Grooving	Turning	
Aluminum	Vc (sfm)	500 ~ 650		Wet
	Feed (ipr)	0.0008	0.0008 ~ 0.0039	
Brass	Vc (sfm)	325 ~ 525		
	Feed (ipr)	0.0012	0.0008 ~ 0.0059	

★ : 1st Recommendation
☆ : 2nd Recommendation

New Part Description (Change in Overall Length) Reference Table for Small Tools (Back Clamp)

Conventional Toolholder						New Swiss Length Toolholder			
Insert Shape	Part Number	Overall Length	Spare Parts: Anchor Pin	Spare Parts: Lock Screw	Spare Parts: Wrench	Part Number	Overall Length	Notes	Ref. to Page
ABS15	AABSR6-15CF	5.00"	LPA-11	HSB4X8R	FH-2	AABSR6-15JXF	4.75"		E19
	AABSR8-15DF	6.00"	LPA-13			AABSR8-15JXF	4.75"		
	-	-	LPA-17			AABSR10-15JXF	4.75"		
	AABSR0810K-40F	125mm	LPA-11	HSB4x8R	FH-2	-	-	No Alternative	-
	AABSR1010K-40F	125mm				AABSR1010JX-40F	120mm		E19
	AABSR1212M-40F	150mm	LPA-13			AABSR1212JX-40F	120mm		
	AABSR1616M-40F	150mm	LPA-17			AABSR1616JX-40F	120mm		
ABW15	AABWR6-15CF	5.00"	LPA-11	HSB4X8R	FH-2	AABWR6-15JXF	4.75"		E20
	AABWR8-15DF	6.00"	LPA-13			AABWR8-15JXF	4.75"		
	-	-	LPA-17			AABWR10-15JXF	4.75"		
	AABWR0810K-40F	125mm	LPA-11	HSB4x8R	FH-2	-	-	No Alternative	-
	AABWR1010K-40F	125mm				AABWR1010JX-40F	120mm		E20
	AABWR1212M-40F	150mm	LPA-13			AABWR1212JX-40F	120mm		
	AABWR1616M-40F	150mm	LPA-17			AABWR1616JX-40F	120mm		
ABW23	AABWR6-23CF	5.00"	LPA-11	HSB4X8R	FH-2	AABWR6-23JXF	4.75"		E21
	AABWR8-23DF	6.00"	LPA-13			AABWR8-23JXF	4.75"		
	-	-	LPA-17			AABWR10-23JXF	4.75"		
	AABWR0810K-50F	125mm	LPA-11	HSB4x8R	FH-2	-	-	No Alternative	-
	AABWR1010K-50F	125mm				AABWR1010JX-50F	120mm		E21
	AABWR1212M-50F	150mm	LPA-13			AABWR1212JX-50F	120mm		
	AABWR1616M-50F	150mm	LPA-17			AABWR1616JX-50F	120mm		
CC..	ACLC□6-2CF	5.00"	LPF-11	HSB4X8□	FH-2	ACLC□6-2JXFF	4.75"		E24
	-	-	LPF-13			ACLC□6-3JXFF	4.75"		
	ACLC□8-3DF	6.00"				ACLC□8-3JXFF	4.75"		
	-	-	LPF-17			ACLC□10-3JXFF	4.75"		
	ACLC□0810K-06F	125mm	LPF-11	HSB4x8R (Right-hand toolholder) HSB4x8L (Left-hand toolholder)	FH-2	SCLC□0808F-06FF	120mm	Clamping system is different.	E24
	ACLC□1010K-06F	125mm				ACLC□1010JX-06FF	120mm		
	ACLC□1010K-09F	125mm	LPF-13			ACLC□1010JX-09FF	120mm		
	ACLC□1212M-09F	150mm				ACLC□1212JX-09FF	120mm		
	ACLC□1616M-09F	150mm	LPF-17			ACLC□1616JX-09FF	120mm		
DC..	ADJC□6-2CF	5.00"	LPF-11	HSB4X8□	FH-2	ADJC□6-2JXFF	4.75"		E26
	-	-	LPF-13			ADJC□6-3JXFF	4.75"		
	ADJC□8-3DF	6.00"				ADJC□8-3JXFF	4.75"		
	-	-	LPF-17			ADJC□10-3JXFF	4.75"		
	ADNCR6-2CF	5.00"	-	-	-	-	-	No Alternative	-
	ADNC□8-3DF	6.00"	-	-	-	-	-	No Alternative	
	ADJC□0810K-07F	125mm	LPF-11	HSB4x8R (Right-hand toolholder) HSB4x8L (Left-hand toolholder)	FH-2	SDJC□0808F-07FF	120mm	Clamping system is different.	E26
	ADJC□1010K-07F	125mm				ADJC□1010JX-07FF	120mm		
	ADJC□1010K-11F	125mm	LPF-13			ADJC□1010JX-11FF	120mm		
	ADJC□1212M-11F	150mm				ADJC□1212JX-11FF	120mm		
	ADJC□1616M-11F	150mm	LPF-17			ADJC□1616JX-11FF	120mm		
	ADNCR0810K-07F	125mm	LPF-11	HSB4x8R	FH-2	-	-	No Alternative	-
	ADNCR1010K-07F	125mm				SDNCN1010JX-07	120mm	Clamping system is different. Neutral	E31
	ADNCR1010K-11F	125mm	LPF-13			SDNCN1010JX-11	120mm		
	ADNCR1212M-11F	150mm				SDNCN1212JX-11	120mm		
	ADNCR1616M-11F	150mm	LPF-17			SDNCN1616JX-11	120mm		
VB..	AVJB□6-2CF	5.00"	LPF-11	HSB4X8□	FH-2	AVJB□6-2JXFF	4.75"		E34
	AVJB□8-2DF	6.00"	LPF-1113			AVJB□8-2JXFF	4.75"		
	-	-	LPF-1117			AVJB□10-2JXFF	4.75"		
	AVJB□1010K-11F	125mm	LPF-11	HSB4x8R (Right-hand toolholder) HSB4x8L (Left-hand toolholder)	FH-2	AVJB□1010JX-11FF	120mm		E34
	AVJB□1212M-11F	150mm	LPF-1113			AVJB□1212JX-11FF	120mm		
	AVJB□1616M-11F	150mm	LPF-1117			AVJB□1616JX-11FF	120mm		
	AVVB□1010K-11F	125mm	LPF-11	HSB4x8R (Right-hand toolholder) HSB4x8L (Left-hand toolholder)	FH-2	SVVBN1010JX-11	120mm	Clamping system is different. Neutral	E36
	AVVB□1212M-11F	150mm	LPF-1113			SVVBN1212JX-11	120mm		
	AVVB□1616M-11F	150mm	LPF-1117			SVVBN1616JX-11	120mm		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

New Part Description (Change in Overall Length) Reference Table for Small Tools (Screw Clamp)

Conventional Toolholder					New Swiss Length Toolholder			
Insert Shape	Part Number	Overall Length	Spare Parts: Clamp Screw	Spare Parts: Wrench	Part Number	Overall Length	Notes	Ref. to Page
	SABSR6-15CF	5.00"	SB-3080TR	FT-10	SABSR6-15JXF	4.75"		
	SABSR8-15DF	6.00"			SABSR8-15JXF	4.75"		E19
	-	-			SABSR10-15JXF	4.75"		
ABS15	SABSR0810K-40F	125mm	SB-3080TR	FT-10	-	-	No Alternative	-
	SABSR1010K-40F	125mm			SABSR1010JX-40F	120mm		
	SABSR1212M-40F	150mm			SABSR1212JX-40F	120mm		E19
	SABSR1616M-40F	150mm			SABSR1616JX-40F	120mm		
	SABWR6-15CF	5.00"	SB-3080TR	FH-2	SABWR6-15JXF	4.75"		
	SABWR8-15DF	6.00"			SABWR8-15JXF	4.75"		E20
	-	-			SABWR10-15JXF	4.75"		
ABW15	SABWR0810K-40F	125mm	SB-3080TR	FT-10	-	-	No Alternative	-
	SABWR1010K-40F	125mm			SABWR1010JX-40F	120mm		
	SABWR1212M-40F	150mm			SABWR1212JX-40F	120mm		E20
	SABWR1616M-40F	150mm			SABWR1616JX-40F	120mm		
	SABWR6-23CF	5.00"	SB-3080TR	FT-10	SABWR6-23JXF	4.75"		
	SABWR8-23DF	6.00"			SABWR8-23JXF	4.75"		E21
	-	-			SABWR10-23JXF	4.75"		
ABW23	SABWR0810K-50F	125mm	SB-3080TR	FT-10	-	-	No Alternative	-
	SABWR1010K-50F	125mm			SABWR1010JX-50F	120mm		
	SABWR1212M-50F	150mm			SABWR1212JX-50F	120mm		E21
	SABWR1616M-50F	150mm			SABWR1616JX-50F	120mm		
	SCLC□6-2X	3.00"	SB-2570TR	FT-8	SCLC□6-2JXFF	4.75"		
	SCAC□6-2C	5.00"	-	-	-	-	Cutting edge angle is different	
	SCGCR6-2X	3.00"	-	-	-	-		
	-	-	SB-4085TR	FT-15	SCLC□6-3JXFF	4.75"		
	SCLC□8-3A	4.00"			SCLC□8-3JXFF	4.75"	No Alternative	
	SCAC□8-3D	6.00"	-	-	-	-	Cutting edge angle is different	E24
	SCGCR8-3A	4.00"	-	-	-	-		
	SCLC□10-3C	5.00"	SB-4085TR	FT-15	SCLC□10-3JXFF	4.75"		
CC..	SCGCR10-3C	5.00"	-	-	-	-	Cutting edge angle is different	
	SCLC□12-3C	5.00"	-	-	-	←	No Alternative	
	SCAC□0808K-06	125mm	SB-2570TR	FT-8	SCLC□0808F-06FF	85mm		
	SCAC□1010K-06	125mm			SCLC□1010JX-06FF	120mm		
	SCAC□1010K-09	125mm	SB-4085TR	FT-15	SCLC□1010JX-09FF	120mm		
	SCAC□1212M-09	150mm			SCLC□1212JX-09FF	120mm	Cutting edge angle is different.	E24
	SCAC□1616M-09	150mm			SCLC□1616JX-09FF	120mm		
	SCACR1212F-09FF	85mm	SB-4085TR	FT-15	SCLCR1212JX-09FF	120mm		
	SCLC□0808E-06	70mm	SB-2570TR	FT-8	SCLC□0808F-06FF	85mm		
	SDJC□6-2CF	5.00"	SB-2570TR	FT-8	SDJC□6-2JXFF	4.75"		
	SDJC□6-2X	3.00"	-	-	-	-		
	-	-	SB-4085TR	FT-15	SDJC□6-3JXFF	4.75"		
	SDJC□8-3DF	6.00"			SDJC□8-3JXFF	4.75"		E26
	SDJC□8-3A	4.00"	-	-	-	-		
	SDJC□10-3C	5.00"	SB-4085TR	FT-15	SDJC□10-3JXFF	4.75"		
	SDJC□12-3C	5.00"	-	-	-	-	No Alternative	
DC..	-	-	SB-4085TR	FT-15	SDJCR52-3JX-F3	4.75"		
					SDJCR52-3JX-F9	4.75"		E22
					SDJCR62.5-3JX-F3	4.75"		
					SDJCR62.5-3JX-F9	4.75"		
	SDJC□0808F-07F	80mm	SB-2570TR	FT-8	SDJC□0808F-07FF	85mm		
	SDJC□1010F-07F	80mm			SDJC□1010JX-07FF	120mm		
	SDJC□1010F-11F	80mm	SB-4085TR	FT-15	SDJC□1010JX-11FF	120mm		E26
	SDJC□1212H-11F	100mm			SDJC□1212JX-11FF	120mm		
	SDJC□1616H-11F	100mm			SDJC□1616JX-11FF	120mm		
	-	-	SB-2570TR	FT-8	SDLC□6-2JXFF	4.75"		E30

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

New Part Description (Change in Overall Length) Reference Table for Small Tools (Screw Clamp)

Conventional Toolholder					New Swiss Length Toolholder			
Insert Shape	Part Number	Overall Length	Spare Parts: Clamp Screw	Spare Parts: Wrench	Part Number	Overall Length	Notes	Ref. to Page
DC..	-	-	SB-4085TR	FT-15	SDLC□6-3JXFF	4.75"		E30
		-			SDLC□8-3JXFF	4.75"		
		-			SDLC□10-3JXFF	4.75"		
	SDLC□1010F-07FF	80mm	SB-2570TR	FT-8	SDLC□1010JX-07FF	120mm		E30
	SDLC□1212H-07FF	100mm			SDLC□1212F-07FF	85mm	Short length type	
					SDLC□1212JX-07FF	120mm		
	SDLC□1616H-07FF	100mm			SDLC□1616JX-07FF	120mm		
	SDLC□1212H-11FF	100mm	SB-4085TR	FT-15	SDLC□1212JX-11FF	120mm		
	SDLCL1616H-11FF	100mm			SDLCL1616JX-11FF	120mm		
	SDNC□6-2CF	5.00"	SB-2570TR	FT-8	SDNC□6-2JXF	4.75"		E31
	SDNCN6-2X	3.00"			SDNCN6-2JX	4.75"		
	-	-	SB-4085TR	FT-15	SDNCN6-3JX	4.75"		
		-	SB-2570TR	FT-8	SDNCN8-2JX	4.75"		
	SDNC□8-3DF	6.00"	SB-4085TR	FT-15	SDNCN8-3JX	4.75"		
	SDNCN8-3A	4.00"	-	-	-	-		
	SDNCN10-3C	5.00"	SB-4085TR	FT-15	SDNCN10-3JX	4.75"		
	SDNCN12-3C	5.00"	-	-	-	-	No Alternative	
	SDNC□1010F-07F	80mm	SB-2570TR	FT-8	SDNC□1010JX-07F	120mm		E31
	SDNC□1010F-11F	80mm	SB-4085TR	FT-15	SDNC□1010JX-07F	120mm	Insert size is different.	
					SDNCN1010JX-11	120mm	Neutral	
	SDNC□1212H-11F	100mm	SB-4085TR	FT-15	SDNCN1212F-11	85mm	Neutral Short length type	
					SDNCN1212JX-11	120mm	Neutral	
	SDNC□1616H-11F	100mm	SB-4085TR	FT-15	SDNCN1616JX-11	120mm	Neutral	
	SDNCN0808E-07	70mm	SB-2570TR	FT-8	SDNCN0808F-07	85mm		
	SDNCN1010F-07	80mm			SDNCN1010JX-07	120mm		
	SDNCN1212H-07	100mm			SDNCN1212JX-07	120mm		
	SDNCN1212H-11	100mm	SB-4085TR	FT-15	SDNCN1212F-11	85mm		
					SDNCN1212JX-11	120mm	Short length type	
	SDXC□1010F-07	80mm	SB-2570TR	FT-8	SDXC□1010JX-07	120mm		E30
	SDXC□1010F-11	80mm	SB-4085TR	FT-15	SDXC□1010JX-11	120mm		
	SDXC□1212H-11	100mm			SDXC□1212JX-11	120mm		
	SDXC□1616H-11	100mm			SDXC□1616JX-11	120mm		
DP..	-	-	SB-2570TR	FT-8	SDLP□6-2JXFF	4.75"		E32
		-	SB-4085TR	FT-15	SDLP□6-3JXFF	4.75"		
		-			SDLP□8-3JXFF	4.75"		
		-			SDLP□10-3JXFF	4.75"		
	SDLP□0808F-07F	80mm	SB-2570TR	FT-8	SDLP□0808F-07FF	85mm		E32
	SDLP□1010F-07F	80mm			SDLP□1010JX-07FF	120mm		
	SDLP□1010F-11F	80mm	SB-4085TR	FT-15	SDLP□1010JX-11FF	120mm		
	SDLP□1212H-11F	100mm			SDLP□1212JX-11FF	120mm		
	SDLP□1616H-11F	100mm			SDLP□1616JX-11FF	120mm		
VB..	SVJB□6-2CF	5.00"	SB-2570TR	FT-8	SVJB□6-2JXFF	4.75"		E34
	SVJB□6-2X	3.00"	-	-	-	-		
	SVJB□8-2DF	6.00"	SB-2570TR	FT-8	SVJB□8-2JXFF	4.75"		
	SVJB□8-2A	4.00"	-	-	-	4.75"		
	-		SB-2570TR	FT-8	SVJB□10-2JXFF	4.75"		
	SVJB□12-3C	5.00"	-	-	-	-	No Alternative	
	SVJB□1010F-11F	80mm	SB-2570TR	FT-8	SVJB□1010JX-11FF	120mm		E34
	SVJB□1212H-11F	100mm			SVJB□1212JX-11FF	120mm		
	SVJB□1616H-11F	100mm			SVJB□1616JX-11FF	120mm		
	SVPB□1010F-11	80mm	SB-2570TR	FT-8	SVPB□1010JX-11	120mm		E35
	SVPB□1212H-11	100mm			SVPB□1212JX-11	120mm		
	SVPB□1616H-11	100mm			SVPB□1616JX-11	120mm		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

New Part Description (Change in Overall Length) Reference Table for Small Tools (Screw Clamp)

Conventional Toolholder					New Swiss Length Toolholder			
Insert Shape	Part Number	Overall Length	Spare Parts: Clamp Screw	Spare Parts: Wrench	Part Number	Overall Length	Notes	Ref. to Page
VB..	-	-	SB-2570TR	FT-8	SVVBN6-2JX	4.75"		E36
		-			SVVBN8-2JX	4.75"		-
		-			SVVBN10-2JX	4.75"		
	SVVBN1212H-11	100mm	SB-2570TR	FT-8	SVVBN1212JX-11	120mm		E36
VP..	-	-	SB-2570TR	FT-8	SVJP□8-2JXFF	4.75"		
		-			SVJP□10-2JXFF	4.75"		
		-	SB-2550TR	FT-6	SVLP□6-15JXFF	4.75"		E39
		-			SVLP□8-15JXFF	4.75"		
		-			SVLP□10-15JXFF	4.75"		
		-	SB-2570TR	FT-8	SVLP□8-2JXFF	4.75"		
		-			SVLP□10-2JXFF	4.75"		
		-	SB-2570TR	FT-15	SVLPR52-2JX-F9	4.75"		E23
		-			SVLPR62.5-2JX-F9	4.75"		
	SVLP□1010F-08FF	80mm	SB-2050TR	FT-6	SVLP□1010JX-08FF	120mm		E39
	SVLP□1212H-08FF	100mm			SVLP□1212F-08FF	85mm	Short length type	
					SVLP□1212JX-08FF	120mm		
	SVLP□1616H-08FF	100mm			SVLP□1616JX-08FF	120mm		
	SVLP□1010F-11F	80mm	SB-2570TR	FT-8	SVLP□1010JX-08FF	120mm	Insert size is different.	
	SVLP□1212H-11F	100mm			SVLP□1212F-11FF	85mm	Short length type	
					SVLP□1212JX-11FF	120mm		
	SVLP□1616H-11F	100mm			SVLP□1616JX-11FF	120mm		
	-	-	SB-2570TR	FT-8	SVPPR6-2JXFF	4.75"		E40
		-			SVPPR8-2JXFF	4.75"		
		-			SVPPR10-2JXFF	4.75"		
		-	SB-2050TR	FT-6	SVPPR6-15JXFF	4.75"		
		-			SVPPR8-15JXFF	4.75"		
		-			SVPPR10-15JXFF	4.75"		
	SVPPR1010F-11	80mm	SB-2570TR	FT-8	SVPBR1010JX-11	120mm	Insert relief angle is different.	E35
					SVPPR1010JX-11FF	120mm	Without Offset	E40
	SVPPR1212H-11	100mm			SVPBR1212JX-11	120mm	Insert relief angle is different.	E35
					SVPPR1212JX-11FF	120mm	Without Offset	E40
	SVPPR1616H-11	100mm			SVPBR1616JX-11	120mm	Insert relief angle is different.	E35
					SVPPR1616JX-11FF	120mm	Without Offset	E40
	SVPPL1616H-11	100mm	SB-2570TR	FT-8	SVPBL1616JX-11	120mm	Insert relief angle is different.	E35
TC..	STGCR6-1.5X	3.00"	-	-	-	-	No Alternative	-
	STGC□8-2A	4.00"	-	-		-		
WP..	SWLP□8-2A	4.00"	-	-		-	No Alternative	
	SWLPR12-3C	5.00"	-	-		-		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

New Part Description Reference Table for Small Tools (Screw Clamp) Toolholders for Back Turning

Conventional Toolholder					New Swiss Length Toolholder		
Insert Shape	Part Number	Overall length	Clamp Screw	Wrench	Part Number	Overall length	Ref. to Page
TKFB..	KTKF□1010K-12	125mm	SB-4590TRWN	LTW-10S	KTKF□1010JX-12	120mm	E12
	KTKF□1212M-12	150mm			KTKF□1212JX-12	120mm	
	KTKF□1616M-12	150mm			KTKF□1616JX-12	120mm	
	KTKF□1010K-16	125mm			KTKF□1010JX-16	120mm	
	KTKF□1212M-16	150mm			KTKF□1212JX-16	120mm	
	KTKF□1616M-16	150mm			KTKF□1616JX-16	120mm	

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

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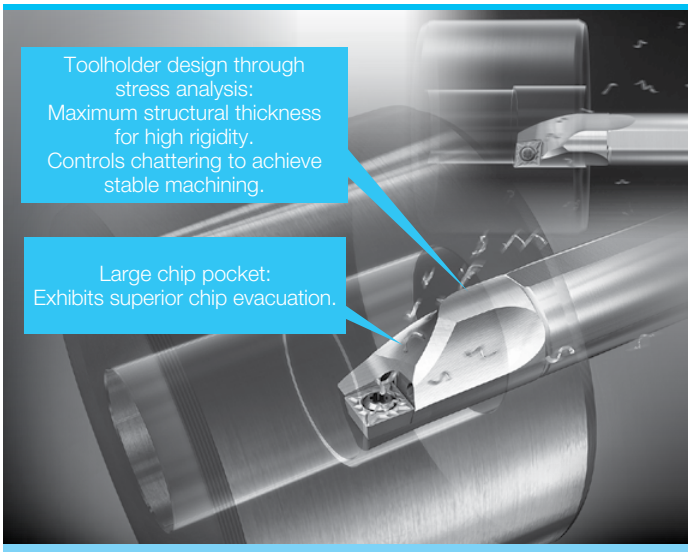
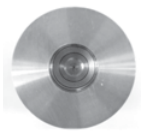
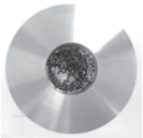
BORING BARS FOR BEARING MACHINING (Square Shank)		F80
AD BARS (Anti-Vibration Dampener System)		F81 - F84
BORING BARS FOR NEGATIVE INSERTS		F85 - F96
CN INSERTS		F85
DN INSERTS		F87
SN INSERTS		F91
TN INSERTS		F92
WN INSERTS		F94
BORING BARS FOR CERAMIC / CBN INSERTS		F97 - F98
BORING BAR SLEEVES		F100 - F105
EZH-CT / EZH-HP / EZH-ST		F30, F100
PH		F102
SHA / SH / SL / SHC / SJS		F102
ALTERNATE TOOLHOLDER REFERENCE TABLE		F106 - F109
RECOMMENDED CUTTING CONDITIONS		F110 - F111

New Dynamic Bar

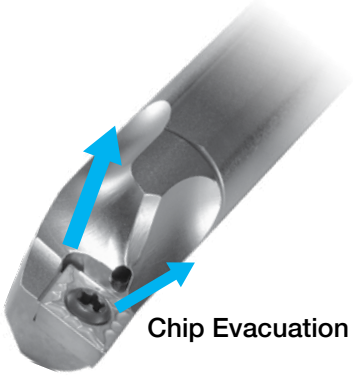


Dynamic design driven by the latest computer simulation technology.

Superior Chip Evacuation (External Coolant)

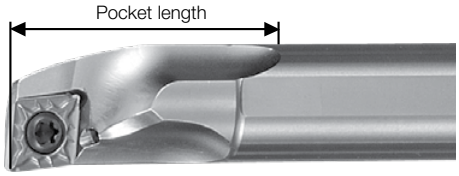
	Dynamic Bar	Competitor A	Competitor B
Inside the Workpiece			

In Competitor A and B's products chips remain inside the workpiece, but chips from Dynamic Bar are all evacuated from the workpiece.



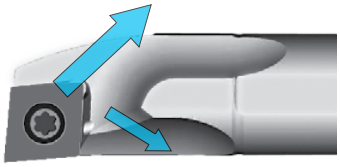
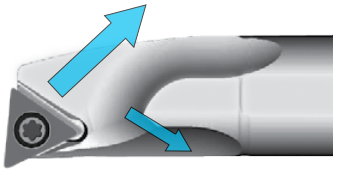
Chip Evacuation Direction

Pocket Length Comparison



Part Number	Pocket length (mm)	
	Dynamic Bar	Competitor A
A16-SCLPR09-18 type	37	29
A20-SCLCR09-22 type	48	32

Chip Evacuation Direction

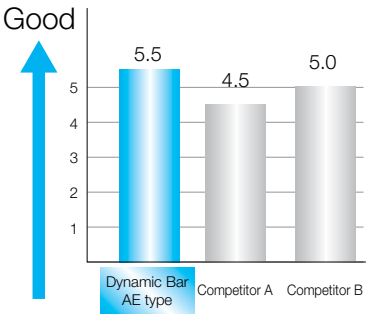
SCLC(P)	STLB(P)
	

Better Evacuation with Dual Chip Flow

Dynamic Bar with Superior Chip Evacuation

High rigidity and chattering resistance is achieved by using a special alloy designed with stress analysis technology.
Achieve previously unobtained surface finish and dimensional accuracy.

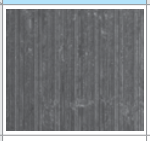
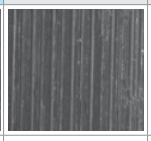
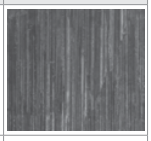
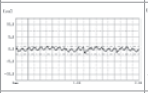
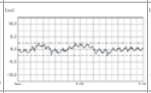
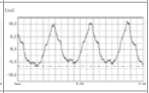
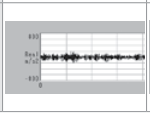
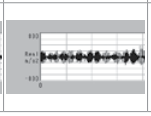
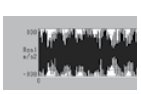
Anti-chatter Vibration Performance



<Cutting Conditions>
4415
Vc = 490 sfm
D.O.C. = 0.020"
f = 0.004 ipr
S16-SCLPR09
CPMH321L-Y

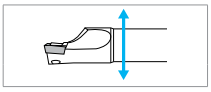
Surface Finish Comparison

Vibration of the Dynamic Bar was minimal even at high cutting speeds, enabling stable machining.

	Dynamic Bar	Competitor A	Competitor B
Surface Wall			
Surface Roughness	 Ra=0.4µm Rz=2.3µm	 Ra=0.6µm Rz=3.6µm	 Ra=3.4µm Rz=14.0µm
Oscillatory Waveform			

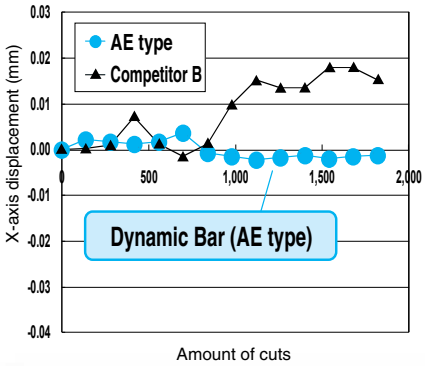
<Cutting Conditions>
4415
Vc = 690 sfm
D.O.C. = 0.020"
f = 0.004 ipr
A16Q-SCLPR09-18
CPMH321XP(PV7020)
L/D = 4
External Coolant

Direction of Vibration Measurement



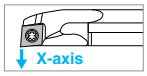
Cutting Point Precision

The AE Dynamic Bar resists deflection to maintain precise cutting edge positional accuracy through the use of a special alloy, thereby achieving high precision machining.



<Cutting Conditions>
SCM435
Vc = 590 sfm
D.O.C. = 0.079"
f = 0.008 ipr
S/A16Q-SCLPR09-18 type
CPMH090308(CA5525)
L/D = 4
External Coolant

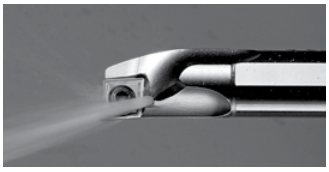
Direction of Measurement



Toolholder Lineup

- Excellent Bar (AE Type)

Excellent Bar with coolant hole (internal coolant) (A···AE) enables better chip evacuation.



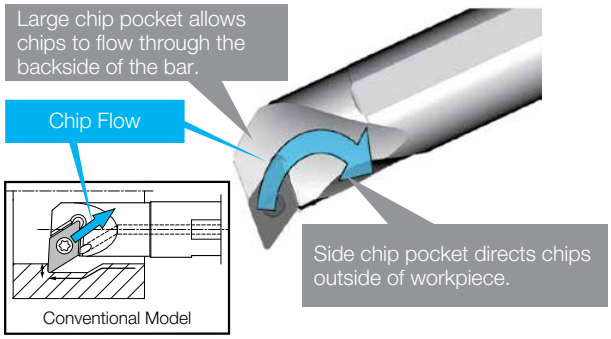
- Steel Bar

The steel shank bar (without coolant hole) provides superior cost performance

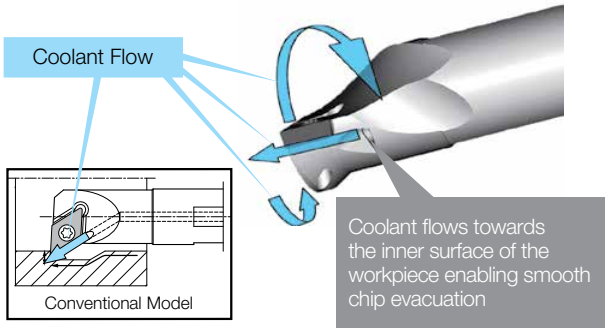
Advantages of Dynamic Bar SDUC

New Design Focusing on Chip Evacuation

Streamlined pocket enables effective chip evacuation.

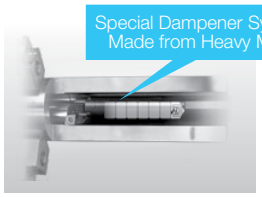


Coolant flows toward the workpiece's inner surface.



AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

- The AD (Advanced Dampener) system enables a maximum overhang of 6 times L/D.
- Highly efficient machining: The anti-vibration dampener enables large cutting-depths and high feed rates.
- Applicable for a variety of machining conditions due to the interchangeable head design.



Double Clamp Boring Bars for Negative Inserts

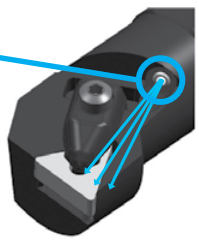
Stable machining with Double Clamp and Direction Adjustment Coolant Hole.

Improved Clamping Rigidity

Firmly clamp the insert in two directions with one action. Ensure quick, accurate, and repeatable insert position.

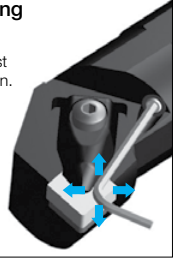
Direction Adjustment Mechanism Coolant Hole

Discharge direction of coolant is adjustable to focus directly on cutting edge.
*Not applicable to high-pressure coolant



Nozzle Setting

Use wrench to adjust coolant hole direction.



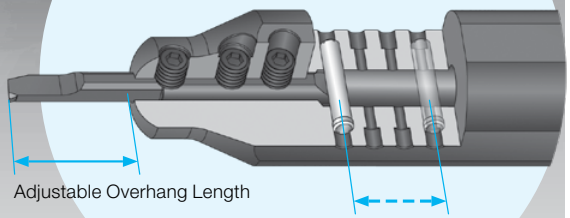
EZ Bar

Kyocera's Original EZ Adjust Structure

- Easy adjustment and high precision
- EZ Bar minimizes deviation with high rigidity clamping

MEGACOAT PR1225 for Stable Cutting and Extended Tool Life

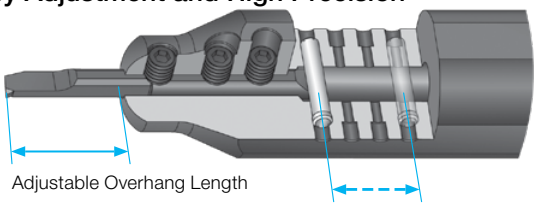
Kyocera's Original EZ Adjust Structure



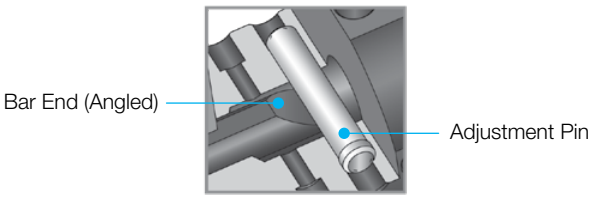
EZ Adjust Structure

Bar overhang is adjustable by replacing adjustment pin.
Internal coolant sleeve (EZH-CT) is available.

1 Easy Adjustment and High Precision



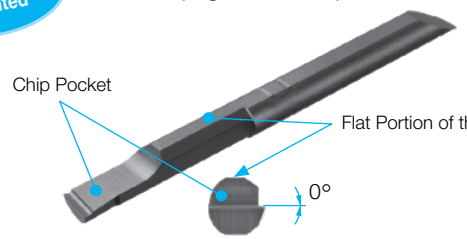
Excellent Clamping Force



Bar is Firmly Clamped on the Slanted End by the Adjustment Pin

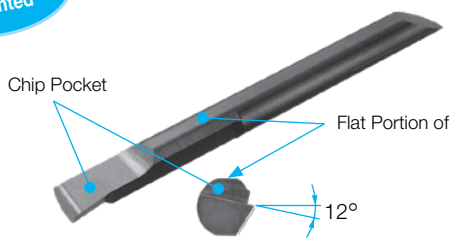
2 2 Bar Types

Precision Oriented — **HP** (High Precision)



F18

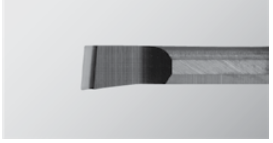
Cost Oriented — **ST** (Standard)



F20

* Chip pocket angles are different.
* Even when using the same sleeve, the Min, Bore Dia. can be different depending on which bar is attach.

3 3 Chipbreakers for Various Applications

H Chipbreaker (Without Lead Angle)	**F Chipbreaker** (With Lead Angle)	**NB Chipbreaker** (Without Chipbreaker)
		
Tough Edge (General Purpose)	**Sharp Cutting** (For Finishing)	**Non-ferrous Metals**

2 Types of Corner-R (RE) for Each Chipbreaker

H Chipbreaker: 0.003", 0.006" (0.08mm, 0.15mm)
F Chipbreaker: 0.002", 0.006" (0.05mm, 0.15mm)
NB (No Chipbreaker): 0.002" (0.05mm) - PR1225
0.0014" (0.035mm) - PCD / CBN

* Lineup Depends on Description

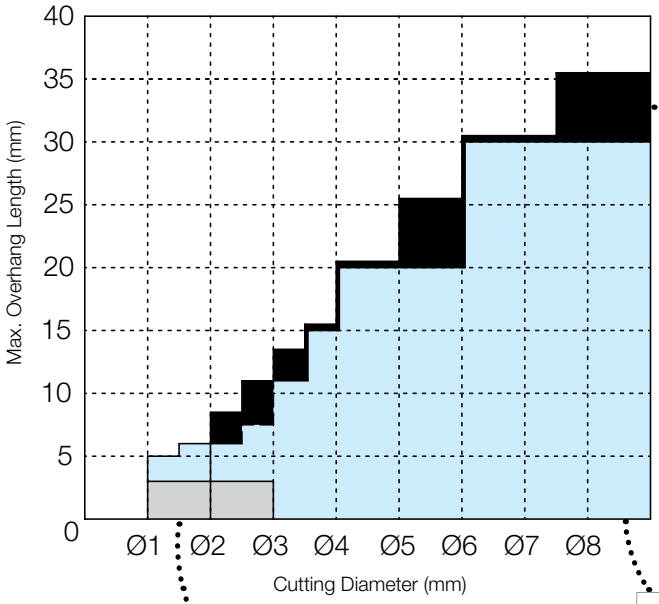
EZVB for Boring, Internal Profiling and Copying

EZ Bar PLUS Indexable Type

EZBT for Back Boring

EZBF 90° Lead Type

Usage Classification (Solid Bar type: Minimum Cutting Dia. 1mm)



EZ Bar
Easy Adjustment & High Precision

F16

Twin Bars F42~F43

SVN F38

Square Shank Straight

S...SVN F39

Standard Round Shank

SVNS F38

Swiss IQ Bars F36

Boring Bar Identification System (Round Shank)

S	Steel
A	Steel (with Coolant Hole)
C	Carbide
E	Carbide (with Coolant Hole)

Shank

	ANSI (in)	ISO (mm)		ANSI (in)	ISO (mm)
F:	3.00	80	Q:	7.00	180
G:	3.50	90	R:	8.00	200
H:	4.00	100	S:	10.00	250
J:	4.50	110	T:	12.00	300
K:	5.00	125	U:	14.00	350
L:	5.50	140	V:	16.00	400
M:	6.00	150	W:	18.00	450
N:	6.50	160	Y:	20.00	500
P:	6.75	170	X:	Special	

Toolholder Length

- **C :** Top Clamp
- **M :** Multi Lock
- **P :** Lock Pin Only or Lever Lock
- **S :** Screw Clamp
- **W :** Wedge Lock

Clamping System

- **C :** 80° Diamond
- **D :** 55° Diamond
- **J :** 70° Diamond
- **R :** Round
- **S :** 90° Square
- **T :** 60° Triangle
- **V :** 35° Diamond
- **W :** 80° Trigon

Insert Shape

- **R :** Right-hand
- **L :** Left-hand

Hand of Tool

Others

Manufacturer's Optional Mark or Number

- **A :** Dynamic Bar
- **AE :** Excellent Bar (Dynamic Bar type)
- **E :** Excellent Bar

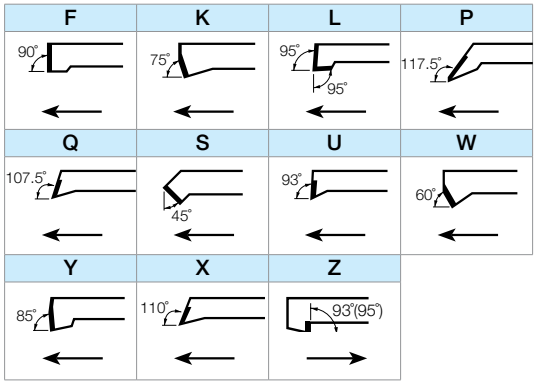
	Shank	Toolholder Length	Clamping System	Insert Shape	Hand of Tool	Others
ANSI (inch)	S	08	M – S	C	L	P	R	3 – AE
ISO (metric)	S	12	M – S	C	L	P	R	09 – 16	A

Shank Diameter

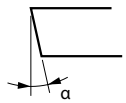
ANSI
A two-digit number that indicates the shank diameter in 1/16" increments.

ISO
Shank diameter in mm

Cutting Edge Angle



Insert Relief Angle

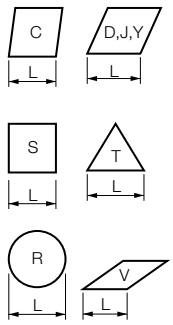


- **B :** 5° Positive
- **C :** 7° Positive
- **D :** 15° Positive
- **E :** 20° Positive
- **N :** 0° Negative
- **P :** 11° Positive

Insert Size

ANSI
Number of 1/8 increments of I.C.

ISO

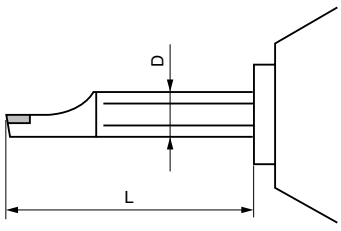


Min. Bore Dia.

- Anti-vibration interchangeable head mechanism Boring Bar "AD Bar"
  For the identification system for boring bars with interchangeable head, Ref. to page F83

Guidelines for Overhang Length of Boring Bar (Workpiece Material 1045)

Overhang Length (L / D)	Shank Material
3	Steel
4	Steel (Dynamic Bar)
5	Excellent
5.5	Excellent (Dynamic Bar)
6	AD Bars (with Anti-vibration Dampener System)
7	Carbide



Carbide Shank Boring Bar

Short Shank Series

Short Shank Types with length of 1/2 and 2/3 of standard type are available. (1/2 or 2/3 is shown at the end of the description) When installing on machines, no additional machining (to change toolholder length) is required.

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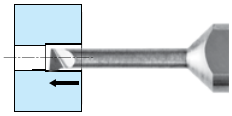
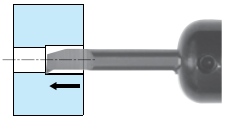
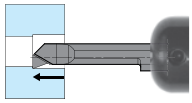
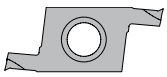
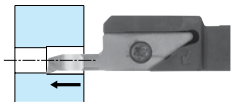
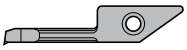
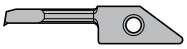
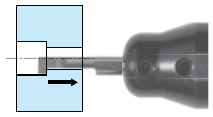
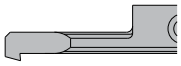
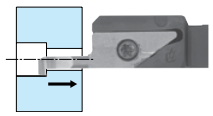
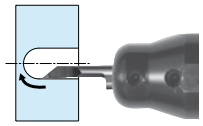
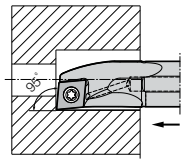
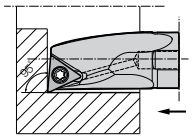
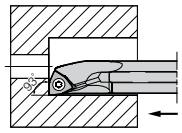
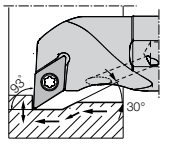
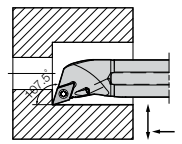
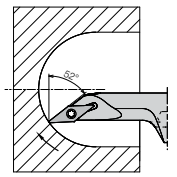
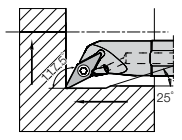
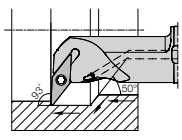
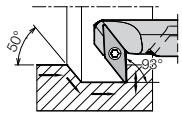
Solid Micro Bars

Application	Solid Micro Bars	Shape	Application
Boring / Profiling	**MBS** Standard Length → F14		
	MBE Extended Reach → F15		

Application	Solid Micro Bars	Shape	Shank Type Max. Overhang Length L/D	Min. Bore Dia. DMIN (mm) 1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	Toolholder / Sleeve Ref. Page	Application
Boring	**EZB-HP** EZ Bar → F18		Solid L/D = ~5			●	●	●	●	●		●		●				→ F30~ → F34	
	EZB-HP-LT EZ Bar (Long Type) → F19		Solid			●	●	●	●	●		●		●					
	EZB-ST EZ Bar → F20		Solid L/D = ~5			●	●	●	●	●	●		●		●		●		
	EZB-NB EZ Bar (MEGACOAT) → F21		Solid L/D = ~5			●	●	●	●	●	●		●		●		●		
	EZB-NB CBN EZ Bar → F21		Solid L/D = ~5					●		●		●		●		●			
	EZB-NB PCD EZ Bar → F21		Solid L/D = ~5							●		●		●		●			
	EZBF EZ Bar (90° Lead Type) NEW → F23		Solid					●		●		●		●					
	TWB Twin Bars → F42		Solid	●	●	●	●	●										→ F42	
	TWBT Twin Bars → F43		Solid	●	●	●	●	●										→ F43	
	VNB-S Swiss IQ Bars → F36		Solid	●	●	●	●	●	●	●								→ F38 → F39	
	VNB Swiss IQ Bars → F36		Solid			●		●		●		●		●		●			
	VNBX-S Swiss IQ Bars → F40		Solid	●	●	●		●	●	●								→ F41	
Back Boring	**EZBT** EZ Bar NEW → F26		Solid							●		●						→ F30~ → F34	
	VNBT Swiss IQ Bars → F37		Solid							●		●						→ F38 → F39	
Copying	**EZVB** EZ Bar → F24		Solid						●		●		●		●			→ F30~ → F34	

Dynamic Bars (inch)

Application	Shape	Boring Bar Type	Shank Type Max. Overhang Length L/D	Coolant Hole Yes	Coolant Hole No	Min. Bore Dia. DMIN (in) 0.240	0.312	0.392	0.413	0.450	0.480	0.512	0.551	0.580	0.630	0.700	0.770	0.787	0.790	0.825	0.930	0.980	1.180	1.200	1.240	1.300	1.340	Toolholder / Sleeve Ref. Page
Boring / Internal Facing		A...SCLC-AE	Excellent L/D = ~5.5	●						●			(0.600) ●			●				●			●				F44
		E...SCLC-A	Carbide L/D = ~7.0	●						●			(0.600) ●			●											
		A...SCLP-AE	Excellent L/D = ~5.5	●					●	●			●		●				●				●				F48
		A...STLB(P)-AE	Excellent L/D = ~5.5	●			●		●				●		●				●					(1.280) ●			F60
		S...STLB-AE	Excellent L/D = ~5.5		○		●																				
Boring		A...SWUB(P)-AE	Excellent L/D = ~5.5	●						(0.472) ●				●		●				●				●			F74
		S...SWUB-AE	Excellent L/D = ~5.5		○	●	●																				
Copying		A...SDUC-AE	Excellent L/D = ~5.5	●							●			●				●				(1.063) ●				●		F52
		E...SDUC-A	Carbide L/D = ~7.0	●							●			●				●										
		A...SDQC-AE	Excellent L/D = ~5.5	●							●			●				●				●					F54
		E...SDQC-A	Carbide L/D = ~7.0	●							●			●				●										
		A...SVJB-AE	Excellent L/D = ~5.5	●																		(0.984) ●	●					F66
		A...SVPC(B)-AE	Excellent L/D = ~5.5	●										●					●			●	●		●			F68
		A...SVUC(B)-AE	Excellent L/D = ~5.5	●										●					●			●					●	F70
Back Boring		A...SVZC(B)-AE	Excellent L/D = ~5.5	●										●					●			●					●	

Min. Bore Dia. DMIN is indicated by the figure under ● depending on the boring bar size.

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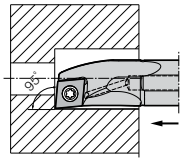
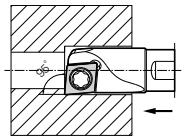
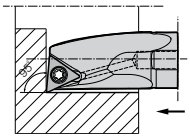
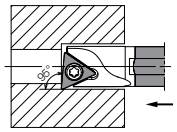
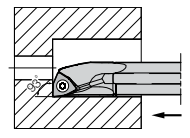
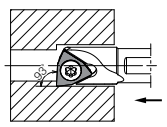
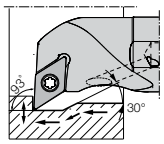
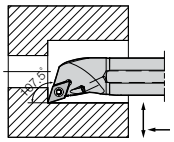
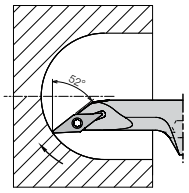
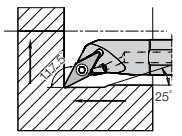
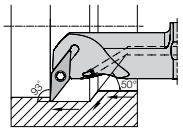
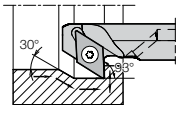
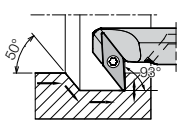
Dynamic Bars / EZ Bar PLUS (metric)

Application	Shape	Boring Bar Type	Shank Type Max. Overhang Length L/D	Coolant Hole Yes	Coolant Hole No	Min. Bore Dia. DMIN (mm) 5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34	40	50	Toolholder / Sleeve Ref. Page
Boring / Internal Facing		A...SCLC-AE	Excellent L/D = ~5.5	●						●	●		●		●		●				●							F44
		S...SCLC-AE	Excellent L/D = ~5.5		○	●	●	●	●																			
		S...SCLC-A	Steel L/D = ~4.0		○					●	●		●		●		●				●							
		C...SCLC-AN	Carbide L/D = ~7.0		○	●	●	●	●																			
		E...SCLC-A(N)	Carbide L/D = ~7.0	●						●	●		●		●		●				●							
		A...SCLP-AE	Excellent L/D = ~5.5	●							●		●	●	●		●				●							F48
		S...SCLP-A	Steel L/D = ~4.0		○						●		●	●	●		●				●							
		E...SCLP-A(N)	Carbide L/D = ~7.0	●							●		●	●	●		●				●							
	EZ Bar PLUS 	S...SCLC-EZ(P)	Steel L/D = ~3.0		○	●	●	●	●	●																	F27
		C...SCLC-EZ(P)	Carbide L/D = ~5.0		○	●	●	●	●	●																	
		A...STLP-AE	Excellent L/D = ~5.5	●						●	●		●	●	●		●		●		●							F60
		S...STLB-AE			○				●																			
		S...STLB(P)-A	Steel L/D = ~4.0		○				●	●	●		●	●	●		●				●							
		E...STLP-A(N)	Carbide L/D = ~7.0	●						●	●		●	●	●		●		●		●							
		C...STLB-AN			○				●																			
		A...STLC-AE	Excellent L/D = ~5.5	●						●	●		●		●		●											F59
		S...STLC-A	Steel L/D = ~4.0		○					●	●		●		●		●											
	EZ Bar PLUS 	S...STLB(P)-EZP	Steel L/D = ~3.0		○				●	●																	F28
		C...STLB(P)-EZP	Carbide L/D = ~5.0		○				●	●																	
Boring		S...SWUB-AE	Excellent L/D = ~5.5		○		●	●	●																			F74
		A...SWUB(P)-AE	Excellent L/D = ~5.5	●						●	●		●		●		●											
		S...SWUB(P)-A	Steel L/D = ~4.0		○		●	●	●	●	●		●		●		●											
		C...SWUB-A	Carbide L/D = ~7.0		○		●	●	●																			
		E...SWUB(P)-A	Carbide L/D = ~7.0	●						●	●		●		●		●											
	EZ Bar PLUS 	S...SWUB-EZP	Steel L/D = ~3.0		○		●	●	●																		F29
		C...SWUB-EZP	Carbide L/D = ~5.0		○		●	●	●																			

Dynamic Bars (metric)

Application	Shape	Boring Bar Type	Shank Type Max. Overhang Length L/D	Coolant Hole Yes	Coolant Hole No	Min. Bore Dia. DMIN (mm) 5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34	40	50	Toolholder / Sleeve Ref. Page
Copying		A...SDUC-AE	Excellent L/D = ~5.5	●									●	●		●		●			●			●				F52
		S...SDUC-A	Steel L/D = ~4.0		○								●	●		●		●			●			●				
		E...SDUC-A	Carbide L/D = ~7.0	●									●	●		●		●			●			●				
		A...SDQC-AE	Excellent L/D = ~5.5	●								●		●		●			●			●						F54
		S...SDQC-A	Steel L/D = ~4.0		○							●		●		●			●			●						
		E...SDQC-A	Carbide L/D = ~7.0	●								●		●		●			●			●						
		A...SVJB(C)-AE	Excellent L/D = ~5.5	●										●		●			●			●				●	●	F66
		A...SVJP-AE		●										●														
		S...SVJB(C)-A	Steel L/D = ~4.0		○									●		●			●			●				●	●	
		S...SVJP-A			○									●														
		A...SVPC(B)-AE	Excellent L/D = ~5.5	●									●		●		●			●			●			●		F68
		S...SVPC(B)-A	Steel L/D = ~4.0		○								●		●		●			●			●			●		
		E...SVPC(B)-A	Carbide L/D = ~7.0	●									●		●		●			●			●					
		A...SVUB(C)-AE	Excellent L/D = ~5.5	●										●		●			●						●	●		F70
		S...SVUB(C)-A	Steel L/D = ~4.0		○									●		●			●						●	●		
		E...SVUB(C)-A	Carbide L/D = ~7.0	●											●				●			29			●			
Back Boring		A...SDZC-AE	Excellent L/D = ~5.5	●									●	●		●		●			●			●				F55
		S...SDZC-A	Steel L/D = ~4.0		○								●	●		●		●			●			●				
		E...SDZC-A	Carbide L/D = ~7.0	●									●	●		●		●			●							
		A...SVZB(C)-AE	Excellent L/D = ~5.5	●										●		●			●						●	●		F70
		S...SVZB(C)-A	Steel L/D = ~4.0		○									●		●			●						●	●		

Min. Bore Dia. DMIN is indicated by the figure under ● depending on the boring bar size.

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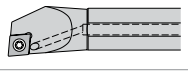
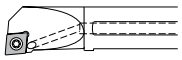
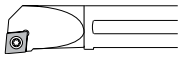
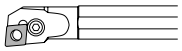
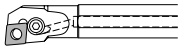
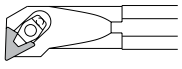
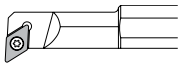
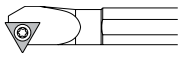
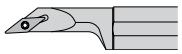
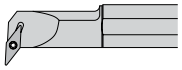
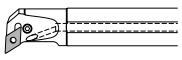
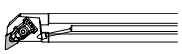
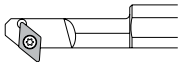
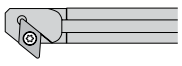
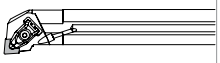
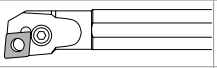
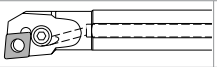
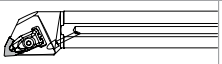
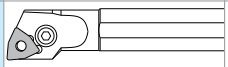
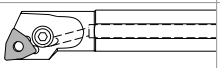
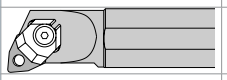
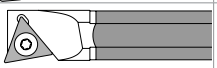
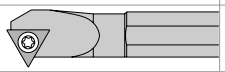
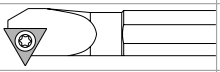
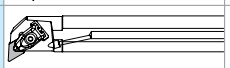
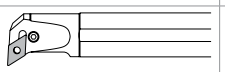
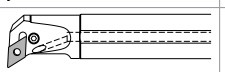
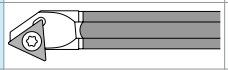
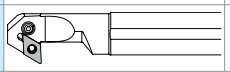
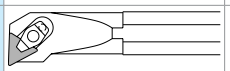
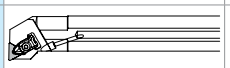
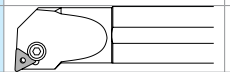
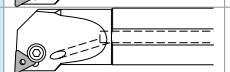
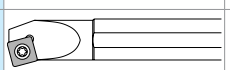
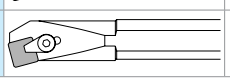
Boring Bars (inch)

Application	Boring Bar Type	Shape	Shank Type Max. Overhang Length L/D	Coolant Hole Yes	Coolant Hole No	Insert Type	Min. Bore Dia. DMIN (in) 0.240	0.312	0.394	0.415	0.472	0.480	0.550	0.600	0.630	0.709	0.770	0.787	0.790	0.912	0.984	1.180	1.250	1.260	1.340	1.500	1.570	1.750	2.020	Toolholder / Sleeve Ref. Page
Boring / Internal Facing	A...SCLP(C)-E		Excellent L/D = ~5.0	●		Positive			●		●				● (0.632)	●					●									
	S...SCLC-E		Excellent L/D = ~5.0		○	Positive	● (0.197)																							
	A...SCLC		Steel L/D = ~3.0	●		Positive				●		●		●			●													F46
	S...SCLP(C)		Steel L/D = ~3.0		○	Positive			●		●				●			● (0.788)			●				● (1.338)					
	C...SCLP(C)		Carbide L/D = ~7.0		○	Positive	● (0.197)		●		●				●			● (0.788)			●									
	A...DCLN		Steel L/D = ~3.0	●		Negative																	●			●		●		F85
	S...PCLN		Steel L/D = ~3.0		○	Negative																			● (1.550)				●	
	A...PCLN		Steel L/D = ~3.0	●		Negative													●		● (1.060)			●						F86
	A...DWLN		Steel L/D = ~3.0	●		Negative																	●			●		●		F95
Boring	S...STUP(B)		Steel L/D = ~3.0		○	Positive		●	● (0.392)		●				●			●		●										F63
	S...SWUB		Steel L/D = ~3.0		○	Negative	●	●																						F76
	C...SWUB		Carbide L/D = ~7.0		○	Positive	●	●																						F77
	S...CTUP		Steel L/D = ~3.0		○	Positive									● (0.625)						● (1.060)				● (1.350)					F79
Copying	S...SDUC		Steel L/D = ~3.0		○	Positive							● (0.564)				● (0.750)				● (0.980)									F56
	S...STWP		Steel L/D = ~3.0		○	Positive					● (0.476)				●			● (0.786)			● (0.970)		● (1.240)							F64
	S...SVJB-E		Excellent L/D = ~5.0		○	Positive																●					●			F72
	S...SVJB		Steel L/D = ~3.0		○	Positive									●			● (0.780)			●									
	S...SVUC(B)-E		Excellent L/D = ~5.0		○	Positive									●				●		● (0.980)				●		●			F73
	A...PDUN		Steel L/D = ~3.0	●		Negative															● (1.060)			●			●			F87
	A...DDUN		Steel L/D = ~3.0	●		Negative																				●		●		F88
Back Boring	S...SDZC		Steel L/D = ~3.0		○	Positive							●		●			●			●									F57
	S...SVZC(B)-E		Excellent L/D = ~5.0		○	Positive									●				●		● (0.980)				●		●			F73

Min. Bore Dia. DMIN is indicated by the figure under ● depending on the boring bar size.

Boring Bars (metric)

Application	Boring Bar Type	Overview Shape	Shank Type Max. Overhang Length L/D	Coolant Hole Yes	Coolant Hole No	Insert Type	Min. Bore Dia. DMIN (mm) 5	6	7	8	10	12	14	16	18	20	25	30	32	40	50	63	Toolholder / Sleeve Ref. Page
Boring / Internal Facing	A...DCLN12		Steel L/D = ~3.0	●		Negative													●	●	●		F85
	S...PCLN○○		Steel L/D = ~3.0		○	Negative										●	● 27		●	●	●		F86
	A...PCLN09		Steel L/D = ~3.0	●		Negative										●	● 27		●				F86
	A...DWLN08		Steel L/D = ~3.0	●		Negative													●	●	●		F95
	S...PWLN○○		Steel L/D = ~3.0		○	Negative										●	● 27		●	●	●		F94 F96
	A...PWLN06		Steel L/D = ~3.0	●		Negative										●	● 27		●				F94
	S...WWLN08-E		Excellent L/D = ~5.0		○	Negative											● 28		● 34	●			F96
	C...STXP(B)		Carbide L/D = ~7.0		○	Positive			● 7.5	● 9	● 11												F65
	C...SJLC		Carbide L/D = ~7.0		○	Positive	● 5.5																F58
Copying	S...STWP-E		Excellent L/D = ~5.0		○	Positive						●		●		●	●		●				F64
	S...STWP		Steel L/D = ~3.0		○	Positive						●		●		●	●						F64
	A...DDUN15		Steel L/D = ~3.0	●		Negative														●	●	●	F88
	S...PDUN11		Steel L/D = ~3.0		○	Negative											● 27		●	●			F87
	A...PDUN11		Steel L/D = ~3.0	●		Negative											● 27		●	●			F87
	S...PDUN15		Steel L/D = ~3.0		○	Negative													●	● 44	● 54		F89
	S...PDQN15		Steel L/D = ~3.0		○	Negative													●	● 44	● 54		F89
Back Boring	C...STZB		Carbide L/D = ~7.0		○	Positive				● 8.5													F65
	C...SJZC		Carbide L/D = ~7.0		○	Positive		● 6.5															F58
	S...PDZN15		Steel L/D = ~3.0		○	Negative													●	● 44	● 54		F89
Boring	S...CTUP		Steel L/D = ~3.0		○	Positive								●		●	● 27		● 34	● 43	●		F79
	A...DTFN○○		Steel L/D = ~3.0	●		Negative													●	●	●		F92
	S...PTUN○○		Steel L/D = ~3.0		○	Negative										●	●	●	●	●	●		F93
	A...PTUN11		Steel L/D = ~3.0	●		Negative										●	●		●				F93
	A...DSKN12		Steel L/D = ~3.0	●		Negative													●	●	●		F91
	S...SSKP		Steel L/D = ~3.0		○	Positive										●	●						F78
	S...CSKP		Steel L/D = ~3.0		○	Positive										●	● 27		● 34	● 43			F78

Min. Bore Dia. DMIN is indicated by the figure under ● depending on the boring size.

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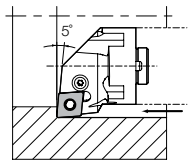
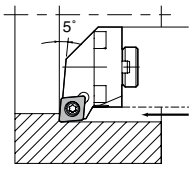
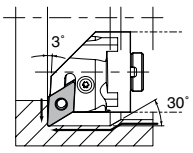
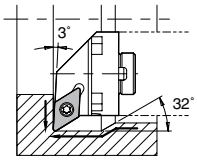
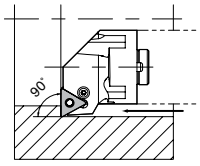
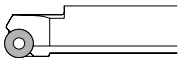
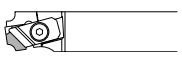
AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

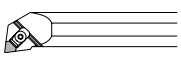
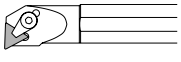
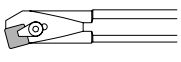
Application	Boring Bar Type	Shape	Shank Type Max. Overhang Length L/D	Coolant Hole Yes	Coolant Hole No	Insert Type	Min. Bore Dia. DMIN (mm) 7	8	10	12	14	16	18	20	25	30	32	40	43	50	63	Toolholder / Sleeve Ref. Page
Boring / Internal Facing	**HA...PCLN12**		Anti-Vibration Dampener L/D = ~5.5	●		Negative												●		●	●	F81
	HA...SCLC09		Anti-Vibration Dampener L/D = ~6.0	●		Positive												●				F83
Copying	**HA...PDUN15**		Anti-Vibration Dampener L/D = ~6.0	●		Negative													●	●	●	F82
	HA...SDUC11		Anti-Vibration Dampener L/D = ~6.0	●		Positive												●				F83
Boring	**HA...PTFN16**		Anti-Vibration Dampener L/D = ~6.0	●		Negative												●		●	●	F82

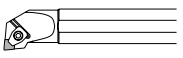
Toolholders for Bearing Machining (Square Shank)

Application	Boring Bar Type	Shape	Min. Bore Dia. DMIN (mm) 20	25	30	32	40	50	Toolholder / Sleeve Ref. Page
Boring	**SRCP-B**		●			●			F80

Application	Boring Bar Type	Shape	Min. Bore Dia. DMIN (mm) 20	25	30	32	40	50	Toolholder / Sleeve Ref. Page
Round-Chamfering	**CBSN-B**		●						F80

Boring Bars for Ceramic / Solid CBN Tools (L/D = ~3)

Application	Boring Bar Type	Shape	Min. Bore Dia. DMIN (mm) 16	18	20	25	30	32	40	50	Toolholder / Sleeve Ref. Page
Boring / Internal Facing	**S...CELN**									●	F97
Boring	**S...CTUP**		●		●	● 27		● 34	● 43	●	F79
	S...CSKP				●	● 27		● 34	● 43		F78

Application	Boring Bar Type	Shape	Min. Bore Dia. DMIN (mm) 20	25	30	32	40	50	Toolholder / Sleeve Ref. Page
	S...CCLN-A						● 40 mm	● 50 mm	F98
					● 1.18 in		● 1.57 in		
	S...CTUN-A				● 30 mm				F98
					● 1.18 in				

Min. Bore Dia. DMIN is indicated by the figure under ● depending on the boring size.

MBS (Micro Internal Diameter Profile Boring)

• MBS Bars are Right-hand

MBS Standard Length (Inch)

Uncoated		AlTiN Coating		Dimensions (in)			
Part Number	Stock	Part Number	Stock	DC $^{+0.0000}_{-0.0025}$	DCON	LF	CDX
MBS-0150.030	●	MBS-0150L030	●	0.0150	1/8	1 1/2	0.030
MBS-0200.030	●	MBS-0200L030	●	0.0200	1/8	1 1/2	0.030
MBS-0250.050	●	MBS-0250L050	●	0.0250	1/8	1 1/2	0.050
MBS-0300.050	●	MBS-0300L050	●	0.0300	1/8	1 1/2	0.050
MBS-0350.050	●	MBS-0350L050	●	0.0350	1/8	1 1/2	0.050
MBS-0400.050	●	MBS-0400L050	●	0.0400	1/8	1 1/2	0.050
MBS-0450.100	●	MBS-0450L100	●	0.0450	1/8	1 1/2	0.100
MBS-0500.100	●	MBS-0500L100	●	0.0500	1/8	1 1/2	0.100
MBS-0550.100	●	MBS-0550L100	●	0.0550	1/8	1 1/2	0.100
MBS-0600.100	●	MBS-0600L100	●	0.0600	1/8	1 1/2	0.100
MBS-0800.250	●	MBS-0800L250	●	0.0800	1/8	1 1/2	0.250
MBS-1000.375	●	MBS-1000L375	●	0.1000	1/8	1 1/2	0.375
MBS-1100.500	●	MBS-1100L500	●	0.1100	1/8	1 1/2	0.500
MBS-1200.600	●	MBS-1200L600	●	0.1200	3/16	2	0.600
MBS-1400.700	●	MBS-1400L700	●	0.1400	3/16	2	0.700
MBS-1600.800	●	MBS-1600L800	●	0.1600	3/16	2 1/2	0.800
MBS-1800.900	●	MBS-1800L900	●	0.1800	1/4	2 1/2	0.900
MBS-2000.1000	●	MBS-2000L1000	●	0.2000	1/4	3	1.000
MBS-2200.1250	●	MBS-2200L1250	●	0.2200	1/4	3	1.250
MBS-2400.1500	●	MBS-2400L1500	●	0.2400	1/4	3	1.500

MBS Standard Length (Metric)

Uncoated		AlTiN Coating		Dimensions (mm)			
Part Number	Stock	Part Number	Stock	DC $^{+0.00}_{-0.06}$	DCON	LF	CDX
MBS-0157.039	●	MBS-0157L039	●	0.40	3.00	38.00	1.00
MBS-0197.039	●	MBS-0197L039	●	0.50	3.00	38.00	1.00
MBS-0236.051	●	MBS-0236L051	●	0.60	3.00	38.00	1.30
MBS-0276.051	●	MBS-0276L051	●	0.70	3.00	38.00	1.30
MBS-0315.051	●	MBS-0315L051	●	0.80	3.00	38.00	1.30
MBS-0354.051	●	MBS-0354L051	●	0.90	3.00	38.00	1.30
MBS-0394.098	●	MBS-0394L098	●	1.00	3.00	38.00	2.50
MBS-0433.098	●	MBS-0433L098	●	1.10	3.00	38.00	2.50
MBS-0472.098	●	MBS-0472L098	●	1.20	3.00	38.00	2.50
MBS-0512.098	●	MBS-0512L098	●	1.30	3.00	38.00	2.50
MBS-0591.236	●	MBS-0591L236	●	1.50	3.00	38.00	6.00
MBS-0669.276	●	MBS-0669L276	●	1.70	3.00	38.00	7.00
MBS-0787.315	●	MBS-0787L315	●	2.00	3.00	38.00	8.00
MBS-1181.591	●	MBS-1181L591	●	3.00	5.00	50.00	15.00
MBS-1378.787	●	MBS-1378L787	●	3.50	5.00	50.00	20.00
MBS-1575.866	●	MBS-1575L866	●	4.00	5.00	50.00	22.00
MBS-1772.906	●	MBS-1772L906	●	4.50	8.00	65.00	23.00
MBS-1969.984	●	MBS-1969L984	●	5.00	8.00	65.00	25.00
MBS-2165.1063	●	MBS-2165L1063	●	5.50	8.00	65.00	27.00
MBS-2362.1142	●	MBS-2362L1142	●	6.00	8.00	65.00	29.00

Series MBS Workpiece Materials

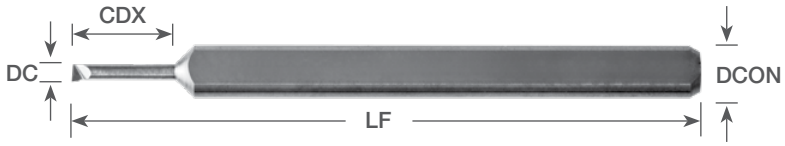
Coating	P Steel ~30HRC	P Steel 30~40HRC	H Hardened Steel ~55HRC	H Hardened Steel ~68HRC	M Stainless Steel	K Cast Iron	N Aluminum	N Graphite	N Copper Alloy	N Brass	N CFRP	N Plastic	N Thermoset Plastic	N High Density Plastic	S Nickel / Cobalt	S Titanium Alloy
AlTiN	★	★	★	☆	☆	☆			☆						☆	☆
Uncoated	★	★	★	☆	☆		☆		☆	☆				☆		

★ : Priority ☆ : Applicable Materials

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MBE (Micro Internal Diameter Profile Boring)



• MBE Bars are Right-hand

MBE Extended Reach (Inch)

Uncoated		AlTiN Coating		Dimensions (in)			
Part Number	Stock	Part Number	Stock	DC $^{+0.0000}_{-0.0025}$	DCON	LF	CDX
MBE-0150.075	●	MBE-0150L075	●	0.0150	1/8	1 1/2	0.075
MBE-0200.075	●	MBE-0200L075	●	0.0200	1/8	1 1/2	0.075
MBE-0250.125	●	MBE-0250L125	●	0.0250	1/8	1 1/2	0.125
MBE-0300.125	●	MBE-0300L125	●	0.0300	1/8	1 1/2	0.125
MBE-0350.125	●	MBE-0350L125	●	0.0350	1/8	1 1/2	0.125
MBE-0400.125	●	MBE-0400L125	●	0.0400	1/8	1 1/2	0.125
MBE-0450.250	●	MBE-0450L250	●	0.0450	1/8	1 1/2	0.250
MBE-0500.250	●	MBE-0500L250	●	0.0500	1/8	1 1/2	0.250
MBE-0550.250	●	MBE-0550L250	●	0.0550	1/8	1 1/2	0.250
MBE-0600.250	●	MBE-0600L250	●	0.0600	1/8	1 1/2	0.250
MBE-0800.500	●	MBE-0800L500	●	0.0800	1/8	1 1/2	0.500
MBE-1000.600	●	MBE-1000L600	●	0.1000	1/8	1 1/2	0.600
MBE-1100.700	●	MBE-1100L700	●	0.1100	1/8	1 1/2	0.700
MBE-1200.850	●	MBE-1200L850	●	0.1200	3/16	2	0.850
MBE-1400.900	●	MBE-1400L900	●	0.1400	3/16	2	0.900
MBE-1600.1100	●	MBE-1600L1100	●	0.1600	3/16	2 1/2	1.100
MBE-1800.1250	●	MBE-1800L1250	●	0.1800	1/4	2 1/2	1.250
MBE-2000.1400	●	MBE-2000L1400	●	0.2000	1/4	3	1.400
MBE-2200.1500	●	MBE-2200L1500	●	0.2200	1/4	3	1.500
MBE-2400.1750	●	MBE-2400L1750	●	0.2400	1/4	3	1.750

MBE Standard Reach (Metric)

Uncoated		AlTiN Coating		Dimensions (mm)			
Part Number	Stock	Part Number	Stock	DC $^{+0.00}_{-0.06}$	DCON	LF	CDX
MBE-0157.079	●	MBE-0157L079	●	0.40	3.00	38.00	2.00
MBE-0197.079	●	MBE-0197L079	●	0.50	3.00	38.00	2.00
MBE-0236.118	●	MBE-0236L118	●	0.60	3.00	38.00	3.00
MBE-0276.118	●	MBE-0276L118	●	0.70	3.00	38.00	3.00
MBE-0315.118	●	MBE-0315L118	●	0.80	3.00	38.00	3.00
MBE-0354.118	●	MBE-0354L118	●	0.90	3.00	38.00	3.00
MBE-0394.197	●	MBE-0394L197	●	1.00	3.00	38.00	5.00
MBE-0433.197	●	MBE-0433L197	●	1.10	3.00	38.00	5.00
MBE-0472.197	●	MBE-0472L197	●	1.20	3.00	38.00	5.00
MBE-0512.197	●	MBE-0512L197	●	1.30	3.00	38.00	5.00
MBE-0591.394	●	MBE-0591L394	●	1.50	3.00	38.00	10.00
MBE-0669.394	●	MBE-0669L394	●	1.70	3.00	38.00	10.00
MBE-0787.394	●	MBE-0787L394	●	2.00	3.00	38.00	10.00
MBE-1181.787	●	MBE-1181L787	●	3.00	5.00	50.00	20.00
MBE-1378.984	●	MBE-1378L984	●	3.50	5.00	50.00	25.00
MBE-1575.1063	●	MBE-1575L1063	●	4.00	5.00	50.00	27.00
MBE-1772.1260	●	MBE-1772L1260	●	4.50	8.00	65.00	32.00
MBE-1969.1260	●	MBE-1969L1260	●	5.00	8.00	65.00	32.00
MBE-2165.1260	●	MBE-2165L1260	●	5.50	8.00	65.00	32.00
MBE-2362.1378	●	MBE-2362L1378	●	6.00	8.00	65.00	35.00

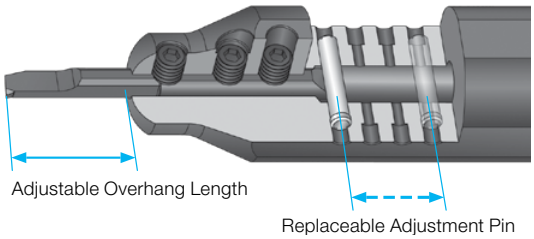
Series MBE Workpiece Materials

Coating	P Steel ~30HRC	P Steel 30~40HRC	H Hardened Steel ~55HRC	H Hardened Steel ~68HRC	M Stainless Steel	K Cast Iron	N Aluminum	N Graphite	N Copper Alloy	N Brass	N CFRP	N Plastic	N Thermoset Plastic	N High Density Plastic	S Nickel / Cobalt	S Titanium Alloy
AlTiN	★	★	★	☆	☆	☆			☆						☆	☆
Uncoated	★	★	★	☆	☆		☆		☆	☆				☆		

★ : *Priority* ☆ : *Applicable Materials*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Kyocera's Original EZ Adjust Structure

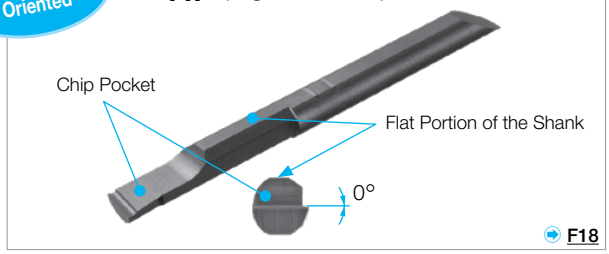


- Easy Adjustment and High Precision
- EZ Bar Minimizes Deviation with High Rigidity Clamping Force
- Wide of Tooling for Various Applications

2 Types of Bars

Precision Oriented

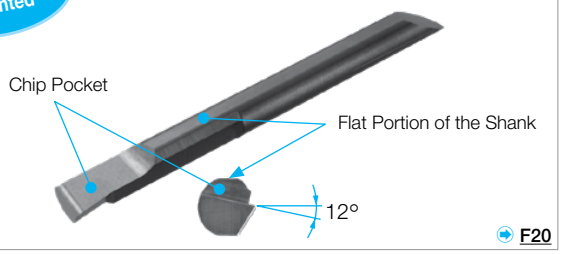
HP (High Precision)



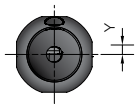
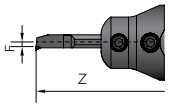
F18

Cost Oriented

ST (Standard)



F20

Insert Setting Image		Insert Tolerance	Offset (F)	Overall length (Z)	Edge Height (Y)	Min. Bore Dia.
 Y = Edge Height	 F = Offset Z = Insert length	Precision-oriented HP Type (High Precision)	±0.025mm	±0.05mm	+0.05/0mm	Same as Shank Dia.
		Cost-oriented ST Type (Standard)	±0.060mm	±0.10mm	+0.06/0mm	Not same as Shank Dia.

* See "Dimensions" page for details.

"EZ Bar PLUS" Indexable EZ Bar Lineup Expansion

3 Types of Sleeves

EZH-CT

High Precision, with Coolant Hole (Adjustable)

EZH-HP

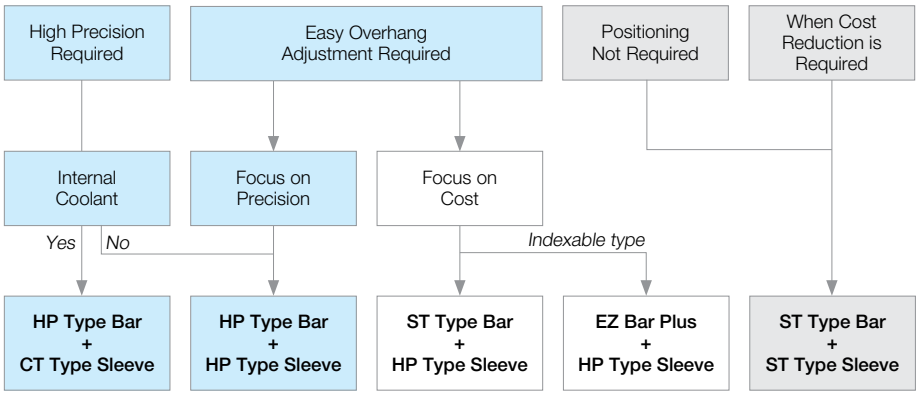
Overhang Length is Adjustable (Adjustable)

EZH-ST

Not-Adjustable

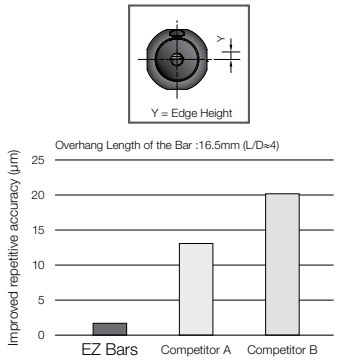
800.823.7284
Visit us online at KyoceraPrecisionTools.com

How to Select Bars and Sleeves for Each Application



HP Type Bar + CT/HP Type Sleeve

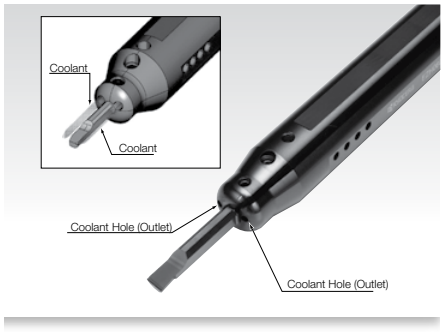
Excellent repeatability and drastic tool change time reduction



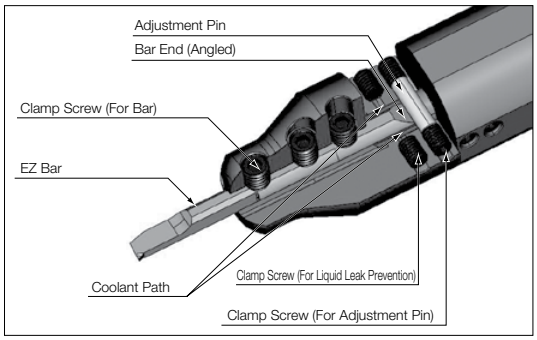
EZH-CT (high precision / with coolant hole) is added to the EZH sleeve lineup

Kyocera's unique EZ adjust structure and internal coolant system improve dimensional accuracy and surface roughness!

EZH-CT Coolant System



EZH-CT Internal Stucture



How to Set Bar in Sleeve

How to use adjustment pin and prevent coolant leakage (Fig.1)

① Put the adjustment pin into the hole according to the overhang length and push it into the sleeve using the wrench "LW-1.5".
② Tighten the clamp screw for the adjustment pin "HS3X4P" using the wrench "LW-1.5" from both sides of the sleeve.
③ Put the additional clamp screws "HS3X4P" into the un-used adjustment pin holes to prevent coolant leakage using the wrench "LW-1.5" and fix them from both sides of the sleeve.

How to secure the bar (Fig.2)

① With the chip pocket upward, set the bar into the sleeve. Press the angled face of the bar end with the adjustment pin. Make sure that the bar does not rotate. **(Fig.3)**
② Tighten the clamp screw with wrench "LW-2" and secure the bar. (Use "LW-1.5" if shank dia. is 3mm or less.)

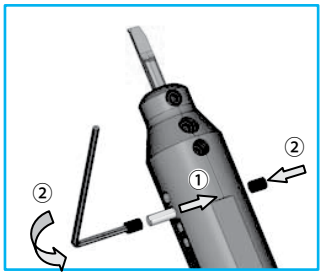


Fig.1 How to use the adjustment pin

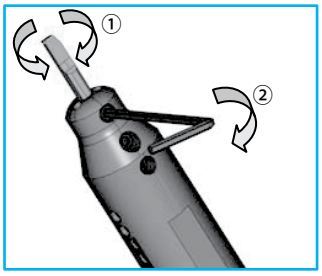


Fig.2 How to secure the bar

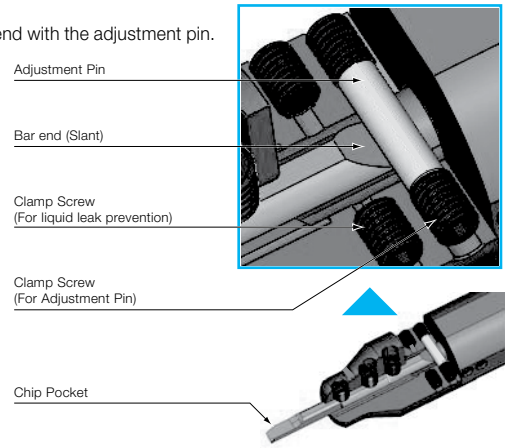
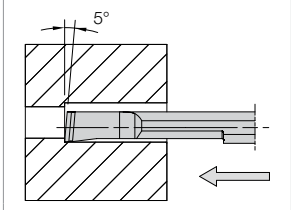
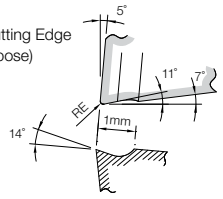


Fig.3 Clamped bar

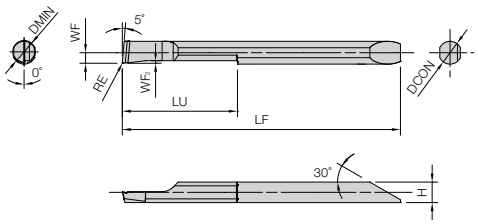
EZB-HP (Boring)

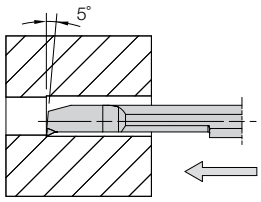


H Chipbreaker
- Chipbreaker Parallel to Cutting Edge
- Tough Edge (General Purpose)

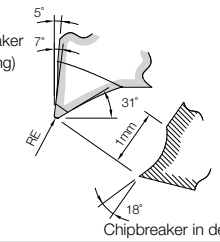


• Right-hand Shown — Chipbreaker in detail

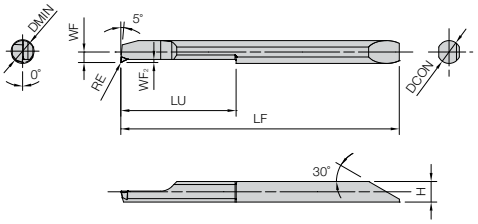




F Chipbreaker
- Lead Angle on Chipbreaker
- Sharp Edge (For Finishing)



• Right-hand Shown — Chipbreaker in detail



EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)							Grade				Applicable Sleeve → F30~F34
										MEGACOAT		Carbide		
		DMIN	DCON	H	LF	LU	WF	WF_2	RE	PR1225		GW05		
										R	L	R	L	
EZB	020020HP-008H	2.0	2.0	1.8	32.0	8.0	0.85	0.25	0.08 ±0.015	●	●	●		EZH020…
	025025HP-008H	2.5	2.5	2.3	35.0	10.5	1.10	0.25	0.08 ±0.015	●	●	●		EZH025…
	025025HP-015H								0.15 ±0.020	●				
	030030HP-008H	3.0	3.0	2.7	38.9	13.0	1.35	0.30	0.08 ±0.015	●	●	●		EZH030…
	030030HP-015H								0.15 ±0.020	●				
	035035HP-008H	3.5	3.5	3.2	41.9	15.0	1.60	0.40	0.08 ±0.015	●	●	●		EZH035…
	035035HP-015H								0.15 ±0.020	●				
	040040HP-008H	4.0	4.0	3.6	48.8	20.0	1.85	0.40	0.08 ±0.015	●	●	●		EZH040…
	040040HP-015H								0.15 ±0.020	●				
NEW	045045HP-008H	4.5	4.5	4.1	51.1	22.5	2.1	0.50	0.08 ±0.015	●	●	●		EZH045...
	050050HP-008H	5.0	5.0	4.6	58.1	25.0	2.35	0.50	0.08 ±0.015	●	●	●		EZH050…
	050050HP-015H								0.15 ±0.020	●				
	060060HP-008H	6.0	6.0	5.6	66.1	30.0	2.85	0.60	0.08 ±0.015	●	●	●		EZH060…
	060060HP-015H								0.15 ±0.020	●				
NEW	070070HP-008H	7.0	7.0	6.3	73.8	35.0	3.3	0.7	0.08 ±0.015	●	●	●		EZH070...
NEW	080080HP-008H	8.0	8.0	7.2	84.8	40.0	3.75	0.8	0.08 ±0.015	●	●	●		EZH080...
EZBR	020020HP-005F	2.0	2.0	1.8	32.0	8.0	0.85	0.25	0.05 ±0.010	●				EZH020…
	025025HP-005F	2.5	2.5	2.3	35.0	10.5	1.10	0.30	0.05 ±0.010	●				EZH025…
	025025HP-015F								0.15 ±0.020	●				
	030030HP-005F	3.0	3.0	2.7	38.9	13.0	1.35	0.40	0.05 ±0.010	●				EZH030…
	030030HP-015F								0.15 ±0.020	●				
	035035HP-005F	3.5	3.5	3.2	41.9	15.0	1.60	0.50	0.05 ±0.010	●				EZH035…
	035035HP-015F								0.15 ±0.020	●				
	040040HP-005F	4.0	4.0	3.6	48.8	20.0	1.85	0.50	0.05 ±0.010	●				EZH040…
	040040HP-015F								0.15 ±0.020	●				
	050050HP-005F	5.0	5.0	4.6	58.1	25.0	2.35	0.70	0.05 ±0.010	●				EZH050…
	050050HP-015F								0.15 ±0.020	●				
	060060HP-005F	6.0	6.0	5.6	66.1	30.0	2.85	0.90	0.05 ±0.010	●				EZH060…
	060060HP-015F								0.15 ±0.020	●				
NEW	070070HP-005F	7.0	7.0	6.3	73.8	35.0	3.3	1.0	0.05 ±0.010	●				EZH070...
NEW	070070HP-015F								0.15 ±0.020	●				
NEW	080080HP-005F	8.0	8.0	7.2	84.8	40.0	3.75	1.0	0.05 ±0.010	●				EZH080...
NEW	080080HP-015F								0.15 ±0.020	●				

Tolerance: Offset ±0.025mm (of the reference pin), overall length ±0.05mm, edge height +0.05/0mm

Recommended Cutting Conditions → F22

EZ Bar Identification System

EZ B R 020 020 HP - 008 H

EZ	B	R	020	020	HP	008	H
Symbol of Bar	Application	Insert Hand	Min. Bore Dia.	Shank Dia.	Precision	Corner-R (RE)	Chipbreaker
EZ	B: B-Boring Bar	R: Right-hand L: Left-hand	020 : 2.0mm 025 : 2.5mm	020 : 2.0mm 025 : 2.5mm	HP: High Precision ST: Standard	008 : 0.08mm 015 : 0.15mm	H: H Chipbreaker (Tough Edge) F: F Chipbreaker (Sharp Edge) NB: Without chipbreaker

EZ Bars are sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

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(Technical Support) 800.823.7284 - Option 2
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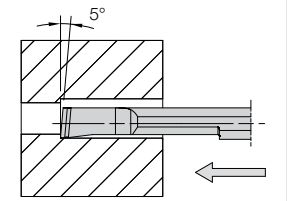
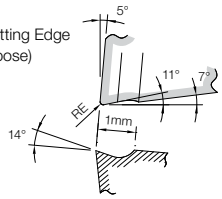
EZB-HP (Boring, Long Type)

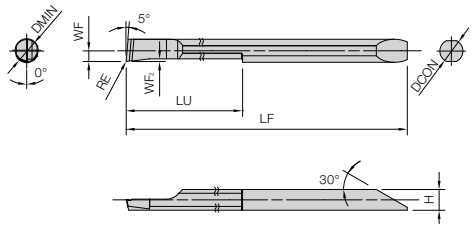


H Chipbreaker
- Chipbreaker Parallel to Cutting Edge
- Tough Edge (General Purpose)



- Right-hand Shown

Chipbreaker in detail



EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)											Grade	Applicable Sleeve ➡ F30~F34
		DMIN	DCON	H	LF	LU	*Overhang Length				WF	WF_2	RE	MEGACOAT PR1225	
							No.1	No.2	No.3	No.4					
EZBR	020020HP-008H-LT	2	2	1.8	36	12	12.5	8.5	-	-	0.85	0.25	0.08 ±0.015	●	EZH020…
	025025HP-008H-LT	2.5	2.5	2.3	39.5	15	15.5	11.5	-	-	1.1			●	EZH025…
	030030HP-008H-LT	3	3	2.7	47.9	18	22.5	18.5	14.5	-	1.35	0.3		●	EZH030…
	035035HP-008H-LT	3.5	3.5	3.2	51.9	21	*25.5	21.5	17.5	-	1.6	0.4		●	EZH035…
	040040HP-008H-LT	4	4	3.6	60.8	28	*32.5	28.5	24.5	20.5	1.85			●	EZH040…
	050050HP-008H-LT	5	5	4.6	73.1	35	*40.5	35.5	30.5	25.5	2.35	0.5		●	EZH050…
	060060HP-008H-LT	6	6	5.6	83.1	42	*47.5	42.5	37.5	32.5	2.85	0.6		●	EZH060…

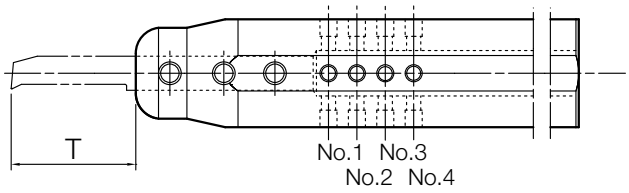
Tolerance: Offset ±0.025mm (of the reference pin), overall length ±0.05mm, edge height +0.05/0mm

Recommended Cutting Conditions ➡ F22

Long Type Overhang Amount T (mm)

Part Number		*Overhang Length (mm)			
		No.1	No.2	No.3	No.4
EZBR	020020HP-008H-LT	12.5	8.5	-	-
	025025HP-008H-LT	15.5	11.5	-	-
	030030HP-008H-LT	22.5	18.5	14.5	-
	035035HP-008H-LT	*25.5	21.5	17.5	-
	040040HP-008H-LT	*32.5	28.5	24.5	20.5
	050050HP-008H-LT	*40.5	35.5	30.5	25.5
	060060HP-008H-LT	*47.5	42.5	37.5	32.5

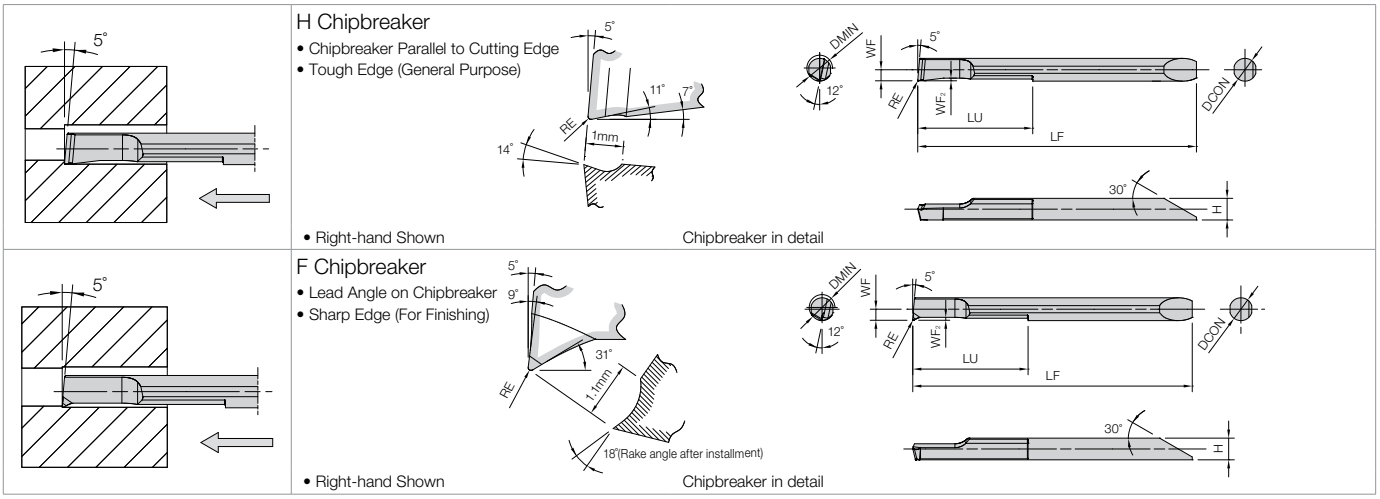
*To use full overhang, inserts with modified LU dimension are required.



EZ Bars are sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

EZB-ST (Boring)



EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)							Grade MEGACOAT	Applicable Sleeve ➡ F30~F34
		DMIN	DCON	H	LF	LU	WF	WF_2	RE	PR1225	
EZBR	020017ST-008H	2.0	1.7	1.5	27.3	7.0	0.79	0.19	0.08 ±0.015	●	EZH017…
	025020ST-008H	2.5	2.0	1.82	32.0	8.0	0.94	0.16	0.08 ±0.015	●	EZH020…
	025020ST-015H								0.15 ±0.020	●	
	030025ST-008H	3.0	2.5	2.3	35.0	10.5	1.19	0.15	0.08 ±0.015	●	EZH025…
	030025ST-015H								0.15 ±0.020	●	
	035030ST-008H	3.5	3.0	2.8	39.0	13.0	1.44	0.18	0.08 ±0.015	●	EZH030…
	035030ST-015H								0.15 ±0.020	●	
	040035ST-008H	4.0	3.5	3.3	42.0	15.0	1.69	0.24	0.08 ±0.015	●	EZH035…
	040035ST-015H								0.15 ±0.020	●	
	045040ST-008H	4.5	4.0	3.8	49.0	20.0	1.94	0.27	0.08 ±0.015	●	EZH040…
	045040ST-015H								0.15 ±0.020	●	
	055050ST-008H	5.5	5.0	4.8	58.2	25.0	2.44	0.33	0.08 ±0.015	●	EZH050…
	055050ST-015H								0.15 ±0.020	●	
	065060ST-008H	6.5	6.0	5.8	66.2	30.0	2.94	0.38	0.08 ±0.015	●	EZH060…
	065060ST-015H								0.15 ±0.020	●	
	075070ST-008H	7.5	7.0	6.8	74.2	35.0	3.44	0.44	0.08 ±0.015	●	EZH070…
	075070ST-015H								0.15 ±0.020	●	
EZBR	020017ST-005F	2.0	1.7	1.5	27.3	7.0	0.79	0.20	0.05 ±0.010	●	EZH017…
	025020ST-005F	2.5	2.0	1.82	32.0	8.0	0.94	0.16	0.05 ±0.010	●	EZH020…
	025020ST-015F								0.15 ±0.020	●	
	030025ST-005F	3.0	2.5	2.3	35.0	10.5	1.19	0.20	0.05 ±0.010	●	EZH025…
	030025ST-015F								0.15 ±0.020	●	
	035030ST-005F	3.5	3.0	2.8	39.0	13.0	1.44	0.26	0.05 ±0.010	●	EZH030…
	035030ST-015F								0.15 ±0.020	●	
	040035ST-005F	4.0	3.5	3.3	42.0	15.0	1.69	0.33	0.05 ±0.010	●	EZH035…
	040035ST-015F								0.15 ±0.020	●	
	045040ST-005F	4.5	4.0	3.8	49.0	20.0	1.94	0.31	0.05 ±0.010	●	EZH040…
	045040ST-015F								0.15 ±0.020	●	
	055050ST-005F	5.5	5.0	4.8	58.2	25.0	2.44	0.45	0.05 ±0.010	●	EZH050…
	055050ST-015F								0.15 ±0.020	●	
	065060ST-005F	6.5	6.0	5.8	66.2	30.0	2.94	0.59	0.05 ±0.010	●	EZH060…
	065060ST-015F								0.15 ±0.020	●	
	075070ST-005F	7.5	7.0	6.8	74.2	35.0	3.44	0.65	0.05 ±0.010	●	EZH070…
	075070ST-015F								0.15 ±0.020	●	

Tolerance: Offset ±0.06mm (of the reference pin), overall length ±0.1mm, edge height +0.06/0mm

Recommended Cutting Conditions ➡ F22

EZ Bars are sold in 1 piece boxes.

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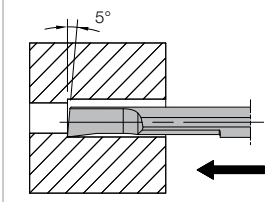
NEW ITEMS!

EZB-NB (Boring)



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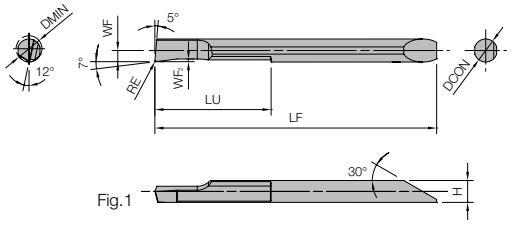
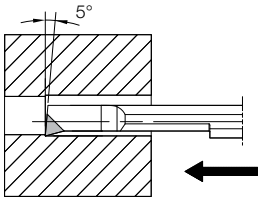


Fig.1

• Right-hand Shown



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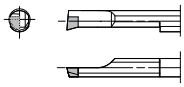

Fig.2 EZBR030 type

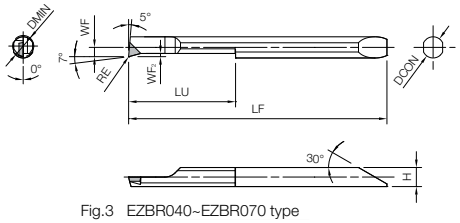

Fig.3 EZBR040~EZBR070 type

• Right-hand Shown

EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)							Drawing	Grade				Applicable Sleeve ➡ F30~F34
											MEGA COAT	Carbide	CBN	PCD	
		DMIN	DCON	H	LF	LU	WF	WF_2	RE		PR1225	GW05 (NEW)	KBN05M	KPD001	
EZBR	020017-005NB	2.0	1.7	1.50	27.3	7.0	0.79	0.20	±0.015 0.050	Fig.1	●	●			EZH017…
	025020-005NB	2.5	2.0	1.82	32.0	8.0	0.94	0.16			●	●			EZH020…
	030025-005NB	3.0	2.5	2.30	35.0	10.5	1.19	0.16			●	●			EZH025…
	035030-005NB	3.5	3.0	2.80	39.0	13.0	1.44	0.19			●	●			EZH030…
	040035-005NB	4.0	3.5	3.30	42.0	15.0	1.69	0.25			●	●			EZH035…
	045040-005NB	4.5	4.0	3.80	49.0	20.0	1.94	0.28			●	●			EZH040…
	055050-005NB	5.5	5.0	4.80	58.2	25.0	2.44	0.33			●	●			EZH050…
	065060-005NB	6.5	6.0	5.80	66.2	30.0	2.94	0.39			●	●			EZH060…
	075070-005NB	7.5	7.0	6.80	74.2	35.0	3.44	0.45			●	●			EZH070…
EZBR	030030-003NB	3.0	3.0	2.60	38.8	13.0	1.25	0.30	±0.015 0.035	Fig.2			●		EZH030…
	040040-003NB	4.0	4.0	3.60	48.8	20.0	1.75	0.50		Fig.3			●		EZH040…
	050050-003NB	5.0	5.0	4.60	58.1	25.0	2.25	0.50					●		EZH050…
	060060-003NB	6.0	6.0	5.60	66.1	30.0	2.75	0.50					●		EZH060…
	070070-003NB	7.0	7.0	6.60	74.1	35.0	3.25	0.50					●		EZH070…
EZBR	040040-003NB	4.0	4.0	3.60	48.8	20.0	1.75	0.50	±0.015 0.035	Fig.3				●	EZH040…
	050050-003NB	5.0	5.0	4.60	58.1	25.0	2.25	0.50						●	EZH050…
	060060-003NB	6.0	6.0	5.60	66.1	30.0	2.75	0.50						●	EZH060…
	070070-003NB	7.0	7.0	6.60	74.1	35.0	3.25	0.50						●	EZH070…

Recommended Cutting Conditions ➡ F22

Edge Preparation

Grade	Edge Preparation	Notes
PR1225	Sharp Edge	-
KBN05M	T00315	0.003" × 15° Chamfered Cutting Edge
KPD001	Sharp Edge	-

EZ Bars are sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Recommended Cutting Conditions

H Chipbreaker (EZB-HP...H Type / EZB-ST...H Type)

Workpiece Material	Insert Grade (Vc : sfm)		EZB□020/025		EZB□030/035		EZB□040/045		EZB□050/055/060/065/070/075/080		Notes
	MEGACOAT	Carbide	Depth of Cut: D.O.C. (inch), Feed: f (ipr)								
	PR1225	**GW05**	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~330	-	~0.0118	~0.0012	~0.0157	~0.0016	~0.0177	~0.0028	~0.0197	~0.0039	Wet
Stainless Steel	100~260	-	~0.0079	~0.0008	~0.0118	~0.0012	~0.0138	~0.0020	~0.0157	~0.0028	
Non-ferrous Material	-	~330	~0.0118	~0.0020	~0.0157	~0.0024	~0.0177	~0.0039	~0.0197	~0.0059	

H Chipbreaker (EZB-HP...H-LT Long Type)

Workpiece Material	Insert Grade (Vc : sfm)	EZBR020/025/030/035		EZBR040/050/060		Notes
	MEGACOAT	Depth of Cut: D.O.C. (inch), Feed: f (ipr)				
	PR1225	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~200	~0.0118	~0.0020	~0.0157	~0.0039	Wet
Stainless Steel	70~130	~0.0098	~0.0020	~0.0118	~0.0028	

F Chipbreaker (EZB-HP...F Type / EZB-ST...F Type)

Workpiece Material	Insert Grade (Vc : sfm)	EZBR020/025		EZBR030/035		EZBR040/045		EZBR050/055/060/065/070/075/080		Notes
	MEGACOAT	Depth of Cut: D.O.C. (inch), Feed: f (ipr)								
	PR1225	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~330	~0.0079	~0.0012	~0.0079	~0.0020	~0.0118	~0.0028	~0.0118	~0.0028	Wet
Stainless Steel	100~260	~0.0079	~0.0008	~0.0079	~0.0012	~0.0098	~0.0020	~0.0098	~0.0020	

NB (Without Chipbreaker)

Workpiece Material	Insert Grade (Vc : sfm)		EZBR020/025		EZBR030/035		EZBR040/045		EZBR050/055/060/065/075		Notes
	MEGACOAT	Carbide	Depth of Cut: D.O.C. (inch), Feed: f (ipr)								
	PR1225	**GW05**	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~330	-	~0.0118	~0.0012	~0.0157	~0.0016	~0.0177	~0.0028	~0.0197	~0.0039	Wet
Stainless Steel	100~260	-	~0.0079	~0.0008	~0.0118	~0.0012	~0.0138	~0.0020	~0.0157	~0.0028	
Non-ferrous Material	-	~330	~0.0118	~0.0020	~0.0157	~0.0024	~0.0177	~0.0028	~0.0197	~0.0039	

Workpiece Material	Insert Grade (Vc : sfm)		EZBR030		EZBR040/045		EZBR050/060/070		Notes
	MEGACOAT CBN	PCD	Depth of Cut: D.O.C. (inch), Feed: f (ipr)						
	KBN05M	**KPD001**	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Non-ferrous Material	-	~980	-	-	~0.0177	~0.0039	~0.0197	~0.0059	Wet
Hardened Materials	~330	-	~0.0028	~0.0012	~0.0039	~0.0020	~0.0059	~0.0028	

EZ Bar Compatibility

EZ Bar is compatible with conventional Micro-Bars

Sleeve \ Bar	**EZB...HP**	**EZB...ST/NB**	**HPB...**(Conventional)
EZH...CT/HP	✓	✓	※1 ※2 ✓ (Compatible)
EZH...ST	✓	✓	※1 ✓ (Compatible)
PSH...(Discontinued Sleeve)	※1 ✓ (Compatible)	※1 ✓ (Compatible)	✓

※1 Some diameters of conventional Micro-Bars are incompatible
※2 Use them without Adjustment Pins. Overhang length of bar is not adjustable.

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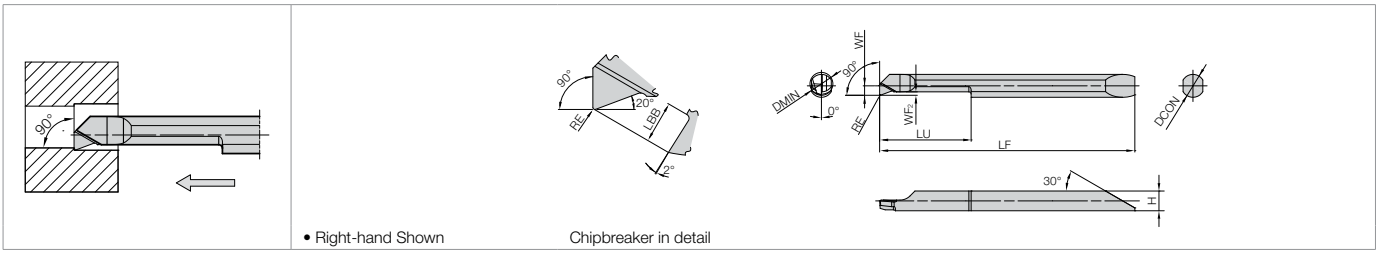
EZBF (90° Lead Boring) NEW



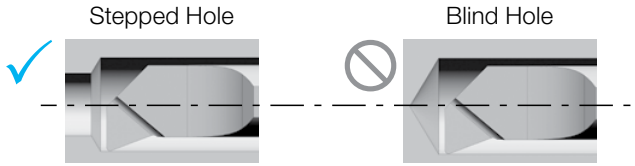
EZ Bar Dimensions (metric)

Part Number		Min. Bore Dia.	Dimensions (mm)								Grade	Applicable Sleeve → F30~F34
											MEGACOAT	
		DMIN	DCON	H	LF	LU	WF	WF_2	LBB	RE	PR1225	
EZBFR	030030-008	3	3	2.5	37.7	12	1.2	0.45	1.5	$0.08^{\pm0.015}$	●	EZH030…
	040040-008	4	4	3.45	44.6	16	1.65	0.55	2.0	$0.08^{\pm0.015}$	●	EZH040…
	050050-015	5	5	4.3	52.7	20	2.15	0.7	2.4	$0.15^{\pm0.02}$	●	EZH050…
	060060-015	6	6	5.15	59.6	24	2.55	0.85	2.8	$0.15^{\pm0.02}$	●	EZH060…

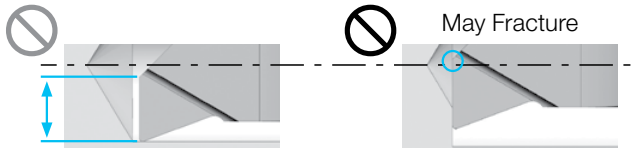
Tolerance: Offset ±0.05mm (of the reference pin), overall length ±0.05mm, edge height +0.05/0mm

EZBF Machining Notes

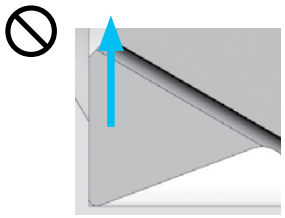
1. Machining into blind holes is not recommended



2. If front cutting edge exceeds beyond workpiece center line, fracturing may occur



3. Up facing is not recommended



Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc : sfm)	EZBFR030		EZBFR040		EZBFR050/060		Notes
	MEGACOAT	Depth of Cut: D.O.C. (inch), Feed: f (ipr)						
	PR1225	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~330	~0.0079	~0.0020	~0.0118	~0.0020	~0.0197	~0.0020	Wet
Stainless Steel	100~260	~0.0079	~0.0020	~0.0118	~0.0020	~0.0197	~0.0020	

EZ Bars are sold in 1 piece boxes.

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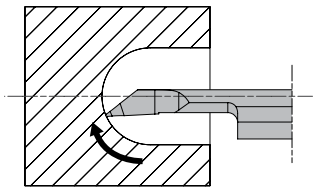
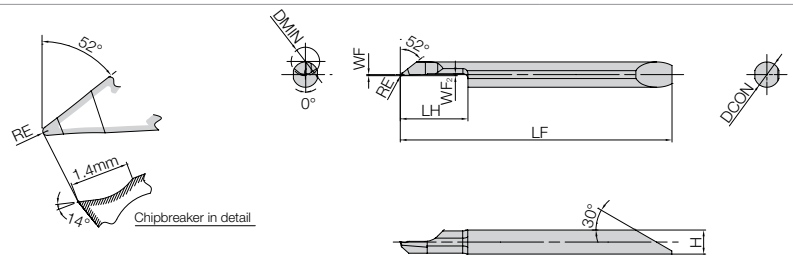
EZVB (Boring / Internal Facing / Internal Profiling)





• Right-hand shown

Toolholder Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)							Grade	Applicable Sleeve ➡ F30~F34
										MEGACOAT	
		DMIN	DCON	H	LF	LH	WF	WF_2	RE	**PR1225**	
EZVBR	**035030-010**	3.5	3.0	2.8	38.0	8.0	0.17	0.22	0.1 ±0.015	●	EZH030…
	045040-010	4.5	4.0	3.8	43.0	10.0	0.17	0.26	0.1 ±0.015	●	EZH040…
	055050-010	5.5	5.0	4.8	50.2	12.0	0.17	0.29	0.1 ±0.015	●	EZH050…
	065060-010	6.5	6.0	5.8	55.2	14.0	0.17	0.32	0.1 ±0.015	●	EZH060…

Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc : sfm)	EZVBR035		EZVBR045		EZVBR055/065		Notes
	MEGACOAT	Depth of Cut: D.O.C. (inch), Feed: f (ipr)						
	PR1225	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~330	~0.0020	~0.0016	~0.0028	~0.0028	~0.0039	~0.0028	Wet
Stainless Steel	100~260	~0.0012	~0.0012	~0.0020	~0.0020	~0.0028	~0.0020	

EZ Bars are sold in 1 piece boxes.

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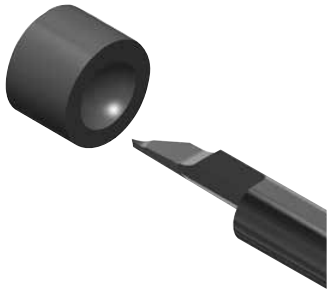
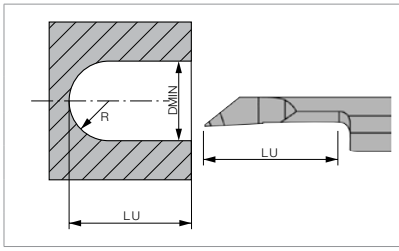
EZVB Application (Internal Spherical Machining, Internal Facing, Internal Profiling)

1. Application Range

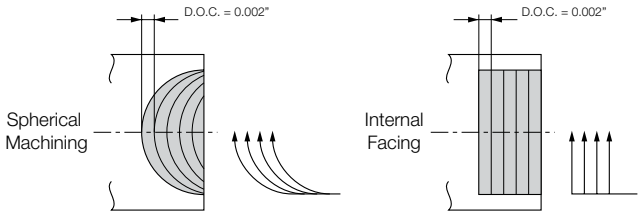




Part Number		Min. Bore Dia.	R	LU
		DMIN	mm	mm
EZVBR	035030-010	3.5	1.75	8.0
	045040-010	4.5	2.25	10.0
	055050-010	5.5	2.75	12.0
	065060-010	6.5	3.25	14.0

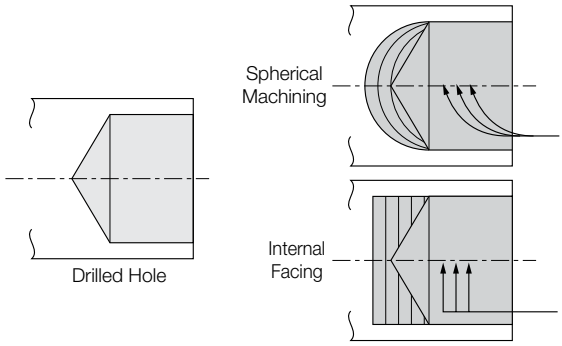
2. Application

Without Existing Hole



(Note) f should be under 0.0012 ipr during internal facing

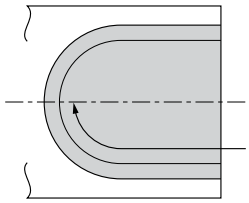
With Pre-Drilled Hole



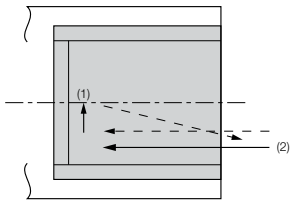
(Note) f should be under 0.0012 ipr during internal facing

Finishing

Spherical Machining

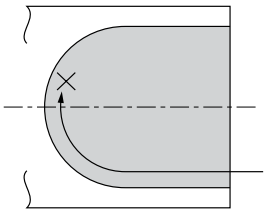


Internal Facing

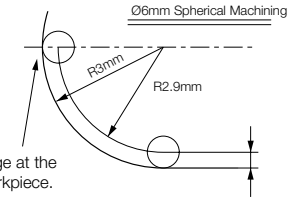


Machining Process
(1) Finish the internal face first.
(2) Next, finish the internal diameter.

3. Caution

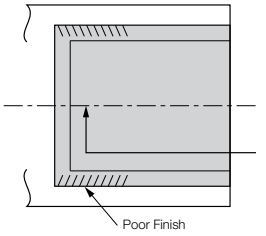


When machining past the center of the workpiece, insert may break.



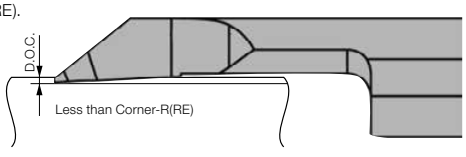
Fix the insert edge at the center of the workpiece.

Adjust the machining program to radius minus the value of Corner-R(RE).



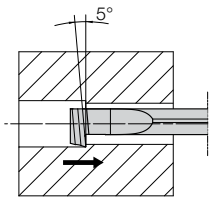
This type of machining is possible, but the chips might scratch the surface.

For internal profiling, ap should be less than the value of Corner-R(RE).

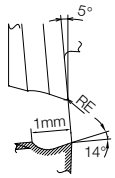


[Burrs may occur, if D.O.C. is bigger than Corner-R(RE)]

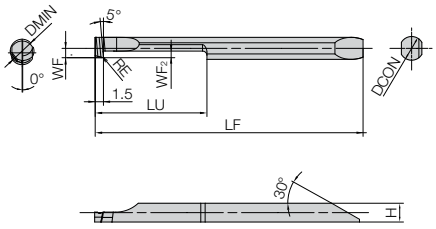
EZBT (Back Boring) NEW



• Right-hand Shown



Chipbreaker in detail



EZ Bar Dimensions (metric)

Part Number	Min. Bore Dia.	Dimensions (mm)							Grade		Applicable Sleeve ➡ F31~F34
									MEGACOAT	Carbide	
	DMIN	DCON	H	LF	LU	WF	WF_2	RE	**PR1225**	**GW05**	
EZBTR 040040-005	4	4	3.45	48.7	20	1.7	1.2	$0.05^{+0.02}$	●	●	EZH040…
050050-005	5	5	4.3	58.7	25	2.15	1.5		●	●	EZH050…

Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc : sfm)		EZBTR040		EZBTR050		Notes
	MEGACOAT	Carbide	Depth of Cut: D.O.C. (inch), Feed: f (ipr)				
	PR1225	**GW05**	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	100~330	-	~0.018	~0.003	~0.020	~0.004	Wet
Stainless Steel	100~260	-	~0.018	~0.002	~0.020	~0.003	
Non-ferrous Material	-	100~330	~0.018	~0.004	~0.020	~0.006	

EZ Bars are sold in 1 piece boxes.

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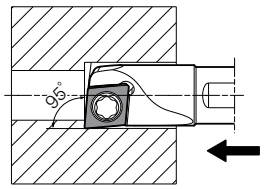
S-SCLC-EZ(P)

Maximum overhand length - L/D = ~3



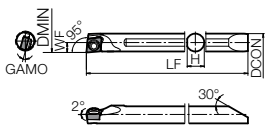


Fig.1

Fig.2-1

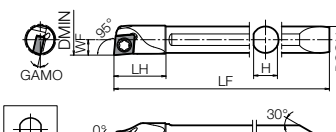


Fig.2

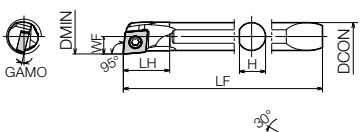


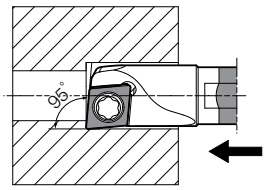
Fig.3

• Right-hand shown

• Left-hand insert for Right-hand toolholder

C-SCLC-EZ(P)

Maximum overhand length - L/D = ~5



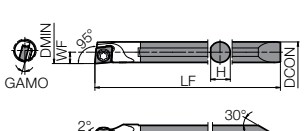


Fig.4

Fig.5-1

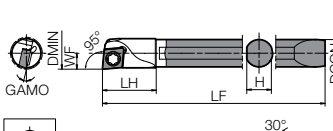


Fig.5

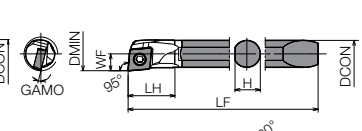


Fig.6

• Right-hand shown

• Left-hand insert for Right-hand toolholder

Toolholder Dimensions

	Part Number	Stock (R)	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Sleeve → F31, F33
Steel	S045X-SCLCR03-050EZ	△	5.0	4.5	4.3	42.4	-	2.5	15°	0.2	No	Fig.1	SB-1635TR	FT-6	EZH045…
	S045X-SCLCR03-050EZP	●													
	S050X-SCLCR03-060EZP	●	6.0	5.0	4.7	48.4	9.0	3.0	13°			Fig.2			EZH050…
	S060X-SCLCR04-070EZ	△	7.0	6.0	5.4	53.9	11.8	3.5				Fig.2-1	SB-2035TR		EZH060…
	S060X-SCLCR04-070EZP	●			5.7	54.4	10.0					Fig.2			
	S070X-SCLCR04-080EZP	●	8.0	7.0	6.7	60.4	10.3	4.0	11°						EZH070…
	S080X-SCLCR06-100EZP	●	10.0	8.0	7.5	69.5	13.3	5.0	14°	0.4		Fig.3	SB-2545TR	FT-8	EZH080…
Carbide	C045X-SCLCR03-050EZ	△	5.0	4.5	4.3	51.4	-	2.5	15°	0.2	No	Fig.4	SB-1635TR	FT-6	EZH045…
	C045X-SCLCR03-050EZP	●													
	C050X-SCLCR03-060EZP	●	6.0	5.0	4.7	58.4	9.0	3.0	13°			Fig.5			EZH050…
	C060X-SCLCR04-070EZ	△	7.0	6.0	5.4	65.9	11.8	3.5				Fig.5-1	SB-2035TR		EZH060…
	C060X-SCLCR04-070EZP	●			5.7	66.4	10.0					Fig.5			
	C070X-SCLCR04-080EZP	●	8.0	7.0	6.7	74.4	11.0	4.0	11°						EZH070…
	C080X-SCLCR06-100EZP	●	10.0	8.0	7.5	85.5	14.0	5.0	14°	0.4		Fig.6	SB-2545TR	FT-8	EZH080…

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium
Ref. Page	→ B53	→ B53	→ B53	→ B53	→ B53	→ B54	→ B54	→ B54	→ B54	→ B54, B55
Insert / Toolholder	CF	PF	GF	SKS	SK	WP (Wiper)	PP	GK	HQ	Standard
...SCLCR03-...	CCGT1109..	CCGT1109..	-	-	-	-	-	-	-	-
...SCLCR04-...	CCGT1411..	CCGT1411..	-	-	-	-	-	-	-	-
...SCLCR06-...	-	CCGT215..	CCGT215..	CCGT215..	CCGT215..	CCMT215..	CCMT215..	CCMT215..	CCMT215..	CCGT215..

Application	Finishing-Medium	Finishing	Finishing / Precision	Low Feed	Finishing / Precision	Cast Iron	Non-ferrous Metals	Hard Material
Ref. Page	→ B53	→ B56	→ B55	→ B58, B59	→ B57	→ B60	→ C24	→ C14
Insert / Toolholder	GQ	L-F	L-FSF	(E/F)L-U	FL-USF	Without Chipbreaker	PCD	CBN
...SCLCR03-...	-	CCGT1109..	CCET1109..	-	-	-	-	CCMW1109..
...SCLCR04-...	-	CCGT1411..	CCET1411..	-	-	-	CCGW1411..	CCMW1411..
...SCLCR06-...	CCGT215..	-	-	CCGT215..	CCET215..	CCGW215...	CCMT215.. CCGW215...	CCMW215..

Recommended Cutting Conditions → F110-F111
Other Applicable Sleeves → F100-F104

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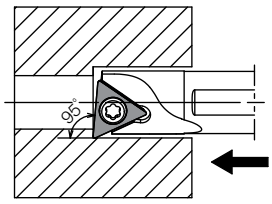
S-STLB(P)-EZP

Maximum overhand length - L/D = ~3



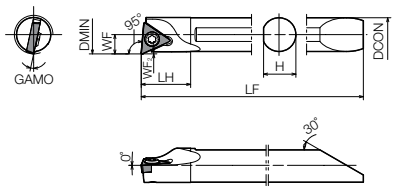


Fig.1

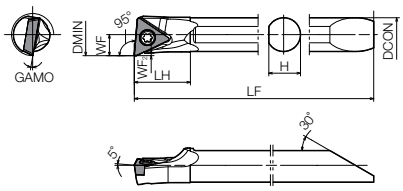


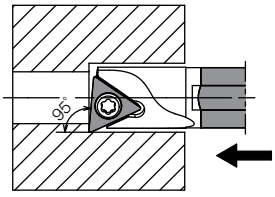
Fig.2

• Right-hand shown

• Left-hand insert for Right-hand toolholder

C-STLB(P)-EZP

Maximum overhand length - L/D = ~5



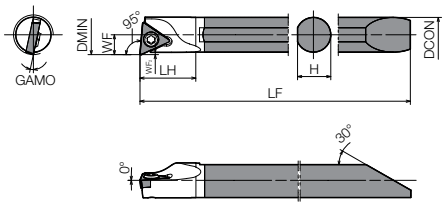


Fig.3

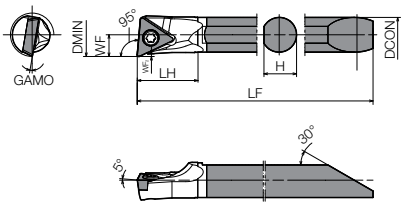


Fig.4

• Right-hand shown

• Left-hand insert for Right-hand toolholder

Toolholder Dimensions

	Part Number	Stock (R)	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	WF2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Sleeve ➔ F31, F33
Steel	S070X-STLBR06-080EZP*	●	8	7	6.7	60.4	10.3	4	0.4	12°	0.2	No	Fig.1	SB-2035TR	FT-6	EZH070…
Steel	S080X-STLPR09-100EZP	●	10	8	7.5	69.5	13.3	5	0.5	10°	0.4	No	Fig.2	SB-2545TR	FT-8	EZH080…
Carbide	C070X-STLBR06-080EZP*	●	8	7	6.7	74.4	11	4	0.4	12°	0.2	No	Fig.3	SB-2035TR	FT-6	EZH070…
Carbide	C080X-STLPR09-100EZP	●	10	8	7.5	85.5	14	5	0.5	10°	0.4	No	Fig.4	SB-2545TR	FT-8	EZH080…

* TB□□1212... type insert cannot be used.

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Medium
Ref. Page	➔ B76, B80	➔ B76, B80	➔ B80	➔ B80	➔ B85	➔ B81	➔ B76	➔ B81	➔ B76, B82, B83	➔ B84
Insert / Toolholder	CF	PF	*WP (Wiper)	PP	R-P	GP	DP	HQ	L	L-H
...STLBR06-...	TBGT121..	TBGT121...	-	-	-	-	TBMT121..	-	TBGT121..	-
...STLPR09-...	TPGT1815..	TPMT1815..	TPMX1815..	TPMT1815..	TPEH1815..	TPMT1815..	-	TPMT1815..	TPGH1815..	TPGH1815..

Application	Soft Steel / Finishing	Cast Iron	Non-ferrous Metals	Hard Material
Ref. Page	➔ B81	➔ B76, B86	➔ C26, C27	➔ C16
Insert / Toolholder	XP	Without Chipbreaker	PCD	CBN
...STLBR06-...	-	TBGW121..	TBMT121.. TBGW121..	-
...STLPR09-...	TPMT1815..	TPGB1815..	TPMH1815.. TPGB1815..	TPGB1815..

Recommended Cutting Conditions ➔ F110-F111
Other Applicable Sleeves ➔ F100-F104

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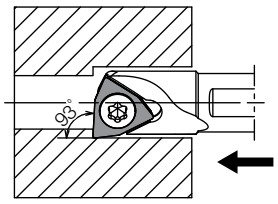
S-SWUB-EZP

Maximum overhand length - L/D = ~3



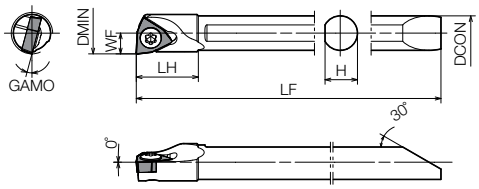


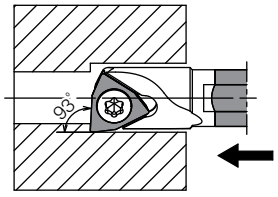
Fig.1

• Right-hand shown

• Left-hand insert for Right-hand toolholder

C-SWUB-EZP

Maximum overhand length - L/D = ~5



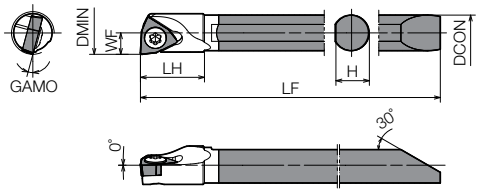


Fig.2

• Right-hand shown

• Left-hand insert for Right-hand toolholder

Toolholder Dimensions

	Part Number	Stock (R)	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Sleeve → F31, F33
Steel	S050X-SWUBR06-060EZP	●	6.0	5.0	4.7	48.4	9.0	3.0	15°	0.2	No	Fig.1	SB-2035TR	FT-6	EZH050…
Steel	S060X-SWUBR06-070EZP	●	7.0	6.0	5.7	54.4	10.0	3.5	13°						EZH060…
Steel	S070X-SWUBR08-080EZP	●	8.0	7.0	6.7	60.4	10.3	4.0	15°						EZH070…
Carbide	C050X-SWUBR06-060EZP	●	6.0	5.0	4.7	58.4	9.0	3.0	15°	0.2	No	Fig.2	SB-2035TR	FT-6	EZH050…
Carbide	C060X-SWUBR06-070EZP	●	7.0	6.0	5.7	66.4	10.0	3.5	13°						EZH060…
Carbide	C070X-SWUBR08-080EZP	●	8.0	7.0	6.7	74.4	11.0	4.0	15°						EZH070…

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Cast Iron	Non-ferrous Metals	Hard Material
Ref. Page	→ B97	→ B97	→ B97	→ B98	→ B98	→ B98	→ C29	→ C18
Insert / Toolholder	L-CF	L-PF	L-DP	L-P	L-F	Without Chipbreaker	PCD	CBN
...SWUBR06-...	WBGT121..	WBGT121..	WBMT121..	-	WBGT121..	WBGW121..	WBMT121..	WBGW121..
...SWUBR08-...	-	WBGT1515..	WBMT1515..	WBET1515..	WBGT1515..	WBGW1515..	WBMT1515..	WBGW1515..

Recommended Cutting Conditions → **F110-F111**

Other Applicable Sleeves → **F100-F104**

EZH-CT (Sleeve)

With Coolant Hole and EZ Adjust Structure

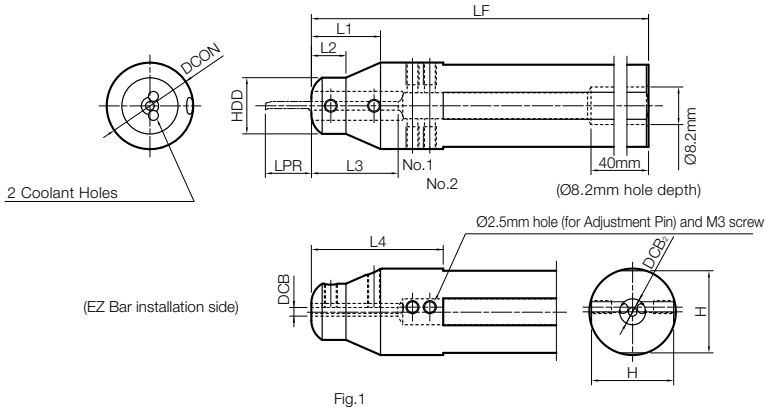


Fig.1

Part Number		Stock	Dimensions (mm)										LPR (mm) Overhang Length of Bar *2				Drawing	Applicable EZ Bar ➡ F18~F21 ➡ J32
			DCB	DCON	HDD	DCB_2	H	LF	L1	L2	*1 L3	L4	Adjustment Pin Setting Position No.1	No.2	No.3	No.4		
EZH	01719CT-120	●	1.7	0.75"	13	6	18.0	120	16	8	16	30.5	7.5	3.5	-	-	Fig.1	EZBR...017...
	01720CT-120	●		20			19.0	120										
	01722CT-135	●		22			21.0	135				41.5						
	01725.0CT-135	●		25			24.0	135				30.5						
	01725.4CT-120	●		1.00"			24.4	120										
EZH	02019CT-120	●	2.0	0.75"	13	6	18.0	120	16	8	20	30.5	8.5	4.5	-	-	Fig.1	EZB R/L ...020...
	02020CT-120	●		20			19.0	120										
	02022CT-135	●		22			21.0	135				41.5						
	02025.0CT-135	●		25			24.0	135				30.5						
	02025.4CT-120	●		1.00"			24.4	120										
EZH	02519CT-120	●	2.5	0.75"	13	6	18.0	120	16	8	20	30.5	11.0	7.0	-	-	Fig.1	EZB R/L ...025... EZTR...025-...
	02520CT-120	●		20			19.0	120										
	02522CT-135	●		22			21.0	135				41.5						
	02525.0CT-135	●		25			24.0	135				30.5						
	02525.4CT-120	●		1.00"			24.4	120										

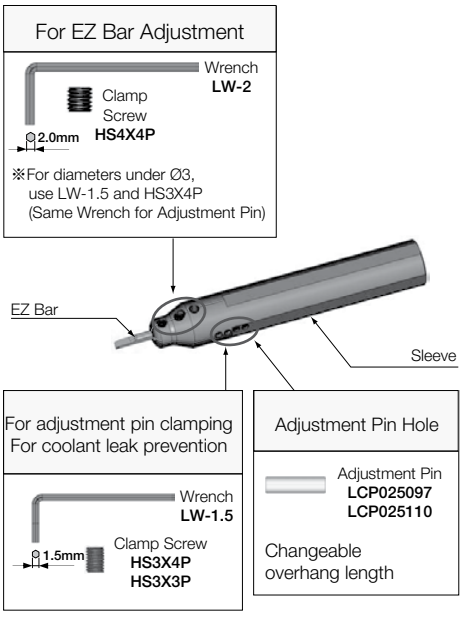
*1 L3 shows DCB length

*2 Dimension LPR shows overhang length of the EZB Bar when attached to sleeve.

• Choose sleeves (DCB) to match DCON dimension of bar.

Spare Parts (for EZH-CT Sleeves)

Part Number		Spare Parts				
		Adjustment Pin	Clamp Screw	Wrench	Clamp Screw	Wrench
EZH	017...CT-..	LCP025097	HS3X4P (for adjustment pin, coolant leak prevention)	LW-1.5 Tightening Torque 1N • m	HS3X4P (for bar)	LW-1.5 Tightening Torque 1N • m
	020...CT-..					
	025...CT-..					
	030...CT-..					
EZH	035...CT-..	LCP025097	HS3X4P (for adjustment pin, coolant leak prevention)	LW-1.5 Tightening Torque 1N • m	HS4X4P (for bar)	LW-2 Tightening Torque 2N • m
	040...CT-..					
	045...CT-..					
	050...CT-..					
	060...CT-..					
	070...CT-..					
	080...CT	LCP025110	HS3X3P (for adjustment pin, coolant leak prevention)			



1) If shank dia. is Ø2.5mm or less, use 6 clamp screws (HS3X4P), distributed as follows:
   For adjustment pin.....2 pcs
   For coolant leak prevention.....2 pcs
   For bar.....2 pcs

2) If shank dia. is Ø3.0mm, use 9 clamp screws (HS3X4P), distributed as follows:
   For adjustment pin.....2 pcs
   For coolant leak prevention.....4 pcs
   For bar.....3 pcs

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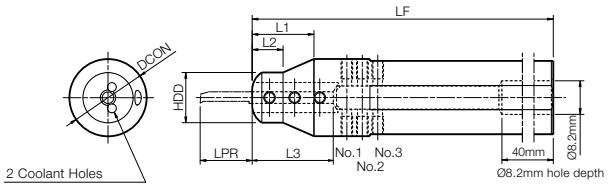
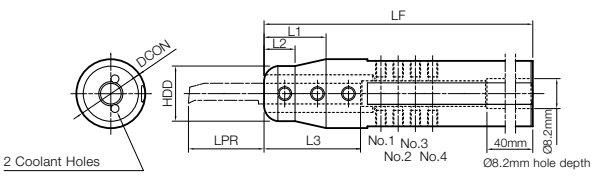
NEW ITEMS!

EZH-CT (Sleeve)

With Coolant Hole and EZ Adjust Structure





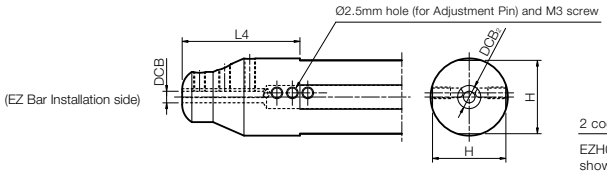
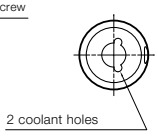


Fig.2



EZH07..CT coolant hole shape is as shown on the figure above.

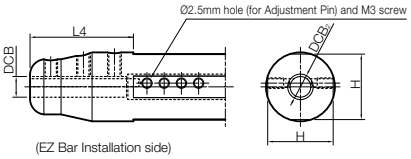


Fig.3

Part Number		Stock	Dimensions (mm)										LPR (mm) Overhang Length of Bar *2				Drawing	Applicable EZ Bar or EZ Bar PLUS ➡ F18~F21 ➡ F23~F29 ➡ G59, G90 ➡ J32
			DCB	DCON	HDD	DCB_2	H	LF	L1	L2	*1 L3	L4	Adjustment Pin Setting Position					
													No.1	No.2	No.3	No.4		
EZH	03019CT-120	●	3.0	0.75"	13	6.0	18.0	120	16	8	21	30.5	13.5	9.5	5.5	-	Fig.2	EZB□...030... EZBFR...030-... EZVBR...030-... EZGR...030-... EZTR...030-...
	03020CT-120	●		20			19.0	120										
	03022CT-135	●		22			21.0	135				41.5						
	03025.0CT-135	●		25			24.0	135				30.5						
	03025.4CT-120	●		1.00"			24.4	120										
EZH	03519CT-120	●	3.5	0.75"	13	6.0	18.0	120	16	8	21	31.1	15.5	11.5	7.5	-	Fig.2	EZBR...035... EZTR...035-...
	03520CT-120	●		20			19.0	120										
	03522CT-135	●		22			21.0	135				41.5						
	03525.0CT-135	●		25			24.0	135				31.1						
	03525.4CT-120	●		1.00"			24.4	120										
EZH	04019CT-120	●	4.0	0.75"	13	6.0	18.0	120	16	8	22	32.7	20.5	16.5	12.5	8.5	Fig.3	EZBR...040... EZVBR045040-... EZGR...040-... EZFGR...040-... EZTR...040-...
	04020CT-120	●		20			19.0	120										
	04022CT-135	●		22			21.0	135				41.5						
	04025.0CT-135	●		25			24.0	135				32.7						
	04025.4CT-120	●		1.00"			24.4	120										
NEW EZH	04519CT-120	●	4.5	0.75"	16	6	18	120	18	9	23	30.0	23 (14)	18.5 (9.5)	14 (-)	9.5 (-)	Fig.3	_045X-...050EZ(P)
	04520CT-120	●		20			19	120										
	04522CT-135	●		22			21	135				44.0						
	04525.0CT-135	●		25			24	135				30.0						
	04525.4CT-120	●		1.00"			24.4	120										
EZH	05019CT-120	●	5.0	0.75"	16	6.0	18.0	120	18	9	26	30.0	25.5 (15.5)	20.5 (10.5)	15.5 (-)	10.5 (-)	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFGR...050-... EZTR...050-... _050X-...-060EZP
	05020CT-120	●		20			19.0	120										
	05022CT-135	●		22			21.0	135				44.0						
	05025.0CT-135	●		25			24.0	135				30.0						
	05025.4CT-120	●		1.00"			24.4	120										
EZH	06019CT-120	●	6.0	0.75"	16	7.4	18.0	120	18	9	28	30.0	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-... _060X-...-070EZ(P)
	06020CT-120	●		20			19.0	120										
	06022CT-135	●		22			21.0	135				41.5						
	06025.0CT-135	●		25			24.0	135				30.0						
	06025.4CT-120	●		1.00"			24.4	120										
EZH	07019CT-120	●	7.0	0.75"	16	7.4	18.0	120	18	9	29	30.0	35.5 (21.5)	30.5 (16.5)	25.5 (11.5)	20.5 (-)	Fig.3	EZBR...070... EZGR...070-... EZFGR...070-... EZTR...070-... _070X-...-080EZP
	07020CT-120	●		20			19.0	120										
	07022CT-135	●		22			21.0	135				44.0						
	07025.0CT-135	●		25			24.0	135				30.0						
	07025.4CT-120	●		1.00"			24.4	120										
NEW EZH	08019CT-120	●	8.0	0.75"	16	8.6	18	120	18	9	33	34.0	40.5 (24.5)	35.5 (19.5)	30.5 (14.5)	25.5 (-)	Fig.3	_080X-...-100EZP
	08020CT-120	●		20			19	120										
	08022CT-135	●		22			21	135				44.0						
	08025.0CT-135	●		25			24	135				34.0						
	08025.4CT-120	●		1.00"			24.4	120										

*1 L3 shows DCB length

*2 Dimension LPR shows overhang length of the EZB Bar when attached to sleeve. Dimensions in ( ) show overhand length of EZ Bar PLUS.

• Choose sleeves (DCB) to match DCON dimension of bar.

EZ Bar Mounting Procedure (EZH-CT Sleeve) ➡ F15

EZH-HP (Sleeve)

Adjustable

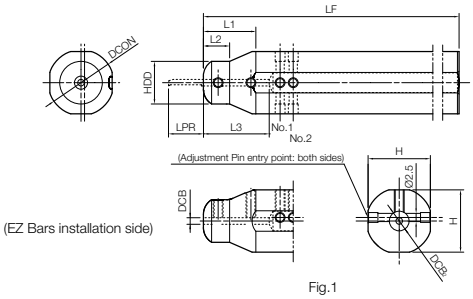


Fig.1

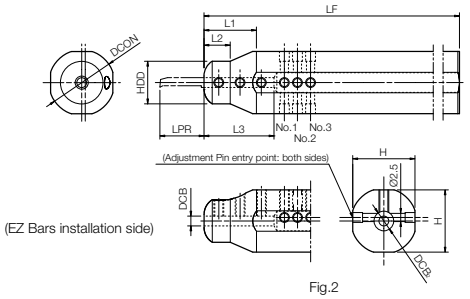


Fig.2

Part Number	Stock	Dimensions (mm)									LPR (mm) Overhang Length of Bar *2				Drawing	Applicable EZ Bar → F18~F21 → F23~F26 → G59, G90 → J32
		DCB	DCON	HDD	DCB_2	H	LF	L1	L2	*1 L3	Adjustment Pin Setting Position No.1	No.2	No.3	No.4		
EZH 01716HP-100	●	1.7	16	13	6	15.0	100	16	8	16	7.5	3.5	-	-	Fig.1	EZBR…017…
01719HP-120	●		0.75"			18.0	120									
01720HP-120	●		20			19.0	120									
01722HP-135	●		22			21.0	135									
01725.0HP-135	●		25			24.0	135									
01725.4HP-120	●		1.00"			24.4	120									
EZH 02016HP-100	●	2.0	16	13	6	15.0	100	16	8	20	8.5	4.5	-	-	Fig.1	EZB□…020…
02019HP-120	●		0.75"			18.0	120									
02020HP-120	●		20			19.0	120									
02022HP-135	●		22			21.0	135									
02025.0HP-135	●		25			24.0	135									
02025.4HP-120	●		1.00"			24.4	120									
EZH 02516HP-100	●	2.5	16	13	6	15.0	100	16	8	20	11.0	7.0	-	-	Fig.1	EZB□…025… EZTR…025-…
02519HP-120	●		0.75"			18.0	120									
02520HP-120	●		20			19.0	120									
02522HP-135	●		22			21.0	135									
02525.0HP-135	●		25			24.0	135									
02525.4HP-120	●		1.00"			24.4	120									
EZH 03016HP-100	●	3.0	16	13	6	15.0	100	16	8	21	13.5	9.5	5.5	-	Fig.2	EZB□…030… EZBFR…030-… EZVBR…030-… EZGR…030-… EZTR…030-…
03019HP-120	●		0.75"			18.0	120									
03020HP-120	●		20			19.0	120									
03022HP-135	●		22			21.0	135									
03025.0HP-135	●		25			24.0	135									
03025.4HP-120	●		1.00"			24.4	120									
EZH 03516HP-100	●	3.5	16	13	6	15.0	100	16	8	22	15.5	11.5	7.5	-	Fig.2	EZB□…035… EZTR…035-…
03519HP-120	●		0.75"			18.0	120									
03520HP-120	●		20			19.0	120									
03522HP-135	●		22			21.0	135									
03525.0HP-135	●		25			24.0	135									
03525.4HP-120	●		1.00"			24.4	120									
EZH 04016HP-100	●	4.0	16	13	6	15	100	16	8	24	20.5	16.5	12.5	8.5	Fig.4 (F23)	EZB□…040… EZBTR…040-… EZBFR…040-… EZVBR…040-… EZG□…040-… EZFG□…040-… EZTR…040-…
04019HP-120	●		19.05			18	120									
04020HP-120	●		20			19	120									
04022HP-135	●		22			21	135									
04025.0HP-135	●		25			24	135									
04025.4HP-120	●		25.4			24.4	120									

*1 L3 shows DCB length

*2 Dimension LPR shows overhang length of the EZB Bar when attached to sleeve.

• Choose sleeves (DCB) to match DCON dimension of bar.

Spare Parts (for EZH-HP Sleeves)

Part Number	Spare Parts: Adjustment Pin	Clamp Screw	Wrench	Clamp Screw	Wrench	Applicable EZB Bar and EZ Bar PLUS	
EZH 017...HP-..	LCP025140	HS3X4P (for adjustment pin and bar)	LW-1.5 Tightening Torque 1N • m	HS3X4P (for bar)	LW-1.5 Tightening Torque 1N • m	EZBR…017…	
020...HP-..						EZB□…020…	
025...HP-..						EZB□…025…	EZ_R…025-…
030...HP-..						EZB□…030…	EZ_R…030-…
EZH 035...HP-..	LCP025140	HS3X4P (only for adjustment pin)	LW-1.5 Tightening Torque 1N • m	HS4X4P (for bar)	LW-2 Tightening Torque 2N • m	EZB□…035…	EZ_R…035-…
040...HP-..						EZB□…040…	EZ_□…040-…
045...HP-..						_045X-…-050EZ(P)	
050...HP-..						EZB□…050… _050X-…-060EZP	EZ_□…050-…
060...HP-..						EZB□…060… _060X-…-070EZ(P)	EZ_□…060-…
070...HP-..						EZB□…070… _070X-…-080EZP	EZ_□…070-…
080...HP-..						_080X-…-100EZP	

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EZH-HP (Sleeve)

Adjustable

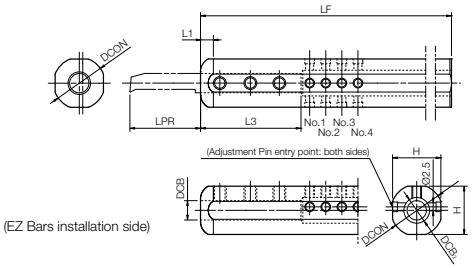

Fig.3

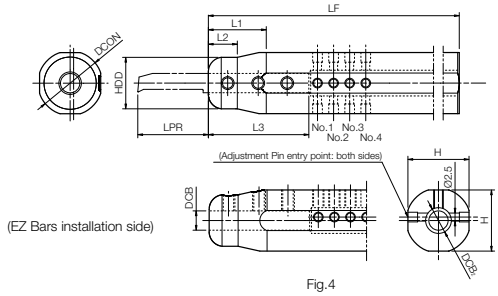

Fig.4

Part Number		Stock	Dimensions (mm)									LPR (mm) Overhang Length of Bar *2				Drawing	Applicable EZ Bar or EZ Bar PLUS → F18~F21 → F23~F29 → G59, G90 → J32
			DCB	DCON	HDD	DCB_2	H	LF	L1	L2	*1 L3	Adjustment Pin Setting Position No.1	No.2	No.3	No.4		
EZH	04516HP-100	●	4.5	16	16	6	15.0	100	4	-	25.3	23.0 (14)	18.5 (9.5)	14.0 (-)	9.5 (-)	Fig.3	EZB□…045… _045X-…050EZ(P)
	04519HP-120	●		0.75"			18.0	120	18	9						Fig.4	
	04520HP-120	●		20			19.0	120									
	04522HP-135	●		22			21.0	135									
	04525.0HP-135	●		25			24.0	135									
	04525.4HP-120	●		1.00"			24.4	120									
EZH	05016HP-100	●	5.0	16	16	6	15.0	100	4	-	29	25.5	20.5	15.5	10.5	Fig.3	EZB□…050… EZBTR...050-… EZBFR...050-… EZVBR...050-… EZG□…050-… EZFG□…050-… EZTR…050-… _050X-...-060EZP
	05019HP-120	●		0.75"			18.0	120	18	9						Fig.4	
	05020HP-120	●		20			19.0	120									
	05022HP-135	●		22			21.0	135									
	05025.0HP-135	●		25			24.0	135									
	05025.4HP-120	●		1.00"			24.4	120									
EZH	06016HP-100	●	6.0	16	16	8	15.0	100	4	-	31	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	Fig.3	EZB□…060… EZBFR...060-… EZVBR...060-… EZG□…060-… EZTR…060-… _060X-…-070EZ(P)
	06019HP-120	●		0.75"			18.0	120	18	9						Fig.4	
	06020HP-120	●		20			19.0	120									
	06022HP-135	●		22			21.0	135									
	06025.0HP-135	●		25			24.0	135									
	06025.4HP-120	●		1.00"			24.4	120									
EZH	07016HP-100	●	7.0	16	16	8	15.0	100	4	-	33	35.5	30.5	25.5	20.5	Fig.3	EZB□…070… EZG□…070-… EZFG□…070-… EZTR…070-… _070X-...-080EZP
	07019HP-120	●		0.75"			18.0	120	18	9						Fig.4	
	07020HP-120	●		20			19.0	120									
	07022HP-135	●		22			21.0	135									
	07025.0HP-135	●		25			24.0	135									
	07025.4HP-120	●		1.00"			24.4	120									
EZH	08019HP-120	●	8.0	0.75"	16	8.4	18.0	120	18	9	37	40.5 (24.5)	35.5 (19.5)	30.5 (14.5)	25.5 (-)	Fig.4	EZB□…080… _080X-...-100EZP
	08020HP-120	●		20			19.0	120									
	08022HP-135	●		22			21.0	135									
	08025.0HP-135	●		25			24.0	135									
	08025.4HP-120	●		1.00"			24.4	120									

*1 L3 shows DCB length

*2 Dimension LPR shows overhang length of the EZB Bar when attached to sleeve. Dimensions in ( ) show overhand length of EZ Bar PLUS.

• Choose sleeves (DCB) to match DCON dimension of bar.

EZ Bar Identification System

EZ H 017 16 HP - 100

EZ Symbol of Bar	Application	Shank Dia. of EZB Bar	Sleeve Shank Dia.	Precision		Overall Length of Sleeve
	H-Sleeve	017 : 1.7mm	16 : 16.00mm	**CT**: High Precision with Coolant Hole		100 : 100mm
		025 : 2.5mm	25.4 : 25.40mm	**HP**: Precision	**ST**: Standard	120 : 120mm

EZ Bar Mounting Procedure

● How to use adjustment pin (Fig.1)

① Put the adjustment pin into the hole.
② Push it into the sleeve, using the wrench "LW-1.5."
③ Tighten the clamp screw "HS3X4P" with wrench "LW-1.5" to fix the adjustment screw.

●How to secure bar (Fig.2)

① With the chip pocket upward, set the bar in sleeve.
Press the slant of the end of the bar against the adjustment pin.
Make sure that the bar does not rotate. (Fig.3)
② Tighten the clamp screw with wrench "LW-2"and secure the bar.
(Use "LW-1.5" if shank dia. is 3mm or less.)

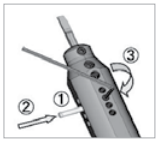

Fig. 1:
How to Use Adjustment Pin

Fig. 2:
How to Secure Bar

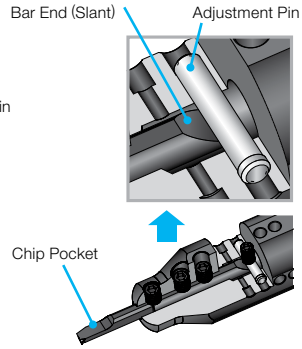

Fig. 3: Clamped Bar

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EZH-ST (Sleeve)

NOT Adjustable

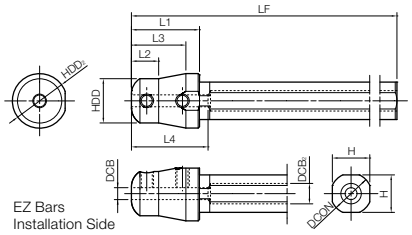

Fig.1

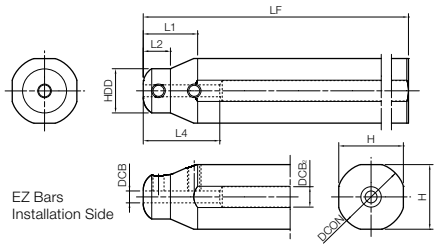

Fig.2

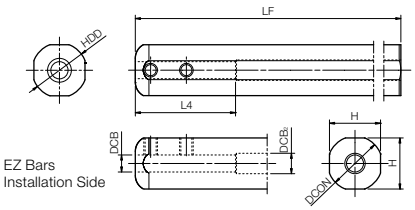

Fig.3

Part Number		Stock	Dimensions (mm)											Drawing	Applicable EZ Bar or EZ Bar PLUS → F18~F21 → F23~F29 → G59, G90 → J32
			DCB	DCON	HDD	HDD_2	DCB_2	H	LF	L1	L2	L3	*L4		
EZH	01712ST-80	●	1.7	12	13	16	6	11.0	80	20	8	16	16	Fig.1	EZBR…017…
	01716ST-100	●		16		-		15.0	100	16		-		Fig.2	
	01719ST-120	●		0.75"				18.0	120						
	01720ST-120	●		20				19.0	120						
	01722ST-135	●		22				21.0	135						
	01725.0ST-135	●		25				24.0	135						
	01725.4ST-120	●		1.00"				24.4	120						
EZH	02512ST-80	●	2.5	12	13	16	6	11.0	80	20	8	16	22	Fig.1	EZBR…025… EZTR…025-…
	02516ST-100	●		16		-		15.0	100	16		-		Fig.2	
	02519ST-120	●		0.75"				18.0	120						
	02520ST-120	●		20				19.0	120						
	02522ST-135	●		22				21.0	135						
	02525.0ST-135	●		25				24.0	135						
	02525.4ST-120	●		1.00"				24.4	120						
EZH	03512ST-80	●	3.5	12	13	16	6	11.0	80	20	8	16	22	Fig.1	EZBR…035… EZTR…035-…
	03516ST-100	●		16		-		15.0	100	16		-		Fig.2	
	03519ST-120	●		0.75"				18.0	120						
	03520ST-120	●		20				19.0	120						
	03522ST-135	●		22				21.0	135						
	03525.0ST-135	●		25				24.0	135						
	03525.4ST-120	●		1.00"				24.4	120						
EZH	04019ST-120	●	4.0	0.75"	13	-	6	18	120	16	8	-	24	Fig.2	EZBR…040… EZBTR…040-… EZBFR…040-… EZVBR…040-… EZGR…040-… EZFGR…040-… EZTR…040-…
	04020ST-120	●		20				19							
	04025.0ST-135	●		1.00"				24.4							
EZH	05022ST-135	●	5.0	22	16	-	6	21	135	18	9	-	29	Fig.2	EZBR…050… EZBTR…050-… EZBFR…050-… EZVBR…050-… EZGR…050-… EZFGR…050-… EZTR…050-… _050X-...-060EZP
EZH	06022ST-135	●	6.0	22	16	-	8	21	135	18	9	-	31	Fig.2	EZBR…060… EZBFR…060-… EZVBR…060-… EZGR…060-… EZTR…060-… _060X-...-070EZ(P)
EZH	08016ST-100	●	8.0	16	16	-	8.4	15	100	-	-	-	37	Fig.3	EZBR…080… _080X-…-100EZP
	08019ST-120	●		0.75"				18	120	18	9			Fig.2	
	08020ST-120	●		20				19	120						
	08022ST-135	●		22				21	135						
	08025.0ST-135	●		25				24	135						
	08025.4ST-120	●		1.00"				24.4	120						

* L4 shows DCB length
- Choose sleeves (DCB) to match DCON dimension of bar.
- Adjustment pin cannot be installed in EZH-ST sleeves. To adjust overhang of EZB insert, please use EZH-CT or EZH-HP sleeves.

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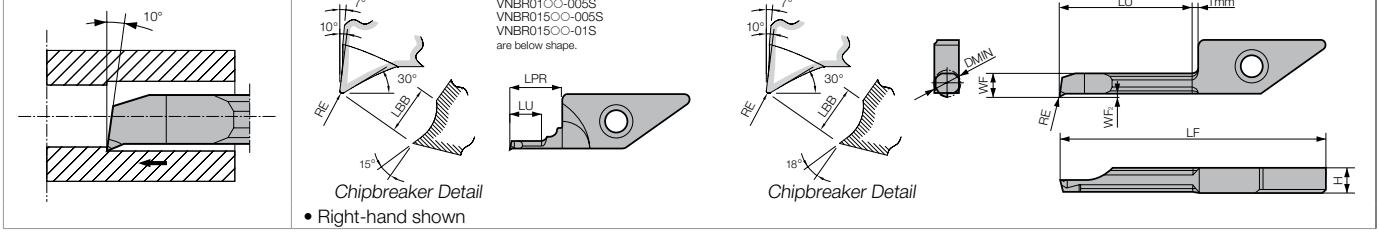
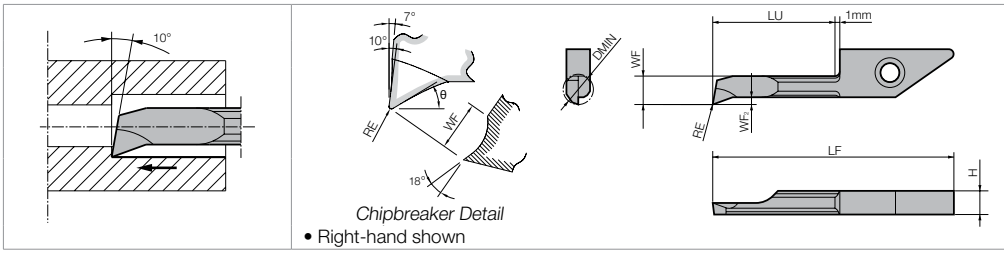
Spare Parts (for EZH-ST Sleeves)

Part Number	Spare Parts		Applicable EZ Bar		EZ Bar PLUS
	Clamp Screw	Wrench	**EZB-HP EZB-HP-LT EZB-ST EZB-NB**	**EZG EZFG EZT EZVB**	**S/C-SCLC S/C-STLB(P) S/C-SWUB**
EZH 017...ST-..	HS3X4P	LW-1.5 Tightening Torque 1N • m	EZBR...017...	-	-
020...ST-..			EZB%...020...		
025...ST-..			EZB%...025...	EZTR...025-...	-
030...ST-..			EZB%...030...	EZ_R...030-...	-
EZH 035...ST-..	HS4X4P	LW-2 Tightening Torque 2N • m	EZB%...035...	EZTR...035-...	-
040...ST-..			EZB%...040...	EZ_%...040-...	-
050...ST-..			EZB%...050...	EZ_%...050-...	_050X-...-060EZP
060...ST-..			EZB%...060...	EZ_%...060-...	_060X-...-070EZ(P)
070...ST-..			EZBR...070...	EZ_%...070-...	_070X-...-080EZP
080...ST-..			-	-	_080X-...-100EZP

VNB-S (Boring) [Corner-R (RE) Minus Tolerance]

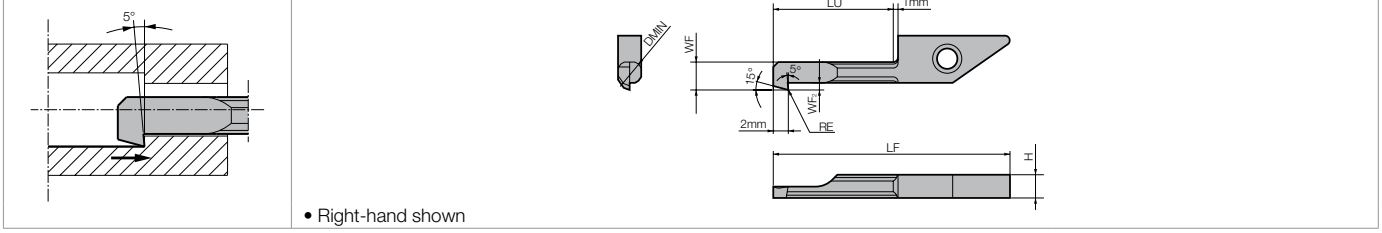


VNB (Boring)



-NB Type (Without Chipbreaker)	
Top Shape	Grades
	Coated Carbide Carbide
	PCD

VNBT (Back Boring)



Insert Dimensions (VNB-S)

Part Number		Min.Bore Dia.	Dimensions (mm)								Grade				
											MEGA COAT	PVD Coated Carbide	Carbide	PCD	
		DMIN	H	LF	LU	LPR	WF	WF_2	RE	LBB	PR1225	PR930	KW10	KPD001	KPD010
VNBR	0103-005S	1.0	3.9	26.5	3.0	7	0.85	0.20	+0 -0.02 0.05	0.7		●			
	0105-005S			26.5	5.0		0.85	0.20				●			
	01503-005S	1.5		26.5	3.0		1.3	0.20				●			
	01505-005S			26.5	5.0		1.3	0.20				●			
	0206-005S	2.0		26.5	6.0	-	1.8	0.25	+0 -0.02 0.05	0.8		●			
	025075-005S	2.5		28.1	7.5		2.1	0.40				●			
	0311-005S	3.0		30.8	11.0		2.6	0.40				●			
	03515-005S	3.5		34.8	15.0		3.0	0.50				●			
	0411-005S	4.0		30.8	11.0		3.5	0.50				●			
	0420-005S			39.8	20.0		3.5	0.50				●			
VNBR	01503-01S	1.5	3.9	26.5	3.0	7	1.3	0.20	+0 -0.03 0.10	0.7		●			
	01505-01S			26.5	5.0		1.3	0.20				●			
	0206-01S	2.0		26.5	6.0	-	1.8	0.25	+0 -0.03 0.10	0.8		●			
	025075-01S	2.5		28.1	7.5		2.1	0.40				●			
	0311-01S	3.0		30.8	11.0		2.6	0.40				●			
	03515-01S	3.5		34.8	15.0		3.0	0.50				●			
	0411-01S	4.0		30.8	11.0		3.5	0.50				●			
	0420-01S			39.8	20.0		3.5	0.50				●			
VNBR	0411-02S	4.0	3.9	30.8	11.0	-	3.5	0.50	+0 -0.04 0.20	0.8		●			
	0420-02S			39.8	20.0							●			

Recommended Cutting Conditions ➡ F99

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Insert Dimensions (VNB / VNB-NB / VNBT)

Part Number		Min. Bore Dia.	Dimensions (mm)								Grade				
											MEGA COAT	PVD Coated Carbide	Carbide	PCD	
		DMIN	H	LF	LU	WF	WF_2	RE	LBB	θ	PR1225	PR930	KW10	KPD001	KPD010
VNBR	0206-003	2	3.9	26.5	6	1.8	0.25	0.03	1.2	24°		●	●		
	0311-003	3		30.8	11	2.6	0.40	0.03	1.8	24°		●	●		
	0411-003	4		30.8	11	3.5	0.50	0.03	2.7	23°		●	●		
	0420-003			39.8	20	3.5	0.50					●	●		
	0511-003	5		30.8	11	4.5	0.70	0.03	3.0	23°		●	●		
	0520-003			39.8	20	4.5	0.70					●	●		
	0620-003	6		39.8	20	5.3	1.00	0.03	3.0	24°		●	●		
	0630-003			49.8	30	5.3	1.00					●	●		
	0720-003	7		39.8	20	6.2	1.00					●	●		
	0730-003			49.8	30	6.2	1.00					●	●		
VNBR	0206-01	2	3.9	26.5	6	1.8	0.25	0.10	1.2	24°		●	●		
	0311-01	3		30.8	11	2.6	0.40	0.10	1.8	24°		●	●		
	0411-01	4		30.8	11	3.5	0.50	0.10	2.7	23°		●	●		
	0420-01			39.8	20	3.5	0.50					●	●		
	0511-01	5		30.8	11	4.5	0.70	0.10	3.0	23°		●	●		
	0520-01			39.8	20	4.5	0.70					●	●		
	0620-01	6		39.8	20	5.3	1.00	0.10	3.0	24°		●	●		
	0630-01			49.8	30	5.3	1.00					●			
	0720-01	7		39.8	20	6.2	1.00					●	●		
	0730-01			49.8	30	6.2	1.00					●			
VNBR	0206-02	2	3.9	26.5	6	1.8	0.25	0.20	1.2	24°		●	●		
	0311-02	3		30.8	11	2.6	0.40	0.20	1.8	24°	●	●	●		
	0411-02	4		30.8	11	3.5	0.50	0.20	2.7	23°		●	●		
	0420-02			39.8	20	3.5	0.50					●	●		
	0511-02	5		30.8	11	4.5	0.70	0.20	3.0	23°		●	●		
	0520-02			39.8	20	4.5	0.70					●	●		
	0620-02	6		39.8	20	5.3	1.00	0.20	3.0	24°	●	●	●		
	0630-02			49.8	30	5.3	1.00					●	●		
	0720-02	7		39.8	20	6.2	1.00					●	●		
	0730-02			49.8	30	6.2	1.00					●	●		
VNBR	0206-003NB	2	3.9	26.5	6	1.8	0.25	0.03	-	15°		●	●		
	0311-003NB	3		30.8	11	2.6	0.40					●	●		
	0411-003NB	4		30.8	11	3.5	0.50					●	●		
	0420-003NB			39.8	20	3.5	0.50					●	●		
	0511-003NB	5		30.8	11	4.5	0.70					●	●		
	0520-003NB			39.8	20	4.5	0.70					●	●		
	0620-003NB	6		39.8	20	5.3	1.00					●	●		
	0630-003NB			49.8	30	5.3	1.00					●	●		
	0720-003NB	7		39.8	20	6.2	1.00					●	●		
	0730-003NB			49.8	30	6.2	1.00					●	●		
VNBR	0206-02NB	2	3.9	26.5	6	1.8	0.25	0.20	-	15°			●		
	0311-02NB	3		30.8	11	2.6	0.40						●		
	0411-02NB	4		30.8	11	3.5	0.50						●	●	●
	0420-02NB			39.8	20	3.5	0.50						●	●	●
	0511-02NB	5		30.8	11	4.5	0.70						●	●	●
	0520-02NB			39.8	20	4.5	0.70						●	●	●
	0620-02NB	6		39.8	20	5.3	1.00						●	●	●
	0630-02NB			49.8	30	5.3	1.00						●	●	●
	0720-02NB	7		39.8	20	6.2	1.00						●	●	●
	0730-02NB			49.8	30	6.2	1.00						●	●	
VNBTR	0411-003	4	3.9	30.8	11	3.6	1.00	0.03	-	-		●	●		
	0420-003			39.8	20	3.6	1.00					●			
	0511-003	5		30.8	11	4.6	1.30					●	●		
	0520-003			39.8	20	4.6	1.30					●			
VNBTR	0411-01	4	3.9	30.8	11	3.6	1.00	0.10	-	-		●	●		
	0420-01			39.8	20	3.6	1.00					●			
	0511-01	5		30.8	11	4.6	1.30					●	●		
	0520-01			39.8	20	4.6	1.30					●			

Recommended Cutting Conditions ➔ F99

Swiss IQ Bars are sold in 5 piece boxes. *PCD Inserts are sold in 1 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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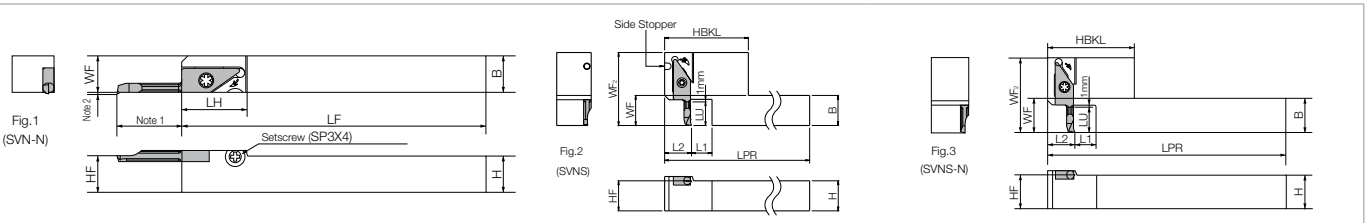
SVN-N (Without Side Stopper) SVNS (With Side Stopper) SVNS-N (Without Side Stopper / Without Setscrew)



• Right-hand shown

• Right-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Note 1 & Note 2 : See Insert Dimension Table. (F36~F37)

Part Number	Stock	Unit	Dimensions H=HF	B	LF LPR	LH HBKL	L1	L2	WF	WF2	LU	Drawing	Spare Parts: Clamp Screw	Wrench	Side Stopper	Wrench	Set Screw	Applicable Inserts
SVNR 1010H-12N	●	mm	10	10	100	22	-	-	10	-	-	Fig.1	SB-3080TR	FT-10	-	-	SP3X4	VNBR....-... VNBTR....-... VNGR....-.. VNFGR....-.. VNTR....-..
1212K-12N	●		12	12	125	22	-	-	12	-	-							
1616K-12N	●		16	16	125	22	-	-	16	-	-							
2020K-12N	●		20	20	125	22	-	-	20	-	-							
2525M-12N	●		25	25	150	22	-	-	25	-	-							
SVNSR 8-12-11	●	inch	0.500	0.500	6.0	1.772	0.394	0.472	0.500	1.299	0.433	Fig.2	SB-3080TR	LTW-10S	HS3X4	LW-1.5	-	(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
8-12-20	●		0.500	0.500	6.0	1.772	0.394	0.492	0.500	1.654	0.787							(VNBR..20-...)※ (VNBTR..20-...)※ (VNGR....-20)※
12-12-11	●		0.750	0.750	8.0	1.772	0.630	0.472	0.750	1.299	0.433							(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
12-12-20	●		0.750	0.750	8.0	1.772	0.630	0.492	0.750	1.654	0.787							(VNBR..20-...)※ (VNBTR..20-...)※ (VNGR....-20)※
SVNSR 1010K-12-06N	●	mm	10	10	125	45	10	12	10	29	6	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..06-...)
1010K-12-11N	●		10	10	125	45	10	12	10	33	11	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
1212M-12-06N	●		12	12	150	45	10	12	12	29	6	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..06-...)
1212M-12-11N	●		12	12	150	45	10	12	12	33	11	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
1212M-12-20N	●		12	12	150	45	10	13	12	42	20	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..20-...)※ (VNBTR..20-...)※ (VNGR....-20)※
1616M-12-06N	●		16	16	150	45	16	12	16	29	6	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..06-...)
1616M-12-11N	●		16	16	150	45	16	12	16	33	11	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..11-...)※ (VNBTR..11-...)※ (VNGR....-11)※ (VNTR...-11)※
1616M-12-20N	●		16	16	150	45	16	13	16	42	20	Fig.3	SB-3080TR	LTW-10S	-	-	-	(VNBR..20-...)※ (VNBTR..20-...)※ (VNGR....-20)※

※ All Swiss IQ Bar Inserts are used with SVNSR Toolholder, but when setting the cutting edge at the toolholder face level as shown in Fig. 2, use the Insert shown in ( ).
In that case, the toolholder dimension LU becomes the same as HBKL of Insert Dimension.

1) SVN-N / S...SVN-N / S-SVN-SN Toolholders (without side stopper) retain high index accuracy by easy restraint.

2) For high-rigidity clamping, (e.g. when varying load direction of undercutting, internal and external, or face cutting by one tool), changing the SP3X4 screw to a HS3X4 screw (sold separately) enables the toolholder's rigid clamping equivalent to the side stopper holders.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
HS3X4	LW-1.5

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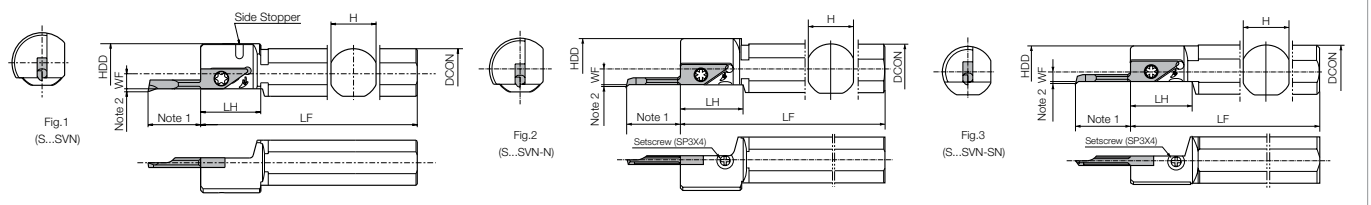
S...SVN (With Side Stopper : Standard) S...SVN-N (Without Side Stopper : Standard) S...SVN-SN (Without Side Stopper : Straight)



• Right-hand shown

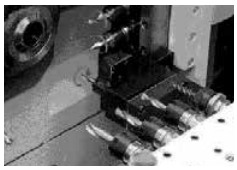
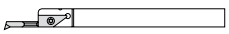
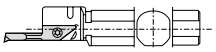
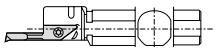
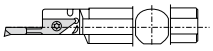
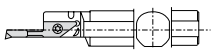
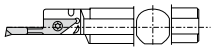
• Right-hand Insert for Right-hand Toolholder

Note 1 & Note 2 : See Insert Dimension Table. (F36~F37)

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions DCON	HDD	H	LF	LH	WF	Drawing	Spare Parts: Clamp Screw	Wrench	Side Stopper	Wrench	Set Screw	Applicable Inserts
S08-SVNR12	●	inch	0.500	0.787	0.480	3.500	0.906	0.157	Fig.1	SB-3080TR	FT-10	HS3X4	LW-1.5	-	VNBR....-.. VNBTR....-... VNGR....-.. VNFGR....-.. VNTR...-..
S12F-SVNR12N	●	mm	12	20.0	11	80	23	4	Fig.2	SB-3080TR	FT-10	-	-	SP3X4	VNBR....-.. VNBTR....-... VNGR....-.. VNFGR....-.. VNTR...-..
S14G-SVNR12N	●		14	20.0	13	90	23	4							
S16H-SVNR12N	●		16	24.0	15	100	23	6							
S19H-SVNR12N	●	inch	0.750	0.945	0.669	3.937	0.945	0.236							
S19N-SVNR12N	●		0.750	0.945	0.669	6.299	0.945	0.236							
S20H-SVNR12N	●	mm	20	24.0	18	100	24	6							
S25H-SVNR12N	●	inch	1.000	1.181	0.905	3.937	0.945	0.236							
S25Q-SVNR12N	●		1.000	1.181	0.905	7.086	0.945	0.236							
S20H-SVNR12SN	●	mm	20	19.5	18	100	23	4	Fig.3	SB-3080TR	FT-10	-	-	SP3X4	
S22K-SVNR12SN	●		22	21.5	20	125	23	4							
S25.0G-SVNR12SN	●		25	24.5	23	90	23	4							

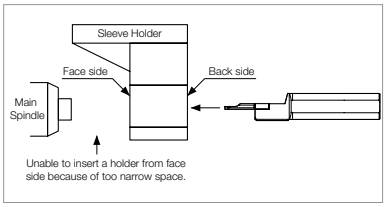
Swiss IQ Bar Selection

Gang-Type (Horizontal)	Gang-Type	Gang-Type (Front Loading Sleeve Type)	Gang-Type (Back Loading Sleeve Type)
			
Square Shank (Straight)	Square Shank (L-Shape)	Square Shank	Square Shank
		—	—
Round Shank (Standard)		Round Shank (Standard)	Round Shank (Standard)
			—
Round Shank (Straight)		Round Shank (Straight)	Round Shank (Straight)
			

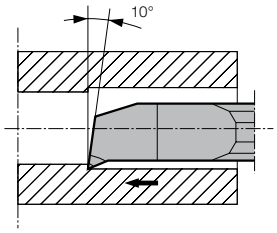
Recommended toolholder may change according to machines used and actual position.
Automatic lathes have various toolpost types other than those above.

Q: There are standard types (head dia. is larger than shank) and straight types for round shanks. What is each one used for?

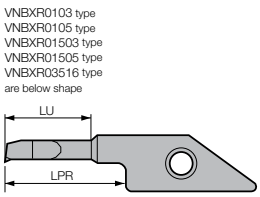
A: The straight type is used when it cannot be inserted from the face side of the sleeve holder and can be inserted only from the back side due to space limitation (Refer to Fig. below). On the other hand, the standard type should be installed when it can be inserted from the face side. The head end is used for positioning as stopper.



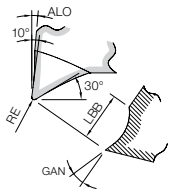
VNBX-S (Boring) [Corner-R(RE) Minus Tolerance]



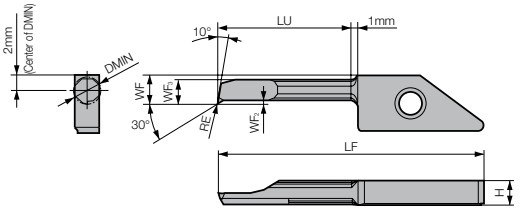
VNBXR0103 type
VNBXR0105 type
VNBXR01503 type
VNBXR01505 type
VNBXR03516 type
are below shape



• Right-hand shown



Chipbreaker Detail



Insert Dimensions (VNBX-S)

Part Number	Min. Bore Dia.	Dimensions (mm)											Grade
													PVD Coated Carbide
	DMIN	H	LF	LU	LPR	WF	WF_2	WF_3	RE	LBB	ALO	GAN	PR930
VNBXR 0103-005S	1.0	3.9	26.5	3	7	2.95	0.20	0.85	$^{+0}_{-0.02}$ 0.05	0.7	7°	15°	●
0105-005S	1.0	3.9	26.5	5	7	2.95	0.20	0.85					●
01503-005S	1.5	3.9	26.5	3	7	2.95	0.20	1.30					●
01505-005S	1.5	3.9	26.5	5	7	2.95	0.20	1.30					●
0206-005S	2.0	3.9	26.5	6	-	3.00	0.25	1.80	$^{+0}_{-0.02}$ 0.05	0.8	8°	18°	●
0311-005S	3.0	3.9	30.8	11	-	3.50	0.40	2.60					●
03511-005S	3.5	3.9	30.8	11	-	3.75	0.45	3.10					●
03516-005S	3.5	3.9	39.8	16	21	3.75	0.45	3.10					●
0411-005S	4.0	3.9	30.8	11	-	4.00	0.50	3.50					●
0420-005S	4.0	3.9	39.8	20	-	4.00	0.50	3.50					●
VNBXR 01503-01S	1.5	3.9	26.5	3	7	2.95	0.20	1.30	$^{+0}_{-0.03}$ 0.10	0.7	7°	15°	●
01505-01S	1.5	3.9	26.5	5	7	2.95	0.20	1.30					●
0206-01S	2.0	3.9	26.5	6	-	3.00	0.25	1.80	$^{+0}_{-0.03}$ 0.10	0.8	8°	18°	●
0311-01S	3.0	3.9	30.8	11	-	3.50	0.40	2.60					●
03511-01S	3.5	3.9	30.8	11	-	3.75	0.45	3.10					●
03516-01S	3.5	3.9	39.8	16	21	3.75	0.45	3.10					●
0411-01S	4.0	3.9	30.8	11	-	4.00	0.50	3.50					●
0420-01S	4.0	3.9	39.8	20	-	4.00	0.50	3.50					●
VNBXR 0411-02S	4.0	3.9	30.8	11	-	4.00	0.50	3.50	$^{+0}_{-0.04}$ 0.20	0.8	8°	18°	●
0420-02S	4.0	3.9	39.8	20	-	4.00	0.50	3.50					●

Recommended Cutting Conditions ➡ **F99**

● VNBX-S Attachment holder for VNBX-S Swiss IQ Bar

1. VNBX-S Attachment holder for VNBX-S Swiss IQ Bar is below (See page ➡ **F41**).
   ① SVNS-XN (Without Side Stopper)
   ② S…SVN-XN (Without Side Stopper)
   ③ S…SVN-SXN (Without Side Stopper)
2. Above holder assures high index accuracy by easy restraint.
3. A holder which attaches setscrews (without side stopper) can be used as binding effect holder as with side stopper holder, once taking off the setscrew, and insert a screw (HS3X4: sold separately) with wrench (LW-1.5: sold separately).

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
HS3X4	LW-1.5

Swiss IQ Bars are sold in 5 piece boxes.

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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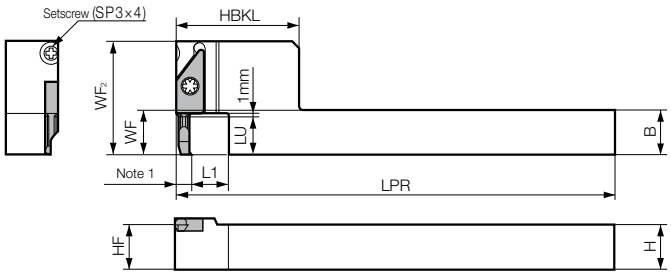
SVNS-XN (Square Shank: L-shape)



• Right-hand shown • Right-hand Insert for Right-hand Toolholder

Note 1 dimension is same size as applicable insert (VNBX) WF dimension

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)									Spare Parts			Applicable Inserts ➔ F40
			H	HF	B	LPR	HBKL	L1	WF	WF_2	LU	Clamp Screw	Wrench	Setscrew	
SVNSR	1010K-12-06XN	●	10	10	10	125	45	10	10	29	6	SB-3080TR	LTW-10S	SP3X4	(VNBXR02..)
	1010K-12-11XN	●	10	10	10	125	45	10	10	33	11				(VNBXR..11..)
	1212M-12-06XN	●	12	12	12	150	45	10	12	29	6				(VNBXR02..)
	1212M-12-11XN	●	12	12	12	150	45	10	12	33	11				(VNBXR..11..)
	1212M-12-20XN	●	12	12	12	150	45	10	12	42	20				(VNBXR0420..)
	1616M-12-06XN	●	16	16	16	150	45	16	16	29	6				(VNBXR02..)
	1616M-12-11XN	●	16	16	16	150	45	16	16	33	11				(VNBXR..11..)
	1616M-12-20XN	●	16	16	16	150	45	16	16	42	20				(VNBXR0420..)

※ All Swiss IQ Bar Inserts are used with an SVNS-XN Toolholder, however, when setting the cutting edge at the face level of the toolholder as shown in Fig., use the insert shown in ( ).

S...SVN-XN (Round Shank: Standard)

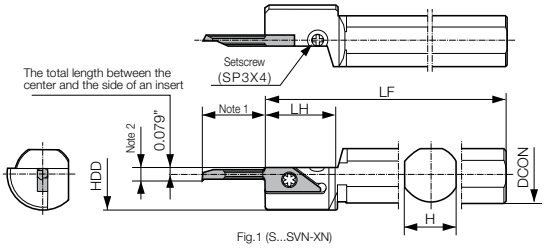


Fig.1 (S...SVN-XN)

• Right-hand shown

S...SVN-SXN (Round Shank: Straight)

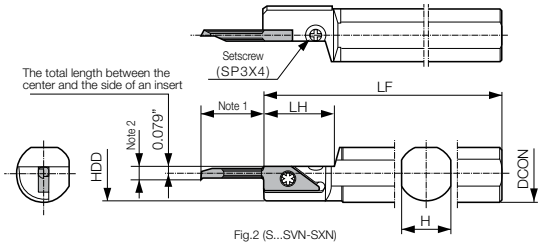


Fig.2 (S...SVN-SXN)

• Right-hand Insert for Right-hand Toolholder

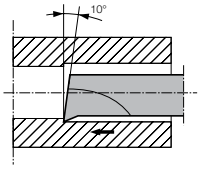
1. Note 1 dimension shows the applicable insert (VNBX) LU dimension +1 mm.
2. Note 2 dimension is same size as applicable insert (VNBX) WF dimension

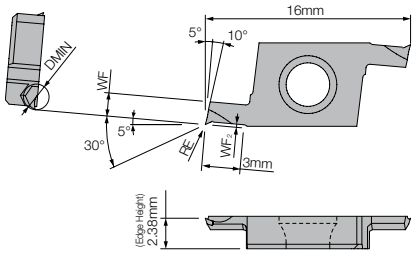
Toolholder Dimensions (Holder center axis core and insert center are coaxial type)

Part Number	Stock	Unit	Dimensions					Drawing	Spare Parts			Applicable Inserts ➔ F40
			DCON	HDD	H	LF	LH		Clamp Screw	Wrench	Setscrew	
S12F-SVNR12XN	●	mm	12	20.0	11	80	23	Fig.1	SB-3080TR	FT-10	SP3X4	VNBXR...
S14G-SVNR12XN	●		14	20.0	13	90	23					
S16H-SVNR12XN	●		16	24.0	15	100	23					
S19H-SVNR12XN	●	inch	0.750	0.945	0.669	3.937	0.945					
S19N-SVNR12XN	●		0.750	0.945	0.669	6.299	0.945					
S20H-SVNR12XN	●	mm	20	24.0	18	100	24					
S25H-SVNR12XN	●	inch	1.000	1.181	0.905	3.937	0.945					
S25Q-SVNR12XN	●		1.000	1.181	0.905	7.086	0.945					
S19H-SVNR12SXN	●	inch	0.750	0.728	0.669	3.397	0.905	Fig.2	SB-3080TR	FT-10	SP3X4	VNBXR...
S20H-SVNR12SXN	●	mm	20	19.5	18	100	23					
S22K-SVNR12SXN	●		22	21.5	20	125	23					
S25.0G-SVNR12SXN	●		25	24.5	23	90	23					

TWIN BAR FOR MICRO BORING

TWB (Micro Boring: Horizontal Type) [Corner-R(RE) Tolerance: +0/-0.02mm, +0/-0.03mm]





• Right-hand shown

Part Number		Min.Bore Dia.	Dimensions (mm)			Insert Grade PVD Coated Carbide	
		DMIN	WF	WF_2	RE	NEW PR1535	PR1025
TWBR	01003-005	1.0	0.85	0.20	+0 -0.02 0.05	●	△
	01503-005	1.5	1.30	0.20		●	△
	02003-005	2.0	1.75	0.25		●	△
	02503-005	2.5	2.10	0.30		●	△
	03003-005	3.0	2.40	0.40		●	△
TWBR	01503-010	1.5	1.30	0.20	+0 -0.03 0.10	●	△
	02003-010	2.0	1.75	0.25		●	△
	02503-010	2.5	2.10	0.30		●	△
	03003-010	3.0	2.40	0.40		●	△

STW (Square Shank for Horizontal Type Inserts)

(For Left-hand toolholder for grooving, please see G94)

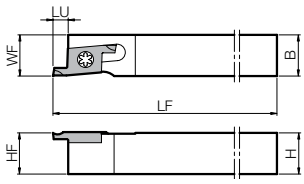


Fig.1

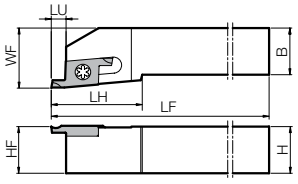


Fig.2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock	Dimensions (mm) H	HF	B	LF	LH	WF	LU	Drawing	Spare Parts Clamp Screw	Wrench	Applicable Inserts Above
STWR	1212F-15	●	12	12	12	85	-	12	3	Fig.1	SB-3080TR	LTW-10S	TWBR○○○○○-○○○

S...-STW (Round Shank for Horizontal Type Inserts)

(For Left-hand toolholder for grooving, please see G94)

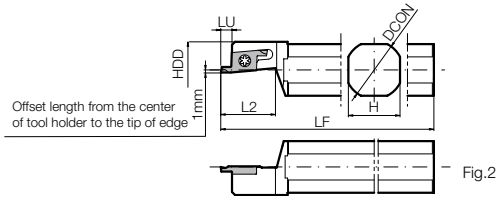


Fig.2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock	Dimensions (mm) DCON	HDD	H	LF	L2	LH	LU	Drawing	Spare Parts Clamp Screw	Wrench	Applicable Inserts Above
S20G-	STWR15	●	20.000	19.5	18	90	18	-	3	Fig.2	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
S25.0J-	STWR15	●	25.000	24.5	23	110	22	-	3				

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(Technical Support) 800.823.7284 - Option 2
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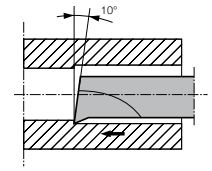
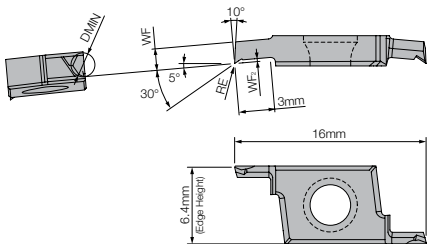
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

TWBT (Micro Boring: Vertical Type) [Corner-R(RE) Tolerance: +0/-0.02mm, +0/-0.03mm]

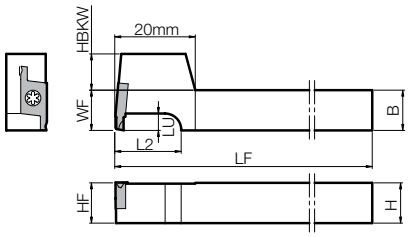




• Right-hand shown

Part Number		Min.Bore Dia.	Dimensions (mm)			Insert Grade PVD Coated Carbide	
		DMIN	WF	WF_2	RE	NEW PR1535	PR1025
TWBTR	01003-005	1.0	0.85	0.20	+0 -0.02 0.05	●	△
	01503-005	1.5	1.30	0.20		●	△
	02003-005	2.0	1.75	0.25		●	△
	02503-005	2.5	2.10	0.30		●	△
	03003-005	3.0	2.30	0.40		●	△
TWBTR	01503-010	1.5	1.30	0.20	+0 -0.03 0.1	●	△
	02003-010	2.0	1.75	0.25		●	△
	02503-010	2.5	2.10	0.30		●	△
	03003-010	3.0	2.30	0.40		●	△

STWS (Square Shank for Vertical Type: L-shape)



• Right-hand shown

Toolholder Dimensions

Part Number		Stock	Dimensions (mm) H	HF	B	LF	L2	WF	HBKW	LU	Drawing	Spare Parts Clamp Screw	Spare Parts Wrench	Applicable Inserts
STWSR	1212JX-15T	●	12	12	12	120	16	12	7	3	-	SB-3080TR	LTW-10S	TWBTR○○○○○-○○○ TWFGTR○○○
	1616JX-15T	●	16	16	16	120	20	16	3	3	-			
STWSR	1010F-15T	●	10	10	10	85	16	10	9	3	-	SB-3080TR	LTW-10S	TWBTR○○○○○-○○○ TWFGTR○○○
	1212F-15T	●	12	12	12	85	16	12	7	3	-			

Applicable Inserts: F43, G95

Recommended Cutting Conditions (TWB / TWBT)

Workpiece Material	Recommended Grade (Vc sfm) PVD Coated Carbide PR1535	PR1025	TWBR01003 TWBR01503 TWBTR01003 TWBTR01503 Depth of Cut: D.O.C. (inch), Feed: f (ipr) D.O.C.	f	TWBR02003 TWBR02503 TWBR03003 TWBTR02003 TWBTR02503 TWBTR03003 D.O.C.	f	Notes
Carbon Steel / Alloy Steel	★ 100~330	☆ 100~330	~0.0039	~0.0004	~0.0079	~0.0012	Wet
Stainless Steel	★ 100~260	☆ 100~260	~0.0039	~0.0004	~0.0079	~0.0008	

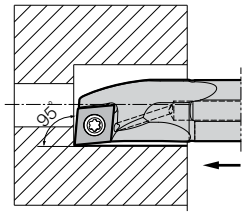
★ : 1st Recommendation ☆ : 2nd Recommendation

Twin Bars are sold in 5 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

A/S-SCLC-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5.5**)



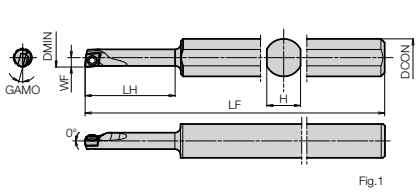


Fig.1

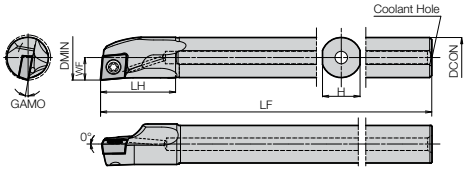


Fig.2

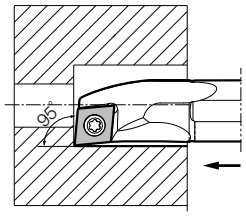
Shank Dia. DCON	Coolant Hole Dia.
Ø8mm	Ø2.5mm
Ø0.375" Ø10mm	Ø3.0mm
Ø0.500" Ø12mm	Ø4.0mm
Ø0.625" Ø16mm	Ø5.0mm
Ø0.750" Ø20mm	Ø5.0mm
Ø1.000" Ø25mm	Ø5.0mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SCLC-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~4**)



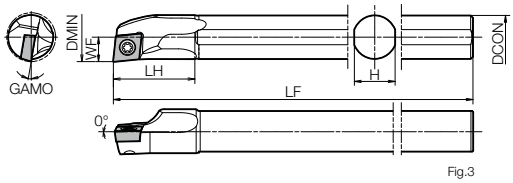


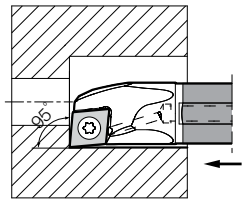
Fig.3

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C/E-SCLC-A(N) Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~7**)



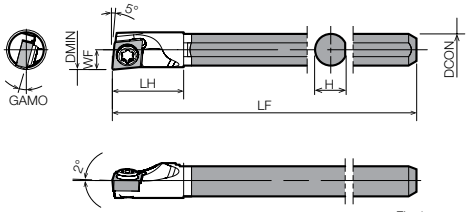


Fig.4

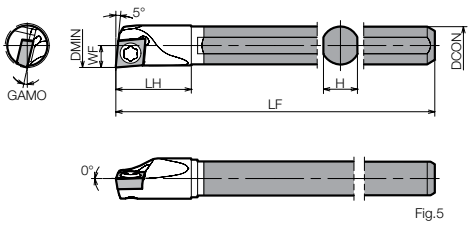


Fig.5

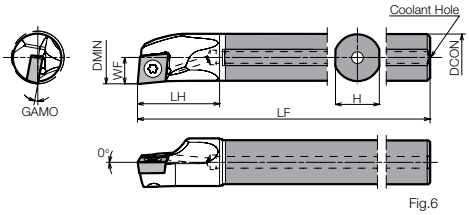


Fig.6

Shank Dia. DCON	Coolant Hole Dia.
Ø8mm	Ø3mm
Ø0.375" Ø10mm	Ø3mm
Ø0.500" Ø12mm	Ø4mm
Ø0.625" Ø16mm	Ø4mm
Ø20mm	Ø6mm
Ø25mm	Ø6mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A06M-SCLC□2AE	●	●	inch	0.480	0.375	0.336	6.000	0.787	0.236	12°	1/64	Yes	Fig.2	SB-2545TR	FT-8
	A08M-SCLC□2AE	●	●		0.600	0.500	0.461	6.000	0.945	0.276	10°					
	A10R-SCLC□3AE	●	●		0.770	0.625	0.586	8.000	1.181	0.354	10°					
	A12S-SCLC□3AE	●	●		0.930	0.750	0.711	10.000	1.417	0.413	8°	1/64	Yes	Fig.2	SB-4065TR	FT-15
	A16T-SCLC□3AE	●	●		1.200	1.000	0.961	12.000	1.811	0.531	6°					
	S10H-SCLC□03-05AE	●	●	mm	5	10	9.0	100	24	2.5	15°	0.2	No	Fig.1	SB-1635TR	FT-6
	S10H-SCLC□03-06AE	●	●		6	10	9.0	100	28	3.0	13°					
	S10H-SCLC□04-07AE	●	●		7	10	9.0	100	32	3.5	13°	0.2	No	Fig.1	SB-2035TR	FT-6
	S10H-SCLC□04-08AE	●	●		8	10	9.0	100	37	4.0	11°					
	A08X-SCLC□06-10AE	●	●		10	8	7.0	120	16	5.0	14°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A10L-SCLC□06-12AE	●	●		12	10	9.0	140	20	6.0	12°					
	A12M-SCLC□06-14AE	●	●		14	12	11.0	150	24	7.0	10°					
	A16Q-SCLC□09-18AE	●	●		18	16	15.0	180	30	9.0	10°	0.4	Yes	Fig.2	SB-4065TR	FT-15
	A20R-SCLC□09-22AE	●	●		22	20	19.0	200	36	11.0	8°					
	A25S-SCLC□09-27AE	●	●		27	25	24.0	250	46	13.5	6°					
Steel	S08X-SCLC□06-10A	●	●	mm	10	8	7.0	120	16	5.0	14°	0.4	No	Fig.3	SB-2545TR	FT-8
	S10L-SCLC□06-12A	●	●		12	10	9.0	140	20	6.0	12°					
	S12M-SCLC□06-14A	●	●		14	12	11.0	150	24	7.0	10°					
	S16Q-SCLC□09-18A	●	●		18	16	15.0	180	30	9.0	10°	0.4	No	Fig.3	SB-4065TR	FT-15
	S20R-SCLC□09-22A	●	●		22	20	19.0	200	36	11.0	8°					
	S25S-SCLC□09-27A	●	●		27	25	24.0	250	46	13.5	6°					
Carbide	E06N-SCLC□2A	●	●	inch	0.480	0.375	0.336	6.300	0.787	0.236	12°	1/64	Yes	Fig.6	SB-2545TR	FT-8
	E06N-SCLC□2A-2/3	□	□		0.480	0.375	0.336	4.200	0.787	0.236	12°					
	E08Q-SCLC□2A	●	●		0.600	0.500	0.461	7.100	0.906	0.276	10°					
	E08Q-SCLC□2A-2/3	□	□		0.600	0.500	0.461	4.800	0.906	0.276	10°					
	E10X-SCLC□3A	●	●		0.770	0.625	0.586	8.700	1.102	0.354	10°				SB-4065TR	FT-15
	E10X-SCLC□3A-2/3	●	□		0.770	0.625	0.586	5.800	1.102	0.354	10°					
	C04G-SCLC□03-05AN	●	●	mm	5	4	3.8	90	7	2.5	15°	0.2	No	Fig.4	SB-1635TR	FT-6
	C05H-SCLC□03-06AN	●	●		6	5	4.4	100	9	3.0	13°	0.2	No	Fig.5	SB-1635TR	FT-6
	C06J-SCLC□04-07AN	●	●		7	6	5.4	110	10	3.5	13°	0.2	No	Fig.5	SB-2035TR	FT-6
	C07K-SCLC□04-08AN	●	●		8	7	6.4	125	11	4.0	11°					
	E08L-SCLC□06-10AN	●	●		10	8	7.0	140	14	5.0	14°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E08L-SCLC□06-10AN-2/3	●			10	8	7.0	90	14	5.0	14°					
	E10N-SCLC□06-12AN	●	●		12	10	9.0	160	18	6.0	12°					
	E10N-SCLC□06-12AN-2/3	●			12	10	9.0	105	18	6.0	12°					
	E12Q-SCLC□06-14A	●	●		14	12	11.0	180	23	7.0	10°					
	E12Q-SCLC□06-14A-2/3	●			14	12	11.0	120	23	7.0	10°					
	E16X-SCLC□09-18A	●	●		18	16	15.0	220	28	9.0	10°	0.4	Yes	Fig.6	SB-4065TR	FT-15
	E16X-SCLC□09-18A-2/3	●			18	16	15.0	145	28	9.0	10°					
	E20S-SCLC□09-22A	●	●		22	20	19.0	250	32	11.0	8°					
	E20S-SCLC□09-22A-2/3	●			22	20	19.0	165	32	11.0	8°					
	E25T-SCLC□09-27A	●	●		27	25	24.0	300	38	13.5	6°					
	E25T-SCLC□09-27A-2/3	●			27	25	24.0	200	38	13.5	6°					

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium	Finishing-Medium	Finishing / Precision
Ref. Page	B53	B53	B53	B54	B54	B54	B54	B54, B55	B53	B55, B56
Insert / Toolholder	CF	PF	SKS	WP (Wiper)	PP	GK	HQ	Standard	GQ	□-F / FSF
...SCLC□03-...	CCGT1109..	CCGT1109..	-	-	-	-	-	-	-	CC□T1109..
...SCLC□04-...	CCGT1411..	CCGT1411..	-	-	-	-	-	-	-	CC□T1411..
...SCLC□2... ...SCLC□06-...	-	CCGT215..	CCGT215..	CCMT215..	CCMT215..	CCMT215..	CCMT215..	CCGT215..	CCGT215..	-
...SCLC□3... ...SCLC□09-...	-	-	CCGT325..	CCMT325	CCMT325	CCMT325	CCMT325..	CCGT325.. CCMT325..	CCGT325..	-

Application	※Finishing	Low Feed	Low Feed / Precision	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B57	B58, B59	B57	B55	B60	B60	B60	B60	C24	C14
Insert / Toolholder	□-P	(E/F)□-U	F□-USF	MQ	Without Chipbreaker	AP	A3	AH	PCD	CBN
...SCLC□03-...	-	-	-	-	-	-	-	-	-	CCMW1109..
...SCLC□04-...	-	-	-	-	-	-	-	-	CCGW1411..	CCMW1411..
...SCLC□2... ...SCLC□06-...	-	CCGT215..	CCET215..	-	CCGW215..	CCGT215..	-	-	CCMT215.. CCGW215..	CCMW215..
...SCLC□3... ...SCLC□09-...	CCET325..	CCGT325..	CCET325..	CCMT325..	CCGW325..	CCGT325..	CCGT325..	CCGT325..	CCMT325.. CCGW325..	CCMW325..

※For P chipbreaker inserts, **Left-hand** Insert for **Left-hand** Toolholder, **Right-hand Insert** for **Right-hand** Toolholder

Recommended Cutting Conditions ➡ F110-F111

Applicable Sleeve ➡ F101-F104

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

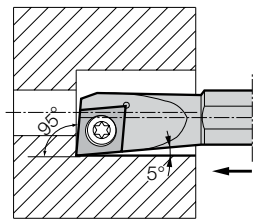
(Customer Service) 800.823.7284 - Option 1

(Technical Support) 800.823.7284 - Option 2

Visit us online at KyoceraPrecisionTools.com

A-SCLC-E Excellent Twin Hole Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5**)



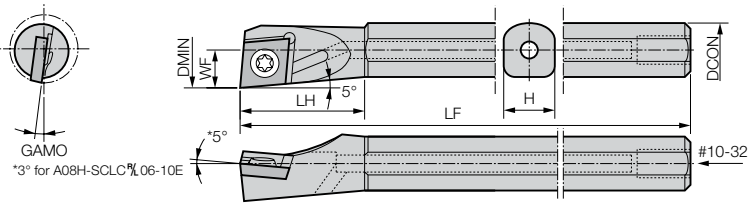


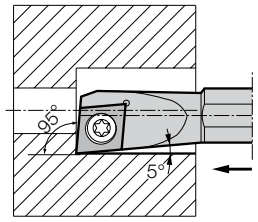
Fig.1

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SCLC-E Excellent Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5**)



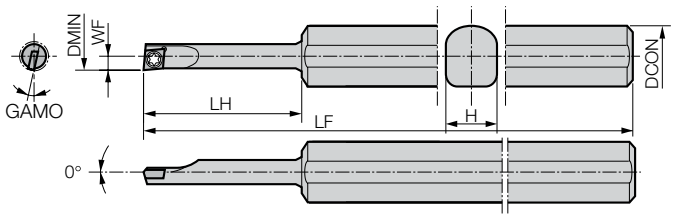


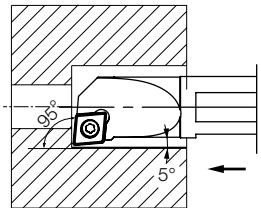
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SCLC Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)



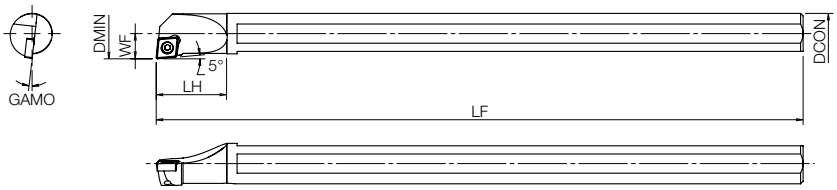


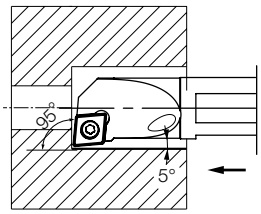
Fig.3

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

A-SCLC Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)



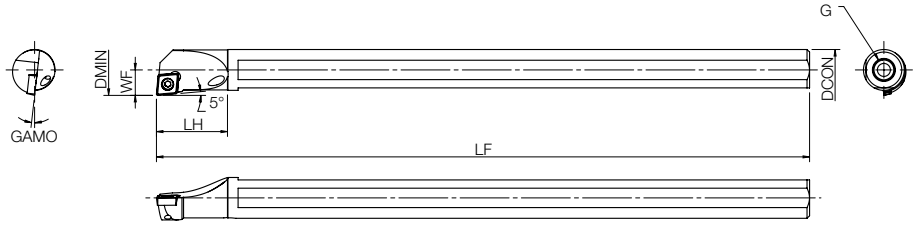


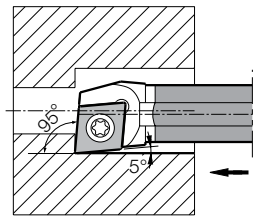
Fig.4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C-SCLC Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~7**)



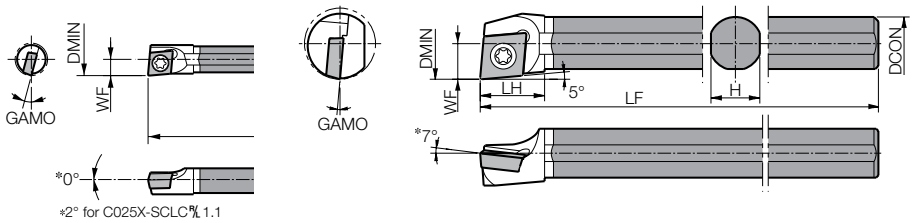


Fig.5

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	G	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	**S06H-SCLCR1.1E** **	●		inch	0.197	0.375	0.335	4.000	0.900	0.098	15°	-	1/64	No	Fig.2	SB-1635TR	FT-6
	A05H-SCLC□2E	●	□		0.394	0.312	0.281	4.000	0.650	0.197	12°	-		Yes	Fig.1	SB-2545TR	FT-8
Steel	**S05K-SCLC□2**	●	●		0.394	0.312	-	5.000	0.625	0.197	12°	-	0.004	No	Fig.3	SB-2545TR	FT-8
	A05K-SCLCR2	●			0.415	0.313	-	5.000	0.870	0.218	11°	-	1/64	Yes	Fig.4	SB-2545TR	FT-8
	A06M-SCLCR2	△			0.480	0.375	-	6.000	0.870	0.250	8°	-	1/64	Yes			
	A08R-SCLCR2	●			0.600	0.500	-	8.000	0.870	0.312	6°	-	1/64	Yes			
	A10S-SCLCR2	●			0.770	0.625	-	10.000	0.870	0.406	4°	1/8 NPT	1/64	Yes			
Carbide	**C05K-SCLCR2**	●			0.394	0.312	0.282	5.000	0.625	0.197	12°	-	0.004	No	Fig.5	SB-2545TR	FT-8

** Optional sleeve SL2.5-10 (0.625" dia.) is available. (Sleeve screw: SLS-2, sleeve wrench: LW-2)

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium	Finishing-Medium	Finishing / Precision
Ref. Page	B53	B53	B53	B54	B54	B54	B54	B54, B55	B53	B55, B56
Insert / Toolholder	**CF**	**PF**	**SKS**	**WP** (Wiper)	**PP**	**GK**	**HQ**	**Standard**	**GQ**	**□-F / FSF**
...SCLC□1.1 **...SCLC□1.1E**	CCGT1109..	CCGT1109..	-	-	-	-	-	-	-	CC□T1109..
...SCLC□2 **...SCLC□2E**	-	CCGT215..	CCGT215..	CCMT215..	CCMT215..	CCMT215..	CCMT215..	CCGT215..	CCGT215..	-

Application	※Finishing	Low Feed	Low Feed / Precision	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B57	B58, B59	B57	B55	B60	B60	B60	B60	C24	C14
Insert / Toolholder	**□-P**	**(E/F)□-U**	**F□-USF**	**MQ**	**Without Chipbreaker**	**AP**	**A3**	**AH**	**PCD**	**CBN**
...SCLC□1.1 **...SCLC□1.1E**	-	-	-	-	-	-	-	-	-	CCMW1109..
...SCLC□2 **...SCLC□2E**	-	CCGT215..	CCET215..	-	CCGW215..	CCGT215..	-	-	CCMT215.. CCGW215..	CCMW215..

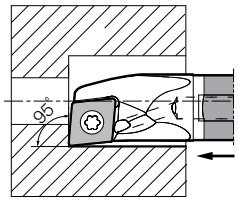
※For P chipbreaker inserts, **Left-hand** Insert for **Left-hand** Toolholder, **Right-hand Insert** for **Right-hand** Toolholder

Recommended Cutting Conditions ➡ **F110-F111**

Applicable Sleeve ➡ **F101-F104**

A-SCLP-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5.5**)



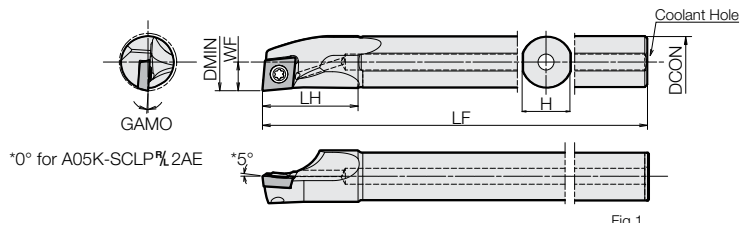


Fig.1

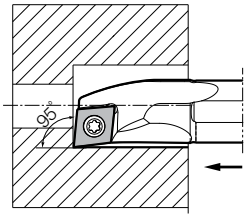
Shank Dia. DCON	Coolant Hole Dia.
Ø0.312"	Ø2.5mm
Ø0.375" Ø10mm	Ø3mm
Ø0.500" Ø12mm	Ø4mm
Ø0.625" Ø16mm	Ø5mm
Ø0.750" Ø20mm	Ø5mm
Ø1.000" Ø25mm	Ø5mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SCLP-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~4**)



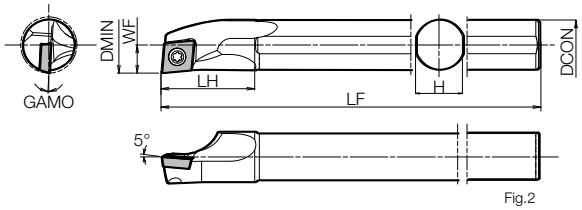


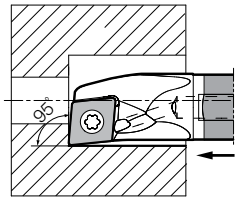
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SCLP-A(N) Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~7**)



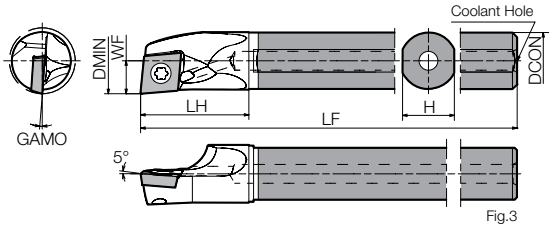


Fig.3

Shank Dia. DCON	Coolant Hole Dia.
Ø10mm	Ø3mm
Ø12mm	Ø4mm
Ø16mm	Ø4mm
Ø20mm	Ø6mm
Ø25mm	Ø6mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A05K-SCLP□2AE	●	●	inch	0.413	0.312	0.273	5	0.630	0.197	10.0°	1/64	Yes	Fig.1	SB-2545TR	FT-8
	A06M-SCLP□2.5AE	●	●		0.480	0.375	0.336	6	0.787	0.236	5.0°	1/64	Yes	Fig.1	SB-3060TR	FT-10
	A08M-SCLP□2.5AE	●	●		0.580	0.500	0.461	6	0.945	0.276	4.0°					
	A10R-SCLP□3AE	●	●		0.700	0.625	0.586	8	1.181	0.354	3.5°	1/64	Yes	Fig.1	SB-4065TR	FT-15
	A12S-SCLP□3AE	●	●		0.825	0.750	0.711	10	1.417	0.413	2.0°					
	A16T-SCLP□3AE	●	●		1.200	1.000	0.961	12	1.811	0.531	0.0°					
	A10L-SCLP□08-12AE	●	●	mm	12	10	9	140	20	6	5.0°	0.4	Yes	Fig.1	SB-3060TR	FT-10
	A12M-SCLP□08-14AE	●	●		14	12	11	150	24	7	4.0°					
	A12M-SCLP□09-16AE	●	●		16	12	11	150	24	8	4.0°	0.4	Yes	Fig.1	SB-4065TR	FT-15
	A16Q-SCLP□09-18AE	●	●		18	16	15	180	30	9	3.5°					
	A20R-SCLP□09-22AE	●	●		22	20	19	200	36	11	2.0°					
	A25S-SCLP□09-27AE	●	●		27	25	24	250	46	13.5	0.0°					
Steel	S10L-SCLP□08-12A	●	●	mm	12	10	9	140	20	6	5.0°	0.4	No	Fig.2	SB-3060TR	FT-10
	S12M-SCLP□08-14A	●	●		14	12	11	150	24	7	4.0°					
	S12M-SCLP□09-16A	●	●		16	12	11	150	24	8	4.0°	0.4	No	Fig.2	SB-4065TR	FT-15
	S16Q-SCLP□09-18A	●	●		18	16	15	180	30	9	3.5°					
	S20R-SCLP□09-22A	●	●		22	20	19	200	36	11	2.0°					
	S25S-SCLP□09-27A	●	●		27	25	24	250	46	13.5	0.0°					
Carbide	E10N-SCLP□08-12AN	●	●	mm	12	10	9	160	18	6	5°	0.4	Yes	Fig.3	SB-3060TR	FT-10
	E10N-SCLP□08-12AN-2/3	●			12	10	9	105	18	6	5°					
	E10N-SCLP□08-12AN-1/2	●			12	10	9	80	18	6	5°					
	E12Q-SCLP□08-14A	●	●		14	12	11	180	23	7	4°					
	E12Q-SCLP□08-14A-2/3	●			14	12	11	120	23	7	4°					
	E12Q-SCLP□08-14A-1/2	●			14	12	11	90	23	7	4°					
	E12Q-SCLP□09-16A	●	●		16	12	11	180	23	8	5°	0.4	Yes	Fig.3	SB-4065TR	FT-15
	E12Q-SCLP□09-16A-2/3	●			16	12	11	120	23	8	5°					
	E12Q-SCLP□09-16A-1/2	●			16	12	11	90	23	8	5°					
	E16X-SCLP□09-18A	●	●		18	16	15	220	28	9	3.5°					
	E16X-SCLP□09-18A-2/3	●			18	16	15	145	28	9	3.5°					
	E16X-SCLP□09-18A-1/2	●			18	16	15	110	28	9	3.5°					
	E20S-SCLP□09-22A	●	●		22	20	19	250	32	11	2°					
	E20S-SCLP□09-22A-2/3	●			22	20	19	165	32	11	2°					
	E20S-SCLP□09-22A-1/2	●			22	20	19	125	32	11	2°					
	E25T-SCLP□09-27A	●	●		27	25	24	300	38	13.5	0°					
	E25T-SCLP□09-27A-2/3	●			27	25	24	200	38	13.5	0°					

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Medium	Finishing-Medium	Low Carbon Steel/ Finishing	Low Carbon Steel/ Finishing-Medium	Cast Iron	Non-ferrous Metals	Hardened Materials
Ref. Page	B61	B61	B61	B61	B61	B61	B61	B61	C25	C14
Insert / Toolholder	PP	GP	HQ	Standard	□-Y	XP	XQ	Without Chipbreaker	PCD	CBN
...SCLP□2AE...	-	-	-	CPGT215..	-	-	-	-	-	-
...SCLP□2.5AE... ...SCLP□08-...	CPMT2515..	CPMT2515..	CPMH2515..	CPMH2515..	CPMH2515..	CPMT2515..	-	CPMB2515..	CPMH2515..	CPGB2515..
...SCLP□3AE... ...SCLP□09-...	CPMT32..	CPMT32..	CPMH32..	CPMH32..	CPMH32..	CPMT32..	CPMT32..	CPMB32..	CPMH32..	CPGB32..

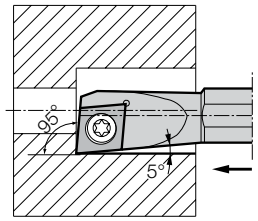
Recommended Cutting Conditions **F110-F111**

Applicable Sleeve **F102-F104**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

A-SCLP-E Excellent Twin Hole Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5**)



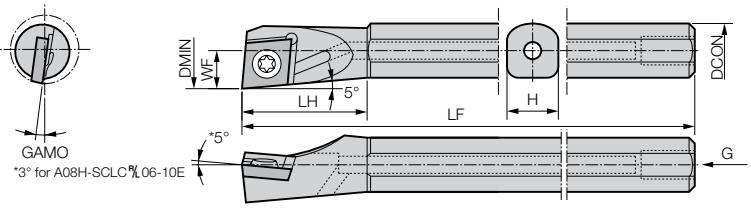


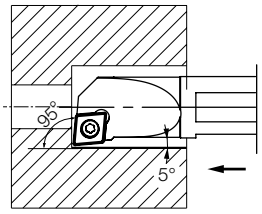
Fig.1

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SCLP Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)



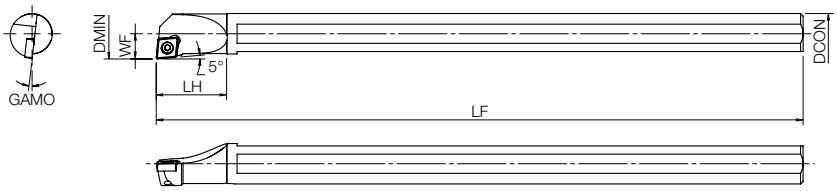


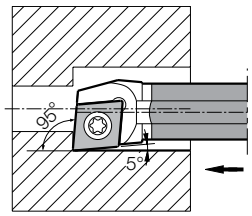
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C-SCLP Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~7**)



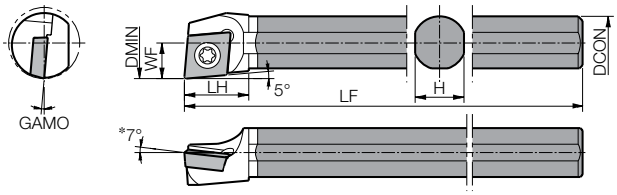


Fig.3

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	G	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	**A06X-SCLP㎭2.5E**	●		inch	0.472	0.375	0.336	4.75	0.900	0.236	#10-32	5°	1/64	Yes	Fig.1	SB-3STR	FT-8
Excellent Bar	**A08X-SCLP㎭3E**	●			0.632	0.500	0.461	4.75	1.140	0.315	1/4-28	4°		Yes		SB-4TR	FT-15
Excellent Bar	**A10M-SCLP㎭3E**	●			0.709	0.625	0.586	6.00	1.220	0.354	5/16-24	3°		Yes			
Steel	**S06M-SCLP㎭2.5**	●	●		0.472	0.375	-	6.00	1.000	0.236	-	5°	1/64	No	Fig.2	SB-3STR	FT-10
Steel	**S08M-SCLP㎭3**	●	●		0.630	0.500	-	6.00	1.180	0.315	-	4°	1/64	No		SB-4TR	FT-15
Steel	**S10X-SCLP㎭3**	●	●		0.788	0.625	-	7.00	1.380	0.394	-	3°	1/64	No			
Steel	**S12R-SCLP㎭3**	●	●		0.984	0.750	-	8.00	1.560	0.492	-	0°	1/64	No			
Steel	**S16T-SCLP㎭3**	●	●		1.338	1.000	-	12.00	1.750	0.669	-	0°	1/64	No			
Carbide	**C06M-SCLP㎭2.5**	●			0.472	0.375	0.334	6.00	1.000	0.236	-	5°	1/64	No	Fig.3	SB-3STR	FT-10
Carbide	**C08R-SCLP㎭3**	●			0.630	0.500	0.480	8.00	1.180	0.315	-	4°	1/64	No		SB-4TR	FT-15
Carbide	**C10S-SCLP㎭3**	●			0.788	0.625	0.584	10.00	1.380	0.394	-	3°	1/64	No			
Carbide	**C12S-SCLP㎭3**	●			0.984	0.750	0.710	10.00	1.560	0.492	-	0°	1/64	No			

Applicable Inserts

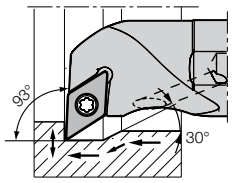
Application	Finishing	Finishing	Finishing-Medium	Medium	Finishing-Medium	Low Carbon Steel/ Finishing	Low Carbon Steel/ Finishing-Medium	Cast Iron	Non-ferrous Metals	Hardened Materials
Ref. Page	B61	B61	B61	B61	B61	B61	B61	B61	C25	C14
Insert / Toolholder	**PP**	**GP**	**HQ**	**Standard**	**㎭-Y**	**XP**	**XQ**	Without Chipbreaker	**PCD**	**CBN**
...SCLP㎭2.5 ...SCLP㎭2.5E	CPMT2515..	CPMT2515..	CPMH2515..	CPMH2515..	CPMH2515..	CPMT2515..	-	CPMB2515..	CPMH2515..	CPGB2515..
...SCLP㎭3 ...SCLP㎭3E	CPMT32..	CPMT32..	CPMH32..	CPMH32..	CPMH32..	CPMT32..	CPMT32..	CPMB32..	CPMH32..	CPGB32..

Recommended Cutting Conditions **F110-F111**

Applicable Sleeve **F102-F104**

A-SDUC-AE Excellent Bar (Copying)

(Max. Overhang Length **L/D = ~5.5**)



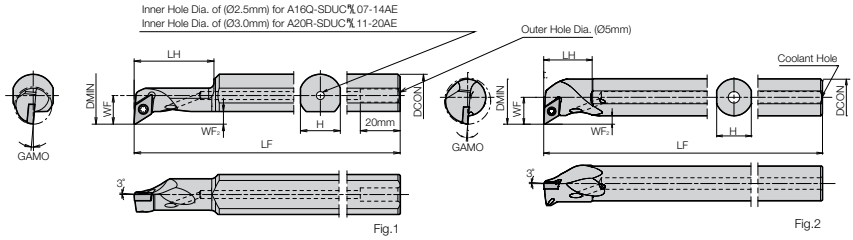


Fig.1 Fig.2

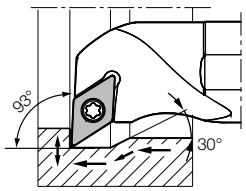
Shank Dia. DCON	Coolant Hole Dia.
Ø10mm	Ø3mm
Ø12mm	Ø4mm
Ø16mm	Ø5mm
Ø20mm	Ø5mm
Ø25mm	Ø5mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SDUC-A Steel Bar (Copying)

(Max. Overhang Length **L/D = ~4**)



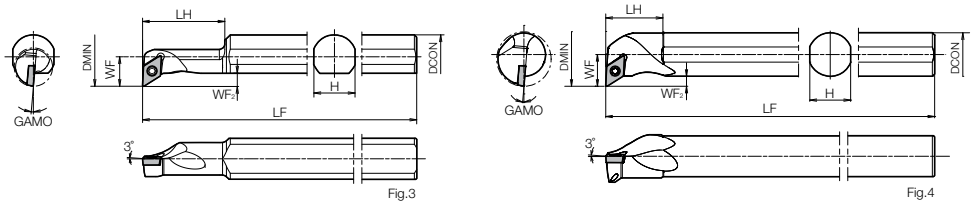


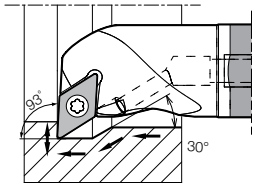
Fig.3 Fig.4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SDUC-A Carbide Shank Bar (Copying)

(Max. Overhang Length **L/D = ~7**)



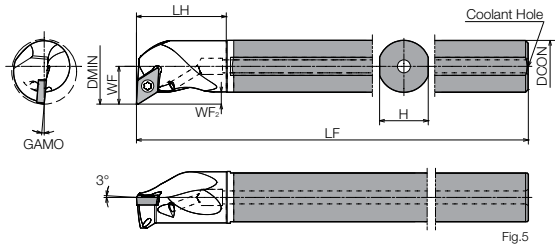


Fig.5

Shank Dia. DCON	Coolant Hole Dia.
Ø0.375" Ø10mm	Ø3mm
Ø0.500" Ø12mm	Ø4mm
Ø0.625" Ø16mm	Ø4mm
Ø0.750" Ø20mm	Ø6mm
Ø1.000" Ø25mm	Ø6mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A06M-SDUC☐2AE	●	●	inch	0.551	0.375	0.336	6.000	0.748	0.341	0.130	5°	1/64	Yes	Fig.1	SB-2560TR	FT-8
	A08M-SDUC☐2AE	●	●		0.630	0.500	0.461	6.000	0.827	0.360	0.130	5°					
	A10R-SDUC☐2AE	●	●		0.787	0.625	0.586	8.000	0.827	0.459	0.130	5°					
	A12S-SDUC☐3AE	●	●		1.063	0.750	0.711	10.000	0.866	0.650	0.240	5°	1/64	Yes	Fig.1	SB-4065TR	FT-15
	A16T-SDUC☐3AE	●	●		1.300	1.000	0.961	12.000	0.945	0.748	0.240	5°					
	A10L-SDUC☐07-14AE	●	●	mm	14	10	9	140	19	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2560TR	FT-8
	A16Q-SDUC☐07-14AE	●	●		14	16	15	180	28	10.8	4.4	5°	0.4	Yes	Fig.1	SB-2560TR	FT-8
	A12M-SDUC☐07-16AE	●	●		16	12	11	150	21	9.7	3.3	5°	0.4	Yes	Fig.2	SB-2560TR	FT-8
	A16Q-SDUC☐07-20AE	●	●		20	16	15	180	21	11.7	3.3	5°					
	A20R-SDUC☐11-20AE	●	●		20	20	19	200	48	15.6	6.1	5°	0.4	Yes	Fig.1	SB-4065TR	FT-15
	A16Q-SDUC☐11-23AE	●	●		23	16	15	180	21	14.5	6.1	5°	0.4	Yes	Fig.2	SB-4065TR	FT-15
	A20R-SDUC☐11-27AE	●	●		27	20	19	200	23	16.5	6.1	5°					
	A25S-SDUC☐11-32AE	●	●		32	25	24	250	24	19.0	6.1	5°					
Steel	S10L-SDUC☐07-14A	●	●	mm	14	10	9	140	19	8.7	3.3	5°	0.4	No	Fig.4	SB-2560TR	FT-8
	S16Q-SDUC☐07-14A	●	●		14	16	15	180	28	10.8	4.4	5°	0.4	No	Fig.3	SB-2560TR	FT-8
	S12M-SDUC☐07-16A	●	●		16	12	11	150	21	9.7	3.3	5°	0.4	No	Fig.4	SB-2560TR	FT-8
	S16Q-SDUC☐07-20A	●	●		20	16	15	180	21	11.7	3.3	5°					
	S20R-SDUC☐11-20A	●	●		20	20	19	200	48	15.6	6.1	5°	0.4	No	Fig.3	SB-4065TR	FT-15
	S16Q-SDUC☐11-23A	●	●		23	16	15	180	21	14.5	6.1	5°	0.4	No	Fig.4	SB-4065TR	FT-15
	S20R-SDUC☐11-27A	●	●		27	20	19	200	23	16.5	6.1	5°					
	S25S-SDUC☐11-32A	●	●		32	25	24	250	24	19.0	6.1	5°					
Carbide	E06N-SDUC☐2A	●	□	inch	0.551	0.375	0.336	6.300	0.776	0.341	0.130	5°	1/64	Yes	Fig.5	SB-2560TR	FT-8
	E06N-SDUC☐2A-2/3	□	□		0.551	0.375	0.336	4.200	0.776	0.341	0.130	5°					
	E08Q-SDUC☐2A	●	□		0.630	0.500	0.461	7.100	0.894	0.360	0.098	5°					
	E08Q-SDUC☐2A-2/3	□	□		0.630	0.500	0.461	4.800	0.894	0.360	0.098	5°					
	E10X-SDUC☐2A	●	□		0.787	0.625	0.586	8.700	1.091	0.459	0.130	5°					
	E10X-SDUC☐2A-2/3	□	□		0.787	0.625	0.586	5.800	1.091	0.459	0.130	5°					
	E10N-SDUC☐07-14A	●	●	mm	14	10	9	160	20	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2560TR	FT-8
	E10N-SDUC☐07-14A-2/3	●			14	10	9	105	20	8.7	3.3	5°					
	E12Q-SDUC☐07-16A	●	●		16	12	11	180	23	9.7	3.3	5°					
	E12Q-SDUC☐07-16A-2/3	●			16	12	11	120	23	9.7	3.3	5°					
	E16X-SDUC☐07-20A	●	●		20	16	15	220	28	11.7	3.3	5°					
	E16X-SDUC☐07-20A-2/3	●			20	16	15	145	28	11.7	3.3	5°					
	E16X-SDUC☐11-23A	●	●		23	16	15	220	28	14.5	6.1	5°	0.4	Yes	Fig.5	SB-4065TR	FT-15
	E16X-SDUC☐11-23A-2/3	●			23	16	15	145	28	14.5	6.1	5°					
	E20S-SDUC☐11-27A	●	●		27	20	19	250	32	16.5	6.1	5°					
	E20S-SDUC☐11-27A-2/3	●			27	20	19	165	32	16.5	6.1	5°					
	E25T-SDUC☐11-32A	●	●		32	25	24	300	32	19.0	6.1	5°					
	E25T-SDUC☐11-32A-2/3	●			32	25	24	200	38	19.0	6.1	5°					

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Roughing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B62	B62	B63	B63	B64	B64	B64	B66, B67	B68, B69	B68
Insert / Toolholder	CF	SKS	WP (Wiper)	PP	GK	HQ	Standard	☐-F / -FSF	(E/F)☐-U	F☐-USF
...-SDUC☐2AE... ...-SDUC☐07-...	DCGT215..	DCGT215..	DCMX215..	DCMT215..	DCMT215..	DCMT215..	DCGT215..	DC☐T215..	DCGT215..	DCET215..
...-SDQC☐2AE... ...-SDQC☐07-...										
...-SDZC☐07-...										
...-SDUC☐11-...	DCGT325..	DCGT325..	DCMX325..	DCMT325..	DCMT325..	DCMT325..	DCMT325.. DCGT325..	DC☐T325..	DCGT325..	DCET325..
...-SDQC☐11-...										
...-SDZC☐11-...										

Application	Low Feed	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B70, B71	B65	B65	B65	B71	B71	B71	B71	C25	C15
Insert / Toolholder	(E/F)☐-J	XP	XQ	MQ	Without Chipbreaker	AP	☐-A3	AH	PCD	CBN
...-SDUC☐2AE... ...-SDUC☐07-...	DCET215..	DCMT215..	-	DCMT215..	DCGW215..	DCGT215..	-	-	DCMT215..	DCMW215..
...-SDQC☐2AE... ...-SDQC☐07-...										
...-SDZC☐07-...										
...-SDUC☐11-...	DC_T325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..
...-SDQC☐11-...										
...-SDZC☐11-...										

When using **WP** chipbreaker, program corrections are required. R51

※ **TPMX-WP insert will not fit in A-SDQC-AE, S-SDQC-A, and E-SDQC-A type holders.**

Recommended Cutting Conditions **F110-F111**

Applicable Sleeve **F102-F104**

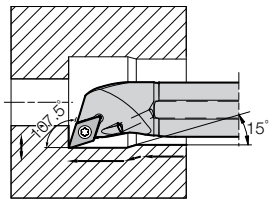
● : Standard Item ☐ : Made to Order △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

A-SDQC-AE Excellent Bar (Copying)

(Max. Overhang Length **L/D = ~5.5**)



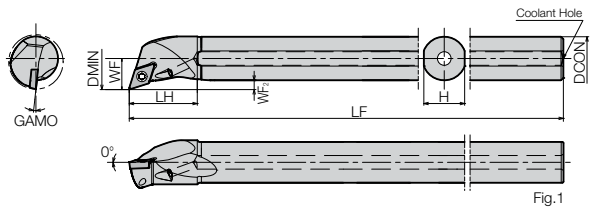


Fig.1

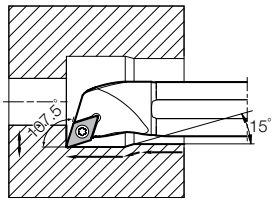
Shank Dia. DCON	Coolant Hole Dia.
Ø0.375" Ø10mm	Ø3mm
Ø0.500" Ø12mm	Ø4mm
Ø0.625" Ø16mm	Ø5mm
Ø0.750" Ø20mm	Ø5mm
Ø25mm	Ø5mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SDQC-A Steel Bar (Copying)

(Max. Overhang Length **L/D = ~4**)



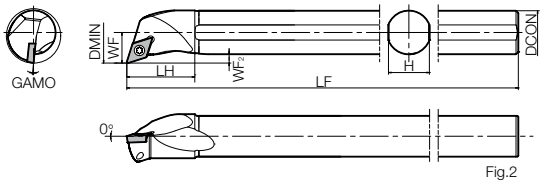


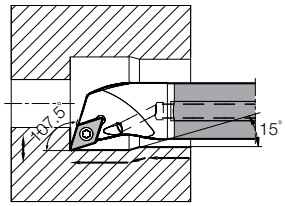
Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SDQC-A Carbide Shank Bar (Copying)

(Max. Overhang Length **L/D = ~7**)



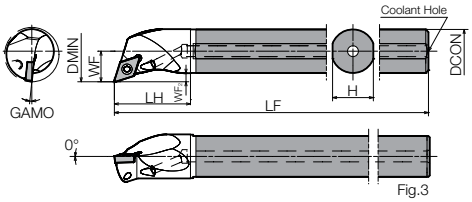


Fig.3

Shank Dia. DCON	Coolant Hole Dia.
Ø0.375" Ø10mm	Ø3mm
Ø0.500" Ø12mm	Ø4mm
Ø0.625" Ø16mm	Ø4mm
Ø20mm	Ø6mm
Ø25mm	Ø6mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A06M-SDQC□2AE	●	●	inch	0.512	0.375	0.336	6 .0	0.736	0.295	0.083	10°	1/64	Yes	Fig.1	SB-2560TR	FT-8
	A08M-SDQC□2AE	●	●		0.630	0.500	0.461	6 .0	0.866	0.364	0.102	8°					
	A10R-SDQC□2AE	●	●		0.787	0.625	0.586	8 .0	0.984	0.443	0.102	6°					
	A12S-SDQC□3AE	●	●		0.980	0.750	0.711	10 .0	1.220	0.565	0.146	5°	1/64	Yes	Fig.1	SB-4065TR	FT-15
	A10L-SDQC□07-13AE	●	●	mm	13	10	9	140	19	7.50	2.1	10°	0.4	Yes	Fig.1	SB-2560TR	FT-8
	A12M-SDQC□07-16AE	●	●		16	12	11	150	22	9.25	2.6	8°					
	A16Q-SDQC□07-20AE	●	●		20	16	15	180	25	11.30	2.6	6°					
	A20R-SDQC□11-25AE	●	●		25	20	19	200	31	14.40	3.7	5°	0.4	Yes	Fig.1	SB-4065TR	FT-15
	A25S-SDQC□11-30AE	●	●		30	25	24	250	38	16.90	3.7	4°					
Steel	S10L-SDQC□07-13A	●	●	mm	13	10	9	140	19	7.50	2.1	10°	0.4	No	Fig.2	SB-2560TR	FT-8
	S12M-SDQC□07-16A	●	●		16	12	11	150	22	9.25	2.6	8°					
	S16Q-SDQC□07-20A	●	●		20	16	15	180	25	11.30	2.6	6°					
	S20R-SDQC□11-25A	●	●		25	20	19	200	31	14.40	3.7	5°	0.4	No	Fig.2	SB-4065TR	FT-15
	S25S-SDQC□11-30A	●	●		30	25	24	250	38	16.90	3.7	4°					
Carbide	E06N-SDQC□2A	□	□	inch	0.512	0.375	0.336	6.3	0.787	0.295	0.079	10°	1/64	Yes	Fig.3	SB-2560TR	FT-8
	E06N-SDQC□2A-2/3	□	□		0.512	0.375	0.336	4.2	0.787	0.295	0.079	10°					
	E08Q-SDQC□2A	□	●		0.630	0.500	0.461	7.1	0.906	0.364	0.102	8°					
	E08Q-SDQC□2A-2/3	□	□		0.630	0.500	0.461	4.8	0.906	0.364	0.102	8°					
	E10X-SDQC□2A	□	□		0.787	0.625	0.586	8.7	1.102	0.443	0.102	6°					
	E10X-SDQC□2A-2/3	□	□		0.787	0.625	0.586	5.8	1.102	0.443	0.102	6°					
	E10N-SDQC□07-13A	●	●	mm	13	10	9	160	20	7.50	2.1	10°	0.4	Yes	Fig.3	SB-2560TR	FT-8
	E10N-SDQC□07-13A-2/3	●			13	10	9	105	20	7.50	2.1	10°					
	E12Q-SDQC□07-16A	●	●		16	12	11	180	23	9.25	2.6	8°					
	E12Q-SDQC□07-16A-2/3	●			16	12	11	120	23	9.25	2.6	8°					
	E16X-SDQC□07-20A	●	●		20	16	15	220	28	11.30	2.6	6°					
	E16X-SDQC□07-20A-2/3	●			20	16	15	145	28	11.30	2.6	6°					
	E20S-SDQC□11-25A	●	●		25	20	19	250	32	14.40	3.7	5°	0.4	Yes	Fig.3	SB-4065TR	FT-15
	E20S-SDQC□11-25A-2/3	●			25	20	19	165	32	14.40	3.7	5°					
	E25T-SDQC□11-30A	●	●		30	25	24	300	38	16.90	3.7	4°					
	E25T-SDQC□11-30A-2/3	●			30	25	24	200	38	16.90	3.7	4°					

Applicable Inserts ➔ **F53**

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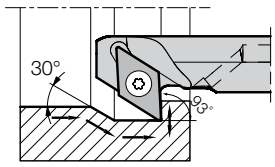
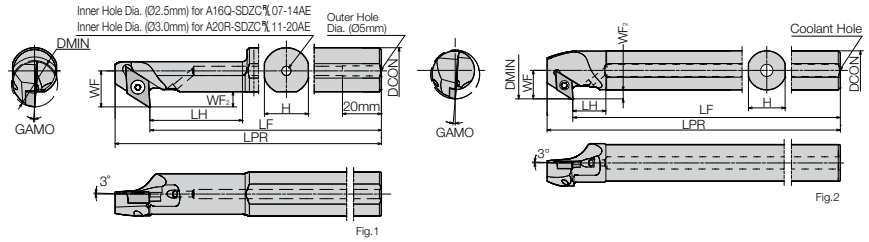
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

A-SDZC-AE Excellent Bar (Back Boring)

(Max. Overhang Length **L/D = ~5.5**)





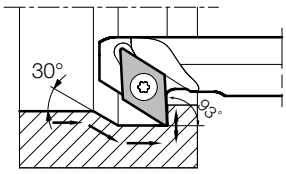
Shank Dia. DCON	Coolant Hole Dia.
Ø10mm	Ø3mm
Ø12mm	Ø4mm
Ø16mm	Ø5mm
Ø20mm	Ø5mm
Ø25mm	Ø5mm

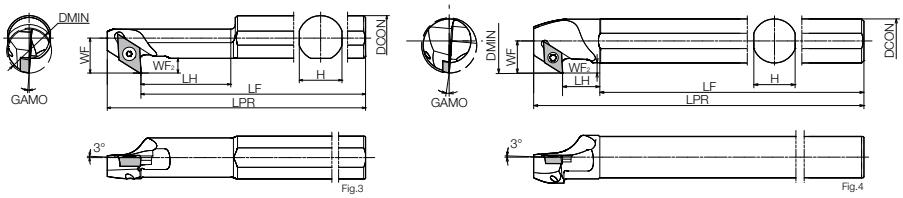
• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

S-SDZC-A Steel Bar (Back Boring)

(Max. Overhang Length **L/D = ~4**)



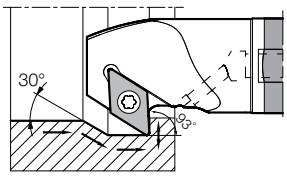


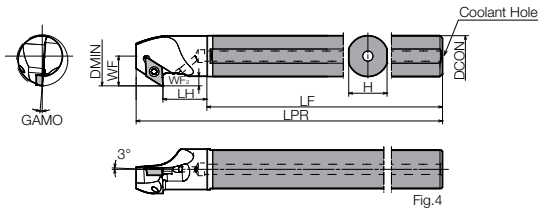
• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

E-SDZC-A Carbide Shank Bar (Back Boring)

(Max. Overhang Length **L/D = ~7**)





Shank Dia. DCON	Coolant Hole Dia.
Ø10mm	Ø3mm
Ø12mm	Ø4mm
Ø16mm	Ø4mm
Ø20mm	Ø6mm

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

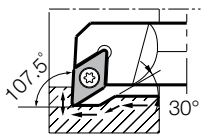
	Part Number	Stock R	Stock L	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LPR	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A10L-SDZC□07-14AE	●	●	14	10	9	140	130.5	14.0	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A16Q-SDZC□07-14AE	●	●	14	16	15	180	170.0	30.0	10.8	4.4	5°	0.4	Yes	Fig.1	SB-2545TR	FT-8
	A12M-SDZC□07-16AE	●	●	16	12	11	150	139.5	14.0	9.7	3.3	5°	0.4	Yes	Fig.2	SB-2560TR	FT-8
	A16Q-SDZC□07-20AE	●	●	20	16	15	180	169.5	14.0	11.7	3.3	5°					
	A20R-SDZC□11-20AE	●	●	20	20	19	200	185.0	40.0	15.6	6.1	5°	0.4	Yes	Fig.1	SB-4065TR	FT-15
	A16Q-SDZC□11-23AE	●	●	23	16	15	180	165.0	15.0	14.5	6.1	5°	0.4	Yes	Fig.2	SB-4065TR	FT-15
	A20R-SDZC□11-27AE	●	●	27	20	19	200	185.0	15.0	16.5	6.1	5°					
	A25S-SDZC□11-32AE	●	●	32	25	24	250	235.0	15.0	19.0	6.1	5°					
Steel	S10L-SDZC□07-14A	●	●	14	10	9	140	130.5	14.0	8.7	3.3	5°	0.4	No	Fig.4	SB-2545TR	FT-8
	S16Q-SDZC□07-14A	●	●	14	16	15	180	170.0	30.0	10.8	4.4	5°	0.4	No	Fig.3	SB-2545TR	FT-8
	S12M-SDZC□07-16A	●	●	16	12	11	150	139.5	14.0	9.7	3.3	5°	0.4	No	Fig.4	SB-2560TR	FT-8
	S16Q-SDZC□07-20A	●	●	20	16	15	180	169.5	14.0	11.7	3.3	5°					
	S20R-SDZC□11-20A	●	●	20	20	19	200	185.0	40.0	15.6	6.1	5°	0.4	No	Fig.3	SB-4065TR	FT-15
	S16Q-SDZC□11-23A	●	●	23	16	15	180	165.0	15.0	14.5	6.1	5°	0.4	No	Fig.4	SB-4065TR	FT-15
	S20R-SDZC□11-27A	●	●	27	20	19	200	185.0	15.0	16.5	6.1	5°					
	S25S-SDZC□11-32A	●	●	32	25	24	250	235.0	15.0	19.0	6.1	5°					
Carbide	E10N-SDZC□07-14A	●		14	10	9	160	150.5	10.5	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2545TR	FT-8
	E12Q-SDZC□07-16A	●		16	12	11	180	169.5	12.5	9.7	3.3	5°	0.4	Yes	Fig.5	SB-2560TR	FT-8
	E16X-SDZC□07-20A	●		20	16	15	220	209.5	17.5	11.7	3.3	5°					
	E16X-SDZC□11-23A	●		23	16	15	220	205.0	13.0	14.5	6.1	5°	0.4	Yes	Fig.5	SB-4065TR	FT-15
	E20S-SDZC□11-27A	●		27	20	19	250	235.0	17.0	16.5	6.1	5°					

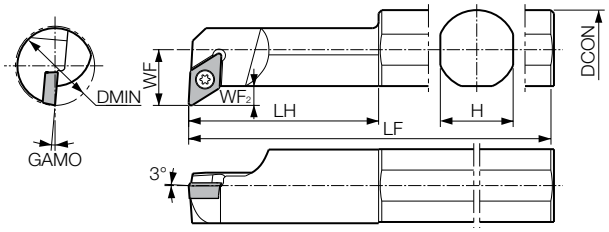
Applicable Inserts ➔ **F53**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S-SDUC Steel Bar (Copying)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	**S08M-SDUC□2**	●	●	inch	0.564	0.500	0.480	6.00	1.125	0.346	0.145	5°	1/64	No	SB-2560TR	FT-8
Steel	**S10X-SDUC□2**	●	●	inch	0.564	0.625	0.584	7.00	1.125	0.346	0.145	5°	1/64	No	SB-2560TR	FT-8
Steel	**S12R-SDUC□3**	●	●	inch	0.750	0.750	0.710	8.00	1.500	0.476	0.224	5°	1/32	No	SB-4085TR	FT-15
Steel	**S16X-SDUC□3**	●	●	inch	0.980	1.000	0.945	9.00	2.360	0.693	0.240	5°	1/32	No	SB-4085TR	FT-15

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Roughing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B62	B62	B63	B63	B64	B64	B64	B66, B67	B68, B69	B68
Insert / Toolholder	**CF**	**SKS**	**WP** (Wiper)	**PP**	**GK**	**HQ**	**Standard**	**□-F / -FSF**	**(E/F)□-U**	**F□-USF**
...-SDUC□2	DCGT215..	DCGT215..	DCMX215..	DCMT215..	DCMT215..	DCMT215..	DCGT215..	DC□T215..	DCGT215..	DCET215..
...-SDUC□3	DCGT325..	DCGT325..	DCMX325..	DCMT325..	DCMT325..	DCMT325..	DCMT325.. DCGT325..	DC□T325..	DCGT325..	DCET325..

Application	Low Feed	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B70, B71	B65	B65	B65	B71	B71	B71	B71	C25	C15
Insert / Toolholder	**(E/F)□-J**	**XP**	**XQ**	**MQ**	Without Chipbreaker	**AP**	**□-A3**	**AH**	**PCD**	**CBN**
...-SDUC□2	DCET215..	DCMT215..	-	DCMT215..	DCGW215..	DCGT215..	-	-	DCMT215..	DCMW215..
...-SDUC□3	DC_T325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

When using **WP** chipbreaker, program corrections are required. → **R51**

Recommended Cutting Conditions → **F110-F111**

Applicable Sleeve → **F102-F104**

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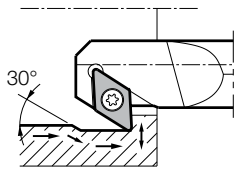
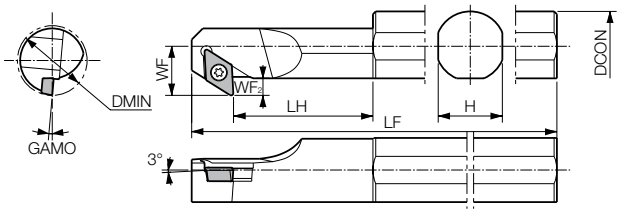
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S-SDZC Steel Bar (Back Boring)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF2	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	**S10Q-SDZC□2**	●		inch	0.550	0.625	0.596	7.00	1.18	0.410	0.173	5°	1/64	No	SB-2560TR	FT-8
Steel	**S10X-SDZC□2**	●	●	inch	0.630	0.625	0.596	7.00	1.52	0.449	0.173	5°	1/64	No	SB-2560TR	FT-8
Steel	**S12R-SDZC□3**	●		inch	0.787	0.750	0.710	8.00	1.60	0.595	0.240	5°	1/32	No	SB-4085TR	FT-15
Steel	**S16X-SDZC□3**	●	●	inch	0.984	1.000	0.960	9.00	2.09	0.693	0.240	5°	1/32	No	SB-4085TR	FT-15

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Roughing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. Page	B62	B62	B63	B63	B64	B64	B64	B66, B67	B68, B69	B68
Insert / Toolholder	**CF**	**SKS**	**WP** (Wiper)	**PP**	**GK**	**HQ**	**Standard**	**□-F / -FSF**	**(E/F)□-U**	**F□-USF**
...-SDZC□2	DCGT215..	DCGT215..	DCMX215..	DCMT215..	DCMT215..	DCMT215..	DCGT215..	DC□T215..	DCGT215..	DCET215..
...-SDZC□3	DCGT325..	DCGT325..	DCMX325..	DCMT325..	DCMT325..	DCMT325..	DCMT325.. DCGT325..	DC□T325..	DCGT325..	DCET325..

Application	Low Feed	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B70, B71	B65	B65	B65	B71	B71	B71	B71	C25	C15
Insert / Toolholder	**(E/F)□-J**	**XP**	**XQ**	**MQ**	**Without Chipbreaker**	**AP**	**□-A3**	**AH**	**PCD**	**CBN**
...-SDZC□2	DCET215..	DCMT215..	-	DCMT215..	DCGW215..	DCGT215..	-	-	DCMT215..	DCMW215..
...-SDZC□3	DC_T325..	DCMT325..	DCMT325..	DCMT325..	DCGW325..	DCGT325..	DCGT325..	DCGT325..	DCMT325..	DCMW325..

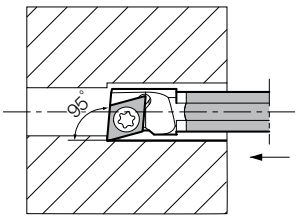
When using **WP** chipbreaker, program corrections are required. R51

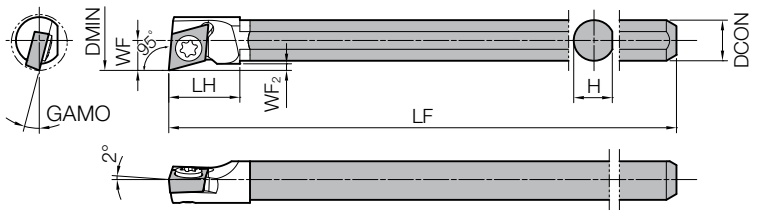
Recommended Cutting Conditions **F110-F111**

Applicable Sleeve **F102-F104**

C-SJLC Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~7**)



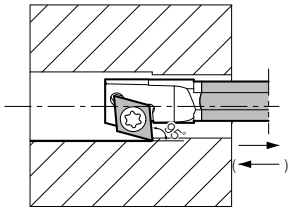


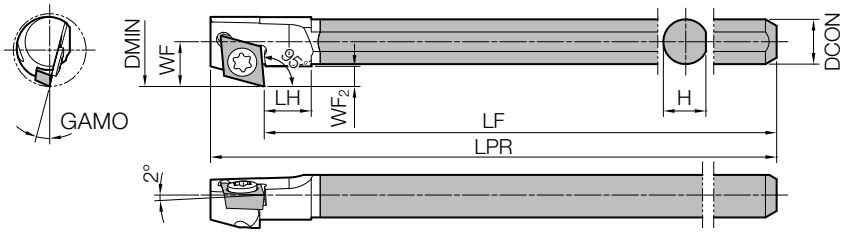
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C-SJZC Carbide Shank Bar (Back Boring)

(Max. Overhang Length **L/D = ~7**)





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

※ When using R-hand Toolholder, Use R-hand insert for machining in this direction (→)
Use L-hand insert for machining in this direction (←)

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)							GAMO	Standard Corner-R (RE)	Spare Parts	
													Clamp Screw	Wrench
	R	L	DMIN	DCON	H	LPR	LF	LH	WF	WF_2				
C04X-SJLCR/L03-055	●	●	5.5	4	3.8	-	91	7	2.95	0.65	15°	0.03	SB-1635TR	FT-6
C04X-SJZCR/L03-065	●	●	6.5	4	3.8	93	88.1	4	4.00	1.80	15°	0.03		

Applicable Inserts

Application	Finishing	Finishing / Precision
Ref. Page	B73	B73
Insert / Toolholder	R/L-F	R/L-FSF
...-SJLCR/L03-...	JCGT1109..	JCET1109..
...-SJZCR/L03-...	JCGT1109..	JCET1109..

Recommended Cutting Conditions → **F110-F111**

Applicable Sleeve → **F101, F103, F104**

Features of C-SJLC

1. Well balanced design minimizing bore diameter yet maintaining a smaller insert radius.
2. High flexibility of tool pass during pecking.
3. Good surface finish at internal facing.

Features of C-SJZC

1. Back boring bars for workpieces which require high concentric circle accuracy and are unavailable for chuck change.
2. Available for back boring and pecking.
3. Large clearance between cutting edge and holder (1.8mm).

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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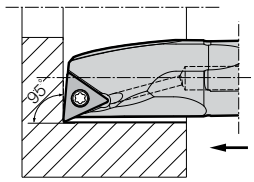
A-STLC-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5.5**)



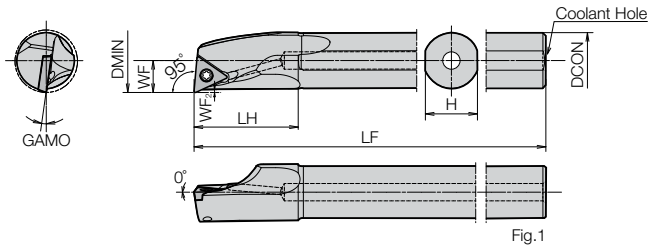


Fig.1

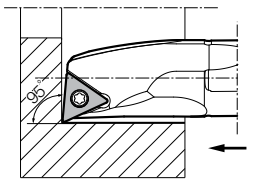
Shank Dia. DCON	Coolant Hole Dia.
Ø8mm	Ø2.5mm
Ø10mm	Ø3.0mm
Ø12mm	Ø4.0mm
Ø16mm	Ø5.0mm
Ø20mm	Ø5.0mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-STLC-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~4**)



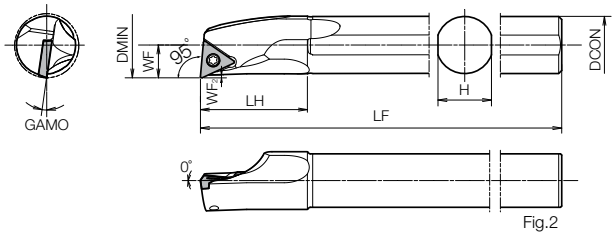


Fig.2

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A08X-STLC□09-10AE	●	●	10	8	7	120	16	5.0	0.5	14°	0.4	Yes	Fig.1	SB-2250TR	FT-7
	A10L-STLC□09-12AE	●	●	12	10	9	140	20	6.2	0.9	12°					
	A10L-STLC□11-12AE	●	●	12	10	9	140	20	6.2	0.9	12°	0.4	Yes	Fig.1	SB-2560TR	FT-8
	A12M-STLC□11-14AE	●	●	14	12	11	150	24	7.2	0.7	10°					
	A16Q-STLC□11-18AE	●	●	18	16	15	180	30	9.2	0.7	8°					
	A20R-STLC□11-22AE	●	●	22	20	19	200	36	11.2	0.7	6°					
Steel	S08X-STLC□09-10A	●	●	10	8	7	120	16	5.0	0.5	14°	0.4	No	Fig.2	SB-2250TR	FT-7
	S10L-STLC□09-12A	●	●	12	10	9	140	20	6.2	0.9	12°					
	S10L-STLC□11-12A	●	●	12	10	9	140	20	6.2	0.9	12°	0.4	No	Fig.2	SB-2560TR	FT-8
	S12M-STLC□11-14A	●	●	14	12	11	150	24	7.2	0.7	10°					
	S16Q-STLC□11-18A	●	●	18	16	15	180	30	9.2	0.7	8°					
	S20R-STLC□11-22A	●	●	22	20	19	200	36	11.2	0.7	6°					

Applicable Insert

Application	Finishing	Finishing-Medium
Ref. Page	B77	B77
Insert / Toolholder	**WP** (Wiper)	**HQ**
...-STLC□09-...	TCMX1815..	TCMT1815..
...-STLC□11-...	TCMX215..	TCMT215..

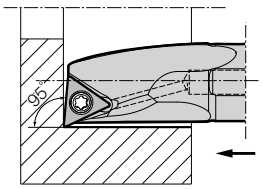
When using **WP** chipbreaker, program corrections are required. **R51**

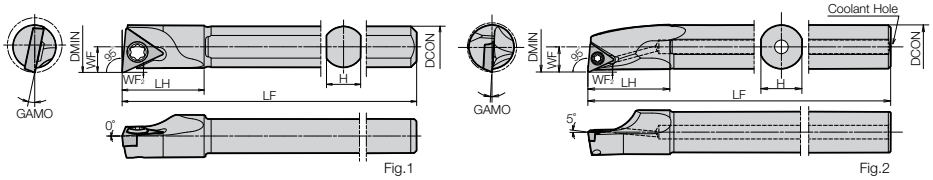
Recommended Cutting Conditions **F110-F111**

Applicable Sleeve **F101-F104**

A/S-STLB(P)-AE Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5.5**)





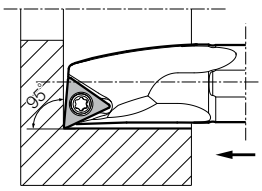
Shank Dia. DCON	Coolant Hole Dia.
Ø0.312" Ø8mm	Ø2.5mm
Ø0.375" Ø10mm	Ø3.0mm
Ø0.500" Ø12mm	Ø4.0mm
Ø0.625" Ø16mm	Ø5.0mm
Ø0.750" Ø20mm	Ø5.0mm
Ø1.000" Ø25mm	Ø5.0mm

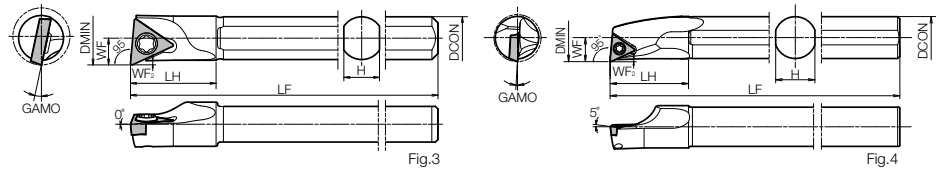
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-STLB(P)-A Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~4**)



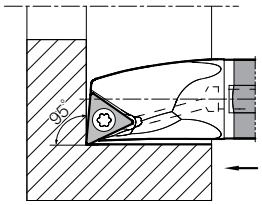


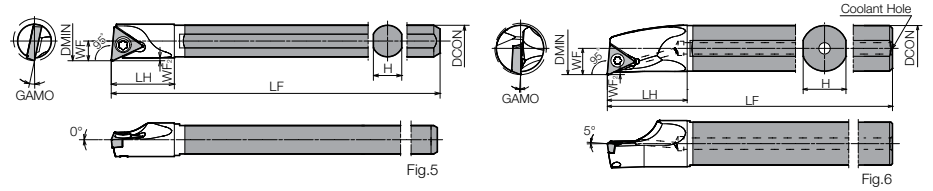
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C/E-STLB(P)-A(N) Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~7**)





Shank Dia. DCON	Coolant Hole Dia.
Ø8mm	Ø3mm
Ø10mm	Ø3mm
Ø12mm	Ø4mm
Ø16mm	Ø4mm
Ø20mm	Ø6mm
Ø25mm	Ø6mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	S04H-STLB□1.2AE	●	●	inch	0.312	0.250	0.211	4	0.472	0.150	0.025	12.0°	0.008	No	Fig.1	SB-2035TR	FT-6
	A05K-STLB□1.2AE	●	●		0.392	0.312	0.273	5	0.630	0.201	0.031	12.0°	0.008	Yes	Fig.2		
	A05K-STLP□1.8AE	●	●		0.392	0.312	0.273	5	0.630	0.197	0.022	10.0°	1/64	Yes	Fig.2	SB-2545TR	FT-8
	A06M-STLP□1.8AE	●	●		0.480	0.375	0.336	6	0.787	0.244	0.036	8.0°					
	A06M-STLP□2AE	●	●		0.480	0.375	0.336	6	0.787	0.236	0.030	10.0°					
	A08M-STLP□2AE	●	●		0.580	0.500	0.461	6	0.945	0.283	0.032	7.0°	1/64	Yes	Fig.2	SB-3060TR	FT-10
	A10R-STLP□2AE	●	●		0.700	0.625	0.586	8	1.181	0.362	0.036	3.5°					
	A12S-STLP□2AE	●	●		0.825	0.750	0.711	10	1.417	0.421	0.031	2°					
	A16T-STLP□3AE	●	●		1.280	1.000	0.961	12	1.811	0.539	0.031	0°	1/64	Yes	Fig.2	SB-4065TR	FT-15
	S06H-STLB□06-08AE	●	●	mm	8	6	5.0	100	12	3.8	0.5	12°	0.2	No	Fig.1	SB-2035TR	FT-6
	A08X-STLP□08-10AE	●	●		10	8	7.0	120	16	5.0	0.5	10°	0.4	Yes	Fig.2	SB-1TR	FT-6
	A08X-STLP□09-10AE	●	●		10	8	7.0	120	16	5.0	0.5	10°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A10L-STLP□09-12AE	●	●		12	10	9.0	140	20	6.2	0.9	8°					
	A10L-STLP□11-12AE	●	●		12	10	9.0	140	20	6.0	0.7	10°	0.4	Yes	Fig.2	SB-3060TR	FT-10
	A12M-STLP□11-14AE	●	●		14	12	11.0	150	24	7.2	0.8	7°					
	A12M-STLP□09-16AE	●	●		16	12	11.0	150	24	8.0	0.6	5°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A16Q-STLP□11-18AE	●	●		18	16	15.0	180	30	9.2	0.7	3.5°	0.4	Yes	Fig.2	SB-3060TR	FT-10
	A20R-STLP□11-22AE	●	●		22	20	19.0	200	36	11.2	0.7	2°					
	A20R-STLP□16-25AE	●	●		25	20	19.0	200	36	13.0	0.7	0°	0.4	Yes	Fig.2	SB-4065TR	FT-15
	A25S-STLP□16-27AE	●	●		27	25	24.0	250	46	13.7	0.7	0°					
Steel	S06H-STLB□06-08A		●	mm	8	6	5.0	100	12	3.8	0.5	12°	0.2	No	Fig.3	SB-2035TR	FT-6
	S08X-STLP□08-10A	●	●		10	8	7.0	120	16	5.0	0.5	10°	0.4	No	Fig.4	SB-1TR	FT-6
	S08X-STLP□09-10A	●	●		10	8	7.0	120	16	5.0	0.5	10°	0.4	No	Fig.4	SB-2545TR	FT-8
	S10L-STLP□09-12A	●	●		12	10	9.0	140	20	6.2	0.9	8°					
	S10L-STLP□11-12A	●	●		12	10	9.0	140	20	6.0	0.7	10°	0.4	No	Fig.4	SB-3060TR	FT-10
	S12M-STLP□11-14A	●	●		14	12	11.0	150	24	7.2	0.8	7°					
	S12M-STLP□09-16A	●	●		16	12	11.0	150	24	8.0	0.6	5°	0.4	No	Fig.4	SB-2545TR	FT-8
	S16Q-STLP□11-18A	●	●		18	16	15.0	180	30	9.2	0.7	3.5°	0.4	No	Fig.4	SB-3060TR	FT-10
	S20R-STLP□11-22A	●	●		22	20	19.0	200	36	11.2	0.7	2°					
	S25S-STLP□16-27A	●	●		27	25	24.0	250	46	13.7	0.7	0°	0.4	No	Fig.4	SB-4065TR	FT-15
Carbide	C06J-STLB□06-08AN	●	●	mm	8	6	5.4	110	10	3.8	0.5	12°	0.2	No	Fig.5	SB-2035TR	FT-6
	E08L-STLP□08-10AN	●	●		10	8	7.0	140	14	5.0	0.5	10°	0.4	Yes	Fig.6	SB-1TR	FT-6
	E08L-STLP□09-10AN	●	●		10	8	7.0	140	14	5.0	0.5	10°					
	E10N-STLP□09-12AN	●	●		12	10	9.0	160	18	6.2	0.9	8°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E10N-STLP□09-12AN-2/3	●			12	10	9.0	105	18	6.2	0.9	8°					
	E10N-STLP□09-12AN-1/2	●			12	10	9.0	80	18	6.2	0.9	8°					
	E10N-STLP□11-12AN	●	●		12	10	9.0	160	18	6.0	0.7	10°					
	E10N-STLP□11-12AN-2/3	●			12	10	9.0	105	18	6.0	0.7	10°					
	E10N-STLP□11-12AN-1/2	●			12	10	9.0	80	18	6.0	0.7	10°					
	E12Q-STLP□11-14A	●	●		14	12	11.0	180	23	7.2	0.8	7°	0.4	Yes	Fig.6	SB-3060TR	FT-10
	E12Q-STLP□11-14A-2/3	●			14	12	11.0	120	23	7.2	0.8	7°					
	E12Q-STLP□11-14A-1/2	●			14	12	11.0	90	23	7.2	0.8	7°					
	E12Q-STLP□09-16A	●	●		16	12	11.0	180	23	8.0	0.6	5°					
	E12Q-STLP□09-16A-2/3	●			16	12	11.0	120	23	8.0	0.6	5°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E12Q-STLP□09-16A-1/2	●			16	12	11.0	90	23	8.0	0.6	5°					
	E16X-STLP□11-18A	●	●		18	16	15.0	220	28	9.2	0.7	3.5°					
	E16X-STLP□11-18A-2/3	●			18	16	15.0	145	28	9.2	0.7	3.5°					
	E16X-STLP□11-18A-1/2	●			18	16	15.0	110	28	9.2	0.7	3.5°	0.4	Yes	Fig.6	SB-3060TR	FT-10
	E20S-STLP□11-22A	●	●		22	20	19.0	250	32	11.2	0.7	2°					
	E20S-STLP□11-22A-2/3	●			22	20	19.0	165	32	11.2	0.7	2°					
	E20S-STLP□11-22A-1/2	●			22	20	19.0	125	32	11.2	0.7	2°					
	E20S-STLP□16-25A	●	●		25	20	19.0	250	32	13.0	0.7	0°					
	E20S-STLP□16-25A-2/3	●			25	20	19.0	165	32	13.0	0.7	0°					
	E20S-STLP□16-25A-1/2	●			25	20	19.0	125	32	13.0	0.7	0°	0.4	Yes	Fig.6	SB-4065TR	FT-15
	E25T-STLP□16-27A	●	●		27	25	24.0	300	38	13.7	0.7	0°					
	E25T-STLP□16-27A-2/3	●			27	25	24.0	200	38	13.7	0.7	0°					

Applicable Inserts ➡ **F62**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Applicable Inserts

Application	Minute D.O.C.	Finishing	※Finishing	※Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision
Ref. Page	B76, B80	B76, B80	B80	B80	B80	B81	B76	B81	B76, B82, B83	B85
Insert / Toolholder	**CF**	**PF**	**WP** (Wiper)	**-WP** (Wiper)	**PP**	**GP**	**DP**	**HQ**	****	**-FSF**
...-STLB 1.2... ...-STLB 06-...	TBGT121..	TBGT121..	-	-	-	-	TBMT121..	-	TBGT121..	-
...-STLP 08-...	TPGT1515..	-	-	-	-	-	-	-	TPGH1515..	TPET1515..
...-STLP 1.8... ...-STLP 09-...	TPGT1815..	TPGT1815..	TPMX1815..	-	TPMT1815..	TPMT1815..	-	TPMT1815..	TPGH1815..	-
...-STLP 2... ...-STLP 11-...	-	-	TPMX22..	TPMX22..	TPMT22..	TPMT22..	-	TPMT22..	TPGH22..	TPET22..
...-STLP 16-...	-	-	-	-	-	TPMT32..	-	TPMT32..	TPGH32..	-

Application	※Finishing	Medium	Low Feed / Precision	Low Carbon Steel/ Finishing	Low Carbon Steel / Finishing-Medium	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B85	B84	B86	B81	B81	B76, B86	B86	C26~C28	C28	C16
Insert / Toolholder	**-P**	**-H**	**-USF**	**XP**	**XQ**	Without Chipbreaker	**AP**	**PCD**	**APD**	**CBN**
...-STLB 1.2... ...-STLB 06-...	-	-	-	-	-	TBGW121..	-	TBMT121.. TBGW121..	-	-
...-STLP 08-...	TPEH1515..	-	TPET1515..	-	-	TPGB1515..	-	TPMH1515.. TPGB1515..	-	TPGB1515..
...-STLP 1.8... ...-STLP 09-...	TPEH1815..	TPGH1815..	-	TPMT1815..	-	TPGB1815..	-	TPMH1815.. TPGB1815..	-	TPGB1815..
...-STLP 2... ...-STLP 11-...	TPEH22..	TPGH22..	TPET22..	TPMT22..	TPMT22..	TPGB22..	TPGT22..	TPMH22.. TPGB22..	TPMT22..	TPGB22..
...-STLP 16-...	-	TPGH32..	-	TPMT32..	TPMT32..	TPGB32..	-	TPMH32.. TPGB32..	-	TPGB32..

※For P chipbreaker inserts, **Left-hand** Insert for **Left-hand** Toolholder, **Right-hand Insert** for **Right-hand** Toolholder

※When using **WP** chipbreaker, program corrections are required. R51

Recommended Cutting Conditions **F110-F111**

Applicable Toolholders **F61**

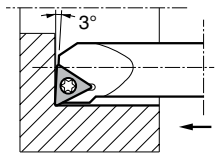
Applicable Sleeve **F101-F104**

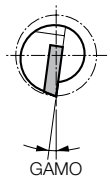
800.823.7284

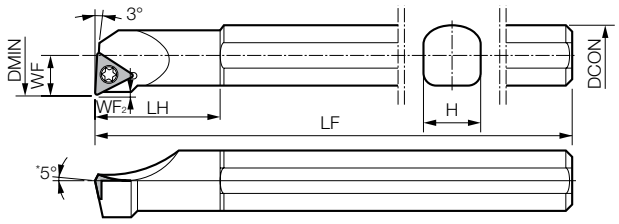
Visit us online at KyoceraPrecisionTools.com

S-STUP(B) Steel Bar (Boring)

(Max. Overhang Length **L/D = ~3**)







• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	**S04H-STUBR/L1.2**	●	□	inch	0.312	0.250	0.224	4.00	0.50	0.148	0.023	12°	1/64	No	SB-1STR	FT-6
	S05K-STUPR/L1.5	●	□		0.392	0.313	0.270	5.00	0.75	0.196	0.020	13°	1/64	No	SB-1TR	FT-6
	S06M-STUPR/L1.8	●	●		0.472	0.375	0.356	6.00	1.01	0.236	0.015	13°	1/64	No	SB-2TR	FT-8
	S08M-STUPR/L1.8	●	□		0.630	0.500	0.480	6.00	1.18	0.315	0.090	10°				
	S10X-STUPR/L2	●	●		0.787	0.625	0.584	7.00	1.38	0.394	0.100	7°	1/64	No	SB-3TR	FT-10
	S12R-STUPR/L2	●	●		0.912	0.750	0.710	8.00	1.58	0.456	0.115	5°				

Applicable Inserts

Application	Minute D.O.C.	Finishing	※Finishing	※Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision
Ref. Page	B76, B80	B76, B80	B80	B80	B80	B81	B76	B81	B76, B82, B83	B85
Insert / Toolholder	**CF**	**PF**	**WP** (Wiper)	**R/L-WP** (Wiper)	**PP**	**GP**	**DP**	**HQ**	**R/L**	**R/L-FSF**
...-STUBR/L1.2...	TBGT121..	TBGT121..	-	-	-	-	TBMT121..	-	TBGT121..	-
...-STUPR/L1.5-...	TPGT1515..	-	-	-	-	-	-	-	TPGH1515..	TPET1515..
...-STUPR/L1.8-...	TPGT1815..	TPGT1815..	TPMX1815..	-	TPMT1815..	TPMT1815..	-	TPMT1815..	TPGH1815..	-
...-STUPR/L2-...	-	-	TPMX22..	TPMX22..	TPMT22..	TPMT22..	-	TPMT22..	TPGH22..	TPET22..

Application	※Finishing	Medium	Low Feed / Precision	Low Carbon Steel/ Finishing	Low Carbon Steel / Finishing-Medium	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B85	B84	B86	B81	B81	B76, B86	B86	C26~C28	C28	C16
Insert / Toolholder	**R/L-P**	**R/L-H**	**FR/L-USF**	**XP**	**XQ**	Without Chipbreaker	**AP**	**PCD**	**APD**	**CBN**
...-STUBR/L1.2...	-	-	-	-	-	TBGW121..	-	TBMT121.. TBGW121..	-	-
...-STUPR/L1.5-...	-	-	TPET1515..	-	-	TPGB1515..	-	TPMH1515.. TPGB1515..	-	TPGB1515..
...-STUPR/L1.8-...	TPEH1815..	TPGH1815..	-	TPMT1815..	-	TPGB1815..	-	TPMH1815.. TPGB1815..	-	TPGB1815..
...-STUPR/L2-...	TPEH22..	TPGH22..	TPET22..	TPMT22..	TPMT22..	TPGB22..	TPGT22..	TPMH22.. TPGB22..	TPMT22..	TPGB22..

※For P chipbreaker inserts, **Left-hand** Insert for **Left-hand** Toolholder, **Right-hand Insert** for **Right-hand** Toolholder

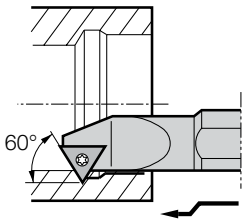
※When using **WP** chipbreaker, program corrections are required. → R51

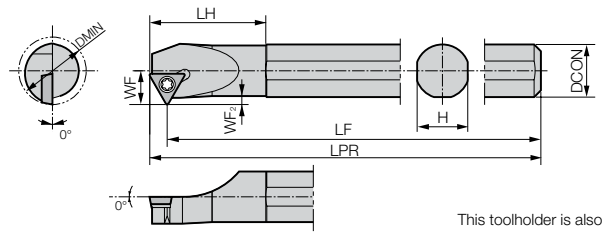
Recommended Cutting Conditions → **F110-F111**

Applicable Sleeve → **F101-F104**

S-STWP-E Excellent Bar (Copying)

(Max. Overhang Length **L/D = ~5**





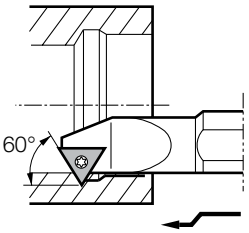
This toolholder is also available for threading. (➡ **J37**)

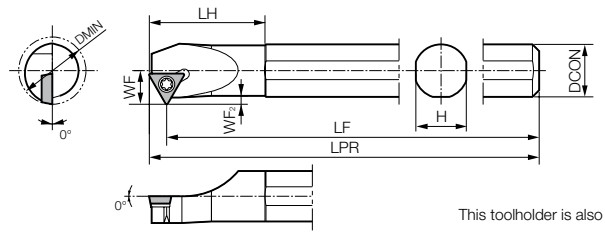
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-STWP Steel Bar (Copying)

(Max. Overhang Length **L/D = ~3**)



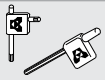


This toolholder is also available for threading. (➡ **J37**)

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions							GAMO	Standard Corner-R (RE)	Spare Parts	
														Clamp Screw	Wrench
	R	L		DMIN	DCON	H	LPR	LF	LH	WF	WF_2				
S06M-STWP□2	●		inch	0.476	0.375	0.350	6.00	5.795	0.91	0.238	0.056	0°	1/64	SB-3STR	FT-10
S08M-STWP□2	●			0.630	0.500	0.476	6.00	5.795	1.20	0.315	0.070	0°			
S10X-STWP□2	●			0.786	0.625	0.600	7.00	6.795	1.40	0.393	0.086	0°			
S12R-STWP□2	●			0.970	0.750	0.726	8.00	7.795	1.60	0.485	0.115	0°			
S16R-STWP□2	●			1.240	1.000	0.974	8.00	7.795	2.00	0.620	0.125	0°			
S10M-STWP□11-12E	●	●	mm	12	10	9.2	150	144.5	23	6.0	1.0	0°	0.1	SB-3STR	FT-10
S12M-STWP□11-16E	●	●		16	12	11.0	150	144.5	30	8.0	1.5	0°			
S16R-STWP□11-20E	●	●		20	16	15.0	200	194.5	35	10.0	2.0	0°	0.1	SB-3TR	FT-10
S20X-STWP□11-25E	●	●		25	20	19.0	220	214.5	40	12.5	2.5	0°			
S20X-STWP□16-25E	●	●		25	20	19.0	220	212.3	40	14.0	4.0	0°	0.8	SB-4TR	FT-15
S25X-STWP□16-32E	●	●		32	25	23.0	270	262.3	42	16.5	4.0	0°			
S10M-STWP□11-12	●			12	10	9.2	150	144.5	23	6.0	1.0	0°	0.1	SB-3STR	FT-10
S12M-STWP□11-16	●			16	12	11.0	150	144.5	30	8.0	1.5	0°			
S16Q-STWP□11-20	●			20	16	15.0	180	174.5	35	10.0	2.0	0°	0.1	SB-3TR	FT-10
S20R-STWP□11-25	●			25	20	19.0	200	194.5	40	12.5	2.5	0°			

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Medium	Low Feed / Precision	Low Carbon Steel / Finishing	Low Carbon Steel / Finishing-Medium
Ref. Page	➡ B80	➡ B81	➡ B81	➡ B82, B83	➡ B85	➡ B84	➡ B86	➡ B81	➡ B81
Insert / Toolholder	PP	GP	HQ	□	□-FSF	□-H	F□-USF	XP	XQ
...-STWP□2 **...-STWP□11-12(E)**	-	-	-	TPGH215..	-	-	-	-	-
...-STWP□11-16~25(E)	TPMT22..	TPMT22..	TPMT22..	TPGH22..	TPET22..	TPGH22..	TPET22..	TPMT22..	TPMT22..
...-STWP□16-...	-	TPMT32..	TPMT32..	TPGH32..	-	TPGH32..	-	TPMT32..	TPMT32..

Application	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	➡ B86	➡ B86	➡ C26~C28	➡ C28	➡ C16
Insert / Toolholder	Without Chipbreaker	AP	PCD	APD	CBN
...-STWP□2 **...-STWP□11-12(E)**	TPGB215..	-	-	-	-
...-STWP□11-16~25(E)	TPGB22..	TPGT22..	TPMH22.. TPGB22..	TPGB22..	TPGB22..
...-STWP□16-...	TPGB32..	-	TPMH32.. TPGB32..	-	TPGB32..

※ **TPMX-WP insert will not fit in S-STWP-E and S-STWP type holders.**

Recommended Cutting Conditions ➡ **F110-111**

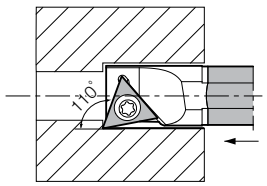
Applicable Sleeve ➡ **F102-F104**

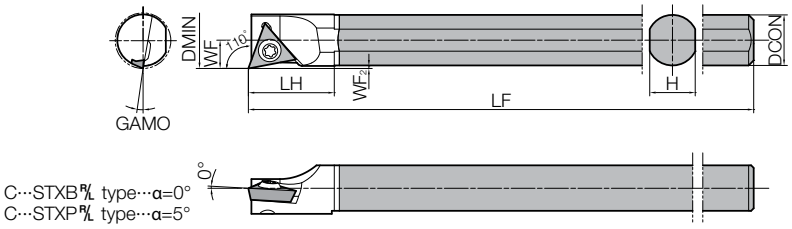
(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

C-STXP(B) Carbide Shank Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~7**)



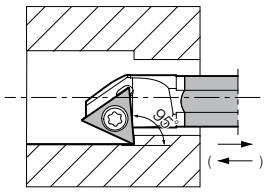


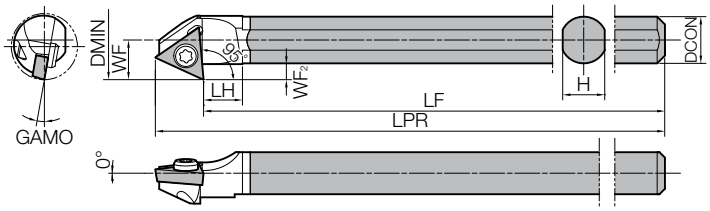
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C-STZB Carbide Shank Bar (Back Boring)

(Max. Overhang Length **L/D = ~7**)





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

※ When using R-hand Toolholder, Use R-hand insert for machining in this direction (→)
Use L-hand insert for machining in this direction (←)

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)							GAMO	Standard Corner-R (RE)	Spare Parts	
													Clamp Screw	Wrench
	R	L	DMIN	DCON	H	LPR	LF	LH	WF	WF_2				
C06J-STXBR/L 06-075	●	●	7.5	6	5.4	-	110	11	3.75	0.5	10°	0.03	SB-1STR	FT-6
C08X-STXPR/L 08-09	●	●	9.0	8	7.0	-	143	14	4.60	0.5	10°	0.03	SB-1TR	
C10X-STXPR/L 09-11	●	●	11.0	10	9.0	-	164	17	5.60	0.5	10°	0.03	SB-2TR	FT-8
C06J-STZBR/L 06-085	●		8.5	6	5.4	110	104.3	5	5.10	2.0	10°	0.03	SB-1STR	FT-6

Applicable Inserts

Application	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Low Carbon Steel / Finishing
Ref. Page	B76, B80	B80	B81	B76	B81	B76, B82, B83	B85	B86	B81
Insert / Toolholder	CF	PP	GP	DP	HQ	R/L	R/L-FSF	FR/L-USF	XP
...-STXBR/L 06-...	TBGT121..	-	-	TBMT121..	-	TBGT121..	-	-	-
...-STXPR/L 08-...	TPGT1515..	-	-	-	-	TPGH1515..	TPET1515..	TPET1515..	-
...-STXPR/L 09-...	TPGT1815..	TPMT1815..	TPMT1815..	-	TPMT1815..	TPGH1815..	-	-	TPMT1815..
...-STZBR/L 06-...	TBGT121..	-	-	TBMT121..	-	TBGT121..	-	-	-

Application	Cast Iron	Non-ferrous Metals	Hardened Materials
Ref. Page	B76, B86	C26~C28	C16
Insert / Toolholder	Without Chipbreaker	PCD	CBN
...-STXBR/L 06-...	TBGW121..	TBMT121..	-
...-STXPR/L 08-...	TPGB1515..	TPMH1515.. TPGB1515..	TPGB1515..
...-STXPR/L 09-...	TPGB1815..	TPMH1815.. TPGB1815..	TPGB1815..
...-STZBR/L 06-...	TBGW121..	TBMT121..	-

※ **TPMX-WP insert will not fit in C-STXP type holders.**

Recommended Cutting Conditions → **F110-111**

Applicable Sleeve → **F101-F104**

C...STXP(B) Type Boring Bar Cutting Conditions

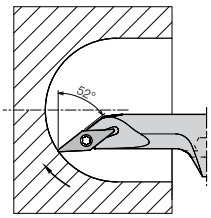
Toolholder Part Number	Insert Part Number (Grades)	Vc : sfm	D.O.C.	f (ipr)	Coolant
C06J-STXBR/L 06-075	TBGT0601003 L/R (PR930)	100~330	0.0008~0.0039	0.0008~0.0016	Yes
C08X-STXPR/L 08-09	TPGH080201 L/R (PR930)	100~330	0.0020~0.0059	0.0012~0.0031	Yes
C10X-STXPR/L 09-11	TPGH090201 L/R (PR930)	100~330	0.0020~0.0059	0.0012~0.0031	Yes

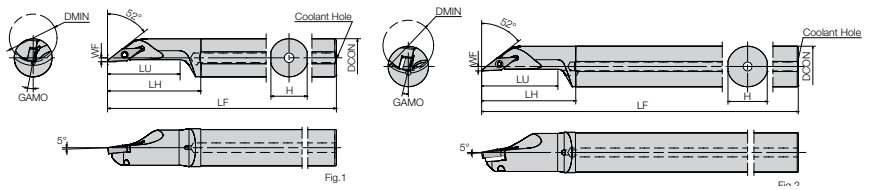
(Workpiece Material: Alloy Steel)

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

A-SVJP(C)(B)-AE Excellent Bar (Internal Spherical Machining / Internal Facing / Copying)

(Max. Overhang Length **L/D = ~5.5**)





Shank Dia. DCON	Coolant Hole Dia.
Ø12mm	Ø4mm
Ø16mm	Ø4mm
Ø0.750" Ø20mm	Ø5mm
Ø1.000" Ø25mm	Ø5mm
Ø32mm	Ø7mm
Ø40mm	Ø9mm

* No shim for SVJP(C)R/L08 or SVJBR/L11.

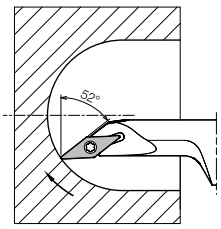
Please see ➔ **F67 for Cutting Instructions**

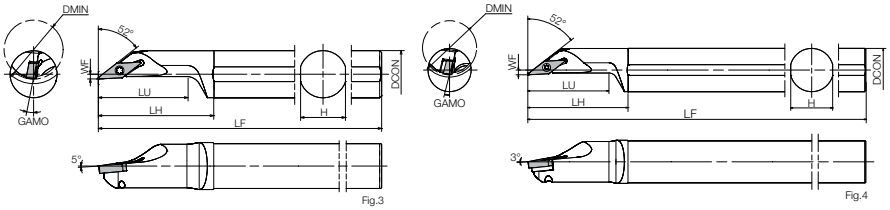
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SVJP(C)(B)-A Steel Bar (Internal Spherical Machining / Internal Facing / Copying)

(Max. Overhang Length **L/D = ~4**)





* No shim for SVJP(C)R/L08 / SVJBR/L11.

Please see ➔ **F67 for Cutting Instructions**

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LU	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	**A12S-SVJBR/L2AE**	●	●	inch	0.984	0.750	0.711	10	1.476	-	0.079	5°	1/64	Yes	Fig.1	SB-2050TR	FT-6
	A16T-SVJBR/L2AE	●	●		1.180	1.000	0.961	12	1.772	-	0.138	5°					
	A12M-SVJPR/L08-16AE	●	●	mm	16	12	11	150	26	33	2.0	5°	0.2	Yes	Fig.1	SB-2050TR	FT-6
	A12M-SVJCR/L08-16AE	●	●		16	12	11	150	26	33	2.0	5°	0.4	Yes	Fig.1	SB-2050TR	FT-6
	A16Q-SVJCR/L08-20AE	●	●		20	16	15	180	36	43	2.0	5°					
	A20R-SVJBR/L11-25AE	●	●		25	20	19	200	37.5	48	2.0	5°	0.4	Yes	Fig.1	SB-2570TR	FT-8
	A25S-SVJBR/L11-30AE	●	●		30	25	24	250	45	58	3.5	5°					
	A32S-SVJBR/L16-40AE	●	●		40	32	31	250	60	74	3.5	8°	0.4	Yes	Fig.2	SB-40125TRN	FT-15
	A40T-SVJBR/L16-50AE	●	●		50	40	39	300	75	91	4.5	7°					
Steel Bar	**S12M-SVJPR/L08-16A**	●	●	mm	16	12	11	150	26	33	2.0	5°	0.2	No	Fig.3	SB-2050TR	FT-6
	S12M-SVJCR/L08-16A	●	●		16	12	11	150	26	33	2.0	5°	0.4	No	Fig.3	SB-2050TR	FT-6
	S16Q-SVJCR/L08-20A	●	●		20	16	15	180	36	43	2.0	5°					
	S20R-SVJBR/L11-25A	●	●		25	20	19	200	37.5	48	2.0	5°	0.4	No	Fig.3	SB-2570TR	FT-8
	S25S-SVJBR/L11-30A	●	●		30	25	24	250	45	58	3.5	5°					
	S32S-SVJBR/L16-40A	●	●		40	32	31	250	60	74	3.5	8°	0.4	No	Fig.4	SB-40125TRN	FT-15
	S40T-SVJBR/L16-50A	●	●		50	40	39	300	75	91	4.5	7°	0.4	No	Fig.4	SB-40125TRN	FT-15

Applicable Inserts

Application	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Non-ferrous Metals	Non-ferrous Metals
Ref. Page	➔ B94	➔ B89, B92	➔ B89, B92	➔ B89	➔ B89, B92	➔ B90	➔ B89, B95	➔ B96	➔ B93	➔ B93
Insert / Toolholder	**CK**	**VF**	**PP**	**GP**	**HQ**	**R/L-F**	**R/L-FSF**	**FR/L-USF**	**AP**	**R/L-A3**
...-SVJPR/L08-...	VPGT1515..	-	-	-	-	-	VPET1515..	VPET1515..	-	-
...-SVJCR/L08-...	-	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	-	-
...-SVJBR/L2AE ...-SVJBR/L11-...	-	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	-	-	-
...-SVJBR/L16-...	-	VBMT33..	VBMT33..	VBMT33..	VBMT33..	-	-	-	VCGT33..	VCGT33..

Application	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	➔ B93	➔ C28	➔ C17
Insert / Toolholder	**AH**	**PCD**	**CBN**
...-SVJPR/L08-...	-	-	-
...-SVJCR/L08-...	-	VCMT1515..	VCGW1515..
...-SVJBR/L2AE ...-SVJBR/L11-...	-	VBMT22..	VBGW22..
...-SVJBR/L16-...	VCGT33..	VBMT33..	VBGW33..

* Use of VBGT1103..-Y / VBGT1604..-Y with A-SVJB-AE / S-SVJB-A is not recommended.

Spare Parts (See ➔ P27 for spare parts of old products.)

Part Number	Spare Parts: Shim	Spare Parts: Shim Screw	Spare Parts: Wrench (for Shim Screw)
□32S-SVJBR/L16-40A□	SVN-32N *(SVN-32S)	SS-4N	LW-4
□40T-SVJBR/L16-50A□			

* Insert with Corner-R (RE) of 0.008" or 1/64", shim in parentheses ( ) is recommended (sold separately)

Recommended Cutting Conditions ➔ **F110-F111**

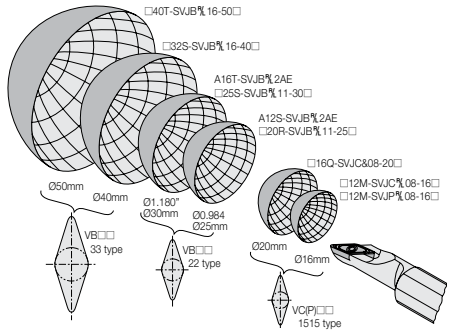
Applicable Sleeve ➔ **F102-F104**

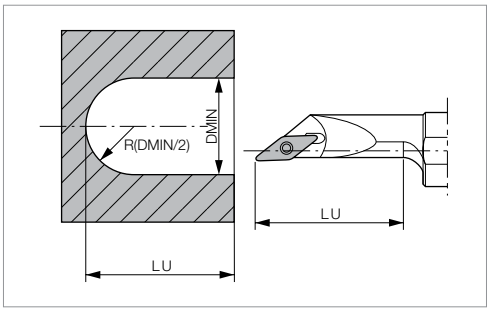
● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

A...SVJP(C)-○, S...SVJP(C)-○ Excellent Bar (Internal Spherical Machining / Internal Facing)

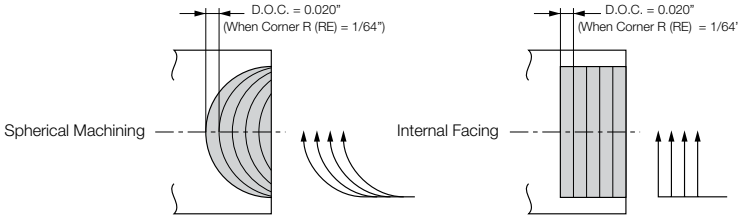
1. Application Range





2. Machining Method

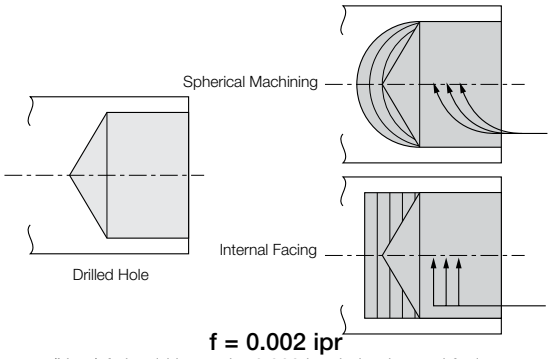
In Cases with No Existing Hole



f = 0.002 ipr

(Note) f should be under 0.002 ipr during internal facing

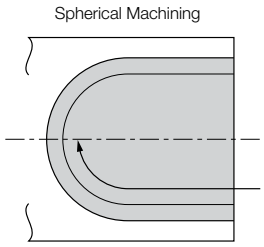
In Cases with Drilled Hole

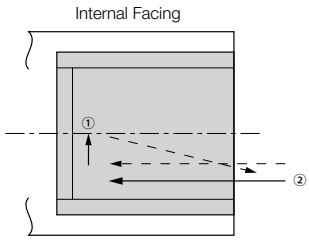


f = 0.002 ipr

(Note) f should be under 0.002 ipr during internal facing

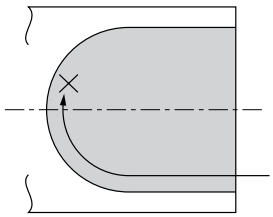
Finishing



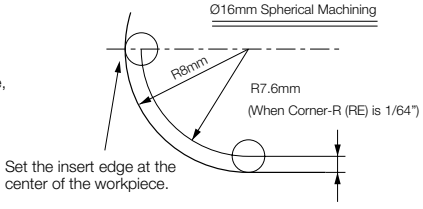


Machining Process
1. First, finish the internal face.
2. Next, finish the internal diameter.

3. Caution

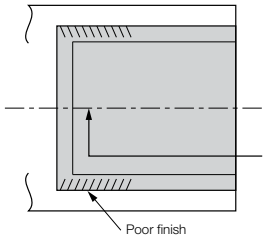


When machining past the center of the workpiece, insert breakage may occur.



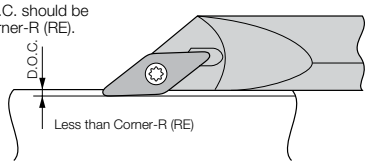
Set the insert edge at the center of the workpiece.

Adjust the machining program radius to a smaller Corner-R (RE) value.



Machining of this kind is available, but the oblique part may be scratched by chips.

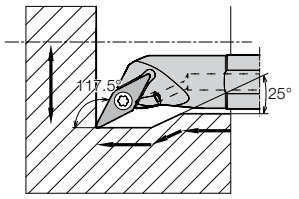
For internal profiling, D.O.C. should be less than the value of Corner-R (RE).



[Burrs may occur, if D.O.C. is bigger than Corner-R (RE)]

A-SVP(C)(B)-AE Excellent Bar (Copying / Undercutting)

(Max. Overhang Length **L/D = ~5.5**)



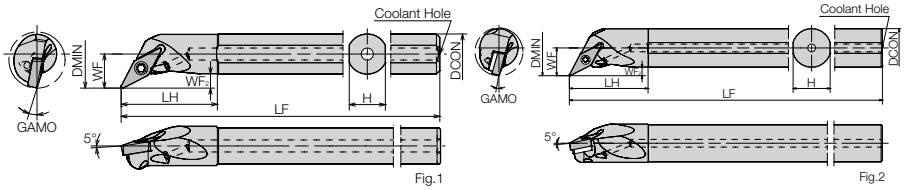


Fig.1 Fig.2

* No shim for SVPC□08 or SVPB□11.

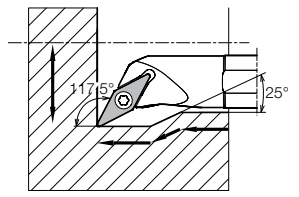
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Shank Dia. DCON	Coolant Hole Dia.
Ø0.375" Ø10mm	Ø3mm
Ø0.500" Ø12mm	Ø4mm
Ø0.625" Ø16mm	Ø5mm
Ø0.750" Ø20mm	Ø5mm
Ø1.000" Ø25mm	Ø5mm
Ø32mm	Ø5mm

S-SVP(C)(B)-A Steel Bar (Copying / Undercutting)

(Max. Overhang Length **L/D = ~4**)



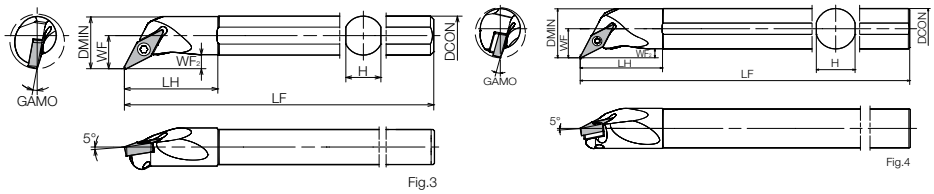


Fig.3 Fig.4

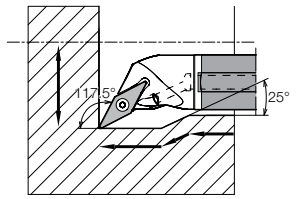
* No shim for SVPC□08 or SVPB□11.

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SVP(C)(B)-A Carbide Shank Bar (Copying / Undercutting)

(Max. Overhang Length **L/D = ~7**)



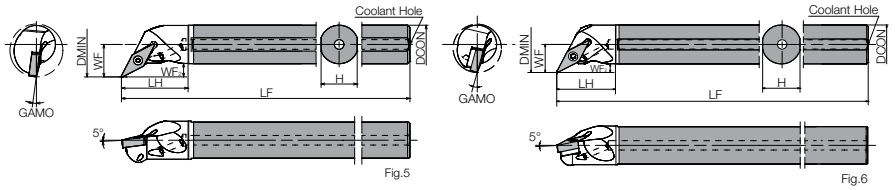


Fig.5 Fig.6

* No shim for SVPC□08 or SVPB□11.

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Shank Dia. DCON	Coolant Hole Dia.
Ø10mm	Ø3mm
Ø12mm	Ø4mm
Ø16mm	Ø4mm
Ø20mm	Ø6mm
Ø25mm	Ø6mm

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	**A06M-SVPC□1.5AE**	●	●	inch	0.630	0.375	0.336	6	0.945	0.335	0.118	8°	1/64	Yes	Fig.1	SB-2570TR	FT-8
	A08M-SVPB□2AE	●	●		0.790	0.500	0.461	6	1.142	0.433	0.177	8°					
	A10R-SVPB□2AE	●	●		0.980	0.625	0.586	8	1.378	0.531	0.197	5°					
	A12S-SVPB□2AE	●	●		1.180	0.750	0.711	10	1.575	0.610	0.197	5°					
	A16T-SVPB□3AE	●	●		1.240	1.000	0.961	12	2.008	0.709	0.197	13°	1/64	Yes	Fig.2	SB-40125TRN	FT-15
	A10L-SVPC□08-14AE	●	●	mm	14	10	9	140	24	8.5	3.0	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6
	A12M-SVPB□11-18AE	●	●		18	12	11	150	29	11.0	4.5	8°	0.4	Yes	Fig.1	SB-2570TR	FT-8
	A16Q-SVPB□11-22AE	●	●		22	16	15	180	35	13.5	5.0	5°					
	A20R-SVPB□11-26AE	●	●		26	20	19	200	41	15.5	5.0	5°					
	A25S-SVPB□16-31AE	●	●		31	25	24	250	51	18.0	5.0	13°	0.4	Yes	Fig.2	SB-40125TRN	FT-15
	A32S-SVPB□16-40AE	●	●		40	32	31	250	54	23.0	6.5	9°					
Steel	**S10L-SVPC□08-14A**	●	●	mm	14	10	9	140	24	8.5	3.0	8°	0.4	No	Fig.3	SB-2050TR	FT-6
	S12M-SVPB□11-18A	●	●		18	12	11	150	29	11.0	4.5	8°	0.4	No	Fig.3	SB-2570TR	FT-8
	S16Q-SVPB□11-22A	●	●		22	16	15	180	35	13.5	5.0	5°					
	S20R-SVPB□11-26A	●	●		26	20	19	200	41	15.5	5.0	5°					
	S25S-SVPB□16-31A	●	●		31	25	24	250	51	18.0	5.0	13°	0.4	No	Fig.4	SB-40125TRN	FT-15
	S32S-SVPB□16-40A	●	●		40	32	31	250	54	23.0	6.5	9°					
Carbide	**E10N-SVPC□08-14A**	●		mm	14	10	9	160	20	8.5	3.0	8°	0.4	Yes	Fig.5	SB-2050TR	FT-6
	E12Q-SVPB□11-18A	●			18	12	11	180	23	11.0	4.5	8°	0.4	Yes	Fig.5	SB-2570TR	FT-8
	E16X-SVPB□11-22A	●			22	16	15	220	28	13.5	5.0	5°					
	E20S-SVPB□11-26A	●			26	20	19	250	32	15.5	5.0	5°					
	E25T-SVPB□16-31A	●			31	25	24	300	38	18.0	5.0	13°	0.4	Yes	Fig.6	SB-40125TRN	FT-15

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
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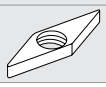
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Spare Parts (See P27 for spare parts of old products.)

Part Number	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
			
□25□-SVPB□16-31A□	SVN-32N *(SVN-32S)	SS-4N	LW-4
□32S-SVPB□16-40A□			
A16T-SVPB□3AE			

* Insert with Corner-R (RE) of 0.008" or 1/64", shim in parentheses ( ) is recommended (sold separately)

Applicable Inserts

Application	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. Page	-	B89, B92	B89, B92	B89	B89, B92	B90	B89	B90, B91	-	B93
Insert / Toolholder	CK	VF	PP	GP	HQ	□-F	□-FSF	□-Y	F□-USF	AP
...-SVPC□1.5AE ...-SVPC□08-...	-	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	-	-
...-SVPB□2AE... ...-SVPB□11-...	-	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-
...-SVPB□3AE ...-SVPB□16-...	-	VBMT33..	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	-	VCGT33..

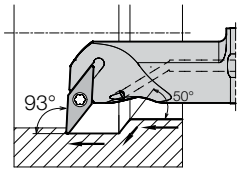
Application	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B93	B93	C28	C17
Insert / Toolholder	□-A3	AH	PCD	CBN
...-SVPC□1.5AE... ...-SVPC□08-...	-	-	VCMT1515..	VCGW1515..
...-SVPB□2AE... ...-SVPB□11-...	-	-	VBMT22..	VBGW22..
...-SVPB□3AE ...-SVPB□16-...	VCGT33..	VCGT33..	VBMT33..	VBGW33..

Recommended Cutting Conditions F110-F111

Applicable Sleeve F102-F104

A-SVUC(B)-AE Excellent Bar (Copying)

(Max. Overhang Length **L/D = ~5.5**)



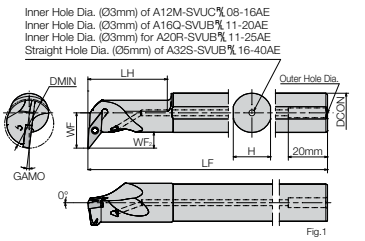


Fig.1

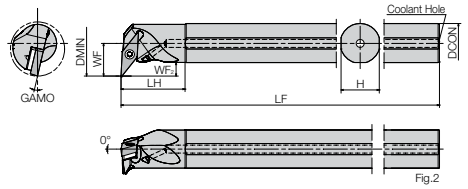


Fig.2

Shank Dia. DCON	Outer Hole Dia.	Coolant Hole Dia.
Ø0.500" Ø12mm	Ø4mm	-
Ø0.625" Ø16mm	Ø5mm	-
Ø0.750" Ø20mm	Ø5mm	-
Ø1.000" Ø25mm	-	Ø5mm
Ø32mm	-	Ø5mm

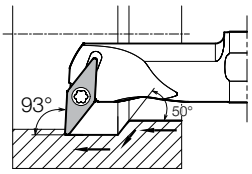
* No shim for SVUC□08 / SVUB□11.

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SVUC(B)-A Steel Bar (Copying)

(Max. Overhang Length **L/D = ~4**)



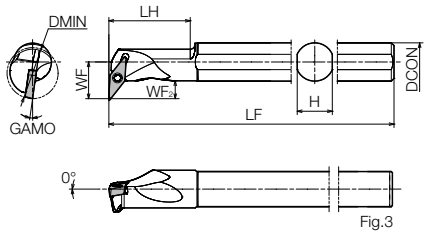


Fig.3

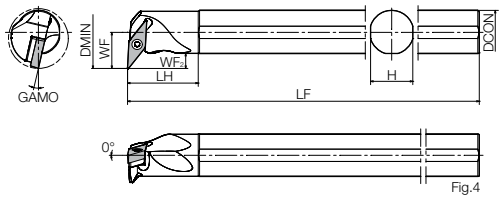


Fig.4

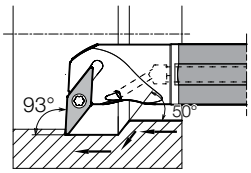
* No shim for SVUC□08 / SVUB□11.

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

E-SVUC(B)-A Carbide Shank Bar (Copying)

(Max. Overhang Length **L/D = ~7**)



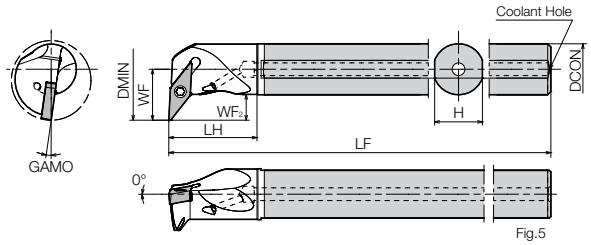


Fig.5

Shank Dia. DCON	Coolant Hole Dia.
Ø12mm	Ø4mm
Ø16mm	Ø4mm
Ø20mm	Ø6mm
Ø25mm	Ø6mm

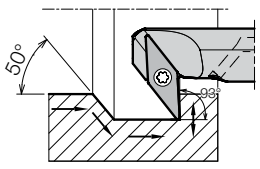
* Shim is attached only for SVUBR16

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

A-SVZC(B)-AE Excellent Bar (Back Boring)

(Max. Overhang Length **L/D = ~5.5**)



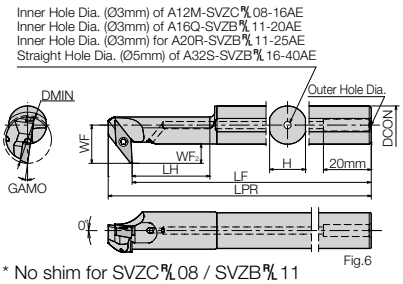


Fig.6

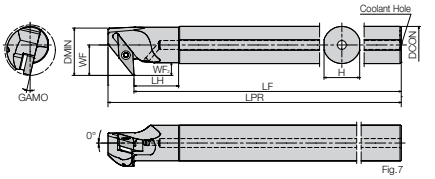


Fig.7

Shank Dia. DCON	Outer Hole Dia.	Coolant Hole Dia.
Ø12mm	Ø4mm	-
Ø16mm	Ø5mm	-
Ø20mm	Ø5mm	-
Ø25mm	-	Ø5mm
Ø32mm	-	Ø5mm

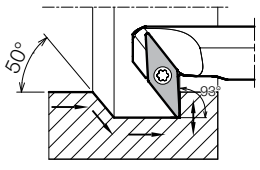
* No shim for SVZC□08 / SVZB□11

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

S-SVZC(B)-A Steel Bar (Back Boring)

(Max. Overhang Length **L/D = ~4**)



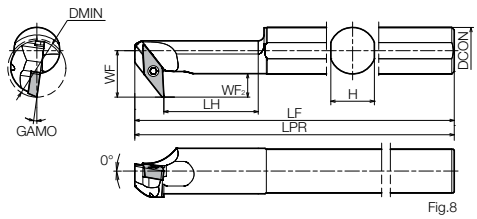


Fig.8

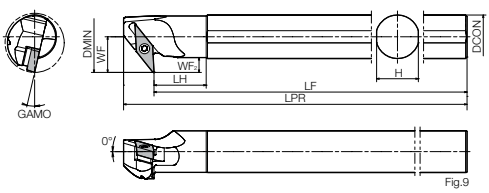


Fig.9

* No shim for SVZC□08 / SVZB□11

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LPR	LF	LH	WF	WF2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A08M-SVUC□1.5AE	●	●	inch	0.630	0.500	0.461	-	6	1.004	0.453	0.217	8°	1/64	Yes	Fig.1	SB-2050TR	FT-6
	A10R-SVUB□2AE	●	●		0.790	0.625	0.586	-	8	1.280	0.630	0.315	8°	1/64	Yes	Fig.1	SB-2570TR	FT-8
	A12S-SVUB□2AE	●	●		0.980	0.750	0.711	-	10	1.595	0.709	0.315	7°					
	A16T-SVUB□3AE	●	●		1.340	1.000	0.961	-	12	1.583	0.807	0.335	13°	1/64	Yes	Fig.2	SB-40125TRN	FT-15
	A12M-SVUC□08-16AE	●	●	mm	16	12	11	-	150	25.5	11.5	5.5	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6
	A16Q-SVUB□11-20AE	●	●		20	16	15	-	180	32.5	16.0	8.0	8°	0.4	Yes	Fig.1	SB-2570TR	FT-8
	A20R-SVUB□11-25AE	●	●		25	20	19	-	200	40.5	18.0	8.0	7°					
	A25S-SVUB□16-34AE	●	●		34	25	24	-	250	40.0	20.5	8.5	13°	0.4	Yes	Fig.2	SB-40125TRN	FT-15
	A32S-SVUB□16-40AE	●	●		40	32	31	-	250	84.0	28.0	12.0	9°	0.4	Yes	Fig.1	SB-40125TRN	FT-15
Steel	S12M-SVUC□08-16A	●	●	mm	16	12	11	-	150	25.5	11.5	5.5	8°	0.4	No	Fig.3	SB-2050TR	FT-6
	S16Q-SVUB□11-20A	●	●		20	16	15	-	180	32.5	16.0	8.0	8°	0.4	No	Fig.3	SB-2570TR	FT-8
	S20R-SVUB□11-25A	●	●		25	20	19	-	200	40.5	18.0	8.0	7°					
	S25S-SVUB□16-34A	●	●		34	25	24	-	250	40.0	20.5	8.5	13°	0.4	No	Fig.4	SB-40125TRN	FT-15
	S32S-SVUB□16-40A	●	●		40	32	31	-	250	84.0	28.0	12.0	9°	0.4	No	Fig.3		
Carbide	E12Q-SVUC□08-18A	●		mm	18	12	11	-	180	23.0	11.5	5.5	8°	0.4	Yes	Fig.5	SB-2050TR	FT-6
	E16X-SVUB□11-25A	●			25	16	15	-	220	28.0	16.0	8.0	8°	0.4	Yes	Fig.5	SB-2570TR	FT-8
	E20S-SVUB□11-29A	●			29	20	19	-	250	32.0	18.0	8.0	7°					
	E25T-SVUB□16-34A	●			34	25	24	-	300	38.0	21.0	8.5	13°	0.4	Yes	Fig.5	SB-40125TRN	FT-15
Excellent Bar	A08M-SVZC□1.5AE	●	●	inch	0.630	0.500	0.461	-	6	1.004	0.453	0.217	8°	1/64	Yes	Fig.6	SB-2050TR	FT-6
	A10R-SVZB□2AE	●	●		0.790	0.625	0.586	-	8	1.280	0.630	0.315	8°	1/64	Yes	Fig.6	SB-2570TR	FT-8
	A12S-SVZB□2AE	●	●		0.980	0.750	0.711	-	10	1.595	0.709	0.315	7°					
	A16T-SVZB□3AE	●	●		1.340	1.000	0.961	-	12	1.181	0.807	0.335	13°	1/64	Yes	Fig.7	SB-40125TRN	FT-15
	A12M-SVZC□08-16AE	●	●	mm	16	12	11	150	142.5	25.5	11.5	5.5	8°	0.4	Yes	Fig.6	SB-2050TR	FT-6
	A16Q-SVZB□11-20AE	●	●		20	16	15	180	170	32.5	16.0	8.0	8°	0.4	Yes	Fig.6	SB-2570TR	FT-8
	A20R-SVZB□11-25AE	●	●		25	20	19	200	190	40.5	18.0	8.0	7°					
	A25S-SVZB□16-34AE	●	●		34	25	24	250	232.5	30.0	20.5	8.5	13°	0.4	Yes	Fig.7	SB-40125TRN	FT-15
	A32S-SVZB□16-40AE	●	●		40	32	31	250	232.5	72.5	28.0	12.0	9°	0.4	Yes	Fig.6	SB-40125TRN	FT-15
Steel	S12M-SVZC□08-16A	●	●	mm	16	12	11	150	142.5	25.5	11.5	5.5	8°	0.4	No	Fig.8	SB-2050TR	FT-6
	S16Q-SVZB□11-20A	●	●		20	16	15	180	170	32.5	16.0	8.0	8°	0.4	No	Fig.8	SB-2570TR	FT-8
	S20R-SVZB□11-25A	●	●		25	20	19	200	190	40.5	18.0	8.0	7°					
	S25S-SVZB□16-34A	●	●		34	25	24	250	232.5	30.0	20.5	8.5	13°	0.4	No	Fig.9	SB-40125TRN	FT-15
	S32S-SVZB□16-40A	●	●		40	32	31	250	235	72.5	28.0	12.0	9°	0.4	No	Fig.8	SB-40125TRN	FT-15

Applicable Inserts

Application	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. Page	-	B89, B92	B89, B92	B89	B89, B92	B90	B89	B90, B91	-	B93
Insert / Toolholder	CK	VF	PP	GP	HQ	□-F	□-FSF	□-Y	F□-USF	AP
...-SVUC□1.5AE ...-SVUC□08-...	-	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	-	-
...-SVUB□2AE ...-SVUB□11-...	-	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-
...-SVUB□3AE ...-SVUB□16-...	-	VBMT33..	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	-	VCGT33..
...-SVZC□1.5AE ...-SVZC□08-...	-	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	-	-
...-SVZC□2AE ...-SVZB□11-...	-	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-
...-SVZC□3AE ...-SVZB□16-...	-	VBMT33..	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	-	VCGT33..

Application	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B93	B93	C28	C17
Insert / Toolholder	□-A3	AH	PCD	CBN
...-SVUC□1.5AE ...-SVUC□08-...	-	-	VCMT1515..	VCGW1515..
...-SVUB□2AE ...-SVUB□11-...	-	-	VBMT22..	VBGW22..
...-SVUB□3AE ...-SVUB□16-...	VCGT33..	VCGT33..	VBMT33..	VBGW33..
...-SVZC□1.5AE ...-SVZC□08-...	-	-	VCMT1515..	VCGW1515..
...-SVZC□2AE ...-SVZB□11-...	-	-	VBMT22..	VBGW22..
...-SVZC□3AE ...-SVZB□16-...	VCGT33..	VCGT33..	VBMT33..	VBGW33..

Spare Parts (See P27 for spare parts of old products.)

Part Number	Spare Parts: Shim	Spare Parts: Shim Screw	Spare Parts: Wrench (for Shim Screw)
□25□-SVUB□16-34A□ □32S-SVUB□16-40A□ □25S-SVZB□16-34A□ □32S-SVZB□16-40A□ A16T-SVUB□3AE A16T-SVZB□3AE	SVN-32N *(SVN-32S)	SS-4N	LW-4

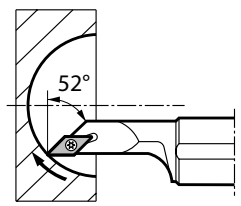
* Insert with Corner-R (RE) of 0.008" or 1/64", shim in parentheses ( ) is recommended (sold separately)

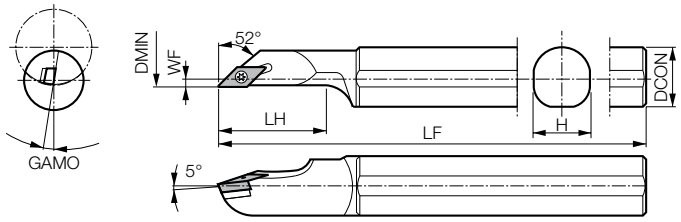
Recommended Cutting Conditions F110-F111
Applicable Sleeve F102-F104

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S-SVJB-E Excellent Bar (Internal Spherical Machining / Internal Facing)

(Max. Overhang Length **L/D = ~5**)



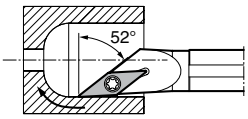


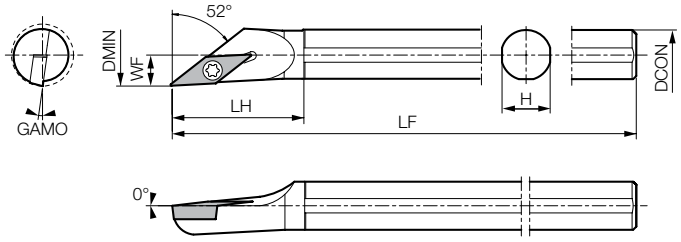
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SVJB Steel Bar (Internal Spherical Machining / Internal Facing)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

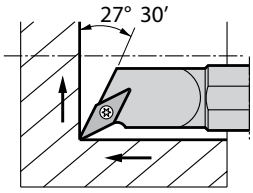
• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

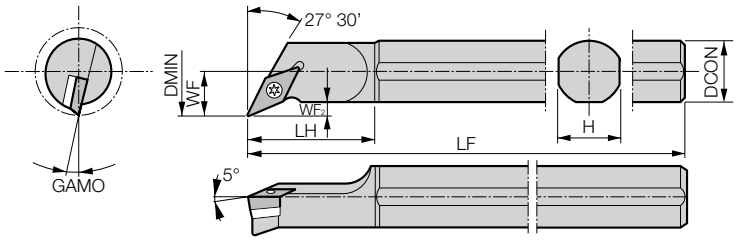
Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Wrench	Shim	Shim Screw	Wrench
Excellent Bar	S16S-SVJBR/L2E		●	inch	1.18	1.00	0.97	10.00	2.92	-	5°	1/64	No	SB-2570TR	FT-8	-	-	-
Excellent Bar	S20S-SVJBR/L3E	●	●		1.57	1.25	1.18	10.0	2.92	-	8°	1/32		SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
Steel	S08M-SVJBR/L2	●	●		0.620	0.500	0.480	6.00	1.25	0.310	8°	1/64	No	SB-2570TR	FT-8	-	-	-
Steel	S10X-SVJBR/L2	●	●		0.780	0.625	0.584	7.00	1.44	0.390	8°							
Steel	S12R-SVJBR/L3	●	●		0.984	0.750	0.710	8.00	1.86	0.492	8°	1/32		SB-4085TR	FT-15	-	-	-

S-SVPB(C)-E Excellent Bar (Copying / Undercutting)

(Max. Overhang Length **L/D = ~5**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

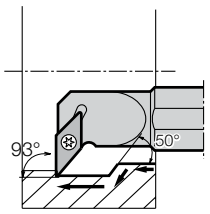
	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF2	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Wrench	Shim	Shim Screw	Wrench
Excellent Bar	S06M-SVPCR/L1.5E	●		inch	0.63	0.38	0.33	6.0	0.98	0.315	0.138	8°	1/64	No	SB-2050TR	FT-6	-	-	-
Excellent Bar	S08M-SVPBR/L2E	●	●		0.79	0.50	0.46	6.00	1.10	0.315	0.163	8°	1/64	No	SB-2570TR	-	-	-	-
Excellent Bar	S10Q-SVPBR/L2E	●	●		0.98	0.63	0.59	7.00	1.10	0.492	0.194	5°							
Excellent Bar	S16X-SVPBR/L3E	●			1.34	1.00	0.97	9.00	2.26	0.807	0.335	13°	1/32	No	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
Excellent Bar	S20S-SVPBR/L3E	●	●		1.57	1.25	1.18	10.0	2.17	0.866	0.256	9°							

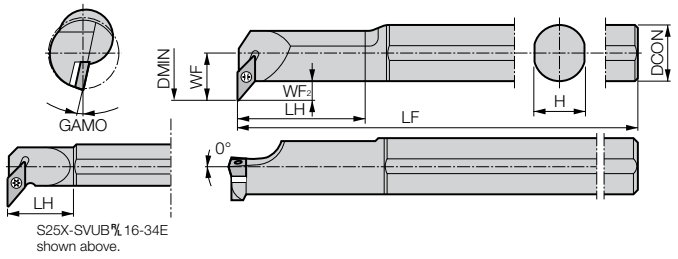
(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S-SVUC(B)-E Excellent Bar (Copying)

(Max. Overhang Length **L/D = ~5**)





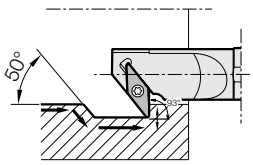
S25X-SVUBR 16-34E shown above.

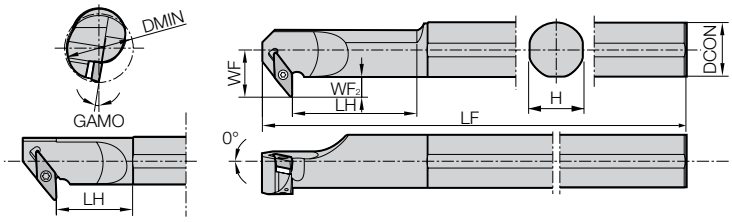
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SVZC(B)-E Excellent Bar (Back Boring)

(Max. Overhang Length **L/D = ~5**)





S25X-SVZBR 16-34E shown above.

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF2	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Wrench	Shim	Shim Screw	Wrench
Excellent Bar	**S08M-SVUCR 1.5E**	●		inch	0.63	0.50	0.46	6.00	1.10	0.433	0.217	8°	1/64	No	SB-2050TR	FT-6	-	-	-
	S10Q-SVUBR 2E	●	●		0.79	0.63	0.59	7.00	1.28	0.610	0.315	8°	1/64	No	SB-2570TR	FT-8	-	-	-
	S12R-SVUBR 2E	●	●		0.98	0.75	0.71	8.00	1.59	0.689	0.355	7°							
	S16X-SVUBR 3E	●	●		1.34	1.00	0.97	9.00	1.97	0.689	0.195	13°	1/32	No	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
	S20S-SVUBR 3E	●			1.57	1.25	1.18	10.00	3.31	1.080	0.472	9°							
	S10Q-SVZBR 2E	●			0.79	0.63	0.59	7.00	1.50	0.610	0.315	8°	1/64	No	SB-2570TR	FT-8	-	-	-
	S12R-SVZBR 2E	●			0.98	0.75	0.71	8.00	1.73	0.689	0.355	7°							
	S20S-SVZBR 3E	●	●		1.57	1.25	1.18	10.0	2.85	1.08	0.472	9°		No	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6

Applicable Inserts

Application	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hardened Materials
Ref. Page	B89, B92	B89, B92	B89	B89, B92	B90	B89	B90, B91	B93	B93	C28	C17
Insert / Toolholder	VF	PP	GP	HQ	R-F	R-FSF	R-Y	AH	R-A3	PCD	CBN
...-SVPCR 1.5E ...-SVUCR 1.5E ...-SVZCR 1.5E	VCMT1515..	VCMT1515..	-	VCMT1515..	-	-	-	-	-	VCMT1515..	VCGW1515..
...-SVJBR 2 ...-SVJBR 2E ...-SVPBR 2E ...-SVUBR 2E ...-SVZBR 2E	VBMT22..	VBMT22..	VBMT22..	VBMT22..	VBGT22..	VBET22..	VBGT22..	-	-	VBMT22..	VBGW22..
...-SVJBR 3 ...-SVJBR 3E ...-SVPBR 3E ...-SVUBR 3E ...-SVZBR 3E	VBMT33..	VBMT33..	VBMT33..	VBMT33..	-	-	VBGT33..	VCGT33..	VCGT33..	VBMT33..	VBGW33..

Recommended Cutting Conditions → **F110-F111**

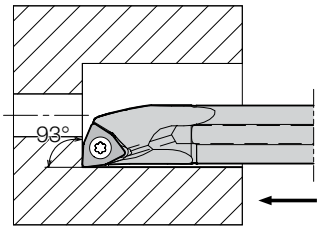
Applicable Sleeve → **F100~ F102**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

S/A-SWUB(P)-AE Excellent Bar (Boring)

(Max. Overhang Length **L/D = ~5.5**)



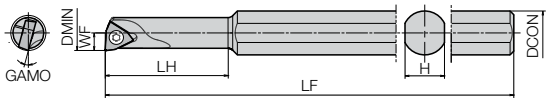
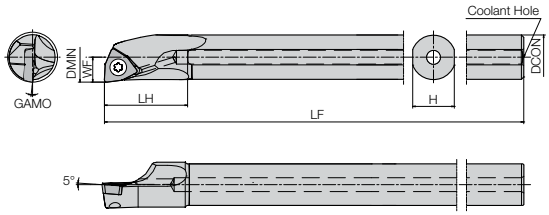


Fig.1



0° for A08X-SWUB☐08-10AE, A10L-SWUB☐08-12AE

Fig.2

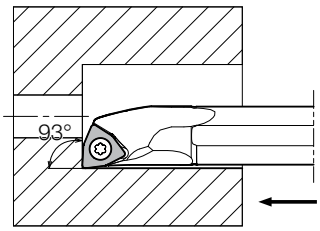
Shank Dia. DCON	Coolant Hole Dia.
Ø8mm	Ø2.5mm
Ø0.375" Ø10mm	Ø3.0mm
Ø0.500" Ø12mm	Ø4.0mm
Ø0.625" Ø16mm	Ø5.0mm
Ø0.750" Ø20mm	Ø5.0mm
Ø1.000"	Ø5.0mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-SWUB(P)-A Steel Bar (Boring)

(Max. Overhang Length **L/D = ~4**)



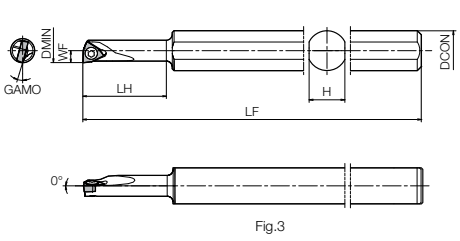
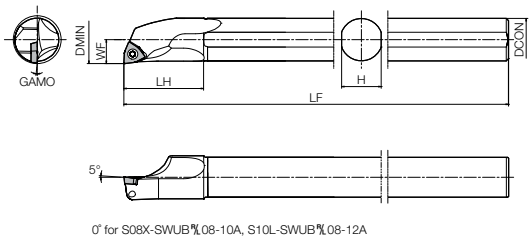


Fig.3



0° for S08X-SWUB☐08-10A, S10L-SWUB☐08-12A

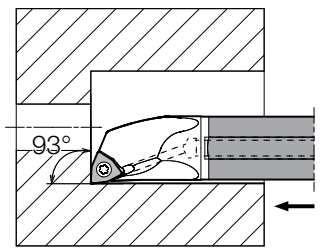
Fig.4

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

C/E-SWUB(P)-A(N) Carbide Shank Bar (Boring)

(Max. Overhang Length **L/D = ~7**)



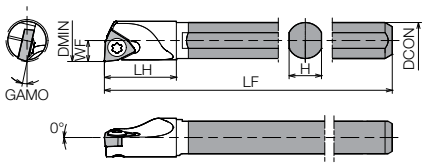
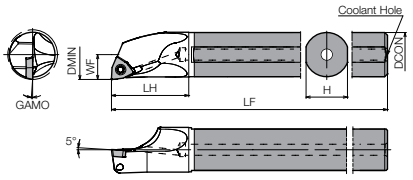


Fig.5



0° for E08L-SWUB☐08-10A, E10N-SWUB☐08-12A,
E10N-SWUB☐08-12A-2/3, E10N-SWUB☐08-12A-1/2

Fig.6

Shank Dia. DCON	Coolant Hole Dia.
Ø5mm	-
Ø6mm	-
Ø7mm	-
Ø8mm	Ø3mm
Ø10mm	Ø3mm
Ø12mm	Ø4mm
Ø16mm	Ø4mm
Ø20mm	Ø6mm

• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	S06H-SWUB□1.2AE	●	●	inch	0.240	0.375	0.336	4	0.827	0.118	-	15.0°	0.01	No	Fig.1	SB-2035TR	FT-6
	S06H-SWUB□1.5AE	●	●		0.312	0.375	0.336	4	1.102	0.157	-	15.0°					
	A06M-SWUB□1.5AE	●	●		0.472	0.375	0.336	6	0.787	0.236	-	10.0°	0.01	Yes	Fig.2	SB-2050TR	FT-6
	A08M-SWUP□2AE	●	●		0.630	0.500	0.461	6	0.945	0.276	-	4.0°	1/64	Yes	Fig.2	SB-2545TR	FT-8
	A10R-SWUP□3AE	●	●		0.770	0.625	0.586	8	1.181	0.354	-	3.5°	1/32	Yes	Fig.2	SB-4065TR	FT-15
	A12S-SWUP□3AE	●	●		0.930	0.750	0.711	10	1.417	0.413	-	2°					
	A16T-SWUP□3AE	●	●		1.200	1.000	0.961	12	1.811	0.531	-	0°					
	S10H-SWUB□06-06AE	●	●	mm	6	10	9	100	21	3.0	-	15.0°	0.2	No	Fig.1	SB-2035TR	FT-6
	S10H-SWUB□06-07AE	●	●		7	10	9	100	25	3.5	-	13.0°					
	S10H-SWUB□08-08AE	●	●		8	10	9	100	28	4.0	-	15.0°					
	A08X-SWUB□08-10AE	●	●		10	8	7	120	16	5.0	-	13.0°	0.2	Yes	Fig.2	SB-2050TR	FT-6
	A10L-SWUB□08-12AE	●	●		12	10	9	140	20	6.0	-	10.0°					
	A12M-SWUP□11-14AE	●	●		14	12	11	150	24	7.0	-	4.0°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A16Q-SWUP□11-18AE	●	●		18	16	15	180	30	9.0	-	1.0°					
	A16Q-SWUP□16-18AE	●	●		18	16	15	180	30	9.0	-	3.5°	0.8	Yes	Fig.2	SB-4065TR	FT-15
	A20R-SWUP□16-22AE	●	●		22	20	19	200	36	11.0	-	2.0°					
Steel	S10H-SWUB□06-06A	●	●	mm	6	10	9	100	21	3.0	-	15.0°	0.2	No	Fig.3	SB-2035TR	FT-6
	S10H-SWUB□06-07A	●	●		7	10	9	100	25	3.5	-	13.0°					
	S10H-SWUB□08-08A	●	●		8	10	9	100	28	4.0	-	15.0°					
	S08X-SWUB□08-10A	●	●		10	8	7	120	16	5.0	-	13.0°	0.2	No	Fig.4	SB-2050TR	FT-6
	S10L-SWUB□08-12A	●	●		12	10	9	140	20	6.0	-	10.0°					
	S12M-SWUP□11-14A	●	●		14	12	11	150	24	7.0	-	4.0°	0.4	No	Fig.4	SB-2545TR	FT-8
	S16Q-SWUP□11-18A	●	●		18	16	15	180	30	9.0	-	1.0°					
	S16Q-SWUP□16-18A	●	●		18	16	15	180	30	9.0	-	3.5°	0.8	No	Fig.4	SB-4065TR	FT-15
	S20R-SWUP□16-22A	●	●		22	20	19	200	36	11.0	-	2.0°					
Carbide	C05H-SWUB□06-06AN	●	●	mm	6	5	4.4	100	9	3.0	-	15.0°	0.2	No	Fig.5	SB-2035TR	FT-6
	C06J-SWUB□06-07AN	●	●		7	6	5.4	110	10	3.5	-	13.0°					
	C07K-SWUB□08-08AN	●	●		8	7	6.4	125	11	4.0	-	15.0°					
	E08L-SWUB□08-10AN	●	●		10	8	7	140	14	5.0	-	13.0°	0.2	Yes	Fig.6	SB-2050TR	FT-6
	E10N-SWUB□08-12AN	●	●		12	10	9	160	18	6.0	-	10.0°					
	E10N-SWUB□08-12AN-2/3	●			12	10	9	105	18	6.0	-	10.0°					
	E10N-SWUB□08-12AN-1/2	●			12	10	9	80	18	6.0	-	10.0°					
	E12Q-SWUP□11-14A	●	●		14	12	11	180	23	7.0	-	4.0°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E12Q-SWUP□11-14A-2/3	●			14	12	11	120	23	7.0	-	4.0°					
	E12Q-SWUP□11-14A-1/2	●			14	12	11	90	23	7.0	-	4.0°					
	E16X-SWUP□11-18A	●	●		18	16	15	220	28	9.0	-	1.0°					
	E16X-SWUP□11-18A-2/3	●			18	16	15	145	28	9.0	-	1.0°					
	E16X-SWUP□11-18A-1/2	●			18	16	15	110	28	9.0	-	1.0°					
	E16X-SWUP□16-18A	●	●		18	16	15	220	28	9.0	-	3.5°	0.8	Yes	Fig.6	SB-4065TR	FT-15
	E16X-SWUP□16-18A-2/3	●			18	16	15	145	28	9.0	-	3.5°					
	E16X-SWUP□16-18A-1/2	●			18	16	15	110	28	9.0	-	3.5°					
	E20S-SWUP□16-22A	●	●		22	20	19	250	32	11.0	-	2.0°					
	E20S-SWUP□16-22A-2/3	●			22	20	19	165	32	11.0	-	2.0°					
	E20S-SWUP□16-22A-1/2	●			22	20	19	125	32	11.0	-	2.0°					

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing	Cast Iron	Non-ferrous Metals	Hardened Materials
Ref. Page	B97	B97	B99	B97	B99	B97, B98	B98	B98, B99	C29	C18
Insert / Toolholder	CF	□-PF	GP	□-DP	HQ	□-F	□-P	Without Chipbreaker	PCD	CBN
...-SWUB□1.2AE... ...-SWUB□06-...	WBGT121..	WBGT121..	-	WBMT121..	-	WB□T121..	-	WBGW121..	WBMT121..	WBGW121..
...-SWUB□1.5AE... ...-SWUB□08-...	-	WBGT1515..	-	WBMT1515..	-	WB□T1515..	WBET1515..	WBGW1515..	WBMT1515..	WBGW1515..
...-SWUP□2AE... ...-SWUP□11-...	-	-	WPMT215..	-	WPMT215..	-	-	WPGW215..	WPMT215..	-
...-SWUP□3AE... ...-SWUP□16-...	-	-	WPMT32..	-	WPMT32..	-	-	WPGW32..	-	-

Recommended Cutting Conditions ➡ **F110-F111**

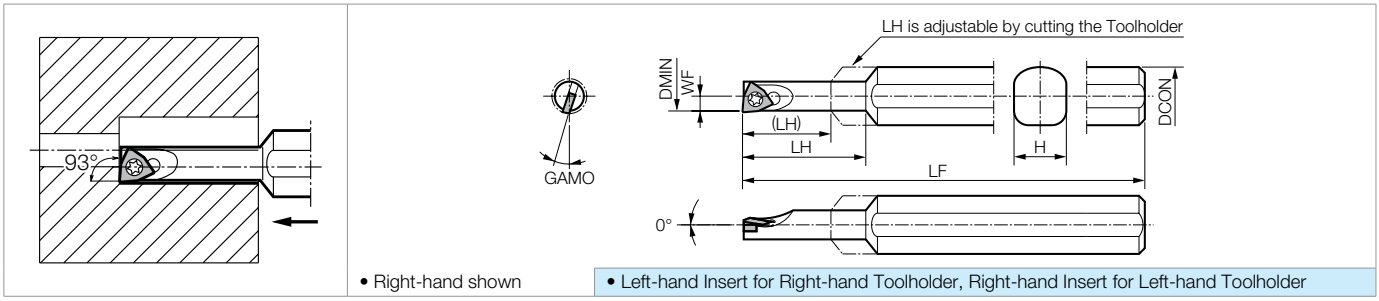
Applicable Sleeve ➡ **F101-F104**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

S-SWUB Steel Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)



• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Steel	**S06H-SWUBR/L1.2**	●	●	inch	0.240	0.375	0.356	4.00	0.825	0.115	15°	0.004	No	SB-2040TR	FT-6
Steel	**S06X-SWUBR/L1.5**	●	●	inch	0.312	0.375	0.356	4.33	1.102	0.156	15°	1/64	No	SB-2050TR	FT-6

Applicable Inserts

Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Cast Iron	Non-ferrous Metals	Hardened Materials
Ref. Page	B97	B97	B97	B97, B98	B98	B98, B99	C29	C18
Insert / Toolholder	CF	R/L-PF	R/L-DP	R/L-F	R/L-P	Without Chipbreaker	PCD	CBN
...-SWUBR/L1.2	WBGT121..	WBGT121..	WBMT121..	WB□T121..	-	WBGW121..	WBMT121..	WBGW121..
...-SWUBR/L1.5	-	WBGT1515..	WBMT1515..	WB□T1515..	WBET1515..	WBGW1515..	WBMT1515..	WBGW1515..

Recommended Cutting Conditions → **F110-F111**

Applicable Sleeve → **F101-F104**

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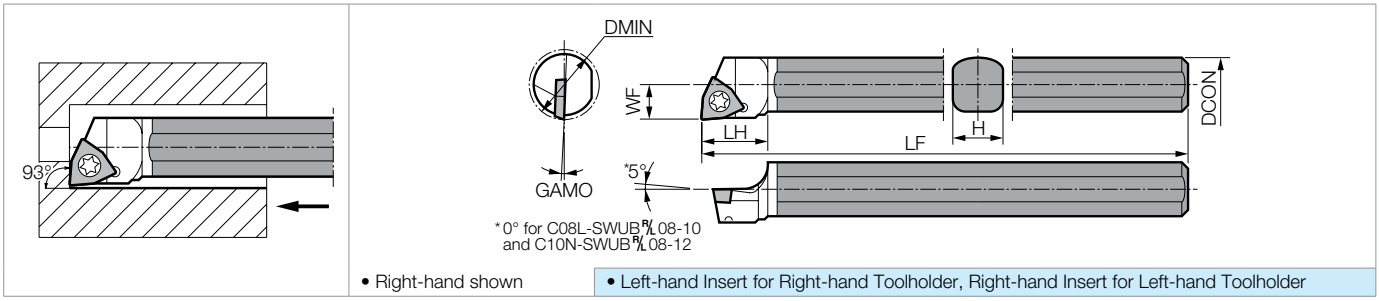
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

C-SWUB Carbide Shank Bar (Boring)

(Max. Overhang Length **L/D = ~7**)



• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

	Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Wrench
Carbide	**C0325K-SWUB□1.2**	●	●	inch	0.240	0.203	0.180	5.00	0.50	0.118	15°	1/64	No	SB-2040TR	FT-6
Carbide	**C045K-SWUB□1.5**	●	●	inch	0.312	0.281	0.252	5.00	0.55	0.157	15°	1/64	No	SB-2050TR	FT-6

Applicable Inserts

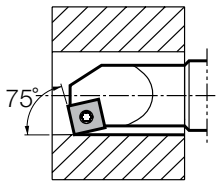
Application	Minute D.O.C.	Finishing	Finishing	Finishing	Finishing	Cast Iron	Non-ferrous Metals	Hardened Materials
Ref. Page	B97	B97	B97	B97, B98	B98	B98, B99	C29	C18
Insert / Toolholder	CF	□-PF	□-DP	□-F	□-P	Without Chipbreaker	PCD	CBN
...-SWUB□1.2	WBGT121..	WBGT121..	WBMT121..	WB□T121..	-	WBGW121..	WBMT121..	WBGW121..
...-SWUB□1.5	-	WBGT1515..	WBMT1515..	WB□T1515..	WBET1515..	WBGW1515..	WBMT1515..	WBGW1515..

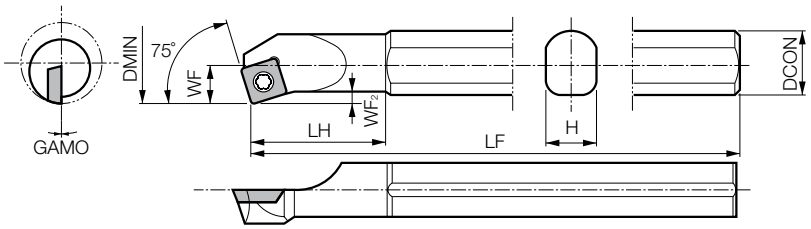
Recommended Cutting Conditions **F110-F111**

Applicable Sleeve **F101-F104**

S-SSKP (Boring)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder

Toolholder Dimensions

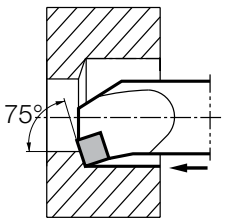
Part Number	Stock	Unit	Min. Bore Dia.	Dimensions							GAMO	Standard Corner-R (RE)	Spare Parts	
													Clamp Screw	Wrench
			DMIN	DCON	H	LF	LH	WF	WF_2					
S16Q-SSKPR09-20	●	mm	20	16	14	180	30	10.0	2.0	-3°	0.8	SB-4TR	FT-15	

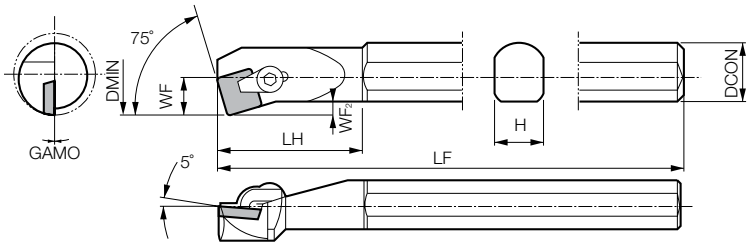
Applicable Inserts

Application	Finishing
Ref. Page	B75
Insert / Toolholder	L
...-SSKP□09...	SPGH32..

S-CSKP (Boring)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Part Number	Stock	Unit	Min. Bore Dia.	Dimensions							GAMO	Standard Corner-R (RE)	Spare Parts		
													Clamp Set	Wrench	
			DMIN	DCON	H	LF	LH	WF	WF_2						
S16N-CSKPR09-20	●	mm	20	16	14	160	40	10.0	2.0	0°	0.8	CPS-2	FH-2.5	-	
S20Q-CSKPR09-27	●		27	20	18	180	45	13.5	3.5	0°					
S25X-CSKPR12-34	●		34	25	23	220	60	17.0	4.5	0°	0.8	CPS-3	-	LW-3	

Applicable Inserts

Application	Medium	Medium	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals
Ref. Page	B75	B75	B75	B75	B113	C29
Insert / Toolholder	G	Standard	□	Without Chipbreaker	Ceramic	PCD
...-CSKPR09...	SPMR32..	SPMR32..	SPGR32..	SPM32.. SPG32..	SPG32..	-
...-CSKPR12...	SPMR42..	SPMR42..	SPGR42..	SPM42.. SPG42..	SPG42..	SPG42..

Recommended Cutting Conditions **F110-F111**

Applicable Sleeves **F103-F104**

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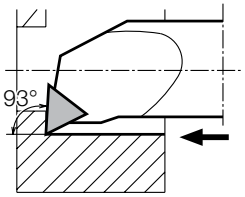
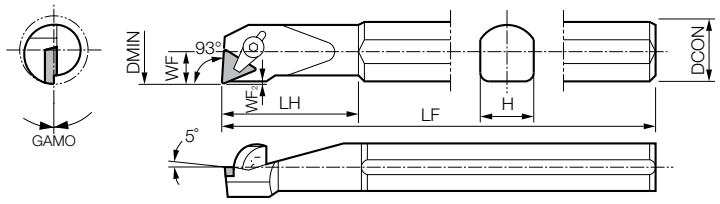
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S-CTUP Steel Bar (Boring)

(Max. Overhang Length **L/D = ~3**)





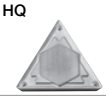
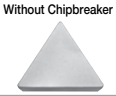
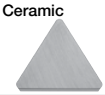
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions						GAMO	Standard Corner-R (RE)	Spare Parts					
													Clamp Set		Wrench		Shim	Shim Screw
	R	L		DMIN	DCON	H	LF	LH	WF	WF_2								
S10X-CTUP□2	●	□	inch	0.625	0.625	0.584	7.00	1.25	0.313	0.03	0°	1/64	-	CPS-2S	FT-15	-	-	-
S12X-CTUP□2	●	□		1.060	0.750	0.710	7.00	1.50	0.520	0.05	0°	1/64	-	CPS-2	-	LW-2.5		
S16R-CTUP□3	●	□		1.350	1.000	0.910	8.00	2.10	0.669	0.04	0°	1/32	-	CPS-3	-	LW-3	-	-
S12L-CTUP□09-16	●		mm	16	12	11	140	32	8.0	0.5	0°	0.4	CPS-1	-	FH-2	-	-	-
S16N-CTUP□11-20	●	●		20	16	14	160	30	10.0	0.5	0°	0.4	-	CPS-2	FH-2.5	-	-	-
S20Q-CTUP□11-27	●	●		27	20	18	180	40	13.5	1.3	0°							
S25X-CTUP□16-34	●	●		34	25	23	220	60	17.0	1.0	0°	0.8	-	CPS-3	-	LW-3	-	-
S32S-CTUP□16-43	●	●		43	32	30	250	70	21.5	1.0	0°	0.8	-	CPS-3	-	LW-3	KPT-32	SP3X10
S40X-CTUP□16-50	●	●		50	40	37	315	80	25.0	1.0	0°							

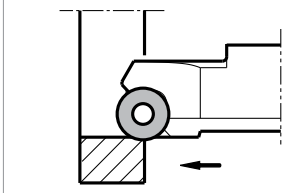
Applicable Inserts

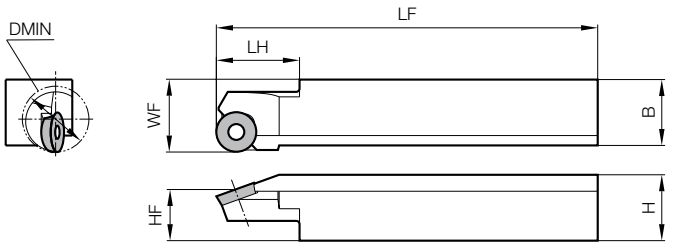
Application	Finishing	Finishing-Medium	Medium	Medium	Finishing	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals	Hardened Materials
Ref. Page	B87	B87	B87	B87	B87	B88	B88	B113	C29	C18
Insert / Toolholder	**GP**	**HQ** 	**G**	**Standard**	**□-F**	**□-□**	Without Chipbreaker 	**Ceramic** 	**PCD**	**CBN**
...-CTUPR09-...	-	-	TPMR1815..	-	TPGR1815..	-	TPG1815..	-	-	-
...-CTUP□2 ...-CTUP□11-...	TPMR22..	TPMR22..	TPMR22..	TPMR22..	-	TPGR22..	TPM22.. TPG22..	TPG22..	TPG22..	TPG22..
...-CTUP□3 ...-CTUP□16-...	TPMR32..	TPMR32..	TPMR32..	TPMR32..	-	TPGR32..	TPM32.. TPG32..	TPG32..	TPG32..	TPG32..

Recommended Cutting Conditions **F110-F111**

Applicable Sleeves **F102-F104**

SRCP-B (Boring)



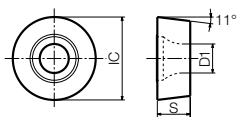


• Right-hand shown

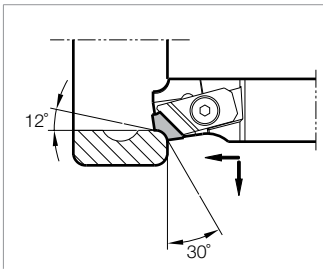
Toolholder Dimensions

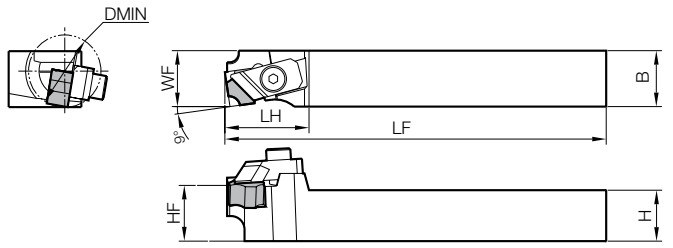
Part Number		Stock		Min. Bore Dia.	Dimensions (mm)						Spare Parts			Applicable Inserts → B103
											Clamp Screw	Wrench		
		R	L	DMIN	H	HF	B	LF	LH	WF				
SRCP□	2020B-12-A20	●	●	20	20	15.5	20	125	25	22	SB-4TR	FT-15	-	RPMT1203M0-BB
	2525B-16-A32	●	△	32	25	20.0	25	150	31	27	SB-5090TR	-	LTW-20	RPMT1604M0-BB

Applicable Inserts

Insert			Part Number		Dimensions (mm)		
					IC	S	D1
			**RPMT**	**1203M0-BB**	12.0	3.18	4.4
				1604M0-BB	16.0	4.76	5.5

CBSN-B (Internal Corner Filleting)





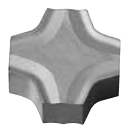
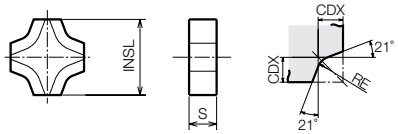
• Right-hand shown

Toolholder Dimensions

Part Number		Stock		Min. Bore Dia.	Dimensions (mm)						Spare Parts		Applicable Inserts → B103
											Clamp Set	Wrench	
		R	L	DMIN	H	HF	B	LF	LH	WF			
CBSN□	2020B-12-A20	●	△	20	20	21	20	125	32	20	CP-RC□	LW-5	SNMF1204○○-21
	2525B-12-A20	●	△	20	25	26	25	150	32	25			

· Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

Applicable Inserts

Insert				Part Number		Dimensions (mm)			
						INSL	S	CDX	RE
				**SNMF**	**120406-21**	12.70	4.76	1.5	0.6
					120410-21			3.0	1.0
					120416-21			3.1	1.6
					120421-21			3.2	2.1
					120426-21			3.3	2.6

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Identification System for Interchangeable Heads

Interchangeable Head	Applicable Adapter Diameter	Clamping System	Insert Shape	Hand of Tool		Min. Bore Dia.
H	A	32	P	C	L	N	R	12	–	40

P : Lock Pin (Lever Lock)
S : Screw Clamp

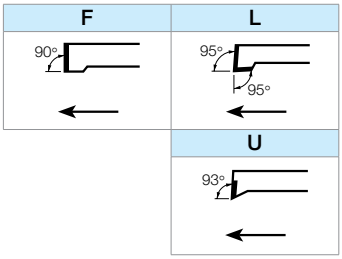
C : 80° Diamond
D : 55° Diamond
T : 60° Triangle

R : Right-hand
L : Left-hand

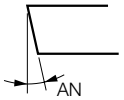
Type of Head

A	Steel Head with Coolant Hole

Cutting Edge Angle

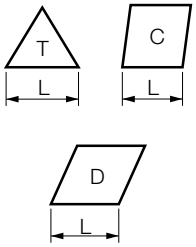


Insert Relief Angle

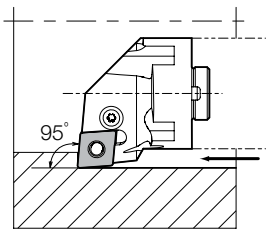


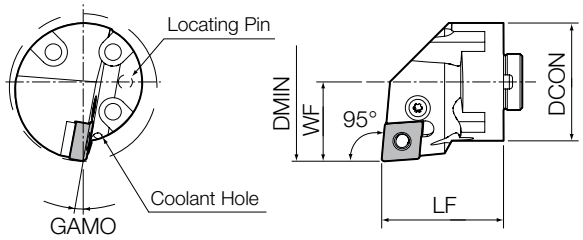
C : 7° Positive
N : 0° Negative

Insert Size



HA...PCLN12 (Boring / Internal Facing, with Coolant Hole)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)			GAMO	Standard Corner-R(RE)	Spare Parts						Applicable Boring Adapter ➡ F84
	R	L	DMIN	DCON	LF	WF			Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	
HA32PCLNR/L12-40	●	●	40	32	41	22	10°	0.8	LL-2K	LS-2P	LC-4K	LSP-3K	*PC-2K	DTPM-15	AD32U
HA40PCLNR/L12-50	●	●	50	40	41	27	10°								AD40V
HA50PCLNR/L12-63	●	●	63	50	41	35	10°								AD50W

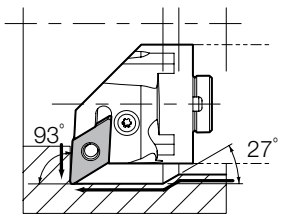
* Punch (*PC-2K): Not included. Purchase separately.

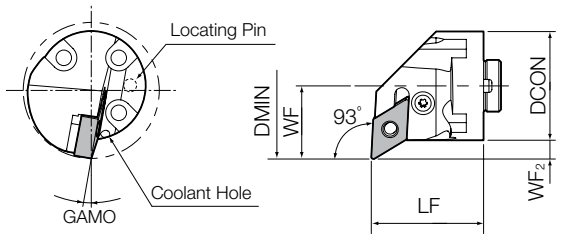
Applicable Inserts

Toolholder Part Number	Insert Part Number		Ref. to Page			
			Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PCLNR/L12-40	CN□A	43..	➡ B16~B22	➡ B106	➡ C23	➡ C6, C7
HA40PCLNR/L12-50	CN□G					
HA50PCLNR/L12-63	CN□M					

Recommended Cutting Conditions ➡ F110-F111

HA...PDUN15 (Copying, with Coolant Hole)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)				GAMO	Standard Corner-R (RE)	Spare Parts						Applicable Boring Adapter ➡ F84
										Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	
	R	L	DMIN	DCON	LF	WF	WF_2									
HA32PDUN□□15-43	●	●	43	32	41	25	9	12°	0.8	LL-3K	LS-3P	LD-4K43 (LD-4K)	LSP-3K	*PC-2K	DTPM-15	AD32U
HA40PDUN□□15-50	●	●	50	40	41	27	7	10°								AD40V
HA50PDUN□□15-63	●	●	63	50	41	35	10	10°								AD50W

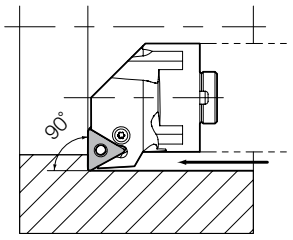
* Punch (*PC-2K): Not included. Purchase separately.
* Shim:LD-4K43 is attached to Toolholder. When using DN□□1506 Insert, purchase LD-4K separately.

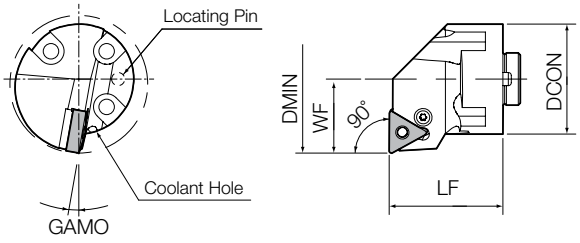
Applicable Inserts

Toolholder Part Number	Insert Part Number				Ref. to Page			
	Shim: LD-4K43		Shim: LD-4K		Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PDUN□□15-43 HA40PDUN□□15-50 HA50PDUN□□15-63	DN□A DN□G DN□M	43..	DN□A DN□G DN□M	44..	➡ B23~B30	➡ B107	➡ C23	➡ C8, C9

Recommended Cutting Conditions ➡ F110-F111

HA...PTFN16 (Internal, with Coolant Hole)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)			GAMO	Standard Corner-R (RE)	Spare Parts						Applicable Boring Adapter ➡ F84
									Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	
	R	L	DMIN	DCON	LF	WF									
HA32PTFN□□16-40	●	●	40	32	41	22	10°	0.8	LL-1K	LS-1P	LT-3K	LSP-2K	*PC-2K	DTPM-15	AD32U
HA40PTFN□□16-50	●	●	50	40	41	27	10°								AD40V
HA50PTFN□□16-63	●	●	63	50	41	35	8°								AD50W

* Punch (*PC-2K): Not included. Purchase separately.

Applicable Inserts

Toolholder Part Number	Insert Part Number		Ref. to Page			
			Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PTFN□□16-40 HA40PTFN□□16-50 HA50PTFN□□16-63	TN□A TN□G TN□M	33..	➡ B36~B43	➡ B111	➡ C23	➡ C11

Reference

Wrenches (LTP-10, LTP-15) are Torx Plus.
The size of Torx Plus is engraved on the long shaft.

Wrench Part Number	LTP-10	LTP-15
Engraved Size	10IP	15IP

Recommended Cutting Conditions
➡ F110-F111

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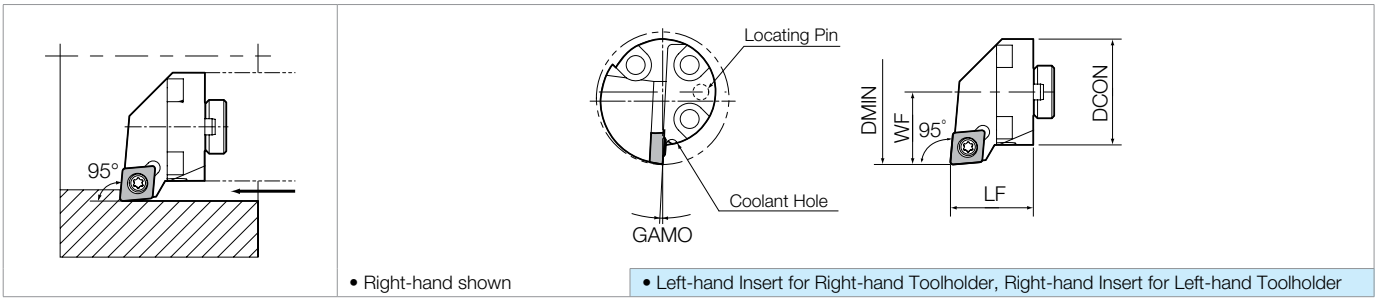
HA...SCLC09 (Boring / Internal Facing, with Coolant Hole)



• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

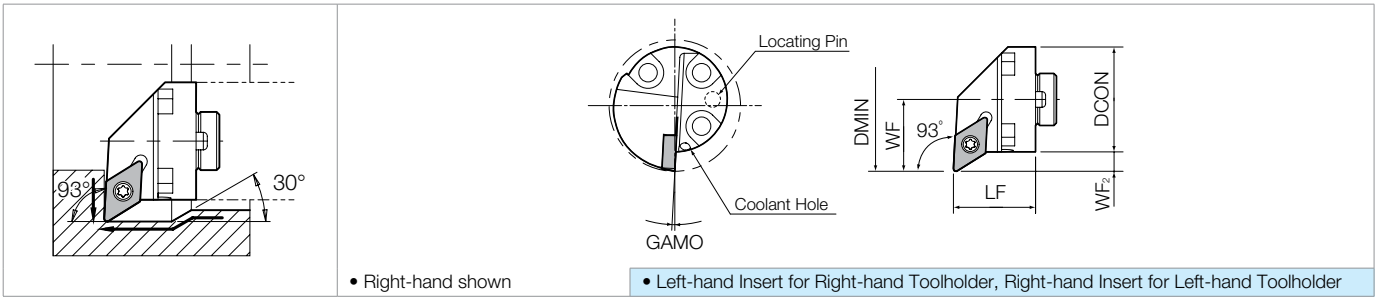
Part Number	Stock		Min. Bore Dia.	Dimensions (mm)			GAMO	Standard Corner-R (RE)	Spare Parts		Applicable Boring Adapter ➡ F84	Applicable Inserts
	R	L	DMIN	DCON	LF	WF			Clamp Screw	Wrench		
HA32SCLCR/L09-40	●	●	40	32	25	22	3°	0.8	SB-3580TR	FT-15	AD32U	CC..325..

Applicable Inserts

Insert Part Number	Ref. to Page		
	Cermet / Coated Carbide / Carbide	PCD	CBN
CC..325..	➡ B53~B55, B57~B60	➡ C24	➡ C14

Recommended Cutting Conditions ➡ F110-F111

HA...SDUC11 (Copying, with Coolant Hole)



• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)				GAMO	Standard Corner-R (RE)	Spare Parts		Applicable Boring Adapter ➡ F84	Applicable Inserts
	R	L	DMIN	DCON	LF	WF	WF2			Clamp Screw	Wrench		
HA32SDUCR/L11-40	●	●	40	32	25	22	6	3°	0.8	SB-3580TR	FT-15	AD32U	DC..325..

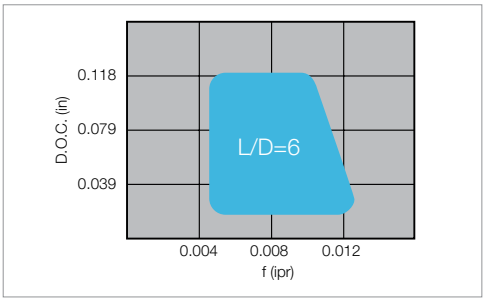
Applicable Inserts

Insert Part Number	Ref. to Page		
	Cermet / Coated Carbide / Carbide	PCD	CBN
DC..325..	➡ B62~B71	➡ C25	➡ C15

Recommended Cutting Conditions ➡ F110-F111

Possible Machining Area (Guide-Line for Overhang Length of AD Bars)

(4140 Vc = 500sfm D.O.C. = 0.020~0.118" f = 0.004 ~0.012ipr TNMG332)



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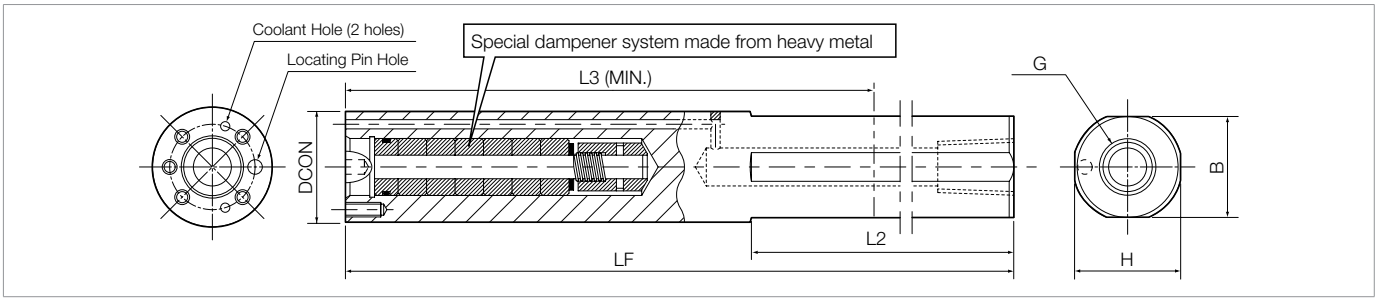
Boring Adapter (with Coolant Hole / Anti-Vibration Dampener System)



Toolholder Dimensions

Part Number	Stock	Dimensions (mm)							Spare Parts		
									Clamp Bolt		Wrench (Sold Separately)
		DCON	H	B	LF	L2	L3 (MIN)	G			
AD 32U	●	32	31	29	310	200	200	Rp3/8	HH5X20 (3 pcs)	HH5X30 (1 pcs)	LW-4
AD 40V	●	40	39	37	360	248	228	Rp3/8			
AD 50W	●	50	47	47	410	280	276	Rp3/8	HH6X20 (3 pcs)	HH6X30 (1 pcs)	LW-5

Note) L3 (MIN.) dimension indicates the minimum length in case of the back end of boring adapter is cut for use.
Do not shorten it to less than L3 (MIN.).

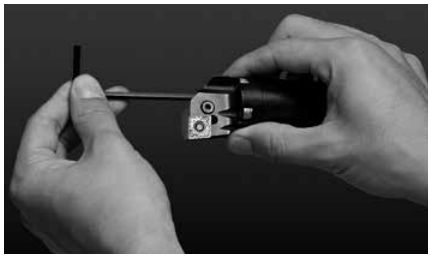
Combinations of Boring Adapter and Interchangeable Head

Interchangeable Head Part Number	Boring Adapter			
	Base Part Number	Clamp Bolt		Wrench
HA32 PCLN□12-40	AD32U	HH5X20	HH5X30	LW-4
PDUN□15-43				
PTFN□16-40				
SCLC□09-40		HH5X20		
SDUC□11-40				
HA40 PCLN□12-50	AD40V	HH5X20	HH5X30	
PDUN□15-50				
PTFN□16-50				
HA50 PCLN□12-63	AD50W	HH6X20	HH6X30	LW-5
PDUN□15-63				
PTFN□16-63				

How to Exchange Heads

1. Remove the boring head.

2. Align the boring head with the installing position.



3. Tighten three screws to clamp the boring head.

   For lever lock type Interchangeable head, use 2 short bolts for upper clamping hole and 1 long bolt for lower clamping hole.
   HA32 SCLC□09-40 and
   HA32 SDUC□11-40
   use HH5 X 20 for all 3 bolts.

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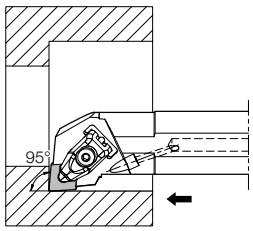
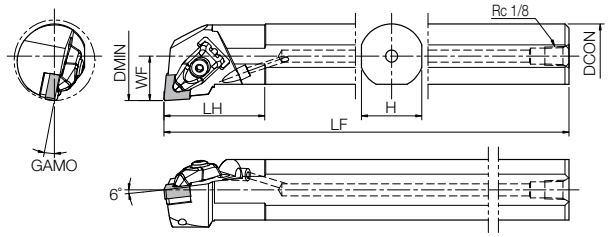
A-DCLN (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (Sold Separately)
A16T-DCLNR4	●		inch	1.25	1.00	0.905	12.0	1.575	0.640	12°	1/32	CP-3D	CS-3D	SP-3D	DC-42	SB-4085TR	DN10	LW-3	FT-15
A20T-DCLNR4	●			1.50	1.25	1.181	12.0	1.614	0.765	11°									
A24T-DCLNR4	●			1.75	1.50	1.374	12.0	2.362	0.905	13°									
A25R-DCLN□12-32	●	●	mm	32	25	23	200	42	17	11°	0.8	CP-3D	CS-3D	SP-3D	DC-42	SB-4085TR	DN10	LW-3	FT-15
A32S-DCLN□12-40	●	●		40	32	30	250	50	22	11°									
A40T-DCLN□12-50	●	●		50	40	37	300	60	27	11°	0.8	CP-3D	CS-3D	SP-3D	DC-42	SB-4085TR	DN20	LW-3	FT-15

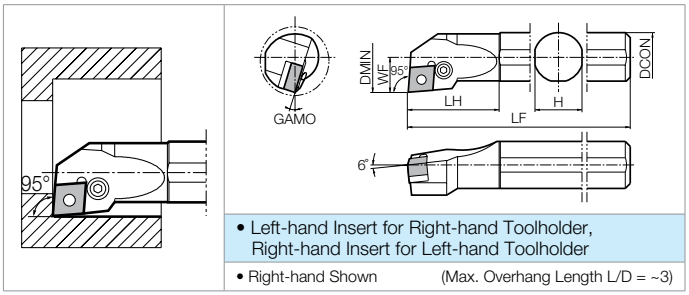
*When using inserts whose corner-R (RE) is greater than 1.60mm, it will be necessary additional modifications of the shim in order to prevent workpiece and shim from interfering each other.
*Not applicable to high-pressure coolant.

Applicable Inserts

Application	Finishing	Finishing-Medium	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. Page	B16	B16	B16	B16	B16	B16	B17	B17	B17	B17
Insert / Toolholder	**WF** (Wiper)	**WE** (Wiper)	**PP**	**GP**	**PQ**	**HQ**	**CQ**	**CJ**	**GS**	**PG**
...-DCLN□4-... ...-DCLN□12-...	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..
Application	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Sided / Roughing / High Feed	Medium	Low Carbon Steel / Small D.O.C.	Low Carbon Steel / Finishing	Low Carbon Steel / Medium	Low Carbon Steel / Roughing
Ref. Page	B17	B18	B18	B18	B19	B22	B19	B19	B19	B19
Insert / Toolholder	**PS**	**PT**	**Standard**	**PH**	**PX**	**□**	**XF**	**XP**	**XQ**	**XS**
...-DCLN□4-... ...-DCLN□12-...	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMM43..	CNGG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..
Application	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Ref. Page	B20	B20	B20	B21	B21	B21	B21	B21	B21	B21
Insert / Toolholder	**MQ**	**MS**	**MU**	**KQ**	**KG**	**KH**	**C**	**ZS**	**GC**	**Without Chipbreaker**
...-DCLN□4-... ...-DCLN□12-...	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMA43.. CNGA43..
Application	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Heat-Resistant Alloys	Heat-Resistant Alloys	Hard Materials			
Ref. Page	B106	B22	B22	C23	B20	B20	C6, C7			
Insert / Toolholder	**Ceramic**	**□-A3**	**AH**	**PCD**	**SQ**	**SG**	**CBN**			
...-DCLN□4-... ...-DCLN□12-...	CNMA43.. CNGA43..	CNGG43..	CNMG43.. CNGG43..	CNMM43..	CNMG43..	CNMG43..	CNGA43..			

Recommended Cutting Conditions ➡ **F110-F111**

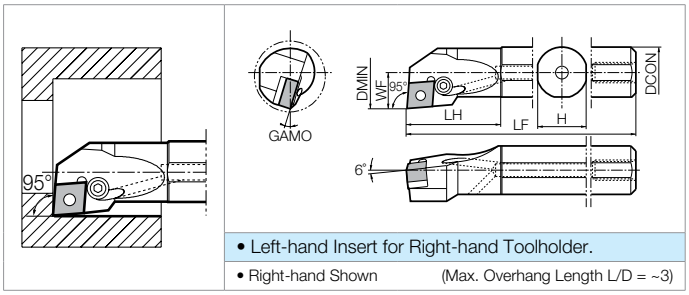
S-PCLN○○ (Boring / Internal Facing)



• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

• Right-hand Shown (Max. Overhang Length L/D = ~3)

A-PCLN Twin-Hole Bar (Boring / Internal Facing, with Coolant Hole)



• Left-hand Insert for Right-hand Toolholder.

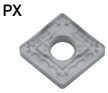
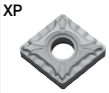
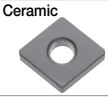
• Right-hand Shown (Max. Overhang Length L/D = ~3)

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
S16M-PCLN□09-20	●	●	mm	20	16	15	150	34	11.0	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PCLN□09-27	●	●	mm	27	20	19	180	37	14.2	17°	0.8	LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	FH-2.5
S25R-PCLN□09-32	●	●	mm	32	25	24	200	42	15.7	15°							
S20S-PCLN□4	●		inch	1.55	1.25	1.17	10.00	2.00	0.75	10°	1/32	LL-2N	LS-2N	LC-42N□	LSP-2	PC-2	LW-3
S24T-PCLN□4	●		inch	2.02	1.50	1.42	12.00	2.50	1.00								
S25R-PCLN□12-32	●	●	mm	32	25	24	200	42	16.3	16°	0.8	LL-2N	LS-2N	LC-42N□	LSP-2	PC-2	LW-3
S32S-PCLN□12-40	●	●	mm	40	32	30	250	50	21.0	10°							
S40T-PCLN□12-50	●	●	mm	50	40	37	300	60	25.0	10°							
A10M-PCLN□3	●	●	inch	0.79	0.63	0.59	6.00	1.34	-	16°	1/32	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
A12Q-PCLN□3	●	●	inch	1.06	0.75	0.71	7.00	1.46	-	17°	1/32	LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	FH-2.5
A16Q-PCLN□3	●	●	inch	1.26	1.00	0.97	7.00	1.65	-	15°							
A16M-PCLN□09-20	●		mm	20	16	15	150	34	11.0	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
A20Q-PCLN□09-27	●		mm	27	20	19	180	37	14.2	17°	0.8	LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	FH-2.5
A25R-PCLN□09-32	●		mm	32	25	24	200	42	15.7	15°							

· LC-42NR for Right-hand Toolholder, LC-42NL for Left-hand Toolholder.

Applicable Inserts

Application	Finishing	Finishing-Medium	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. Page	B16	B16	B16	B16	B16	B16	B17	B17	B17	B17
Insert / Toolholder	**WF** (Wiper)	**WE** (Wiper)	**PP**	**GP**	**PQ**	**HQ**	**CQ**	**CJ**	**GS**	**PG**
...-PCLN□3 ...-PCLN□09-...	-	-	-	CNMG33..	-	CNMG33..	-	-	CNMG33..	-
...-PCLN□4-... ...-PCLN□12-...	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..
Application	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Sided / Roughing / High Feed	Finishing	Medium	Low Carbon Steel / Small D.O.C.	Low Carbon Steel / Finishing	Low Carbon Steel / Medium
Ref. Page	B17	B18	B18	B18	B19	B22	B22	B19	B19	B19
Insert / Toolholder	**PS**	**PT**	**PH**	**Standard**	**PX**	**□-S**	**□**	**XF**	**XP**	**XQ**
									
...-PCLN□3 ...-PCLN□09-...	-	-	-	-	-	CNGG33..	CNGG33..	-	-	-
...-PCLN□4-... ...-PCLN□12-...	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMM43..	-	CNGG43..	CNMG43..	CNMG43..	CNMG43..
Application	Low Carbon Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Ref. Page	B19	B20	B20	B20	B21	B21	B21	B21	B21	B21
Insert / Toolholder	**XS**	**MQ**	**MS**	**MU**	**KQ**	**KG**	**KH**	**C**	**ZS**	**GC**
...-PCLN□3 ...-PCLN□09-...	-	-	-	-	-	-	-	-	-	-
...-PCLN□4-... ...-PCLN□12-...	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..	CNMG43..
Application	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Heat-Resistant Alloys	Hard Materials			
Ref. Page	B21	B106	B22	B22	C23	B20	C6, C7			
Insert / Toolholder	**Without Chipbreaker**	**Ceramic**	**□-A3**	**AH**	**PCD**	**SQ**	**CBN**			
									
...-PCLN□3 ...-PCLN□09-...	-	-	-	-	-	-	-			
...-PCLN□4-... ...-PCLN□12-...	CNMA43.. CNGA43..	CNMA43.. CNGA43..	CNGG43..	CNMG43.. CNGG43..	CNMM43..	CNMG43..	CNGA43..			

Applicable Coolant Sleeve / Joint

Toolholder Part Number	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PCLN□09-20	SHC1640-70, SHC1650-95	SJS-8
A20Q-PCLN□09-27	SHC2040-70, SHC2050-95	
A25R-PCLN□09-32	SHC2540-70, SHC2550-95	

Recommended Cutting Conditions → **F110-F111**

· For Coolant Sleeve, Coolant Joint, ref. to page → **F103-F104**

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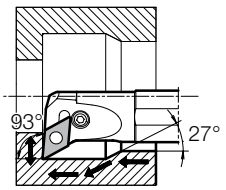
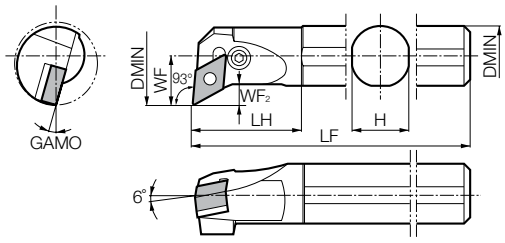
S-PDUN3/11 (Copying)

(Max. Overhang Length **L/D = ~3**)



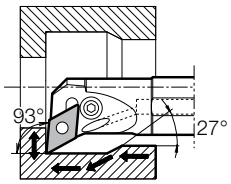


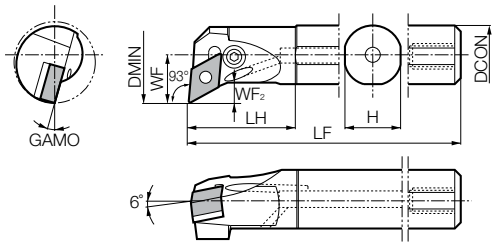
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

A-PDUN3/11 Twin-Hole Bar (Copying, with Coolant Hole)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder.

※ When using R-hand Toolholder, Use R-hand insert for machining in this direction (→)
Use L-hand insert for machining in this direction (←)

Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions						GAMO	Standard Corner-R (RE)	Spare Parts					
	R	L		DMIN	DCON	H	LF	LH	WF	WF2			Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
A12Q-PDUNR/L3	●	●	inch	1.06	0.75	0.71	7.00	1.37	-	-	17°	1/32	LL-1D	LS-1S	LD-32	LSP-1	PC-1	FH-2.5
A16R-PDUNR/L3	●	●		1.26	1.00	0.97	8.00	1.37	-	-	15°							
A20S-PDUNR/L3	●	●		1.57	1.25	1.18	10.00	1.37	-	-	12°							
S20Q-PDUNR/L11-27	●	●	mm	27	20	19	180	35	16	7.6	17°	0.4	LL-1DN	LS-1SN	LD-32N	LSP-1	PC-1	FH-2.5
S25R-PDUNR/L11-32	●	●		32	25	24	200	40	17	7.6	15°							
S32S-PDUNR/L11-40	●	●		40	32	31	250	45	22	8.5	12°							
A20Q-PDUNR/L11-27	●			27	20	19	180	35	16	7.6	17°	0.4	LL-1DN	LS-1SN	LD-32N	LSP-1	PC-1	FH-2.5
A25R-PDUNR/L11-32	●			32	25	24	200	40	17	7.6	15°							
A32S-PDUNR/L11-40	●			40	32	31	250	45	22	8.5	12°							

Applicable Inserts

Application	Finishing	Finishing-Medium	Medium-Roughing	Finishing	Medium
Ref. Page	B23	B24	B24	B30	B30
Insert / Toolholder	**GP**	**HQ**	**GS**	**R/L-S**	**R/L**
...-PDUNR/L3 ...-PDUNR/L11-...	DNMG33..	DNMG33..	DNMG33..	DNGG33..	DNGG33..

Recommended Cutting Conditions **F110-F111**

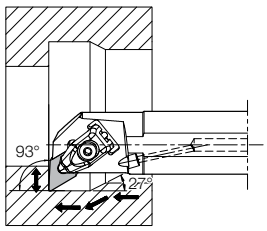
Applicable Coolant Sleeve / Joint

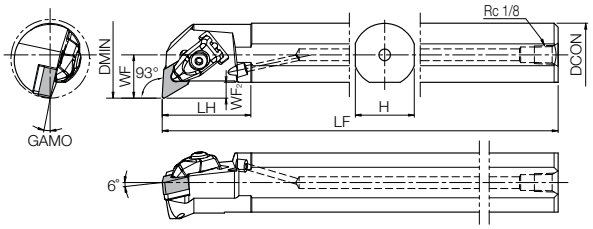
Toolholder Part Number	Applicable Coolant Sleeve	Applicable Coolant Joint
A20Q-PDUNR11-27	SHC2040-70, SHC2050-95	SJS-8
A25R-PDUNR11-32	SHC2540-70, SHC2550-95	
A32S-PDUNR11-40	-	

· For Coolant Sleeve, Coolant Joint, ref. to page **F103-F104**

A-DDUN (Boring / Copying with Coolant)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
																			For Clamp	For Shim
A16T-DDUN□4	●		inch	1.500	1.000	0.905	12	1.575	0.750	0.297	15°	1/32	CP-3D	CS-3D	SP-3D	DD-42 *DD-42-16	SB-4085TR	DN10	LW-3	FT-15
A20T-DDUN□4	●		inch	1.750	1.250	1.181	12	1.772	0.905	0.299	13°	1/32	CP-3D	CS-3D	SP-3D	DD-42 *DD-42-16	SB-4085TR	DN10	LW-3	FT-15
A32S-DDUN□15-40	●	●	mm	40	32	30	250	45	22	8.0	12°	0.8	CP-3D	CS-3D	SP-3D	DD-42 *DD-42-16	SB-4085TR	DN10	LW-3	FT-15
A40T-DDUN□15-50	●	●	mm	50	40	37	300	55	27	8.5	12°	0.8	CP-3D	CS-3D	SP-3D	DD-42 *DD-42-16	SB-4085TR	DN10	LW-3	FT-15
A50U-DDUN□15-63	●	●	mm	63	50	47	350	65	35	10.5	12°	0.8	CP-3D	CS-3D	SP-3D	DD-42 *DD-42-16	SB-4085TR	DN20	LW-3	FT-15

When using inserts whose corner-R(RE) is greater than 1.60mm, please purchase a shim (DD-42-16) with * mark and use it in order to prevent workpiece and shim from interfering each other.
*Not applicable to high-pressure coolant.

Applicable Inserts

Application	*Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. Page	B23	B23	B23	B24	B24	B24	B25	B25	B25	B26
Insert / Toolholder	**WF** (Wiper)	**PP**	**PQ**	**CQ**	**CJ**	**GS**	**PG**	**PS**	**PT**	**Standard**
...-DDUN□4 ...-DDUN□15-... ...-PD□N□15-...	DNMX43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..

Application	Roughing	Single Sided Roughing High Feed Rate	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. Page	B26	B26	B30	B26	B26	B26	B27	B28	B28	B27
Insert / Toolholder	**PH**	**PX**	**□**	**XP**	**XQ**	**XS**	**MQ**	**MS**	**MU**	**TK**
...-DDUN□4 ...-DDUN□15-... ...-PD□N□15-...	DNMG43..	DNMM43..	DNGG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..

Application	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals
Ref. Page	B29	B29	B29	B29	B29	B29	B107	B30	B30	C23
Insert / Toolholder	**KQ**	**KG**	**KH**	**C**	**ZS**	**GC**	**Ceramic**	**□-A3**	**AH**	**PCD**
...-DDUN□4 ...-DDUN□15-... ...-PD□N□15-...	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNMG43..	DNGA43..	DNMG43..	DNMG43.. DNGG43..	DNMM43..

Application	Heat-resistant Alloys	Heat-resistant Alloys	Hard Materials
Ref. Page	B28	B28	C8, C9
Insert / Toolholder	**SQ**	**SG**	**CBN**
...-DDUN□4 ...-DDUN□15-... ...-PD□N□15-...	DNMG43..	DNMG43..	DNGA43..

* When using WF chipbreaker (wiper insert), tool edge offset or program corrections are required. See R50

• WF chipbreaker cannot be used for S-PDQN15 type holders.

Recommended Cutting Conditions **F110-F111**

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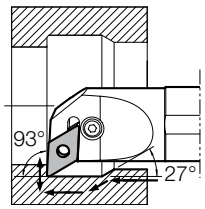
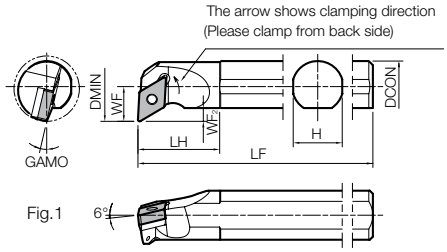
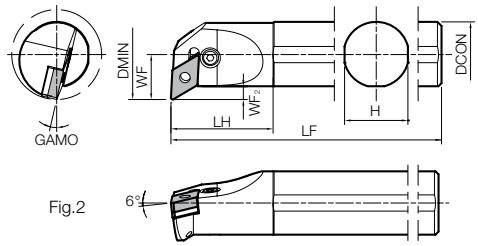
S-PDUN15 (Copying)

(Max. Overhang Length **L/D = ~3**)





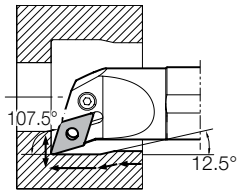


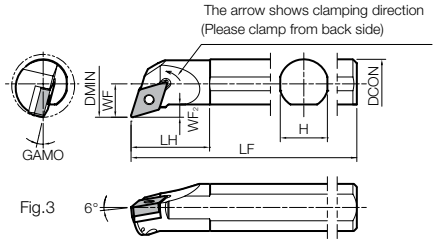
• Right-hand shown

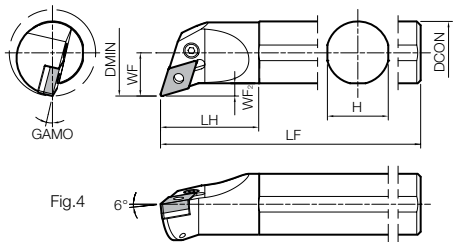
• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-PDQN15 (Copying)

(Max. Overhang Length **L/D = ~3**)





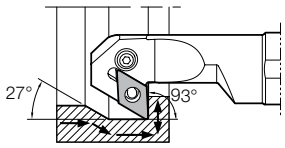


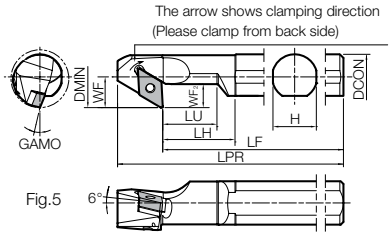
• Right-hand shown

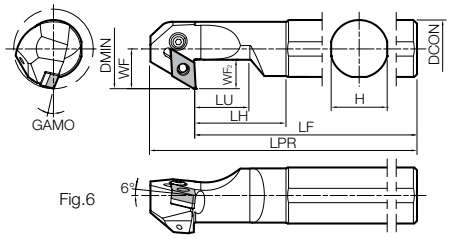
• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

S-PDZN15 (Back Boring)

(Max. Overhang Length **L/D = ~3**)







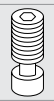
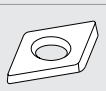
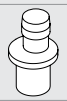
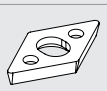
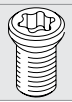
• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)								GAMO	Standard Corner-R (RE)	Drawing	Applicable Inserts → F88	
	R	L	DMIN	DCON	H	LPR	LF	LH	LU	WF	WF_2					
S25R-PDUN□15-32	●	●	32	25	24	-	200	40	-	17	6.5	13°	0.8	Fig.1	DN□A DN□G DN□M DNMX	43..
S32S-PDUN□15-44	●	●	44	32	31	-	250	50	-	22	6.5	13°	0.8	Fig.2		
S40T-PDUN□15-54	●	●	54	40	39	-	300	65	-	27	7.5	12°				
S25R-PDQN□15-32	●	●	32	25	24	-	200	40	-	17	6.5	13°	0.8	Fig.3	DN□A DN□G DN□M	43..
S32S-PDQN□15-44	●	●	44	32	31	-	250	50	-	22	6.5	13°	0.8	Fig.4		
S40T-PDQN□15-54	●	●	54	40	39	-	300	65	-	27	7.5	12°				
S25R-PDZN□15-32	●	●	32	25	24	225	200	40	30	17	13	13°	0.8	Fig.5	DN□A DN□G DN□M DNMX	43..
S32S-PDZN□15-44	●	●	44	32	31	275	250	50	30	22	16	13°	0.8	Fig.6		
S40T-PDZN□15-54	●	●	54	40	39	325	300	65	50	27	16	12°				

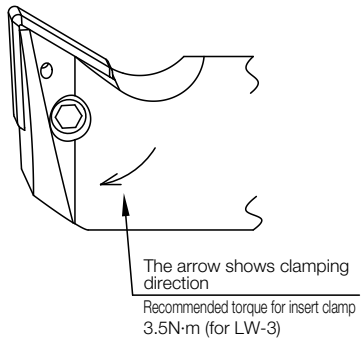
Spare Parts

Toolholder Part Number	Spare Parts									
	Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Lock Pin	Shim	Shim Screw	Wrench (for Shim Screw)
										
S25R - PD□N□15-32	-	-	-	-	-	LW-3	PP-4	PD-42	SB-2050TR	FT-6
S32S - PD□N□15-44	LL-3N	LS-2N	LD-42 *LD-42-20	LSP-2	PC-2	LW-3	-	-	-	-
S40T - PD□N□15-54										

· Shim When using inserts whose corner-R (RE) = 1.60mm or larger for S25R-PD□N□15-32, use shim modified by additional processing to prevent interference between workpiece and shim. When using inserts whose corner-R (RE) = 1.60mm or larger for S32S-PD□N□15-44 and S40T-PD□N□15-54, purchase and use shim with * mark separately to prevent interference between workpiece and shim.

How to Change S25R-PD□N□15-32 Inserts

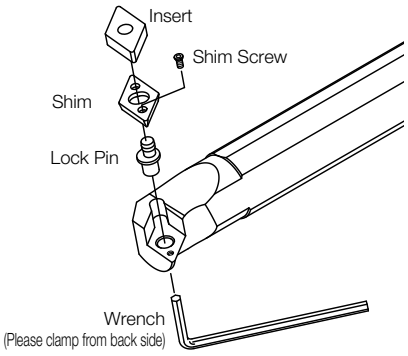
· Please replace S25R-PD□N□15-32 insert from the back side



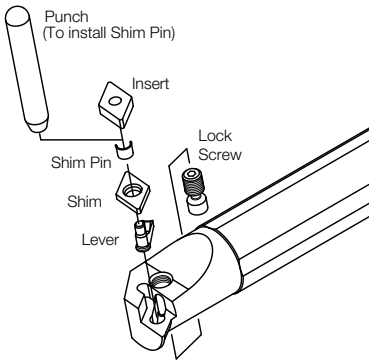
Back side of toolholder

How to Assemble Spare Parts

· S25R-PD□N□15-32 (Pin Lock)

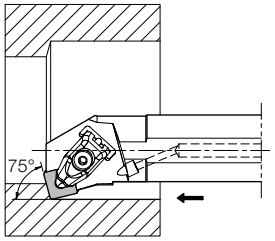


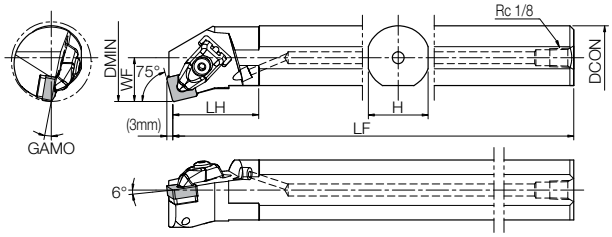
· S32S-PD□N□15-44 (Lever Lock)
· S40T-PD□N□15-54 (Lever Lock)



A-DSKN (Boring / with Coolant)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)					GAMO	Standard Corner-R (RE)	Spare Parts							
											Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
	R	L	DMIN	DCON	H	LF	LH	WF									For Clamp	For Shim
A25R-DSKN□12-32	●	●	32	25	23	200	43	17	11°	0.8	CP-3D	CS-3D	SP-3D	DS-42	SB-4085TR	DN10	LW-3	FT-15
A32S-DSKN□12-40	●	●	40	32	30	250	43	22	11°									
A40T-DSKN□12-50	●	●	50	40	37	300	53	27	11°	0.8	CP-3D	CS-3D	SP-3D	DS-42	SB-4085TR	DN20	LW-3	FT-15

*Not applicable to high-pressure coolant.

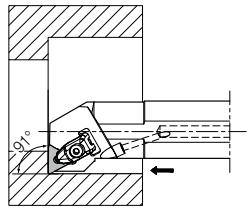
Applicable Inserts

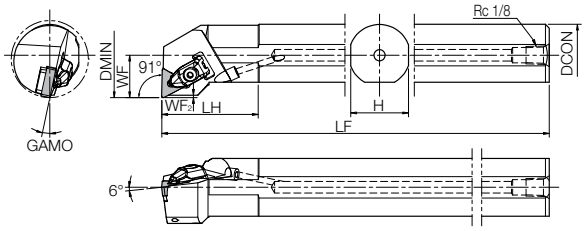
Application	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Sided / Roughing / High Feed Rate
Ref. Page	B32	B32	B32	B32	B32	B32	B33	B33
Insert / Toolholder	**PQ**	**PG**	**PS**	**HS**	**PT**	**Standard**	**PH**	**PX**
...DSKN□12...	SNMG43..	SNMG43..	SNMG43..	SNMG43..	SNMG43..	SNMG43..	SNMG43..	SNMM43..
Application	Finishing-Roughing	Medium-Roughing / Low Cutting Force	Low Carbon Steel / Finishing	Low Carbon Steel / Medium	Low Carbon Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Cast Iron
Ref. Page	B35	B35	B33	B33	B33	B34	B34	B34
Insert / Toolholder	**□-□**	**□-25R**	**XP**	**XQ**	**XS**	**MQ**	**MS**	**C**
...DSKN□12...	SNGG43..	SNGG43..	SNMG43..	SNMG43..	SNMG43..	SNMG43..	SNMG43..	SNMG43..
Application	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Heat-resistant Alloys	Hardened Materials
Ref. Page	B34	B34	B34	B34	B35	B109	B34	C10
Insert / Toolholder	**KH**	**KG**	**ZS**	**GC**	Without Chipbreaker	**Ceramic**	**SG**	**CBN**
...DSKN□12...	SNMG43..	SNMG43..	SNMG43..	SNMG43..	SN□A43..	SN□A43..	SNMG43..	SNGA43..

Recommended Cutting Conditions **F110-F111**

A-DTFN (Boring / with Coolant)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)						GAMO	Standard Corner-R (RE)	Spare Parts							
												Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
	R	L	DMIN	DCON	H	LF	LH	WF	WF_2										
A25R-DTFN□16-32	●	●	32	25	23	200	42	17	0.8	12°	0.8	CP-2D	CS-2D	SP-3D	DT-32	SB-3080TR	DN10	LW-2.5	FT-10
A32S-DTFN□16-40	●	●	40	32	30	250	50	22	1.2	12°									
A40T-DTFN□22-50	●	●	50	40	37	300	60	27	1.5	12°	0.8	CP-3D	CS-3D	SP-3D	DT-42	SB-4085TR	DN20	LW-3	FT-15

*Not applicable to high-pressure coolant.

Applicable Inserts

Application	*Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing
Ref. Page	B36	B36	B36	B36	B36	B36	B36	B36	B37	B37
Insert / Toolholder	WF (Wiper)	PP	GP	PQ	HQ	CQ	GS	PG	PS	HS
...-DTFN□16-...	TNMX33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..
...-DTFN□22-...	-	-	-	-	-	TNMG43..	-	-	TNMG43..	TNMG43..

Application	Single Sided Roughing High Feed Rate	Single Sided Roughing High Feed Rate	Roughing	Finishing	Medium-Roughing	Low Carbon Steel / Finishing	Low Carbon Steel / Medium	Low Carbon Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing
Ref. Page	B37	B37	B37	B42	B42, B43	B38	B38	B38	B39	B39
Insert / Toolholder	PT	GT	Standard	□-S	□-□	XP	XQ	XS	MQ	MS
...-DTFN□16-...	TNMG33..	TNMG33..	TNMG33..	TNGG33..	TNGG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..
...-DTFN□22-...	-	-	TNMG43..	-	TNGG43..	-	-	-	-	-

Application	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Ref. Page	B39	B39	B40	B40	B40	B40	B40	B40	B40	B111
Insert / Toolholder	MU	□-ST	KQ	KG	KH	C	ZS	GC	Without Chipbreaker	Ceramic
...-DTFN□16-...	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33.. TNGA33..	TNMG33..
...-DTFN□22-...	-	-	-	-	-	-	-	-	-	-

Application	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Heat-resistant Alloys	Hard Materials
Ref. Page	B41	B41	C23	B39	C11
Insert / Toolholder	□-A3	AH	PCD	SG	CBN
...-DTFN□16-...	TNGG33..	TN_G33..	TNMM33..	TNMG33..	TNGA33..
...-DTFN□22-...	-	-	-	-	-

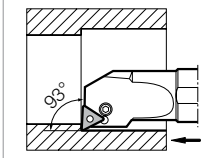
* When using WF chipbreaker (wiper insert), tool edge offset or program corrections are required. See R50

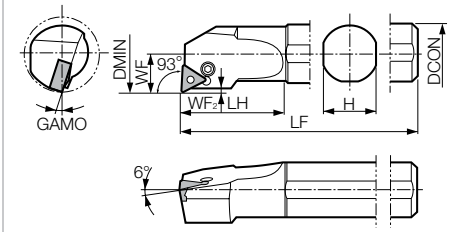
Recommended Cutting Conditions **F110-F111**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S-PTUN11/16 (Boring)

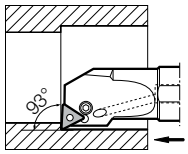


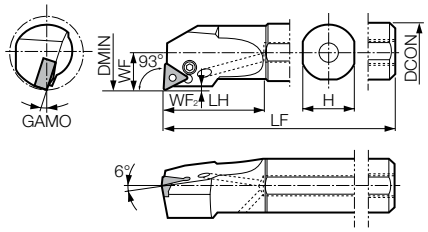


• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

• Right-hand Shown (Max. Overhang Length L/D = ~3)

A-PTUN11 Twin-Hole Bar (Internal, with Coolant Hole)





• Left-hand Insert for Right-hand Toolholder.

• Right-hand Shown (Max. Overhang Length L/D = ~3)

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)						GAMO	Standard Corner-R (RE)	Spare Parts					
												Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
	R	L	DMIN	DCON	H	LF	LH	WF	WF_2								
S16M-PTUN☐11-20	●	●	20	16	15	150	34	11.0	0.3	18°	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PTUN☐11-25	●	●	25	20	19	180	37	13.2	0.2	17°							
S25R-PTUN☐11-32	●	●	32	25	24	200	42	15.7	0.3	16°							
S16M-PTUN☐16-20	●	●	20	16	15	150	34	11.0	1.3	18°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PTUN☐16-25	●	●	25	20	19	180	37	13.2	1.3	17°							
S25R-PTUN☐16-30	●	●	30	25	24	200	42	15.5	1.3	13°							
S32S-PTUN☐16-40	●	●	40	32	30	250	50	22.0	0.7	13°	0.8	LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	FH-2.5
S40T-PTUN☐16-50	●	●	50	40	37	300	60	27.0	0.6	11°							
A16M-PTUN☐11-20	●		20	16	15	150	34	11.0	0.3	18°	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5
A20Q-PTUN☐11-25	●		25	20	19	180	37	13.2	0.2	17°							
A25R-PTUN☐11-32	●		32	25	24	200	42	15.7	0.3	16°							

· When using inserts whose corner-R(RE) = 1.6mm or larger, purchase and use shim with * mark separately to prevent interference between workpiece and shim.

Applicable Inserts

Application	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing	Single Sided Roughing High Feed Rate
Ref. Page	B36	B36	B36	B36	B36	B36	B36	B37	B37	B37
Insert / Toolholder	PP	GP	PQ	HQ	CQ	GS	PG	PS	HS	PT
...-PTUN☐11-...	-	TNMG23..	-	TNMG23..	-	TNMG23..	-	-	-	-
...-PTUN☐16-...	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..
Application	Single Sided Roughing High Feed Rate	Roughing	Finishing	Medium-Roughing	Low Carbon Steel / Finishing	Low Carbon Steel / Medium	Low Carbon Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. Page	B37	B37	B42	B42, B43	B38	B38	B38	B39	B39	B39
Insert / Toolholder	GT	Standard	☐-S	☐-□	XP	XQ	XS	MQ	MS	MU
...-PTUN☐11-...	-	-	TNGG23..	TNGG23..	-	-	-	-	-	-
...-PTUN☐16-...	TNMG33..	TNMG33..	TNGG33..	TNGG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..
Application	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals
Ref. Page	B39	B40	B40	B40	B40	B40	B40	B40	B111	B41
Insert / Toolholder	☐-ST	KQ	KG	KH	C	ZS	GC	Without Chipbreaker	Ceramic	AH
...-PTUN☐11-...	-	-	-	-	-	-	-	-	-	-
...-PTUN☐16-...	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33..	TNMG33.. TNGA33..	TNGA33..	TN_G33..
Application	Non-ferrous Metals	Non-ferrous Metals	Hard Materials							
Ref. Page	B41	C23	C11							
Insert / Toolholder	☐-A3	PCD	CBN							
...-PTUN☐11-...	-	-	-							
...-PTUN☐16-...	TNGG33..	TNMM33..	TNGA33..							

Recommended Cutting Conditions → **F110-F111**

Applicable Coolant Sleeve / Joint

Toolholder Part Number	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PTUN☐11-20	SHC1640-70, SHC1650-95	SJS-8
A20Q-PTUN☐11-25	SHC2040-70, SHC2050-95	
A25R-PTUN☐11-32	SHC2540-70, SHC2550-95	

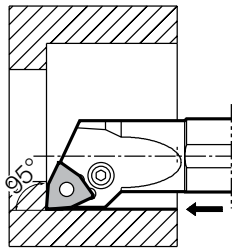
· For Coolant Sleeve, Coolant Joint, ref. to page → **F103~F104**

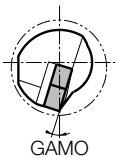
● : Standard Item △ : Phaseout Item (will be removed from next catalog)

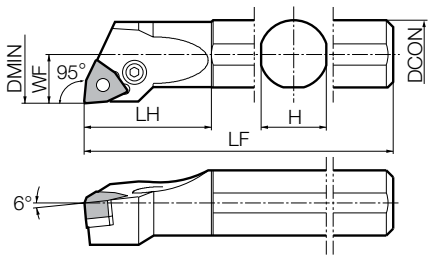
Contact your local Kyocera sales engineer to upgrade old products to new technology

S-PWLN06 (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)





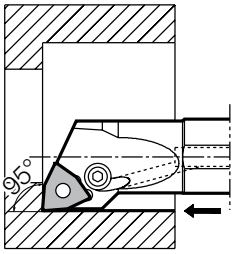


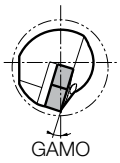
• Right-hand shown

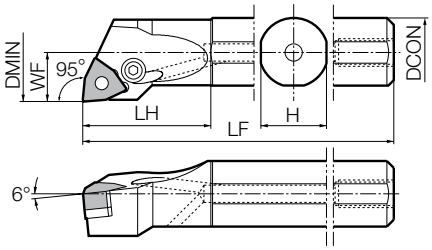
• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

A-PWLN06 Twin-Hole Bar (Boring / Internal Facing, with Coolant Hole)

(Max. Overhang Length **L/D = ~3**)



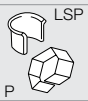




• Right-hand shown

• Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)					GAMO	Standard Corner-R (RE)	Spare Parts					
											Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
	R	L	DMIN	DCON	H	LF	LH	WF								
S16M-PWLN□**06-20**	●	●	20	16	15	150	34	11.0	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PWLN□**06-27**	●	●	27	20	19	180	37	14.2	17°	0.8	LL-1N	LS-1SN	LW-32N	LSP-1	PC-1	FH-2.5
S25R-PWLN□**06-32**	●	●	32	25	24	200	42	15.7	15°							
A16M-PWLN□**06-20**	●		20	16	15	150	34	11.0	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
A20Q-PWLN□**06-27**	●	△	27	20	19	180	37	14.2	17°	0.8	LL-1N	LS-1SN	LW-32N	LSP-1	PC-1	FH-2.5
A25R-PWLN□**06-32**	●	△	32	25	24	200	42	15.7	15°							

Applicable Inserts

Application	Finishing	Finishing-Medium	Medium-Roughing	Finishing	Medium
Ref. Page	B46	B46	B47	B49	B49
Insert / Toolholder	GP	HQ	GS	□-S	□
...-PWLN□**06-...**	WNMG33..	WNMG33..	WNMG33..	WNGG33..	WNGG33..

Recommended Cutting Conditions **F110-F111**

Applicable Coolant Sleeve / Joint

Toolholder Part Number	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PWLNR06-20	SHC1640-70, SHC1650-95	SJS-8
A20M-PWLNR06-27	SHC2040-70, SHC2050-95	
A25R-PWLNR06-32	SHC2540-70, SHC2550-95	

· For Coolant Sleeve, Coolant Joint, ref. to page **F103~F104**

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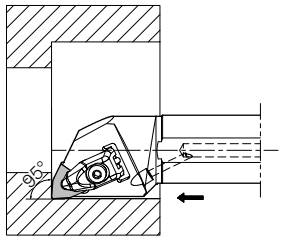
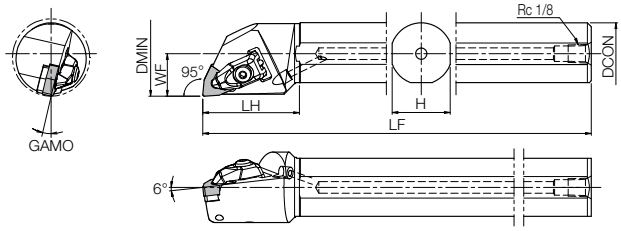
A-DWLN (Boring / Internal Facing / with Coolant)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

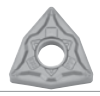
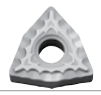
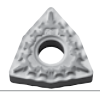
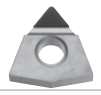
• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	WF_2	GAMO	Standard Corner-R (RE)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
																			For Clamp	For Shim
A16T-DWLN□**4**	●		inch	1.250	1.000	0.905	12	1.575	0.64	-	12°	1/32	CP-3D	CS-3D	SP-3D	DW-42	SB-4085TR	DN10	LW-3	FT-15
A20T-DWLN□**4**	●			1.500	1.250	1.181	12	1.614	0.765	-	11°									
A24T-DWLN□**4**	●			1.750	1.500	1.374	12	2.362	0.905	-	13°									
A25R-DWLN□**08-32**	●	●	mm	32	25	23	200	50	17	-	13°	0.8	CP-3D	CS-3D	SP-3D	DW-42	SB-4085TR	DN10	LW-3	FT-15
A32S-DWLN□**08-40**	●	●		40	32	30	250	50	22	-	13°									
A40T-DWLN□**08-50**	●	●		50	40	37	300	60	27	-	13°	0.8	CP-3D	CS-3D	SP-3D	DW-42	SB-4085TR	DN20	LW-3	FT-15

*Not applicable to high-pressure coolant.

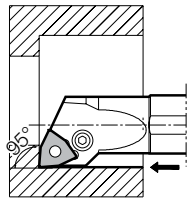
Applicable Inserts

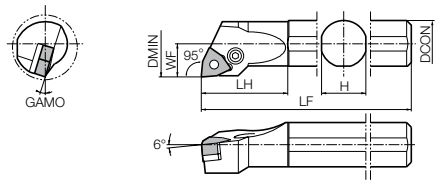
Application	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. Page	B46	B46	B46	B46	B47	B47	B47	B47	B47	B47	B47
Insert / Toolholder	**WF (Wiper)**	**WE (Wiper)**	**PP**	**PQ**	**CQ**	**CJ**	**GS**	**PG**	**PS**	**PT**	**Standard**
											
...-DWLN□**4** **...-DWLN**□**08 -...**	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..
Application	Low Carbon Steel / Finishing	Low Carbon Steel / Medium	Low Carbon Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Ref. Page	B48	B48	B48	B48	B48	B48	B49	B49	B49	B49	B49
Insert / Toolholder	**XP**	**XQ**	**XS**	**MQ**	**MS**	**MU**	**C(GC)**	**KQ**	**KG**	**KH**	**ZS**
											
...-DWLN□**4** **...-DWLN**□**08 -...**	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..
Application	Non-ferrous Metals	Non-ferrous Metals	Heat-resistant Alloys	Hard Materials							
Ref. Page	B49	C23	B48	C13							
Insert / Toolholder	**AH**	**PCD**	**SG**	**CBN**							
											
...-DWLN□**4** **...-DWLN**□**08 -...**	WNGG43..	WNMM43..	WNMG43..	WNGA43..							

Recommended Cutting Conditions ➡ **F110-F111**

S-PWLN08 (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

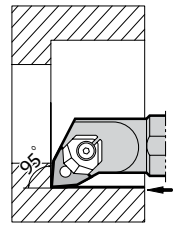
Toolholder Dimensions

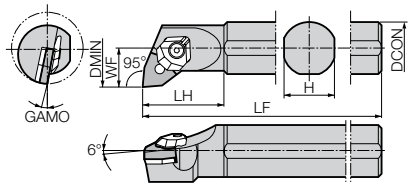
Part Number	Stock R	Stock L	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
S32S-PWLNR/L08-40	●	●	40	32	30	250	50	22	10°	0.8	LL-2N	LS-2N	LW-42NR/L	LSP-2	PC-2	LW-3
S40T-PWLNR/L08-50	●	●	50	40	37	300	60	27	10°							

· Shim: LW-42NR for Right-hand Toolholder, LW-42NL for Left-hand Toolholder.

S-WWLN08-E Excellent Bar (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~5**)





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Spare Parts: Clamp Set	Wrench	Shim	Shim Pin	Wrench
S25S-WWLNR/L08-28E	●	●	28	25	24	250	36	14	13°	1.2	WCS-8	LW-3	WWP-42	WP5X11	LW-2
S25S-WWLNR/L08-34E	●	●	34	25	24	250	40	17	11°				*WWP		
S32S-WWLNR/L08-40E	●	●	40	32	30	250	50	20	10°				-42-16		

· When using inserts whose corner-R(RE) = 1.60mm or larger, purchase and use shim with * mark separately to prevent interference between workpiece and shim.

Applicable Inserts

Application	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. Page	B46	B46	B46	B46	B47	B47	B47	B47	B47	B47	B47
Insert / Toolholder	WF (Wiper)	WE (Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
...-PWLNR/L08-... / ...-WWLNR/L08-...	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..
Application	Low Carbon Steel / Finishing	Low Carbon Steel / Medium	Low Carbon Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron
Ref. Page	B48	B48	B48	B48	B48	B48	B49	B49	B49	B49	B49
Insert / Toolholder	XP	XQ	XS	MQ	MS	MU	C(GC)	KQ	KG	KH	ZS
...-PWLNR/L08-... / ...-WWLNR/L08-...	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..	WNMG43..
Application	Non-ferrous Metals	Non-ferrous Metals	Heat-resistant Alloys	Hard Materials							
Ref. Page	B49	C23	B48	C13							
Insert / Toolholder	AH	PCD	SG	CBN							
...-PWLNR/L08-... / ...-WWLNR/L08-...	WNGG43..	WNMM43..	WNMG43..	WNGA43..							

· In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restraint force.

Recommended Cutting Conditions ➔ **F110-F111**

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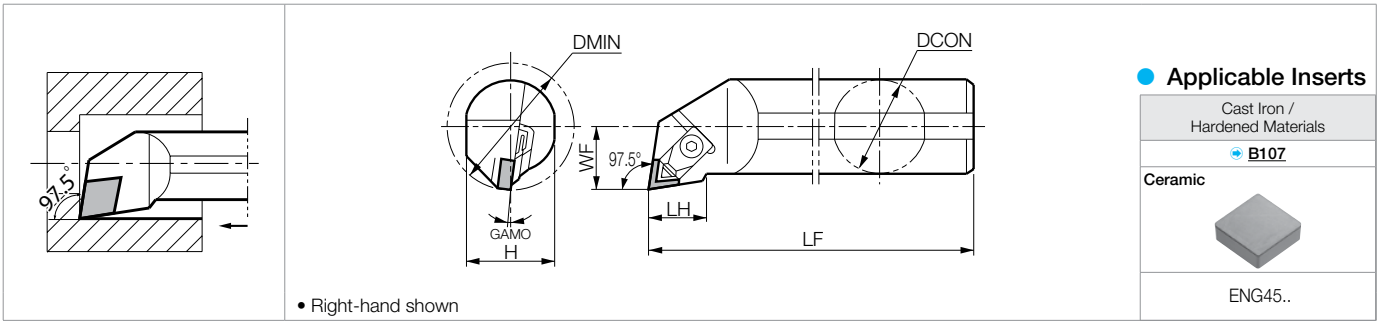
S-CELN (Boring / Internal Facing)

(Max. Overhang Length **L/D = ~3**)



• Right-hand shown

Applicable Inserts

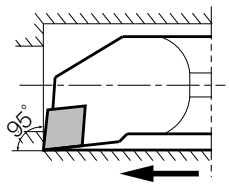
Cast Iron / Hardened Materials
B107
Ceramic
ENG45..

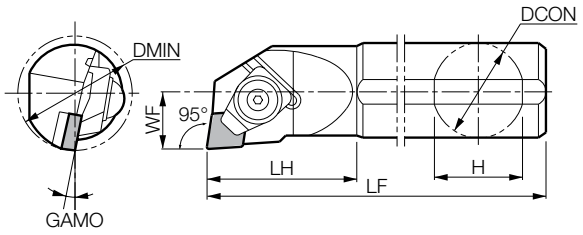
Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)					GAMO	Standard Corner-R (RE)	Spare Parts				
	R	L	DMIN	DCON	H	LF	LH	WF			Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
S40T-CELNR13-50	●		50	40	37	300	32	27	12°	0.8	CB-16	CE-010	LW-4	SP-341P	M3X8

Recommended Cutting Conditions **F110-F111**

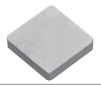
S-CCLN-A (Boring / Internal Facing)





• Right-hand shown

Applicable Inserts

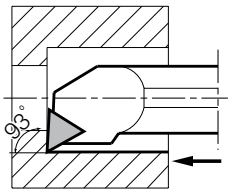
Hardened Materials / Cast Iron
C19
CBN (KBN900)

CNM32..

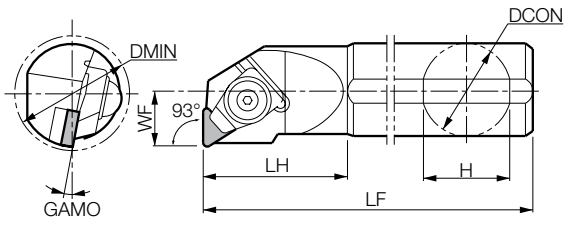
Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Spare Parts: Clamp Set	Wrench	Shim	Shim Screw
S32S-CCLN□**09-40A**	△	△	mm	40	32	30	250	50	22	8°	0.8	CE-360S	LW-4	SP-420A	BH3X6

Recommended Cutting Conditions **F110-F111**

S-CTUN-A (Boring)





• Right-hand shown

Applicable Inserts

Hardened Materials / Cast Iron	Hardened Materials / Cast Iron
C19	B111
CBN (KBN900)	Ceramic
TNM22..	TNG22..

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	GAMO	Standard Corner-R (RE)	Spare Parts: Clamp Set	Wrench	Shim	Shim Screw
S25X-CTUN□**11-30A**	●		mm	30	25	24	220	40	15	10°	0.8	CE-360S	LW-4	SP-210A	BH3X6

Recommended Cutting Conditions **F110-F111**

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Recommended Cutting Conditions (VNB-S)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: sfm)						VNB01-S VNB015-S		VNB02-S ~ VNB04-S		Notes
	MEGA COAT	PVD	Carbide	CBN	PCD		D.O.C. (inch), f (ipr)				
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	★ 100~390	☆ 100~330					~0.0039	~0.0004	~0.0079	~0.0012	Wet
Stainless Steel	★ 100~300	☆ 100~260					~0.0039	~0.0004	~0.0079	~0.0008	

★ : 1st Recommendation
☆ : 2nd Recommendation

Recommended Cutting Conditions (VNB / VNB-NB / VNBT)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: sfm)						VNB02		VNB03		VNB004 VNBT04		VNB05 VNB06 VNB07 VNBT05		Notes
	MEGA COAT	PVD	Carbide	CBN	PCD		D.O.C. (inch), f (ipr)								
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	D.O.C.	f	D.O.C.	f	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel	★ 100~390	☆ 100~330					~0.0118	~0.0012	~0.0157	~0.0016	~0.0177	~0.0028	~0.0197	~0.0039	
Stainless Steel	★ 100~330	☆ 100~260					~0.0118	~0.0008	~0.0157	~0.0012	~0.0177	~0.0020	~0.0197	~0.0028	Wet
Non-ferrous Metals			☆ ~330		★ ~980	☆ ~980	~0.0118	~0.0020	~0.0157	~0.0024	~0.0177	~0.0039	~0.0197	~0.0059	

★ : 1st Recommendation
☆ : 2nd Recommendation

Recommended Cutting Conditions (VNBX-S)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: sfm)							VNBX01-S VNBX015-S		VNBX02-S ~ VNBX04-S		Notes
	PVD Coated Carbide			Carbide	CBN	PCD		D.O.C. (inch), f (ipr)				
	PR630	PR915	PR930	KW10	KBN510	KPD001	KPD010	D.O.C.	f	D.O.C.	f	
Carbon Steel / Alloy Steel			★ 100~330					~0.0039	~0.0004	~0.0079	~0.0012	Wet
Stainless Steel			★ 100~260					~0.0039	~0.0004	~0.0079	~0.0008	

★ : 1st Recommendation

EZH Sleeves EZ Bar Sleeves (Listed by Sleeve Shank Dia.)

Sleeve Part Number				Applicable Bars				
EZH-CT (Adjustable Overhang Length with Coolant Hole)	EZH-HP (Adjustable Overhang Length)	EZH-ST	Sleeve Shank Dia DCON (mm)	EZB	EZBF / EZBT EZVB / EZG EZFG / EZT	EZ Bar Plus	Shank Dia DCON (mm)	Applicable Machine Manufacturer
-	-	EZH 01712ST-80	12	EZBR ...017...	-	-	1.7	(General Purpose)
		02012ST-80		EZB% ...020...			2	
		02512ST-80		EZB% ...025...	EZ_ _ ...025-...		2.5	
		03012ST-80		EZB% ...030...	EZ_ _ ...030-...		3	
		03512ST-80		EZB% ...035...	EZ_ _ ...035-...		3.5	
		04012ST-80		EZB% ...040...	EZ_ _ ...040-...		4	
		05012ST-80		EZB% ...050...	EZ_ _ ...050-...		5	
		06012ST-80		EZB% ...060...	EZ_ _ ...060-...		6	
		07012ST-80		EZBR ...070...	EZ_ _ ...070-...		7	
-	EZH 01716HP-100	EZH 01716ST-100	16	EZBR ...017...	-	-	1.7	(General Purpose)
	02016HP-100	02016ST-100		EZB% ...020...			2	
	02516HP-100	02516ST-100		EZB% ...025...	EZ_ _ ...025-...		2.5	
	03016HP-100	03016ST-100		EZB% ...030...	EZ_ _ ...030-...		3	
	03516HP-100	03516ST-100		EZB% ...035...	EZ_ _ ...035-...		3.5	
	04016HP-100	04016ST-100		EZB% ...040...	EZ_ _ ...040-...		4	
	04516HP-100	-		EZB% ...045...	-	S/C045X- ...-050EZ(P)	4.5	
	05016HP-100	05016ST-100		EZB% ...050...	EZ_ _ ...050-...	S/C050X- ...-060EZP	5	
	06016HP-100	06016ST-100		EZB% ...060...	EZ_ _ ...060-...	S/C060X- ...-070EZ(P)	6	
	07016HP-100	07016ST-100		EZBR ...070...	EZ_ _ ...070-...	S/C070X- ...-080EZP	7	
	-	08016ST-100		EZB% ...080...	-	S/C080X- ...-100EZP	8	
EZH 01719CT-120	EZH 01719HP-120	EZH 01719ST-120	19.05	EZBR ...017...	-	-	1.7	Citizen Machinery
02019CT-120	02019HP-120	02019ST-120		EZB% ...020...			2	
02519CT-120	02519HP-120	02519ST-120		EZB% ...025...	EZ_ _ ...025-...		2.5	
03019CT-120	03019HP-120	03019ST-120		EZB% ...030...	EZ_ _ ...030-...		3	
03519CT-120	03519HP-120	03519ST-120		EZB% ...035...	EZ_ _ ...035-...		3.5	
04019CT-120	04019HP-120	04019ST-120		EZB% ...040...	EZ_ _ ...040-...		4	
04519CT-120	04519HP-120	-		EZB% ...045...	-	S/C045X- ...-050EZ(P)	4.5	
05019CT-120	05019HP-120	05019ST-120		EZB% ...050...	EZ_ _ ...050-...	S/C050X- ...-060EZP	5	
06019CT-120	06019HP-120	06019ST-120		EZB% ...060...	EZ_ _ ...060-...	S/C060X- ...-070EZ(P)	6	
07019CT-120	07019HP-120	07019ST-120		EZBR ...070...	EZ_ _ ...070-...	S/C070X- ...-080EZP	7	
08019CT-120	08019HP-120	08019ST-120		EZB% ...080...	-	S/C080X- ...-100EZP	8	
EZH 01720CT-120	EZH 01720HP-120	EZH 01720ST-120	20	EZBR ...017...	-	-	1.7	Amada Machine Tools Eguro Tsugami Citizen Machinery (General Purpose)
02020CT-120	02020HP-120	02020ST-120		EZB% ...020...			2	
02520CT-120	02520HP-120	02520ST-120		EZB% ...025...	EZ_ _ ...025-...		2.5	
03020CT-120	03020HP-120	03020ST-120		EZB% ...030...	EZ_ _ ...030-...		3	
03520CT-120	03520HP-120	03520ST-120		EZB% ...035...	EZ_ _ ...035-...		3.5	
04020CT-120	04020HP-120	04020ST-120		EZB% ...040...	EZ_ _ ...040-...		4	
04520CT-120	04520HP-120	-		EZB% ...045...	-	S/C045X- ...-050EZ(P)	4.5	
05020CT-120	05020HP-120	05020ST-120		EZB% ...050...	EZ_ _ ...050-...	S/C050X- ...-060EZP	5	
06020CT-120	06020HP-120	06020ST-120		EZB% ...060...	EZ_ _ ...060-...	S/C060X- ...-070EZ(P)	6	
07020CT-120	07020HP-120	07020ST-120		EZBR ...070...	EZ_ _ ...070-...	S/C070X- ...-080EZP	7	
08020CT-120	08020HP-120	08020ST-120		EZB% ...080...	-	S/C080X- ...-100EZP	8	
EZH 01722CT-135	EZH 01722HP-135	EZH 01722ST-135	22	EZBR ...017...	-	-	1.7	Star Micronics Nomura DS Tsugami
02022CT-135	02022HP-135	02022ST-135		EZB% ...020...			2	
02522CT-135	02522HP-135	02522ST-135		EZB% ...025...	EZ_ _ ...025-...		2.5	
03022CT-135	03022HP-135	03022ST-135		EZB% ...030...	EZ_ _ ...030-...		3	
03522CT-135	03522HP-135	03522ST-135		EZB% ...035...	EZ_ _ ...035-...		3.5	
04022CT-135	04022HP-135	04022ST-135		EZB% ...040...	EZ_ _ ...040-...		4	
04522CT-135	04522HP-135	-		EZB% ...045...	-	S/C045X- ...-050EZ(P)	4.5	
05022CT-135	05022HP-135	05022ST-135		EZB% ...050...	EZ_ _ ...050-...	S/C050X- ...-060EZP	5	
06022CT-135	06022HP-135	06022ST-135		EZB% ...060...	EZ_ _ ...060-...	S/C060X- ...-070EZ(P)	6	
07022CT-135	07022HP-135	07022ST-135		EZBR ...070...	EZ_ _ ...070-...	S/C070X- ...-080EZP	7	
08022CT-135	08022HP-135	08022ST-135		EZB% ...080...	-	S/C080X- ...-100EZP	8	
EZH 01725.0CT-135	EZH 01725.0HP-135	EZH 01725.0ST-135	25	EZBR ...017...	-	-	1.7	Amada Machine Tools Eguro Tsugami Citizen Machinery (General Purpose)
02025.0CT-135	02025.0HP-135	02025.0ST-135		EZB% ...020...			2	
02525.0CT-135	02525.0HP-135	02525.0ST-135		EZB% ...025...	EZ_ _ ...025-...		2.5	
03025.0CT-135	03025.0HP-135	03025.0ST-135		EZB% ...030...	EZ_ _ ...030-...		3	
03525.0CT-135	03525.0HP-135	03525.0ST-135		EZB% ...035...	EZ_ _ ...035-...		3.5	
04025.0CT-135	04025.0HP-135	04025.0ST-135		EZB% ...040...	EZ_ _ ...040-...		4	
04525.0CT-135	04525.0HP-135	-		EZB% ...045...	-	S/C045X- ...-050EZ(P)	4.5	
05025.0CT-135	05025.0HP-135	05025.0ST-135		EZB% ...050...	EZ_ _ ...050-...	S/C050X- ...-060EZP	5	
06025.0CT-135	06025.0HP-135	06025.0ST-135		EZB% ...060...	EZ_ _ ...060-...	S/C060X- ...-070EZ(P)	6	
07025.0CT-135	07025.0HP-135	07025.0ST-135		EZBR ...070...	EZ_ _ ...070-...	S/C070X- ...-080EZP	7	
08025.OCT-135	08025.0HP-135	08025.0ST-135		EZB% ...080...	-	S/C080X- ...-100EZP	8	
EZH 01725.4CT-120	EZH 01725.4HP-120	EZH 01725.4ST-120	25.4	EZBR ...017...	-	-	1.7	Citizen Machinery
02025.4CT-120	02025.4HP-120	02025.4ST-120		EZB% ...020...			2	
02525.4CT-120	02525.4HP-120	02525.4ST-120		EZB% ...025...	EZ_ _ ...025-...		2.5	
03025.4CT-120	03025.4HP-120	03025.4ST-120		EZB% ...030...	EZ_ _ ...030-...		3	
03525.4CT-120	03525.4HP-120	03525.4ST-120		EZB% ...035...	EZ_ _ ...035-...		3.5	
04025.4CT-120	04025.4HP-120	04025.4ST-120		EZB% ...040...	EZ_ _ ...040-...		4	
04525.4CT-120	04525.4HP-120	-		EZB% ...045...	-	S/C045X- ...-050EZ(P)	4.5	
05025.4CT-120	05025.4HP-120	05025.4ST-120		EZB% ...050...	EZ_ _ ...050-...	S/C050X- ...-060EZP	5	
06025.4CT-120	06025.4HP-120	06025.4ST-120		EZB% ...060...	EZ_ _ ...060-...	S/C060X- ...-070EZ(P)	6	
07025.4CT-120	07025.4HP-120	07025.4ST-120		EZBR ...070...	EZ_ _ ...070-...	S/C070X- ...-080EZP	7	
08025.4CT-120	08025.4HP-120	08025.4ST-120		EZB% ...080...	-	S/C080X- ...-100EZP	8	

- Choose sleeves (DCB) to meet with DCON dimension of bar.
- Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT/HP sleeves.
- Machine manufacturers in random order.

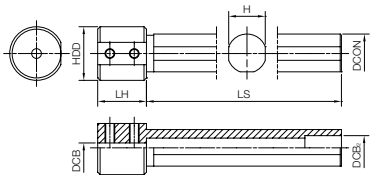
EZH Sleeves and Applicable Inserts / Toolholders (Listed by Sleeve Shank Dia.)

Shank Size (Hole Dia. : mm)		017 (1.7mm)	020 (2.0mm)	025 (2.5mm)	03 (3.0mm)	035 (3.5mm)
EZH-CT Sleeve Part Number (Internal Coolant) EZH-HP Sleeve Part Number (Adjustable Overhang Length)		EZH 01716HP-100	EZH 02016HP-100	EZH 02516HP-100	EZH 03016HP-100	EZH 03516HP-100
		01719CT/HP-120	02019CT/HP-120	02519CT/HP-120	03019CT/HP-120	03519CT/HP-120
		01720CT/HP-120	02020CT/HP-120	02520CT/HP-120	03020CT/HP-120	03520CT/HP-120
		01722CT/HP-135	02022CT/HP-135	02522CT/HP-135	03022CT/HP-135	03522CT/HP-135
		01725.0CT/HP-135	02025.0CT/HP-135	02525.0CT/HP-135	03025.0CT/HP-135	03525.0CT/HP-135
		01725.4CT/HP-120	02025.4CT/HP-120	02525.4CT/HP-120	03025.4CT/HP-120	03525.4CT/HP-120
EZH-ST Sleeve Part Number		EZH 01712ST-80	EZH 02012ST-80	EZH 02512ST-80	EZH 03012ST-80	EZH 03512ST-80
		01716ST-100	02016ST-100	02516ST-100	03016ST-100	03516ST-100
		01719ST-120	02019ST-120	02519ST-120	03019ST-120	03519ST-120
		01720ST-120	02020ST-120	02520ST-120	03020ST-120	03520ST-120
		01722ST-135	02022ST-135	02522ST-135	03022ST-135	03522ST-135
		01725.0ST-135	02025.0ST-135	02525.0ST-135	03025.0ST-135	03525.0ST-135
		01725.4ST-120	02025.4ST-120	02525.4ST-120	03025.4ST-120	03525.4ST-120
EZ Bar			EZB※ 020020HP-	EZB※ 025025HP-	EZB※ 030030HP-	EZB※ 035035HP-
	Boring Bar	EZBR 020017ST-	EZBR 025020ST-	EZBR 030025ST-	EZBR 035030ST-	EZBR 040035ST-
		EZBR 020017-...NB	EZBR 025020-...NB	EZBR 030025-...NB	EZBR ...030-...NB	EZBR 040035-...NB
					EZVBR 035030-	
					EZBFR 030030-	
	Internal Grooving				EZGR 030030-	
	Face Grooving					
	Internal Threading			EZTR 030025-	EZTR 035030-	EZTR 040035-
EZ Bar - Plus						

Shank Size (Hole Dia. : mm)		04 (4.0mm)	045 (4.5mm)	05 (5.0mm)	06 (6.0mm)	07 (7.0mm)	08 (8.0mm)
EZH-CT Sleeve Part Number (Internal Coolant) EZH-HP Sleeve Part Number (Adjustable Overhang Length)		EZH 04016HP-100	EZH 04516HP-100	EZH 05016HP-100	EZH 06016HP-100	EZH 07016HP-100	
		04019CT/HP-120	04519CT/HP-120	05019CT/HP-120	06019CT/HP-120	07019CT/HP-120	EZH 08019CT/HP-120
		04020CT/HP-120	04520CT/HP-120	05020CT/HP-120	06020CT/HP-120	07020CT/HP-120	08020CT/HP120
		04022CT/HP-135	04522CT/HP-135	05022CT/HP-135	06022CT/HP-135	07022CT/HP-135	08022CT/HP-135
		04025.0CT/HP-135	04525.0CT/HP-135	05025.0CT/HP-135	06025.0CT/HP-135	07025.0CT/HP-135	08025.0CT/HP-135
		04025.4CT/HP-120	04525.4CT/HP-120	05025.4CT/HP-120	06025.4CT/HP-120	07025.4CT/HP-120	08025.4CT/HP-120
EZH-ST Sleeve Part Number		EZH 04012ST-80		EZH 05012ST-80	EZH 06012ST-80	EZH 07012ST-80	
		04016ST-100		05016ST-100	06016ST-100	07016ST-100	EZH 08016ST-100
		04019ST-120		05019ST-120	06019ST-120	07019ST-120	08019ST-120
		04020ST-120		05020ST-120	06020ST-120	07020ST-120	08020ST-120
		04022ST-135		05022ST-135	06022ST-135	07022ST-135	08022ST-135
		04025.0ST-135		05025.0ST-135	06025.0ST-135	07025.0ST-135	08025.0ST-135
		04025.4ST-120		05025.4ST-120	06025.4ST-120	07025.4ST-120	08025.4ST-120
EZ Bar		EZB※ 040040HP-		EZB※ 050050HP-	EZB※ 060060HP-		
	Boring Bar	EZBR 045040ST-		EZBR 055050ST-	EZBR 065060ST-	EZBR 075070ST-	
		EZBR ...040-...NB		EZBR ...050-...NB	EZBR ...060-...NB	EZBR ...070-...NB	
		EZVBR 045040-		EZVBR 055050-	EZVBR 065060-		
		EZBTR 040040-		EZBTR 050050-			
		EZBFR 040040-		EZBFR 050050-	EZBFR 060060-		
	Internal Grooving	EZG※ 040040-		EZG※ 050050-	EZG※ 060060-	EZG※ ...070-...	
	Face Grooving	EZFG※ 050040-		EZFG※ 060050-		EZFG※ 080070-	
	Internal Threading	EZTR 050040-		EZTR 060050-	EZTR 070060-	EZTR 080070-	
EZ Bar - Plus			S/C045X-SCLCR03-050EZ(P)	S/C050X-SWUBR03-060EZP	S/C060X-SCLCR04-070EZ(P)	S/C070X-SCLCR04-080EZP	S/C080X-SCLCR06-100EZP
						S/C070X-STLBR06-080EZP	S/C080X-STLBR09-100EZP
				S/C050X-SWUBR06-060EZP	S/C060X-SWUBR06-070EZP	S/C070X-SWUBR08-080EZP	
Boring Bar		C04-...		C05-...	C06-...	C07-...	C/E08-...
					S06-...		A/S08-...

Note 1) When attaching Double-sided Micro Bars to EZH-CT/HP Sleeve (Adjustable overhang length), detach Adjustable Pin.
Overhang length of bar is not adjustable.

Sleeves for Micro Bars

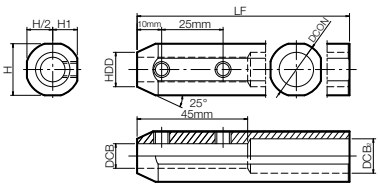
Shape	Part Number	Stock	Unit	Dimensions							Spare Parts	
				DCON	HDD	DCB	DCB2	H	LS	LH	Screw	Wrench
 (Tip-Bar installation side)	PH 0212-60	△	mm	12	19	1.8	6	11	60	20	HS3X4	LW-1.5
	0312-60	△		12	19	2.8						
	0412-60	△		12	19	3.8	6	11	60	20	HS4X4	LW-2
	0512-60	△		12	19	4.8						
	0612-60	△		12	19	5.8	8	11	60	20	HS4X4	LW-2
	0712-60	△		12	19	6.8						
	PH 0216-80	△		16	22	1.8	Rp¼ (PS¼)	15	80	20	HS3X4	LW-1.5
	0316-80	△		16	22	2.8						
	0416-80	△		16	22	3.8	Rp¼ (PS¼)	15	80	20	HS4X4	LW-2
	0516-80	△		16	22	4.8						
	0616-80	△		16	22	5.8						
	0716-80	△		16	22	6.8						
	PH 10-3MM	●	inch	0.625	0.750	0.110	3/8-24 UNF	0.575	3.213	0.787	SLS-1	LW-2
	10-4MM	●		0.625	0.875	0.150						
	10-6MM	●		0.625	0.875	0.228						
	10-7MM	●		0.625	0.875	0.268						

F BORING

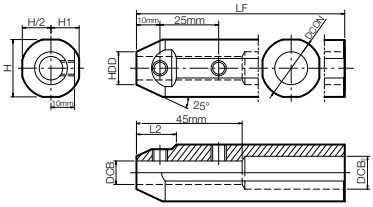
Description Table for PH Sleeves and Applicable Toolholders

Shank Size (Hole Dia. : mm)		..-2mm / 02.. (0.071" / 1.8mm)	..-3mm / 03.. (0.110" / 2.8mm)	..-4mm / 04.. (0.150" / 3.8mm)	..-5mm / 05.. (0.189" / 4.8mm)	..-6mm / 06.. (0.228" / 5.8mm)	..-7mm / 07.. (0.268" / 6.8mm)
PH Type Sleeve Part Numbers		PH10-2MM	PH10-3MM	PH10-4MM	PH10-5MM	PH10-6MM	PH10-7MM
		PH0212-60	PH0312-60	PH0412-60	PH0512-60	PH0612-60	PH0712-60
		PH0216-80	PH0316-80	PH0416-80	PH0516-80	PH0616-80	PH0716-80
1-Edge Micro Bars	Boring Bars	PSB□0202-	PSB□0303-	PSB□0404-	PSB□0505-	PSB□0606-	PSB□0707-
				PSBT□0415-	PSBT□0515-		
	Internal Grooving			PSG□0510-	PSG□0610-	PSG□0710-	PSG□0810-
				PSG□0520-	PSG□0620-	PSG□0720-	PSG□0820-
	Face Grooving						PSFG□0810-
							PSFG□0820-
							PSFG□0830-
	Internal Threading			PSTR0604-	PSTR0805-		

SHA Sleeves (Applicable Toolholders ➡ F104)



(Toolholder installation side) **Fig.1**



(Toolholder installation side) **Fig.2**

Part Number	Stock	Dimensions (mm)								Drawing	Spare Parts		Applicable Machine Manufacturer
		DCB	DCON	HDD	DCB2	H	H1	LF	L2		Screw	Wrench	
SHA 0820-120	□	8	20.00	14	12	19.0	9.25	120	-	Fig.1	HS6X4P	LW-3	Amada Machine Tools Eguro Tsugami Citizen Machinery
1020-120	●	10	20.00	14	12	19.0	9.25	120	-	Fig.1			
SHA 0825.0-135	●	8	25.00	14	14	24.0	11.5	135	17	Fig.2			
1025.0-135	●	10	25.00	14	14	24.0	11.5	135	17	Fig.2			
1225.0-135	●	12	25.00	16	14	24.0	11.5	135	17	Fig.2			
SHA 0819-120	□	8	19.05	14	12	18.0	8.75	120	-	Fig.1	HS6X4P	LW-3	Citizen Machinery
1019-120	□	10	19.05	14	12	18.0	8.75	120	-	Fig.1			
SHA 0820-120	□	8	20.00	14	12	19.0	9.25	120	-	Fig.1			
1020-120	●	10	20.00	14	12	19.0	9.25	120	-	Fig.1			
SHA 0825.4-120	●	8	25.40	14	14	24.4	12.0	120	17	Fig.2			
1025.4-120	●	10	25.40	14	14	24.4	12.0	120	17	Fig.2			
1225.4-120	●	12	25.40	16	14	24.4	12.0	120	17	Fig.2			
SHA 0822-125	●	8	22.00	14	14	21.0	10.0	125	-	Fig.1	HS6X4P	LW-3	Star Micronics Nomura DS
1022-125	●	10	22.00	14	14	21.0	10.0	125	-	Fig.1			
1222-125	□	12	22.00	16	14	21.0	10.0	125	-	Fig.1			
SHA 0823-120	□	8	23.00	14	14	22.0	10.5	120	16	Fig.2	HS6X4P	LW-3	Nomura DS
1023-120	□	10	23.00	14	14	22.0	10.5	120	16	Fig.2			
1223-120	□	12	23.00	16	14	22.0	10.5	120	16	Fig.2			

※ : Length of DCB…45mm (All SHA sleeves) • Choose sleeves (DCB) to meet with DCON dimension of toolholder. • Machine manufacturers are in random order.

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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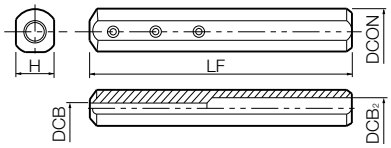
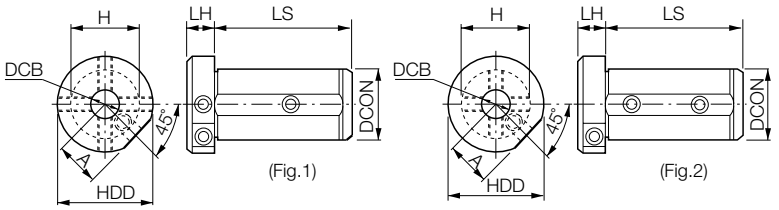
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Sleeves for Boring Bars

Shape	Part Number	Stock	Unit	Dimensions					Spare Parts	
									Screw	Wrench
				DCON	DCB	DCB_2	H	LF		
 (Toolholder installation side)	**SH 0416-100**	●	mm	16	4	5	14	100	HS4X4	LW-2
	0516-100	●		16	5	6	14	100		
	0616-100	●		16	6	7	14	100		
	0716-100	●		16	7	8	14	100		
	SH 0820-120	●		20	8	9	18	120	HS4X4	LW-2
	1020-120	●		20	10	11	18	120		
	1225-150	●		25	12	13	23	150	HS5X5	LW-2.5
	1632-180	●		32	16	18	30	180	HS5X5	LW-2.5
	2032-180	●		32	20	22	30	180		
	SL -1	●	inch	0.625	0.203	0.250	0.292	4.00	SLS-1	LW-2
	-2	●		0.625	0.281	0.312	0.292	4.00	SLS-2	
	-2.5-10	●		0.625	0.156	0.197	0.292	4.00	SLS-1	

Coolant Sleeve Dimensions



(Fig.1) (Fig.2)

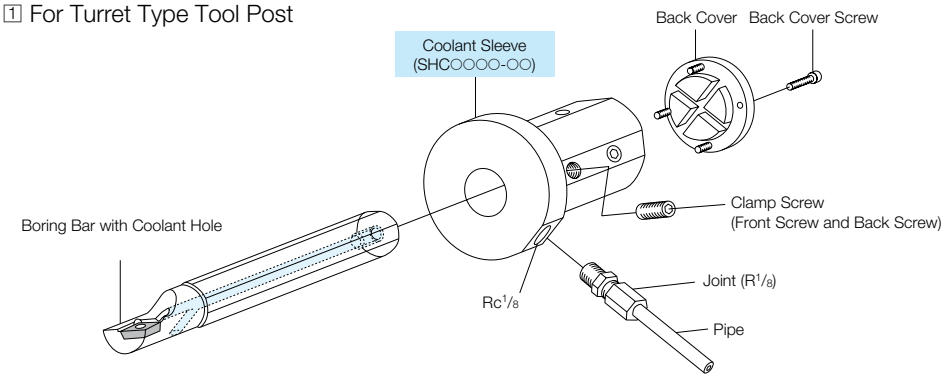
Accessories
- Back Cover / SHL-4···SHC○○40-70
  SHL-5···SHC○○50-95
- Back Cover Screw
- Shank Clamp Screw

(Note) To stabilize the Toolholder and to prevent coolant leaks, tighten all 4 screws of coolant sleeve securely.

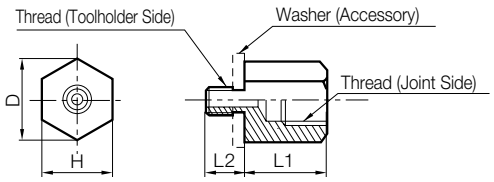
Part Number	Stock	Dimensions (mm)							Drawing	Spare Parts						
		DCON	HDD	DCB	LS	LH	H	A		Front Screw	Wrench	Back Screw	Wrench	Back Cover	Back Cover Screw	Wrench
SHC 0840-70	●	40	56	8	70	16	38	27.0	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-4	HH3X6	LW-2.5
1040-70	●	40	56	10	70	16	38	27.0								
1240-70	●	40	56	12	70	16	38	27.0	Fig.2	HS10X10	LW-5	HS10X10	LW-5	SHL-4	HH3X6	LW-2.5
1640-70	●	40	56	16	70	16	38	27.0								
2040-70	●	40	56	20	70	16	38	27.0	Fig.1	HS10X10	LW-5	HS6X6	LW-3	SHL-4	HH3X6	LW-2.5
2540-70	●	40	56	25	70	16	38	27.0								
SHC 0850-95	●	50	65	8	95	16	47	30.5	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-5	HH3X12	LW-2.5
1050-95	●	50	65	10	95	16	47	30.5								
1250-95	●	50	65	12	95	16	47	30.5	Fig.2	HS10X10	LW-5	HS10X10	LW-5	SHL-5	HH3X12	LW-2.5
1650-95	●	50	65	16	95	16	47	30.5								
2050-95	●	50	65	20	95	16	47	30.5								
2550-95	●	50	65	25	95	16	47	30.5								

How to Install

1 For Turret Type Tool Post

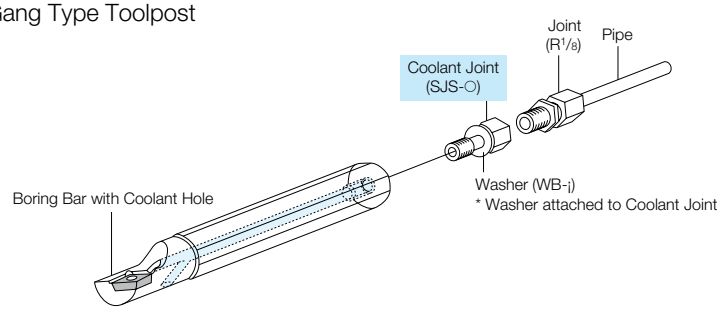


Coolant Joint Dimensions *This Coolant Joint is not applicable for Dynamic Bar



Part Number	Stock	Dimensions (mm)				Thread (Toolholder Side)	Thread (Joint Side)	Spare Parts Washer
		D	L1	L2	H			
SJS-5	●	15	15	7	13	M5XP0.8	Rc1/8 (PT1/8)	WB-5
SJS-6	●	15	15	9	13	M6XP1.0		WB-6
SJS-8	●	15	15	13	13	M8XP1.25		WB-8

2 For Gang Type Toolpost



List of Toolholders and Applicable Joints

Toolholder Part Number	Applicable Coolant Joint
A08-----OOE	SJS-5
A10-----OOE	
A12-----OOE	SJS-6
A16-----OOE	SJS-8
A20-----OOE	
A25-----OOE	
E08-----OO	SJS-5
E10-----OO	
E12-----OO	SJS-6
E16-----OO	SJS-8
E20-----OO	

* This Coolant Joint is not applicable for Dynamic Bar

SHA / SH / SHC Sleeves and Applicable Toolholders (Listed by Shank Dia.)

Shank Size (Hole Dia. : mm)	04 (4mm)	05 (5mm)	06 (6mm)	07 (7mm)	08 (8mm)	10 (10mm)	12 (12mm)	16 (16mm)	20 (20mm)	25 (25mm)
SHA / SH / SHC Sleeve Part Numbers	SH0416-100	SH0516-100	SH0616-100	SH0716-100	SH0820-120	SH1020-120	SH1225-150	SH1632-180	SH2032-180	
					SHA0819-120	SHA1019-120				
					SHA0820-120	SHA1020-120				
					SHA0822-125	SHA1022-125	SHA1222-125			
					SHA0823-120	SHA1023-120	SHA1223-120			
					SHA0825.0-135	SHA1025.0-135	SHA1225.0-135			
					SHA0825.4-120	SHA1025.4-120	SHA1225.4-120			
					SHC0840-70	SHC1040-70	SHC1240-70	SHC1640-70	SHC2040-70	SHC2540-70
					SHC0850-95	SHC1050-95	SHC1250-95	SHC1650-95	SHC2050-95	SHC2550-95
Boring Bars Part Numbers					A08-····	A10-····	A12-····	A16-····	A20-····	A25-····
	C04-····	C05-····	C06-····	C07-····	C08-····	C10-····	C12-····	C16-····	C20-····	C25-····
					E08-····	E10-····	E12-····	E16-····	E20-····	E25-····
			S06-····		S08-····	S10-····	S12-····	S16-····	S20-····	S25-····
Internal Grooving Toolholder Part Numbers					SIGER0808A-EH	SIGER1010B-EH	SIGER1412C-EH	SIGER1616C-EH	SIGER2020D-EH	SIGER2525E-EH
						SIGER1210B-EH	SIGER1612C-EH			KIGBAR3525-16
					SIGER0808A-WH	SIGER1010B-WH	SIGER1412C-WH	KIGMR2016B-3V	KIGMR2520B-3V	KIGMR3225B-4V
						SIGER1210B-WH	SIGER1612C-WH			KITGR3525T-16
					SIGER1008B-WH-90	SIGER1210B-WH-90	SIGER1412C-WH-90			
							GIVR1412-1SE	GIVR1216-1SS	GIVR1420-1S	GIVR2025-1B
							GIVR1612-1AE	GIVR2016-1BE	GIVR1620-1A	GIVR2025-2B
								GIVR2016-2BE	GIVR2520-1CE	GIVR3225-1CE
								GIVR1616-1AW	GIVR2720-2CE	GIVR3225-2CE
									GIVR2020-1BW	GIVR2525-1CW
									GIVR2020-2BW	GIVR2525-2CW
Internal Threading Toolholder Part Numbers							SINR0612S-06E	SINR0816S-08E	SINR2420S-16	CINR3025S-16
								SINR1216S-11E	SINR2420S-22	CINR3025S-22
								SINR1516S-11		
								SINR1616S-16		
								SINR2016S-16		

* For SHA sleeves, please ref. to page **F102**
For SH / SL / SHC sleeves, please ref. to page **F103**

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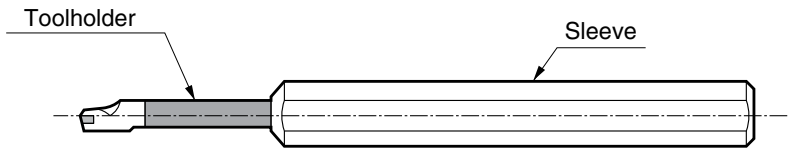
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

C...-AS (Assembly List)

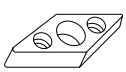
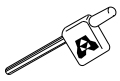


Assembly configuration

Assembly (Discontinued Part Number)	Toolholder (Discontinued Part Number)	Alternative Toolholder (Dynamic Bar)	Sleeve Part Number	Notes
C04G-SCLCR03-05-AS	C04G-SCLCR03-05	C04G-SCLCR03-05AN	SH0416-100	-
SCLCL03-05-AS	SCLCL03-05	SCLCL03-05AN		
C05H-SCLCR03-06-AS	C05H-SCLCR03-06	C05H-SCLCR03-06AN	SH0516-100	
SCLCL03-06-AS	SCLCL03-06	SCLCL03-06AN		
C05H-SWUBR06-06-AS	C05H-SWUBR06-06	C05H-SWUBR06-06AN	SH0516-100	
SWUBL06-06-AS	SWUBL06-06	SWUBL06-06AN		
C06J-SCLCR04-07-AS	C06J-SCLCR04-07	C06J-SCLCR04-07AN	SH0616-100	
SCLCL04-07-AS	SCLCL04-07	SCLCL04-07AN		
C06J-SWUBR06-07-AS	C06J-SWUBR06-07	C06J-SWUBR06-07AN	SH0616-100	
SWUBL06-07-AS	SWUBL06-07	SWUBL06-07AN		
C07K-SCLCR04-08-AS	C07K-SCLCR04-08	C07K-SCLCR04-08AN	SH0716-100	
SCLCL04-08-AS	SCLCL04-08	SCLCL04-08AN		
C07K-SWUBR08-08-AS	C07K-SWUBR08-08	C07K-SWUBR08-08AN	SH0716-100	
SWUBL08-08-AS	SWUBL08-08	SWUBL08-08AN		
C08L-STUPR08-10-AS	C08L-STUPR08-10	E08L-STLPR08-10AN	SH0820-120	Difference of Alternative Toolholder No Coolant Hole → With Coolant Hole Front Cutting Edge Angle 3° → 5°
C10N-STUPR09-12-AS	C10N-STUPR09-12	E10N-STLPR09-12AN	SH1020-120	
C10N-STUPR11-12-AS	C10N-STUPR11-12	E10N-STLPR11-12AN		
C12Q-STUPR09-16-AS	C12Q-STUPR09-16	E12Q-STLPR09-16A	SH1225-150	
C12Q-STUPR11-14-AS	C12Q-STUPR11-14	E12Q-STLPR11-14A		
C12Q-STUPR11-16-AS	C12Q-STUPR11-16			
C16X-STUPR11-18-AS	C16X-STUPR11-18	E16X-STLPR11-18A	SH1632-180	
C16X-STUPR11-20-AS	C16X-STUPR11-20			
C20S-STUPR11-25-AS	C20S-STUPR11-25	E20S-STLPR11-22A	SH2032-180	
C20S-STUPR16-25-AS	C20S-STUPR16-25	E20S-STLPR16-25A		

* "AS" indicates an assembly of toolholder and sleeve.
You can purchase the toolholder and sleeve and assemble them to make the corresponding assembly part.

Former Parts List (Boring Bar)

Part Number (Previous Part Number)	Spare Parts				
	Clamp Screw	Wrench	Shim	Shim Screw	Wrench
					
S32S-SVJBR16-40E	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
S40T-SVJBR16-50E					
S25X-SVPBR16-34E					
S32S-SVPBR16-40E					
S25X-SVUBR16-34E					
S32S-SVUBR16-40E					
S25X-SVZBR16-34E					
S32S-SVZBR16-40E					

· **S32S-SVJBR16-40E** and **S40T-SVJBR16-50E** have been replaced by **A32S-SVJBR16-40AE** and **A40T-SVJBR16-50AE** respectively. Ref. page F66
· **S25X-SVPBR16-34E** and **S32S-SVPBR16-40E** have been replaced by **A25S-SVPBR16-31AE** and **A32S-SVPBR16-40AE** respectively. Ref. page F68
· **S25X-SVUBR16-34E** and **S32S-SVUBR16-40E** have been replaced by **A25S-SVUBR16-34AE** and **A32S-SVUBR16-40AE** respectively. Ref. page F71
· **S25X-SVZBR16-34E** and **S32S-SVZBR16-40E** have been replaced by **A25S-SVZBR16-34AE** and **A32S-SVZBR16-40AE** respectively. Ref. page F71

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Part Number)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant Hole	Part Number	Coolant Hole	Part Number	Ref. to Page	Coolant Hole	Part Number	Ref. to Page
Excellent Bar	CC..	No	S08X-SCLC□06-10E	Yes	A08X-SCLC□06-10AE	F45	No	S08X-SCLC□06-10A	F45
			S10H-SCLC□03-05E	No	S10H-SCLC□03-05AE		-	-	-
			S10H-SCLC□03-06E		S10H-SCLC□03-06AE				
			S10J-SCLC□04-07E		S10H-SCLC□04-07AE				
			S10J-SCLC□04-08E		S10H-SCLC□04-08AE				
		Yes	A08H-SCLC□06-10E	Yes	A08X-SCLC□06-10AE		No	S08X-SCLC□06-10A	F45
	CP..	No	S10M-SCLP□08-12E	Yes	A10L-SCLP□08-12AE	F49	No	S10L-SCLP□08-12A	F49
			S12M-SCLP□08-14E		A12M-SCLP□08-14AE			S12M-SCLP□08-14A	
			S12M-SCLP□09-16E		A12M-SCLP□09-16AE			S12M-SCLP□09-16A	
			S16Q-SCLP□09-18E		A16Q-SCLP□09-18AE			S16Q-SCLP□09-18A	
			S16R-SCLP□09-20E						
			S20X-SCLP□09-25E		A20R-SCLP□09-22AE			S20R-SCLP□09-22A	
		Yes	A10X-SCLP□08-12E	Yes	A10L-SCLP□08-12AE	F49	No	S10L-SCLP□08-12A	F49
			A12X-SCLP□08-14E		A12M-SCLP□08-14AE			S12M-SCLP□08-14A	
			A12X-SCLP□09-16E		A12M-SCLP□09-16AE			S12M-SCLP□09-16A	
			A16M-SCLP□09-18E		A16Q-SCLP□09-18AE			S16Q-SCLP□09-18A	
			A16M-SCLP□09-20E						
			A20Q-SCLP□09-25E		A20R-SCLP□09-22AE			S20R-SCLP□09-22A	
	DC..	No	S10M-SDUC□07-14E	Yes	A10L-SDUC□07-14AE	F53	No	S10L-SDUC□07-14A	F53
			S12M-SDUC□07-16E		A12M-SDUC□07-16AE			S12M-SDUC□07-16A	
			S16Q-SDUC□07-20E		A16Q-SDUC□07-20AE			S16Q-SDUC□07-20A	
			S16Q-SDUC□11-25E		A16Q-SDUC□11-23AE			S16Q-SDUC□11-23A	
			S20Q-SDUC□11-32E		A20R-SDUC□11-27AE			S20R-SDUC□11-27A	
		No	S10M-SDZC□07-14E	Yes	A10L-SDZC□07-14AE	F55	No	S10L-SDZC□07-14A	F55
			S12M-SDZC□07-16E		A12M-SDZC□07-16AE			S12M-SDZC□07-16A	
			S16Q-SDZC□07-20E		A16Q-SDZC□07-20AE			S16Q-SDZC□07-20A	
			S16Q-SDZC□11-25E		A16Q-SDZC□11-23AE			S16Q-SDZC□11-23A	
			S20Q-SDZC□11-32E		A20R-SDZC□11-27AE			S20R-SDZC□11-27A	
	TB..	No	S06H-STUB□06-08E	No	S06H-STLB□06-08AE	F61	No	S06H-STLB□06-08A	F61
	TP..	No	S08K-STUP□08-10E	Yes	A08X-STLP□08-10AE	F61	No	S08X-STLP□08-10A	F61
			S10M-STUP□09-12E		A10L-STLP□09-12AE			S10L-STLP□09-12A	
			S10M-STUP□11-12E		A10L-STLP□11-12AE			S10L-STLP□11-12A	
			S12M-STUP□09-16E		A12M-STLP□09-16AE			S12M-STLP□09-16A	
			S12M-STUP□11-14E		A12M-STLP□11-14AE			S12M-STLP□11-14A	
			S12M-STUP□11-16E						
			S16R-STUP□11-18E		A16Q-STLP□11-18AE			S16Q-STLP□11-18A	
			S16R-STUP□11-20E						
			S20X-STUP□11-25E		A20R-STLP□11-22AE			S20R-STLP□11-22A	
			S20X-STUP□16-25E		A20R-STLP□16-25AE		-	-	-
			S25X-STUP□16-32E		A25S-STLP□16-27AE		No	S25S-STLP□16-27A	F61
		Yes	A08H-STUP□08-10E	Yes	A08X-STLP□08-10AE	F61	No	S08X-STLP□08-10A	F61
			A10X-STUP□09-12E		A10L-STLP□09-12AE			S10L-STLP□09-12A	
			A10X-STUP□11-12E		A10L-STLP□11-12AE			S10L-STLP□11-12A	
			A12X-STUPR09-16E		A12M-STLPR09-16AE			S12M-STLPR09-16A	
			A12X-STUP□11-14E		A12M-STLP□11-14AE			S12M-STLP□11-14A	
			A12X-STUPR11-16E		A12M-STLPR11-14AE			S12M-STLPR11-14A	
			A16M-STUP□11-18E		A16Q-STLP□11-18AE			S16Q-STLP□11-18A	
			A16M-STUP□11-20E						
			A20Q-STUP□11-25E		A20R-STLP□11-22AE			S20R-STLP□11-22A	
			A20Q-STUP□16-25E		A20R-STLP□16-25AE		-	-	-
			A25R-STUP□16-32E		A25S-STLP□16-27AE		No	S25S-STLP□16-27A	F61
	VB..	No	S20R-SVJB□11-25E	Yes	A20R-SVJB□11-25AE	F66	No	S20R-SVJB□11-25A	F66
			S25S-SVJB□11-30E		A25S-SVJB□11-30AE			S25S-SVJB□11-30A	
			S32S-SVJB□16-40EN		A32S-SVJB□16-40AE			S32S-SVJB□16-40A	
			S40T-SVJB□16-50EN		A40T-SVJB□16-50AE			S40T-SVJB□16-50A	

Note) The corresponding replacements may be different from the conventional parts in minimum machining diameter or applicable insert size.
Make sure of their specifications by referring to the catalog or other documents.

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Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Part Number)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant Hole	Part Number	Coolant Hole	Part Number	Ref. to Page	Coolant Hole	Part Number	Ref. to Page
Excellent Bar	VB..	No	S12M-SVPBR/L11-20E	Yes	A12M-SVPBR/L11-18AE	F68	No	S12M-SVPBR/L11-18A	F68
			S16Q-SVPBR/L11-25E		A16Q-SVPBR/L11-22AE			S16Q-SVPBR/L11-22A	
			S25X-SVPBR/L16-34EN		A25S-SVPBR/L16-31AE			S25S-SVPBR/L16-31A	
			S32S-SVPBR/L16-40EN		A32S-SVPBR/L16-40AE			S32S-SVPBR/L16-40A	
		No	S16Q-SVUBR/L11-20E	Yes	A16Q-SVUBR/L11-20AE	F71	No	S16Q-SVUBR/L11-20A	F71
			S20R-SVUBR/L11-25E		A20R-SVUBR/L11-25AE			S20R-SVUBR/L11-25A	
			S25X-SVUBR/L16-34EN		A25S-SVUBR/L16-34AE			S25S-SVUBR/L16-34A	
			S32S-SVUBR/L16-40EN		A32S-SVUBR/L16-40AE			S32S-SVUBR/L16-40A	
		No	S16Q-SVZBR/L11-20E	Yes	A16Q-SVZBR/L11-20AE	F71	No	S16Q-SVZBR/L11-20A	F71
			S20R-SVZBR/L11-25E		A20R-SVZBR/L11-25AE			S20R-SVZBR/L11-25A	
			S25X-SVZBR/L16-34EN		A25S-SVZBR/L16-34AE			S25S-SVZBR/L16-34A	
			S32S-SVZBR/L16-40EN		A32S-SVZBR/L16-40AE			S32S-SVZBR/L16-40A	
	VC..	No	S12M-SVJCR/L08-16E	Yes	A12M-SVJCR/L08-16AE	F66	No	S12M-SVJCR/L08-16A	F66
			S16Q-SVJCR/L08-20E		A16Q-SVJCR/L08-20AE			S16Q-SVJCR/L08-20A	
		No	S10M-SVPCR/L08-16E	Yes	A10L-SVPCR/L08-14AE	F68	No	S10L-SVPCR/L08-14A	F68
		No	S12M-SVUCR/L08-16E	Yes	A12M-SVUCR/L08-16AE	F71	No	S12M-SVUCR/L08-16A	F71
		No	S12M-SVZCR/L08-16E	Yes	A12M-SVZCR/L08-16AE	F71	No	S12M-SVZCR/L08-16A	F71
	VP..	No	S12M-SVJPR/L08-16E	Yes	A12M-SVJPR/L08-16AE	F66	No	S12M-SVJPR/L08-16A	F66
	WB..	No	S08K-SWUBR/L08-10E	Yes	A08X-SWUBR/L08-10AE	F75	No	S08X-SWUBR/L08-10A	F75
			S10M-SWUBR/L08-12E		A10L-SWUBR/L08-12AE			S10L-SWUBR/L08-12A	
			S10H-SWUBR/L06-06E	No	S10H-SWUBR/L06-06AE			S10H-SWUBR/L06-06A	
			S10H-SWUBR/L06-07E		S10H-SWUBR/L06-07AE			S10H-SWUBR/L06-07A	
			S10J-SWUBR/L08-08E		S10H-SWUBR/L08-08AE			S10H-SWUBR/L08-08A	
	WP..	No	S12M-SWUPR/L11-14E	Yes	A12M-SWUPR/L11-14AE	F75	No	S12M-SWUPR/L11-14A	F75
			S12M-SWUPR/L11-16E						
			S16N-SWUPR/L11-18E		A16Q-SWUPR/L11-18AE			S16Q-SWUPR/L11-18A	
			S16Q-SWUPR/L16-20E		A16Q-SWUPR/L16-18AE			S16Q-SWUPR/L16-18A	
			S20R-SWUPR/L16-25E		A20R-SWUPR/L16-22AE			S20R-SWUPR/L16-22A	
Steel Bar	CC..	No	S08X-SCLCR/L06-10	No	S08X-SCLCR/L06-10A	F45	-	-	-
	CP..	No	S10M-SCLPR/L08-12	No	S10L-SCLPR/L08-12A	F49	-	-	-
			S12M-SCLPR/L08-14		S12M-SCLPR/L08-14A				
			S12M-SCLPR/L09-16		S12M-SCLPR/L09-16A				
			S16N-SCLPR/L09-18		S16Q-SCLPR/L09-18A				
			S16Q-SCLPR/L09-20						
			S20R-SCLPR/L09-25		S20R-SCLPR/L09-22A				
			S25S-SCLPR/L09-30		S25S-SCLPR/L09-27A				
	DC..	No	S16Q-SDUCR/L07-14	No	S16Q-SDUCR/L07-14A	F53	-	-	-
			S16Q-SDUCR/L07-16						
			S20R-SDUCR/L11-20		S20R-SDUCR/L11-20A				
			S25X-SDUCR/L11-25		S16Q-SDUCR/L11-23A		No	S25S-SDUCR/L11-32A	F53
		No	S16Q-SDZCR/L07-14	No	S16Q-SDZCR/L07-14A	F55	-	-	-
			S16Q-SDZCR/L07-16						
			S20R-SDZCR/L11-20		S20R-SDZCR/L11-20A				
			S25X-SDZCR/L11-25		S16Q-SDZCR/L11-23A		No	S25S-SDZCR/L11-32A	F55
	TB..	No	S06H-STUBR/L06-08	No	S06H-STLBR/L06-08A	F61	-	-	-
	TP..	No	S08K-STUPR/L08-10	No	S08X-STLPR/L08-10A	F61	-	-	-
			S10M-STUPR/L09-12		S10L-STLPR/L09-12A				
			S12M-STUPR/L09-16		S12M-STLPR/L09-16A				
			S16Q-STUPR/L11-20		S16Q-STLPR/L11-18A				
			S20R-STUPR/L11-25		S20R-STLPR/L11-22A				
			S25X-STUPR/L16-32		S25S-STLPR/L16-27A				
	WB..	No	S10H-SWUBR/L06-06	No	S10H-SWUBR/L06-06A	F75	-	-	-
			S10H-SWUBR/L06-06-15						
			S10H-SWUBR/L06-07		S10H-SWUBR/L06-07A				
			S10J-SWUBR/L08-08		S10H-SWUBR/L08-08A				
			S10J-SWUBR/L08-08-20						

Note) The corresponding replacements may be different from the conventional parts in minimum machining diameter or applicable insert size.
Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Part Number)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant Hole	Part Number	Coolant Hole	Part Number	Ref. to Page	Coolant Hole	Part Number	Ref. to Page
Carbide Shank Boring Bar	CC..	No	C04G-SCLC□03-05 (A)	No	C04G-SCLC□03-05AN	F45	-	-	-
			C05H-SCLC□03-06 (A)		C05H-SCLC□03-06AN				
			C06J-SCLC□04-07 (A)		C06J-SCLC□04-07AN				
			C07K-SCLC□04-08 (A)		C07K-SCLC□04-08AN				
			C08L-SCLC□06-10	Yes	E08L-SCLC□06-10AN				
		Yes	E08L-SCLC□06-10 (A)						
			E08L-SCLCR06-10A-2/3		E08L-SCLCR06-10AN2/3				
			E10N-SCLC□06-12A		E10N-SCLC□06-12AN	F45	-	-	-
			E10N-SCLCR06-12A-2/3		E10N-SCLCR06-12AN2/3				
	CP..	No	C10N-SCLP□08-12	Yes	E10N-SCLP□08-12AN	F49	-	-	-
			C10N-SCLPR08-12-1/2		E10N-SCLPR08-12AN1/2				
			C10N-SCLPR08-12-2/3		E10N-SCLPR08-12AN2/3				
			C12Q-SCLP□09-16		E12Q-SCLP□09-16A				
			C12Q-SCLPR09-16-1/2		E12Q-SCLPR09-16A-1/2				
			C12Q-SCLPR09-16-2/3		E12Q-SCLPR09-16A-2/3				
			C16X-SCLP□09-20		E16X-SCLP□09-18A				
			C16X-SCLPR09-20-1/2		E16X-SCLPR09-18A-1/2				
			C16X-SCLPR09-20-2/3		E16X-SCLPR09-18A-2/3				
			C20S-SCLP□09-25		E20S-SCLP□09-22A				
			C20S-SCLPR09-25-1/2		E20S-SCLPR09-22A-1/2				
			C20S-SCLPR09-25-2/3		E20S-SCLPR09-22A-2/3				
		Yes	E10N-SCLP□08-12 (A)	Yes	E10N-SCLP□08-12AN	F49	-	-	-
			E10N-SCLPR08-12A-1/2		E10N-SCLPR08-12AN1/2				
			E10N-SCLPR08-12A-2/3		E10N-SCLPR08-12AN2/3				
			E12Q-SCLP□09-16		E12Q-SCLP□09-16A				
			E16X-SCLP□09-20		E16X-SCLP□09-18A				
			E20S-SCLP□09-25		E20S-SCLP□09-22A				
	DC..	No	C10N-SDUC□07-14	Yes	E10N-SDUC□07-14A	F53	-	-	-
			C12Q-SDUC□07-16		E12Q-SDUC□07-16A				
			C12Q-SDUC□11-20						
			C16X-SDUC□11-25		E16X-SDUC□11-23A				
			C20S-SDUC□11-32		E20S-SDUC□11-27A				
	TB..	No	C06J-STLB□06-08A	No	C06J-STLB□06-08AN	F61	-	-	-
			C10L-STUB□06-08		C06J-STLB□06-08AN				
	TP..	Yes	E08L-STLP□08-10A	Yes	E08L-STLP□08-10AN	F61	-	-	-
			E08L-STLP□09-10A		E08L-STLP□09-10AN				
			E10N-STLP□09-12A		E10N-STLP□09-12AN				
			E10N-STLPR09-12A-1/2		E10N-STLPR09-12AN1/2				
			E10N-STLPR09-12A-2/3		E10N-STLPR09-12AN2/3				
			E10N-STLP□11-12A		E10N-STLP□11-12AN				
			E10N-STLPR11-12A-1/2		E10N-STLPR11-12AN1/2				
			E10N-STLPR11-12A-2/3		E10N-STLPR11-12AN2/3				
		No	C08L-STUP□08-10	Yes	E08L-STLP□08-10AN	F61	-	-	-
			C10N-STUP□09-12		E10N-STLP□09-12AN				
			C10N-STUPR09-12-1/2		E10N-STLPR09-12AN-1/2				
			C10N-STUPR09-12-2/3		E10N-STLPR09-12AN-2/3				
			C10N-STUP□11-12		E10N-STLP□11-12AN				
			C10N-STUPR11-12-1/2		E10N-STLPR11-12AN-1/2				
			C10N-STUPR11-12-2/3		E10N-STLPR11-12AN-2/3				
			C12Q-STUP□09-16		E12Q-STLP□09-16A				
			C12Q-STUPR09-16-1/2		E12Q-STLPR09-16A-1/2				
			C12Q-STUPR09-16-2/3		E12Q-STLPR09-16A-2/3				
			C12Q-STUP□11-14		E12Q-STLP□11-14A				
			C12Q-STUPR11-14-1/2		E12Q-STLPR11-14A-1/2				
			C12Q-STUPR11-14-2/3		E12Q-STLPR11-14A-2/3				
			C12Q-STUP□11-16		E12Q-STLP□11-14A				
			C12Q-STUPR11-16-1/2		E12Q-STLPR11-14A-1/2				
			C12Q-STUPR11-16-2/3		E12Q-STLPR11-14A-2/3				

Note) The corresponding replacements may be different from the conventional parts in minimum machining diameter or applicable insert size.
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Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Part Number)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant Hole	Part Number	Coolant Hole	Part Number	Ref. to Page	Coolant Hole	Part Number	Ref. to Page
Carbide Shank Boring Bar	TP..	No	C16X-STUP□11-18	Yes	E16X-STLP□11-18A	F61	-	-	-
			C16X-STUPR11-18-1/2		E16X-STLPR11-18A-1/2				
			C16X-STUPR11-18-2/3		E16X-STLPR11-18A-2/3				
			C16X-STUP□11-20		E16X-STLP□11-18A				
			C16X-STUPR11-20-1/2		E16X-STLPR11-18A-1/2				
			C16X-STUPR11-20-2/3		E16X-STLPR11-18A-2/3				
			C20S-STUP□11-25		E20S-STLP□11-22A				
			C20S-STUPR11-25-1/2		E20S-STLPR11-22A-1/2				
			C20S-STUPR11-25-2/3		E20S-STLPR11-22A-2/3				
			C20S-STUP□16-25		E20S-STLP□16-25A				
			C20S-STUPR16-25-1/2		E20S-STLPR16-25A-1/2				
			C20S-STUPR16-25-2/3		E20S-STLPR16-25A-2/3				
		Yes	E08L-STUP□08-10	Yes	E08L-STLP□08-10AN	F61	-	-	-
			E10N-STUP□09-12		E10N-STLP□09-12AN				
			E10N-STUP□11-12		E10N-STLP□11-12AN				
			E12Q-STUP□09-16		E12Q-STLP□09-16A				
			E12Q-STUP□11-14		E12Q-STLP□11-14A				
			E12Q-STUP□11-16						
			E16X-STUP□11-18		E16X-STLP□11-18A				
			E16X-STUP□11-20						
			E20S-STUPR11-25		E20S-STLPR11-22A				
			E20S-STUPR16-25		E20S-STLPR16-25A				
	WB..	No	C05H-SWUB□06-06	No	C05H-SWUB□06-06AN	F75	-	-	-
			C06J-SWUB□06-07		C06J-SWUB□06-07AN				
			C07K-SWUB□08-08		C07K-SWUB□08-08AN				
			C08L-SWUB□08-10	Yes	E08L-SWUB□08-10AN				
			C10N-SWUB□08-12		E10N-SWUB□08-12AN				
			C10N-SWUBR08-12-1/2		E10N-SWUBR08-12AN1/2				
			C10N-SWUBR08-12-2/3		E10N-SWUBR08-12AN2/3				
		Yes	E08L-SWUB□08-10A		E08L-SWUB□08-10AN				
			E10N-SWUB□08-12A		E10N-SWUB□08-12AN				
			E10N-SWUBR08-12A-1/2		E10N-SWUBR08-12AN1/2				
			E10N-SWUBR08-12A-2/3		E10N-SWUBR08-12AN2/3				
	WP..	No	C12Q-SWUP□11-14	Yes	E12Q-SWUP□11-14A	F75	-	-	-
			C12Q-SWUPR11-14-1/2		E12Q-SWUPR11-14A-1/2				
			C12Q-SWUPR11-14-2/3		E12Q-SWUPR11-14A-2/3				
			C12Q-SWUP□11-16		E12Q-SWUP□11-14A				
			C12Q-SWUPR11-16-1/2		E12Q-SWUPR11-14A-1/2				
			C12Q-SWUPR11-16-2/3		E12Q-SWUPR11-14A-2/3				
			C16X-SWUP□11-18		E16X-SWUP□11-18A				
			C16X-SWUPR11-18-1/2		E16X-SWUPR11-18A-1/2				
			C16X-SWUPR11-18-2/3		E16X-SWUPR11-18A-2/3				
			C16X-SWUP□16-20		E16X-SWUP□16-18A				
			C16X-SWUPR16-20-1/2		E16X-SWUPR16-18A-1/2				
			C16X-SWUPR16-20-2/3		E16X-SWUPR16-18A-2/3				
			C20S-SWUP□16-25		E20S-SWUP□16-22A				
			C20S-SWUPR16-25-1/2		E20S-SWUPR16-22A-1/2				
			C20S-SWUPR16-25-2/3		E20S-SWUPR16-22A-2/3				

Note) The corresponding replacements may be different from the conventional parts in minimum machining diameter or applicable insert size.
Make sure of their specifications by referring to the catalog or other documents.

Recommended Cutting Conditions - Boring (Positive Insert)

[D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Application	Recommended Chipbreaker	Recommended Insert Grade	Corner-R (RE)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (inch)	Feed Rate f (ipr)
P	Low-carbon Steel Low-carbon Alloy	HB ≦ 300	Finishing (Solid Bar)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **230** - 360	0.0020 - **0.0039** - 0.0079	0.0004 - **0.0016** - 0.0028
				Interrupted			0.006	100 - **200** - 300	0.0020 - **0.0039** - 0.0079	0.0012 - **0.0028** - 0.0039
			Finishing	Continuous	F	PR1725	0.004	130 - **260** - 390	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	130 - **230** - 330	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing-Medium	Continuous	CF	PR1725	0.004	130 - **260** - 390	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	130 - **230** - 330	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0028** - 0.0039
	Medium-carbon Steel Medium-carbon Alloy	HB ≦ 300	Finishing (Solid Bar)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **230** - 360	0.0020 - **0.0039** - 0.0079	0.0004 - **0.0016** - 0.0028
				Interrupted			0.006	100 - **200** - 300	0.0020 - **0.0039** - 0.0079	0.0012 - **0.0028** - 0.0039
			Finishing	Continuous	F	PR1725	0.004	130 - **260** - 390	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	130 - **230** - 390	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing-Medium	Continuous	CF	PR1725	0.004	130 - **260** - 390	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	130 - **230** - 330	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0028** - 0.0039
	High-carbon Alloy	HB ≦ 280	Finishing (Solid Bar)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **230** - 360	0.0020 - **0.0039** - 0.0079	0.0004 - **0.0016** - 0.0028
				Interrupted			0.006	100 - **200** - 300	0.0020 - **0.0039** - 0.0079	0.0012 - **0.0028** - 0.0039
			Finishing	Continuous	F	PR1725	0.004	130 - **260** - 390	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	130 - **230** - 330	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing-Medium	Continuous	CF	PR1725	0.004	130 - **260** - 390	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	130 - **230** - 330	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0028** - 0.0039
M	Stainless Steel	HB ≦ 220	Finishing (Solid Bar)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **200** - 260	0.0020 - **0.0039** - 0.0079	0.0004 - **0.0012** - 0.0020
				Interrupted			0.006	100 - **200** - 260	0.0020 - **0.0039** - 0.0079	0.0008 - **0.0020** - 0.0028
			Finishing	Continuous	F	PR1225	0.004	100 - **200** - 260	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted		PR1535	0.008	100 - **200** - 260	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing-Medium	Continuous	CF	PR1225	0.004	100 - **200** - 260	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0020** - 0.0028
				Interrupted		PR1535	0.008	100 - **200** - 260	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0028** - 0.0039
	Stainless Steel	HB ≦ 300	Finishing (Solid Bar)	Continuous	EZB-F EZB-H	PR1225	0.002	100 - **200** - 260	0.0020 - **0.0039** - 0.0079	0.0004 - **0.0012** - 0.0020
				Interrupted			0.006	100 - **200** - 260	0.0020 - **0.0039** - 0.0079	0.0008 - **0.0020** - 0.0028
			Finishing	Continuous	F	PR1225	0.004	100 - **200** - 260	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted		PR1535	0.008	100 - **200** - 260	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing-Medium	Continuous	CF	PR1225	0.004	100 - **200** - 260	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0020** - 0.0028
				Interrupted		PR1535	0.008	100 - **200** - 260	0.0020 - **0.0059** - 0.0098	0.0012 - **0.0028** - 0.0039
K	Gray Cast Iron	HB ≦ 250	Finishing (Solid Bar)	Continuous	(VNB) (VNB-NB)	KW10	0.001	100 - **200** - 330	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	100 - **200** - 330	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing	Continuous	F	KW10	0.004	100 - **200** - 330	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	100 - **200** - 260	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing-Medium	Continuous	Without Chipbreaker	KW10	0.008	100 - **200** - 330	0.0039 - **0.0079** - 0.0118	0.0012 - **0.0020** - 0.0028
				Interrupted			1/64	100 - **200** - 260	0.0039 - **0.0079** - 0.0118	0.0012 - **0.0028** - 0.0039
	Nodular Cast Iron	HB ≦ 270	Finishing (Solid Type)	Continuous	(VNB) (VNB-NB)	KW10	0.001	100 - **200** - 260	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	100 - **200** - 260	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing	Continuous	F, U	KW10	0.004	100 - **200** - 260	0.0020 - **0.0031** - 0.0039	0.0012 - **0.0020** - 0.0028
				Interrupted			0.008	100 - **200** - 260	0.0020 - **0.0039** - 0.0059	0.0012 - **0.0028** - 0.0039
			Finishing-Medium	Continuous	Without Chipbreaker	KW10	0.008	100 - **200** - 330	0.0039 - **0.0079** - 0.0118	0.0012 - **0.0020** - 0.0028
				Interrupted			1/64	100 - **200** - 260	0.0039 - **0.0079** - 0.0118	0.0012 - **0.0028** - 0.0039
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloy	HB ≦ 100	High Speed Finishing (Surface Finish Oriented)	Continuous	Without Chipbreaker	KPD001	0.002	490 - **660** - 980	0.0020 - **0.0039** - 0.0118	0.0020 - **0.0039** - 0.0059
			Finishing (Long Tool Life)	Continuous	F, U	PDL025	0.004	330 - **490** - 660	0.0020 - **0.0118** - 0.0197	0.0012 - **0.0039** - 0.0079
				Interrupted			0.008	330 - **490** - 660	0.0020 - **0.0118** - 0.0197	0.0012 - **0.0039** - 0.0079
			Finishing	Continuous	F, U	KW10	0.004	330 - **490** - 660	0.0020 - **0.0118** - 0.0197	0.0012 - **0.0039** - 0.0079
				Interrupted			0.008	330 - **490** - 660	0.0020 - **0.0118** - 0.0197	0.0012 - **0.0039** - 0.0079
S	Titanium Alloy	HB ≦ 400	Precision Finishing (Surface Finish Oriented)	Continuous	Without Chipbreaker	KPD001	0.004	330 - **390** - 490	0.0020 - **0.0039** - 0.0118	0.0012 - **0.0028** - 0.0039
				Interrupted			0.008	230 - **330** - 390	0.0020 - **0.0039** - 0.0118	0.0012 - **0.0028** - 0.0039
			Finishing	Continuous	F, U	KW10	0.004	70 - **130** - 200	0.0020 - **0.0079** - 0.0197	0.0012 - **0.0039** - 0.0079
				Interrupted			0.008	70 - **130** - 200	0.0020 - **0.0079** - 0.0197	0.0012 - **0.0039** - 0.0079
	Heat-resistant Alloys	HB ≦ 350	Finishing (Solid Bar)	Continuous	(VNB)	KW10	0.008	30 - **100** - 160	0.0020 - **0.0039** - 0.0118	0.0012 - **0.0020** - 0.0039
				Interrupted			0.008	30 - **100** - 160	0.0020 - **0.0039** - 0.0118	0.0012 - **0.0020** - 0.0031
			Finishing	Continuous	F, U	KW10	0.008	30 - **100** - 160	0.0020 - **0.0079** - 0.0157	0.0012 - **0.0020** - 0.0039
				Interrupted			0.008	30 - **100** - 160	0.0020 - **0.0079** - 0.0157	0.0012 - **0.0020** - 0.0039
H	Hardened Steel Hardened Materials	40 ~ 50 HRC	Finishing	Continuous	(VNB)	PR930	0.008	100 - **160** - 230	0.0020 - **0.0039** - 0.0157	0.0004 - **0.0008** - 0.0020
				Interrupted			0.008	100 - **160** - 230	0.0020 - **0.0039** - 0.0079	0.0004 - **0.0008** - 0.0012
		45 ~ 68 HRC	Finishing	Continuous	ME MES	KBN05M	0.008	200 - **330** - 460	0.0020 - **0.0039** - 0.0079	0.0008 - **0.0020** - 0.0039
				Interrupted			1/64	200 - **260** - 390	0.0020 - **0.0039** - 0.0079	0.0008 - **0.0020** - 0.0039

Recommended Cutting Conditions - Boring (Positive Insert)

[D.O.C. Indicates Radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Application	Recommended Chipbreaker	Recommended Grade	Corner-R (RE)	Lower Limit - **Recommendation** - Upper Limit		
								Vc (sfm)	D.O.C. (inch)	Feed Rate f (ipr)
P	Low-carbon Steel Low-carbon Alloy	HB ≦ 300	Precision Finishing	Continuous	F, U	TN620	0.004	820 - **980** - 1150	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
				Interruption		PR1725	0.008	390 - **560** - 720	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
			Finishing	Continuous	XP	PV710	1/64	660 - **820** - 980	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		CA525	1/64	490 - **660** - 820	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	XQ	PV710	1/64	490 - **660** - 820	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.010
				Interruption		CA525	1/64	330 - **490** - 660	0.020 - **0.039** - 0.059	0.004 - **0.006** - 0.008
			Medium	Continuous	Standard	PV720	1/32	330 - **490** - 660	0.039 - **0.059** - 0.098	0.004 - **0.006** - 0.012
				Interruption		CA525	1/32	260 - **390** - 490	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.008
	Medium-carbon Steel Medium-carbon Alloy	HB ≦ 300	Precision Finishing	Continuous	F, U	TN620	0.008	490 - **660** - 820	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
				Interruption		PR1725	1/64	390 - **460** - 560	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
			Finishing	Continuous	PP	PV710	1/64	490 - **660** - 820	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		CA525	1/64	390 - **590** - 660	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	HQ	PV710	1/64	390 - **590** - 720	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.010
				Interruption		CA525	1/64	330 - **490** - 660	0.020 - **0.039** - 0.059	0.004 - **0.006** - 0.008
			Medium	Continuous	Standard	PV720	1/32	330 - **490** - 660	0.039 - **0.059** - 0.098	0.004 - **0.006** - 0.012
				Interruption		CA525	1/32	260 - **390** - 490	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.008
	High-carbon Alloy	HB ≦ 280	Precision Finishing	Continuous	F, U	TN620	0.008	390 - **490** - 590	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
				Interruption		PR1725	1/64	360 - **430** - 520	0.002 - **0.012** - 0.020	0.001 - **0.004** - 0.006
			Finishing	Continuous	PP	PV710	1/64	390 - **490** - 590	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		CA525	1/64	330 - **390** - 490	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing-Medium	Continuous	HQ	PV710	1/64	390 - **490** - 590	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.010
				Interruption		CA525	1/64	330 - **390** - 490	0.020 - **0.039** - 0.059	0.004 - **0.006** - 0.008
			Medium	Continuous	Standard	CA515	1/32	330 - **390** - 490	0.039 - **0.059** - 0.098	0.004 - **0.006** - 0.012
				Interruption		CA525	1/32	260 - **330** - 390	0.039 - **0.059** - 0.079	0.004 - **0.006** - 0.008
M	Stainless Steel	HB ≦ 220	Finishing	Continuous	MQ	CA6525	1/64	390 - **490** - 590	0.008 - **0.020** - 0.031	0.002 - **0.003** - 0.004
				Interruption		PR1535	1/32	330 - **390** - 490	0.008 - **0.020** - 0.031	0.002 - **0.003** - 0.004
			Medium	Continuous	Standard	CA6525	1/64	390 - **490** - 590	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
				Interruption		PR1535	1/32	330 - **390** - 490	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
	Stainless Steel	HB ≦ 300	Finishing	Continuous	MQ	CA6525	1/64	260 - **330** - 390	0.008 - **0.028** - 0.039	0.002 - **0.004** - 0.006
				Interruption		PR1535	1/32	200 - **260** - 330	0.008 - **0.028** - 0.039	0.002 - **0.004** - 0.006
			Medium	Continuous	Standard	CA6525	1/64	260 - **330** - 390	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
				Interruption		PR1535	1/32	200 - **260** - 330	0.020 - **0.039** - 0.059	0.002 - **0.004** - 0.008
K	Gray Cast Iron	HB ≦ 250	High Speed Machining	Continuous	Without Chipbreaker	KBN475	1/64	1310 - **1640** - 1970	0.002 - **0.008** - 0.020	0.002 - **0.004** - 0.006
				Interruption		PT600M	1/32	660 - **820** - 1150	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Finishing (Gloss Oriented)	Continuous	Standard	PV7005	1/32	660 - **820** - 980	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		TN620	1/32	390 - **590** - 750	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing	Continuous	Standard	CA310	1/64	490 - **590** - 660	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		CA315	1/32	330 - **490** - 590	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Medium	Continuous	Standard	CA310	1/32	330 - **490** - 660	0.020 - **0.039** - 0.079	0.004 - **0.006** - 0.008
				Interruption		CA315	1/32	260 - **390** - 490	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
	Nodular Cast Iron	HB ≦ 270	High Speed Machining	Continuous	Without Chipbreaker	KBN60M	1/64	660 - **980** - 1310	0.002 - **0.008** - 0.020	0.001 - **0.002** - 0.004
				Interruption		PT600M	1/32	490 - **660** - 820	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.006
			Finishing (Gloss Oriented)	Continuous	Standard	PV7005	1/32	490 - **660** - 820	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		TN620	1/32	390 - **490** - 660	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Finishing	Continuous	Standard	CA310	1/64	390 - **490** - 590	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
				Interruption		CA315	1/32	330 - **390** - 490	0.008 - **0.020** - 0.039	0.002 - **0.004** - 0.008
			Medium	Continuous	Standard	CA315	1/32	330 - **390** - 490	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.008
				Interruption		CA320	1/32	260 - **330** - 390	0.020 - **0.039** - 0.079	0.002 - **0.004** - 0.006
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB ≦ 100	High Speed Machining (Surface Finish Oriented)	Continuous	Without Chipbreaker	KPD001	0.008	660 - **1310** - 3280	0.002 - **0.004** - 0.012	0.002 - **0.004** - 0.006
			Finishing (Long Tool Life)	Continuous	F, U	PDL025	1/64	330 - **660** - 1310	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interruption			1/64	330 - **660** - 1310	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
			Finishing	Continuous	F, U	KW10	1/64	330 - **660** - 1310	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interruption			1/64	330 - **660** - 1310	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
S	Titanium Alloy	HB ≦ 400	Precision Finishing (Surface Finish Oriented)	Continuous	Without Chipbreaker	KPD001	0.008	330 - **390** - 490	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
				Interruption			1/64	230 - **330** - 390	0.002 - **0.004** - 0.012	0.001 - **0.003** - 0.004
			Finishing	Continuous	F, U	KW10	0.008	100 - **160** - 230	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interruption			1/64	100 - **160** - 230	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
	Heat-resistant Alloys	HB ≦ 350	Finishing	Continuous	F, U	KW10	1/64	30 - **100** - 160	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
				Interruption			1/64	30 - **100** - 160	0.002 - **0.020** - 0.039	0.001 - **0.004** - 0.008
			Finishing	Continuous	MQ	PR1310	1/64	130 - **200** - 260	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
				Interruption			1/32	130 - **200** - 260	0.004 - **0.012** - 0.020	0.001 - **0.002** - 0.004
H	Hardened Steel Hardened Materials	40~50 HRC	Finishing	Continuous	HQ Standard	CA515	1/32	200 - **260** - 330	0.002 - **0.012** - 0.020	0.002 - **0.003** - 0.004
				Interruption			1/32	100 - **160** - 230	0.002 - **0.012** - 0.020	0.002 - **0.003** - 0.004
		45~68 HRC	Finishing	Continuous	ME MET	KBN05M	1/64	330 - **460** - 590	0.004 - **0.008** - 0.012	0.001 - **0.003** - 0.004
				Interruption			1/32	300 - **390** - 520	0.004 - **0.008** - 0.012	0.001 - **0.003** - 0.004
			Medium	Continuous	Without Chipbreaker (Negative)	KBN900	1/32	200 - **260** - 330	0.012 - **0.028** - 0.039	0.001 - **0.004** - 0.006

GROOVING

G1 - G150

EXTERNAL GROOVING		G2 - G56
SUMMARY OF EXTERNAL GROOVING		G2
KGBA / KGBAS / KGBA-JCT		G12
KGBF-F / KGBFS / KGBF-JCT		G14
KTGF-F / KTGF		G20
S...KTGF	Sleeve Holder	G21
KGD / KGD-JCT	Integral Type for Small Parts	G28
KGD / KGD-JCT	Integral Type	G30
KGD-S	0° SwitchBlade Type	G34
KGDS-S	90° SwitchBlade Type	G36
KKC	Cera-Notch Grooving System	G43
KGM	Small Parts	G48
KGM-T		G49
KGMM / KGMS		G50
KGMU		G51
KGH / KGHS		G52
KGA		G53
EGT / KDB		G54
KGMW	For Aluminum Wheel	G56

INTERNAL GROOVING		G57 - G85
SUMMARY OF INTERNAL GROOVING		G57
EZG	EZ Bar	G59
VNG	Swiss IQ Bar	G61
SIGC		G65
SIGE-EH / SIGE-WH / SIGE-WH-90		G69
SI-GIV / GIV / GIV-E / GIV-W		G74
KIGBA		G76
KGDI		G79
KIGH		G80
KIGM-8 / KIGMU-8		G81
KGIA		G82
KIGM-V		G83
A-KKC	Cera-Notch Grooving System	G85

FACE GROOVING		G86 - G138
SUMMARY OF FACE GROOVING		G86
EZFG	EZ Bar	G90
VNFG	Swiss IQ Bar	G92
TWFG / TWFGT	Micro Twin Bars	G94
KGDF	0° SwitchBlade Type	G100
KGDF-Z	Integral Type	G110
KGDF	90° SwitchBlade Type	G111
GFVS-AA / GFVT-AA		G124
GFV		G126
GFVS / GFVT		G128
KKCE	Cera-Notch Grooving System	G133
KFMS		G134
KFMS-8		G136
KFTB-S		G137
GIFV	Round Shank Type	G138

TECHNICAL INFORMATION		G139 - G150
RECOMMENDED CUTTING CONDITIONS		G139
GUIDE FOR GROOVING		G148

KGD Grooving (External Grooving & Traversing) G23~G39

· Integral Type

Type	KGD
Edge Width	0.079" ~ 0.315" (2.00mm ~ 8.00mm)
Grooving Depth	0.236" ~ 1.181" (6.00mm ~ 30.00mm)
Ref. Page	G30

· Integral Type (Jet Coolant-Through)

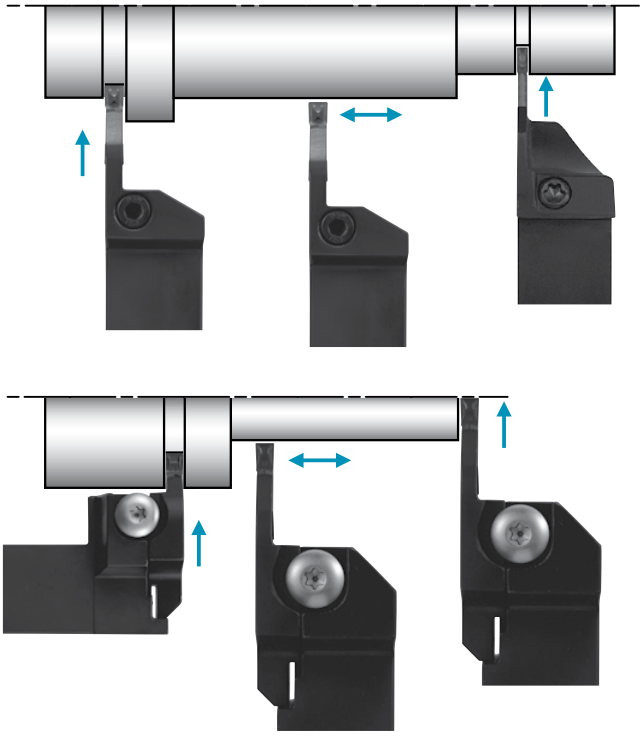
Type	KGD-JCT
Edge Width	0.118" ~ 0.157" (3.00mm ~ 5.00mm)
Grooving Depth	0.787" ~ 1.000" (6.00mm ~ 25.00mm)
Ref. Page	G32

· Integral Type (Small Parts)

Type	KGD
Edge Width	0.079" ~ 0.157" (2.00mm ~ 4.00mm)
Grooving Depth	0.394" ~ 0.827" (10.00mm ~ 21.00mm)
Ref. Page	G28

· Integral Type (Small Parts, Jet Coolant-Through)

Type	KGD-JCT
Edge Width	2.00mm ~ 4.00mm
Grooving Depth	12.00mm ~ 16.00mm
Ref. Page	G29



· SwitchBlade 90°

Type	*KGDS-S
Edge Width	0.079" ~ 0.197" (2.00mm ~ 5.00mm)
Grooving Depth	0.394" ~ 0.984" (10.00mm ~ 25.00mm)
Ref. Page	G36

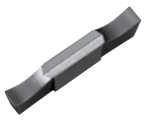
* The SwitchBlade Type toolholders can accept all the blades if their hand is matching.

· SwitchBlade 0°

Type	*KGD-S
Edge Width	0.079" ~ 0.197" (2.00mm ~ 5.00mm)
Grooving Depth	0.394" ~ 0.984" (10.00mm ~ 25.00mm)
Ref. Page	G34

* The SwitchBlade Type toolholders can accept all the blades if their hand is matching.

GS Low Cutting Force



GL Low Feed

GM General Purpose

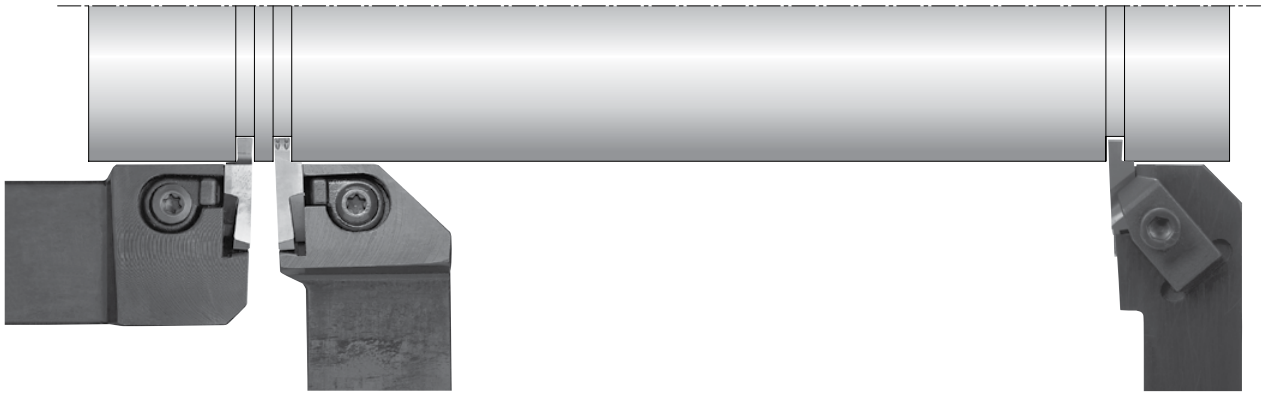
PH High Feed Rate

CM Copying

800.823.7284
Visit us online at KyoceraPrecisionTools.com

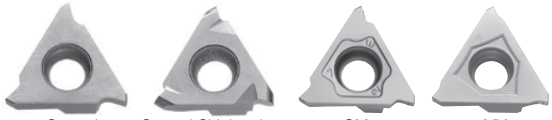
External Grooving (G6~G22, G50, G51)

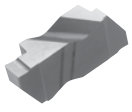
Shallow Grooving [Grooving Depth : ~0.197" (5mm)]



Type	KGBAS	KGBA	KGBA-JCT
Edge Width	0.031" ~ 0.189" (0.33mm ~ 4.80mm)	0.031" ~ 0.189" (0.33mm ~ 4.80mm)	0.031" ~ 0.189" (0.33mm ~ 4.80mm)
Grooving Depth	0.032" ~ 0.197" (0.80mm ~ 5.00mm)	0.032" ~ 0.197" (0.80mm ~ 5.00mm)	0.032" ~ 0.197" (0.80mm ~ 5.00mm)
Ref. Page	G12	G12	G13

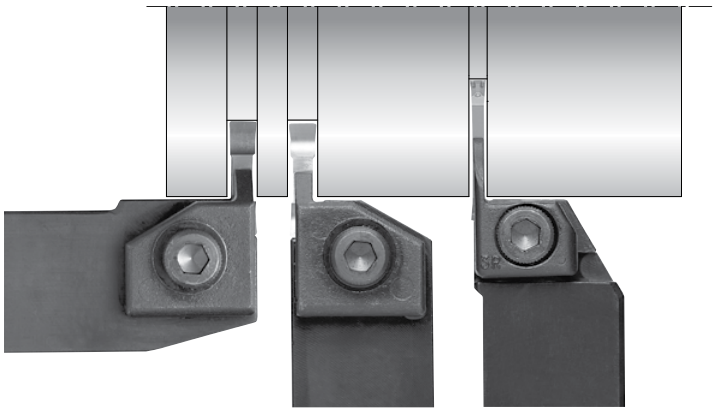
KKC
0.031" ~ 0.250"
0.050" ~ 0.250"
G43



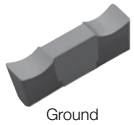

Ground Chipbreaker

Edge Shape	General (Square)	Full-R (Round)	GM Chipbreaker	MY Chipbreaker

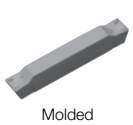
Deep Grooving [Grooving Depth : ~0.984" (25mm)]



Type	KGHS	KGH	KGA
Edge Width	0.157" ~ 0.315" (4.00mm ~ 8.00mm)	0.157" ~ 0.472" (4.00mm ~ 12.00mm)	0.118" ~ 0.197" (3.00mm ~ 5.00mm)
Grooving Depth	0.512" (13.00mm)	0.512" ~ 0.669" (13.00mm ~ 17.00mm)	0.787" ~ 0.984" (20.00mm ~ 25.00mm)
Ref. Page	G52	G52	G53

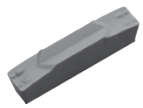

Ground Chipbreaker

Molded Chipbreaker

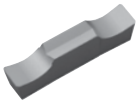

Molded Chipbreaker

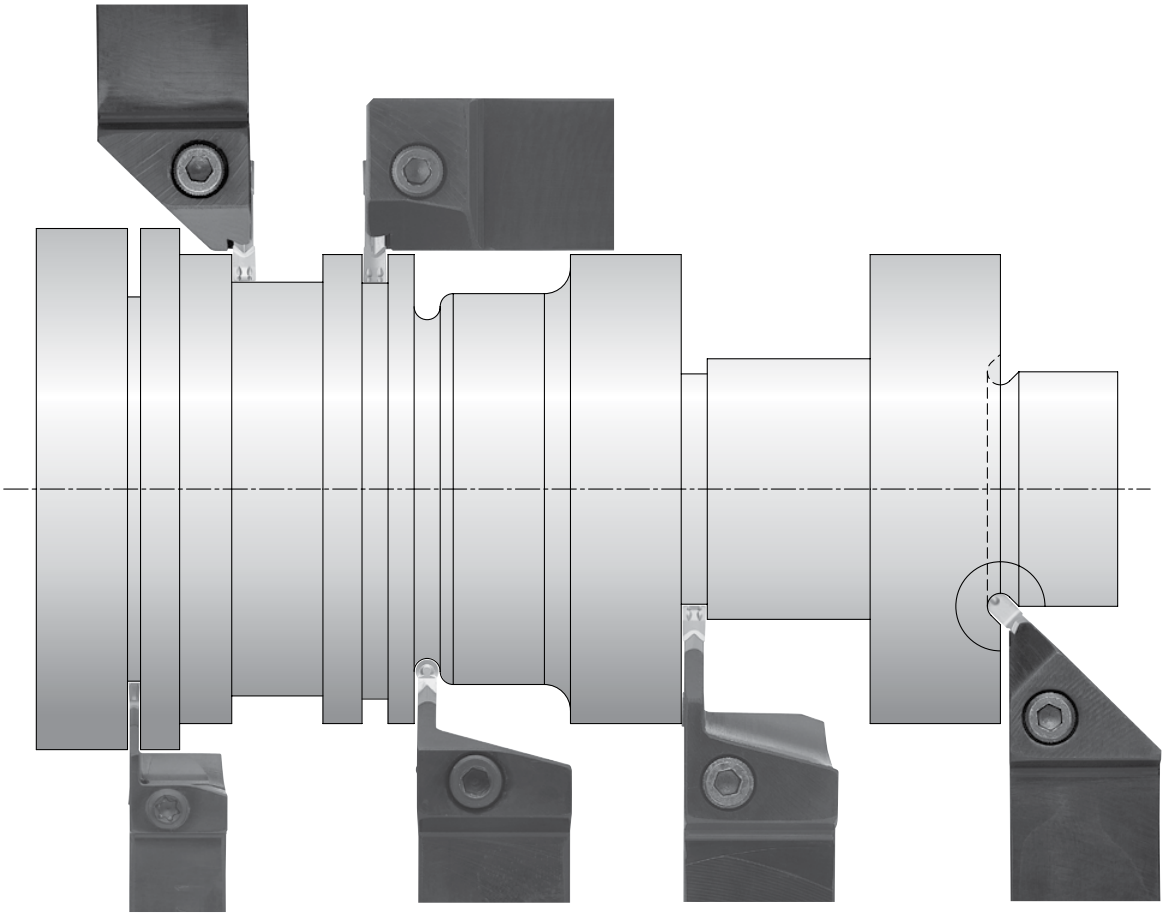
KGM Grooving (External Grooving & Traversing) (G42~G49)

Type	KGMM	KGMS
Edge Width	0.118" ~ 0.197" (3.00mm ~ 5.00mm)	0.118" ~ 0.197" (3.00mm ~ 5.00mm)
Grooving Depth	0.189" (4.80mm)	0.189" (4.80mm)
Ref. Page	G50	G50

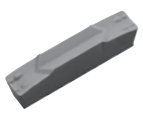

Molded Chipbreaker

Molded Chipbreaker Full-R

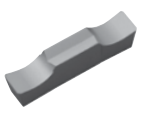

Ground Chipbreaker



Type	KGM	KGM	KGM-T	KGMU
Edge Width	0.079" ~ 0.118" (1.50mm ~ 4.00mm)	0.118" ~ 0.157" (3.00mm ~ 8.00mm)	0.079" ~ 0.236" (2.00mm ~ 6.00mm)	0.118" ~ 0.197" (3.00mm ~ 5.00mm)
Grooving Depth	0.394" ~ 0.492" (10.00mm ~ 16.00mm)	0.354" (9.00mm ~ 25.00mm)	0.669" ~ 1.181" (17.00mm ~ 30.00mm)	0.138" ~ 0.177" (3.50mm ~ 4.50mm)
Ref. Page	G48	G48	G49	G51


Molded Chipbreaker

Molded Chipbreaker Full-R


Ground Chipbreaker

Deep Grooving / Cut-off

Molded Chipbreaker Full-R

800.823.7284
Visit us online at KyoceraPrecisionTools.com

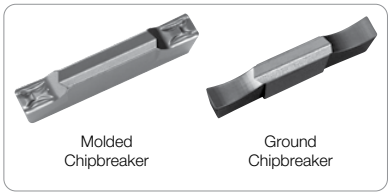
External Grooving of Precision Parts (G17~G19, G20, G21, G28, G48)

For Small Parts Machining

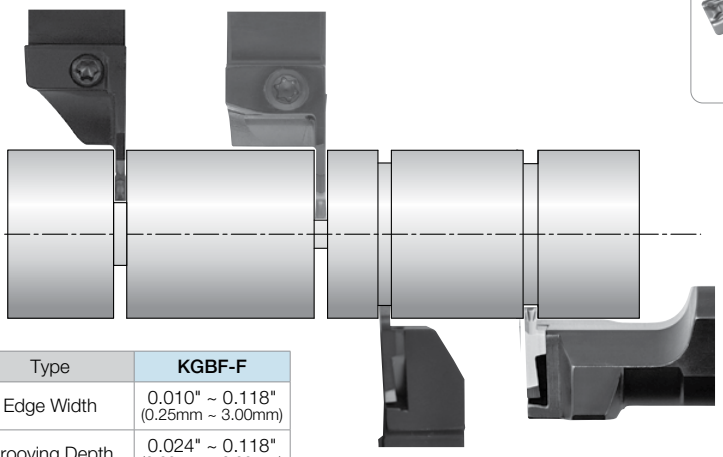
Type	KGD
Edge Width	0.079" ~ 0.157" (2.00mm ~ 4.00mm)
Grooving Depth	0.394" ~ 0.827" (10.00mm ~ 21.00mm)
Ref. Page	G28

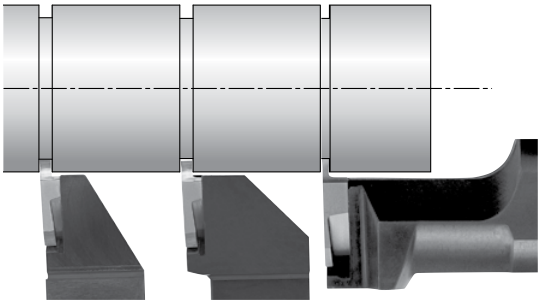
Type	KGD-JCT
Edge Width	2.00mm ~ 4.00mm
Grooving Depth	12.00mm ~ 16.00mm
Ref. Page	G29

Type	KGM
Edge Width	0.079" ~ 0.118" (1.50mm ~ 4.00mm)
Grooving Depth	0.394" ~ 0.492" (10.00mm ~ 16.00mm)
Ref. Page	G48



Molded Chipbreaker | Ground Chipbreaker



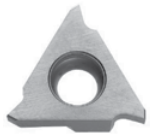


Type	KGBF-F
Edge Width	0.010" ~ 0.118" (0.25mm ~ 3.00mm)
Grooving Depth	0.024" ~ 0.118" (0.60mm ~ 3.00mm)
Ref. Page	G17

Type	KGBFS	KGBF-JCT
Edge Width	0.010" ~ 0.118" (0.25mm ~ 3.00mm)	0.25mm ~ 3.00mm
Grooving Depth	0.024" ~ 0.118" (0.60mm ~ 3.00mm)	0.60mm ~ 3.00mm
Ref. Page	G18	G19

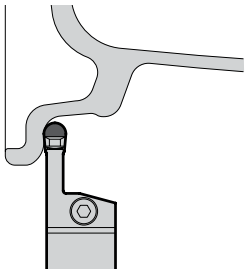
Type	KTGF-F	KTGF	S-KTGF
Edge Width	0.013" ~ 0.098" (0.33mm ~ 2.50mm)		0.013" ~ 0.098" (0.33mm ~ 2.50mm)
Grooving Depth	0.032" ~ 0.098" (0.80mm ~ 2.50mm)		0.032" ~ 0.098" (0.80mm ~ 2.50mm)
Ref. Page	G20		G21

Ground Chipbreaker | GL Chipbreaker



Ground Chipbreaker

For Aluminum Wheel External Grooving (External / Facing / Copying) (G48)



Type	KGMW
Edge Width	0.236" ~ 0.315" (6.00mm ~ 8.00mm)
Grooving Depth	0.984" (25.00mm)
Ref. Page	G56

1-edge PCD

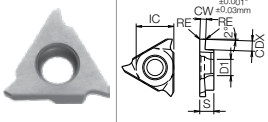
GBA Inserts (Inch)

(in)

Part Number	IC	S	D1
GBA32_	0.375	0.125	0.173
GBA43_	0.500	0.187	0.217
GBA43□480	0.500	0.197	0.217

P	Carbon Steel / Alloy Steel	●	◐
M	Stainless Steel		●
K	Cast Iron		
N	Non-ferrous Metals		
S	Titanium Alloy		●
H	Hard materials (≤40HRC)		●
	Hard materials (≥40HRC)		

Classification of Usage
- ◐ : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Unit	Dimensions (in) CW	CDX	RE	MEGACOAT Cermet PV7040 R	PV7040 L	MEGA COAT PR1215 R	PR1215 L	Applicable Toolholders	Ref. Page for Toolholder
	GBA32□ 031N	-	inch	0.031	0.079	0.002	●	●	●	●	KGBA□…-3 KGBA□…-16 (JCT) KGBAS□…-3 KGBAS□…-16 KIGBA□…-3 (Internal) KIGBA□…-16 (Internal)	G12 G13 G76 (Internal)
	041N	-		0.041	0.079	0.002	●	●	●	●		
	047N	-		0.047	0.079	0.008	●	●	●	●		
	058N	-		0.058	0.079	0.008	●	●	●	●		
	062N	-		0.062	0.079	0.008	●	●	●	●		
	078N	-		0.078	0.098	0.008	●	●	●	●		
	094N	-		0.094	0.098	0.008	●	●	●	●		
	GBA43□ 031N	-	inch	0.031	0.079	0.008	●	●	●	●	KGBA□…-4-15 KGBA□…22-15 (JCT) KGBAS□…-4-15 KGBAS□…22-15 KIGBA□…-4 (Internal) KIGBA□…22 (Internal)	
	047N	-		0.047	0.079	0.008	●	●	●	●		
	062N	-		0.062	0.138	0.008	●	●	●	●		
	072N	-		0.072	0.138	0.008	●	●	●	●		
	078N	-		0.078	0.138	0.008	●	●	●	●		
	088N	-		0.088	0.138	0.008	●	●	●	●		
	094N	-		0.094	0.157	0.012	●	●	●	●	KGBA□…4-25 KGBA□…22-25 (JCT) KGBA□…22-25T5 KGBAS□…4-25 KGBAS□…22-25 KGBAS□…22-25T5 KIGBA□…-4 (Internal) KIGBA□…22 (Internal)	
	097N	-		0.097	0.157	0.012	●	●	●	●		
	105N	-		0.105	0.157	0.012	●	●	●	●		
	109N	-		0.109	0.157	0.012			●	●		
	110N	-		0.110	0.157	0.012	●	●	●	●		
	125N	-		0.125	0.157	0.012	●	●	●	●		
	141N	-		0.141	0.197	0.012			●	●	KGBA□…-4-35 KGBA□…22-35 (JCT) KGBAS□…-4-35 KGBAS□…22-35 KIGBA□…-4 (Internal) KIGBA□…22 (Internal)	
	142N	-		0.142	0.197	0.012	●	●	●	●		
	156N	-		0.156	0.197	0.016	●	●	●	●		
	172N	-		0.172	0.197	0.016			●	●		
	178N	-		0.178	0.197	0.016	●	●	●	●		
	188N	-		0.188	0.197	0.016			●	●		

- Dimension **CDX** shows available grooving depth

Recommended Cutting Conditions ➡ **G139**

Inserts are sold in 5 piece boxes.

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

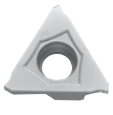
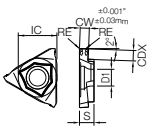
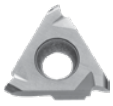
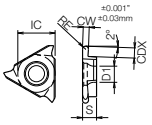
GBA Inserts (Inch)

(in)

Part Number	IC	S	D1
GBA32_	0.375	0.125	0.173
GBA43_	0.500	0.187	0.217
GBA43R/L480	0.500	0.197	0.217

P	Carbon Steel / Alloy Steel	●	◔
M	Stainless Steel		●
K	Cast Iron		
N	Non-ferrous Metals		
S	Titanium Alloy		●
H	Hard materials (≤40HRC)		●
	Hard materials (≥40HRC)		

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Unit	Dimensions (in) CW	CDX	RE	MEGACOAT Cermet PV7040 R	PV7040 L	MEGA COAT PR1215 R	PR1215 L	Applicable Toolholders	Ref. Page for Toolholder
 Molded Chipbreaker MY Chipbreaker 	GBA43R/L 078MYN	-	inch	0.078	0.138	0.008			●	●	KGBAR/L…-4-15 KGBAR/L…22-15 (JCT) KGBASR/L…-4-15 KGBASR/L…22-15 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	094MYN	-		0.094	0.157	0.012			●	●	KGBAR/L…4-25 KGBAR/L…22-25 (JCT) KGBAR/L…22-25T5 KGBASR/L…4-25 KGBASR/L…22-25 KGBASR/L…22-25T5 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	125MYN	-		0.125	0.157	0.012			●	●		
	156MYN	-		0.156	0.197	0.016			●	●	KGBAR/L…-4-35 KGBAR/L…22-35 (JCT) KGBASR/L…-4-35 KGBASR/L…22-35 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
 Full-R (Round) 	GBA32R 031R	-	inch	0.062	0.079	0.031			●		KGBAR/L…-3 KGBAR/L…-16 (JCT) KGBASR/L…-3 KGBASR/L…-16 KIGBAR/L…-3 (Internal) KIGBAR/L…-16 (Internal)	G12 G13 G76 (Internal)
	047R	-		0.094	0.098	0.047			●			
	GBA43R/L 031R	-		0.062	0.138	0.031			●	●	KGBAR/L…-4-15 KGBAR/L…22-15 (JCT) KGBASR/L…-4-15 KGBASR/L…22-15 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	047R	-		0.094	0.157	0.047			●	●	KGBAR/L…4-25 KGBAR/L…22-25 (JCT) KGBAR/L…22-25T5 KGBASR/L…4-25 KGBASR/L…22-25 KGBASR/L…22-25T5 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	062R	-		0.125	0.157	0.062			●	●		
	078R	-		0.156	0.197	0.078			●	●	KGBAR/L…-4-35 KGBAR/L…22-35 (JCT) KGBASR/L…-4-35 KGBASR/L…22-35 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	094R	-		0.188	0.197	0.094			●	●		

• Dimension **CDX** shows available grooving depth

Recommended Cutting Conditions G139

Inserts are sold in 5 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

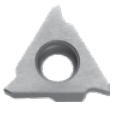
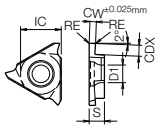
GBA Inserts (Metric)

(mm)

Part Number	IC	S	D1
GBA32_	9.525	3.18	4.4
GBA43_	12.700	4.76	5.5
GBA43R/L480	12.700	5.00	5.5

		NEW											
P	Carbon Steel / Alloy Steel	●			●	●	◔		◔				
M	Stainless Steel				●	●	◔		◔				
K	Cast Iron					●		◔			◔		
N	Non-ferrous Metals										●		
S	Titanium Alloy										●		
H	Hard materials (≤40HRC)					●	○		○				
	Hard materials (≥40HRC)												

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Dimensions (mm) CW	CDX	RE	MEGACOAT Cermet PV7040 R	L	Cermet TC40 R	L	TN90 R	L	MEGACOAT NANO PR1625 R	L	MEGACOAT PR1215 R	L	PVD Coated Carbide PR1115 R	L	PR905 R	L	PR930 R	L	Carbide KW10 R	L	Applicable Toolholders	Ref. Page for Toolholder
 	GBA32R/L 033-005 ※1	0.33	0.8	0.05							●	●			●	●	△	△					KGBAR/L…-3 KGBAR/L…-16 (JCT) KGBASR/L…-3 KGBASR/L…-16 KIGBAR/L…-3 (Internal) KIGBAR/L…-16 (Internal)	G12 G13 G76 (Internal)
	050-005 ※2※3	0.50	1.0	0.05					●												●	●		
		0.50	1.2	0.05							●	●	●	●	●	●			●	●				
	075-005	0.75	2.0	0.05	●	●			●		●	●	●	●	●	●	●		●	●	●	●		
	095-005	0.95	2.0	0.05					●	△	●	●	●	●	●	●	△		●	●	●	●		
	100-005	1.00	2.0	0.05	●	●			●	●	●	●	●	●	●	●	●		●	●	●	●		
	110-005	1.10	2.0	0.05							●	●			●	●	●							
	120-005	1.20	2.0	0.05							●	●	●	●	●	●								
	125-020	1.25	2.0	0.20	●	●			●	●	●	●	●	●	●	●			●	●	●	●		
	130-020	1.30	2.0	0.20							●	●	●	●	●									
	140-020	1.40	2.5	0.20							●	●	●	●	●	●	●							
	145-020 ※3	1.45	2.0	0.20					●	△												●	●	
		1.45	2.5	0.20							●	●	●	●	●	●			●	●				
	150-020 ※3	1.50	2.0	0.20	●	●			●	●												●	●	
		1.50	2.5	0.20							●	●	●	●	●	●	△		●	●				
	160-020	1.60	2.5	0.20							●	●	●	●	●									
	170-020	1.70	2.5	0.20							●	●	●	●	●	●								
	175-020 ※3	1.75	2.0	0.20					●	●												●	●	
		1.75	2.5	0.20							●	●	●	●	●	●	●		●	●				
	200-020	2.00	2.5	0.20	●	●			●	●	●	●	●	●	●	●		●	●	●	●	●		
	225-020	2.25	2.5	0.20							●	●	●	●	●	△								
	250-020	2.50	2.5	0.20					●	●	●	●	●	●	●	●			●	●	●	●		
	300-020	3.00	2.5	0.20							●	●	●	●	●	●	●	●						
	GBA43R/L 125-010	1.25	2.0	0.10							●	●	●	●	△								KGBAR/L…-4-15 KGBAR/L…22-15 (JCT) KGBASR/L…-4-15 KGBASR/L…22-15 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	125-020	1.25	2.0	0.20	●	●	●	●	●	●	●	●	●	●	△	△	●		●		●	●		
	140-020	1.40	3.5	0.20							●	●	●	●	△		●							
	145-020 ※3	1.45	2.0	0.20			●	●	●	●												●	●	
		1.45	3.5	0.20							●	●	●	●	△				●	●				
	150-010	1.50	3.5	0.10							●	●	●	●	△									
	150-020	1.50	3.5	0.20	●	●	●	●	●	●	●	●	●	●	△	△	●	△	●	●	●	●		
	170-020	1.70	3.5	0.20							●	●	●	●	△	△	●	●						
	175-020	1.75	3.5	0.20			●			●	●	●	●	●	△		●	●	●	●	●	●		
	185-020	1.85	3.5	0.20			●	●	●	△	●	●	●	●	△		●	●	●	●	●	●		
	195-020	1.95	3.5	0.20							●	●			△	△	△							
	200-010	2.00	3.5	0.10							●	●	●	●	△	△								
	200-020	2.00	3.5	0.20	●	●	●	●	●	●	●	●	●	●	△	△	●	●	●	●	●	●		
	225-020	2.25	3.5	0.20							●	●	●	●	△		●	△						
	230-020	2.30	3.5	0.20			●	●	●	●	●	●	●	●	△	△	●	●	●	●	●	●		
	250-010	2.50	5.0	0.10							●	●	●	●	△	△							★1	
	250-030 ※3	2.50	4.0	0.30	●	●	●	●	●	●												●	● ★2	
		2.50	5.0	0.30							●	●	●	●	△		●	●	●	●			★1	
	265-030 ※3	2.65	4.0	0.30			●		●	●												●	● ★2	
		2.65	5.0	0.30							●	●	●	●					●	●			★1	
	280-030 ※3	2.80	4.0	0.30			●		●	●												●	● ★2	
		2.80	5.0	0.30							●	●	●	●	△		△		●	●			★1	
	300-010	3.00	5.0	0.10							●	●	●	●	△									
	300-030 ※3	3.00	4.0	0.30	●	●	●	●	●	●												●	● ★2	
		3.00	5.0	0.30							●	●	●	●	△	△	●		●	●			★1	
	325-030	3.25	5.0	0.30							●						●						★2	
	330-030 ※3	3.30	4.0	0.30			●	●	●	△												●	●	
		3.30	5.0	0.30							●	●	●	●	△	△	●		●	●			★1	
	GBA43R/L 350-010	3.50	5.0	0.10							●	●	●	●	△								KGBAR/L…-4-35 KGBAR/L…22-35 (JCT) KGBASR/L…-4-35 KGBASR/L…22-35 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	350-030	3.50	5.0	0.30			●	●	●	●	●	●	●	●	△		●	●	●	●	●	●		
	400-010	4.00	5.0	0.10							●	●	●	●										
	400-040	4.00	5.0	0.40	●	●	●	●	●	●	●	●	●	●	△		●	●	●	●	●	●		
	430-040	4.30	5.0	0.40			●	△	●		●	●	●	●					●		●	●		
	450-040	4.50	5.0	0.40			●		●		●	●	●	●					●	●	●	●		
	480-040	4.80	5.0	0.40					●		●	●	●	●					●	●	●	●		

※1 : The edge width tolerance of GBA32R/L 033-005 : $0.33^{+0.02}_{-0.03}$
※2 : The edge width tolerance of GBA32R/L 050-005 : $0.50^{+0.05}_{-0.00}$
※3 : Available grooving depth is different based on grade

• Dimension **CDX** shows available grooving depth

Recommended Cutting Conditions G139

Inserts are sold in 10 piece boxes.

★1: KGBAR/L…4-25, KGBAR/L…22-25 (JCT), KGBAR/L…22-25T5, KGBASR/L…22-25T5, KIGBAR/L…4, KIGBAR/L…22
★2: KGBAR/L…4-25, KGBAR/L…22-25 (JCT), KGBAR/L…22-25T5, KGBASR/L…4-25, KGBASR/L…22-25, KGBASR/L…22-25T5, KIGBAR/L…4, KIGBAR/L…22

KYOCERA
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(Technical Support) 800.823.7284 - Option 2
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

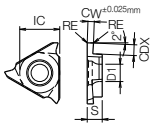
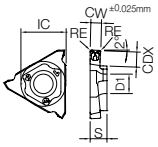
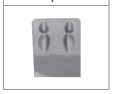
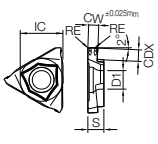
GBA Inserts (Metric)

(mm)

Part Number	IC	S	D1
GBA32_	9.525	3.18	4.4
GBA43_	12.70	4.76	5.5
GBA43□480	12.70	5.00	5.5

		TN620	TN6020	PR1625	PR1215	PR1115	PR930
P	Carbon Steel / Alloy Steel	●	○	● NEW	●	◔	◔
M	Stainless Steel			●	●	◔	◔
K	Cast Iron						
N	Non-ferrous Metals						
S	Titanium Alloy						
H	Hard materials (≤40HRC)				●	○	○
	Hard materials (≥40HRC)						

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Dimensions (mm) CW	CDX	RE	Cermet TN620 R	TN620 L	TN6020 R	TN6020 L	MEGACOAT NANO PR1625 R	PR1625 L	MEGACOAT PR1215 R	PR1215 L	PVD Coated Carbide PR1115 R	PR1115 L	PR930 R	PR930 L	Applicable Toolholders	Ref. Page for Toolholder
Sharp Edge		GBA32□ 050-005F *	0.50	1.0	0.05	●	●										KGBA□...-3 KGBA□...-16 KGBAS□...-3 KGBAS□...-16 KIGBA□...-3 (Internal) KIGBA□...-16 (Internal)	
		075-005F	0.75	2.0	0.05	●	●											
		095-005F	0.95	2.0	0.05	●	●											
		100-005F	1.00	2.0	0.05	●	●											
		125-020F	1.25	2.0	0.2	●	●											
		145-020F	1.45	2.0	0.2	●	●											
		150-020F	1.50	2.0	0.2	●	●											
		175-020F	1.75	2.0	0.2	●	●											
		200-020F	2.00	2.5	0.2	●	●											
		250-020F	2.50	2.5	0.2	●	●											
		GBA43□ 125-020F	1.25	2.0	0.2	●	●										KGBA□...-4-15 KGBA□...22-15 (JCT) KGBAS□...-4-15 KGBAS□...22-15 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
		145-020F	1.45	2.0	0.2	●	●											
		150-020F	1.50	3.5	0.2	●	●											
		175-020F	1.75	3.5	0.2	●	●											
		185-020F	1.85	3.5	0.2	●	●											
		200-020F	2.00	3.5	0.2	●	●											
		230-020F	2.30	3.5	0.2	●	●											
		250-030F	2.50	4.0	0.3	●	●										★2	
		265-030F	2.65	4.0	0.3	●	●											
		280-030F	2.80	4.0	0.3	●	●											
		300-030F	3.00	4.0	0.3	●	●											
		330-030F	3.30	4.0	0.3	●	●											
		350-030F	3.50	5.0	0.3	●	●										KGBA□...-4-35 KGBA□...22-35 (JCT) KGBAS□...-4-35 KGBAS□...22-35 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
		400-040F	4.00	5.0	0.4	●	●											
		430-040F	4.30	5.0	0.4	●												
		450-040F	4.50	5.0	0.4	●												
		480-040F	4.80	5.0	0.4	●												
Molded Chipbreaker GM Chipbreaker		GBA43□ 140-010GM	1.40	3.5	0.10	●	●			●	●	●	●				KGBA□...-4-15 KGBA□...22-15 (JCT) KGBAS□...-4-15 KGBAS□...22-15 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	G12 G13 G76 (Internal)
		150-020GM	1.50	3.5	0.20	●	●			●	●	●	●					
		175-020GM	1.75	3.5	0.20	●	●			●	●	●	●					
		185-020GM	1.85	3.5	0.20	●	●			●	●	●	●					
		200-020GM	2.00	3.5	0.20	●	●			●	●	●	●					
		230-020GM	2.30	3.5	0.20	●	●			●	●	●	●					
		250-030GM	2.50	5.0	0.30	●	●			●	●	●	●				KGBA□...22-25 (JCT) KGBA□...22-25T5 KGBAS□...22-25T5 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
		265-030GM	2.65	5.0	0.30	●	●			●	●	●	●					
		300-030GM	3.00	5.0	0.30	●	●			●	●	●	●					
		330-030GM	3.30	5.0	0.30	●	●			●	●	●	●					
		350-030GM	3.50	5.0	0.30	●	●			●	●	●	●				KGBA□...-4-35 KGBA□...22-35 (JCT) KGBAS□...-4-35 KGBAS□...22-35 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
		400-040GM	4.00	5.0	0.40	●	●			●	●	●	●					
Molded Chipbreaker MY Chipbreaker 		GBA43□ 175-020MY	1.75	3.5	0.20			●	●	●	●	△	△	●	●	●	●	KGBA□...-4-15 KGBA□...22-15 (JCT) KGBAS□...-4-15 KGBAS□...22-15 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
		185-020MY	1.85	3.5	0.20			●	●	●	●	△		●	●	●	●	
		200-020MY	2.00	3.5	0.20			●	●	●	●	△	△	●	●	●	●	
		230-020MY	2.30	3.5	0.20			●	●	●	●			●	●	●	●	
		250-030MY ※3	2.50	4.0	0.30			●										★2
			2.50	5.0	0.30					●	●	△		●	●	●	●	★1
		265-030MY ※3	2.65	4.0	0.30			●	●									★2
			2.65	5.0	0.30					●	●	△		●		●		★1
		300-030MY ※3	3.00	4.0	0.30			●	●									★2
			3.00	5.0	0.30					●	●	△	△	●	●	●	●	★1
		330-030MY ※3	3.30	4.0	0.30			●										★2
			3.30	5.0	0.30					●	●	△		●		●		★1
		350-030MY	3.50	5.0	0.30			●	●	●	●	△		●	●	●	●	KGBA□...-4-35 KGBA□...22-35 (JCT) KGBAS□...-4-35 KGBAS□...22-35 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)
		400-040MY	4.00	5.0	0.40			●	●	●	●			●	●	●	●	

• Dimension **CDX** shows available grooving depth
* Edge width tolerance of GBA32□050-005F is 0.50mm +0.25mm/-0
※3 : Available grooving depth is different based on grade
★1: KGBA□...4-25, KGBA□...22-25 (JCT), KGBA□...22-25T5, KGBAS□...22-25T5, KIGBA□...4, KIGBA□...22
★2: KGBA□...4-25, KGBA□...22-25 (JCT), KGBA□...22-25T5, KGBAS□...4-25, KGBAS□...22-25, KGBAS□...22-25T5, KIGBA□...4, KIGBA□...22

Recommended Cutting Conditions → **G139**

Rake Angle (α) after Installment of GBA-GM

α (°)	Insert Part Number
10°	GBA43□150-020GM
15°	GBA43□175-020GM ~ GBA43□265-030GM
12°	GBA43□300-030GM ~ GBA43□400-040GM

Rake Angle (α) after Installment of GBA-MY

α (°)	Insert Part Number
15°	GBA43□175-020MY ~ GBA43□350-030MY
14°	GBA43□400-040MY

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

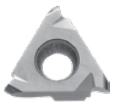
GBA Inserts (Metric)

(mm)

Part Number	IC	S	D1
GBA32_	9.525	3.18	4.4
GBA43_	12.700	4.76	5.5
GBA43R480	12.700	5.00	5.5

		PV7040	TN620	TN90	PR1625 (NEW)	PR1215	PR1115	PR905	PR930	KW10
P	Carbon Steel / Alloy Steel	●	○		●	●	◔		◔	
M	Stainless Steel				●	●	◔		◔	
K	Cast Iron							◔		◔
N	Non-ferrous Metals									●
S	Titanium Alloy									●
H	Hard materials (≤40HRC)					●	○		○	
	Hard materials (≥40HRC)									

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	CW	CDX	RE	PV7040 R	PV7040 L	TN620 R	TN620 L	TN90 R	TN90 L	PR1625 R	PR1625 L	PR1215 R	PR1215 L	PR1115 R	PR1115 L	PR905 R	PR905 L	PR930 R	PR930 L	KW10 R	KW10 L	Applicable Toolholders	Ref. Page for Toolholder
 Molded Chipbreaker RF : Sharp Edge	GBA32R 200-100R	2.00	2.5	1.00							●		●		●								KGBA□...-3 KGBA□...-16 (JCT) KGBAS□...-3 KGBAS□...-16 KIGBA□...-3 (Internal) KIGBA□...-16 (Internal)	G12 G13 G76 (Internal)
	300-150R	3.00	2.5	1.50							●		●		●									
	GBA43□ 100-050R	1.00	2.0	0.50	●	●					●	●	●	●	△	△			●				KGBA□...-4-15 KGBA□...22-15 (JCT) KGBAS□...-4-15 KGBAS□...22-15 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
	150-075R	1.50	3.5	0.75	●	●			●		●	●	●	●	△	△	●					●		
	200-100R	2.00	3.5	1.00	●	●					●	●	●	●	△		●	●						
	250-125R	2.50	4.0	1.25							●	●	●	●	△								★1	
	300-150R	3.00	4.0	1.50					●	●	●	●	●	●			●	●	●	●	●	●		
	400-200R	4.00	5.0	2.00							●	●	●	●									KGBA□...-4-35 KGBA□...22-35 (JCT) KGBAS□...-4-35 KGBAS□...22-35 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
	GBA43□ 100-050RF (NEW)	1.00	2.0	0.50			●	●															KGBA□...-4-15 KGBA□...22-15 (JCT) KGBAS□...-4-15 KGBAS□...22-15 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
	150-075RF	1.50	3.5	0.75			●	●																
	200-100RF	2.00	3.5	1.00			●	●																
	250-125RF	2.50	4.0	1.25			●	●															★1	
	300-150RF	3.00	4.0	1.50			●	●															KGBA□...-4-35 KGBA□...22-35 (JCT) KGBAS□...-4-35 KGBAS□...22-35 KIGBA□...-4 (Internal) KIGBA□...22 (Internal)	
	400-200RF	4.00	5.0	2.00			●																	

Full-R (Round)

- Dimension **CDX** shows available grooving depth
*MC stands for MEGACOAT Cermet.

Recommended Cutting Conditions ➡ **G139**

★1: KGBA□...4-25, KGBA□...22-25 (JCT), KGBA□...22-25T5, KGBAS□...4-25, KGBAS□...22-25, KGBAS□...22-25T5, KIGBA□...4, KIGBA□...22

● Rake Angle (α) after Installment of GBA

GBA32□○○○-○○○		GBA43□○○○-○○○		GBA43□○○○-○○○R (Full-R)		
α (°)	Insert Grade	α (°)	Insert Grade	α (°)	Insert Grade	Full-R
10°	TN90,PV7040,PR930 PR1115,PR1215,PR1625, PR905 KPD001,KPD010	0°	KBN510, KBN525	10°	TN90,PV7040,PR930 PR1115,PR1215,PR905	050R~150R
		10°	TC40,TN90,PV7040,PR930 PR1115,PR1215,PR1625, PR905 KPD001, KPD010	14°	TN90,PV7040,PR930 PR1115,PR1215,PR905	200R
20°	KW10	20°	KW10	14°	KW10	050R~200R

GBA inserts can be used in KGB / KGBS toolholders as well.

For GM Chipbreaker and MY Chipbreaker, see page ➡ **G9**

Inserts are sold in 10 piece boxes.

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(Technical Support) **800.823.7284 - Option 2**
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

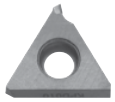
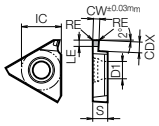
GBA Inserts (Metric)

(mm)

Part Number	IC	S	D1
GBA32_	9.525	3.18	4.4
GBA43_	12.700	4.76	5.5
GBA43R/L480	12.700	5.00	5.5

P	Carbon Steel / Alloy Steel				
M	Stainless Steel				
K	Cast Iron			●	
N	Non-ferrous Metals			●	
S	Titanium Alloy				
H	Hard materials (≤40HRC)				
	Hard materials (≥40HRC)	○	●		

Classification of Usage
❶ : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Dimensions (mm) CW	CDX	RE	CBN KBN510 R	CBN KBN510 L	CBN KBN525 R	CBN KBN525 L	PCD KPD001 R	PCD KPD001 L	PCD KPD010 R	PCD KPD010 L	Applicable Toolholders	Ref. Page for Toolholder
 1-Edge	GBA32R 125-010	1.25	2.0	0.1							●		KGBAR/L…-3 KGBAR/L…-16 (JCT) KGBASR/L…-3 KGBASR/L…-16 KIGBAR/L…-3 (Internal) KIGBAR/L…-16 (Internal)	G12 G13 G76 (Internal)
	150-010	1.50	2.0	0.1					●		●			
 GBA32 LE=1.7mm GBA43 LE=1.9mm	GBA43R/L 125-010	1.25	2.0	0.1							●	●	KGBAR/L…-4-15 KGBAR/L…22-15 (JCT) KGBASR/L…-4-15 KGBASR/L…22-15 KIGBAR/L…-4 (Internal) KIGBAR/L…22 (Internal)	
	125-020	1.25	2.0	0.2	●	△		●						
	150-010	1.50	3.5	0.1					●	●	●	●		
	150-020	1.50	3.5	0.2	●	●	●							
	200-010	2.00	3.5	0.1					●	●	●	●		
	200-020	2.00	3.5	0.2	●	●	●	●						
	250-010	2.50	4.0	0.1					●	●	●	●		
	300-010	3.00	4.0	0.1					●	●	●	●	★1	
	300-020	3.00	4.0	0.2			●							

• Dimension **CDX** shows available grooving depth

Recommended Cutting Conditions ➡ **G139**

★1: KGBAR/L…4-25, KGBAR/L…22-25 (JCT), KGBAR/L…22-25T5, KGBASR/L…4-25, KGBASR/L…22-25, KGBASR/L…22-25T5, KIGBAR/L…4, KIGBAR/L…22

Rake Angle (α) after Installment of GBA

GBA32R/L○○○-○○○		GBA43R/L○○○-○○○		GBA43R/L○○○-○○○R (Full-R)		
α (°)	Insert Grade	α (°)	Insert Grade	α (°)	Insert Grade	Full-R
10°	TN90,PV7040,PR930 PR1115,PR1215,PR1625, PR905 KPD001,KPD010	0°	KBN510, KBN525	10°	TN90,PV7040,PR930 PR1115,PR1215,PR905	050R~150R
		10°	TC40,TN90,PV7040,PR930 PR1115,PR1215,PR1625, PR905 KPD001, KPD010	14°	TN90,PV7040,PR930 PR1115,PR1215,PR905	200R
20°	KW10	20°	KW10	14°	KW10	050R~200R

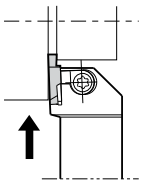
GBA inserts can be used in KGB / KGBS toolholders as well.

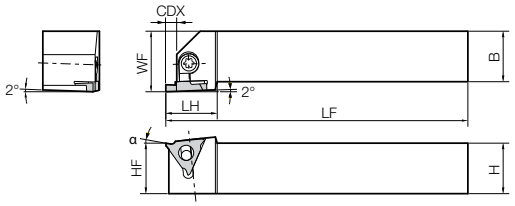
For GM Chipbreaker and MY Chipbreaker, see page ➡ **G9**

CBN & PCD Inserts are sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGBA





• Right-hand shown

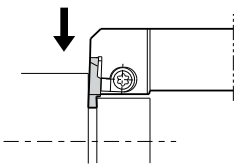
• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

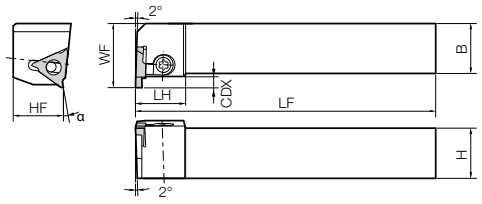
● Alternative Toolholder Reference Table

KGBA ←	(KGB)
KGBA R/L…22-15	KGB R/L…22-15
KGBA R/L…22-25	KGB R/L…22-25
KGBA R/L…22-35	KGB R/L…22-35
KGBA R/L…22-25T5	KGB R/L…22-25 (Available grooving depth has a limit)

· Short shank type is not available for KGB / KGBS.

KGBAS





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

● Alternative Toolholder Reference Table

KGBAS ←	(KGBS)
KGBAS R/L…22-15	KGBS R/L…22-15
KGBAS R/L…22-25	KGBS R/L…22-25
KGBAS R/L…22-35	KGBS R/L…22-35
KGBAS R/L…22-25T5	KGBS R/L…22-25 (Available grooving depth has a limit)

● Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	CDX	Spare Parts: Clamp Set	Spare Parts: Wrench	Applicable Insert (G6~G11)
KGBA R/L	12-3	●	●	inch	0.750	0.750	0.750	5.000	0.945	1.000	0.098	LGBA-16R/LS	FT-15	GBA32R/L...
	16-3	●	●		1.000	1.000	1.000	6.000	0.945	1.250	0.098			
	12-4-15	●	●		0.750	0.750	0.750	5.000	1.004	1.000	0.157	LGBA-22R/LS	FT-15	GBA43R/L...
	16-4-15	●	●		1.000	1.000	1.000	6.000	1.004	1.250	0.157			
	12-4-25	●	●		0.750	0.750	0.750	5.000	1.004	1.000	0.177			
	16-4-25	●	●		1.000	1.000	1.000	6.000	1.004	1.250	0.177			
	12-4-35	●	●		0.750	0.750	0.750	5.000	1.004	1.000	0.217			
	16-4-35	●	●		1.000	1.000	1.000	6.000	1.004	1.250	0.217			
KGBA R/L	2020K-16	●	●	mm	20	20	20	125	24.0	25	2.5	LGBA-16R/LS	FT-15	GBA32R/L...
	2525M-16	●	●		25	25	25	150	24.0	30	2.5			
	2020K22-15	●	●		20	20	20	125	25.5	25	4.0	LGBA-22R/LS	FT-15	GBA43R/L...
	2525M22-15	●	●		25	25	25	150	25.5	30	4.0			
	2020K22-25	●	●		20	20	20	125	25.5	25	4.5			
	2525M22-25	●	●		25	25	25	150	25.5	30	4.5			
	2020K22-25T5	●	●		20	20	20	125	25.5	25	5.5			
	2525M22-25T5	●	●		25	25	25	150	25.5	30	5.5			
	2020K22-35	●	●		20	20	20	125	25.5	25	5.5			
	2525M22-35	●	●		25	25	25	150	25.5	30	5.5			
	2020H22-15*	●			20	20	20	100	25.5	25	4.0			
	2020H22-25*	●			20	20	20	100	25.5	25	4.5			
	2020H22-35*	●			20	20	20	100	25.5	25	5.5			
KGBASR	12-3	●		inch	0.750	0.750	0.750	5.000	0.984	0.984	0.098	LGBA-16LS	FT-15	GBA32L...
	16-3	●			1.000	1.000	1.000	6.000	0.984	1.181	0.098			
	12-4-15	●			0.750	0.750	0.750	5.000	0.984	1.062	0.157	LGBA-22LS	FT-15	GBA43L...
	16-4-15	●			1.000	1.000	1.000	6.000	0.984	1.260	0.157			
	12-4-25	●			0.750	0.750	0.750	5.000	0.984	1.062	0.177			
	16-4-25	●			1.000	1.000	1.000	6.000	0.984	1.250	0.177			
	12-4-35	●			0.750	0.750	0.750	5.000	0.984	1.062	0.217			
	16-4-35	●			1.000	1.000	1.000	6.000	0.984	1.260	0.217			
KGBAS R/L	2020K-16	●	●	mm	20	20	20	125	25	25	2.5	LGBA-16R/LS	FT-15	GBA32R/L...
	2525M-16	●	●		25	25	25	150	25	30	2.5	LGBA-22R/LS	FT-15	GBA43R/L...
	2020K22-15	●	●		20	20	20	125	25	27	4.0			
	2525M22-15	●	●		25	25	25	150	25	32	4.0			
	2020K22-25	●	●		20	20	20	125	25	27	4.5			
	2525M22-25	●	●		25	25	25	150	25	32	4.5			
	2020K22-25T5	●	●		20	20	20	125	25	27	5.5			
	2525M22-25T5	●	●		25	25	25	150	25	32	5.5			
	2020K22-35	●	●		20	20	20	125	25	27	5.5			
	2525M22-35	●	●		25	25	25	150	25	32	5.5			

• Dimension **CDX** shows the distance from the toolholder to the cutting edge. Reference dimension **CDX** in applicable insert table for actual grooving depth. * mark indicates short shank type

• Clamp Set : KGBA R/L…LGBA-○○RS for Right-hand Toolholder, and LGBA-○○LS for Left-hand Toolholder.
KGBAS R/L…LGBA-○○LS for Right-hand Toolholder, and LGBA-○○RS for Left-hand Toolholder.

External Grooving Toolholders KGBA Short Shank Types Are Available

For NC lathe and HSK tooling, KGBAR2020K-○○ (Overall length 125mm) short shank type KGBAR2020H22-○○ (Overall length 100mm) is available., meaning it is no longer necessary for users to cut-down the shank.

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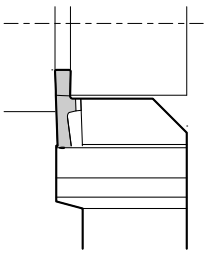
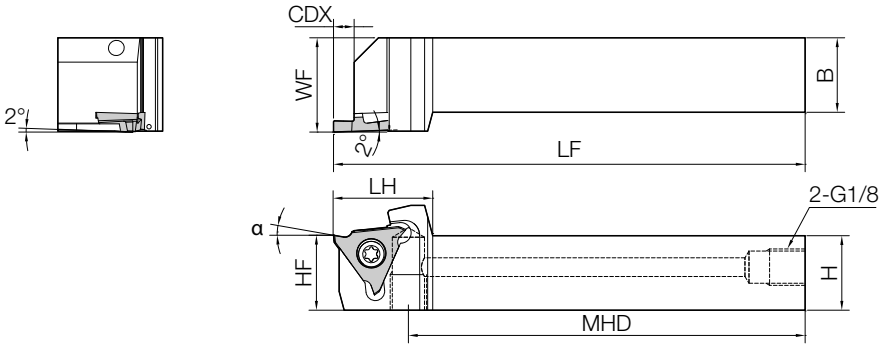
KGBA-JCT (Jet Coolant-through) NEW





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Pressure Resistance: up to 4,350 psi

Part Number		Stock		Unit	Dimensions (mm)								Spare Parts				Applicable Insert ➡ G6~G11
													Clamp Screw	Wrench		Plug	
		R	L		H	HF	B	LF	LH	WF	CDX*1	MHD					
KGBA□	2020K-16JCT	●	●	mm	20	20	20	125	24.0	25	2.5	107.5	SB-4085TR	FT-15	-	HSG1/8x8.0	GBA32□...
	2525K-16JCT	●	●		25	25	25			30							
	2020K22-15JCT	●	●		20	20	20		26.5	25	4	105	SB-5085TR	-	LTW-20		GBA43□...
	2525K22-15JCT	●	●		25	25	25			30							
	2020K22-25JCT	●	●		20	20	20			25	5.5						
	2525K22-25JCT	●	●		25	25	25			30							
	2020K22-35JCT	●	●		20	20	20			25							
	2525K22-35JCT	●	●		25	25	25			30							

*1 Dimension **CDX** shows the distance from the toolholder to the cutting edge. Reference dimension **CDX** in applicable insert table for actual grooving depth.

• KGBA-JCT Toolholder is Screw Clamp Type

Coolant Connections and Pipe Parts ➡ **H14-H15**
Recommended Cutting Conditions ➡ **G139**

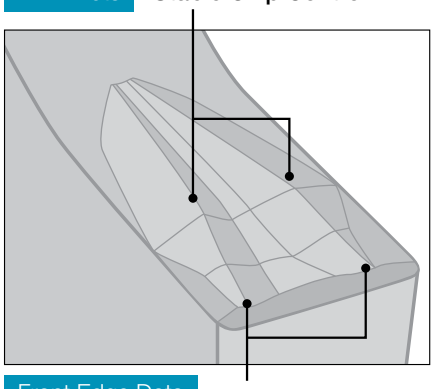
GBF

High Precision Grooving with Insert Width Tolerance of ± 0.02mm
High Efficiency MEGACOAT Coating Technology for Long Tool Life

1 Stable Chip Control with GL Chipbreaker

GL Chipbreaker for stable chip control in both grooving and traversing operations (Traversing is not recommended for GBF32R075-005GL)

Twin Dots **Stable Chip Control**



Front Edge Dots

Chips are short, curled and break evenly in low feed machining. Prevents chip clogging.

Chip Control Comparison (Internal Evaluation)

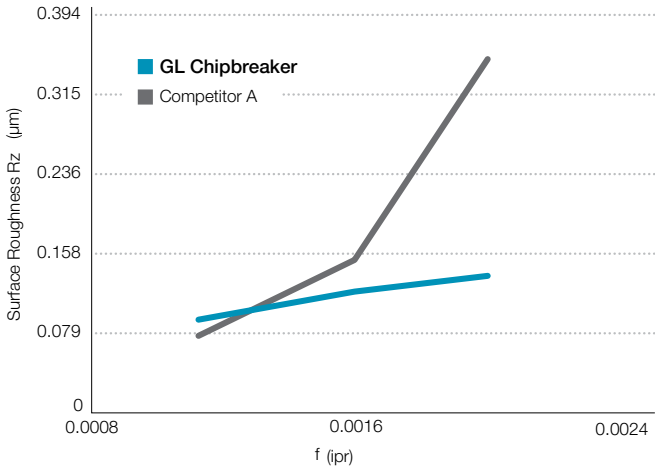
	GL Chipbreaker	Competitor A
Grooving f = 0.0020 ipr d = 0.059"		
Turning f = 0.0016 ipr D.O.C. = 0.008"		

Cutting Conditions : Vc = 260 sfm, Edge Width 0.039"
Workpiece Material : 304

2 Good Surface Finish

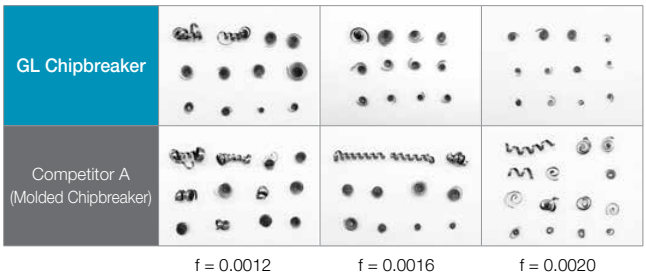
GL Chipbreaker stable chip control at high feed rates, Good surface finish of side wall.

Surface Roughness Comparison (Internal Evaluation)



Cutting Conditions : Vc = 260 sfm, d = 0.059", f = 0.001~0.002 ipr, Edge Width 0.039"
Workpiece Material : Chromium Steel

Chip Control Comparison (Internal Evaluation)



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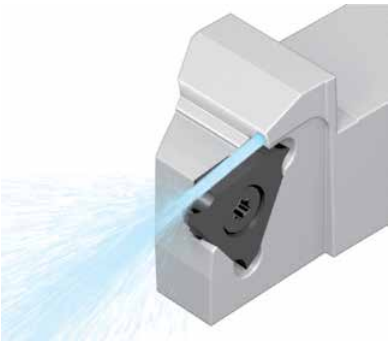
NEW ITEMS!

KGBF-JCT NEW

Coolant-Through Grooving Holders for Small Parts Machining

KGBF-JCT can direct coolant closer to the cutting edge from the top of the insert
Delivers improved chip control and longer tool life while grooving

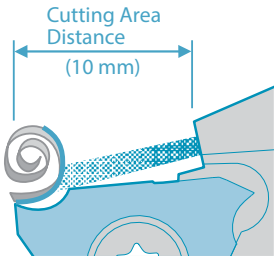


Coolant Hole

Coolant hole discharges coolant to the cutting edge and prevents coolant stream spreading which slows the coolant flow

Coolant Direction

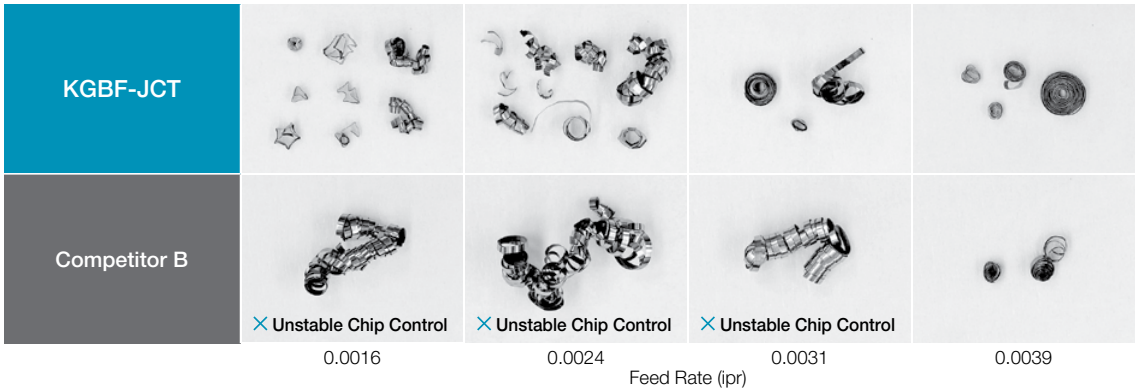
Sufficient coolant between the chipbreaker and the chips to provide stable chip curls and sufficient cooling of the insert



1 Excellent Chip Control

Chip Control Comparison (Internal Evaluation)

KGBF-JCT provided much better chip control

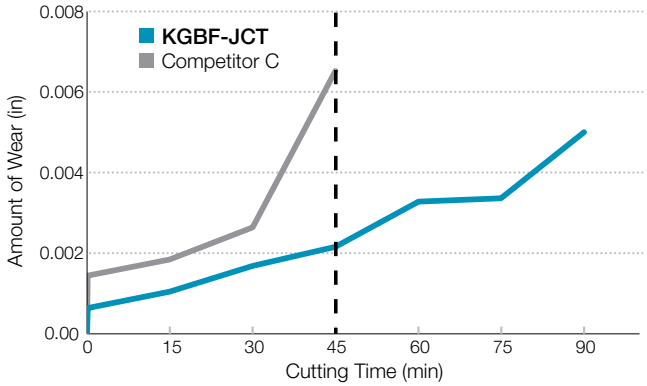


Cutting Conditions: Vc = 330 sfm, D.O.C. = 0.098", GBF32R200-010 PR1535, KGBFR1625H-16FJCT
Workpiece: Ti-6Al-4V External and Internal Coolant (218 psi) External Grooving

2 Superior Cooling Action Improves Tool Life

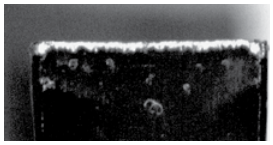
Wear Resistance Comparison (Internal Evaluation)

KGBF-JCT Showed Superior Wear Resistance

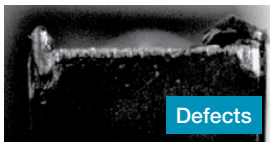


Cutting Edge

KGBF-JCT



Competitor B



Cutting Conditions: Vc = 490 sfm, D.O.C. = 0.071", f = 0.0024 ipr, GBF32R100-005GL PR1535, KGBFR1625H-16FJCT
Workpiece: 304 External and Internal Coolant (218 psi) External Grooving

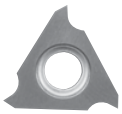
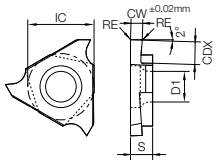
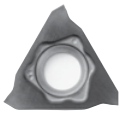
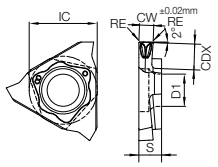
GBF / GBF-GL

P	Carbon Steel / Alloy Steel	●	◔	
M	Stainless Steel	◔	●	
K	Cast Iron			●
N	Non-ferrous Metals			●
S	Titanium Alloy			●
H	Hard materials (≤40HRC)			
	Hard materials (≥40HRC)			

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

(mm)

Part Number	IC	S	D1
GBF32_	9.525	3.18	4.4

Insert (Right-handed Insert Shown)		Part Number	Dimensions (mm) CW	CDX	RE	MEGA COAT PR1215 R	MEGA COAT PR1215 L	MEGACOAT NANO PR1535 R	MEGACOAT NANO PR1535 L	Carbide GW15 R	Carbide GW15 L	Applicable Toolholders	Ref. Page for Toolholder
		GBF32□ 025-005	0.25	0.6	0.05	●	●	●	●	●	●	KGBF□...16F S...KGBF□16 KGBFS□...16 KGBF□...-16FJCT	G17 G18 G19
		030-005	0.30	0.8	0.05	●	●	●	●	●	●		
		033-005 ※1	0.33	0.8	0.05	●	●	●	●	●	●		
		043-005 ※2	0.43	1.0	0.05	●	●	●	●	●	●		
		050-005	0.50	1.2	0.05	●	●	●	●	●	●		
		053-005 ※3	0.53	1.2	0.05	●	●	●	●	●	●		
		065-005	0.65	1.2	0.05	●	●	●	●	●	●		
		075-005	0.75	2.0	0.05	●	●	●	●	●	●		
		080-005	0.80	2.0	0.05	●	●	●	●	●	●		
		095-005	0.95	2.0	0.05	●	●	●	●	●	●		
		100-005	1.00	2.0	0.05	●	●	●	●	●	●		
		110-005	1.10	2.0	0.05	●	●	●	●	●	●		
		120-005	1.20	2.0	0.05	●	●	●	●	●	●		
		125-010	1.25	2.0	0.10	●	●	●	●	●	●		
		130-010	1.30	2.0	0.10	●	●	●	●	●	●		
		140-010	1.40	2.7	0.10	●	●	●	●	●	●		
		145-010	1.45	2.7	0.10	●	●	●	●	●	●		
		150-010	1.50	2.7	0.10	●	●	●	●	●	●		
		165-010	1.65	2.7	0.10	●	●	●	●	●	●		
		170-010	1.70	3.0	0.10	●	●	●	●	●	●		
		175-010	1.75	3.0	0.10	●	●	●	●	●	●		
		200-010	2.00	3.0	0.10	●	●	●	●	●	●		
		225-010	2.25	3.0	0.10	●	●	●	●	●	●		
		250-010	2.50	3.0	0.10	●	●	●	●	●	●		
		300-010	3.00	3.0	0.10	●	●	●	●	●	●		
		GBF32R 075-005GL	0.75	2.0	0.05	●		●					
		095-005GL	0.95	2.0	0.05	●		●					
		100-005GL	1.00	2.0	0.05	●		●					
		150-010GL	1.50	2.7	0.10	●		●					
		200-010GL	2.00	3.0	0.10	●		●					
		300-010GL	3.00	3.0	0.10	●		●					

Maximum Cutting Diameter See Page ➡ **G19**

Recommended Cutting Conditions ➡ **G140**

※1 : The edge width (**CW**) tolerance of GBF32□ 033-005 : $0.33^{+0.015mm}_{-0.025mm}$
※2 : The edge width (**CW**) tolerance of GBF32□ 043-005 : $0.43^{+0.015mm}_{-0.025mm}$
※2 : The edge width (**CW**) tolerance of GBF32□ 053-005 : $0.53^{+0.015mm}_{-0.025mm}$

Inserts are sold in 10 piece boxes.

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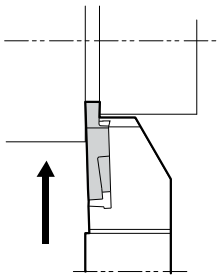
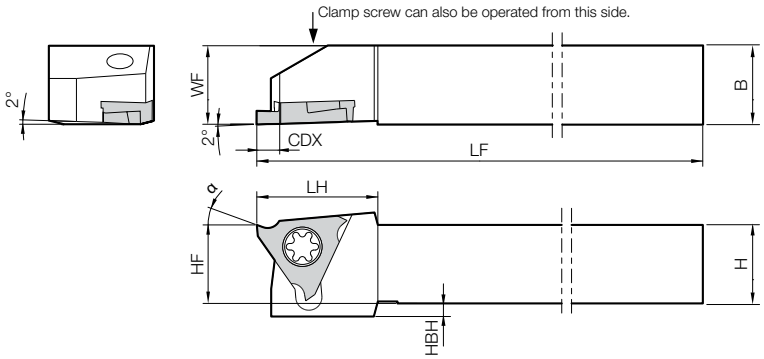
KGBF-F (Without Offset)





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions (mm) H=HF	HBH	B=WF	LF	LH	CDX*1	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
KGBF□	1010JX-16F	●	●	mm	10	4	10	120	18.5	3	SB-4070TRW	FT-8	GBF32□...
	1212JX-16F	●	●		12	2	12						
	1616JX-16F	●	●		16	-	16						
	2020JX-16F	●	●		20	-	20						

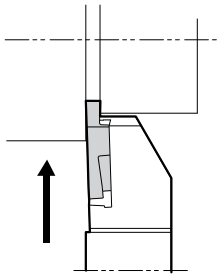
Applicable Inserts G16

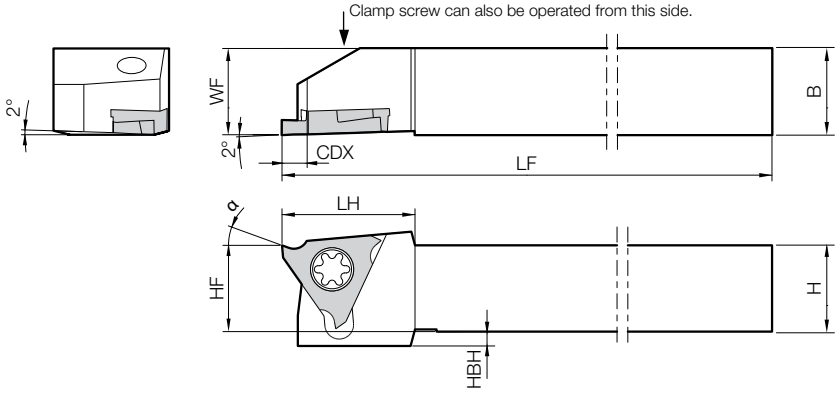
*1 Dimension **CDX** shows the distance from the toolholder to the cutting edge. Reference dimension **CDX** in applicable insert table for actual grooving depth.

Maximum Cutting Diameter See Page **G19**

Recommended Cutting Conditions **G140**

KGBFS





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock		Unit	Dimensions (mm)							Spare Parts		Applicable Inserts
												Clamp Screw	Wrench	
		R	L		H=HF	HBH	B	LF	LH	WF	CDX*1			G16
KGBFS**R/L**	**1010JX-16**	●	●	mm	10	4	10	120	14	15	3	SB-4070TRW	FT-8	GBF32**R/L**...
	1212JX-16	●	●		12	2	12			16				
	1616JX-16	●	●		16	-	16			20				

*1 Dimension **CDX** shows the distance from the toolholder to the cutting edge. Reference dimension **CDX** in applicable insert table for actual grooving depth.

Maximum Cutting Diameter See Page **G19**

Recommended Cutting Conditions **G140**

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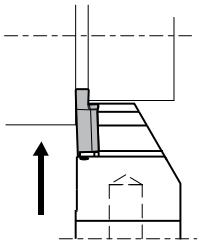
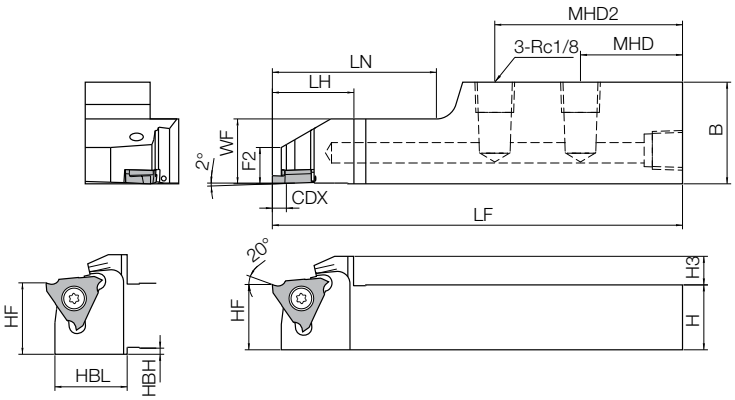
KGBF-JCT (Jet Coolant-through) NEW





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Pressure Resistance: up to 2,175 psi

Part Number	Stock		Unit	Dimensions (mm)											Spare Parts			Applicable Inserts
															Clamp Screw	Wrench	Plug	
	R	L		H=HF	HBH	B	LF	HBL	LH	LN	WF	CDX*1	MHD	MHD2				G16
KGBFR 1220H-16FJCT	●	●	mm	12	1.5	20	100	20	20	28	12	3	35	-	SB-4070TRW	FT-8	GP-1	GBF32R/L...
1625H-16FJCT	●	●		16	-	25	100	-	20	40	16	3	25	46				
2025H-16FJCT	●	●		20	-	25	100	-	20	40	20	3	25	46				

*1 Dimension **CDX** shows the distance from the toolholder to the cutting edge. Reference dimension **CDX** in applicable insert table for actual grooving depth.

Coolant Connections and Pipe Parts **H14-H15**
Recommended Cutting Conditions **G140**

Compatibility & Precautions

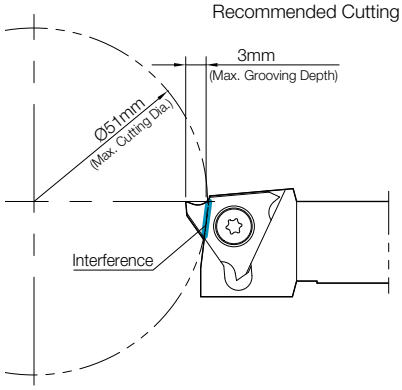
GBF and GBA Compatibility

1 GBF will fit KGBA / KGBAS toolholders
Caution: The maximum groove depth for KGBA / KGBAS toolholders is 2.5 mm

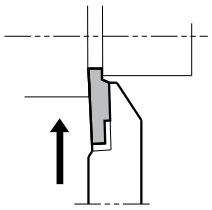
2 GBA inserts will also fit KGBF-F toolholders
Caution: The rake angle after installation in the toolholder is 11°

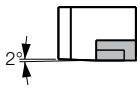
Maximum Machining Diameter for KGBF-F toolholder with GBF Insert

3 mm groove depth is available on workpiece diameters up to Ø51mm
2.7 mm groove depth is available on workpiece diameters up to Ø100mm,
2.5 mm groove depth is available on workpiece diameters up to Ø200mm
The workpiece will interfere with the holder at maximum cutting diameters or larger.



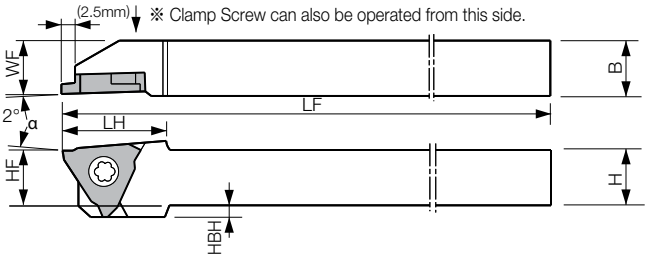
KTGF-F (Without Offset)





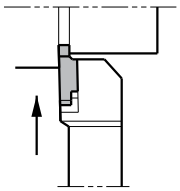
α (°)	Insert Grade
20°	PR1115, PR1215 PR930, KW10
11°	KPD001
6°	TC40

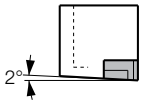
• Right-hand shown



• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

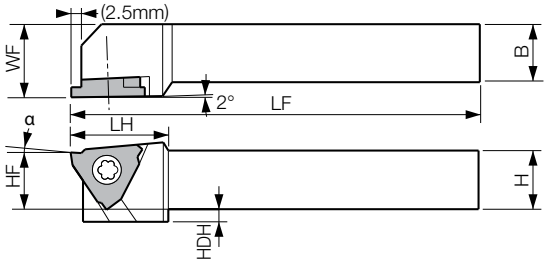
KTGF (With Offset)





α (°)	Insert Grade
20°	PR1115, PR1215 PR930, KW10
11°	KPD001
6°	TC40

• Right-hand shown



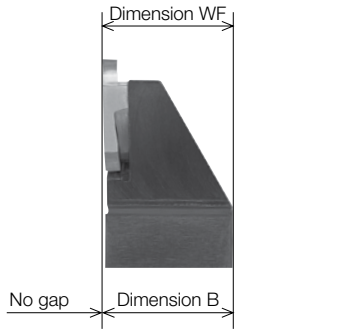
• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

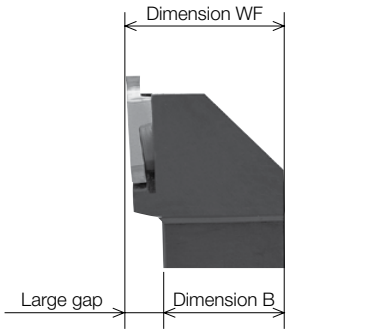
Part Number		Stock R	Stock L	Unit	Dimensions H	HBH	HF	B	LF	LH	WF	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
KTGF□	6-3JXF	●	●	inch	0.375	0.079	0.375	0.375	4.750	0.728	0.383	SB-4070TRW	FT-8	TGF32□
	8-3JXF	●	●		0.500	-	0.500	0.500	4.750	0.728	0.500			
	10-3JXF	●	●		0.625	-	0.625	0.625	4.750	0.728	0.098			
KTGF□	1010JX-16F	●	●	mm	10	2	10	10	120	18.5	10	SB-4070TRW	FT-8	
	1212JX-16F	●	●		12	-	12	12	120	18.5	12			
	1616JX-16F	●	●		16	-	16	16	120	18.5	16			
KTGF□	1212F-16F	●			12	-	12	12	85	18.5	12	SB-4070TRW	FT-8	
KTGF□	1010F-16	●	●		10	4	10	10	80	18.5	12	SB-4070TRS	FT-10	
	1212H-16	●	●		12	2	12	12	100	18.5	16			
	1616H-16	●	●		16	-	16	16	100	18.5	20			
	2020K-16	●	●		20	-	20	20	125	20.0	25			
	2525M-16	●	●		25	-	25	25	150	20.0	32			

Usage Difference Between KTGF-F and KTGF Toolholders

It is necessary to use "Without Offset" in operating the swiss machine.



KTGF-F (without offset type)

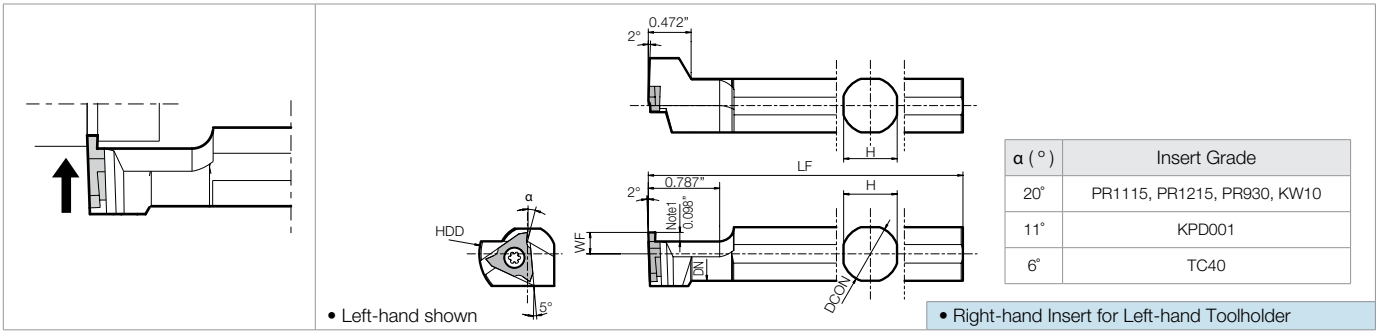


KTGF (with offset type)

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S...KTGF (Sleeve Holder)



α (°)	Insert Grade
20°	PR1115, PR1215, PR930, KW10
11°	KPD001
6°	TC40

• Left-hand shown

• Right-hand Insert for Left-hand Toolholder

Note 1) Dimension shown is the distance from the toolholder to the cutting edge. Reference dimension **CDX** in applicable insert table for actual grooving depth.

Toolholder Dimensions

Part Number	Stock	Unit	Dimensions						Spare Parts		Applicable Inserts Below
			DCON	LF	WF	DN	HDD	H	Clamp Screw	Wrench	
S15F-KTGFL16	●	inch	0.625	3.35	0.236	0.575	1.063	0.591	SB-4070TRS	FT-10	TGF32R
S19G-KTGFL16	●		0.750	3.54	0.236	0.693	1.063	0.669			
S19K-KTGFL16	●		0.750	4.73	0.236	0.693	1.063	0.669			
S25K-KTGFL16	●		1.000	4.73	3.940	0.929	1.260	0.906			
S12F-KTGFL16	●	mm	12.0	80	6	11.0	27	11			
S14H-KTGFL16	●		14.0	100	6	13.0	27	13			
S16F-KTGFL16	●		16.0	85	6	14.6	27	15			
S20G-KTGFL16	●		20.0	90	6	18.6	27	18			
S20K-KTGFL16	●		20.0	120	6	18.6	27	18			
S25.0H-KTGFL16	●		25.0	100	10	23.6	32	23			

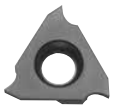
Applicable Inserts

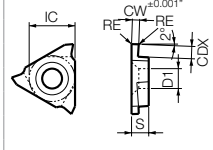
P	Carbon Steel / Alloy Steel		●	◔	◔				
M	Stainless Steel		●	◔	●				
K	Cast Iron					●			
N	Non-ferrous Metals					●	●		
S	Titanium Alloy					●	●		
H	Hard materials (≤40HRC)		●	○	○				
	Hard materials (≥40HRC)								

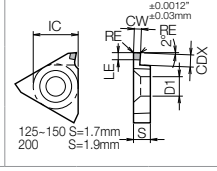
Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

(in)

Part Number	IC	S	D1
TGF32_	0.375	0.125	0.177

Insert (Right-handed Insert Shown)	Part Number	Unit	Dimensions			Cermet	MEGA COAT	PVD Coated Carbide		Carbide	PCD	Applicable Toolholders	Ref. Page for Toolholder
			CW	CDX	RE	TC40	PR1215	PR930	PR1115	KW10	KPD001		
						R L	R L	R L	R L	R L	R L		
General (Square) (Corner is C Shape) TGF32R/L○○○	TGF32R/L 031N	inch	0.031	0.078	0.004		● ●					KTGFR/L...16F KTGFR/L...16 S...KTGFR/L16	G20 G21
	041N		0.041	0.078	0.004		● ●						
	047N		0.047	0.078	0.004		● ●						
	058N		0.058	0.078	0.004		● ●						
	062N		0.062	0.078	0.004		● ●						
	078N		0.078	0.098	0.004		● ●						
	094N		0.094	0.098	0.004		● ●						
 General (Square) (Corner is R Shape) TGF32R/L ○○○-○○○	TGF32R/L 033-005	mm	0.33	0.8	0.05		●	●	△				
	050-005		0.50	1.2	0.05	●	● ●	● ●	△	●			
	075-010		0.75	2.0	0.10	●	● ●	● ●	△ △	●			
	095-010		0.95	2.0	0.10	●	● ●	● ●	△	●			
	100-010		1.00	2.0	0.10	●	● ●	● ●	△	●			
	120-010		1.20	2.0	0.10		● ●						
	125-010		1.25	2.0	0.10	●	● ●	● ●	△	●			
	140-010		1.40	2.0	0.10		● ●						
	145-010		1.45	2.0	0.10	●	● ●	● ●		●			
	150-010		1.50	2.0	0.10	●	● ●	● ●	△ △	●			
	175-010		1.75	2.0	0.10	●	● ●	● ●	△	●			
	200-010		2.00	2.5	0.10	●	● ●	● ●	△	●			
	250-010		2.50	2.5	0.10	●	● ●	● ●	△	●			
1 Edge	TGF32R 125-010	mm	1.25	2.0	0.10						●		
	150-010		1.50	2.0	0.10						●		
	200-010		2.00	2.5	0.10						●		





• Dimension **CDX** shows available grooving depth

Recommended Cutting Conditions ➡ **G140**

Inserts are sold in 10 piece boxes. *CBN & PCD Tools are sold in 1 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

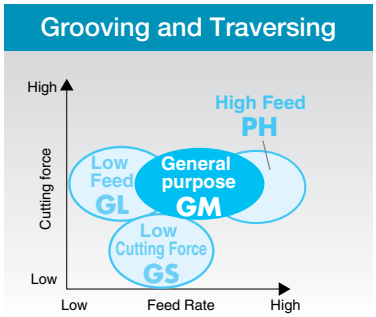
KGD Insert Lineup

Smooth Chip Control
Introducing new chipbreakers designed for a variety of workpiece materials.

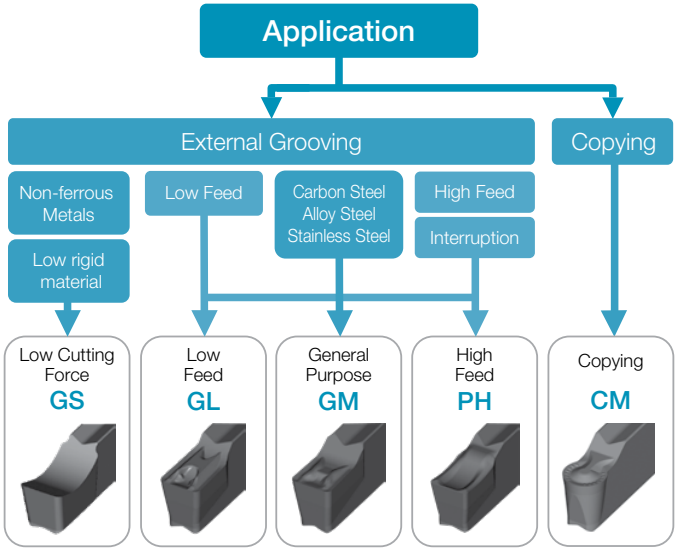
High Precision Edge Preparation
High precision molding technology with tolerance ±0.03mm (2, 3, 4mm types).

MEGACOAT Techology
Long tool life and high efficiency machining achieved by superior oxidation and wear resistance.

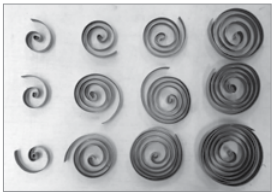
● Application Map



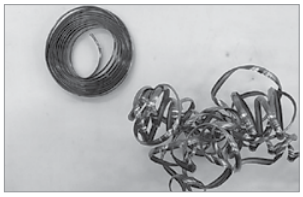
● Chipbreaker Selection



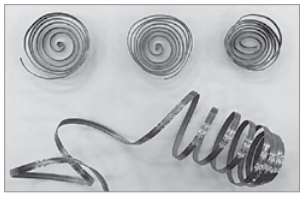
● Comparison of Chip Control - Structural Steel Vc = 490 sfm, f = 0.006 ipr



GM Chipbreaker



Competitor A

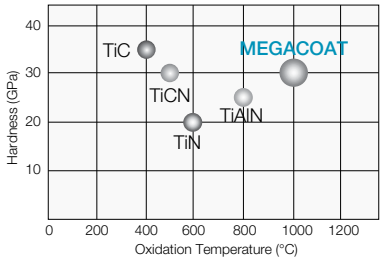


Competitor B

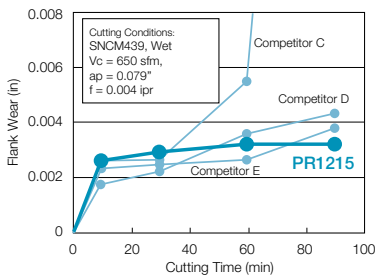
Better chip control than competitors

Reduces damage of cutting edge caused by crushing chips

● MEGACOAT Features



● Wear Resistance Comparison



PR1225
1st recommendation for cut-off, grooving, and traversing of steel

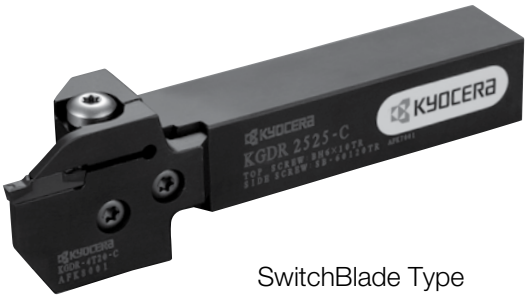
PR1215
Superior wear resistance, recommended for grooving and cut-off under stable conditions.

1st recommendation for machining of cast iron

KGD Toolholder

Integral Type and SwitchBlade Type (Toolholder + Blade) are available

Integral Type

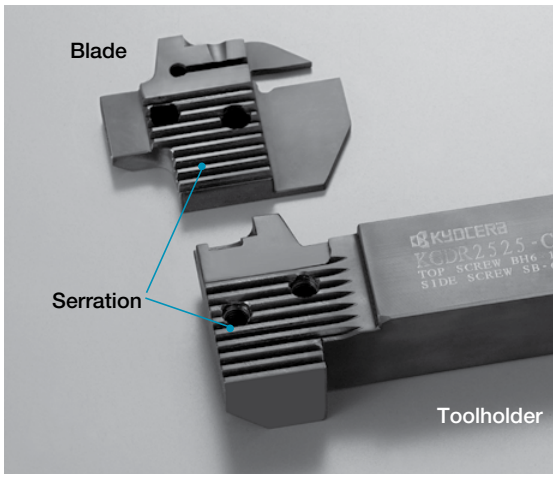


SwitchBlade Type

High Rigidity SwitchBlade Type Toolholder

Adaptable to a wide range of applications by swapping blades

Various edge widths and cutting depths can be achieved by changing the blade and toolholder combination.
Swap blades out easily to change groove width and depth.

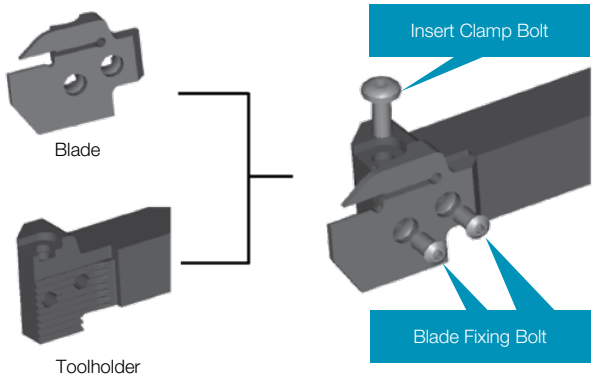


Jet Coolant-Through KGD-JCT Holders

Various edge widths and cutting depths can be achieved by changing the blade and toolholder combination.
Swap blades out easily to change groove width and depth.

Structure of Toolholder Unit (Toolholder + Blade)

KGD-S (0°SwitchBlade Type)

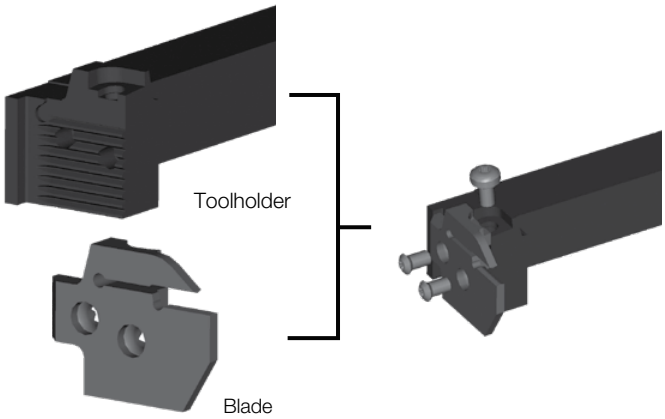


Blade Combination of 0° SwitchBlade Type

Toolholder (KGD**R** ○○○○-C)
+
Blade (KGD**R**-○T○○-C)

➡Right-hand **(R)** Blade for Right-hand **(R)** Toolholder,
Left-hand **(L)** Blade for Left-hand **(L)** Toolholder.

KGDS-S (90°SwitchBlade Type)



Blade Combination of 90° SwitchBlade Type

Toolholder (KGDSR ○○○○-C)
+
Blade (KGDL-○T○○-C)

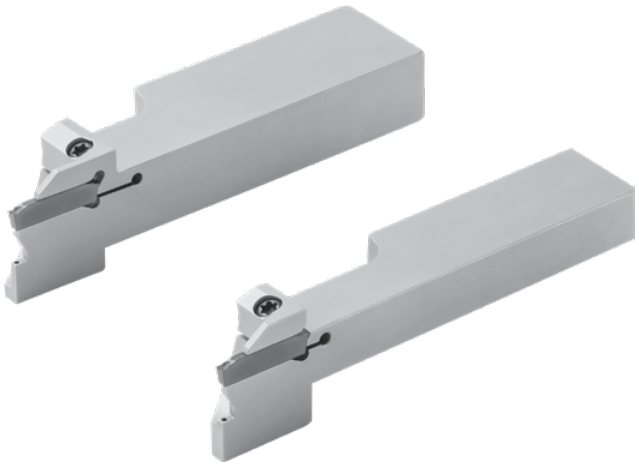
➡Left-hand (L) Blade for Right-hand (R) Toolholder,
Right-hand (R) Blade for Left-hand (L) Toolholder.

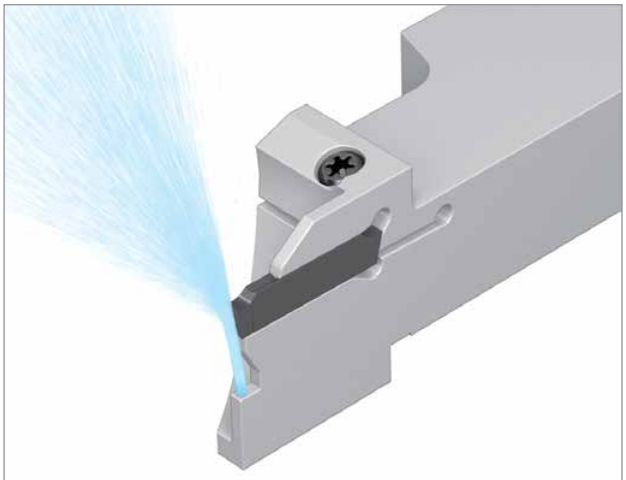
KGD-JCT for Small Parts

Small Diameter Grooving / Cut-Off

Coolant-Through Cut-Off Holders for Small Parts Machining

Improved Tool Life Lowers Machining Costs





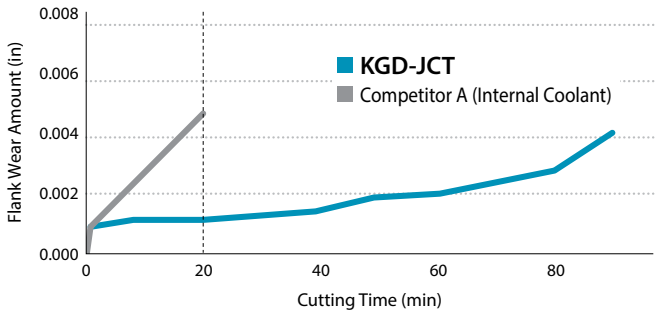
Effective Cooling of the Cutting Edge

Optimized Coolant Hole Position

Discharges Coolant towards the Flank Face of the Insert

Wear Resistance Comparison

(Internal Evaluation)

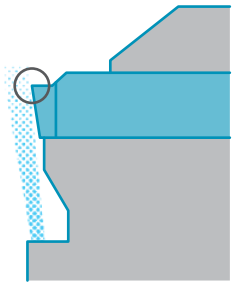


Cutting Conditions : Vc = 260 sfm, f=0.0024 ipr (at~Ø 0.079" : f = 0.0007 (ipr)
KGDR1625H-2JCT, GDM2020N-015PF PR1535 (Insert Width : 0.079")
Workpiece : 304 (Ø0.984")
Internal Coolant(218 psi) Cut-off

Coolant Discharge

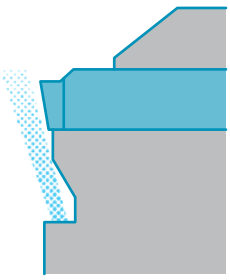
KGD-JCT

Sufficient cooling towards the cutting edge

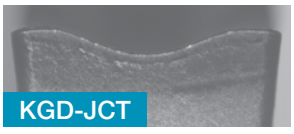


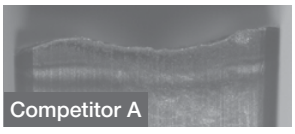
Competitor A

Coolant does not flow directly towards the cutting edge



Cutting Edge (After Machining 20 min)





High density and high speeds coolant provides effective cooling of the cutting edge

Superior cooling action improves tool life

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KGD-JCT

Grooving / Cut-Off

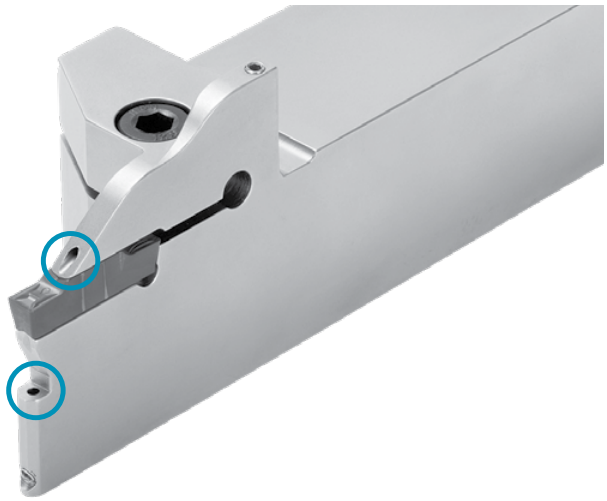
Coolant-Through Holders for External Grooving and Cut-Off

Improved Chip Control and Longer Tool Life for External Grooving and Cut-off

Discharges Coolant in Two Directions

Discharges coolant in two directions toward both the rake surface and the flank face of the insert

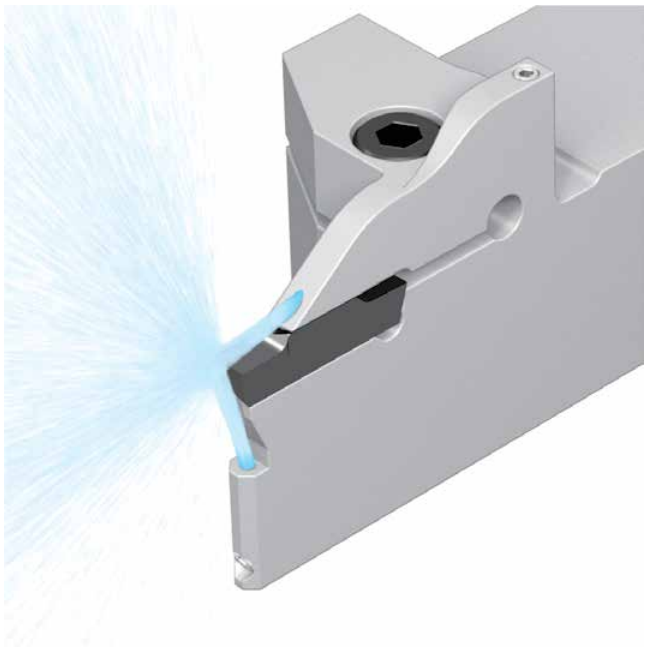
Excellent Chip Control and Long Tool Life



Superior Chip Control Performance

Coolant directed towards the rake face

Coolant hole position and angle improve chip control



Chip Control Comparison (Internal Evaluation)

KGD-JCT showed better chip control performance even at lower feed rates

f = 0.002 ipr (218 psi)

KGD-JCT

Competitor E

Competitor F

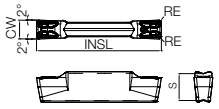
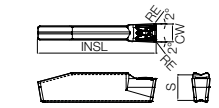
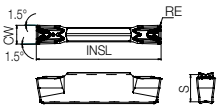
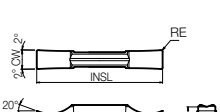
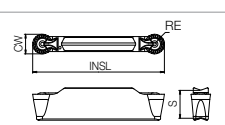
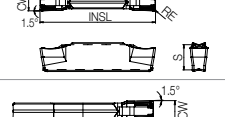
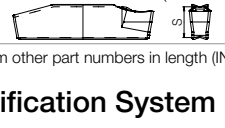
Competitor G

Cutting Conditions: Vc = 490 sfm, f = 0.002 ipr, d = 0.315", Wet
Edge Width 4 mm (0.157") Workpiece: 4131 Grooving

GDM / GDMS / GDG

Usage Classification
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

		Cermet		MEGACOAT NANO	MEGACOAT		Carbide
P	Carbon Steel / Alloy Steel	●	○		●	◔	
M	Stainless Steel			●	◔	◔	
K	Cast Iron					●	
N	Non-ferrous Metals						●
S	Titanium Alloy			●			◔
H	Hard materials (≤40HRC)				○		
	Hard materials (≥40HRC)						

Insert (Right-handed Insert Shown)			Part Number	Dimensions (in) CW inch	CW mm	CW Tolerance	RE	INSL	S	TN620	TN90	PR1535	PR1225	PR1215	GW15	Ref. Page for Toolholder
Grooving & Traversing	General Purpose 2-edge		GDM 2420N-020GM	0.094	2.4	±0.0012	0.008	0.787	0.169	●	●	●	●	●		G28 ~ G36
			3020N-020GM	0.118	3.0		0.008			●	●	●	●	●		
			3020N-040GM	0.118	3.0		0.016			●	●	●	●	●		
			4020N-020GM	0.157	4.0		0.008			●	●	●	●	●		
			4020N-040GM	0.157	4.0		0.016			●	●	●	●	●		
			4020N-080GM	0.157	4.0		0.032			●	●	●	●	●		
			5020N-040GM	0.197	5.0	±0.0016	0.016			●	●	●	●	●		
			5020N-080GM	0.197	5.0		0.032			●	△	●	●	●		
			6020N-040GM	0.236	6.0		0.016			●	●	●	●	●		
			6020N-080GM	0.236	6.0		0.032			●	●	●	●	●		
			8030N-080GM	0.315	8.0	±0.0020	0.032	1.181	0.217			●	●	●		
	General Purpose 1-edge		GDMS 2220N-020GM	0.087	2.2	±0.0012	0.008	0.787	0.169	●	●	●	●	●		
			3020N-040GM	0.118	3.0		0.016			●	△	●	●	●		
			4020N-040GM	0.157	4.0		0.016			●	●	●	●	●		
			5020N-080GM	0.197	5.0	±0.0016	0.032			●	△	●	●	●		
			6020N-080GM	0.236	6.0		0.032			●	△	●	●	●		
	Low Feed 2-edge		GDM 2420N-020GL	0.094	2.4	±0.0012	0.008	0.787	0.169	●	●	●	●	●		
			3020N-020GL	0.118	3.0		0.008			●	●	●	●	●		
			3020N-040GL	0.118	3.0		0.016			●	●	●	●	●		
			4020N-020GL	0.157	4.0		0.008			●	●	●	●	●		
			4020N-040GL	0.157	4.0		0.016			●	△	●	●	●		
			5020N-040GL	0.197	5.0	±0.0016	0.016			●	●	●	●	●		
			6020N-040GL	0.236	6.0		0.016			●	△	●	●	●		
Grooving	Low Cutting Force 2-edge		GDG 2520N-020GS	0.098	2.5	±0.0008	0.008	0.787	0.169	●	●	●	●	●	●	
			3020N-020GS	0.118	3.0		0.008			●	●	●	●	●	●	
			3520N-020GS	0.138	3.5		0.008			●	△	●	●	●	●	
			4020N-040GS	0.157	4.0		0.016			●	●	●	●	●	●	
			5020N-040GS	0.197	5.0		0.016			●	●	●	●	●	●	
			6020N-040GS	0.236	6.0		0.016			●	△	●	●	●	●	
			8030N-040GS	0.315	8.0	±0.0008	0.016	1.181	0.217	●	△	●	●	●	●	
Full-R / Copying	2-edge		GDM 3020N-150R-CM	0.118	3.0	±0.0012	0.059	0.787	0.169	●	●	●	●	●		
			4020N-200R-CM	0.157	4.0		0.079			●	●	●	●	●		
			5020N-250R-CM	0.197	5.0	±0.0016	0.098	*0.827		●	●	●	●	●		
			6020N-300R-CM	0.236	6.0		0.118			●	△	●	●	●		
Grooving & Cut-off	High Feed 2-edge		GDM 2020N-020PH	0.079	2.0	±0.0012	0.008	0.787	0.169			●	●	●		
			3020N-030PH	0.118	3.0		0.012					●	●	●		
			4020N-030PH	0.157	4.0		0.012					●	●	●		
	High Feed 1-edge		GDMS 2020N-020PH	0.079	2.0	±0.0012	0.008	0.787				●	●	●		
			3020N-030PH	0.118	3.0		0.012					●	●	●		
			4020N-030PH	0.157	4.0		0.012					●	●	●		

*GDM50/60-CM differs from other part numbers in length (INSL) to avoid interference of a toolholder with workpiece.

Recommended Cutting Conditions ➔ G39~G40

Inserts are sold in 10 piece boxes.

Insert Identification System

Series	No. of Edges	Insert Length	Tolerance	Width	Hand of Tool	Corner-R (RE)	Chipbreaker
G D	M / S	30 / 20	M : M-Class G : G-Class	20 : 2mm 30 : 3mm 40 : 4mm	N : Neutral	020 : 0.2mm 040 : 0.4mm 150R : 1.5mm (Full-R)	GM: Grooving & Traversing GL: Low Feed GS: Low Cutting Force CM: Copying PH : High Feed NB : Without Chipbreaker

Example: G D M S 30 20 N - 040 GM

No. of Edges: No Indication : 2-edge; S : 1-edge

Insert Length: 20 : 20mm; 30 : 30mm

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(Technical Support) 800.823.7284 - Option 2
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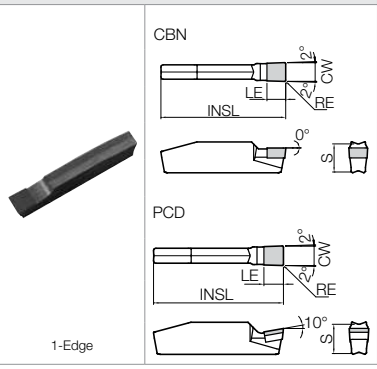
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

GDGS (CBN / PCD)

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

K	Cast Iron				Ref. Page for Toolholder
N	Non-ferrous Metals			●	
S	Titanium Alloy			●	
H	Hard materials (≤40HRC)				
	Hard materials (≥40HRC)	●			
	Powdered Steel		●		

Insert (Right-handed Insert Shown)	Part Number	Dimensions (in) CW inch	CW mm	CW Tolerance	RE	INSL	S	LE	MEGA CBN KBN05M	CBN KBN570	PCD KPD001
Grooving	GDGS 2020N-020NB	0.079	2.0	±0.0012	0.008	0.787	0.169	0.114	●	●	●
	3020N-020NB	0.118	3.0		0.008						●
	3020N-040NB	0.118	3.0		0.016				●	●	
	4020N-020NB	0.157	4.0		0.008						●
	4020N-040NB	0.157	4.0		0.016				●	●	
	5020N-020NB	0.197	5.0		0.008						●
	5020N-040NB	0.197	5.0		0.016				●	●	
	6020N-020NB	0.236	6.0		0.008						●
	6020N-040NB	0.236	6.0		0.016				●	△	



Ref. Page for Toolholder: G28 ~ G36

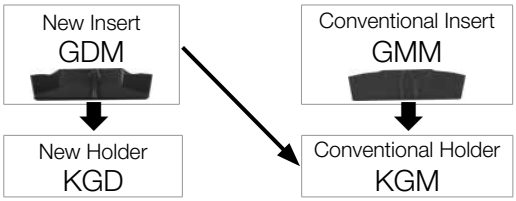
Recommended Cutting Conditions ➔ G39~G40

CBN & PCD Inserts are sold in 1 piece boxes.

KGD / KGM Combinations

● **Insert Pocket Angle of KGD / KGM Toolholders**

KGD...0°	Conventional KGM...5°
0°	5°



Installing conventional inserts into the new toolholder is not recommended.

Toolholder Identification System

K G D | **R** | **1616** | **JX** - **3** | **D38** (Integral Type for Small Parts Machining)

Toolholder Hand	Shank Size	Toolholder Length	Applicable Inserts	Cutting Dia.
R : Right-hand **L** : Left-hand	**16**×**16**mm	**120mm**	GDM/GDMS **3~4**mm	CUTDIA **38**mm

K G D | **R** | **1616** | **H** - **2** **T** **06** (Integral Type)

Toolholder Hand	Shank Size	Toolholder Length	Applicable Inserts	Max. Depth of Cut
R : Right-hand **L** : Left-hand	**16**×**16**mm	**100mm**	GDM/GDMS **2~3mm**	**06** : 06mm

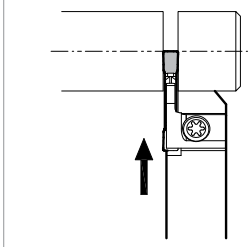
K G D / **K G D S** | **R** | **2020** | **X** - **3** **T** **10** **S** (Separate Type / Unit Description)

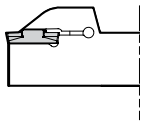
Toolholder Hand	Shank Size	Toolholder Type	Applicable Inserts	Max. Depth of Cut
R : Right-hand **L** : Left-hand	**20**×**20**mm	Unit Description	GDM/GDMS **3~4**mm	**10** : 10mm

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGD (for Small Parts Machining)

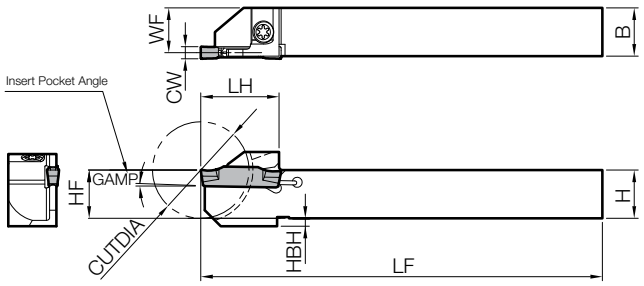
Insert Width: 0.079"~0.157" / 2.0mm~5.0mm





KGD□2012K-○D34
KGD□2020K-○D34
Shown in figure above

• Right-hand shown



Toolholder Dimensions (Inch Size)

Part Number	Stock R	Stock L	Cut-Off Dia. CUTDIA	Dimensions (in) H	HF	HBH	B	LF	LH	WF	GAMP	Insert Width CW (in) MIN	MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench
KGD□ 6-1.5JX	●	●	0.787	0.375	0.375	0.098	0.375	4.75	0.709	0.351	1°	-	0.059	SB-40120TR	LTW-15S
8-1.5JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.476					
KGD□ 6-2JX	●	●	0.787	0.375	0.375	0.098	0.375	4.75	0.709	0.342	1°	0.079	0.118		
8-2JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.467					
10-2JX	●	●	1.259	0.625	0.625	-	0.625	4.75	0.965	0.592					
KGD□ 6-2.4JX	●	●	0.787	0.375	0.375	0.098	0.375	4.75	0.709	0.336	1°	0.094	0.118		
8-2.4JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.461					
10-2.4JX	●	●	1.259	0.625	0.625	-	0.625	4.75	0.965	0.586					
KGD□ 8-3JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.453	1°	0.118	0.118		
10-3JX	●	●	1.259	0.625	0.625	-	0.625	4.75	0.965	0.578			0.157		
KGD□ 10-3D38JX	●	●	1.496	0.625	0.625	-	0.625	4.75	1.142	0.578	1°	0.118	0.157	SE-50125TR	LTW-20
12-3D42JX	●	●	1.653	0.750	0.750	-	0.750	4.75	1.220	0.703					
43-3D42JX	●	●	1.653	0.750	0.750	-	0.500	4.75	1.220	0.453					

Toolholder Dimensions (Metric Size)

Part Number	Stock R	Stock L	Cut-Off Dia. CUTDIA	Dimensions (mm) H	HF	HBH	B	LF	LH	WF	GAMP	Insert Width CW (mm) MIN	MAX	Spare Parts: Clamp Bolt/Screw	Spare Parts: Wrench
KGD□ 1010JX-1.3D16	●	●	16	10	10	2	10	120	18.0	9.9	5°	1.3	1.3	SB-40120TR	LTW-15S
1010JX-1.3	●	●	20	10	10	2	10	120	18.0	9.5					
1212F-1.3D16	●	●	16	12	12	2	12	85	19.5	11.9					
1212JX-1.3D16	●	●	16	12	12	2	12	120	19.5	11.9					
1212F-1.3	●	●	24	12	12	2	12	85	19.5	11.5					
1212JX-1.3	●	●	24	12	12	2	12	120	19.5	11.5					
KGD□ 1010JX-1.5D16	●	●	16	10	10	2	10	120	18.0	9.7	5°	1.5	1.5	SB-40120TR	LTW-15S
1010JX-1.5	●	●	20	10	10	2	10	120	18.0	9.4					
1212F-1.5D16	●	●	16	12	12	2	12	85	19.5	11.7					
1212JX-1.5D16	●	●	16	12	12	2	12	120	19.5	11.7					
1212F-1.5	●	●	24	12	12	2	12	85	19.5	11.4					
1212JX-1.5	●	●	24	12	12	2	12	120	19.5	11.4					
KGD□ 1010JX-2	●	●	20	10	10	2	10	120	18.0	9.2	1°	2.0	3.0	SB-40120TR	LTW-15S
1212F-2	●	●	24	12	12	2	12	85	19.5	11.2					
1212JX-2	●	●	24	12	12	2	12	120	19.5	11.2					
1616JX-2	●	●	32	16	16	-	16	120	24.5	15.2					
2012K-2D34	●	●	34	20	20	-	12	125	32.5	11.2	0°			HH5X16	LW-4
2020K-2D34	●	●	34	20	20	-	20	125	32.5	19.2					
KGD□ 1010JX-2.4	●	●	20	10	10	2	10	120	18.0	9.0	1°	2.4	3.0	SB-40120TR	LTW-15S
1212F-2.4	●	●	24	12	12	2	12	85	19.5	11.0					
1212JX-2.4	●	●	24	12	12	2	12	120	19.5	11.0					
1616JX-2.4	●	●	32	16	16	-	16	120	24.5	15.0					
2012K-2.4D34	●	●	34	20	20	-	12	125	32.5	11	0°			HH5X16	LW-4
2020K-2.4D34	●	●	34	20	20	-	20	125	32.5	19					
KGD□ 1212JX-3	●	●	24	12	12	2	12	120	19.5	10.8	1°	3.0	3.0	SB-40120TR	LTW-15S
1616JX-3	●	●	32	16	16	-	16	120	24.5	14.8			4.0		
1616JX-3D38	●	●	38	16	16	-	16	120	29.0	14.8	1°	3.0	4.0	SE-50125TR	LTW- 20
1913K-3D38	●	●	38	19	19	-	13	125	29.0	11.8					
2012JX-3D42	●	●	42	20	20	-	12	120	31.0	10.8					
2012JX-3D51	●	●	51	20	20	-	12	120	36.0	10.8					
2020JX-3D42	●	●	42	20	20	-	20	120	31.0	18.8					
2020JX-3D51	●	●	51	20	20	-	20	120	36.0	18.8					

Note 1) 0.157" (4mm) width insert can be installed in KGD□8-3JX and KGD□1212JX-3, but is not recommended due to the toolholder's rigidity.
2) Recommended tightening torque for clamp screw is 2.0Nm for SB-40120TR and 2.5Nm for SE-50125TR.
3) When machining material greater than Ø1.417" (36mm) with KGD□...-3D38(JX), KGD□...-3D42(JX), or KGD□...-3D51 toolholders, use 1-edge inserts. Max. workpiece diameter for 2-edge inserts is Ø1.417" (36mm)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **G26~G27**

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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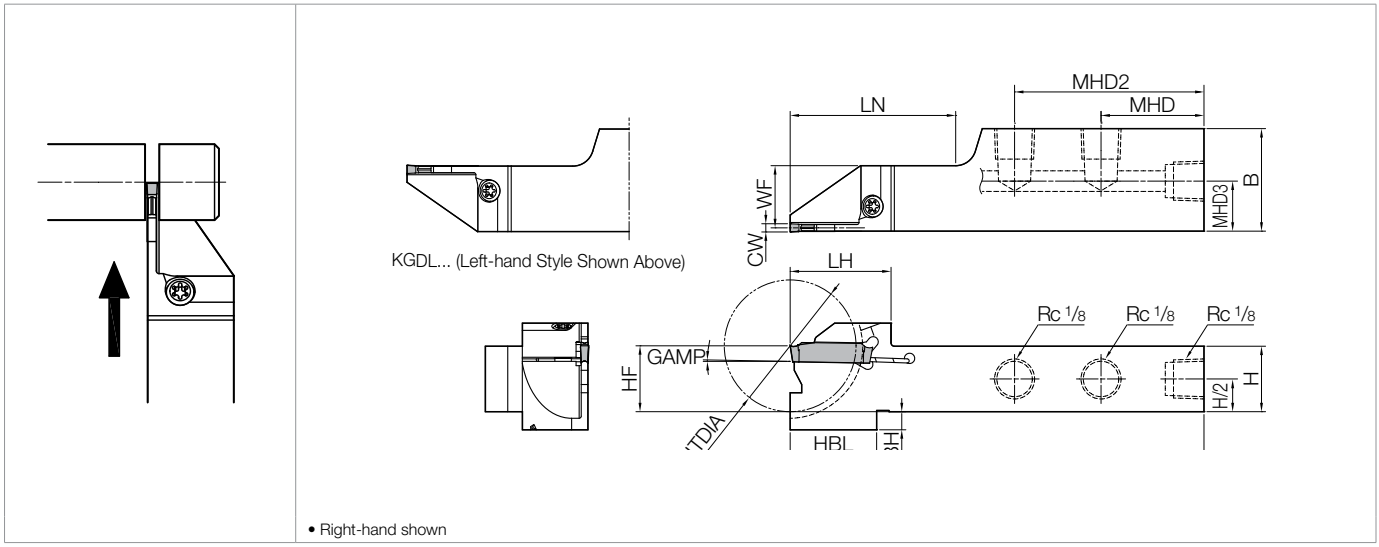
KGD-JCT (for Small Parts Machining / Jet Coolant-Through) NEW

Insert Width: 0.079"~0.157" / 2.0mm~4.0mm



• Right-hand shown

Toolholder Dimensions (Metric Size)

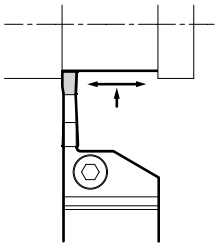
Part Number	Stock		Cut-Off Dia.	Dimensions (mm)													Insert Width CW (mm)		Spare Parts		
																			Clamp Bolt	Wrench	Plug
	R	L	CUTDIA	H=HF	HBH	B	LF	LH	HBL	LN	WF	MHD	MHD2	MHD3	GAMP	MIN	MAX			
KGDR 1220H-2JCT	●	●	24	12	8.5	20	100	19.5	21	44	11.2	35	-	8.4	1°	2.0	3.0	SB-40120TR	LTW-15S	GP-1
KGDL 1220H-2JCT	●	●							21.5					7.7						
KGDR 1625H-2JCT	●	●	32	16	4.5	25		24.5	21	40	15.2	25	46	12.2						
KGDL 1625H-2JCT	●	●												7.7						
KGDR 1220H-2.4JCT	●	●	24	12	8.5	20	100	19.5	21	44	11	35	-	8.4	1°	2.4	3.0			
KGDL 1220H-2.4JCT	●	●							21.5					7.7						
KGDR 1625H-2.4JCT	●	●	32	16	4.5	25		24.5	21	40	15	25	46	12.2						
KGDL 1625H-2.4JCT	●	●												7.7						
KGDR 1220H-3JCT	●	●	24	12	8.5	20	100	19.5	21	44	10.8	35	-	8.6	1°	3.0	3.0			
KGDL 1220H-3JCT	●	●							21.5					7.7						
KGDR 1625H-3JCT	●	●	32	16	4.5	25		24.5	21	40	14.8	25	46	12.2			4.0			
KGDL 1625H-3JCT	●	●												7.7						

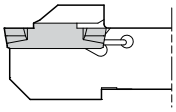
Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **G26~G27**

Coolant Connections and Pipe Parts **G33**

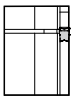
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

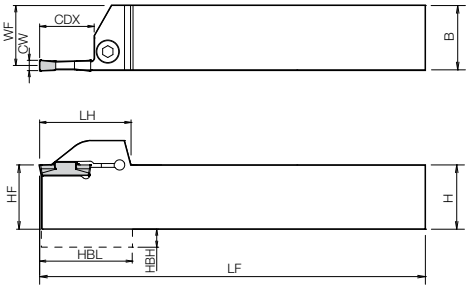
KGD (Integral-Style)





KGD□1216JX-3T06
KGD□1216JX-4T06
Shown in figure above





• Right-hand shown

Toolholder Dimensions (Inch Size)

Width (in)	Max. D.O.C. (in)	Part Number	Stock R	Stock L	H	HF	HBH	B	LF	LH	HBL	WF	CDX*	Insert Width CW (in) MIN	Insert Width CW (in) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench
0.079" (2mm)	0.669" (17mm)	KGD□ 12-2T17	●	●	0.75	0.75	-	0.75	4.92	1.28	-	0.71	0.669" (17mm)	0.079" (2mm)	0.118" (3mm)	HH5X16	LW-4
		16-2T17	●	●	1.00	1.00	-	1.00	5.90	1.28	-	0.96				HH5X25	
0.118" (3mm)	0.393" (10mm)	KGD□ 12-3T10	●	●	0.75	0.75	-	0.75	4.92	1.20	-	0.70	0.393" (10mm)	0.118" (3mm)	0.157" (4mm)	HH5X16	LW-4
		16-3T10	●	●	1.00	1.00	-	1.00	5.90	1.20	-	0.95				HH5X25	
	0.787" (20mm)	KGD□ 12-3T20	●	●	0.75	0.75	-	0.75	4.92	1.35	-	0.70	0.787" (20mm)			HH5X16	LW-4
		16-3T20	●	●	1.00	1.00	-	1.00	5.90	1.39	-	0.95				HH5X25	
	NEW 1.000" (25.4mm)	KGD□ 12-3T254	●	●	0.75	0.75	-	0.75	4.92	1.52	-	0.70	1.000" (25.4mm)			HH5X16	LW-4
		16-3T254	●	●	1.00	1.00	-	1.00	5.90	1.52	-	0.95				HH5X25	
0.157" (4mm)	0.393" (10mm)	KGD□ 12-4T10	●	●	0.75	0.75	-	0.75	4.92	1.20	-	0.68	0.393" (10mm)	0.157" (4mm)	0.197" (5mm)	HH5X16	LW-4
		16-4T10	●	●	1.00	1.00	-	1.00	5.90	1.20	-	0.93				HH5X25	
	0.787 (20mm)	KGD□ 12-4T20	●	●	0.75	0.75	-	0.75	4.92	1.35	-	0.68	0.787 (20mm)			HH5X16	LW-4
		16-4T20	●	●	1.00	1.00	-	1.00	5.90	1.39	-	0.93				HH5X25	
	0.984 (25mm)	KGD□ 16-4T25	●	●	1.00	1.00	-	1.00	5.90	1.59	-	0.93	0.984 (25mm)			HH5X25	LW-4
0.197" (5mm)	0.393 (10mm)	KGD□ 12-5T10	●	●	0.75	0.75	-	0.75	4.92	1.20	-	0.66	0.393 (10mm)	0.197" (5mm)	0.236" (6mm)	HH5X16	LW-4
		16-5T10	●	●	1.00	1.00	-	1.00	5.90	1.20	-	0.91				HH5X25	
	0.669 (17mm)	KGD□ 12-5T17	●	●	0.75	0.75	-	0.75	4.92	1.47	-	0.66	0.669 (17mm)			HH5X16	LW-4
		16-5T17	●	●	1.00	1.00	-	1.00	5.90	1.47	-	0.91				HH5X25	
	0.984 (25mm)	KGD□ 16-5T25	●	●	1.00	1.00	-	1.00	5.90	1.59	-	0.91	0.984 (25mm)			HH5X25	LW-4
0.236" (6mm)	0.591 (15mm)	KGD□ 16-6T15	●	●	1.00	1.00	-	1.00	5.90	1.28	-	0.89	0.591 (15mm)	0.236" (6mm)	0.236" (6mm)	HH5X25	LW-4
	1.181 (30mm)	KGD□ 16-6T30	●	●	1.00	1.00	-	1.00	5.90	1.79	-	0.89	1.181 (30mm)				
0.315" (8mm)	0.984 (25mm)	KGD□ 16-8T25	●	●	1.00	1.00	0.26	1.00	5.90	1.65	1.69	0.88	0.984 (25mm)	0.315" (8mm)	0.315" (8mm)	HH6X25	LW-5

Note 1) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
2) Recommended tightening torque for clamp bolt is 6.5Nm for HH5X○○ and 8.0Nm for HH6X25.
3) Above toolholders can also be used for cut-off applications.

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **G26~G27**

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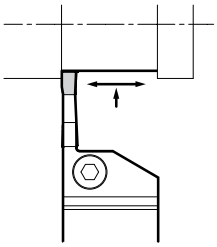
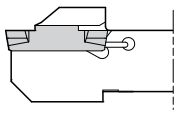
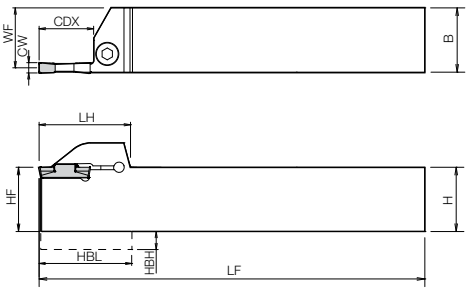
KGD (Integral-Style)





KGD□1216JX-3T06
KGD□1216JX-4T06
Shown in figure above



• Right-hand shown

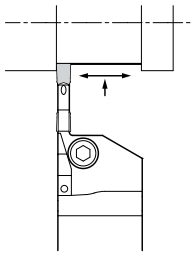
Toolholder Dimensions (Metric Size)

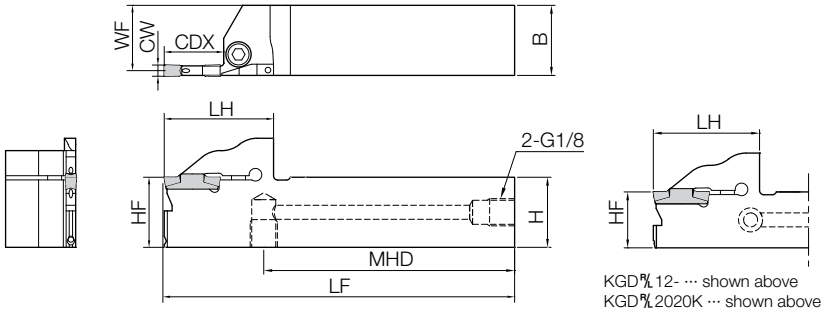
Width (mm)	Max. Grooving Depth (mm)	Part Number	Stock R	Stock L	H	HF	HBH	B	LF	LH	HBL	WF	CDX*	Insert Width CW (mm) MIN	Insert Width CW (mm) MAX	Spare Parts: Clamp Bolt/Screw	Spare Parts: Wrench
2.0	6	KGD□ 1616H-2T06	●	●	16	16	4.0	16	100	27.7	28.0	15.2	6	2.0	3.0	HH5X16	LW-4
		2020K-2T06	●	●	20	20	-	20	125	28.0	-	19.2				HH5X16	
		2525M-2T06	●	●	25	25	-	25	150	28.0	-	24.2				HH5X25	
	10	KGD□ 1616H-2T10	●	●	16	16	4.0	16	100	30.2	30.5	15.2	10			HH5X16	LW-4
		2020K-2T10	●	●	20	20	-	20	125	30.5	-	19.2				HH5X16	
		2525M-2T10	●	●	25	25	-	25	150	30.5	-	24.2				HH5X25	
	17	KGD□ 1616H-2T17	●	●	16	16	4.0	16	100	31.2	31.5	15.2	17			HH5X16	LW-4
		2012K-2T17	●	●	20	20	-	12	125	32.5	-	11.2				HH5X16	
		2020K-2T17	●	●	20	20	-	20	125	32.5	-	19.2				HH5X16	
		2525M-2T17	●	●	25	25	-	25	150	32.5	-	24.2				HH5X25	
2.4	17	KGD□ 2012K-2.4T17	●	●	20	20	-	12	125	32.5	-	11.0	17	2.4	3.0	HH5X16	LW-4
		2020K-2.4T17	●	●	20	20	-	20	125	32.5	-	19.0				HH5X16	
3.0	6	KGD□ 1216JX-3T06	●	●	12	12	2.0	16	120	19.5	19.0	14.8	6	3.0	4.0	SE-50125TR	LTW-20
		1616H-3T06	●	●	16	16	4.0	16	100	27.7	28.0	14.8				HH5X16	LW-4
		2020K-3T06	●	●	20	20	-	20	125	28.0	-	18.8				HH5X16	
		2525M-3T06	●	●	25	25	-	25	150	28.0	-	23.8				HH5X25	
	10	KGD□ 1616H-3T10	●	●	16	16	4.0	16	100	30.2	30.5	14.8	10			HH5X16	LW-4
		2020K-3T10	●	●	20	20	-	20	125	30.5	-	18.8				HH5X16	
		2525M-3T10	●	●	25	25	-	25	150	30.5	-	23.8				HH5X25	
	20	KGD□ 1616H-3T20	●	●	16	16	4.0	16	100	34.2	34.5	14.8	20			HH5X16	LW-4
		2012K-3T20	●	●	20	20	-	12	125	34.5	-	10.8				HH5X16	
		2020K-3T20	●	●	20	20	-	20	125	34.5	-	18.8				HH5X16	
		2525M-3T20	●	●	25	25	-	25	150	35.5		23.8				HH5X25	
4.0	6	KGD□ 1216JX-4T06	●	●	12	12	2.0	16	120	19.5	19.0	14.3	6	4.0	5.0	SE-50125TR	LTW-20
	10	KGD□ 2020K-4T10	●	●	20	20	-	20	125	30.5	-	18.3	10			HH5X16	LW-4
		2525M-4T10	●	●	25	25	-	25	150	30.5	-	23.3				HH5X25	
	20	KGD□ 2020K-4T20	●	●	20	20	-	20	125	34.5	-	18.3	20			HH5X16	
		2525M-4T20	●	●	25	25	-	25	150	35.5	-	23.3				HH5X25	
	25	KGD□ 2525M-4T25	●	●	25	25	-	25	150	40.5	-	23.3	25			HH5X25	
5.0	10	KGD□ 2020K-5T10	●	●	20	20	-	20	125	30.5	-	17.8	10	5.0	6.0	HH5X16	LW-4
		2525M-5T10	●	●	25	25	-	25	150	30.5	-	22.8				HH5X25	
	17	KGD□ 2020K-5T17	●	●	20	20	-	20	125	37.5	-	17.8	17			HH5X25	
		2525M-5T17	●	●	25	25	-	25	150	37.5	-	22.8				HH5X25	
	25	KGD□ 2525M-5T25	●	●	25	25	-	25	150	40.5	-	22.8	25			HH5X25	
6.0	15	KGD□ 2525M-6T15	●	●	25	25	-	25	150	32.5	-	22.4	15	6.0	6.0	HH5X25	LW-4
	30	KGD□ 2525M-6T30	●	●	25	25	-	25	150	45.5	-	22.4	30			HH5X25	
8.0	25	KGD□ 2525M-8T25	●	●	25	25	7.0	25	150	43.3	44.2	22.0	25	8.0	8.0	HH6X25	LW-5
		3232P-8T25	●	●	32	32	-	32	170	43.3	-	29.0				HH6X25	

Note 1) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
2) Recommended tightening torque for clamp bolt/screw is 6.5Nm for HH5X○○, 8.0Nm for HH6X25 and 2.5Nm for SE-50125TR.
3) Above toolholders can also be used for cut-off applications.

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **G26~G27**

KGD-JCT (Integral Style / Jet Coolant-Through) NEW





• Right-hand shown

Toolholder Dimensions (Inch Size)

Pressure Resistance: up to 2,175 psi

Width (mm)	Max. Grooving Depth (mm)	Part Number	Stock R	Stock L	H	HF	B	LF	LH	WF	CDX	MHD	Insert Width CW (in) MIN	Insert Width CW (in) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench	Spare Parts: Plug
0.118 (3mm)	0.787 (20mm)	KGD□ 12-3T20JCT	●	●	0.750	0.750	0.750	5.000	1.496	0.702	0.787 (20mm)	3.590	0.118 (3mm)	0.157 (4mm)	HH5X16	LW-4	HSG1/8X8.0
		16-3T20JCT	●	●	1.000	1.000	1.000	5.000	1.535	0.952		3.551			HH5X25		
0.157 (4mm)	0.787 (20mm)	KGD□ 12-4T20JCT	●		0.750	0.750	0.750	5.000	1.496	0.683	0.787 (20mm)	3.590	0.157 (4mm)	0.197 (5mm)	HH5X16		
		16-4T20JCT	●	●	1.000	1.000	1.000	5.000	1.535	0.933		3.551			HH5X25		
	1.000 (25.4mm)	KGD□ 16-4T25.4JCT	●	●	1.000	1.000	1.000	5.000	1.732	0.933	1.000 (25.4mm)	3.354			HH5X25		

Toolholder Dimensions (Metric Size)

Pressure Resistance: up to 2,175 psi

Width (mm)	Max. Grooving Depth (mm)	Part Number	Stock R	Stock L	H	HF	B	LF	LH	WF	CDX	MHD	Insert Width CW (mm) MIN	Insert Width CW (mm) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench	Spare Parts: Plug
3	6	KGD□ 2020K-3T06JCT	●	●	20	20	20	125	31.5	18.8	6	96.2	3.0	4.0	HH5X16	LW-4	HSG1/8X8.0
		2525K-3T06JCT	●	●	25	25	25		31.5	23.8		96.5			HH5X25		
	10	2020K-3T10JCT	●	●	20	20	20		34.0	18.8	10	94.2			HH5X16		
		2525K-3T10JCT	●	●	25	25	25		34.0	23.8		94.5			HH5X25		
	20	2020K-3T20JCT	●	●	20	20	20		38.0	18.8	20	90.2			HH5X16		
		2525K-3T20JCT	●	●	25	25	25		39.0	23.8		89.5			HH5X25		
4	10	KGD□ 2020K-4T10JCT	●	●	20	20	20	125	34.0	18.8	10	94.2	4.0	5.0	HH5X16	LW-4	HSG1/8X8.0
		2525K-4T10JCT	●	●	25	25	25		34.0	23.8		94.5			HH5X25		
	20	KGD□ 2020K-4T20JCT	●	●	20	20	20		38.0	18.8	20	90.2			HH5X16		
		2525K-4T20JCT	●	●	25	25	25		39.0	23.8		89.5			HH5X25		
	25	KGD□ 2525K-4T25JCT	●	●	25	25	25		44.0	23.8	25	84.5					

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ G26~G27

Coolant Connections and Pipe Parts ➡ G33

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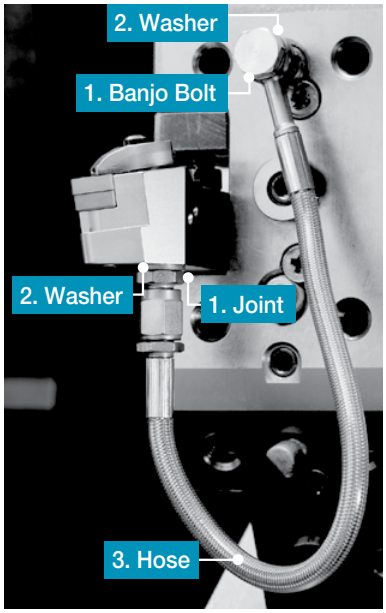
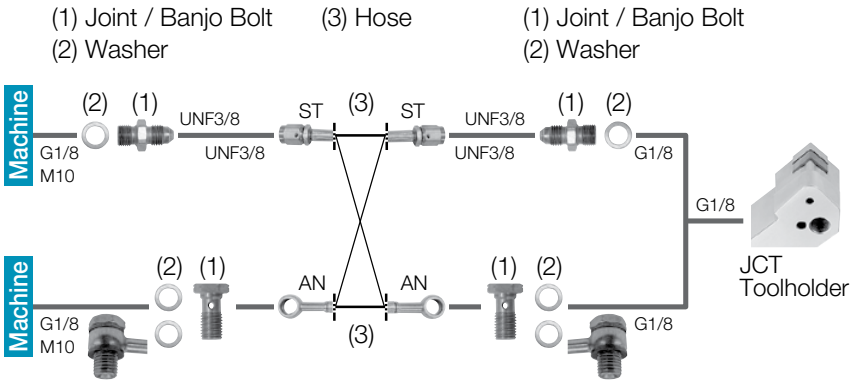
Easy Coolant Connections

Easy Connection with High Pressure Hose and Joint



- Even without a high pressure pump, internal coolant can be used at a normal pressure
- Banjo bolt available for angled hose connection and can be used in a variety of machines

Piping Installation Guide



Piping Parts

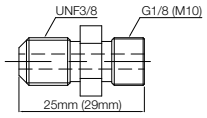
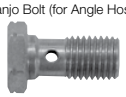
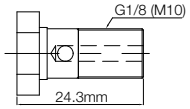
Optional Piping Parts Available

Choose from parts below to match your machine specifications

1. Joint / Banjo bolt × 2
2. Washer × 2-4
3. Hose × 1

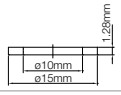
1. Joint / Banjo Bolt

Pressure Resistance: up to 4,350 psi

Shape		Part Number	Stock	Thread Standard
		**J-G1/8-UNF3/8**	●	G1/8
		J-10X1.5-UNF3/8	●	M10X1.5
Banjo Bolt (for Angle Hose) 		**BB-G1/8**	●	G1/8
		BB-M10X1.5	●	M10X1.5

2. Washer

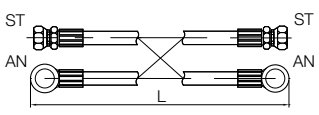
Pressure Resistance: up to 4,350 psi

Shape		Part Number	Stock
		**WS-10**	●

* Use 2 washers for a banjo bolt

3. Hose

Pressure Resistance: up to 4,350 psi

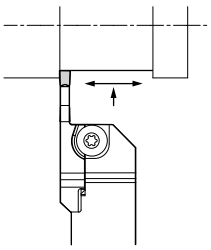
Shape		Part Number	Stock	Thread Standard		Dimensions (mm) L
		**HS-ST-ST-200**	●	UNF3/8	UNF3/8	200
		HS-ST-ST-250	●			250
		HS-ST-AN-200	●	UNF3/8	- (Banjo Bolt)	200
		HS-ST-AN-250	●			250
		HS-AN-AN-200	●	- (Banjo Bolt)	- (Banjo Bolt)	200
		HS-AN-AN-250	●			250

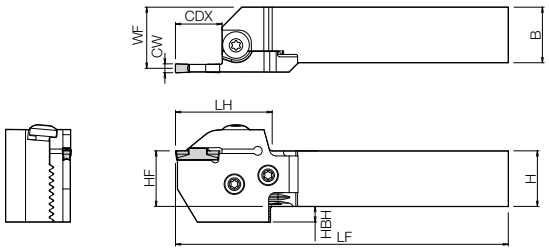
Precautions

1. Make sure machine door is completely closed before use of these parts.
2. Use appropriate seal for the male thread of the piping parts and make sure the connection is secure. Use plugs to seal off unused coolant holes.
3. Connect and fasten the coolant hose firmly.
4. The use of copper washers may cause leakage but will have no effect on the performance.
5. Commercial piping parts can be used if the thread standards are the same. Check the pressure resistance before use.
6. Regularly changing the coolant filter is recommended.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGD-S (0° SwitchBlade Type)





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions (Inch Size)

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

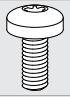
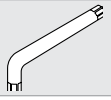
Shank Angle	Width (in)	Max. Grooving Depth (in)	Shank Size (in)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number G35	Blade Part Number G35	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX*	Insert Width CW (in) MIN.	MAX.
0°	0.079 (2mm)	0.669 (17mm)	□0.75	KGD□ 12X-2T17S	●	●	KGD□12-C	KGD□-2T17-C	0.75	0.75	0.472	0.75	4.80	1.57	0.88	0.669 (17mm)	0.079 (2mm)	0.118 (3mm)
			□1.00	16X-2T17S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.79	1.57	1.13			
	0.118 (3mm)	0.394 (10mm)	□0.75	KGD□ 12X-3T10S	●	●	KGD□12-C	KGD□-3T10-C	0.75	0.75	0.472	0.75	4.53	1.30	0.87	0.394 (10mm)	0.118 (3mm)	0.157 (4mm)
			□1.00	16X-3T10S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.51	1.30	1.12			
		0.787 (20mm)	□0.75	KGD□ 12X-3T20S	●	●	KGD□12-C	KGD□-3T20-C	0.75	0.75	0.472	0.75	4.92	1.69	0.87	0.787 (20mm)		
			□1.00	16X-3T20S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.91	1.69	1.12			
	0.157 (4mm)	0.394 (10mm)	□0.75	KGD□ 12X-4T10S	●	●	KGD□12-C	KGD□-4T10-C	0.75	0.75	0.472	0.75	4.53	1.30	0.85	0.394 (10mm)	0.157 (4mm)	0.197 (5mm)
			□1.00	16X-4T10S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.51	1.30	1.10			
		0.787 (20mm)	□0.75	KGD□ 12X-4T20S	●	●	KGD□12-C	KGD□-4T20-C	0.75	0.75	0.472	0.75	4.92	1.69	0.85	0.787 (20mm)		
			□1.00	16X-4T20S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.91	1.69	1.10			
		0.984 (25mm)	□0.75	KGD□ 12X-4T25S	●	●	KGD□12-C	KGD□-4T25-C	0.75	0.75	0.472	0.75	5.12	1.89	0.85	0.984 (25mm)		
			□1.00	16X-4T25S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	6.10	1.89	1.10			
	0.197 (5mm)	0.394 (10mm)	□0.75	KGD□ 12X-5T10S	●	●	KGD□12-C	KGD□-5T10-C	0.75	0.75	0.472	0.75	4.53	1.30	0.83	0.394 (10mm)	0.197 (5mm)	0.236 (6mm)
			□1.00	16X-5T10S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.51	1.30	1.08			
		0.984 (25mm)	□0.75	KGD□ 12X-5T25S	●	●	KGD□12-C	KGD□-5T25-C	0.75	0.75	0.472	0.75	5.12	1.89	0.83	0.984 (25mm)		
			□1.00	16X-5T25S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	6.10	1.89	1.08			

Note 1) When using the toolholder in normal mounting position, the lower jaw of the toolholder may interfere with the tool presetter.
2) The toolholder and blade part numbers are printed on the toolholder body. (Unit part numbers are not printed)
KGD-S: Right-hand blades for right-hand toolholders, and left-hand blades for left-hand toolholders.
3) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
4) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table G26~G27

Spare Parts (Common with SwitchBlade Types)

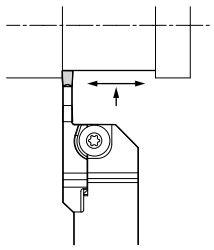
* The parts are included in the toolholder and unit.

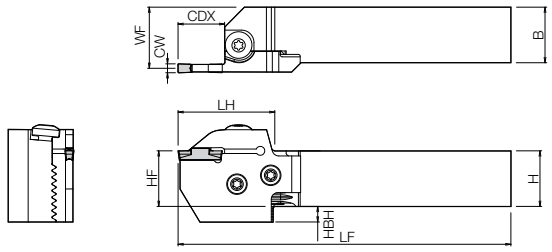
Unit Part Number	Spare Parts: Clamp Bolt (for Insert Clamp)	Spare Parts: Clamp Screw (for Blade)	Spare Parts: Wrench
			
KGD□·····S	BH6X10TR	SB-60120TR	LTW-25

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGD-S (0° SwitchBlade Type)





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions (Metric Size)

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

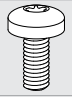
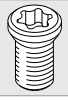
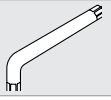
Shank Angle	Width (mm)	Max. Grooving Depth (mm)	Shank Size (mm)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number G35	Blade Part Number G35	H	HF	HBH	B	LF	LH	WF	CDX*	Insert Width CW (mm) MIN.	Insert Width CW (mm) MAX.
0°	2	17	□20	KGD□ 2020X-2T17S	●	△	KGD□2020-C	KGD□-2T17-C	20	20	12	20	122	40	23.4	17	2.0	3.0
			□25	2525X-2T17S	●	●	KGD□2525-C		25	25	7	25	147	40	28.4			
			□32	No Unit Part Number ➡			KGD□3232-C		32	32	-	32	167	40	35.4			
	3	10	□20	KGD□ 2020X-3T10S	●	△	KGD□2020-C	KGD□-3T10-C	20	20	12	20	115	33	23.0	10	3.0	4.0
			□25	2525X-3T10S	●	△	KGD□2525-C		25	25	7	25	140	33	28.0			
			□32	3232X-3T10S	△		KGD□3232-C		32	32	-	32	160	33	35.0			
		20	□20	KGD□ 2020X-3T20S	●	●	KGD□2020-C	KGD□-3T20-C	20	20	12	20	125	43	23.0	20		
			□25	2525X-3T20S	●	●	KGD□2525-C		25	25	7	25	150	43	28.0			
			□32	3232X-3T20S	●	△	KGD□3232-C		32	32	-	32	170	43	35.0			
	4	10	□20	KGD□ 2020X-4T10S	●		KGD□2020-C	KGD□-4T10-C	20	20	12	20	115	33	22.5	10	4.0	5.0
			□25	2525X-4T10S	●		KGD□2525-C		25	25	7	25	140	33	27.5			
		20	□20	KGD□ 2020X-4T20S	●		KGD□2020-C	KGD□-4T20-C	20	20	12	20	125	43	22.5	20		
			□25	2525X-4T20S	●	●	KGD□2525-C		25	25	7	25	150	43	27.5			
			□32	3232X-4T20S	●	△	KGD□3232-C		32	32	-	32	170	43	34.5			
		25	□20	KGD□ 2020X-4T25S	●	●	KGD□2020-C	KGD□-4T25-C	20	20	12	20	130	48	22.5	25		
			□25	2525X-4T25S	●	●	KGD□2525-C		25	25	7	25	155	48	27.5			
			□32	3232X-4T25S	●	△	KGD□3232-C		32	32	-	32	175	48	34.5			
	5	10	□20	KGD□ 2020X-5T10S	●	●	KGD□2020-C	KGD□-5T10-C	20	20	12	20	115	33	22.0	10	5.0	6.0
			□25	2525X-5T10S	●		KGD□2525-C		25	25	7	25	140	33	27.0			
		25	□20	KGD□ 2020X-5T25S	△		KGD□2020-C	KGD□-5T25-C	20	20	12	20	130	48	22.0	25		
			□25	2525X-5T25S	●	●	KGD□2525-C		25	25	7	25	155	48	27.0			
			□32	3232X-5T25S	●		KGD□3232-C		32	32	-	32	175	48	34.0			

Note 1) When using the toolholder in normal mounting position, the lower jaw of the toolholder may interfere with the tool presetter.
2) The toolholder and blade part numbers are printed on the toolholder body. (Unit part numbers are not printed)
KGD-S: Right-hand blades for right-hand toolholders, and left-hand blades for left-hand toolholders.
3) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
4) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ G26~G27

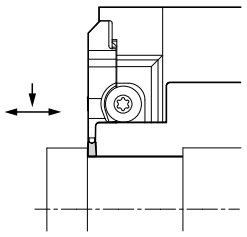
Spare Parts (Common with SwitchBlade Types)

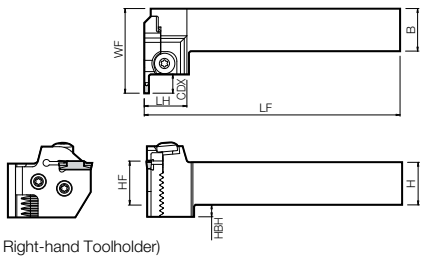
* The parts are included in the toolholder and unit.

Unit Part Number	Spare Parts: Clamp Bolt (for Insert Clamp)	Spare Parts: Clamp Screw (for Blade)	Spare Parts: Wrench
			
KGD□·····S	BH6X10TR	SB-60120TR	LTW-25

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDS-S (90° SwitchBlade Type)





• Right-hand shown (Left-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions (Inch Size)

(Choose **Left-hand** Blade for **Right-hand** Toolholder and **Right-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Width (mm)	Max. Grooving Depth (mm)	Shank Size (mm)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number G35	Blade Part Number G35	Dimensions (in)								Insert Width CW (in)	
							H	HF	HBH	B	LF	LH	WF	CDX*	MIN.	MAX.
90°	0.079 (2mm)	0.669 (17mm)	□0.75	No Unit Part Number ➡	KGDS□12-C	KGD□-2T17-C	0.75	0.75	0.472	0.75	4.92	1.09	2.19	0.669 (17mm)	0.079 (2mm)	0.118 (3mm)
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	2.25			
	0.118 (3mm)	0.394 (10mm)	□0.75		KGDS□12-C	KGD□-3T10-C	0.75	0.75	0.472	0.75	4.92	1.09	1.92	0.394 (10mm)	0.118 (3mm)	0.157 (4mm)
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	1.97			
		0.787 (20mm)	□0.75		KGDS□12-C	KGD□-3T20-C	0.75	0.75	0.472	0.75	4.92	1.09	2.31	0.787 (20mm)		
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	2.37			
	0.157 (4mm)	0.394 (10mm)	□0.75		KGDS□12-C	KGD□-4T10-C	0.75	0.75	0.472	0.75	4.92	1.09	1.92	0.394 (10mm)	0.157 (4mm)	0.197 (5mm)
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	1.97			
		0.787 (20mm)	□0.75		KGDS□12-C	KGD□-4T20-C	0.75	0.75	0.472	0.75	4.92	1.09	2.31	0.787 (20mm)		
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	2.37			
		0.984 (25mm)	□0.75		KGDS□12-C	KGD□-4T25-C	0.75	0.75	0.472	0.75	4.92	1.09	2.51	0.984 (25mm)		
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	2.56			
	0.197 (5mm)	0.394 (10mm)	□0.75		KGDS□12-C	KGD□-5T10-C	0.75	0.75	0.472	0.75	4.92	1.09	1.92	0.394 (10mm)	0.197 (5mm)	0.236 (6mm)
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	1.97			
		0.984 (25mm)	□0.75		KGDS□12-C	KGD□-5T25-C	0.75	0.75	0.472	0.75	4.92	1.09	2.51	0.984 (25mm)		
			□1.00		KGDS□16-C		1.00	1.00	0.276	1.00	5.91	1.09	2.56			

Toolholder + Blade Dimensions (Metric Size)

(Choose **Left-hand** Blade for **Right-hand** Toolholder and **Right-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Width (mm)	Max. Grooving Depth (mm)	Shank Size (mm)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number G35	Blade Part Number G35	Dimensions (mm)								Insert Width CW (mm)	
									H	HF	HBH	B	LF	LH	WF	CDX*	MIN.	MAX.
90°	2	17	□20	No Unit Part Number ➡			KGDS□2020-C	KGD□-2T17-C	20	20	12	20	125	27.7	56.7	17	2.0	3.0
			□25				KGDS□2525-C		25	25	7	25	150	27.7	56.7			
	3	10	□20	KGDS□ 2020X-3T10S	●	●	KGDS□2020-C	KGD□-3T10-C	20	20	12	20	125	27.7	49.7	10	3.0	4.0
			□25	2525X-3T10S	●	●	KGDS□2525-C		25	25	7	25	150	27.7	49.7			
		20	□20	No Unit Part Number ➡			KGDS□2020-C	KGD□-3T20-C	20	20	12	20	125	27.7	59.7	20		
			□25				KGDS□2525-C		25	25	7	25	150	27.7	59.7			
	4	10	□20				KGDS□2020-C	KGD□-4T10-C	20	20	12	20	125	27.7	49.7	10	4.0	5.0
			□25				KGDS□2525-C		25	25	7	25	150	27.7	49.7			
		20	□20				KGDS□2020-C	KGD□-4T20-C	20	20	12	20	125	27.7	59.7	20		
			□25				KGDS□2525-C		25	25	7	25	150	27.7	59.7			
		25	□20				KGDS□2020-C	KGD□-4T25-C	20	20	12	20	125	27.7	64.7	25		
			□25				KGDS□2525-C		25	25	7	25	150	27.7	64.7			
	5	10	□20				KGDS□2020-C	KGD□-5T10-C	20	20	12	20	125	27.7	49.7	10	5.0	6.0
			□25				KGDS□2525-C		25	25	7	25	150	27.7	49.7			
		25	□20				KGDS□2020-C	KGD□-5T25-C	20	20	12	20	125	27.7	64.7	25		
			□25				KGDS□2525-C		25	25	7	25	150	27.7	64.7			

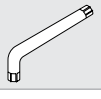
Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **G26~G27**

Note

1) When using the toolholder in normal mounting position, the lower jaw of the toolholder may interfere with the tool presetter.
2) The toolholder and blade part numbers are printed on the toolholder body. (Unit part numbers are not printed)
KGDS-S: Left-hand blades for right-hand toolholders, and right-hand blades for left-hand toolholders.
3) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
4) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).

Spare Parts (Common with SwitchBlade Types)

* The parts are included in the toolholder and unit.

Unit Part Number	Spare Parts		
	Clamp Bolt (for Insert Clamp)	Clamp Bolt (for Blade)	Wrench
			
KGDS□·····S	BH6X10TR	SB-60120TR	LTW-25

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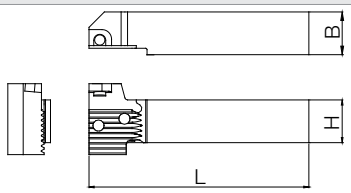
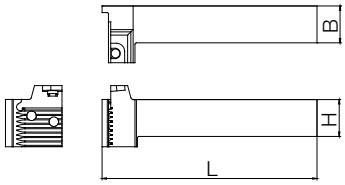
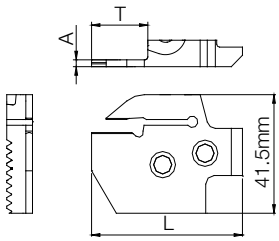
Toolholder Dimensions

KGD-S (0° SwitchBlade Type) Right-hand shown	Toolholder Part Number	Stock R	Stock L	Unit	Dimensions L	Dimensions B	Dimensions H
	KGDR/L 12-C	●	●	inch	4.09	0.75	0.75
	16-C	●	●		5.08	1.00	1.00
	KGDR/L 2020-C	●	●	mm	104	20	20
	2525-C	●	●		129	25	25
	3232-C	●	●		149	32	32

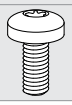
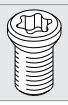
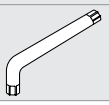
KGDS-S (90° SwitchBlade Type) Right-hand shown	Toolholder Part Number	Stock R	Stock L	Unit	Dimensions L	Dimensions B	Dimensions H
	KGDSR/L 12-C	●	●	inch	4.80	0.75	0.75
	16-C	●	●		5.79	1.00	1.00
	KGDSR/L 2020-C	●	●	mm	122	20	20
	2525-C	●	●		147	25	25

Blade Dimensions

Blade Right-hand shown	Blade Part Number	Stock R	Stock L	Unit	Dimensions L	Dimensions T	Dimensions A
	KGDR/L -2T17-C	●	●	mm	51.2	17.2	1.7
	-3T10-C	●	●		44.2	10.2	2.4
	-3T20-C	●	●		53.2	20.2	2.4
	-4T10-C	●	●		44.2	10.2	3.4
	-4T20-C	●	●		54.2	20.2	3.4
	-4T25-C	●	●		59.2	25.2	3.4
	-5T10-C	●	●		44.2	10.2	4.4
	-5T25-C	●	●		59.2	25.2	4.4

Spare Parts (Common with SwitchBlade Types)

* The parts are included in the toolholder and unit.

Unit Part Number	Spare Parts: Clamp Bolt (for Insert Clamp)	Spare Parts: Clamp Screw (for Blade)	Spare Parts: Wrench
			
KGDR/L·····S KGDSR/L·····S	BH6X10TR	SB-60120TR	LTW-25

Setting the Insert

1. Completely eliminate chips from the insert mounting part. (see **Fig.1**)
2. Put the insert into the toolholder and push until it contacts the holder's surface for fixing the insert's back end. (see **Fig.1**, **Fig.2**)
3. Keeping the insert pushed against the toolholder's locating surface, tighten the insert clamp bolt at an appropriate torque.
4. Make sure there is no gap between the insert and the toolholder's locating surface and that the insert is set straight. (see **Fig.2**, **Fig.3**)

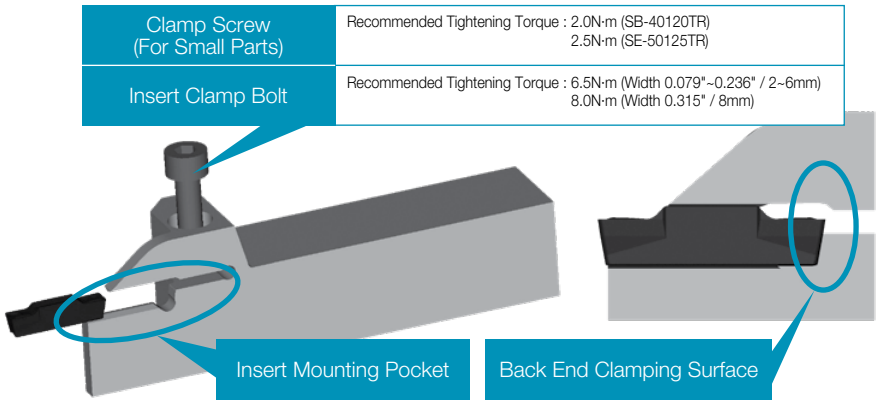


Fig.1 Fig.2

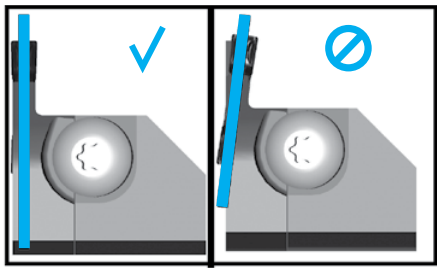


Fig.3

Setting the Blade (SwitchBlade Type toolholder)

1. Use compressed air or other measures to remove chips and dust from the serrated surface. (See **Fig.1**)
2. Mate and fit the serrations of the blade and toolholder. (See **Fig.2**)
3. Tighten the blade fixing screws at an appropriate torque. You can tighten them in any order. (See **Fig.2**) (Recommended tightening torque : 8Nm)
4. Mount the insert after setting the blade.

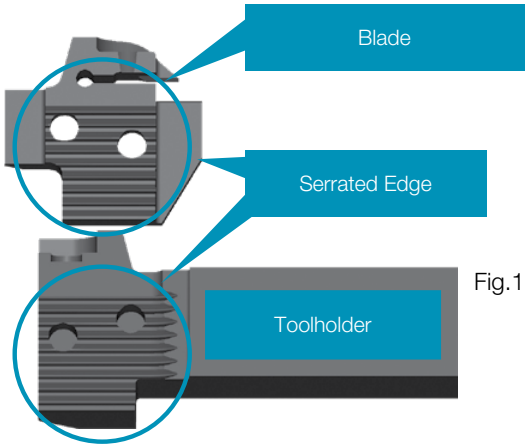


Fig.1

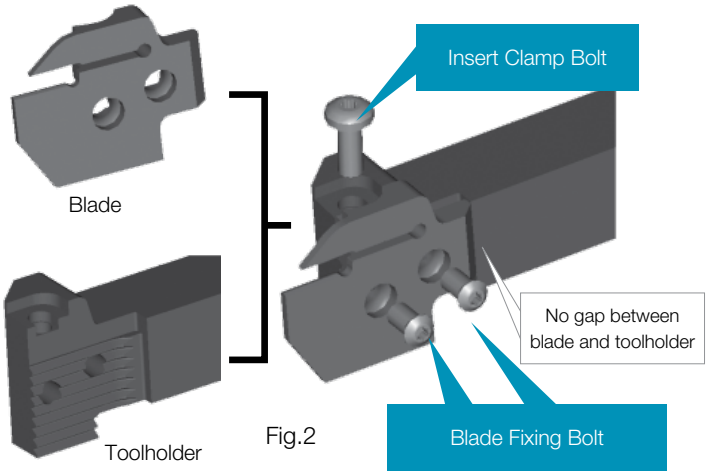
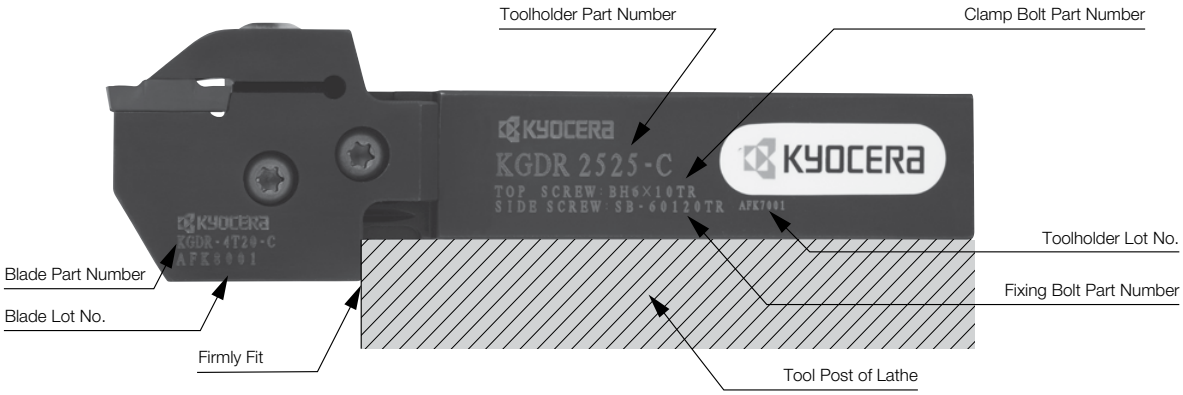


Fig.2

SwitchBlade Type Toolholder Identification System and Their Setting to Lathe

● Firmly fit the lower jaw to the tool post of the lathe.



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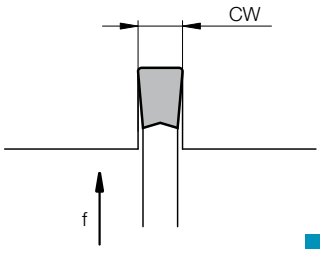
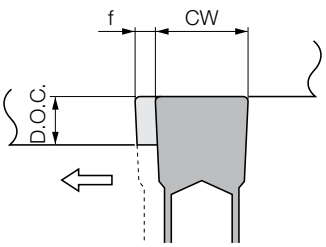
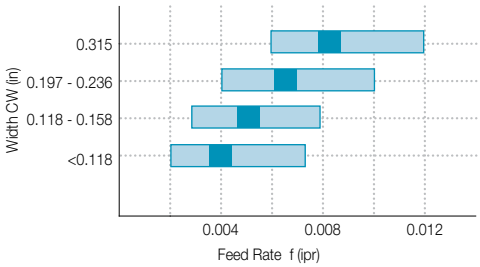
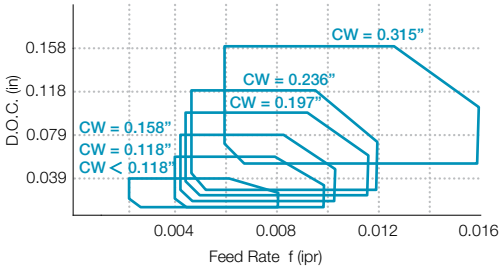
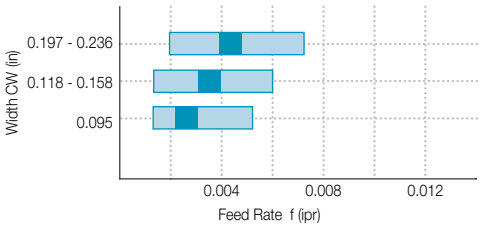
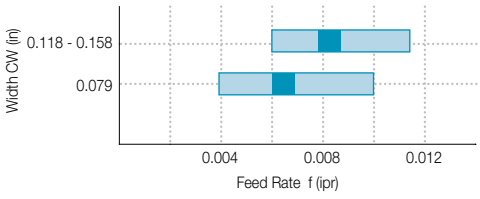
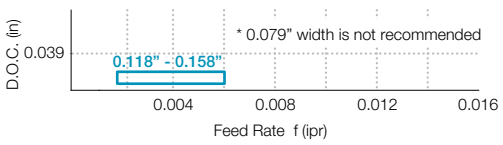
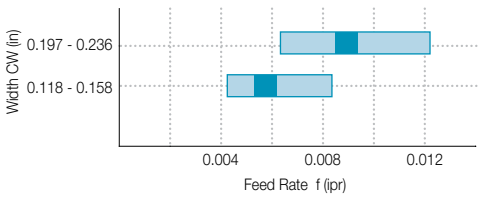
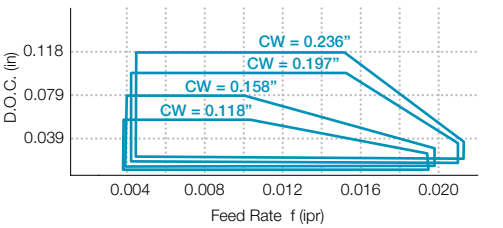
Recommended Cutting Conditions (Vc)

Workpiece	Chipbreaker	Recommended Insert Grade (Vc : sfm)									Notes
		Cermet		MEGACOAT NANO	MEGACOAT		Carbide	MEGACOAT CBN	CBN	PCD	
		TN620	TN90	PR1535	PR1225	PR1215	GW15	KBN05M	KBN570	KPD001	
Carbon Steel	GM GL CM PH GS	☆ 260 - 720	☆ 330 - 720	☆ 260 - 660	★ 260 - 660	☆ 330 - 660	-	-	-	-	Coolant
Alloy Steel		☆ 230 - 660	☆ 260 - 660	☆ 230 - 590	★ 230 - 590	☆ 260 - 590	-	-	-	-	
Stainless Steel		-	-	★ 200 - 490	☆ 200 - 490	☆ 200 - 490	-	-	-	-	
Cast Iron		-	-	-	-	★ 330 - 660	-	-	-	-	
Aluminum Alloy	GS NB	-	-	-	-	-	☆ 660 - 1,640	-	-	★ 490 - 6,560	
Brass		-	-	-	-	-	☆ 330 - 660	-	-	★ 660 - 2,620	
Hard Materials	NB	-	-	-	-	-	-	★ 260 - 490	-	-	
Powdered Steel		-	-	-	-	-	-	-	★ 330 - 820	-	

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Feed Rate / D.O.C.)

(Workpiece Material : 1049)

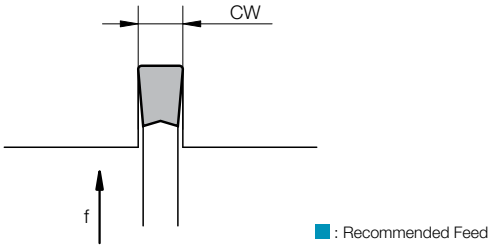
Chipbreaker	Grooving	Traversing
		
GM (General Purpose)		
GL (Low Feed)		
PH (High Feed)		
CM (Copying)		

1) The above values reflect a CDX dimension that is 0.669" (17mm) or less.
2) If the toolholder is not for the 0.315" (8mm) width insert and its CDX dimension is over 0.669" (17mm), set the values for traversing to less than 90% of recommended cutting conditions above.

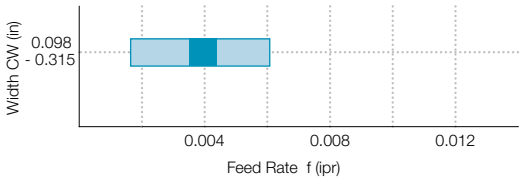
Recommended Cutting Conditions (Feed Rate / D.O.C.)

(Workpiece Material : 1049)

Chipbreaker: Grooving



GS (Low Cutting Force)



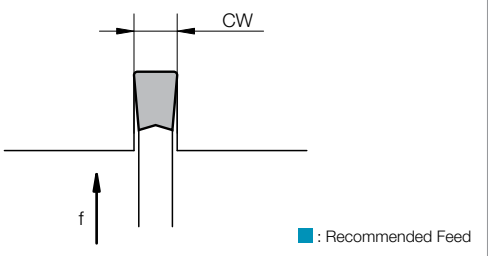
* When traversing, keep D.O.C. less than the Corner-R (RE)

1) The above values reflect a CDX dimension that is 0.669" (17mm) or less.

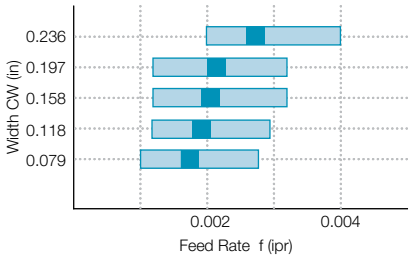
Recommended Cutting Conditions (Feed Rate)

Workpiece: Grooving

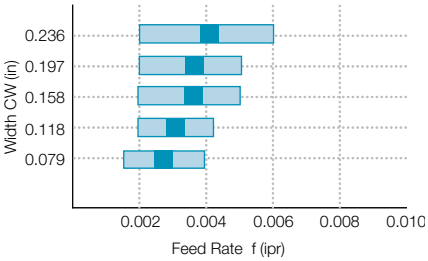
Insert Grade



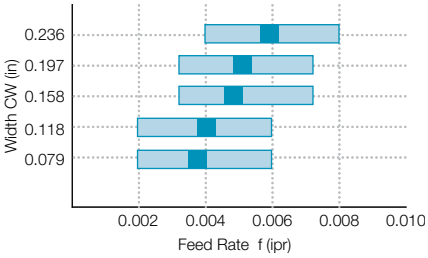
Hard Materials — KBN05M



Powdered Steel — KBN570



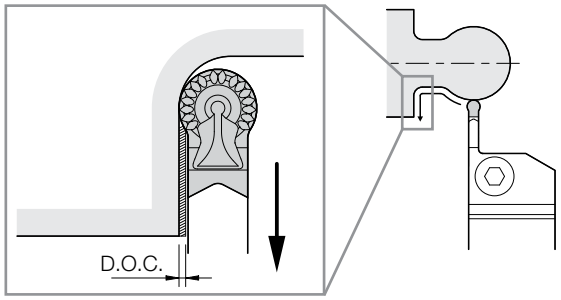
Aluminum Alloy / Brass — KPD001



CM Chipbreaker (Back Turning)

- Estimated maximum cutting amount (D.O.C.) for back turning

Part Number		Max. D.O.C. (in)				
		Toolholder Part Number				
		KGD...-2T...	KGD...-3T...	KGD...-4T...	KGD...-5T...	KGD...-6T...
GDM	3020N-150R-CM	0.009	0.008	-	-	-
	4020N-200R-CM	-	0.009	0.008	-	-
	5020N-250R-CM	-	-	0.012	0.008	-
	6020N-300R-CM	-	-	-	0.012	0.010



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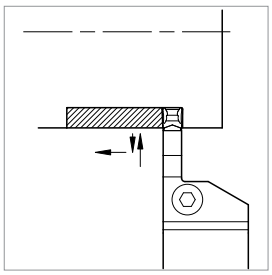
Guide for External Grooving

① Traversing After Grooving

1. Grooving Depths Over 0.020" (0.5mm) : When Roughing (see **Fig.1**)
   Before traversing, pull the tool back about 0.004" (0.1mm) after grooving, instead of traversing subsequent to grooving.
   (Failure to pull the tool back before traversing will result in an unbalanced load applied on only one side of the cutting edge.)

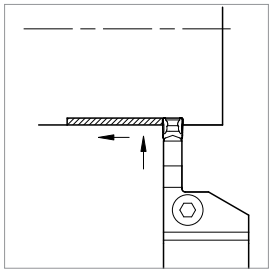
Fig.1



Before traversing, pull the tool back about 0.004" (0.1mm) after grooving.
(Grooving Depth Over 0.020" (0.5mm) : When Roughing)

2. Grooving Depths Under 0.020" (0.5mm) : When Finishing (see **Fig.2**)
   Traversing subsequent to grooving is possible because shallow groove depths apply a small load on the cutting edge.
   (Dwell-motion is not necessary)

Fig.2

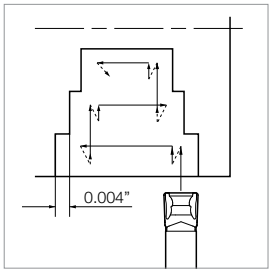


Traversing Subsequent to Grooving.
(Grooving Depth Under 0.020" (0.5mm) : When Finishing)

②

1. When widening the groove width, use "Step Traversing" as shown in **Fig.3**

Fig.3

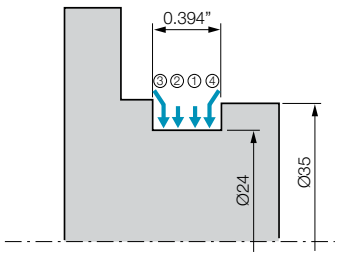


2. The widened groove and side walls should be finished last.
   (For better chip control, D.O.C. over 0.020" (0.5mm) is recommended.)
   Note: If the workpiece is not supported at the center, reduce the feed rate when grooving towards center

Case Studies

5120H (Grooving)

- Gear
- Vc = 370~540 sfm
- f = 0.002 ipr
- Wet
- GDM4020N-040GM (PR1225)
- KGDL2525X-3T10S



GM Chipbreaker (PR1225)	1,500 pcs/C
Competitor K (PVD Coated Carbide)	250 pcs/C

6X Longer Life

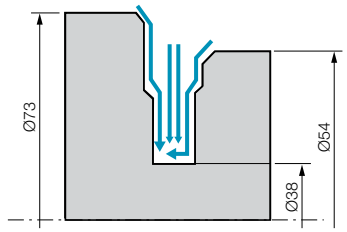
- KGD type grooving toolholder + GM chipbreaker (PR1225) showed 6 times longer tool life than that of Competitor K.
- Good chip control without burned chips.

Competitor K | GM Chipbreaker

(User Evaluation)

Structural Steel (Grooving, Traversing)

- Gear
- Vc = 560 sfm
- f = 0.006 ipr (Roughing)
  0.004 ipr (Finishing)
- D.O.C = 0.008" (Finishing)
- Wet
- GDM4020N-040GM (PR1215)
- KGDR2525X-4T20S



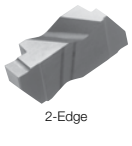
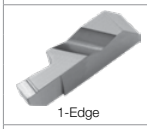
GM Chipbreaker (PR1215)	250 pcs/C
Competitor L (Roughing: PVD Coated Carbide) (Finishing: Cermet)	200 pcs/C

- GM chipbreaker reduced chip entanglement (occurrence rate 80% ➡ 10%). The problem was persistent with Competitor L. Machining productivity is improved.

Chips easily tangled | Competitor L (Finishing) | Smooth chip control | GM Chipbreaker (Finishing)

(User Evaluation)

KCG / KCGP / KCGDP / KCRP

Insert (Right-handed Insert Shown)	Part Number	CW (inch)	CW (mm)	CDX	RE	W1	INSL	S	Insert Grade: Cermet TC40 R	TC40 L	Cermet TC60 R	TC60 L	MEGA COAT CVD PR1215 R	PR1215 L	PVD PR660 R	PR660 L	PVD PR930 R	PR930 L	Carbide KW10 R	KW10 L	Ceramic A65 R	A65 L
2-Edge	KCG 2062R/L	0.062	1.57	0.110	0.008	0.150	0.540	0.219													●	●
	2125R/L	0.125	3.18																			●
	3062R/L	0.062	1.57	0.094	0.008	0.195	0.810	0.344													●	
	3094R/L	0.094	2.39	0.150																	●	●
	3125R/L	0.125	3.18																		●	
	3156R/L	0.156	3.96																		●	●
 2-Edge	KCGP 2031R/L	0.031	0.79	0.050	0.003	0.150	0.540	0.219	●	●	●	●	●	●	●		●	●	●	●		
	2041R/L	0.041	1.04						●	●	●	●	●	●			●					
	2047R/L	0.047	1.19						●	●	●	●	●	●	●	●	●	●	●	●		
	KCGP 2058R/L	0.058	1.47	0.110	0.008	0.150	0.540	0.219	●	●			●									
	2062R/L	0.062	1.57						●	●	●	●	●	●	●	●	●	●	●	●		
	KCGP 2094R/L	0.094	2.39	0.110	0.008	0.150	0.540	0.219	●	●			●	●	●		●	●	●	●		
	2125R/L	0.125	3.18						●	●			●	●	●		●	●	●			
	KCGP 3031R/L	0.031	0.79	0.050	0.008	0.195	0.810	0.344	●	●			●	●			●	●				
	3047R/L	0.047	1.19	0.075					●	●	●	●	●	●	●	●	●	●	●			
	3062R/L	0.062	1.57	0.094					●	●	●	●	●	●	●	●	●	●	●	●		
	3072R/L	0.072	1.83						●	●	●	●	●	●				●				
	KCGP 3078R/L	0.078	1.98	0.094	0.008	0.195	0.810	0.344	●	●	●		●	●	●	●	●	●				
	3088R/L	0.088	2.24						●	●		●	●				●	●				
	KCGP 3094R/L	0.094	2.39	0.150	0.008	0.195	0.810	0.344	●	●	●	●	●	●	●	●	●	●	●	●		
	3097R/L	0.097	2.46						●	●							●	●				
	3105R/L	0.105	2.67						●	●							●	●				
	KCGP 3110R/L	0.110	2.79	0.150	0.008	0.195	0.810	0.344	●	●			●	●			●	●				
	3122R/L	0.122	3.10						●								●	●				
	3125R/L	0.125	3.18						●	●	●		●	●		●	●	●	●	●		
	KCGP 3142R/L	0.142	3.61	0.150	0.008	0.195	0.810	0.344	●	●							●	●				
	3156R/L	0.156	3.96						●	●	●			●		●	●	●				
	3178R/L	0.178	4.52						●	●							●	●				
	KCGP 3185R/L	0.185	4.70	0.150	0.008	0.195	0.810	0.344	●	●							●	●				
	3189R/L	0.189	4.80						●	●	●	●	●	●		●	●	●	●	●		
	KCGP 4125R/L	0.125	3.18	0.150	0.008	0.255	1.272	0.453	●	●			●	●			●	●				
	4189R/L	0.189	4.80	0.250	0.018					●			●	●			●	●				
	4213R/L	0.213	5.41						●	●							●	●				
	KCGP 4219R/L	0.219	5.56	0.250	0.018	0.255	1.272	0.453	●	●							●	●				
	4250R/L	0.250	6.35							●			●	●			●	●				
 1-Edge	KCGDP 3062R/L	0.062	1.57	0.125	0.008	0.195	0.886	0.344	●	●			●	●			●					
	3094R/L	0.094	2.39	0.250	0.008	0.195	0.990	0.344	●	●			●	●			●	●				
	3125R/L	0.125	3.18						●				●	●			●	●				
	3189R/L	0.189	4.80	0.250	0.023				●	●								●				
2-Edge	KCRP 2031R/L	0.062	1.57	0.094	0.031	0.150	0.540	0.219			●		●	●			●					
	2039R/L	0.078	1.98	0.110	0.039												●	●				
	2047R/L	0.094	2.39	0.150	0.047								●	●								
	2062R/L	0.125	3.18	0.150	0.062						●		●	●								
	KCRP 3031R/L	0.062	1.57	0.094	0.031	0.195	0.810	0.344	●	●	●		●	●	●	●	●	●		●		
	3047R/L	0.094	2.39	0.150	0.047				●	●			●	●	●	●	●	●				
	3062R/L	0.125	3.18	0.150	0.062				●	●			●	●	●	●	●	●				
	KCRP 3078R/L	0.156	3.96	0.150	0.078	0.195	0.810	0.344	●	●							●	●				
	3094R/L	0.188	4.78	0.150	0.094				●	●			●	●			●	●				
	KCRP 4125R/L	0.250	6.35	0.250	0.125	0.255	1.272	0.453	●	●					●		●	●				

- Dimension **CDX** shows available Grooving Depth.

Applicable Toolholders ➡ **G43, G133**

Recommended Cutting Conditions (Cera-Notch)

Workpiece Material	Cermet Feeds (ipr)	Carbide Feeds (ipr)	Recommended Insert Grade (Vc : sfm) Cermet TC40	Cermet TC60	MEGACOAT PR1215	Carbide PR660	Carbide PR930	Carbide KW10	Ceramic A65
Carbon Steel	0.002~0.005	0.002~0.010	300~900	250~900	300~800	200~550	250~650	-	-
Alloy Steel	0.002~0.005	0.002~0.010	250~800	250~800	300~750	100~500	150~550	-	-
Stainless Steel	0.002~0.005	0.002~0.010	-	200~600	300~600	100~550	100~550	-	-
Tool Steel	0.002~0.005	0.002~0.010	200~650	200~650	300~600	-	100~550	-	-
Hardened Steel (>45Rc)	-	-	-	-	-	-	-	-	250~500*
Gray Cast Iron	0.003~0.006	0.002~0.012	200~700	-	300~700	-	-	-	500~1000
Ductile Iron	0.003~0.006	0.002~0.012	-	150~600	300~600	-	-	-	500~1000
Aluminum	0.002~0.008	0.002~0.012	150~1600	-	-	-	-	500~1600	-

Speeds & Feeds listed are for external grooving. Reduce parameters by 10% for internal grooving.
*Feeds = 0.003~0.008 ipr

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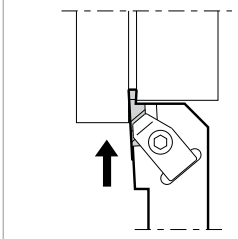
KKC



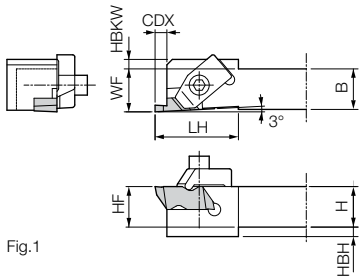


Fig.1

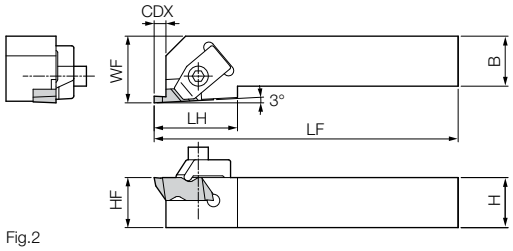


Fig.2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Unit	Dimensions									Drawing	Spare Parts		
														Clamp	Clamp Screw	Wrench
	R	L		H	HF	HBH	B	LF	LH	WF	HBKW	CDX*				
KKC☐ 1212M-2-150F	●		mm	12	12	-	12	150	19.05	12.25	-	3.5	Fig.1	CKC-2☐	SKC-2	(7/64 hex)
KKC☐ 6-2X	●	●	inch	0.375	0.375	-	0.375	2.500	0.750	0.562	-	0.138	Fig.2	CKC-2☐	SKC-2	(7/64 hex)
6-2CF	●	●		0.375	0.375	0.125	0.375	5.000	0.750	0.385	0.125	0.138	Fig.1			
8-2X	●	●		0.500	0.500	-	0.500	3.500	0.750	0.750	-	0.138	Fig.2			
8-2DF	●	●		0.500	0.500	-	0.500	6.000	0.750	0.510	-	0.138	Fig.1			
10-2DF	●	●		0.625	0.625	-	0.625	6.00	0.750	0.635	-	0.138	Fig.1			
12-2B	●	●		0.750	0.750	-	0.750	4.50	0.750	1.000	-	0.138	Fig.2	CKC-2☐	SKC-2	(7/64 hex)
12-2C	●	□		0.750	0.750	-	0.750	5.00	0.750	1.000	-	0.138	Fig.2			
16-2C	●	●		1.000	1.000	-	1.000	5.00	0.750	1.250	-	0.138	Fig.2			
16-2D	●	●		1.000	1.000	-	1.000	6.00	0.750	1.250	-	0.138	Fig.2			
12-3B	●	●		0.750	0.750	-	0.750	4.50	1.250	1.000	-	0.210	Fig.2	CKC-3☐	SKC-3	LW-156
12-3C	●	●		0.750	0.750	-	0.750	5.00	1.250	1.000	-	0.210	Fig.2			
16-3C	●	●		1.000	1.000	-	1.000	5.00	1.250	1.250	-	0.210	Fig.2			
16-3D	●	●		1.000	1.000	-	1.000	6.00	1.250	1.250	-	0.210	Fig.2			
20-3D	●	●		1.250	1.250	-	1.250	6.00	1.250	1.500	-	0.210	Fig.2			
16-4D	●	●		1.000	1.000	-	1.000	6.00	1.380	1.250	-	0.294	Fig.2			
20-4D	●	●		1.250	1.250	-	1.250	6.00	1.380	1.500	-	0.294	Fig.2			

* **CDX** dimension shows the distance from the toolholder to the cutting edge. For actual maximum grooving depth, see **CDX** dimension in insert table.

Applicable Inserts ➔ **G42**

• Note: **Right-hand** bars require **right-hand** inserts and clamps
Left-hand bars require **left-hand** inserts and clamps

Also Available for Threading. See Page ➔ **J24**

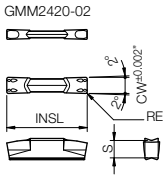
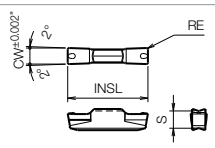
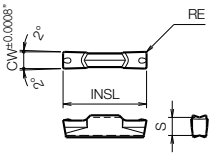
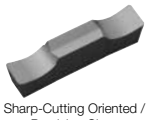
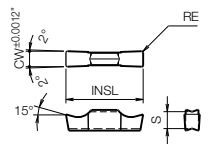
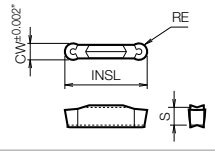
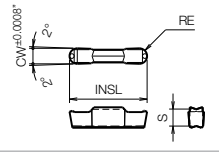
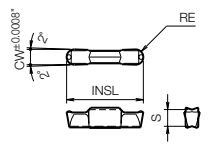
Applicable Inserts

Toolholder	Inserts ➔ G42	
	2-Edge Use	1-Edge Use
KKC☐ …-2	KCGP-2, KCG-2, KCRP-2	
KKC☐ …-3	KCGP-3, KCG-3, KCRP-3	KCGDP-3
KKC☐ …-4	KCGP-4, KCRP-4	

GMM / GMG

Classification of Usage
- ◕ : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel			◔	◕		
M	Stainless Steel			◕	◔		
K	Cast Iron					◕	◔
N	Non-ferrous Metals						◕
S	Titanium Alloy						◕
H	Hard materials (≤40HRC)			○	●		
	Hard materials (≥40HRC)						

Insert (Right-handed Insert Shown)		Part Number		Dimensions (in) CW inch	CW mm	RE	INSL	S	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Ref. Page for Toolholder
Chip Control Oriented M-Class		GMM	2420-020MW	0.095	2.4	0.008	0.787	0.169	●	●		●	●	●	G48,G49
			3020-020MW	0.118	3.0	0.008			●	●	●	●	●	●	
			3020-040MW			0.016			●	●	●	●	●	●	
			4020-020MW	0.158	4.0	0.008			●	●		●	●		G48
			4020-040MW			0.016			●	●	●	●	●	●	G49
			4020-080MW			0.031			●	●	●	●	●		G50
			5020-040MW	0.197	5.0	0.016			●	●	△	●	●	●	
			5020-080MW			0.031			●	●	●	●	●	●	
			6020-040MW	0.236	6.0	0.016				●	●	●	●		G48,G49
			6020-080MW			0.031				●		●	●	●	
			8030-080MW	0.315	8.0	0.031	1.181	0.217		●		●	●	●	G48,G81
Sharp Cutting Oriented M-Class		GMM	3020-020MS	0.118	3.0	0.008	0.787	0.169	●	●	●	●		●	
			3020-040MS			0.016			●	●	●	●		●	G48
			4020-040MS	0.158	4.0				●	●	●	●		●	G49
			5020-040MS	0.197	5.0	0.016					●	●		●	G50
			6020-040MS	0.236	6.0									●	G48,G49
Sharp Cutting Oriented Precision Class		GMG	3020-000MS	0.118	3.0	0.000	0.787	0.169		△	●	●		△	
			3020-020MS			0.008			●	●	●	●		●	
			3020-040MS			0.016			●	●	●	●		●	
			4020-020MS	0.158	4.0	0.008			●	△		●		●	G48
			4020-040MS			0.016			●	●		●		●	G49
			4020-080MS			0.031				●	●	●			G50
			5020-040MS	0.197	5.0	0.016	0.787	0.169		△		●			
			5020-080MS			0.031						●			
			6020-080MS	0.236	6.0	0.031	0.787	0.169						●	G48,G49
 Sharp-Cutting Oriented / Precision Class Ground Chipbreaker		GMG	2520-030MG	0.098	2.5	0.012	0.787	0.169	●			●		●	G48,G49
			3020-030MG	0.118	3.0				●		●	●	●	●	
			3520-030MG	0.138	3.5							●	●		G48
			4020-040MG	0.158	4.0	0.016			●	●		●	●	●	G49
			5020-040MG	0.197	5.0				●			●	●	●	G50
			6020-040MG	0.236	6.0							●	●		
			8030-050MG	0.315	8.0	0.020	1.181	0.217	●	●		●	●	●	G48,G81
Chip Control Oriented / M Class / Full-R / Copying		GMM	3020-150R	0.118	3.0	0.059	0.787	0.169	●	●	●	●	●	●	
			4020-200R	0.158	4.0	0.079			●	●	●	●	●	●	G48
			5020-250R	0.197	5.0	0.098				●		●	●	●	G49
			6020-300R	0.236	6.0	0.118			●	●		●	●	●	G50
Sharp-Cutting Oriented / Precision Class Full-R / Copying		GMG	3020-150R	0.118	3.0	0.059	0.787	0.169	●	●		●		●	
			4020-200R	0.158	4.0	0.079				●		●			G48
			5020-250R	0.197	5.0	0.098						●			G49
															G50
Undercutting Chip Control Oriented		GMG	3020-150RU	0.118	3.0	0.059	0.787	0.169		●		●			
			4020-200RU	0.158	4.0	0.079						●			G48
															G49
															G51

Recommended Cutting Conditions ➡ **G147**

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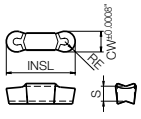
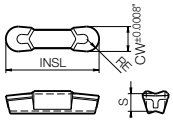
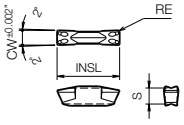
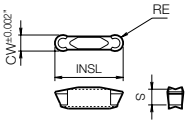
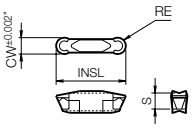
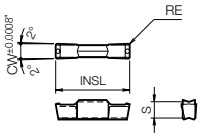
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel			◔	●	
M	Stainless Steel			●	◔	
K	Cast Iron					●
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)			○	●	
	Hard materials (≥40HRC)					

Insert (Right-handed Insert Shown)		Part Number	Dimensions (in) CW inch	CW mm	RE	INSL	S	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PVD Coated Carbide PR930	Carbide KW10	Ref. Page for Toolholder
Sharp-Cutting Oriented / Precision Class / Full-R / Copying		GMGA 6020-300R	0.236	6.0	0.118	0.787	0.169					●	G48 G49
Sharp Cutting Oriented / Precision Class / Full-R / Copying		GMGA 8030-400R	0.315	8.0	0.157	1.181	0.217					●	G48 G81
Chip Control Oriented / M Class		GMM 3014-04	0.118	3.0	0.016	0.551	0.169	●			●		
Chip Control Oriented / M Class Full-R / Copying		GMM 3014-15R	0.118	3.0	0.059	0.551	0.169	●					-
Undercutting Chip Control Oriented		GMM 3014-15RU	0.118	3.0	0.059	0.551	0.169				△		
Face Grooving Chip Control Oriented Precision Class		FGGR/L 3020-02	0.118	3.0	0.008	0.787	0.169	R L	R L	R L	R L	R L	G51
		4020-04	0.158	4.0	0.016				● ●		● ●	● ●	
		5020-04	0.197	5.0	0.016				● ●			● ●	

Recommended Cutting Conditions G147

Chipbreakers

Series	Insert	Features
GMM...MW		Excellent chip evacuation during grooving, traversing, and cut-off.
GMG...MG		Low cutting forces with ground chipbreaker.
GMG...MS GMM...MS		Grooving, traversing and cut-off operations have minimum cutting forces with positive edge
GMM...MT		Small corner-R (RE) minimizes the core which remains in the center of the face.
GMM...TK		Large corner-R (RE) with stable performance during cut-off.
GMM...NB		Flat rake face without chipbreaker. Good performance for brass.

Edge Preparation

Edge Preparation	Chamfered + Honed Cutting Edge Corner-R(RE) = 0.05	Chamfered + Honed Cutting Edge Sharp Corner
MT-Chipbreaker	**CR9025 / PR915**	**PR930 / KW10**
Edge Preparation	Chamfered + Honed Cutting Edge Corner-R(RE) = 0.20~0.30	Sharp Edge Corner-R(RE) = 0.20~0.30
TK-Chipbreaker	**CR9025 / PR915**	**PR930 / KW10**
Edge Preparation	Honed Cutting Edge Corner-R(RE) = 0.05	Sharp Edge Sharp Corner
Without Chipbreaker (-NB)	**CR9025**	**PR930 / KW10**

• Sharp Edge Spec. can reduce cutting resistance to 40% less than that of chamfer edge

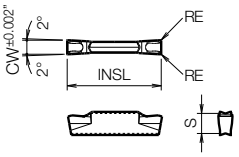
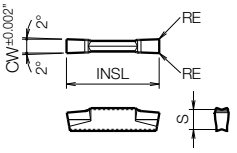
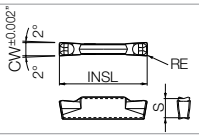
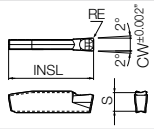
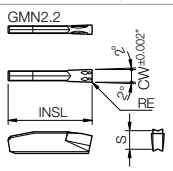
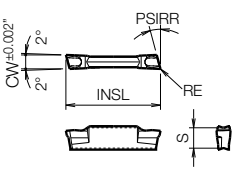
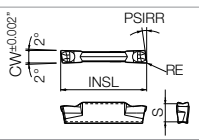
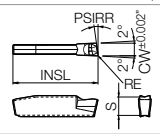
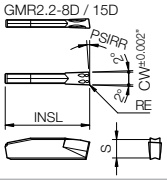
Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

GMM / GMN / GMR/L

Classification of Usage
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

		Cermet	CVD Coated Carbide	PVD Coated Carbide		Carbide
		TN90	CR9025	PR915	PR930	KW10
P	Carbon Steel / Alloy Steel			◔	●	
M	Stainless Steel			●	◔	
K	Cast Iron					●
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)			○	●	
	Hard materials (≥40HRC)					

Insert (Right-handed Insert Shown)	Part Number	CW inch	CW mm	RE	INSL	S	Angle (°) PSIR/L	Ref. Page for Toolholder
Deep Grooving / Cut-Off Sharp Cutting Oriented		GMM 1520-MT	0.059	1.5	0.000 0.002	0.787	0.169	-	G48
		2020-MT	0.079	2.0	0.000 0.002				G48 G49
		2520-MT	0.098	2.5	0.000 0.002				
		3020-MT	0.118	3.0	0.000 0.002				G48-G50
Deep Grooving / Cut-Off Sharp Cutting Oriented Without Chipbreaker		GMM 1520-NB	0.059	1.5	0.000 0.002	0.787	0.169	-	G48
		2020-NB	0.079	2.0	0.000 0.002				G48
		2520-NB	0.098	2.5	0.000 0.002				G49
		3020-NB	0.118	3.0	0.000 0.002				G48-G50
Deep Grooving / Cut-Off Stability Oriented		GMM 2020-TK	0.079	2.0	0.008	0.787	0.169	-	G48
		2520-TK	0.098	2.5	0.008				G49
		3020-TK	0.118	3.0	0.010				G48-G50
Cut-Off / Stability Oriented 1-Edge		GMN 2-TK	0.079	2.0	0.008	0.787	0.169	-	G48-G49
		3-TK	0.118	3.0	0.010				G48 G49
		4-TK	0.158	4.0	0.012				G50
Deep Grooving / Cut-Off 1-Edge		GMN 2.2	0.087	2.2	0.007	0.787	0.169	-	G48-G49
		3	0.118	3.0	0.008				G48
		4	0.158	4.0	0.010				G49
		5	0.197	5.0	0.031				G50
		6	0.236	6.0	0.031				G48-G49
								R L R L R L R L R L	
Cut-Off / Sharp Cutting Oriented with Lead Angle		GMM 1520R/L-MT-15D	0.059	1.5	0.000 0.002	0.787	0.169	15°	G48
		2020R/L-MT-15D		2.0	0.000 0.002				G48 G49
		2520R/L-MT-15D	0.098	2.5	0.000 0.002				
		3020R/L-MT-15D		3.0	0.000 0.002				G48-G50
Cut-Off / Stability Oriented With Lead Angle		GMM 2020R/L-TK-8D	0.079	2.0	0.008	0.787	0.169	8°	G48
		2520R/L-TK-8D	0.098	2.5	0.008				G49
		3020R/L-TK-8D	0.118	3.0	0.010				G48-G50
Cut-Off / Stability Oriented 1-Edge with Lead Angle		GMR/L 2-TK-8D	0.079	2.0	0.008	0.787	0.169	8°	G48-G49
		3-TK-8D	0.118	3.0	0.010				G48 G49
		4-TK-8D	0.158	4.0	0.012				G50
Cut-Off Sharp Cutting Oriented 1-Edge with Lead Angle		GMR/L 2.2-8D	0.087	2.2	0.007	0.787	0.169	8°	G48
		2.2-15D			0.000			15°	G49
		3-4D	0.118	3.0	0.008			4°	G48
		3-15D			0.008			15°	G49
		4-4D	0.158	4.0	0.010			4°	G50

Recommended Cutting Conditions ➡ G147

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

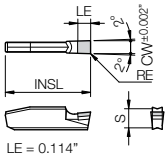
(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

GMN

Classification of Usage
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

					Ref. Page for Toolholder
P	Carbon Steel / Alloy Steel				
M	Stainless Steel				
K	Cast Iron				
N	Non-ferrous Metals			●	
S	Titanium Alloy			●	
H	Hard materials (≤40HRC)				
	Hard materials (≥40HRC)	○	●		

Deep Grooving
1-Edge



LE = 0.114"

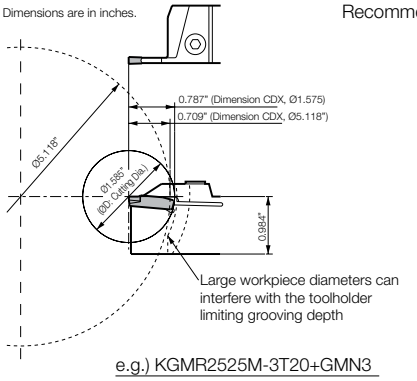
Insert	Part Number	Dimensions (in) W inch	W mm	RE	INSL	S	CBN KBN510	CBN KBN525	PCD KPD001	PCD KPD010	Ref. Page for Toolholder
GMN	2	0.079	2.0	0.008	0.787	0.169			●	●	G48-G49
				0.016			●	●			
	3	0.118	3.0	0.008					●	●	
				0.016			●	●			G48
	4	0.158	4.0	0.008					●	●	G49
				0.016			●	●			G50
	5	0.197	5.0	0.008					●	●	
				0.016			●	●			
	6	0.236	6.0	0.008						●	G48-G49
				0.016			●	●			

Recommended Cutting Conditions ➔ **G146**

KGM / KGM-T Available Cutting Diameter

There is a limit to available grooving depth depending on the workpiece diameter

Dimensions are in inches.



Large workpiece diameters can interfere with the toolholder limiting grooving depth

e.g.) KGMR2525M-3T20+GMN3

KGM Available Cutting Diameter Table

Toolholders		ØD Cutting Diameter																
KGM℠	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10mm	14mm	16mm	32mm	∞
	1010○-1.5…	-	-	-	-	-	-	-	20mm	25mm	32mm	40mm	60mm	∞	∞	∞	∞	
	1212○-1.5…	-	-	-	-	25mm	26mm	28mm	32mm	36mm	40mm	60mm	100mm					
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10mm	14mm	16mm	32mm	
	6-2-5								0.80"	1.00"	1.28"	1.60"	2.40"	∞	∞	∞	∞	
	1010○-2…	-	-	-	-	-	-	-	20mm	25mm	32mm	40mm	60mm					
	8-2-6					1.00"	1.04"	1.12"	2.00"	∞	∞	∞	∞					
	1212○-2…	-	-	-	-	25mm	26mm	28mm	50mm									
	1616○-2…	32mm	40mm	50mm	60mm	80mm	100mm	∞	∞									
	1010○-2.5…	-	-	-	-	-	-	-	20mm	25mm	32mm	40mm	60mm					
	1212○-2.5…	-	-	-	-	25mm	26mm	28mm	32mm	36mm	40mm	60mm	100mm					
	1616○-2.5…	32mm	40mm	50mm	60mm	80mm	100mm	∞	∞	∞	∞	∞	∞					
	1616○-3…	32mm	40mm	50mm	60mm	80mm	100mm											
Available Grooving Depth CDX (in)		0.64"	0.60"	0.56"	0.52"	0.50"	0.48"	0.44"	0.40"	0.36"	0.32"	0.28"	0.24"	0.20"	0.16"	0.12"	0.08"	0.04"
Available Grooving Depth CDX (mm)		16mm	15mm	14mm	13mm	12.5mm	12mm	11mm	10mm	9mm	8mm	7mm	6mm	5mm	4mm	3mm	2mm	1mm

KGM-T Available Cutting Diameter Table (GMN, GM℠ When Using 1-edge Insert)

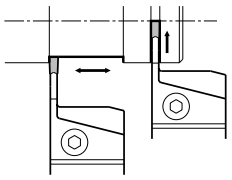
Toolholders		ØD Cutting Diameter											
KGM℠	2012K-2T17	-	-	-	-	-	-	-	-	66mm	80mm	130mm	260mm	∞
	12-2T	-	-	-	-	-	-	-	-	2.64"	3.20"	5.20"	10.40"	
	2020K-2T17	-	-	-	-	-	-	-	-	66mm	80mm	130mm	260mm	
	16-2T	-	-	-	-	-	-	-	-	2.64"	3.20"	5.20"	10.40"	
	2525M-2T1710	-	-	-	-	-	-	-	-	66mm	80mm	130mm	260mm	
	1616H-3T20	-	-	-	-	-	40mm	54mm	70mm	100mm	180mm	∞	∞	
	2012K-3T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	12-3T	-	-	-	-	-	1.60"	3.60"	5.20"	9.60"				
	2020K-3T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	16-3T	-	-	-	-	-	1.60"	3.60"	5.20"	9.60"				
	2525M-3T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	12-4T	-	-	-	-	-	1.60"	3.60"	5.20"	9.60"				
	2020K-4T20	-	-	-	-	-	40mm	90mm	130mm	240mm	∞	∞	∞	
	2525M-4T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	16-4T	-	-	2.00"	5.60"	9.60"								
	2525M-4T25	-	-	50mm	140mm	240mm								
	16-5T	-	-	2.00"	5.60"	9.60"								
	2525M-5T25	-	-	50mm	140mm	240mm	∞	∞	∞	∞				
	3232P-5T25	-	-	50mm	280mm	600mm								
	2525M-6T30	100mm	300mm	∞	∞	∞								
Available Grooving Depth CDX (in)		1.20"	1.08"	1.00"	0.92"	0.88"	0.80"	0.76"	0.72"	0.68"	0.64"	0.60"	0.56"	<0.52"
Available Grooving Depth CDX (mm)		30mm	27mm	25mm	23mm	22mm	20mm	19mm	18mm	17mm	16mm	15mm	14mm	<13mm

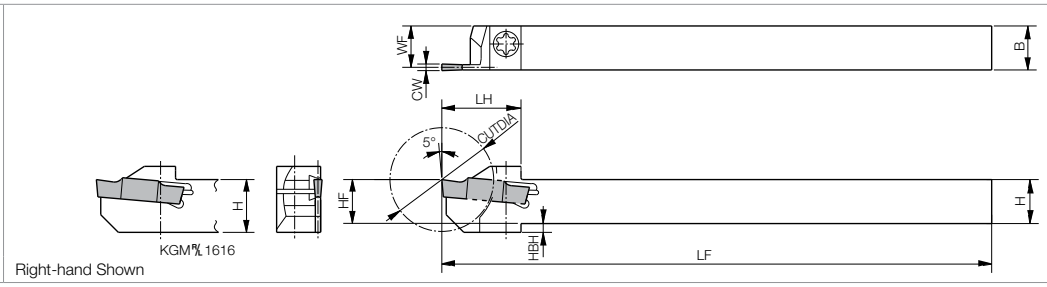
CBN & PCD Inserts are sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGM (Small Parts) - Will be phased out and removed from catalog. Switch to KGD G28

Insert Width : 0.079"~0.118" / 1.5mm~4.0mm





Right-hand Shown

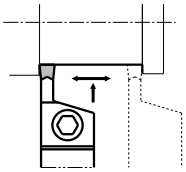
Toolholder Dimensions

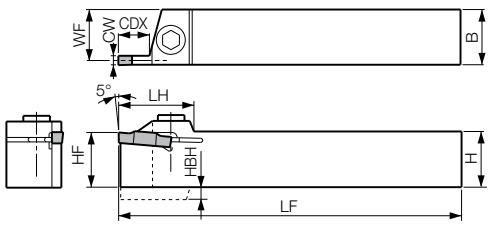
Part Number	Stock R	Stock L	Unit	Cut-Off Dia. CUTDIA	Dimensions H	HF	HBH	B	LF	LH	WF	Insert Width CW MIN	MAX	Spare Parts Clamp Screw	Wrench
KGM 6-2-5	●	●	inch	0.787	0.375	0.375	0.079	0.375	5.000	0.750	0.342	0.079	0.118	SE-40120TR	LTW-15S
8-2-6	●	●	inch	0.984	0.500	0.500	0.051	0.500	6.000	0.830	0.467	0.079	0.118	SE-40120TR	LTW-15S
KGM 1010JX-1.5	●	●	mm	18	10	10	2	10	120	18.0	9.40	1.5	2.0	SE-40120TR	LTW-15S
1212JX-1.5	●	●	mm	23	12	12	2	12	120	20.5	11.40	1.5	2.0	SE-40120TR	LTW-15S
KGM 1010JX-2	●	●	mm	18	10	10	2	10	120	18.0	9.15	2.0	3.0	SE-40120TR	LTW-15S
1212JX-2	●	●	mm	23	12	12	2	12	120	19.0	11.15	2.0	3.0	SE-40120TR	LTW-15S
1616JX-2	●	●	mm	30	16	16	-	16	120	24.5	15.15	2.0	3.0	SE-50125TR	LTW-20
KGM 1212JX-2.5	●	●	mm	23	12	12	2	12	120	20.5	11.00	2.4	3.0	SE-40120TR	LTW-15S
1616JX-2.5	●	●	mm	30	16	16	-	16	120	25.5	15.00	2.4	3.0	SE-50125TR	LTW-20
KGM 1616JX-3	●	●	mm	30	16	16	-	16	120	25.5	14.80	3.0	4.0	SE-50125TR	LTW-20
KGM 1212F-1.5-85	●		mm	23	12	12	2	12	85	19.0	11.40	1.5	2.0	SE-40120TR	LTW-15S
1212F-2-85	●		mm	23	12	12	2	12	85	19.0	11.15	2.0	3.0	SE-40120TR	LTW-15S
1212F-2.5-85	●		mm	23	12	12	2	12	85	19.0	11.00	2.4	3.0	SE-40120TR	LTW-15S

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **G44~G47**

KGM - Will be phased out and removed from catalog. Switch to KGD G30~G35

Insert Width : 0.118"~0.315" / 3mm~8mm





Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH	WF	CDX	Insert Width CW MIN	MAX	Spare Parts Clamp Screw	Clamp Screw	Wrench	Wrench
KGM 12-3	●		inch	0.750	0.750	-	0.750	5.000	1.070	0.702	0.354	0.118	0.157	-	HH5X16	-	LW-4
16-3	●		inch	1.000	1.000	-	1.000	6.000	1.070	0.953	0.354	0.118	0.157	-	HH5X25	-	LW-4
KGM 1212H-3	●		mm	12	12	4	12	100	27	10.8	9	3.0	3.0	SB-5TR	-	LTW-20	-
1616H-3	●		mm	16	16	4	16	100	27	14.8	9	3.0	4.0	-	HH5X16	-	LW-4
2020K-3	●	●	mm	20	20	-	20	125	27	18.8	9	3.0	4.0	-	HH5X16	-	LW-4
2525M-3	●	●	mm	25	25	-	25	150	27	23.8	9	3.0	4.0	-	HH5X25	-	LW-4
KGM 2020K-4	●		mm	20	20	-	20	125	27	18.3	10	4.0	5.0	-	HH5X16	-	LW-4
2525M-4	●	●	mm	25	25	-	25	150	27	23.3	10	4.0	5.0	-	HH5X25	-	LW-4
KGM 2020K-5	●	△	mm	20	20	-	20	125	27	17.8	10	5.0	6.0	-	HH5X16	-	LW-4
2525M-5	●		mm	25	25	-	25	150	27	22.8	10	5.0	6.0	-	HH5X25	-	LW-4
KGM 2525M-8	●	●	mm	25	25	7.5	25	150	40	22.0	25	8.0	8.0	-	HH6X25	-	LW-5

- Dimension **CDX** shows available grooving depth
- 4.0mm width insert can be installed in KGM 1212H-3, but is not recommended due to the toolholder's rigidity

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above.
Insert table **G44~G47**

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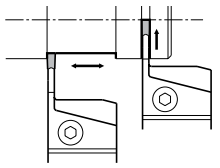
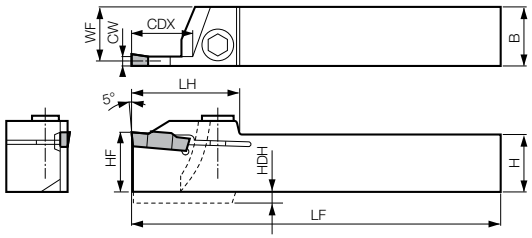
KGM-T - Will be phased out and removed from catalog. Switch to KGD ➔ G30~G35

Insert Width : 0.078"~0.236" / 2.0mm~5.0mm





Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	HBH	B	LF	LH	WF	CDX	Insert Width CW MIN	Insert Width CW MAX	Spare Parts: Clamp Screw	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Wrench
KGM□ 12-2T	●	●	inch	0.75	0.75	-	0.75	5.0	1.30	0.717	0.669	0.078	0.118	-	HH5X16	-	LW-4
16-2T	●			1.00	1.00	-	1.00	6.0	1.30	0.967	0.669				HH5X25		
KGM□ 12-3T	●	●		0.75	0.75	-	0.75	5.0	1.42	0.702	0.787	0.118	0.157	-	HH5X16	-	
16-3T	●	●		1.00	1.00	-	1.00	6.0	1.42	0.953	0.787				HH5X25		
KGM□ 12-4T	●	●		0.75	0.75	-	0.75	5.0	1.42	0.683	0.787	0.157	0.197	-	HH5X16	-	
16-4T	●	●		1.00	1.00	-	1.00	6.0	1.22	0.933	0.984				HH5X25		
KGM□ 16-5T	●	●		1.00	1.00	-	1.00	6.0	1.22	0.913	0.984	0.197	0.236	-	HH5X25	-	-
KGM□ 2012K-2T17		●	mm	20	20	-	12	125	33	11.15	17	2.0	3.0	SB-5TR	-	LTW-20	-
2020K-2T17	●	●		20	20	-	20	125	33	19.15	17	2.0	3.0	-	HH5X16	-	LW-4
2525M-2T17	●	●		25	25	-	25	150	33	24.15	17	2.0	3.0		HH5X25		
KGM□ 1616H-3T20	●			16	16	4	16	100	36	14.8	20	3.0	4.0	-	HH5X16	-	LW-4
2012K-3T20		●		20	20	-	12	125	36	10.8	20	3.0	4.0	SB-5TR	-	LTW-20	-
2020K-3T20	●	●		20	20	-	20	125	36	18.8	20	3.0	4.0	-	HH5X16	-	LW-4
2525M-3T20	●	●		25	25	-	25	150	36	23.8	20	3.0	4.0		HH5X25		
KGM□ 2020K-4T20	●			20	20	-	20	125	36	18.3	20	4.0	5.0	-	HH5X16	-	LW-4
2525M-4T20	●			25	25	-	25	150	36	23.3	20	4.0	5.0		HH5X25		
2525M-4T25	●	●		25	25	-	25	150	41	23.3	25	4.0	5.0				
KGM□ 2525M-5T25	●	●		25	25	-	25	150	42	22.8	25	5.0	6.0	-	HH5X25	-	LW-4
3232P-5T25	●			32	32	-	32	170	42	29.8	25	5.0	6.0				
KGM□ 2525M-6T30	●			25	25	-	25	150	45	22.4	30	6.0	6.0	-	HH5X25	-	LW-4

- Dimension **CDX** shows the distance from the toolholder to the cutting edge. Refer to table on ➔ **G47** for relationship between available grooving depth and cutting diameter
- When using GMG / GMM type 2-edge insert, set groove depth under 0.591"(15mm)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➔ **G44~G47**

Applicable Inserts

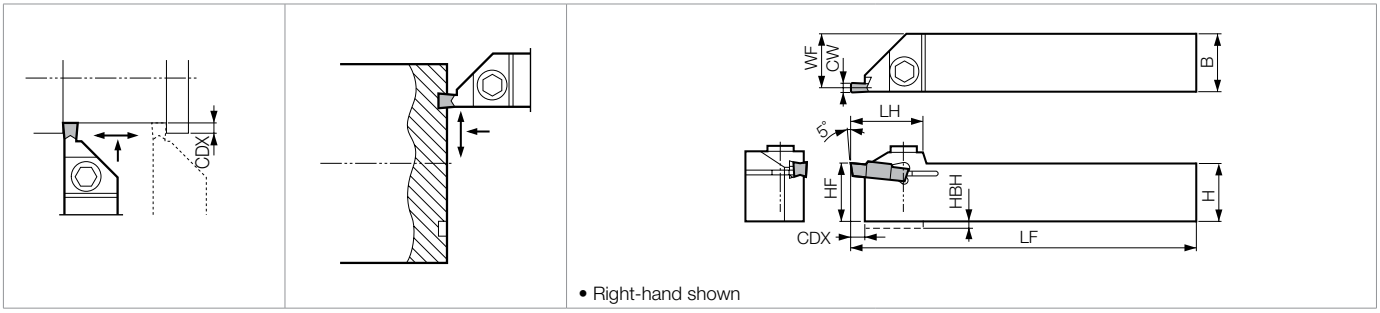
Application	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Full-R / Copying	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving / Cut-Off	Deep Grooving
Ref. Page	➔ G44	➔ G44	➔ G44	➔ G44	➔ G45	➔ G46	➔ G46	➔ G46	➔ G46	➔ G46	➔ G47
Insert / Toolholder	MW	MS	MG			MT	NB	TK	TK		CBN • PCD
KGM□...1.5	-	-	-	-	-	GMM1520...MT GMM2020...MT GMM1520□...MT GMM2020□...MT	GMM1520...NB GMM2020...NB	GMM2020...TK GMM2020□...TK	GMN2...TK GM□2...TK	-	-
KGM□...-2- KGM□...-2(T)	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	-	GMM2020...MT GMM2520...MT GMM3020...MT GMM2020□...MT GMM2520□...MT GMM3020□...MT	GMM2020...NB GMM2520...NB GMM3020...NB	GMM2020...TK GMM2520...TK GMM3020...TK GMM2020□...TK GMM2520□...TK GMM3020□...TK	GMN2...TK GMN3...TK GM□2...TK GM□3...TK	GMN2.2 GMN3 GM□2.2 GM□3	GMN2 GMN3
KGM□...2.5	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	-	GMM2520...MT GMM3020...MT GMM2520□...MT GMM3020□...MT	GMM2520...NB GMM3020...NB	GMM2520...TK GMM3020...TK GMM2520□...TK GMM3020□...TK	GMN3...TK GM□3...TK	GMN3 GM□3	GMN3
KGM□...-3(T)	GMM3020...MW GMM4020...MW	GMG3020...MS GMM3020...MS GMG4020...MS GMM4020...MS	GMG3020...MG GMG3520...MG GMG4020...MG	GMG3020...R GMM3020...R GMG4020...R GMM4020...R	-	GMM3020...MT GMM3020□...MT	GMM3020...NB	GMM3020...TK GMM3020□...TK	GMN3...TK GMN4...TK GM□3...TK GM□4...TK	GMN3 GMN4 GM□3 GM□4	GMN3 GMN4
KGM□...-4(T)	GMM4020...MW GMM5020...MW	GMG4020...MS GMM4020...MS GMG5020...MS GMM5020...MS	GMG4020...MG GMG5020...MG	GMG4020...R GMM4020...R GMG5020...R GMM5020...R	-	-	-	-	GMN4...TK GM□4...TK	GMN4 GMN5 GM□4	GMN4 GMN5
KGM□...-5(T)	GMM5020...MW GMM6020...MW	GMG5020...MS GMM5020...MS GMG6020...MS GMM6020...MS	GMG5020...MG GMG6020...MG	GMG5020...R GMM5020...R GMG6020...R GMM6020...R	GMGA6020..R	-	-	-	-	GMN5 GMN6	GMN5 GMN6
KGM□...-6T	GMM6020..MW	GMG6020..MS GMM6020..MS	GMG6020..MG	GMG6020..R GMM6020..R	GMGA6020..R	-	-	-	-	GMN6	GMN6
KGM□...8	GMM8030..MW	-	GMG8030..MG	-	GMGA8030..R	-	-	-	-	-	-

- If using a full-R insert, you need to modify the insert seat tip of the toolholder.

Recommended Cutting Condtions ➔ **G147**
Recommended Cutting Condtions (CBN / PCD) ➔ **G146**

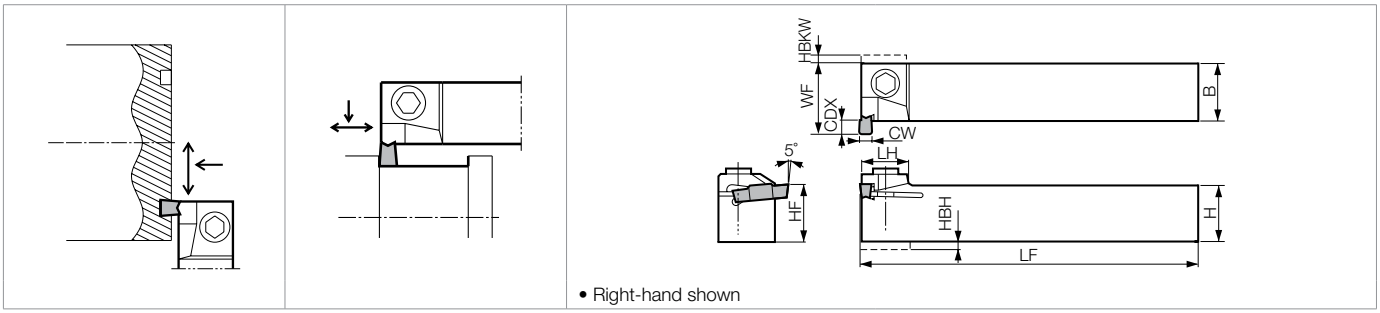
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGMM



• Right-hand shown

KGMS



• Right-hand shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	HBH	B	LF	LH	WF	HBKW	CDX	Insert Width CW (mm) MIN	Insert Width CW (mm) MAX	Spare Parts: Screw	Spare Parts: Screw	Spare Parts: Wrench	Spare Parts: Wrench
KGMMR 2525M-3	●		mm	25	25	-	25	150	25	23.8	-	4.8	3.0	5.0	-	HH5X25	-	LW-4
KGMSR 2525M-3	●		mm	25	25	-	25	150	17	30	-	4.8	3.0	5.0	-	HH5X25	-	LW-4

• Dimension **CDX** shows available grooving depth. (Ref. to the table ➡ **G49** for Face Grooving and minimum cutting diameter)

Applicable Inserts [External Grooving]

Application	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Grooving	Grooving	Grooving	Grooving	Grooving	Grooving
Ref. Page	➡ G44	➡ G44	➡ G44	➡ G44	➡ G46	➡ G46	➡ G46	➡ G46	➡ G46	➡ G47
Insert / Toolholder	**MW**	**MS**	**MG**		**MT**	**NB**	**TK**	**TK**		**CBN • PCD**
KGMMR···3 KGMSR···3	GMM3020..MW GMM4020..MW GMM5020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG3020..MG GMG3520..MG GMG4020..MG GMG5020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R GMG5020..R GMM5020..R	GMM3020..MT	GMM3020..NB	GMM3020..TK	GMN3..TK GMN4..TK	GMN3 GMN4 GMN5	GMN3 GMN4 GMN5

Applicable Inserts [Face Grooving]

Application	Grooving / Traversing	Undercutting	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Grooving	Grooving	Grooving	Grooving
Ref. Page	➡ G45	➡ G44	➡ G44	➡ G44	➡ G44	➡ G44	➡ G46	➡ G46	➡ G46	➡ G46
Insert / Toolholder			**MW**	**MS**	**MG**		**MT**	**NB**	**TK**	
KGMMR···3 KGMSR···3	FGG‰3020.. FGG‰4020.. FGG‰5020..	GMG3020..RU GMG4020..RU GMG5020..RU	GMM3020..MW GMM4020..MW GMM5020..MW	GMG3020..MS GMM3020..MS GMG4020..MS GMM4020..MS GMG5020..MS GMM5020..MS	GMG3020..MG GMG3520..MG GMG4020..MG GMG5020..MG	GMG3020..R GMM3020..R GMG4020..R GMM4020..R GMG5020..R GMM5020..R	GMM3020..MT	GMM3020..NB	GMM3020..TK	GMN3 GMN4 GMN5 GMN3..TK GMN4..TK

Recommended Cutting Condtions ➡ **G147**
Recommended Cutting Condtions (CBN / PCD) ➡ **G146**

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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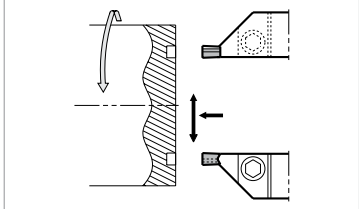
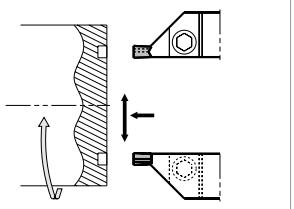
Selection of Insert & Toolholder (Face Grooving)

KGMM

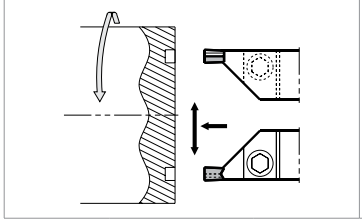
Toolholder	Left-hand (L)
Insert	Left-hand (L)



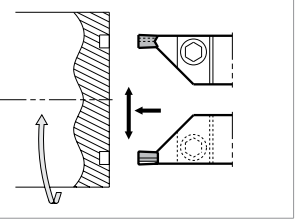
Toolholder	Right-hand (R)
Insert	Right-hand (R)



Toolholder	Right-hand (R)
Insert	Left-hand (L)

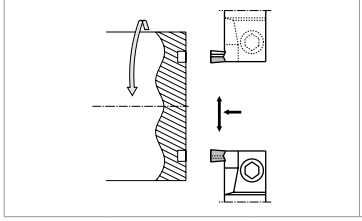


Toolholder	Left-hand (L)
Insert	Right-hand (R)

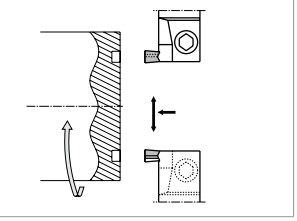


KGMS

Toolholder	Right-hand (R)
Insert	Left-hand (L)

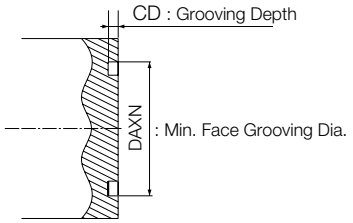


Toolholder	Left-hand (L)
Insert	Right-hand (R)



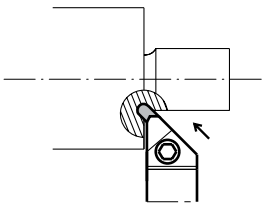
Min. Cutting Dia. & Grooving Depth (Face Grooving)

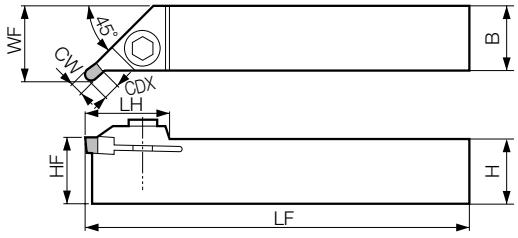
KGMM / KGMS



Part Number	DAXN	CD
GMG/GMM3020-○○□□	Ø100mm	4.8mm
GMG/GMM4020-○○□□		
GMG/GMM5020-○○□□		
FGG℠3020-02	Ø22mm	4.3mm
FGG℠4020-04	Ø28mm	4.8mm
FGG℠5020-04	Ø30mm	
GMG3020-150RU	Ø22mm	4.3mm
GMG4020-200RU	Ø28mm	4.8mm

KGMU (External Undercutting Toolholder)





• Right-hand shown

Toolholder Dimensions

Part Number	Stock		Unit	Dimensions							Insert Width CW (mm)		Spare Parts	
													Clamp Bolt	Wrench
	R	L		H	HF	B	LF	LH	WF	CDX	MIN	MAX		
KGMUR 2525M	●		mm	25	25	25	150	28.5	28.6	4.8	3.0	5.0 (6.0)	HH5X25	LW-4

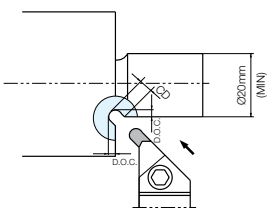
• Dimension **CDX** shows the distance from the Toolholder to the cutting edge. Ref. to the table below for the available Grooving Depth.
Dimension **WF** shows for GMM5020-RU. MAX CW in ( ) indicates external grooving inserts when installed.

Applicable Inserts

Application	Undercutting
Ref. Page	G44
Insert / Toolholder	
KGMU℠ 2525M	GMG3020..RU GMG4020..RU

• External grooving inserts (grooving width 3mm~6mm) will be attached.
(In case of using GMG○○20-○○○□□, GMM○○20-○○○□□, GMN○ insert)

Undercut Depth t



Part Number	Undercut Depth CD (mm)	Distance from the face of the workpiece. D.O.C. (mm)
GMG3020-150RU	3.5	1.8
GMG4020-200RU	4.0	1.9
GMG5020-250RU	4.5	2.1

*In case of undercutting for the diameter over 100mm, external grooving inserts GMG○○20-○○○□□, GMM○○20-○○○□□,GMN○ are also available.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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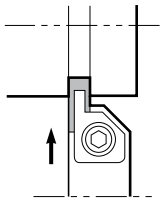
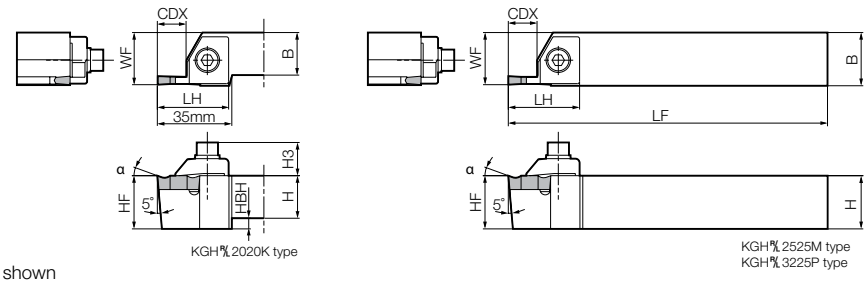
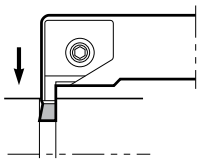
KGH

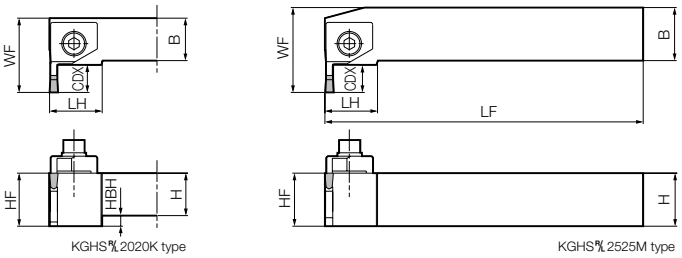




• Right-hand shown

KGHS





• Right-hand shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH	WF	CDX	Spare Parts Clamp	Clamp Bolt	Washer	Spring	Wrench
KGH□	2020K-4	●	●	mm	20	20	5	20	125	33.5	24.5-24.8	13	CGH-1□	HH6X25	W-6	SP-6	LW-5
	2525M-4	●	●		25	25	-	25	150	33.5	24.5-24.8	13					
	2020K-5	●	●		20	20	5	20	125	33.5	25.0-25.8	13					
	2525M-5	●	●		25	25	-	25	150	33.5	25.0-25.8	13					
	3225P-5	●	●		32	32	-	25	170	33.5	25.0-25.8	13					
	2020K-7	●	●		20	20	5	20	125	33.5	24.5-25.0	13	CGH-2□	HH6X25	W-6	SP-6	LW-5
	2525M-7	●	●		25	25	-	25	150	33.5	24.5-25.0	13					
	2525M-10	●	●		25	25	-	25	150	41.0	25.5-26.5	17	CGH-3□	HH6X25	W-6	SP-6	LW-5
	3225P-10	●			32	32	-	25	170	41.0	25.5-26.5	17					
KGHS□	2020K-4	●	●		20	20	5	20	125	25.0	35.0	13	CGH-1□	HH6X25	W-6	SP-6	LW-5
	2525M-4	●	●		25	25	-	25	150	25.0	40.0	13					
	2020K-5	●	●		20	20	5	20	125	25.0	35.0	13					
	2525M-5	●	●		25	25	-	25	150	25.0	40.0	13					

- Dimension **CDX** shows available grooving depth.
- Dimension F1 of KGH□ Toolholder depends on the insert's edge width.
- Clamp KGH□ ... CGH-○R for Right-hand Toolholder, and CGH-○L for Left-hand Toolholder.
  KGHS□ ... CGH-○L for Right-hand Toolholder, and CGH-○R for Left-hand Toolholder.

Applicable Inserts ➡ **G53**

Rake Angle (α) after Installment of GH / GHU

GH-○○○○-○○		GHU○○-○○	
α (°)	Insert Grade	α (°)	Insert Grade
0°	A65, A66N, PT600M	10°	TN60 CR9025
10°	TC40		
20°	TN90, TC60 PR930 KW10		

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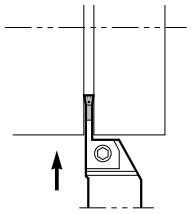
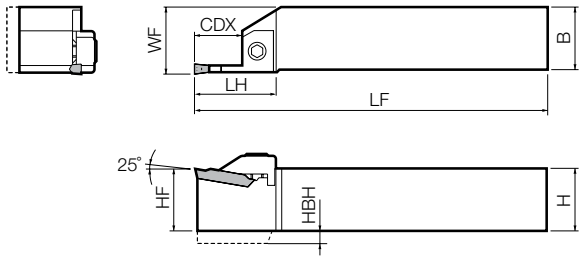
KGA





• Right-hand shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH	WF	CDX	Spare Parts: Clamp	Clamp Bolt	Spring	Wrench
KGA□R/L	2020K-3	●	●	mm	20	20	5	20	125	37	21.5	20	CGA-3□R/L	HH6X20	SP-6	LW-5
	2525M-3	●	●		25	25	-	25	150	37	26.5	20				
	2020K-4	●			20	20	5	20	125	37	21.5	20	CGA-4□R/L	HH6X20	SP-6	LW-5
	2525M-4	●			25	25	-	25	150	37	26.5	20				
	2020K-5	●			20	20	5	20	125	42	21.5	25	CGA-5□R/L	HH6X20	SP-6	LW-5
	2525M-5	●			25	25	-	25	150	42	26.5	25				

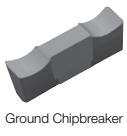
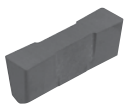
- Dimension **CDX** shows available grooving depth.
- Clamp: CGA-○R for Right-hand Toolholder, and CGA-○L for Left-hand Toolholder.

Applicable Inserts (in)

Part Number	INSL	S
GH4020-○○~GH8020-○○	0.787	0.295
GH10025-05~GH12025-05	0.984	0.295
GHU○○-○○	0.787	0.295
GA30 , GA40	0.984	0.197
GA50	1.181	0.197

		Cermet TN60	TN90	TC40	TC60	CVD Coated Carbide CR9025	PVD Coated Carbide PR930	Carbide KW10	Ceramic A65	A66N	PT600M
P	Carbon Steel / Alloy Steel						●				
M	Stainless Steel						●				
K	Cast Iron							●	○		●
N	Non-ferrous Metals							●			
S	Titanium Alloy							●			
H	Hard materials (≤40HRC)						●				
	Hard materials (≥40HRC)									○	●

Classification of Usage
● : Light Interruption / 1st Choice
◴ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Dimensions (in) CW	RE	Applicable Toolholders	Ref. Page for Toolholder
 Ground Chipbreaker	GH 4020-02	0.157	0.008	KGH□R/L…4 KGHS□R/L…4	G52
	4020-05		0.020		
	4520-02	0.177	0.008		
	4520-05		0.020		
	5020-02	0.197	0.008	KGH□R/L…5 KGHS□R/L…5	
	5020-05		0.020		
	5520-02	0.217	0.008		
	5520-05		0.020		
	6020-02	0.236	0.008		
	6020-05		0.020		
 Ceramic	6520-02	0.256	0.008		
	6520-05		0.020		
	7020-02	0.276	0.008	KGH□R/L…7 KGHS□R/L…7	
	7520-05		0.020		
	7520-02	0.295	0.008		
	7520-05		0.020		
	8020-02	0.315	0.008		
	8020-05		0.020		
	10025-05	0.394	0.020	KGH□R/L…10	
	12025-05	0.472	0.020		
Molded Chipbreaker	GHU 40-20	0.157	0.010	KGH□R/L…4 KGHS□R/L…4	G52
	50-20	0.197	0.012	KGH□R/L…5 KGHS□R/L…5	
	60-20	0.236	0.012		
	GA 30	0.118	0.008	KGA□R/L…3	
	40	0.157	0.010	KGA□R/L…4	G53
	50	0.197	0.012	KGA□R/L…5	

Ceramic insert is above shape.

Recommended Cutting Conditions **G144**

Inserts are sold in 10 piece boxes.

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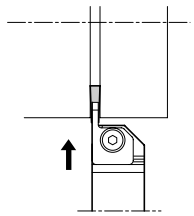
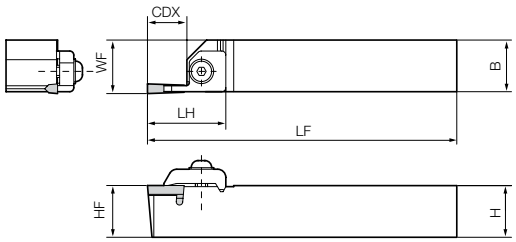
EGT





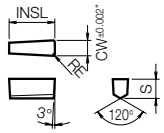
• Right-hand shown

Toolholder Dimensions

Part Number	Stock		Unit	Dimensions							Spare Parts	
											Clamp Set	Wrench
	R	L		H	HF	B	LF	LH	WF	CDX		
EGT□ 16-1	●	□	inch	1.00	1.00	1.00	6.00	1.34	1.0085~1.0285	0.63	R: HCL-009 L: HCL-011	LW-156

• Clamp Set: ETG□… HCL-009 for Right-hand Toolholder, HCL-011 for Left-hand Toolholder

Applicable Inserts

Insert Right-handed Insert Shown		Part Number	Previous Part Number	Unit	Dimensions					Insert Grade
					CW		RE	INSL	S	Ceramic
					inch	mm				**A65**
		**GG 157-20 T00320**	-	inch	0.157	4.0	0.020	0.591	0.197	●
		197-32 T00320	-		0.197	5.0	0.032	0.591	0.197	●

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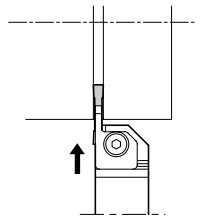
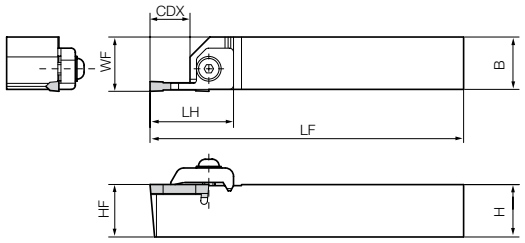
KDB





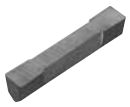
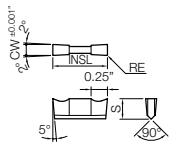
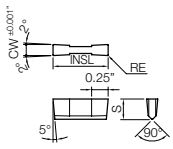
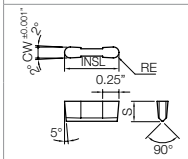
• Right-hand shown

Toolholder Dimensions

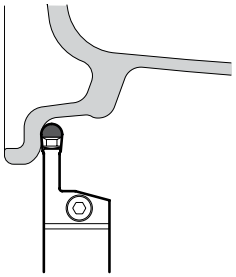
Part Number	Stock		Unit	Dimensions							Spare Parts	
											Clamp Set	Wrench
	R	L		H	HF	B	LF	LH	WF	CDX		
KDB R/L 16-1	●	□	inch	1.00	1.00	1.00	6.00	-	1.0050~1.0360	0.75	R: HCL-009 L: HCL-011	LW-156

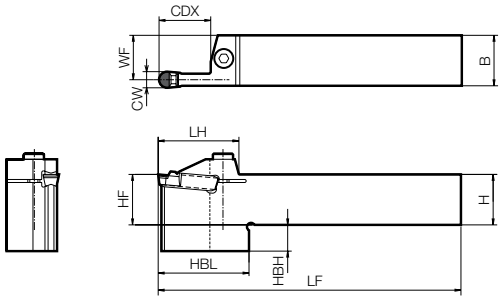
• Clamp Set: KDB R/L… HCL-009 for Right-hand Toolholder, HCL-011 for Left-hand Toolholder

Applicable Inserts

Insert		Part Number	Unit	Dimensions					Insert Grade		
				CW		RE	INSL	S	Cermet		Ceramic
				inch	mm				TN60	TC30	A65
		DB 125R15	inch	0.125	3.18	0.015	1.125	0.250	●	●	
		187R15		0.187	4.75	0.015	1.125	0.250		●	
		187R30		0.187	4.75	0.030	1.125	0.250	●	●	
		250R15		0.250	6.35	0.015	1.125	0.250	●		
		375R30		0.375	9.525	0.030	1.125	0.250	●	●	
		DB 125R15 T00420		0.125	3.18	0.015	1.125	0.250			●
		187R30 T00420		0.187	4.75	0.030	1.125	0.250			●
		DB 125FNR T00420		0.125	3.18	0.063	1.125	0.250			●
		187FNR T00420		0.187	4.75	0.094	1.125	0.250			●

KGMW (External / Facing / Copying)



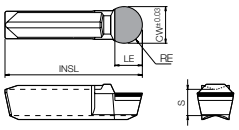
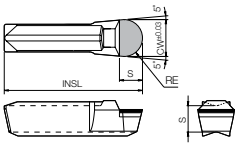


• Right-hand shown

Toolholder Dimensions

Part Number	Stock		Dimensions (mm)									Spare Parts		Applicable Inserts
												Clamp Bolt	Wrench	
	R	L	H	HF	HBH	B	LF	LH	HBL	WF	CDX			
KGMWR 2525M-6	●		25	25	13	25	150	40	55	22.8	25	HH6X25	LW-5	GMGW6030-30R

Applicable Inserts

Insert		Part Number	Dimensions (mm)						No. of Edges	PCD
			W	rε	L	H	M	S		KPD001
		**GMGW 6030-30R**	6	3	30	5.5	5	4.5	1	●
		8030-40R	8	4	30	5.5	6	6.0	1	●
		**GMGW 8030-40R-HR**	8	4	30	5.5	6	5.0	1	●

• GMGW inserts are exclusively used for KGMW type toolholder. It cannot be used for other toolholder because of its different installation angle.
• GMGW inserts Edge Preparation: R-honed Cutting Edge.

PCD Inserts are sold in 1 piece boxes.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)	① f (feed) during Grooving (ipr)
	PCD	② f (feed) during Traversing (ipr)
	KPD001	③ D.O.C. during Traversing (in)
Aluminum	★ 490~8,860	① 0.0020~0.0120
		② 0.0080~0.0310
		③ MAX 0.118

★ : 1st Recommendation

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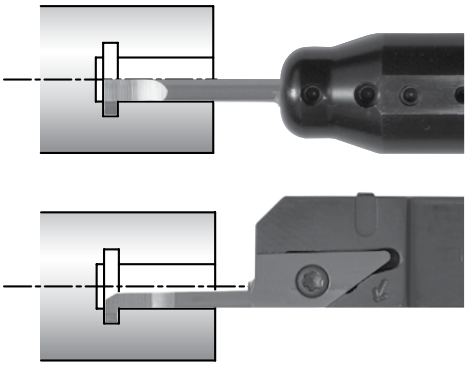
Small Diameter Internal Grooving Ø0.118"~ / (Ø3mm)~ (G59~G61)

EZ Bar / Double-Sided Micro Bar / Swiss IQ Bar



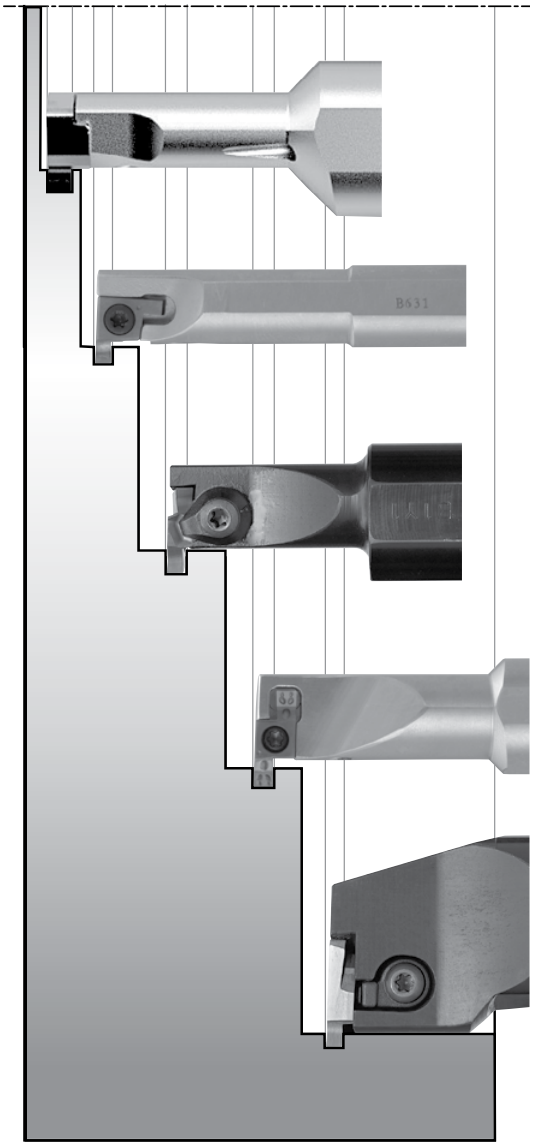
Type	EZG
Min. Bore Dia.	0.118"~0.315" (3.00mm~8.00mm)
Edge Width	0.020"~0.079" (0.50mm ~ 2.00mm)
Grooving Depth	0.039"~0.079" (1.00mm ~ 2.00mm)
Ref. Page	G59

EZ Bars

Type	VNG
Min. Bore Dia.	0.158"~0.276" (4.0mm~7.0mm)
Edge Width	0.039"~0.079" (1.0mm ~ 2.0mm)
Grooving Depth	0.032"~0.079" (0.8mm ~ 2.0mm)
Ref. Page	G61

Swiss IQ Bars

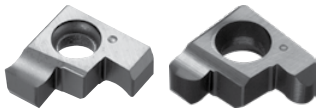
Internal Shallow Grooving Ø0.315"~ / (Ø8mm)~ (G65~G77)



Type	SIGC
Min. Bore Dia.	8.0mm~12.00mm
Edge Width	1.0mm ~ 3.0mm
Grooving Depth	1.0mm ~ 3.0mm
Ref. Page	G65

1-Edge
Ground Chipbreaker

Type	SIGE
Min. Bore Dia.	0.315"~0.375" (8.0mm~12.00mm)
Edge Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.059"~0.087" (1.5mm ~ 2.2mm)
Ref. Page	G69



2-Edge
Ground Chipbreaker
2-Edge
Ground Chipbreaker Full-R

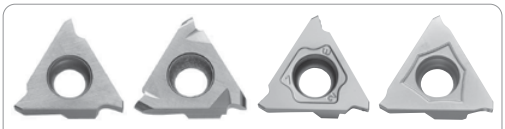
Type	SI-GIV / GIV
Min. Bore Dia.	0.472"~0.984" (12.0mm~40.0mm)
Edge Width	0.031"~0.197" (1.0mm~5.0mm)
Grooving Depth	0.067"~0.248" (1.7mm~6.5mm)
Ref. Page	G74

1-Edge
Ground Chipbreaker
2-Edge
Ground Chipbreaker
2-Edge
Ground Chipbreaker Full-R

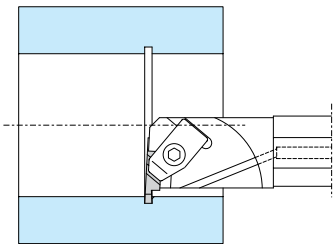
Type	SIGE
Min. Bore Dia.	0.551"~1.575" (14.0mm~40.0mm)
Edge Width	0.039"~0.197" (1.0mm~5.0mm)
Grooving Depth	0.098"~0.256" (2.5mm~6.5mm)
Ref. Page	G69

2-Edge
Molded Chipbreaker
2-Edge
Ground Chipbreaker
2-Edge
Ground Chipbreaker Full-R

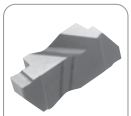
Type	KIGBA
Min. Bore Dia.	1.378"~1.575" (35.0mm~40.0mm)
Edge Width	0.013"~0.189" (0.33mm~4.8mm)
Grooving Depth	0.032"~0.110" (0.8mm~2.8mm)
Ref. Page	G76



Ground Chipbreaker
Ground Chipbreaker Full-R
GM Chipbreaker
MY Chipbreaker

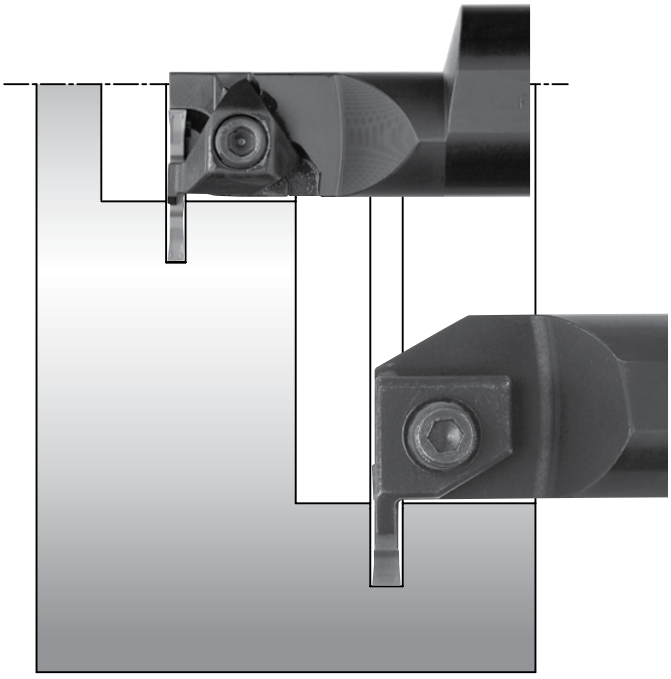


Type	A-KKC
Min. Bore Dia.	1.000"~2.750"
Edge Width	0.031"~0.189"
Grooving Depth	0.040"~0.240"
Ref. Page	G85

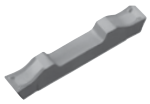


Ground Chipbreaker

Internal Deep Grooving (G80, G82)

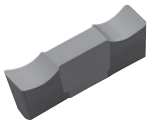


Type	KGIA
Min. Bore Dia.	1.260"~2.598" (32.0mm~66.0mm)
Edge Width	0.118"~0.197" (3.0mm ~ 5.0mm)
Grooving Depth	0.394"~0.591" (10.0mm ~ 15.0mm)
Ref. Page	G82



Molded Chipbreaker

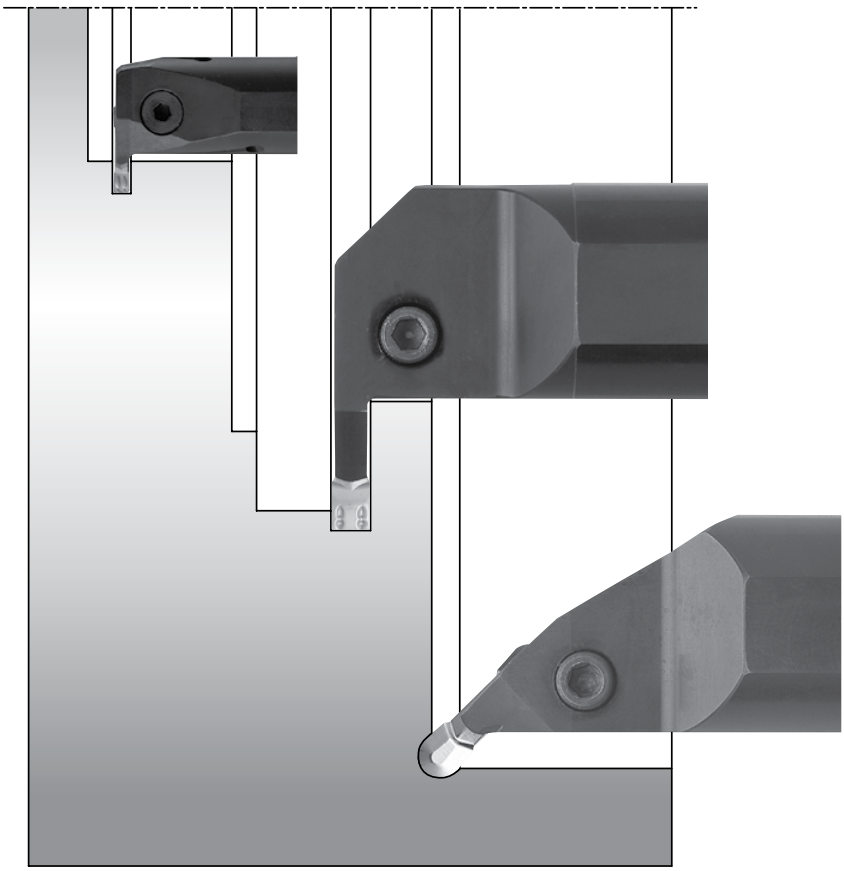
Type	KIGH
Min. Bore Dia.	1.772"~2.559" (45.0mm~65.0mm)
Edge Width	1.575"~0.315" (4.0mm~8.0mm)
Grooving Depth	0.472" (12.0mm)
Ref. Page	G80



Ground Chipbreaker

Molded Chipbreaker

Internal Grooving & Traversing Ø0.787"~ (Ø20mm~) (G79, G81, G83)



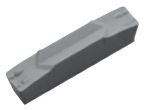
Type	KGDI
Min. Bore Dia.	0.709"~1.575" (18.0mm~40.0mm)
Edge Width	0.079"~0.197" (2.0mm~5.0mm)
Grooving Depth	0.177"~0.433" (4.5mm~11.0mm)
Ref. Page	G79

Molded Chipbreaker

Type	KIGM-V
Min. Bore Dia.	0.787"~1.575" (20.0mm~40.0mm)
Edge Width	0.118"~0.197" (3.0mm~5.0mm)
Grooving Depth	0.217"~0.433" (5.5mm~11.0mm)
Ref. Page	G83

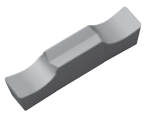
Molded Chipbreaker Full-R

Type	KIGM-8
Min. Bore Dia.	2.559" (65.0mm)
Edge Width	0.315" (8.0mm)
Grooving Depth	0.787" (20mm)
Ref. Page	G81



Molded Chipbreaker

Type	KIGMU-8
Min. Bore Dia.	2.559" (65.0mm)
Edge Width	0.315" (8.0mm)
Grooving Depth	0.087" (2.2mm)
Ref. Page	G81



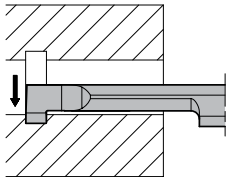
Ground Chipbreaker

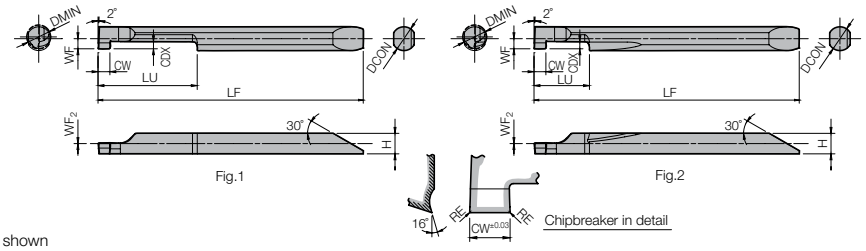
Molded Chipbreaker Full-R

800.823.7284
Visit us online at KyoceraPrecisionTools.com

NEW ITEMS!

EZG (Small Diameter Internal Grooving) NEW





• Right-hand shown

Micro Bar Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)									Drawing	MEGACOAT NEW PR1225		Carbide NEW GW05	Applicable Sleeves F30~F34
		DMIN	CW±0.03*	RE	DCON	H	LF	LU	WF	WF2	CDX		R	L	R	
EZG®	040040-050	4	0.5	±0.013 0.05	4	3.45	44.7	12	1.70	0	1.0	Fig.2	●	●	●	EZH040..
	040040-100	4	1.0		4	3.45	44.7	12	1.70	0	1.0		●	●	●	
	040040-150	4	1.5		4	3.45	44.7	12	1.70	0	1.0		●	●	●	
	040040-200	4	2.0		4	3.45	44.7	12	1.70	0	1.0		●	●	●	
	050050-100	5	1.0		5	4.30	52.8	20	2.15	0	1.5	Fig.1	●	●	●	EZH050..
	050050-150	5	1.5		5	4.30	52.8	20	2.15	0	1.5		●	●	●	
	050050-200	5	2.0		5	4.30	52.8	20	2.15	0	1.5		●	●	●	
	060060-100	6	1.0		6	5.15	60.7	20	2.65	0	2.0	Fig.1	●	●	●	EZH060..
	060060-150	6	1.5		6	5.15	60.7	20	2.65	0	2.0		●	●	●	
	060060-200	6	2.0		6	5.15	60.7	20	2.65	0	2.0		●	●	●	
	070070-100	7	1.0		7	6.20	63.7	25	3.05	0	2.0	Fig.1	●	●	●	EZH070..
	070070-150	7	1.5		7	6.20	63.7	25	3.05	0	2.0		●	●	●	
	070070-200	7	2.0		7	6.20	63.7	25	3.05	0	2.0		●	●	●	
	080070-100	8	1.0		7	6.20	63.7	25	3.45	0	2.0		●	●	●	
	080070-150	8	1.5		7	6.20	63.7	25	3.45	0	2.0		●	●	●	
	080070-200	8	2.0		7	6.20	63.7	25	3.45	0	2.0		●	●	●	
EZGR	030030-050S	3	0.5	±0.013 0.05	3	2.50	38.7	5	1.25	0	0.8	Fig.2	●			EZH030..
	030030-100S	3	1.0		3	2.50	38.7	5	1.25	0	0.8		●			
	040040-050S	4	0.5		4	3.45	44.7	8	1.70	0	1.0	Fig.2	●			EZH040..
	040040-100S	4	1.0		4	3.45	44.7	8	1.70	0	1.0		●			
	040040-150S	4	1.5		4	3.45	44.7	8	1.70	0	1.0		●			
	040040-200S	4	2.0		4	3.45	44.7	8	1.70	0	1.0		●			
	050050-100S	5	1.0		5	4.30	52.8	10	2.15	0	1.5	Fig.2	●			EZH050..
	050050-150S	5	1.5		5	4.30	52.8	10	2.15	0	1.5		●			
	050050-200S	5	2.0		5	4.30	52.8	10	2.15	0	1.5		●			
	060060-100S	6	1.0		6	5.15	60.7	10	2.65	0	2.0	Fig.2	●			EZH060..
	060060-150S	6	1.5		6	5.15	60.7	10	2.65	0	2.0		●			
	060060-200S	6	2.0		6	5.15	60.7	10	2.65	0	2.0		●			
	070070-100S	7	1.0		7	6.20	63.7	10	3.05	0	2.0	Fig.2	●			EZH070..
	070070-150S	7	1.5		7	6.20	63.7	10	3.05	0	2.0		●			
	070070-200S	7	2.0		7	6.20	63.7	10	3.05	0	2.0		●			
	080070-100S	8	1.0		7	6.20	63.7	10	3.45	0	2.0		●			
	080070-150S	8	1.5		7	6.20	63.7	10	3.45	0	2.0		●			
	080070-200S	8	2.0		7	6.20	63.7	10	3.45	0	2.0		●			

- Dimension **CDX** shows available grooving depth
- "S" in part number represents short length

EZ Bar Identification System

EZ G R 030 030 – 050 S

EZ	Application	Hand of Tool	Min. Bore Dia.	Shank Dia.	Groove Width	Type
Symbol of Bar						
	G: Internal Grooving	R: Right-hand L: Left-hand	030 : 3mm 040 : 4mm ⋮	030 : 3mm 040 : 4mm ⋮	050 : 0.5mm 100 : 1.0mm ⋮	S: Short Length (LU dimension)

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)		EZGR030030-...S	EZGR040040-...(S) EZGR050050-...(S)	EZGR060060-...(S) EZGR070070-...(S) EZGR080070-...(S)	Notes
	MEGACOAT	Carbide				
	PR1225	GW05	Feed Rate (ipr)			
Carbon Steel / Alloy Steel	★ 100~330	-	~0.0008	~0.0012	~0.0020	Wet
Stainless Steel	★ 100~260	-	~0.0004	~0.0008	~0.0012	
Non-Ferrous	-	★ ~980	-	~0.0020	~0.0031	

EZ Bars are sold in 1 piece boxes.

★ : 1st Recommendation

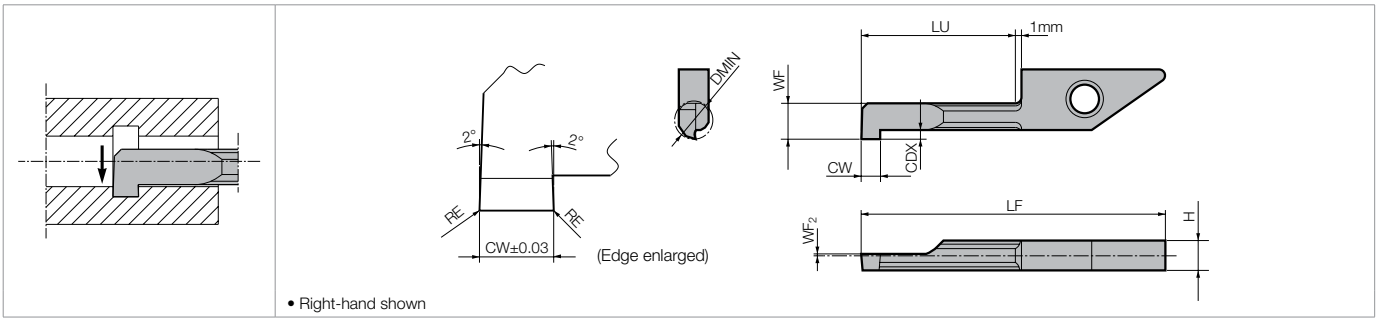
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

APPLICABLE SLEEVES FOR INTERNAL GROOVING BARS

Sleeve Part Number				Applicable Intenal Grooving Bar		Applicable Machine Manufacturer
EZH-CT (Adjustable Overhang Length / with Coolant Hole) → F30-F31	EZH-HP (Adjustable Overhang Length) → F32-F33	EZH-ST → F34	Sleeve Shank Dia. DCON (mm)	EZG	EZ Bar Shank Dia. DCON (mm)	
-	-	EZH 03012ST-80	12.00	EZG_ 030030-...	3	(General purpose)
		04012ST-80		EZG_ 040040-...	4	
		05012ST-80		EZG_ 050050-...	5	
		06012ST-80		EZG_ 060060-...	6	
		07012ST-80		EZG_ 070070-...	7	
				EZG_ 080070-...	8	
-	EZH 03016HP-100	EZH 03016ST-100	16.00	EZG_ 030030-...	3	(General purpose)
	04016HP-100	04016ST-100		EZG_ 040040-...	4	
	05016HP-100	05016ST-100		EZG_ 050050-...	5	
	06016HP-100	06016ST-100		EZG_ 060060-...	6	
	07016HP-100	07016ST-100		EZG_ 070070-...	7	
				EZG_ 080070-...	8	
EZH 03019CT-120	EZH 03019HP-120	EZH 03019ST-120	0.750"	EZG_ 030030-...	3	Citizen Machinery
04019CT-120	04019HP-120	04019ST-120		EZG_ 040040-...	4	
05019CT-120	05019HP-120	05019ST-120		EZG_ 050050-...	5	
06019CT-120	06019HP-120	06019ST-120		EZG_ 060060-...	6	
07019CT-120	07019HP-120	07019ST-120		EZG_ 070070-...	7	
				EZG_ 080070-...	8	
EZH 03020CT-120	EZH 03020HP-120	EZH 03020ST-120	20.00	EZG_ 030030-...	3	Amada Machine Tools Eguro Tsugami Citizen Machinery (General purpose)
04020CT-120	04020HP-120	04020ST-120		EZG_ 040040-...	4	
05020CT-120	05020HP-120	05020ST-120		EZG_ 050050-...	5	
06020CT-120	06020HP-120	06020ST-120		EZG_ 060060-...	6	
07020CT-120	07020HP-120	07020ST-120		EZG_ 070070-...	7	
				EZG_ 080070-...	8	
EZH 03022CT-135	EZH 03022HP-135	EZH 03022ST-135	22.00	EZG_ 030030-...	3	Star Micronics Nomura DS Tsugami
04022CT-135	04022HP-135	04022ST-135		EZG_ 040040-...	4	
05022CT-135	05022HP-135	05022ST-135		EZG_ 050050-...	5	
06022CT-135	06022HP-135	06022ST-135		EZG_ 060060-...	6	
07022CT-135	07022HP-135	07022ST-135		EZG_ 070070-...	7	
				EZG_ 080070-...	8	
EZH 03025.0CT-135	EZH 03025.0HP-135	EZH 03025.0ST-135	25.00	EZG_ 030030-...	3	Amada Machine Tools Eguro Tsugami Citizen Machinery (General purpose)
04025.0CT-135	04025.0HP-135	04025.0ST-135		EZG_ 040040-...	4	
05025.0CT-135	05025.0HP-135	05025.0ST-135		EZG_ 050050-...	5	
06025.0CT-135	06025.0HP-135	06025.0ST-135		EZG_ 060060-...	6	
07025.0CT-135	07025.0HP-135	07025.0ST-135		EZG_ 070070-...	7	
				EZG_ 080070-...	8	
EZH 03025.4CT-120	EZH 03025.4HP-120	EZH 03025.4ST-120	1.000"	EZG_ 030030-...	3	Citizen Machinery
04025.4CT-120	04025.4HP-120	04025.4ST-120		EZG_ 040040-...	4	
05025.4CT-120	05025.4HP-120	05025.4ST-120		EZG_ 050050-...	5	
06025.4CT-120	06025.4HP-120	06025.4ST-120		EZG_ 060060-...	6	
07025.4CT-120	07025.4HP-120	07025.4ST-120		EZG_ 070070-...	7	
				EZG_ 080070-...	8	

- Choose sleeves' (DCON) that match with DCON dimension of Internal Grooving Bars.
- Adjustment Pin cannot be installed to EZH-ST Sleeves. To adjust overhang of the bar, please use EZH-CT/HP Sleeves.
- Machine manufacturers in random order.

VNG



• Right-hand shown

Dimensions

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		MEGA COAT	PVD	Carbide	PCD		
P	Carbon Steel / Alloy Steel	●	○				
M	Stainless Steel	●	○				
K	Cast Iron			●			
N	Non-ferrous Metals				●		
S	Titanium Alloy				●		
H	Hard materials (≤40HRC)	○	○				
	Hard materials (≥40HRC)						

Part Number		Min. Bore Dia.	Dimensions (mm)									MEGA COAT	PVD	Carbide	PCD		Ref. Page for Toolholder
			CW		RE	H	LF	LU	WF	WF_2	CDX						
		DMIN	inch	mm								PR1225	PR930	KW10	KPD001	KPD010	
VNGR	0410-11	4	0.039	1.0	0.05	3.9	30.8	11	0.1	3.5	0.8		●	●			
	0420-11	4	0.079	2.0	0.05	3.9	30.8	11	0.1	3.5	0.8		●	●			
	0510-11	5	0.039	1.0	0.05	3.9	30.8	11	0.1	4.4	1.0		●	●			
	0520-11	5	0.079	2.0	0.05	3.9	30.8	11	0.1	4.4	1.0		●	●			
	0610-20	6	0.039	1.0	0.05	3.9	39.8	20	0.3	5.2	1.8		●	●			
	0620-20	6	0.079	2.0	0.05	3.9	39.8	20	0.3	5.2	1.8		●	●			
	0710-20	7	0.039	1.0	0.05	3.9	39.8	20	0.3	6.2	2.0		●	●			
	0720-20	7	0.079	2.0	0.05	3.9	39.8	20	0.3	6.2	2.0		●	●			F38 F39
VNGR	0410-11NB	4	0.039	1.0	0.05	3.9	30.8	11	0.1	3.5	0.8				□		
	0420-11NB	4	0.079	2.0	0.05	3.9	30.8	11	0.1	3.5	0.8				□		
	0510-11NB	5	0.039	1.0	0.05	3.9	30.8	11	0.1	4.4	1.0				□		
	0520-11NB	5	0.079	2.0	0.05	3.9	30.8	11	0.1	4.4	1.0				□		
	0610-20NB	6	0.039	1.0	0.05	3.9	39.8	20	0.3	5.2	1.8				□	□	
	0620-20NB	6	0.079	2.0	0.05	3.9	39.8	20	0.3	5.2	1.8				□	□	
	0710-20NB	7	0.039	1.0	0.05	3.9	39.8	20	0.3	6.2	2.0				□	□	
	0720-20NB	7	0.079	2.0	0.05	3.9	39.8	20	0.3	6.2	2.0				□		

- Dimension **CDX** shows available grooving depth
- Dimension **WF_2** indicates the cutting edge is above the tool's center position

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)			VNG04 VNG05	VNG06 VNG07	Notes
	MEGACOAT	PVD	Carbide			
	PR1225	PR930	KW10	Feed Rate (ipr)		
Carbon Steel / Alloy Steel	★ 100~325	☆ 100~325	-	~0.0012	~0.0020	Wet
Stainless Steel	★ 100~250	☆ 100~250	-	~0.0008	~0.0012	
Non-ferrous Metals	-	-	★ ~975	~0.0020	~0.0031	

★ : 1st Recommendation ☆ : 2nd Recommendation

Swiss IQ Bars are sold in 5 piece boxes. *CBN & PCD Inserts are sold in 1 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

SIGC

Small Internal Grooving Series

New Clamping System Ensures a Firm Insert Hold for High-Precision Machining

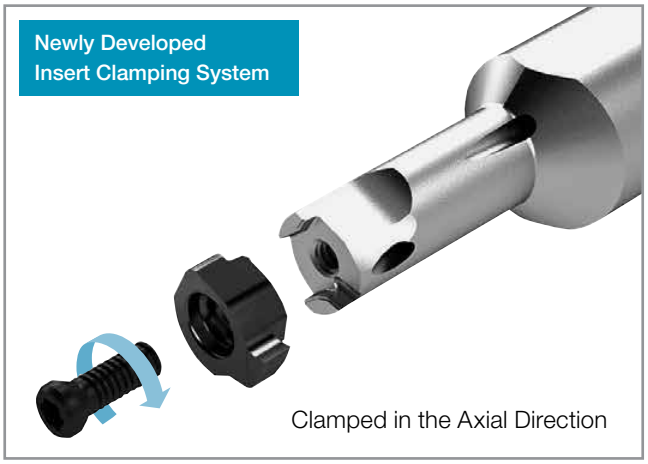
Excellent Chip Evacuation with Double Coolant Holes

Optimized Flute Shape with a ø8mm Minimum Bore Diameter

1 Firm Insert Clamping System for High-Precision Machining

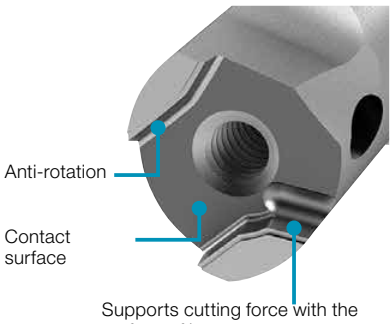
High strength clamping action by pulling the bottom surface of the insert in axial direction

Stable machining is achieved by ensuring a firm clamp on the insert



Clamping Part

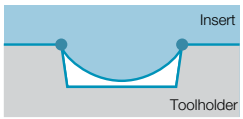
Large contact surface improves chip stability



SIGC

Bottom Surface Contact

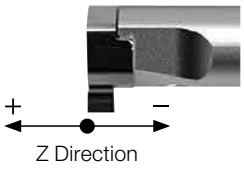
Competitor A

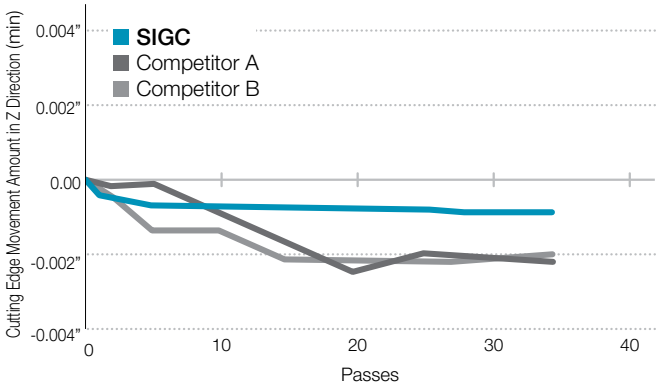


Point Contact

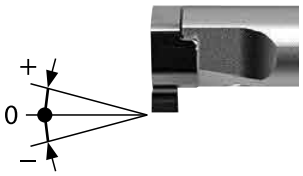
Cutting Edge Stability Position Comparison (Internal evaluation)

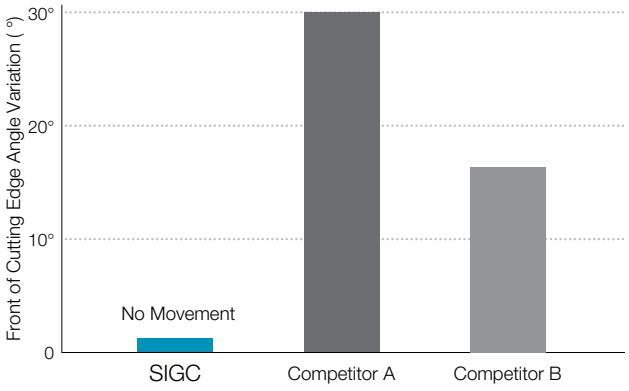
Cutting Edge Movement Amount in Z Direction (in.)





Front of Cutting Edge Angle Variation (°)





Cutting Conditions : Vc = 160 sfm, D.O.C. = 0.008", f = 0.002 ipr, Wet Workpiece: 4137 External Turning

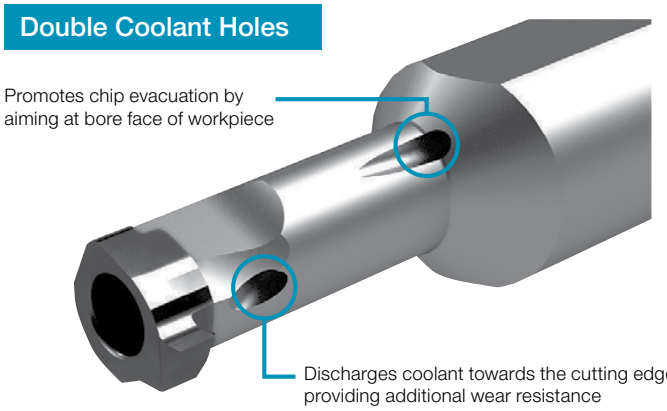
SIGC ensures high precision machining by preventing cutting edge position movement

NEW ITEMS!

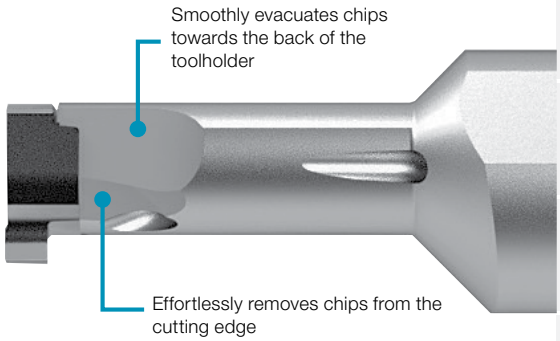
2 Firm Insert Clamping System for High-Precision Machining

Excellent chip evacuation with double coolant holes and optimized flute shape

Double Coolant Holes



Flute Shape

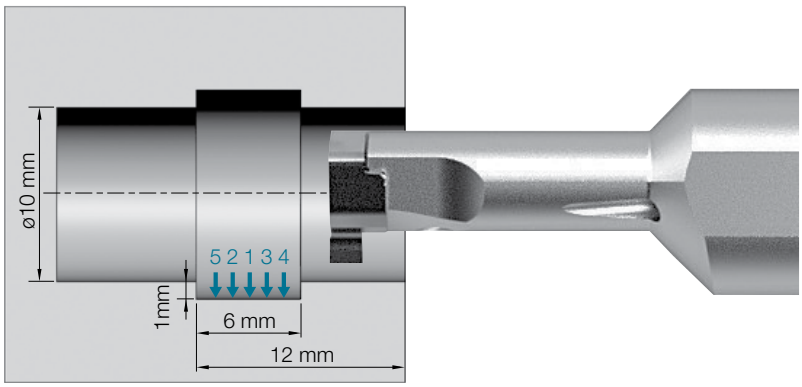


Provides better solutions for chip evacuation in small internal grooving applications

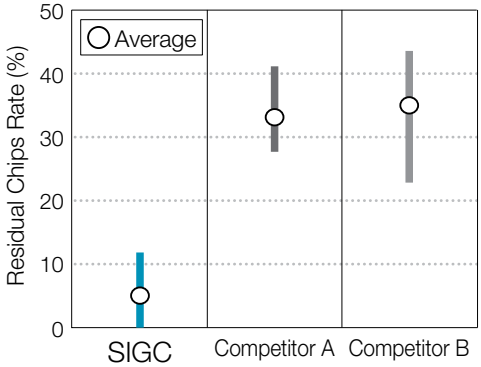
Prevents chip crunching

Chip Evacuation Comparison (Internal evaluation)

Cutting Conditions : Vc = 164 sfm, D.O.C. = 0.039" (Shouldering), f = 0.001 ipr, Wet (Internal Coolant), Workpiece : SCM415 (JIS), With Edge Width 0.079"

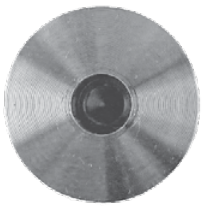
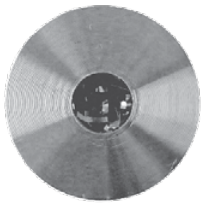
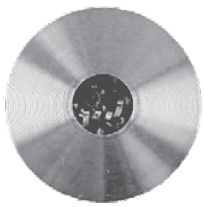


Residual Chips Rate (%)



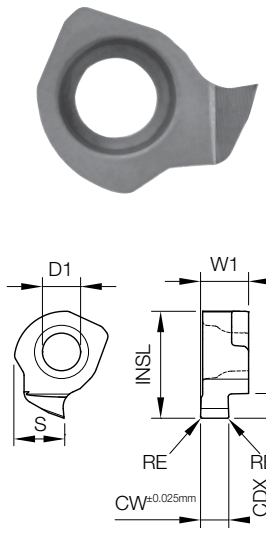
$$\text{Residual Chips Rate (\%)} = \frac{\text{Weight of remaining chip in the hole (g)}}{\text{Weight of chips removed (g)}} \times 100$$

Chip Evacuation Comparison

SIGC	Competitor A	Competitor B
		

No Remaining Chips
Good Chip Evacuation

Applicable Inserts

Insert (Right-handed Insert Shown)	Part Number	CW	CDX	RE	W1	INSL	S	D1	MEGACOAT NANO PLUS PR1725 R	MEGACOAT NANO PLUS PR1725 L	MEGACOAT NANO PR1535 R	MEGACOAT NANO PR1535 L	Applicable Toolholders
	GC08R/L 100-005	1.00	1.5	0.05	3.4	7.7	3.5	2.7	●	●	●	●	SIGCR/L0812-EH SIGCR/L0806-WH
	120-005	1.20							●	●	●	●	
	125-005	1.25							●	●	●	●	
	150-010	1.50		0.1					●	●	●	●	
	200-010	2.00							●	●	●	●	
	GC10R/L 100-005	1.00	2.2	0.05	4.7	9.6	4.4	3.5	●	●	●	●	SIGCR/L1016-EH SIGCR/L1008-WH-L85 SIGCR1008-WH-L100
	120-005	1.20							●	●	●	●	
	125-005	1.25							●	●	●	●	
	145-010	1.45		0.1					●	●	●	●	
	150-010	1.50							●	●	●	●	
	200-010	2.00							●	●	●	●	
	250-020	2.50		0.2					●	●	●	●	
	300-020	3.00							●	●	●	●	
	GC12R/L 100-005	1.00	2.2	0.05	4.7	11.6	5.4	3.5	●	●	●	●	SIGCR/L1216-EH SIGCR1210-WH-L95 SIGCR/L1210-WH-L110
	120-005	1.20							●	●	●	●	
	125-005	1.25							●	●	●	●	
	145-010	1.45		0.1					●	●	●	●	
	150-010	1.50							●	●	●	●	
	200-010	2.00							●	●	●	●	
	250-020	2.50		0.2					●	●	●	●	
	300-020	3.00							●	●	●	●	

- Dimension **CDX** shows available grooving depth.

Inserts are sold in 5 piece boxes.

Recommended Cutting Conditions

Workpiece	Recommended Insert Grade (Vc : sfm) MEGACOAT NANO PLUS PR1725	MEGACOAT NANO PR1535	(1) Feed Rate for Grooving (ipr) / (2) Feed Rate for Traversing (ipr) / (3) D.O.C. for Traversing (in) GC08R/L...	GC10R/L, GC12R/L 100 ~ 200...	GC10R/L, GC12R/L 250 ~ 300...	Notes
Carbon Steel	★ 160 - 260	☆ 160 - 260	(1) 0.0004 ~ 0.0012	(1) 0.0008 ~ 0.0016	(1) 0.0008 ~ 0.0016	Coolant
			(2) 0.0004 ~ 0.0012	(2) 0.0008 ~ 0.0016	(2) 0.0008 ~ 0.0016	
			(3) Max. 0.0020	(3) Max. 0.0020	(3) Max. 0.0039	
Alloy Steel	★ 160 - 260	☆ 160 - 260	(1) 0.0004 ~ 0.0012	(1) 0.0008 ~ 0.0016	(1) 0.0008 ~ 0.0016	
			(2) 0.0004 ~ 0.0012	(2) 0.0008 ~ 0.0016	(2) 0.0008 ~ 0.0016	
			(3) Max. 0.0020	(3) Max. 0.0020	(3) Max. 0.0039	
Stainless Steel	☆ 160 - 260	★ 160 - 260	(1) 0.0004 ~ 0.0012	(1) 0.0004 ~ 0.0012	(1) 0.0004 ~ 0.0012	
			(2) 0.0004 ~ 0.0012	(2) 0.0004 ~ 0.0012	(2) 0.0004 ~ 0.0012	
			(3) Max. 0.0020	(3) Max. 0.0020	(3) Max. 0.0039	

★ : 1st Recommendation ☆ : 2nd Recommendation

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(Technical Support) 800.823.7284 - Option 2
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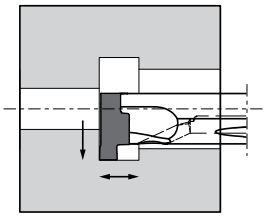
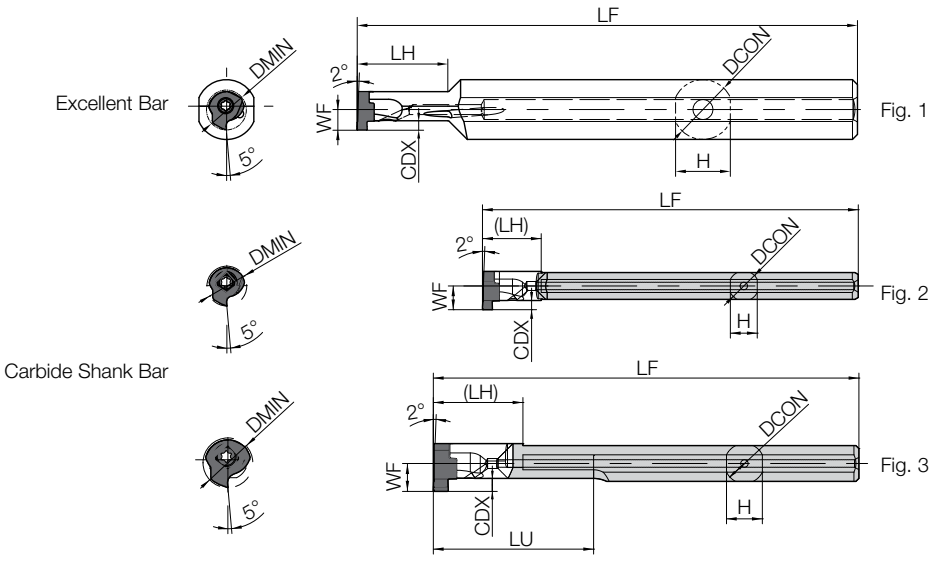
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

SIGC Bar (With Coolant Hole)





• Right-hand shown

Right-Hand Insert for Right-Hand Toolholder, Left-Hand Insert for Left-Hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)							Drawing	Spare Parts		Applicable Inserts G64
												Clamp Screw	Wrench	
	R	L	DMIN	DCON	H	LF	LU	LH	WF	CDX				
SIGC R/L 0812-EH	●	●	8	12	11	100	-	18	4.1	1.5	Fig.1	SB-2270TR/L	FT-7	GC08R/L100-005 ~ GC08R/L200-010
SIGC R/L 1016-EH	●	●	10	16	15	100	-	21	5.0	2.2		SB-3070TR/L	FT-8	GC10R/L100-005 ~ GC10R/L300-020
SIGC R/L 1216-EH	●	●	12	16	15	110	-	25	6.0	2.2				GC12R/L100-005 ~ GC12R/L300-020
SIGC R/L 0806-WH	●	●	8	6	5.4	75	-	12	4.8	1.5	Fig.2	SB-2270TR/L	FT-7	GC08R/L100-005 ~ GC08R/L200-010
SIGC R/L 1008-WH-L85	●	●	10	8	7.2	85	32	18	5.6	2.2	Fig.3	SB-3070TR/L	FT-8	GC10R/L100-005 ~ GC10R/L300-020
SIGCR 1008-WH-L100	●					100	45							GC10R100-005 ~ GC10R300-020
SIGCR 1210-WH-L95	●		12	10	9.2	95	32		6.6					GC12R100-005 ~ GC12R300-020
SIGC R/L 1210-WH-L110	●	●				110	45							GC12R/L100-005 ~ GC12R/L300-020

Mounting Inserts

Use compressed air or other measures to remove chips or debris from the insert pocket
Mount the insert into the toolholder and ensure the bottom makes contact with the end of the toolholder's surface
Keeping the insert seated, tighten the insert clamp screw at an appropriate torque
Recommended tightening torque for clamp screw: 0.8 Nm (SB-2270TR) 1.2 Nm (SB-3070TR)
L-hand clamp screw for L-hand Toolholders (See table to the right)

GC**R-***	GC**L-***
Lock **Right-hand screw**	Lock **Left-hand screw**
Toolholder : SIGCR****-** Insert : GC**R-*** Clamp Screw : SB-****TR	Toolholder : SIGCL****-** Insert : GC**L-*** Clamp Screw : SB-****TL

Applicable Sleeve

Shank Size (Diameter : mm)	06 (6 mm)	08 (8 mm)	10 (10 mm)	12 (12 mm)	16 (16 mm)
Toolholders	SIGC R/L 0806-WH	SIGC R/L 1008-WH-L85 SIGC R/L 1008-WH-L100	SIGC R/L 1210-WH-L95 SIGC R/L 1210-WH-L110	SIGC R/L 0812-EH	SIGC R/L 1016-EH SIGC R/L 1216-EH
SH Sleeve (for Boring Bars)	SH 06…	SH 08…	SH 10…	SH 12…	SH 16…
SHC Sleeve (for Coolant-Through)	-	SHC 08…	SHC 10…	SHC 12…	SHC 16…
SHA Sleeve	-	SHA 08…	SHA 10…	SHA 12…	-
EZH Sleeve (for EZ Bars)	EZH 06…ST/CT/HP…	EZH 08…ST/CT/HP…	-	-	-

Remove the positioning pin when mounting SIGC to the EZH-CT/HP Sleeve.
(Positioning function is not available.)

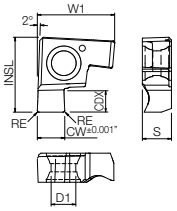
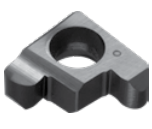
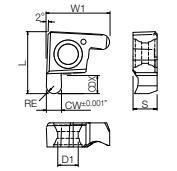
Applicable Inserts

(in)

Part Number	W1	INSL	S	D1
GE□...-A	0.263	0.256	0.102	0.098
GER...-AR				
GE□...-B	0.333	0.323	0.125	0.106
GER...-BR				

		Cermet	MEGACOAT	PVD Coated Carbide	Carbide	
P	Carbon Steel / Alloy Steel		●	◔		
M	Stainless Steel		●	◔		
K	Cast Iron					◔
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)		●	○		

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Dimensions (in) CW inch	CW mm	CDX	RE	Cermet TN6020 R	Cermet TN6020 L	MEGACOAT PR1225 R	MEGACOAT PR1225 L	PVD Coated Carbide PR1025 R	PVD Coated Carbide PR1025 L	Carbide GW15 R	Carbide GW15 L	Carbide KW10 R	Carbide KW10 L	Applicable Toolholders	Ref. Page for Toolholder
2-Edge	GE□ 031-002A	0.031		0.037	0.002					●	●					SIGE□05EH SIGE□...A-EH SIGE□...A-WH	G69 G70
	041-002A	0.041		0.059						●	●						
	047-002A	0.047								●	●						
	058-002A	0.058	-							●	●						
	062-004A	0.062			0.004					●	●						
	072-004A	0.072								●	●						
	078-004A	0.078								●	●						
	GE□ 100-005A		1.00	0.059	0.002	●		●	●	●	●			●			
	120-005A		1.20			●		●	●	●				△			
	125-005A	-	1.25			△		●	●	●	●			●			
	150-010A		1.50		0.004	●		●	●	●				●	●		
	200-010A		2.00			●		●	●	●	●			●			
	GE□ 031-002B	0.031		0.044	0.002					●	●					SIGE□06EH SIGE□...B-EH SIGE□...B-WH SIGER...B-WH-90	G69 G70 G71
	041-002B	0.041		0.087						●	●						
	047-002B	0.047								●	●						
	058-002B	0.058								●	●						
	062-004B	0.062			0.004					●	●						
	072-004B	0.072								●	●						
	078-004B	0.078	-							●	●						
	088-004B	0.088								●	●						
	094-004B	0.094								●	●						
	097-004B	0.097								●	●						
	105-008B	0.105			0.008					●	●						
	110-008B	0.110								●	●						
	122-008B	0.122								●	●						
	GE□ 100-005B		1.00	0.087	0.002	●		●	●	●	●			●	●		
	120-005B		1.20			●		●	●	●				●			
	125-005B		1.25			△		●	●	●				●			
	145-010B	-	1.45		0.004	●		●	●	●				●			
	150-010B		1.50			●	●	●	●	●				●			
	200-010B		2.00			●	●	●	●	●	●			●	●		
	250-020B		2.50		0.008	●	●	●	●	●	●			●			
	300-020B		3.00			●	●	●	●	●	●			●	●		
 2-Edge Full-R	GER 100-050AR		1.00	0.059	0.020			●		●				●		SIGER05EH SIGER...A-EH SIGER...A-WH	G69 G70
	200-100AR	-	2.00		0.039			●		●				△			
	GER 100-050BR		1.00	0.087	0.020			●		●				●		SIGER...B-EH SIGER...B-WH SIGER...B-WH-90	G69 G70 G71
	200-100BR		2.00		0.039			●		●				●			

• Dimension **CDX** shows available grooving depth.

Recommended Cutting Conditions G72

Inserts are sold in 10 piece boxes.

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Applicable Inserts

(in)

Part Number	W1	INSL	S	D1
GER...-CM	0.228	0.452	0.159	0.110
GER...-DM	0.268	0.647	0.199	0.134
GER...-EM	0.376	0.853	0.219	0.173

		Cermet	MEGA COAT	PVD Coated Carbide	Carbide	
P	Carbon Steel / Alloy Steel		●	◔		
M	Stainless Steel		●	◔		
K	Cast Iron					◔
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)		●	○		
	Hard materials (≥40HRC)					

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Dimensions (in) CW inch	CW mm	CDX	RE	TN6020 R	TN6020 L	PR1225 R	PR1225 L	PR1025 R	PR1025 L	GW15 R	GW15 L	KW10 R	KW10 L	Applicable Toolholders	Ref. Page for Toolholder
2-Edge Molded Chipbreaker	GER 150-010CM	-	1.50	0.098	0.004			●		●						SIGE[R/L]...C-EH SIGE[R/L]...C-WH SIGER...C-WH-90	G69 G70 G71
	GER 200-010CM		2.00					●		●							
	GER 250-020CM		2.50	0.098	0.008			●		●							
	GER 300-020CM		3.00					●		●							
	GER 350-020CM		3.50					●		●							
	GER 150-010DM	-	1.50	0.118	0.004			●		●						SIGER...D-EH	G69
	GER 200-010DM		2.00	0.126				●		●							
	GER 230-020DM		2.30		0.008			●		●							
	GER 250-020DM		2.50					●		●							
	GER 300-020DM		3.00					●		●							
	GER 350-020DM		3.50	0.177				●		●							
	GER 400-020DM		4.00					●		●							
	GER 150-010EM	-	1.50	0.118	0.004			●		●						SIGER...E-EH	
	GER 200-010EM		2.00	0.126				●		●							
	GER 250-020EM		2.50	0.177	0.008			●		●							
	GER 300-020EM		3.00					●		●							
	GER 350-020EM		3.50	0.217				●		●							
	GER 400-020EM		4.00					●		●							
	GER 450-020EM		4.50	0.256				●		●							
	GER 500-020EM		5.00					●		●							

• Dimension **CDX** shows available grooving depth.

Recommended Cutting Conditions G72

Chip Evacuation Comparison (Molded Chipbreaker)

Toolholder \ f (ipr)	SCM415 (Min. Bore Dia.) 0.0020"	0.0028"	0.0039"	Evaluation
SIGER1612C-EH GER300-020CM (PR1025)				Good Chip Control
Competitor A (Width 0.1181")			Insert Cracks	Unstable Chip Control and Biting
Competitor B (Width 0.1181")				Unstable Chip Control and Biting

(Vc = 330 sfm, D.O.C. = 0.079", Wet) (Internal Evaluation)

Chip Evacuation Comparison
(Min. Cutting Dia. Ø0.3150")

Toolholder \ f (ipr)	SCM415 0.0008"	Evaluation
SIGER0808A-EH GER200-010A (PR1025)		Good Chip Control
Competitor C (Width 0.079")		Unstable Chip Control and Biting

(Vc = 175 sfm, D.O.C. = 0.049", Wet) (Internal Evaluation)

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

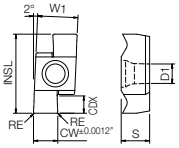
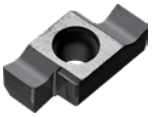
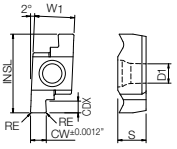
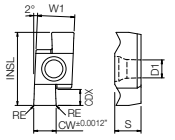
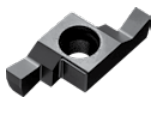
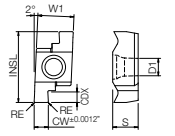
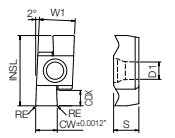
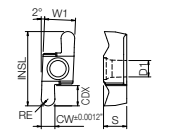
Applicable Inserts

(in)

Part Number	W1	INSL	S	D1
GE□...-C	0.228	0.452	0.159	0.110
GER...-CR				
GE□...-D	0.268	0.647	0.199	0.134
GER...-DR				
GE□...-E	0.376	0.853	0.219	0.173

		Cermet	MEGACOAT	PVD Coated Carbide	Carbide	
P	Carbon Steel / Alloy Steel		●	◔		
M	Stainless Steel		●	◔		
K	Cast Iron					◔
N	Non-ferrous Metals					●
S	Titanium Alloy					●
H	Hard materials (≤40HRC)		●	○		
	Hard materials (≥40HRC)					

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Dimensions (in) CW inch	CW mm	CDX	RE	Cermet TN6020 R	Cermet TN6020 L	MEGACOAT PR1225 R	MEGACOAT PR1225 L	PVD Coated Carbide PR1025 R	PVD Coated Carbide PR1025 L	Carbide GW15 R	Carbide GW15 L	Carbide KW10 R	Carbide KW10 L	Applicable Toolholders	Ref. Page for Toolholder
2-Edge 	GE□ 100-005C		1.00		0.002	●	●	●	●	●	●	●	●				
	120-005C		1.20			●		●	●	●	●	●					
	125-005C		1.25			●		●		●	●	●	●				
	140-005C		1.40			●		●		●		●					
	145-010C		1.45		0.004			●		●	●	△	△				
	150-010C		1.50			●		●	●	●	●	●	●			SIGE□...C-EH	G69
	170-010C	-	1.70	0.098		△		●		●		●				SIGE□...C-WH	G70
	185-010C		1.85					●		●		△				SIGER...C-WH-90	G71
	195-010C		1.95					●		△	△						
	200-010C		2.00			●		●	●	●	●	●	●				
	250-020C		2.50		0.008	●	●	●	●	●		●	●				
	300-020C		3.00			●	●	●	●	●	●	●					
	350-020C		3.50			△	△	●		●	●	●					
  	GE□ 100-005D		1.00		0.002	●		●	●	●	●	●	●				
	140-005D		1.40	0.098		●		●	●	●		●					
	145-010D		1.45		0.004	●		●		●	●						
	150-010D		1.50	0.118		●	●	●	●	●	●	●	●				
	170-010D		1.70			●		●	●	●		△					
	185-010D		1.85							●							
	195-010D		1.95							●							
	200-010D		2.00	0.126		●	●	●	●	●	●	●					
	225-010D		2.25			△		●	●	●	●						
	230-020D	-	2.30		0.008	●		●	●	△		●				SIGE□...D-EH	
	250-020D		2.50			●	●	●	●	●	●	●					
	275-020D		2.75							△							
	280-020D		2.80							●		●					
	300-020D		3.00	0.177		●	●	●	●	●	●	●	●				
	330-020D		3.30							●							
	350-020D		3.50					●		△		△	△				
	400-020D		4.00			●		●	●	●		●					
 2-Edge 	GE□ 100-005E		1.00	0.098	0.002	●		●	●	●		●					G69
	150-010E		1.50	0.118	0.004	●		●	●	●	●	●	●				
	170-010E		1.70			●		●	●	●	●	●					
	185-010E		1.85			●				●	●						
	195-010E		1.95			△				●	●						
	200-010E		2.00	0.126		●		●		●	●	●	●				
	225-010E		2.25			●		●		●		●					
	230-020E		2.30		0.008	●	●	●		●		●					
	250-020E		2.50	0.177		●	●	●	●	●	●	●	●				
	275-020E		2.75						●	△		●					
	280-020E		2.80			●		●	●	●	●						
	300-020E	-	3.00			●	●	●	●	●	●	●	●			SIGE□...E-EH	
	330-020E		3.30			●		●		●	●						
	350-020E		3.50			●	●	●		●	●	●					
	400-020E		4.00	0.217		●		●		●	●	●	●				
	430-020E		4.30			●		●									
	450-020E		4.50			●		●		△	△	●					
	460-020E		4.60	0.256				●		●							
	500-020E		5.00			●		●		●	●	●					
2-edge Full-R 	GER 200-100CR		2.00		0.039			●		●		●				SIGER...C-EH	G69
	250-125CR		2.50	0.098	0.049			●		●		●				SIGER...C-WH	G70
	300-150CR	-	3.00		0.059			●		●		●				SIGER...C-WH-90	G71
	GER 200-100DR		2.00	0.126	0.039			●		●		●				SIGER...D-EH	G69
	300-150DR		3.00	0.177	0.059			●		●		●					

- Dimension **CDX** shows available grooving depth.

Recommended Cutting Conditions G72

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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(Technical Support) 800.823.7284 - Option 2
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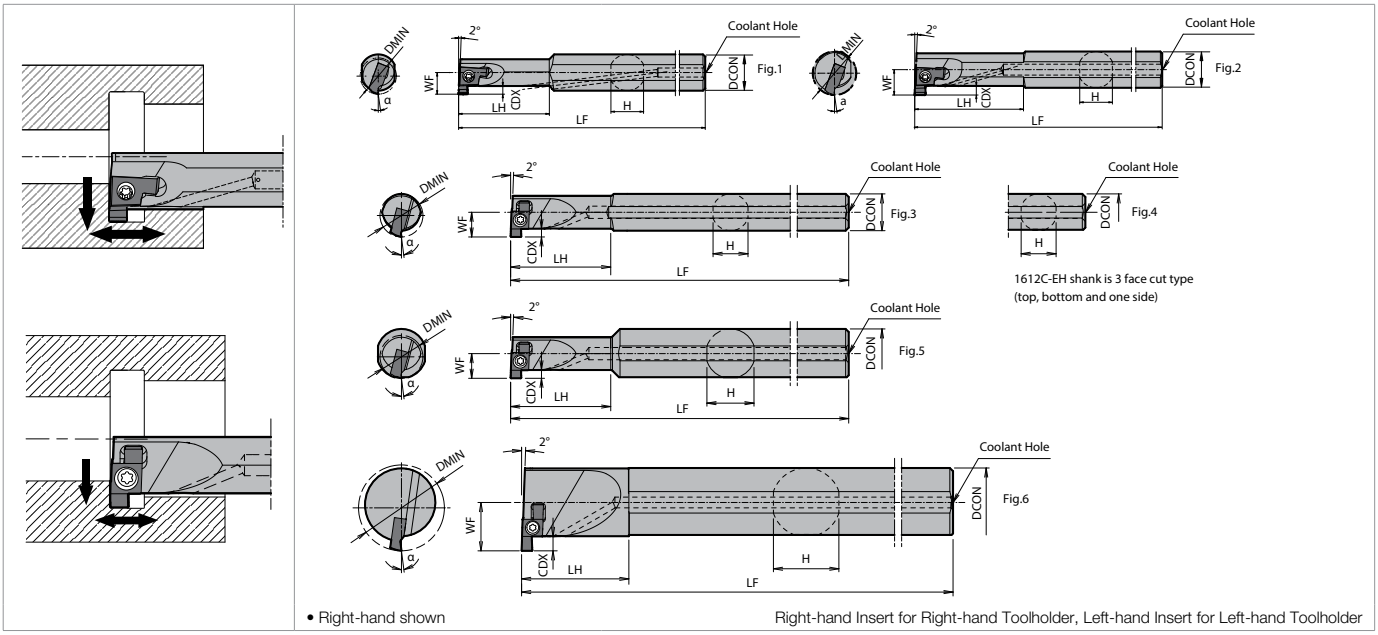
SIGE-EH Excellent Bar (With Coolant Hole)



• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	CDX	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench FT	Spare Parts: Wrench DT	Applicable Inserts (G66~G68)
SIGE-□	05EH	●	●	inch	0.313	0.313	0.283	3.940	0.787	0.177	0.059	Fig.1	SB-2045TRN	FT-6	-	GE□031-002A~GE□200-010A GER100-050AR~GER200-100AR
	06EH	●	●		0.394	0.375	0.354	4.920	0.984	0.232	0.087	Fig.1	SB-2255TR	-	DT-7	GE□031-002B~GE□300-020B GER100-050BR~GER200-100BR
	0809C-EH	●	●		0.551	0.500	0.460	5.900	1.300	0.315	0.098	Fig.3	SB-2570TR	FT-8	-	GE□100-005C~GE□350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	0810C-EH	●	●		0.630	0.500	0.460	5.900	0.788	0.335	0.098					
	1213D-EH	●	●		0.790	0.750	0.710	7.09	1.575	0.477	0.177	Fig.5	SB-3080TR	FT-10	-	GE□100-005D~GE□400-020D GER150-010DM~GER400-020DM GER200-100DR~GER300-150DR
	1616E-EH	●	●		1.000	1.000	0.960	7.88	1.772	0.614	0.255	Fig.5	SB-4085TR	FT-15	-	GE□100-005E~GE□500-020E GER150-010EM~GER500-020EM
	2020E-EH	●	●		1.250	1.250	1.170	8.66	2.166	0.748	0.255					
	2025E-EH	●	●		1.575	1.250	1.170	9.84	1.772	0.906	0.255	Fig.6				
SIGE-□	0808A-EH	●	●	mm	8	8	7.2	100	20	4.8	1.5	Fig.1	SB-2045TRN	FT-6	-	GE□031-002A~GE□200-010A GER100-050AR~GER200-100AR
	1010B-EH	●	●		10	10	9.0	125	25	6.2	2.2	Fig.1	SB-2255TR	-	DT-7	GE□031-002B~GE□300-020B GER100-050BR~GER200-100BR
	1210B-EH	●	●		12	10	9.0	125	30	7.0	2.2	Fig.2				
	1412C-EH	●	●		14	12	11.4	150	33	8.0	2.5	Fig.3	SB-2570TR	FT-8	-	GE□100-005C~GE□350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	1612C-EH	●	●		16	12	11.4	150	20	8.5	2.5	Fig.4				
	1616C-EH	●	●		16	16	15.0	160	36	9.0	2.5	Fig.5				
	2020D-EH	●	●		20	20	19.0	180	40	12.1	4.5	Fig.5	SB-3080TR	FT-10	-	GE□100-005D~GE□400-020D GER150-010DM~GER400-020DM GER200-100DR~GER300-150DR
	2525E-EH	●	●		25	25	24.0	200	45	15.6	6.5	Fig.5	SB-4085TR	FT-15	-	GE□100-005E~GE□500-020E GER150-010EM~GER500-020EM
	3232E-EH	●	●		32	32	30.4	220	55	19.0	6.5					
	4032E-EH	●	●		40	32	30.4	250	45	23.0	6.5	Fig.6				

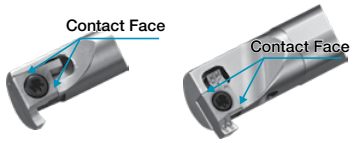
• Dimension **CDX** shows available grooving depth. See **CDX** dimension of insert table for actual grooving depth.

Features

- **Traditional top clamp has been replaced with a screw clamp only. This design creates a large chip pocket that provides excellent chip evacuation**

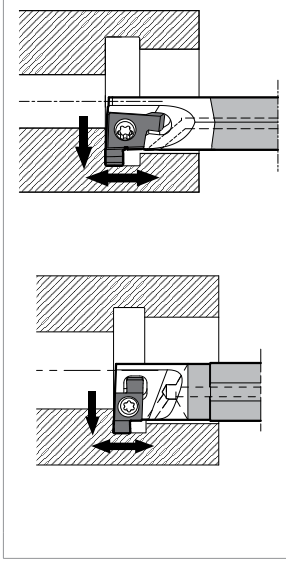
- **Cost effective chip control from a molded chipbreaker**

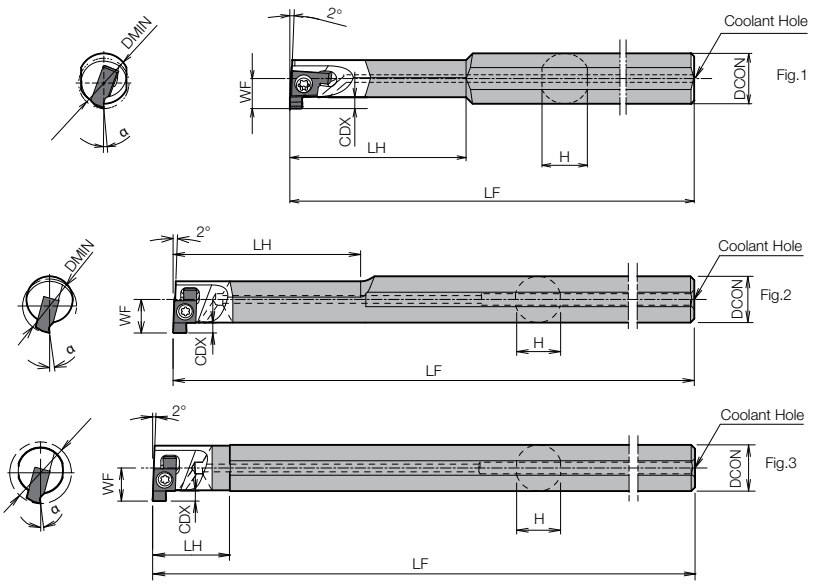
- **Cutting Edge is Protected in the Pocket**



- **8mm Minimum Cutting Diameter with 2-Edge Design**

SIGE-WH Carbide Shank Bar (With Coolant Hole)





• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	CDX	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench		Applicable Inserts
SIGE	0808A-WH	●	●	8	8	7.2	125	28	4.8	1.5	Fig.1	SB-2045TRN	FT-6	-	GE 031-002A~GE 200-010A GER100-050AR~GER200-100AR
	1010B-WH	●	●	10	10	9.0	125	35	6.2	2.2	Fig.1	SB-2255TR	-	DT-7	GE 031-002B~GE 300-020B GER100-050BR~GER200-100BR
	1210B-WH	●	●	12	10	9.0	140	45	7.0	2.2					
	1412C-WH	●	●	14	12	11.4	150	50	8.7	2.5	Fig.2	SB-2570TR	FT-8	-	GE 100-005C~GE 350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR
	1612C-WH	●	●	16	12	11.4	180	20	8.5	2.5	Fig.3				

• Dimension **CDX** shows available grooving depth. See **CDX** dimension of insert table for actual grooving depth.

Applicable Inserts and Rake Angle (α) After Installment of Insert

Toolholder		Ground Chipbreaker	α (°)	Molded Chipbreaker	α (°)
SIGE	05EH	GE 031-002A~GE 200-010A GER100-050AR~GER200-100AR	5°	-	-
	06EH	GE 031-002B~GE 300-020B GER100-050BR~GER200-100BR	5°	-	-
SIGE	0808A-EH	GE 100-005A~GE 200-010A GER100-050AR~GER200-100AR	5°	-	-
	0809C-EH 0810C-EH	GE 100-005C~GE 350-020C GER200-100CR~GER300-150CR	8	GER150-010CM~GER350-020CM	10°
	1010B-EH 1210B-EH	GE 100-005B~GE 300-020B GER100-050BR~GER200-100BR	5°	-	-
	1213D-EH	GE 100-005D~GE 400-020D GER200-100DR~GER300-150DR	9°	GER150-010DM~GER400-020DM	10°
	1412C-EH 1612C-EH 1616C-EH	GE 100-005C~GE 350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°
	1616E-EH	GE 100-005E~GE 500-020E	10°	GER150-010EM~GER500-020EM	10°
	2020D-EH	GE 100-005D~GE 400-020D GER200-100DR~GER300-150DR	9°	GER150-010DM~GER400-020DM	10°
	2020E-EH 2025E-EH 2525E-EH 3232E-EH 4032E-EH	GE 100-005E~GE 500-020E	10°	GER150-010EM~GER500-020EM	10°
SIGE	0808A-WH	GE 031-002A~GE 200-010A GER100-050AR~GER200-100AR	5°	-	-
	1010B-WH 1210B-WH 1008B-WH-90 1210B-WH-90	GE 031-002B~GE 300-020B GER100-050BR~GER200-100BR	5°	-	-
	1412C-WH 1612C-WH 1412C-WH-90	GE 100-005C~GE 350-020C GER200-100CR~GER300-150CR	8°	GER150-010CM~GER350-020CM	10°

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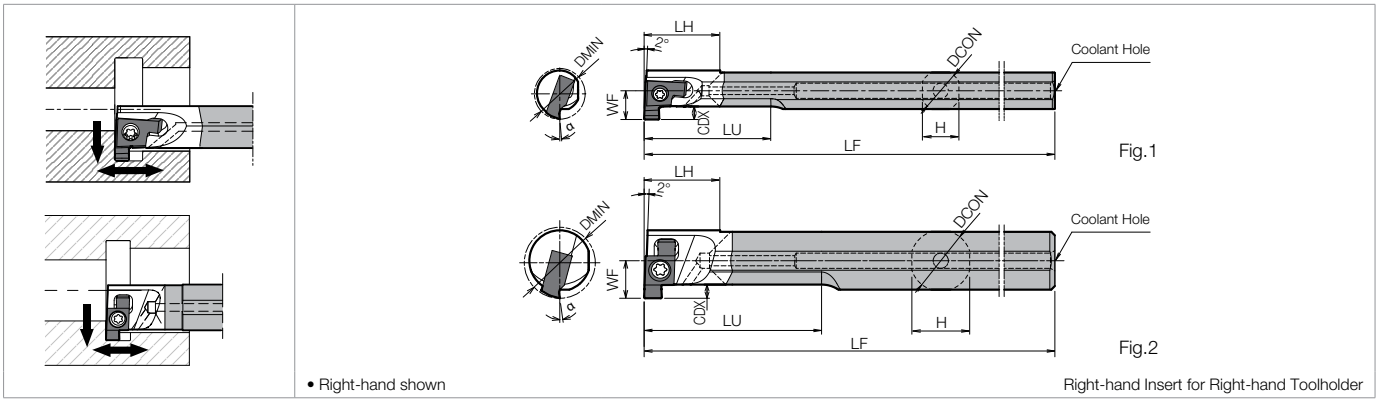
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

SIGE-WH-90 Carbide Shank Bar (With Coolant Hole)



• Right-hand shown

Right-hand Insert for Right-hand Toolholder

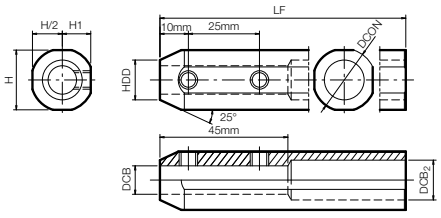
Toolholder Dimensions

Part Number		Stock	Min. Bore Dia.	Dimensions (mm)							Drawing	Spare Parts		Applicable Inserts
												Clamp Screw	Wrench	
			DMIN	DCON	H	LF	LU	*LH	WF	CDX				G66~G68
SIGER	1008B-WH-90	●	10	8	7.2	90	25	15	5.6	2.2	Fig.1	SB-2255TR	FT-7	GER031-002B~GER300-020B GER100-050BR~GER200-100BR
	1210B-WH-90	●	12	10	9.4	90	30	15	6.6	2.2				
	1412C-WH-90	●	14	12	11.4	90	35	15	7.4	2.5	Fig.2	SB-2570TR	FT-8	GER100-005C~GER350-020C GER150-010CM~GER350-020CM GER200-100CR~GER300-150CR

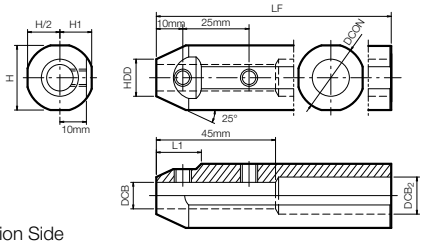
*Dimension **LH** shows minimum overhang length.

• Ref. to Page G70 for applicable Insert & Rake Angle (α) after Installment of Insert.

Applicable Sleeves



Holder Installation Side Fig.1



Holder Installation Side Fig.2

Part Number		Stock	Dimensions (mm)								Drawing	Spare Parts		Applicable Machine Manufacturer
												Screw	Wrench	
			DCB	DCON	HDD	DCB_2	H	H1	LF	L1				
SHA	0820-120	□	8	20.00	14	12	19.0	9.25	120	-	Fig.1	HS6x4P	LW-3	Amada Machine Tools Eguro Tsugami Citizen Machinery
	1020-120	●	10	20.00	14	12	19.0	9.25	120	-				
SHA	0825.0-135	●	8	25.00	14	14	24.0	11.50	135	17	Fig.2	HS6x4P	LW-3	
	1025.0-135	●	10	25.00	14	14	24.0	11.50	135	17				
	1225.0-135	●	12	25.00	16	14	24.0	11.50	135	17				
SHA	0819-120	□	8	19.05	14	12	18.0	8.75	120	-	Fig.1	HS6x4P	LW-3	Citizen Machinery
	1019-120	□	10	19.05	14	12	18.0	8.75	120	-				
SHA	0820-120	□	8	20.00	14	12	19.0	9.25	120	-				
	1020-120	●	10	20.00	14	12	19.0	9.25	120	-				
SHA	0825.4-120	●	8	25.40	14	14	24.4	12.00	120	17	Fig.2	HS6x4P	LW-3	
	1025.4-120	●	10	25.40	14	14	24.4	12.00	120	17				
	1225.4-120	●	12	25.40	16	14	24.4	12.00	120	17				
SHA	0822-125	●	8	22.00	14	14	21.0	10.00	125	-	Fig.1	HS6x4P	LW-3	Star Micronics Nomura DS
	1022-125	●	10	22.00	14	14	21.0	10.00	125	-				
	1222-125	□	12	22.00	16	14	21.0	10.00	125	-				
SHA	0823-120	□	8	23.00	14	14	22.0	10.50	120	16	Fig.2	HS6x4P	LW-3	Nomura DS
	1023-120	□	10	23.00	14	14	22.0	10.50	120	16				
	1223-120	□	12	23.00	16	14	22.0	10.50	120	16				

※ : Depth of DCB…45mm (All types of SHA sleeves)

• Choose sleeves with **DCB** dimension that matches the **DCON** dimension of the toolholder.

• Machine manufacturers are in random order.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

Recommended Cutting Conditions (Ground Chipbreaker : GE...A(R), GE...B(R))

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)			Notes
	Cermet	MEGACOAT	PVD	Carbide	GE...031-002A ~ GE...078-004A GE...100-005A ~ GE...200-010A GER100-050AR ~ GER200-100AR	GE...031-002B ~ GE...088-004B GE...100-005B ~ GE...200-010B GER100-050BR ~ GER200-100BR	GE...094-004B ~ GE...122-008B GE...250-020B ~ GE...300-020B	
	TN6020	**PR1225**	**PR1025**	**KW10**				
Carbon Steel	☆ 160~260	★ 160~260	☆ 160~260	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	Wet
Alloy Steel	☆ 160~260	★ 160~260	☆ 160~260	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	
Stainless Steel	-	★ 160~260	☆ 160~260	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	
Cast Iron	-	-	-	★ 160~260	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	
Aluminum	-	-	-	★ 160~330	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0079	
Brass	-	-	-	★ 160~330	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0079	

• Use PVD coated grade or uncoated carbide for traversing with edge width 0.0394"(1mm). (GE...100-005A/100-005B)

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Ground Chipbreaker : GE...C(R),GE...D(R),GE...E)

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)						Notes
	Cermet	MEGA-COAT	PVD	Carbide	GE... 100~200-010C 200-100CR	GE... 250~350-020C 250~300-150CR					
	TN6020	**PR1225**	**PR1025**	**GW15**	GE... 100~145-010D	GE... 150~195-010D	GE... 200~280-020D 200-100DR		GE... 300~400-020D 300-150DR		
					GE... 100-010E	GE... 150~195-010E	GE... 200~225-010E 230-020E	GE... 250~330-020E		GE... 350~430-020E	GE... 450~500-020E
Carbon Steel	☆ 390~590	★ 200~460	☆ 200~460	-	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	Wet
Alloy Steel	☆ 330~520	★ 200~390	☆ 200~390	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	
Stainless Steel	☆ 230~430	★ 200~360	☆ 200~360	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	
Cast Iron	-	-	-	★ 200~330	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	
Aluminum	-	-	-	★ 490~980	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	
Brass	-	-	-	★ 330~820	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	

• Use PVD coated grade or uncoated carbide for traversing with edge width 0.0394" (1mm). (GE...100-010C / 100-010D / 100-010E)

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Molded Chipbreaker : GER...CM, GER...DM, GER...EM)

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)						Notes
	Cermet	MEGA COAT	PVD	Carbide	GER 150~200-010CM	GER 250~350-020CM					
	TN6020	**PR1225**	**PR1025**	**GW15**	GER 150~200-010DM		GER 230~250-020DM	GER 300~400-020DM			
					GER 150~200-010EM			GER 250~350-020EM	GER 350~400-020EM	GER 450~500-020CM	
Carbon Steel	-	★ 200~520	☆ 200~520	-	① 0.0012~0.0039 ② 0.0012~0.0039 ③ Max. 0.0394	① 0.0012~0.0047 ② 0.0012~0.0039 ③ Max. 0.0591	① 0.0016~0.0047 ② 0.0016~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	Wet
Alloy Steel	-	★ 200~460	☆ 200~460	-	① 0.0012~0.0039 ② 0.0012~0.0039 ③ Max. 0.0394	① 0.0012~0.0039 ② 0.0012~0.0039 ③ Max. 0.0591	① 0.0016~0.0047 ② 0.0016~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	
Stainless Steel	-	★ 200~360	☆ 200~360	-	① 0.0012~0.0031 ② 0.0012~0.0039 ③ Max. 0.0394	① 0.0012~0.0031 ② 0.0012~0.0039 ③ Max. 0.0591	① 0.0016~0.0031 ② 0.0016~0.0039 ③ Max. 0.0591	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0591	

★ : 1st Recommendation ☆ : 2nd Recommendation

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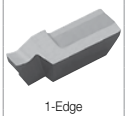
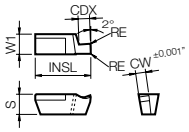
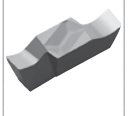
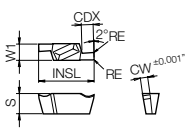
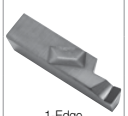
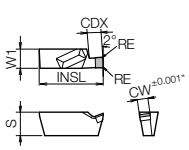
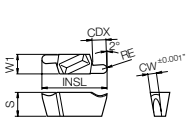
Applicable Inserts (GIV / GIV-E / GIV-W)

Part Number	W1	INSL	S
GV□…SS GVR09-...	0.142 0.130	0.354	0.118
GV□…S	0.157	0.433	0.157
GV□…A GVR12-...	0.157	0.472	0.197
GV□…B GVR15-...	0.177	0.591	0.217
GV□…C GVR21-...	0.228	0.827	0.256

Classification of Usage
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel				●	◔			
M	Stainless Steel				●	◔			
K	Cast Iron						●		
N	Non-ferrous Metals						●	●	
S	Heat-resistant Alloy						●	●	
H	Hard materials (≤40HRC)				○	○			
	Hard materials (≥40HRC)								

Applicable Toolholders ➔ G75

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (in) CW inch	CW mm	CDX	RE	Cermet TN90 R	TN90 L	TC40 R	TC40 L	TC60 R	TC60 L	MEGA COAT PR1225 R	PR1225 L	PVD Carbide PR930 R	PR930 L	Carbide KW10 R	KW10 L	PCD KPD010 R	KPD010 L	Applicable Toolholders
 1-Edge 	GV□ 100-020SS	GV□ 100SS	0.039	1.00	0.091	0.008	△				●		●	●	●		●	●			GIV□…1SS SI-GIVR10-09
	125-020SS	125SS	0.049	1.25			△				●		●	●	●		●	●			
	145-020SS	145SS	0.057	1.45			△				●		●	●	●	●	●	●			
	200-020SS	200SS	0.079	2.00			△				●		●	●	●		●	●			
	250-020SS	250SS	0.098	2.50							●		●	●	●		●	●			
	300-020SS	300SS	0.118	3.00			△				●		●	●	●	●	●	●			
	GVR 09-031	GV□ 09-031	0.031	0.79	0.091	0.008					●										
	09-062	09-062	0.062	1.57							●										
	09-125	09-125	0.125	3.18							●										
	GV□ 100-020S	GV□ 100S	0.039	1.00	0.091	0.008	△		●	●	●		●	●	●	●	●	●			GIV□…1S GIV□…1SE
	125-020S	125S	0.049	1.25			△		●	●	●		●		●		●	●			
	145-020S	145S	0.057	1.45					●		●		●		●		●	●			
	185-020S	185S	0.073	1.85					●		●		●		●		●	●			
	200-020S	200S	0.079	2.00			△		●	●	●		●	●	●	●	●	●			
	250-020S	250S	0.098	2.50					●		●		●	●	●		●	●			
	340-020S	340S	0.134	3.40					●		●		●		●		●	●			
 2-Edge 	GVR 12-032	GV□ 12-032	0.032	0.81	0.091	0.008			●												
	12-062	12-062	0.062	1.57					●												
	12-094	12-094	0.094	2.39					●												
	12-125	12-125	0.125	3.18					●												
	GV□ 100-020A	GV□ 100A	0.039	1.00	0.091	0.008	△		●	●	●	●	●	●	●	●	●	●			SI-GIVR12-12 GIV□…1A GIV□…1AE GIV□…1AW
	125-020A	125A	0.049	1.25			△		●	●	●		●	●	●		●	●			
	145-020A	145A	0.057	1.45			△		●	●	●	●	●	●	●		●	●			
	185-020A	185A	0.073	1.85			△		●		●		●	●	●		●	●			
	200-020A	200A	0.079	2.00			△		●	●	●	●	●	●	●	●	●	●			
	250-020A	250A	0.098	2.50			△		●		●		●	●	●		●	●			
	300-020A	300A	0.118	3.00			△		●		●		●		●		●	●			
	340-020A	340A	0.134	3.40					●		●		●		●		●	●			
	GVR 15-062	GVR 15-062	0.062	1.57	0.091	0.008			●												
	15-094	15-094	0.094	2.39					●												
	GV□ 145-020B	GV□ 145B	0.057	1.45	0.110	0.008	△		●	●	●	●	●	●	●	●	●	●			SI-GIVR16-15 GIV□…1B GIV□…1BE GIV□…1BW
	185-020B	185B	0.073	1.85			△		●	●	●	●	●		●		●				
	200-020B	200B	0.079	2.00	0.126		△	△	●	●	●	●	●	●	●	●	●	●			
	230-020B	230B	0.091	2.30			△		●		●	●	●	●	●	●	●				
	250-020B	250B	0.098	2.50			△		●	●	●	●	●	●	●	●	●	●			
	280-020B	280B	0.110	2.80					●	●	●		●		●		●				
	300-020B	300B	0.118	3.00			△	△	●	●	●	●	●	●	●	●	●	●			SI-GIVR16-15 GIV□…2B GIV□…2BE GIV□…2BW
	340-020B	340B	0.134	3.40	0.165	0.008			●		●		●		●		●				
	400-020B	400B	0.157	4.00			△		●		●		●		●		●	●			
	GVR 21-125	GVR 21-125	0.125	3.18	0.165	0.008			●												SI-GIVR20-21 GIV□…1C GIV□…1CE GIV□…1CW
	GV□ 280-020C	GV□ 280C	0.110	2.80	0.177	0.008	△		●	●	●	●	●	●	●		●	●			
	300-020C	300C	0.118	3.00			△	△	●	●	●	●	●	●	●	●	●	●			
	340-020C	340C	0.134	3.40	0.217	0.008	△		●	●	●	●	●	●	●	●	●	●			
	400-020C	400C	0.157	4.00			△		●	●	●	●	●	●	●	●	●	●			SI-GIVR20-21 GIV□…2C GIV□…2CE GIV□…2CW
	430-020C	430C	0.169	4.30			△		●	●	●	●	●		●		●	●			
	460-020C	460C	0.181	4.60	0.248	0.008			●				●		●		●	●			
	500-020C	500C	0.197	5.00					●		●	●	●	●	●	●	●	●			
 1-Edge 	GV□ 145-020A	GV□ 145A	0.057	1.45	0.091	0.008													●		SI-GIVR12-12 GIV□…1A GIV□…1AE GIV□…1AW
	200-020A	200A	0.079	2.00															●		
	300-020A	300A	0.118	3.00															□		
	GV□ 200-020B	GV□ 200B	0.079	2.00	0.126	0.008													●		SI-GIVR16-15 GIV□…1B GIV□…1BE GIV□…1BW
	250-020B	250B	0.098	2.50	0.126														●		
	300-020B	300B	0.118	3.00	0.165														□		SI-GIVR16-15 GIV□…2B□
	GV□ 300-020C	GV□ 300C	0.118	3.00	0.177	0.008													□		SI-GIVR20-21 GIV□…1C□
	400-020C	400C	0.157	4.00	0.217														□		SI-GIVR20-21 GIV□…2C□
2-Edge Full-R 	GV□ 200-100AR	GV□ 100AR	0.079	2.00	0.091	0.039					●		●	●	●	●	●				SI-GIVR12-12 GIV□…1A GIV□…1AE GIV□…1AW
	250-125AR	125AR	0.098	2.50		0.049					●		●		●		●				
	300-150AR	150AR	0.118	3.00		0.059					●		●		●		●				
	GV□ 200-100BR	GV□ 100BR	0.079	2.00	0.126	0.039	△				●		●		●		●	●			SI-GIVR16-15 GIV□…1B□
	300-150BR	150BR	0.118	3.00	0.165	0.059	△				●		●		●		●	●			SI-GIVR16-15 GIV□…2B□

- Dimension **CDX** shows available grooving depth.

Inserts are sold in 10 piece boxes. *CBN & PCD Inserts are sold in 1 piece boxes.*

Recommended Cutting Condtions ➔ **G145**
Applicable Toolholders ➔ **G75**

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

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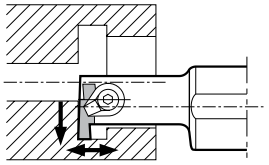
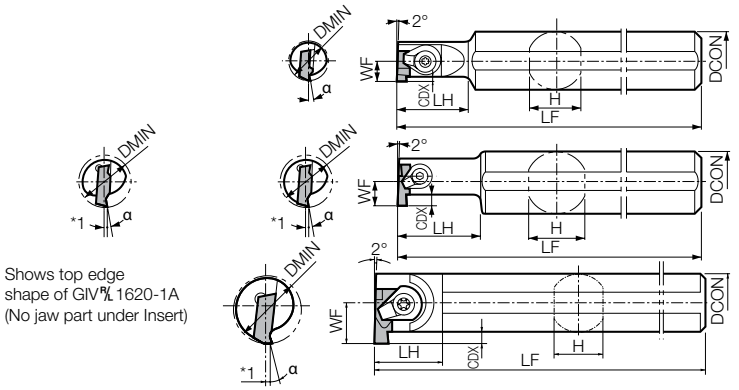
GIV (SI-GIV)





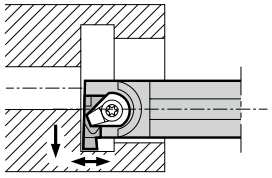
Shows top edge shape of GIV□1620-1A (No jaw part under Insert)

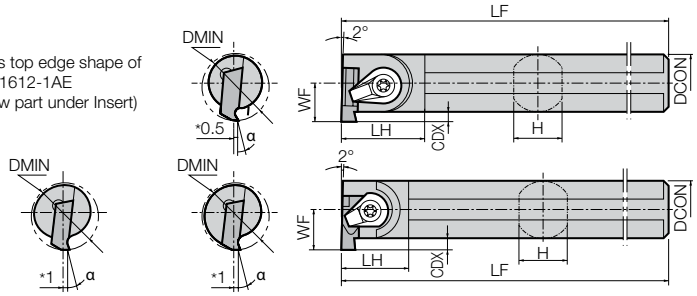
Fig.1 Fig.2 Fig.3

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

GIV-E Excellent Bar





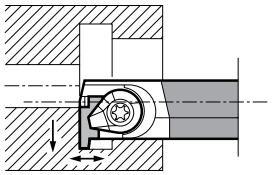
Shows top edge shape of GIV□1612-1AE (No jaw part under Insert)

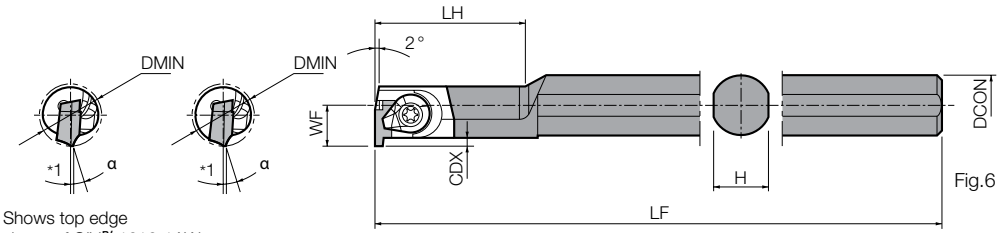
Fig.4 Fig.5

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

GIV-W Carbide Shank Bar





Shows top edge shape of GIV□1616-1AW (No jaw part under Insert)

Fig.6

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Applicable Inserts and Rake Angle (α) After Installment of Insert

Toolholder	Insert Part Number ➡ G73			Rake Angle (α)	
	General Grooving (Square)		Full-R Grooving (Round)	TC40	TN90,TC60 PR930,PR1225 KW10
SI-GIVR10-09	GVR09-...	GV□100~300-020SS	-	10°	10°
SI-GIVR12-12	GVR12-...	GV□100~340-020A	GVR12-R		
SI-GIVR16-15	GVR15-...	GV□145~400-020B	-		
SI-GIVR20-21	GVR21-...	GV□280~500-020C	-		
GIV□···1SS	GV□100~300-020SS	GVR09-...	-	10°	15°
GIV□···1S	GV□100~340-020S	-	-	10°	15°
GIV□···1SE	GV□100~340-020S	-	-	3°	8°
GIV□···1A(□)	GV□100~340-020A	GVR12-...	GV□200-100AR~300-150AR	3°	8°
GIV□···1B(□)	GV□145~250-020B	GVR15-...	GV□200-100BR	4°	9°
GIV□···2B(□)	GV□280~400-020B		GV□300-150BR		
GIV□···1C(□)	GV□280~340-020C	GVR21-...	-	5°	10°
GIV□···2C(□)	GV□400~500-020C		-		

*** GIV, GIV-E and GIV-W are designed to set the cutting edge height 1mm above the center height. (0.5mm for GIV□1612-1AE)**

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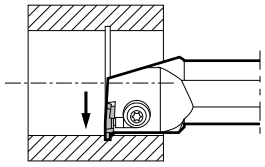
Toolholder Dimensions

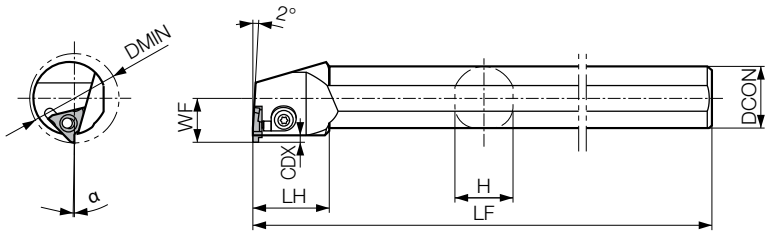
Part Number		Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	CDX	Drawing	Spare Parts: Clamp Set		Wrench	Wrench	Ref. Page for Applicable Inserts
SI-GIVR	**10-09**	●		inch	0.472	0.625	0.590	5.910	0.787	0.236	0.087	Fig.1	CPS-4V	-	FT-10	-	
	12-12	●			0.630	0.750	0.710	6.300	1.100	0.314	0.090	Fig.2	CPS-5V	-	FT-15	-	
	16-15	●			0.790	1.000	0.960	7.100	1.380	0.394	0.125						
	20-21	●			0.984	1.250	1.170	7.875	1.700	0.492	0.177	Fig.2	-	CPS-6V	-	LW-3	
GIVR/L	**1216-1SS**	●	●	mm	12	16	15.0	150	20	6.0	2.2	Fig.1	CPS-4V	-	FT-10	-	
	1420-1S	●	●		14	20	19.0	150	24	7.0	2.2	Fig.1	CPS-5F	-	FT-15	-	
	1620-1A	●	●		16	20	19.0	160	28	8.0	2.2	Fig.2	CPS-5V	-	FT-15	-	
	2025-1B	●	●		20	25	23.0	180	35	10.0	Note 1) 2.8	Fig.2	CPS-5V	-	FT-15	-	
	2025-2B	●	●		20	25	23.0	180	35	10.0	Note 2) 3.2						
	2532-1C	●	●		25	32	30.0	200	43	12.5	Note 3) 4.5	Fig.2	-	CPS-6V	-	LW-3	
	3232-1C	●	●		32	32	30.0	220	52	16.0	Note 3) 4.5						
	4032-1C	●	●		40	32	30.0	250	43	21.0	Note 3) 4.5	Fig.3	-	CPS-6V	-	LW-3	
	2532-2C	●	●		25	32	30.0	200	43	12.5	Note 4) 5.5	Fig.2	-	CPS-6V	-	LW-3	
	3232-2C	●	●		32	32	30.0	220	52	16.0	Note 4) 5.5						
	4032-2C	●	●		40	32	30.0	250	43	22.2	Note 4) 5.5	Fig.3	-	CPS-6V	-	LW-3	G69
GIVR/L	**1412-1SE**	●	●		14	12	11.4	150	18	7.7	1.7	Fig.4	CPS-5F	-	FT-15	-	
	1612-1AE	●	●		16	12	11.4	150	19	8.2	2.2	Fig.5	CPS-5V	-	FT-15	-	
	2016-1BE	●	●		20	16	15.2	180	20	11.2	Note 1) 2.8	Fig.5	CPS-5V	-	FT-15	-	
	2016-2BE	●	●		20	16	15.2	180	19	11.7	Note 5) 3.2						
	2520-1CE	●	●		25	20	19.0	200	25	14.5	Note 6) 4.5	Fig.5	-	CPS-6V	-	LW-3	
	3225-1CE	●	●		32	25	24.0	220	24	17.5	Note 7) 4.5						
	4032-1CE	●	●		40	32	31.0	240	29	21.0	Note 7) 4.5						
	2720-2CE	●	●		27	20	19.0	200	25	16.2	Note 4) 5.5						
	3225-2CE	●	●		32	25	24.0	220	24	18.7	Note 4) 5.5						
	4032-2CE	●	●		40	32	31.0	240	29	22.2	Note 4) 5.5						
GIVR/L	**1616-1AW**	●	●		16	16	15.0	175	48	10.6	2.2	Fig.6	CPS-5V	-	FT-15	-	
	2020-1BW	●	●		20	20	19.0	220	60	14.6	Note 1) 2.8	Fig.6	CPS-5V	-	FT-15	-	
	2020-2BW	●	●		20	20	19.0	220	60	14.6	Note 2) 3.2						
	2525-1CW	●	●		25	25	24.0	260	70	19.1	Note 3) 4.5	Fig.6	-	CPS-6V	-	LW-3	
	2525-2CW	●	●		25	25	24.0	260	70	19.1	Note 4) 5.5						

- Dimension **CDX** shows available grooving depth.

Note 1: GV®/L200~250-020B Insert can be used up to a Groove Depth 3.2mm.
Note 2: GV®/L300~400-020B Insert can be used up to a Groove Depth 4.2mm.
Note 3: GV®/L340-020C Insert can be used up to a Groove Depth 5.5mm.
Note 4: GV®/L430~500-020C Insert can be used up to a Groove Depth 6.3mm.
Note 5: GV®/L300~400-020B Insert can be used up to a Groove Depth 3.8mm. (When using GIV®/L2016-2BE)
Note 6: GV®/L340-020C Insert can be used up to a Groove Depth 4.7mm. (When using GIV®/L2520-1CE)
Note 7: GV®/L340-020C Insert can be used up to a Groove Depth 5.3mm. (When using GIV®/L3225-1CE, GIV®/L4032-1CE)
If you need any of insert groove depth specified in notes 1 to 7, modify the dimension **CDX** of toolholder.

KIGBA





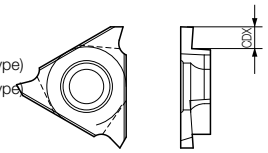
• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions						Spare Parts		Applicable Inserts
											Clamp Set	Wrench	
	R	L		DMIN	DCON	H	LF	LH	WF	*CDX			G6~G11
KIGBA 16-3	●	●	inch	1.38	1.00	0.92	9.0	1.18	0.69	0.12	LGBA-16RS	FT-15	GBA32R Type
20-4	●	●		1.57	1.25	1.18	10.0	1.18	0.90	0.12	LGBA-22RS	FT-15	GBA43R Type
KIGBA 3525-16	●	●	mm	35	25	23	220	30	17.5	2.8	LGBA-16RS	FT-15	GBA32R type
4032-22	●	●		40	32	30	250	30	23.0	3.0	LGBA-22RS	FT-15	GBA43R type

*Dimension **CDX** shows the distance from the Toolholder to the cutting edge.
Available Grooving Depth depends on the insert.
KIGBA3525-16: Dimension **CDX** of the applicable insert (GBA32 type)
4032-22: Dimension **CDX** of the applicable insert (GBA43 type)
1. 2.0mm (Dimension **CDX** < 2.8mm)
2. 2.8mm (Dimension **CDX**≧2.8mm)



• Clamp Set : LGBA-○○LS for Right-hand Toolholder, and LGBA-○○RS for Left-hand Toolholder.

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Rake Angle (α) after Installment of GBA

GBA32R/L○○○-○○○		GBA43R/L○○○-○○○		GBA43R/L○○○-○○○R (Full-R)		
α (°)	Insert Grade	α (°)	Insert Grade	α (°)	Insert Grade	Full-R
+1°	TN620, TN90, PV7040, PR930, PR1115, PR1215, PR1625, PR905 KPD001, KPD010	-9°	KBN510, KBN525	+1°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905	050R~150R
		+1°	TN620, TC40, TN90, PV7040 PR930, PR1115, PR1215 PR1625, PR905 KPD001, KPD010	+5°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905	200R
+11°	KW10	+11°	KW10	+5°	KW10	050R~200R

Rake Angle (α) after Installment of GBA-GM

α (°)	Insert Part Number
+1°	GBA43R/L150-020GM
+6°	GBA43R/L175-020GM ~ GBA43R/L265-030GM
+3°	GBA43R/L300-030GM ~ GBA43R/L400-040GM

Rake Angle (α) after Installment of GBA-MY

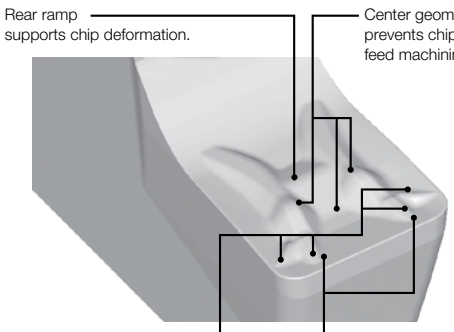
α (°)	Insert Part Number
+6°	GBA43R/L175-020MY ~ GBA43R/L350-030MY
+5°	GBA43R/L400-040MY

KGDI Internal Grooving

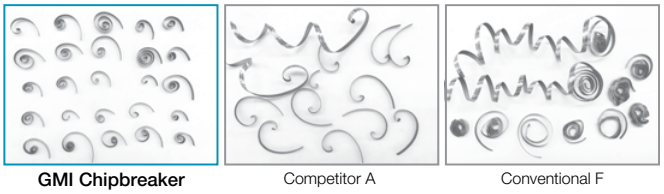
Stable Machining with Excellent Chip Control and Smooth Chip Evacuation

1 Excellent Chip Control with GMI Chipbreaker for Internal Grooving

Evenly breaks chips in various cutting conditions with newly designed chipbreaker geometry.
Good chip control even in finishing applications with small depths of cut.



Chip Control Comparison (Internal Evaluation)

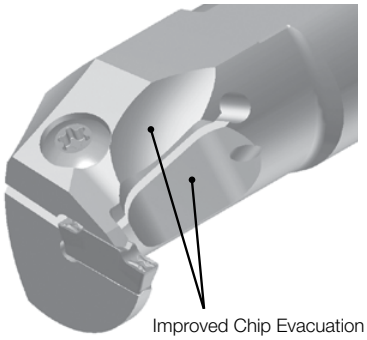


Smooth chip control with stable chip shape compared with Competitor A and Conventional F.
Prevents frequent machine stops caused by tangled chips.

Cutting Conditions: Vc = 330 sfm, f = 0.003 ipr Toolholder: KGDIR3225B-3
Insert: GDM3015N-040GMI Workpiece: 5120 Steel

2 Smooth Chip Evacuation by Creating Chip Pocket

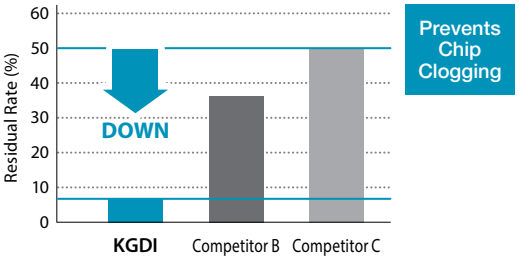
Smooth chip evacuation when grooving and finishing.

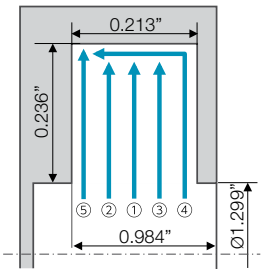


Improved Chip Evacuation with Innovative Chip Pockets

Cutting Conditions:
Vc = 330 sfm
①: D.O.C. = 0.118", ②③: D.O.C. = 0.039", ④⑤: D.O.C. = 0.008"
f = 0.003 ipr
Toolholder: KGDIR3225B-3
Insert: GDM3015N-040GMI
Workpiece: 4131 Steel

Residual Chips (Internal Evaluation)



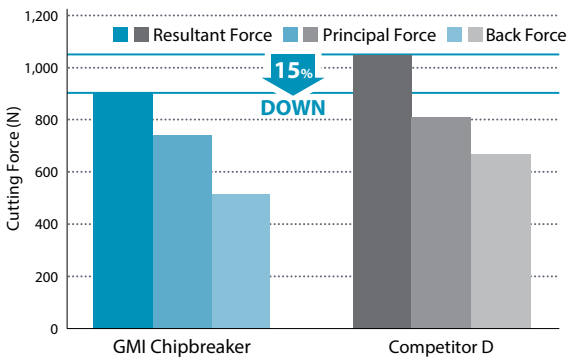


Chips remaining in machined bore were greatly reduced compared with Competitor B and C.

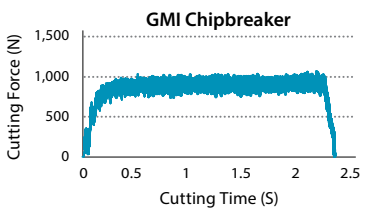
3 Low Cutting Forces and Stable Machining

GMI chipbreaker prevents chip clogging and reduces cutting forces.

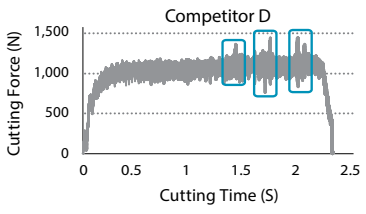
Cutting Force Comparison (Internal Evaluation)



Cutting Conditions: Vc = 490 sfm, f = 0.004 ipr Toolholder: KGDIR3225B-3
Insert: GDM3015N-040GMI Workpiece: 4131 Steel



Stable machining with consistent in cutting force.



Cutting force spike due to clogged chips.

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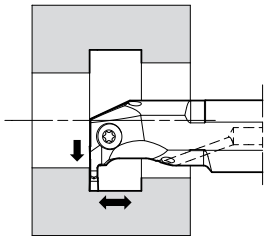
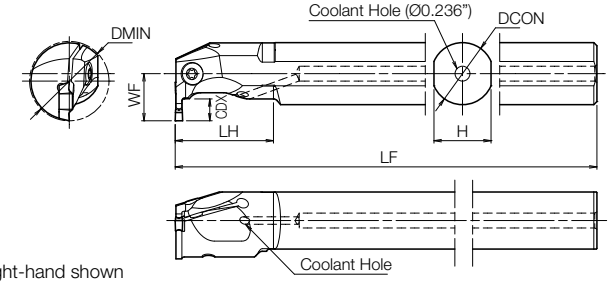
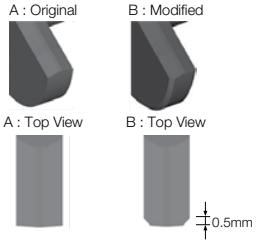




• Right-hand shown

A : Available with Original Holder Shape
B : Available with Modified Holder Shape (Below)



Toolholder Dimensions

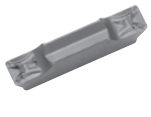
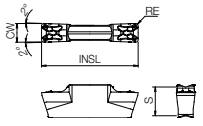
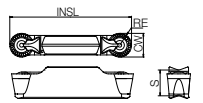
Part Number		Stock R	Stock L	Unit	Min. Bore Dia. DMIN GMI	Min. Bore Dia. DMIN CM	DCON	H	LF	LH	WF	CDX	Edge Width CW MIN	Edge Width CW MAX	Spare Parts: Clamp Screw		Spare Parts: Wrench	
KGDIR	10B-2	●		inch	0.709	-	0.625	0.591	6	0.984	0.374	0.177	0.079	0.079	GS-50	-	LW-3	-
	12B-2	●			0.984		0.75	0.709	7	1.181	0.571	0.236	0.079	0.079				
	16B-2	●			1.260		1	0.906	8	1.575	0.748	0.276	0.079	0.079	-	SB-5TR	-	LTW-20
KGDIR	10B-3	●			0.787	0.827	0.625	0.591	6	0.984	0.453	0.217	0.118	0.118	GS-50	-	LW-3	-
	12B-3	●			0.984	1.024	0.75	0.709	7	1.181	0.571	0.236	0.118	0.118				
	16B-3	●			1.260	1.299	1	0.906	8	1.575	0.748	0.315	0.118	0.118	-	SB-5TR	-	LTW-20
KGDIR	16B-4	●			1.260	A: 1.575 B: 1.299	1	0.906	8	1.575	0.748	0.335	0.157	0.197	-	SB-5TR	-	LTW-20
	20B-4	●			1.575	A: 1.890 B: 1.614	1.25	1.142	8.5	1.969	0.925	0.433	0.157	0.197				
KGDIR	16B-5	●			1.260	A: 1.457 B: 1.338	1	0.906	8	1.575	0.748	0.335	0.197	0.197	-	SB-5TR	-	LTW-20
	20B-5	●			1.575	A: 1.772 B: 1.653	1.25	1.142	8.5	1.969	0.925	0.433	0.197	0.197				
KGDI[R/L]	1816B-2	●	●	mm	18	-	16	15	150	25	9.5	4.5	2	2	GS-50	-	LW-3	-
	2520B-2	●	●		25		20	18	180	30	14.5	6	2	2				
	3225B-2	●	●		32		25	23	200	40	19	7	2	2	-	SB-5TR	-	LTW-20
KGDI[R/L]	2016B-3	●	●		20	21	16	15	150	25	11.5	5.5	3	3	GS-50	-	LW-3	-
	2520B-3	●	●		25	26	20	18	180	30	14.5	6	3	3				
	3225B-3	●	●		32	33	25	23	200	40	19	8	3	3	-	SB-5TR	-	LTW-20
KGDI[R/L]	3225B-4	●	●		32	40 (34*)	25	23	200	40	19	8.5	4	5	-	SB-5TR	-	LTW-20
	4032B-4	●	●		40	48 (42*)	32	29	220	50	23.5	11	4	5				
KGDI[R/L]	3225B-5	●	●		32	37 (34*)	25	23	200	40	19	8.5	5	5	-	SB-5TR	-	LTW-20
	4032B-5	●	●		40	45 (42*)	32	29	220	50	23.5	11	5	5				

* Possible by slightly chamfering toolholder's tip about 0.5 mm

Applicable Inserts

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

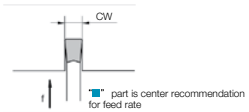
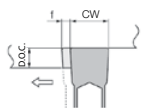
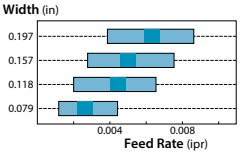
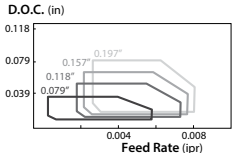
P	Carbon Steel / Alloy Steel	●	◔	●	◔
M	Stainless Steel		●	◔	◔
K	Cast Iron				●

Insert		Part Number	Dimensions (in) CW in	CW mm	RE	INSL	S	Cermet TN620	MEGACOAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1215	Applicable Toolholders
		GDM 2013N-020GMI	0.079	2.0	0.008	0.531	0.169	●	●	●	●	KGDI[R/L]...-2
		3015N-040GMI	0.118	3.0	0.016	0.610	0.181	●	●	●	●	KGDI[R/L]...-3
		4020N-040GMI	0.157	4.0	0.016	0.787	0.169	●	●	●	●	KGDI[R/L]...-4
		5020N-040GMI	0.197	5.0	0.016	0.787	0.169	●	●	●	●	KGDI[R/L]...-4 KGDI[R/L]...-5
		5020N-080GMI	0.197	5.0	0.031	0.787	0.169	●	●	●	●	KGDI[R/L]...-4 ...-5
		GDM 3015N-150R-CM	0.118	3.0	0.059	0.642	0.181	●	●	●	●	KGDI[R/L]...-3
		4020N-200R-CM	0.157	4.0	0.079	0.787	0.169	●	●	●	●	KGDI[R/L]...-4
		5020N-250R-CM	0.197	5.0	0.098	0.827	0.169	●	●	●	●	KGDI[R/L]...-4 KGDI[R/L]...-5

* Tolerance: ±0.03mm for CW = 2.0mm and 3.0mm, ±0.04mm for CW = 5.0mm

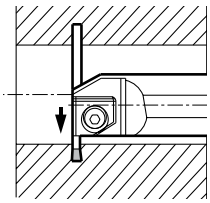
Recommended Cutting Conditions

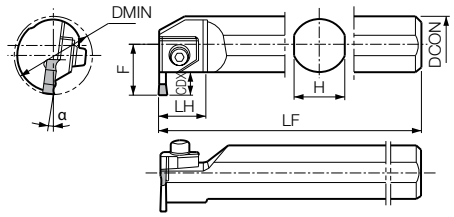
Workpiece Material	Chipbreaker	Recommended Insert Grade (Vc sfm) Cermet TN620	MEGACOAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1215	Notes
Carbon Steel	GMI CM	☆ 330~720	☆ 260~490	★ 260~660	☆ 330~660	Wet
Alloy Steel		☆ 260~660	☆ 230~490	★ 230~590	☆ 260~590	
Stainless Steel		☆ 230~590	★ 200~490	☆ 200~490	☆ 200~490	
Cast Iron		-	-	-	★ 330~660	

Chipbreaker	Grooving	Traversing
		
GMI (General Purpose)		

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KIGH





• Right-hand shown

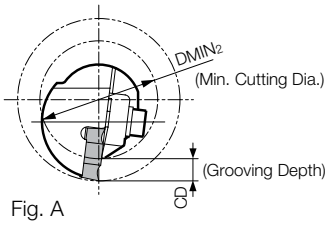


Fig. A

Toolholder Dimensions

Part Number		Stock	Min. Bore Dia. DMIN	Dimensions (mm) DCON	H	LF	LH	WF	CDX	Spare Parts: Clamp	Clamp Bolt	Washer	Spring	Wrench
KIGHR	**4532B-4**	●	45	32	30	200	27	28.2	12	CGH-1L	HH6X25	W-6	SP-6	LW-5
	5540B-4	●	55	40	38	250	27	32.3	12					
	6550B-4	●	65	50	48	300	27	37.3	12					
	4532B-5	●	45	32	30	200	27	28.2	12	CGH-1L	HH6X25	W-6	SP-6	LW-5
	5540B-5	●	55	40	38	250	27	32.3	12					
	6550B-5	●	65	50	48	300	27	37.3	12					
	5540B-7	●	55	40	38	250	27	32.3	12	CGH-2L	HH6X25	W-6	SP-6	LW-5
	6550B-7	△	65	50	48	300	27	37.3	12					

- Dimension **CDX** shows the distance from the Toolholder to the cutting edge. For the actual Grooving Depth (**CD**), ref. to "List of Min. Available Cutting Diameter and Groove Depth".
- Dimension **LH** depends on the width of the installed Insert.

Rake Angle (α) after Installment of GH / GHU

GH○○○○-○○		GHU○○-○○	
α (°)	Insert Grade	α (°)	Insert Grade
-5°	A65, A66N, PT600M	+5°	TN60 CR9025
+5°	TC40		
+15°	TN90, TC60 PR930 KW10		

List of the Min. Cutting Diameter and Grooving Depth (Refer to Fig.A)

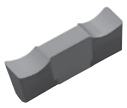
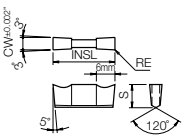
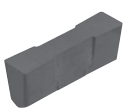
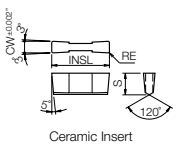
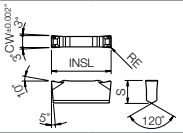
Part Number		$DMIN_2$ Min. Cutting Dia. (mm)					
KIGHR	**4532B-○**	Ø110	Ø70	Ø65	Ø60	Ø55	Ø45
	5540B-○	Ø70	Ø60	Ø55			
	6550B-○	Ø65					
Available Grooving Depth CD (mm)		12.0	11.5	11.0	10.0	9.0	under 8.0

Applicable Inserts

(mm)

Part Number	INSL	S
GH4020-○○~GH8020-○○	20	7.5
GHU○○-○○	20	

		Classification of Usage
P	Carbon Steel / Alloy Steel	
M	Stainless Steel	
K	Cast Iron	● : Light Interruption / 1st Choice
N	Non-ferrous Metals	◔ : Light Interruption / 2nd Choice
S	Titanium Alloy	● : Continuous / 1st Choice
H	Hard materials (≤40HRC)	○ : Continuous / 2nd Choice
	Hard materials (≥40HRC)	

Insert		Part Number	Dimensions (mm) CW	RE	Cermet TN60	TN90	TC40	TC60	CVD Coated Carbide PVD Coated Carbide CR9025	PR930	Carbide KW10	Ceramic A65	A66N	PT600M	Applicable Toolholders
 Ground Chipbreaker		**GH 4020-02**	4.0	0.20			●	●		●	●				KIGHR4532B-4 KIGHR5540B-4 KIGHR6550B-4
		4020-05		0.50			●	●		●	●	●	●	●	
		4520-02	4.5	0.20			●								
		4520-05		0.50			●								
		5020-02	5.0	0.20			●	●		●	●				KIGHR4532B-5 KIGHR5540B-5 KIGHR6550B-5
		5020-05		0.50			●	●		●	●	●	●	●	
		5520-02	5.5	0.20			●								
		5520-05		0.50			●								
		6020-02	6.0	0.20			●	●		●	●				
		6020-05		0.50			●	●		●	●	●		●	
		6520-02	6.5	0.20			●								
 Ceramic	 Ceramic Insert	**6520-05**		0.50			●								
		7020-02	7.0	0.20			●	●		●	●				KIGHR5540B-7 KIGHR6550B-7
		7020-05		0.50			●	●		●	●	●		△	
		7520-02	7.5	0.20			●								
		7520-05		0.50			●								
		8020-02	8.0	0.20			●	●		●	●				
		8020-05		0.50			●	●		●	●				
Molded Chipbreaker		**GHU 40-20**	4.0	0.25	●				●						KIGHR…○○○○B-4
		50-20	5.0	0.30	●				●						KIGHR…○○○○B-5
		60-20	6.0	0.30	●				●						

Recommended Cutting Conditions ➡ **G141**

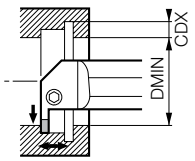
Inserts are sold in 10 piece boxes.

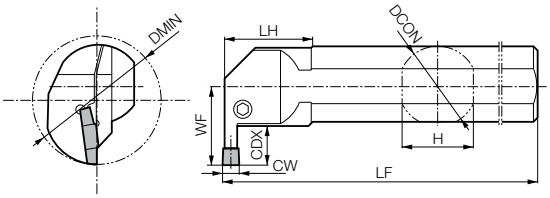
● : Standard Item △ : Phaseout Item (will be removed from next catalog)

Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

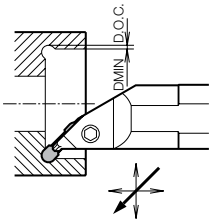
KIGM-8 (8mm-Width Insert / Large Internal Diameter Deep Grooving)

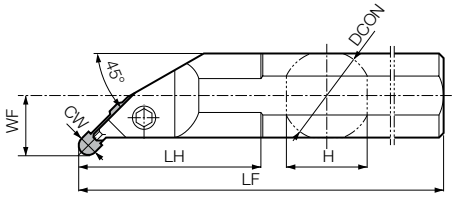




• Right-hand shown

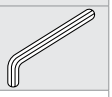
KIGMU-8 (8mm-Width Insert / Large Internal Diameter Undercut Grooving)





• Right-hand shown

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)							Insert Width CW (mm)		Spare Parts	
													Clamp Bolt	Wrench
	R	L	DMIN	DCON	H	LF	LH	WF	CDX	D.O.C.	MIN	MAX		
KIGM□ 6540B-8	●	●	65	40	36	300	41	41	20	-	8	8	HH6X20	LW-5
KIGMUR 6540B-8	●		65	40	36	300	83	26	-	2.2	8	8	HH6X20	LW-5

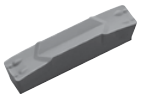
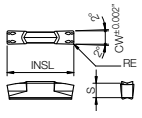
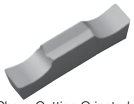
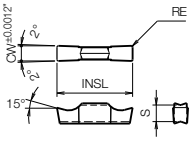
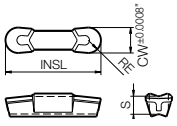
- Dimension CDX shows available grooving depth.
- Dimension D.O.C. shows the distance from the Internal face of the workpiece.

Applicable Inserts

Part Number	INSL	S
GMM8030-080MW	30.0	5.5
GMG8030-050MG	30.0	5.5
GMGA8030-400R	30.0	5.5

		Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide
		TN90	CR9025	PR915	PR930	PR905	KW10
P	Carbon Steel / Alloy Steel			○	●		
M	Stainless Steel			●	○		
K	Cast Iron					●	○
N	Non-ferrous Metals						●
S	Titanium Alloy						●
H	Hard materials (≤40HRC)			○	●		
	Hard materials (≥40HRC)						

Classification of Usage
● : Light Interruption / 1st Choice
○ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)		Part Number	Previous Part Number	Dimensions (mm) CW	Dimensions (mm) RE	TN90	CR9025	PR915	PR930	PR905	KW10	Applicable Toolholders
 Chip Control Oriented M Class		GMM 8030-080MW	GMM 8030-08	8.0	0.8		●		●	●	●	KIGM□...-8 KIGMUR...-8
 Sharp-Cutting Oriented / Precision Class Ground Chipbreaker		GMG 8030-050MG	GMG 8030-05MG	8.0	0.5	●	●		●	●	●	
Sharp-Cutting Oriented / Precision Class Full-R / Copying		GMGA 8030-400R	GMGA 8030-40R	8.0	4.0						●	

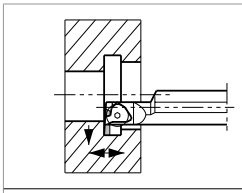
- If using a full-R insert with KIGM-8 type toolholder, you need to modify the corner of insert adapter of toolholder.

Recommended Cutting Conditions ➔ G147

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGIA



Integral Type

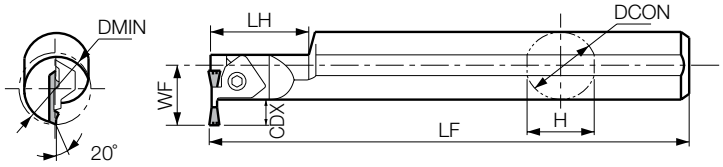
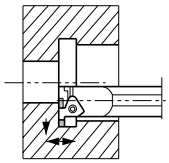


Fig. 1



SwitchBlade Type

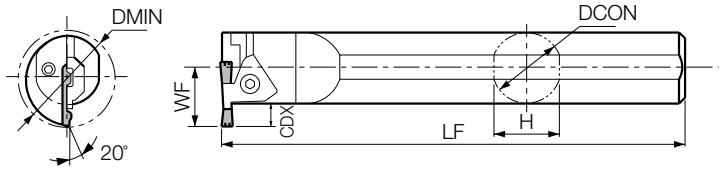


Fig. 2

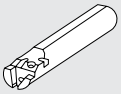
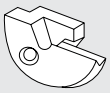
• Right-hand shown

Toolholder Dimensions

Part Number		Stock	Min. Bore Dia.	Dimensions (mm)						Drawing	Spare Parts			
											Clamp	Clamp Bolt	Spring	Wrench
			DMIN	DCON	H	LF	LH	WF	CDX					
KGIAR	**3232B-3**	●	32	32	30.4	200	45	26.5	10	Fig.1	CGIA-3R	HH5X15	SP-5	LW-4
	4332B-3	●	43	32	30.0	200	-	26.3	10	Fig.2	CGIA-3R	HH5X15	SP-5	LW-4
	5140B-3	●	51	40	38.0	250	-	30.3	10					
	3232B-4	●	32	32	30.4	200	45	26.5	10	Fig.1	CGIA-4R	HH5X15	SP-5	LW-4
	4332B-4	●	43	32	30.0	200	-	26.3	10	Fig.2	CGIA-4R	HH5X15	SP-5	LW-4
	5140B-4	●	51	40	38.0	250	-	30.3	10					
	5640B-5	●	56	40	38.0	250	-	35.3	15	Fig.2	CGIA-5R	HH5X15	SP-5	LW-4
	6650B-5	●	66	50	48.0	250	-	40.3	15					

• Dimension **CDX** shows available grooving depth.

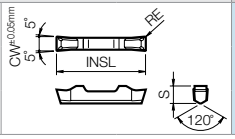
Composition

Type	Toolholder Part Number		Spare Parts			
			Toolholder	Blade	Clamp Screw	Wrench
						
Integral Type	**KGIAR**	**3232B-3**	-	-	-	-
Separate Type		**4332B-3**	KGIAR32H	BGIAR43-3	SB-40140TR	FT-15
		5140B-3	KGIAR40H	BGIAR51-3	SB-40140TR	FT-15
Integral Type		**3232B-4**	-	-	-	-
SwitchBlade Type		**4332B-4**	KGIAR32H	BGIAR43-4	SB-40140TR	FT-15
		5140B-4	KGIAR40H	BGIAR51-4	SB-40140TR	FT-15
SwitchBlade Type		**5640B-5**	KGIAR40H	BGIAR56-5	SB-40140TR	FT-15
		6650B-5	KGIAR50H	BGIAR66-5	SB-40140TR	FT-15

Applicable Inserts

P	Carbon Steel / Alloy Steel	○	◕
M	Stainless Steel	○	◕
K	Cast Iron		
N	Non-ferrous Metals		
S	Titanium Alloy		
H	Hard materials (≤40HRC)	○	●
	Hard materials (≥40HRC)		

Classification of Usage
◕ : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert Right-handed Insert Shown		Part Number		Dimensions (mm)				Cermet	CVD Coated Carbide	Applicable Toolholders
				CW	RE	INSL	S	TN60	CR9025	
Molded Chipbreaker		**GIA**	**30**	3.0	0.20	25	5.0	●	●	KGIAR…3
			40	4.0	0.25	25	5.0	●	●	KGIAR…4
			50	5.0	0.30	30	5.0	●	●	KGIAR…5

Recommended Cutting Conditions ➡ **G144**

Inserts are sold in 10 piece boxes.

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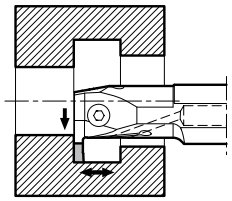
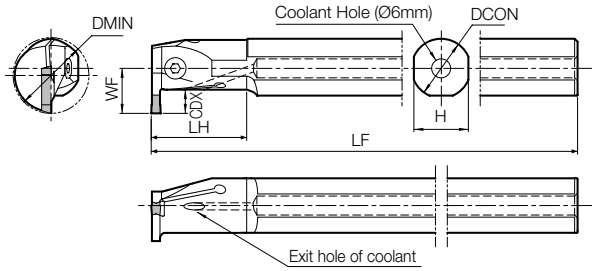
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KIGM-V (KIGM-V is phasing out and will be removed from next catalog. Switch to **KGDI** G78~G79)





• Right-hand shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LF	LH	WF	CDX	Edge Width CW MIN	MAX	Spare Parts: Clamp Screw		Wrench	
KIGM®	10B-3V	●	●	inch	0.787	0.625	0.591	6.000	0.984	0.453	0.217	0.118	0.118	GS-50	-	LW-3	-
	12B-3V	●	●		0.966	0.750	0.709	7.000	1.260	0.571	0.217	0.118	0.118				
	16B-3V	●	●		1.260	1.000	0.906	8.000	1.575	0.748	0.315	0.118	0.118	-	SB-5TR	-	LTW-20
	16B-4V	●	●		1.260	1.000	0.906	8.000	1.575	0.748	0.335	0.157	0.197				
	20B-4V	●	●		1.550	1.250	1.140	8.500	1.969	0.925	0.433	0.157	0.197				

• Dimension **CDX** shows available grooving depth.

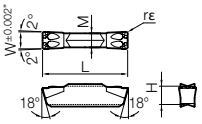
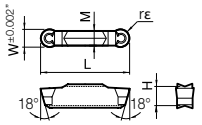
Applicable Inserts

(in)

Part Number	INSL	S
GMM3015…V(□)	0.610	0.169
GMM4020…V(□)	0.787	0.169
GMM5020…V(□)	0.787	0.169

		Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide
P	Carbon Steel / Alloy Steel			◔	●		
M	Stainless Steel			●	◔		
K	Cast Iron					●	◔
N	Non-ferrous Metals						●
S	Titanium Alloy						●
H	Hard materials (≤40HRC)			○	●		
	Hard materials (≥40HRC)						

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert		Part Number	Previous Part Number	Dimensions (in) CW	RE	TN90	CR9025	PR915	PR930	PR905	KW10	Applicable Toolholders
Chip Control Oriented M Class		GMM 3015-040V	GMM 3015-04V	0.118	0.016	●	●	●	●	●	●	KIGM® 2016B-3V KIGM® 2520B-3V KIGM® 3225B-3V
		4020-040V	4020-04V	0.157	0.016	●	●	●	●	●	●	KIGM® 3225B-4V KIGM® 4032B-4V
		5020-080V	5020-08V	0.197	0.031		●	●	●	●	●	
Chip Control Oriented M Class Full-R / Copying		GMM 3015-150VR	GMM 3015-15VR	0.118	0.059		△		△	△	△	KIGM® 2016B-3V KIGM® 2520B-3V KIGM® 3225B-3V
		4020-200VR	4020-20VR	0.157	0.079				△	△		KIGM® 3225B-4V KIGM® 4032B-4V
		5020-250VR	5020-25VR	0.197	0.098				△			

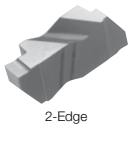
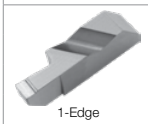
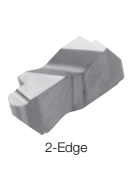
• It is not recommended to use this for KIGM-V Internal Grooving Toolholders against GMM...V / GMM...VR which the front relief angle is 18°, because the relief angle of the insert used for GMM4020-04 toolholder is 10°.

Recommended Cutting Conditions G147

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KCG / KCGP / KCGDP / KCRP

Insert (Right-handed Insert Shown)	Part Number	CW (inch)	CW (mm)	CDX	RE	W1	INSL	S	Insert Grade: Cermet TC40 R	TC40 L	Cermet TC60 R	TC60 L	MEGA COAT CVD PR1215 R	PR1215 L	PVD PR660 R	PR660 L	PVD PR930 R	PR930 L	Carbide KW10 R	KW10 L	Ceramic A65 R	A65 L
2-Edge	KCG 2062R/L	0.062	1.57	0.110	0.008	0.150	0.540	0.219													●	●
	2125R/L	0.125	3.18																			●
	3062R/L	0.062	1.57	0.094	0.008	0.195	0.810	0.344													●	
	3094R/L	0.094	2.39	0.150																	●	●
	3125R/L	0.125	3.18																		●	
	3156R/L	0.156	3.96																		●	●
 2-Edge	KCGP 2031R/L	0.031	0.79	0.050	0.003	0.150	0.540	0.219	●	●	●	●	●	●	●		●	●	●	●		
	2041R/L	0.041	1.04						●	●	●	●	●	●			●					
	2047R/L	0.047	1.19						●	●	●	●	●	●	●	●	●	●	●	●		
	KCGP 2058R/L	0.058	1.47	0.110	0.008	0.150	0.540	0.219	●	●			●									
	2062R/L	0.062	1.57						●	●	●	●	●	●	●	●	●	●	●	●		
	KCGP 2094R/L	0.094	2.39	0.110	0.008	0.150	0.540	0.219	●	●			●	●	●		●	●	●	●		
	2125R/L	0.125	3.18						●	●			●	●	●		●	●	●			
	KCGP 3031R/L	0.031	0.79	0.050	0.008	0.195	0.810	0.344	●	●			●	●			●	●				
	3047R/L	0.047	1.19	0.075					●	●	●	●	●	●	●	●	●	●	●			
	3062R/L	0.062	1.57	0.094					●	●	●	●	●	●	●	●	●	●	●	●		
	3072R/L	0.072	1.83						●	●	●	●	●	●				●				
	KCGP 3078R/L	0.078	1.98	0.094	0.008	0.195	0.810	0.344	●	●	●		●	●	●	●	●	●				
	3088R/L	0.088	2.24						●	●		●	●					●				
	KCGP 3094R/L	0.094	2.39	0.150	0.008	0.195	0.810	0.344	●	●	●	●	●	●	●	●	●	●	●	●		
	3097R/L	0.097	2.46						●	●							●	●				
	3105R/L	0.105	2.67						●	●							●	●				
	KCGP 3110R/L	0.110	2.79	0.150	0.008	0.195	0.810	0.344	●	●			●	●			●	●				
	3122R/L	0.122	3.10						●								●	●				
	3125R/L	0.125	3.18						●	●	●		●	●		●	●	●	●	●		
	KCGP 3142R/L	0.142	3.61	0.150	0.008	0.195	0.810	0.344	●	●							●	●				
	3156R/L	0.156	3.96						●	●	●			●		●	●	●				
	3178R/L	0.178	4.52						●	●							●	●				
	KCGP 3185R/L	0.185	4.70	0.150	0.008	0.195	0.810	0.344	●	●							●	●				
	3189R/L	0.189	4.80						●	●	●	●	●	●		●	●	●	●	●		
	KCGP 4125R/L	0.125	3.18	0.150	0.008	0.255	1.272	0.453	●	●			●	●			●	●				
	4189R/L	0.189	4.80	0.250	0.018					●			●	●			●	●				
	4213R/L	0.213	5.41						●	●							●	●				
	KCGP 4219R/L	0.219	5.56	0.250	0.018	0.255	1.272	0.453	●	●							●	●				
	4250R/L	0.250	6.35							●			●	●			●	●				
 1-Edge	KCGDP 3062R/L	0.062	1.57	0.125	0.008	0.195	0.886	0.344	●	●			●	●			●					
	3094R/L	0.094	2.39	0.250	0.008	0.195	0.990	0.344	●	●			●	●			●	●				
	3125R/L	0.125	3.18						●				●	●			●	●				
	3189R/L	0.189	4.80	0.250	0.023				●	●								●				
 2-Edge	KCRP 2031R/L	0.062	1.57	0.094	0.031	0.150	0.540	0.219			●		●	●			●					
	2039R/L	0.078	1.98	0.110	0.039												●	●				
	2047R/L	0.094	2.39	0.150	0.047								●	●								
	2062R/L	0.125	3.18	0.150	0.062						●		●	●								
	KCRP 3031R/L	0.062	1.57	0.094	0.031	0.195	0.810	0.344	●	●	●		●	●	●	●	●	●		●		
	3047R/L	0.094	2.39	0.150	0.047				●	●			●	●	●	●	●	●				
	3062R/L	0.125	3.18	0.150	0.062				●	●			●	●	●	●	●	●				
	KCRP 3078R/L	0.156	3.96	0.150	0.078	0.195	0.810	0.344	●	●							●	●				
	3094R/L	0.188	4.78	0.150	0.094				●	●			●	●			●	●				
	KCRP 4125R/L	0.250	6.35	0.250	0.125	0.255	1.272	0.453	●	●					●		●	●				

- Dimension **CDX** shows available Grooving Depth.

Recommended Cutting Conditions (Cera-Notch)

Workpiece Material	Cermet Feeds (ipr)	Carbide Feeds (ipr)	Recommended Insert Grade (Vc : sfm) Cermet TC40	Cermet TC60	MEGACOAT PR1215	Carbide PR660	Carbide PR930	Carbide KW10	Ceramic A65
Carbon Steel	0.002~0.005	0.002~0.010	300~900	250~900	300~800	200~550	250~650	-	-
Alloy Steel	0.002~0.005	0.002~0.010	250~800	250~800	300~750	100~500	150~550	-	-
Stainless Steel	0.002~0.005	0.002~0.010	-	200~600	300~600	100~550	100~550	-	-
Tool Steel	0.002~0.005	0.002~0.010	200~650	200~650	300~600	-	100~550	-	-
Hardened Steel (>45Rc)	-	-	-	-	-	-	-	-	250~500*
Gray Cast Iron	0.003~0.006	0.002~0.012	200~700	-	300~700	-	-	-	500~1000
Ductile Iron	0.003~0.006	0.002~0.012	-	150~600	300~600	-	-	-	500~1000
Aluminum	0.002~0.008	0.002~0.012	150~1600	-	-	-	-	500~1600	-

Speeds & Feeds listed are for external grooving. Reduce parameters by 10% for internal grooving.
*Feeds = 0.003~0.008 ipr

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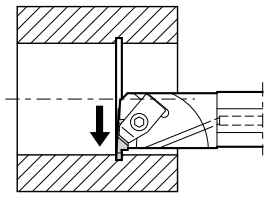
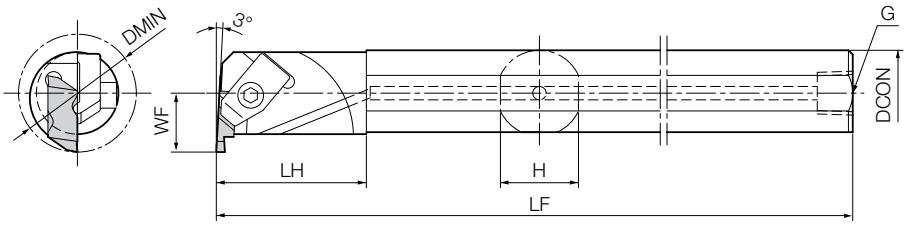
A-KKC





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions (in) DCON	H	LF	LH	WF	G	Spare Parts: Clamp	Clamp Screw	Wrench
A10M-KKCR-2	●			1.000	0.625	0.596	6.00	1.153	0.500	1/8-27 NPT			
A10S-KKCR-2	●			1.000	0.625	0.596	10.00	1.153	0.500	1/8-27 NPT	CKC-2L	SKC-2	(7/64 Hex)
A12R-KKCR-2	●			1.125	0.750	0.728	8.00	1.171	0.562	1/8-27 NPT			
A12S-KKCR-2	●			1.125	0.750	0.728	10.00	1.171	0.562	1/8-27 NPT			
A16T-KKC$^{R}_{L}$-2	●	●		1.375	1.000	0.910	12.00	1.100	0.688	1/8-27 NPT			
A16X-KKC$^{R}_{L}$-3	●			1.375	1.000	0.910	9.00	1.750	0.688	1/8-27 NPT			
A16T-KKC$^{R}_{L}$-3	●	●	inch	1.375	1.000	0.910	12.00	1.750	0.688	1/4-18 NPT			
A20U-KKC$^{R}_{L}$-3	●	●		1.750	1.250	1.138	14.00	1.750	0.875	1/4-18 NPT			
A24U-KKC$^{R}_{L}$-3	●	●		2.000	1.500	1.366	14.00	1.750	1.000	1/4-18 NPT	CKC-3$^{R}_{L}$	SKC-3	(LW-156)
A28U-KKC$^{R}_{L}$-3	●			2.250	1.750	1.593	14.00	1.750	1.125	1/4-18 NPT			
A32V-KKC$^{R}_{L}$-3	●	●		2.500	2.000	1.820	16.00	1.750	1.250	1/4-18 NPT			
A28U-KKC$^{R}_{L}$-4	●	●		2.500	1.750	1.593	14.00	1.750	1.250	1/4-18 NPT			
A32V-KKC$^{R}_{L}$-4	●	●		2.750	2.000	1.820	16.00	1.750	1.375	1/4-18 NPT			

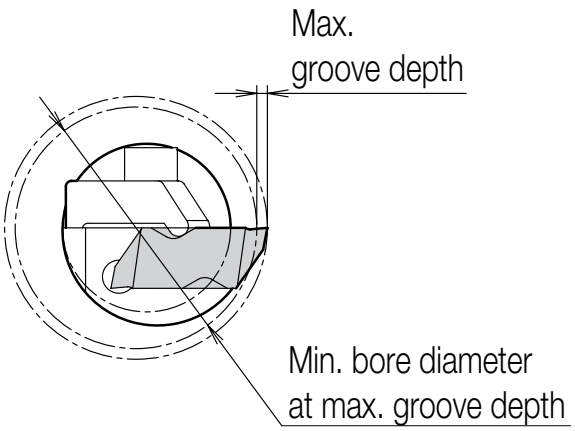
• Note: Right hand bars require left hand inserts and clamps. Left hand bars require right hand inserts and clamps

Also Available for Internal Threading. See Page J25

Applicable Insert

Toolholder	Insert G84
A-KKC$^{R}_{L}$ ...-2	**KCGP-2, KCG-2, KCRP-2**
A-KKC$^{R}_{L}$ ...-3	**KCGP-3, KCG-3, KCRP-3**
A-KKC$^{R}_{L}$ ...-4	**KCGP-4, KCRP-4**

Cutting Diameter Table



• "**CDX**" dimension is same as the "**CDX** dimension" of the available insert.

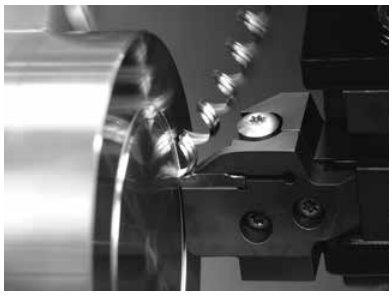
(inch)

Insert Size	CDX Dimension	Max Groove Depth	Min Bore Dia.
KCG-2 KCGP-2 KCRP-2	0.050	0.040	1.000
	0.110	0.110	2.500
		0.102	1.750
		0.098	1.500
		0.080	1.000
KCG-3 KCGP-3 KCRP-3	0.075	0.050	1.325
	0.094	0.080	1.250
		0.070	1.625
		0.065	1.325
	0.150	0.140	2.375
		0.135	2.125
		0.128	1.875
		0.115	1.625
		0.100	1.375
KCGP-4 KCRP-4	0.150	0.140	2.750
	0.250	0.240	5.750
		0.235	5.000
		0.230	4.500
		0.208	3.250
		0.190	2.500

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Face Grooving Dia. (DAXN / DAXX)

Face grooving diameter DAXN (min) ~ DAXX (max) is the suitable range for the initial grooving plunge on the unprocessed workpiece
(See Fig.1).
Then, you can widen it towards the inside or the outside within the tool's diameter range.



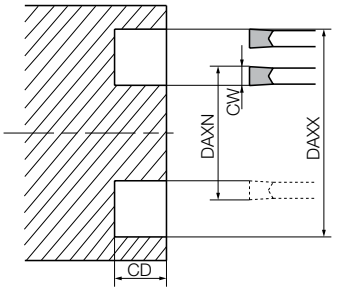
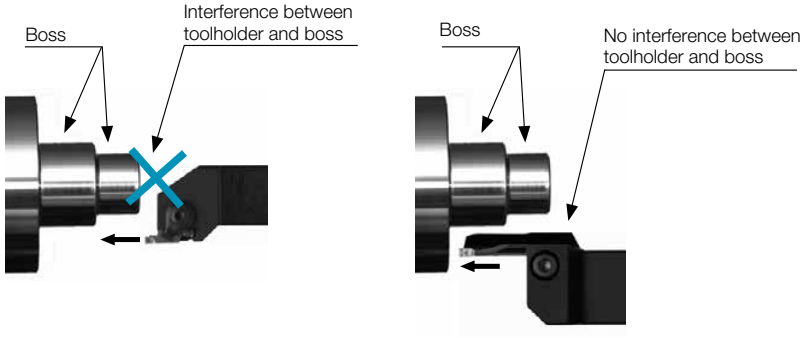


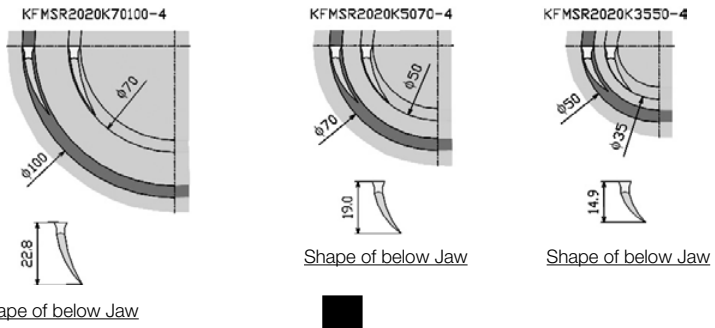
Fig.1

Caution for Face Grooving

1) When face grooving, the suitable toolholder depends on the length of the boss



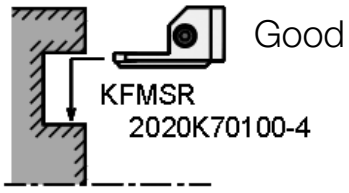
2) Selection of Face Grooving Toolholder

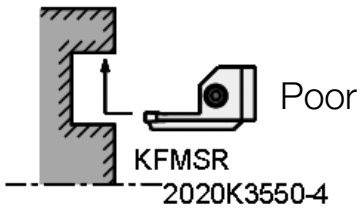


Shape of below Jaw

Shape of below Jaw

Shape of below Jaw



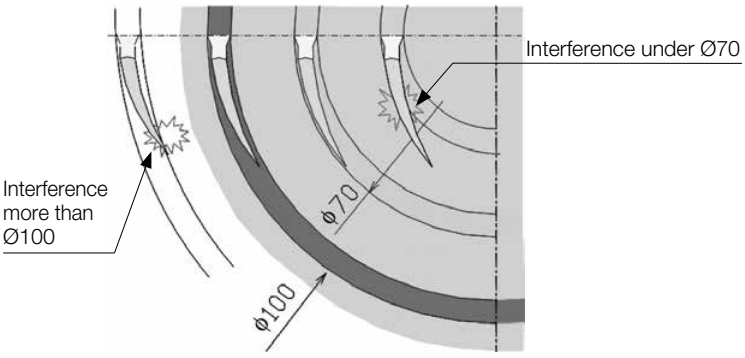


Wider grooving (turning) should be performed from the outside inwards.

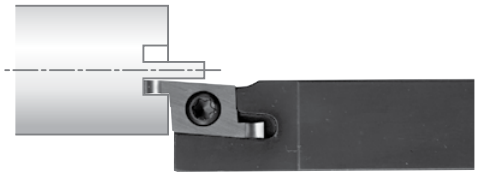
- Example of usage for the face grooving toolholder. When face grooving, KFMSR2525M70100-4 should be plunged between Ø70mm~Ø100mm starting at the outer diameter and moving torwards center. The jaw of toolholder interferes with the workpiece at diameters above Ø100mm or below Ø70mm.

3) Interference of Face Grooving Toolholder

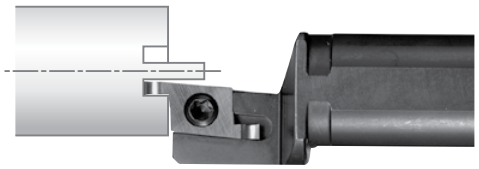
e.g.) KFMSR2525M70100-4



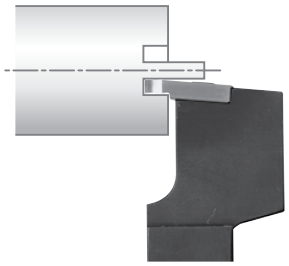
Small Diameter Face Grooving Ø0.236" (Ø6mm)~



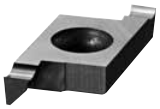
Type	STW
Min. Face Groove Dia.	0.236" (6.0mm)
Edge Width	0.020"~0.079" (0.5mm ~ 2.0mm)
Grooving Depth	0.039"~0.118" (1.0mm ~ 3.0mm)
Ref. Page	G94



Type	S...-STW
Min. Face Groove Dia.	0.236" (6.0mm)
Edge Width	0.020"~0.079" (0.5mm ~ 2.0mm)
Grooving Depth	0.039"~0.118" (1.0mm ~ 3.0mm)
Ref. Page	G94



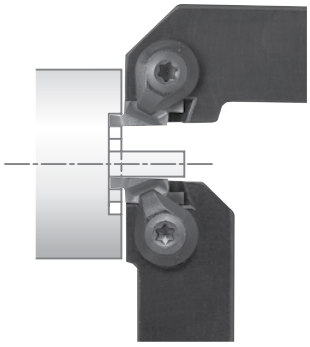
Type	STWS
Min. Face Groove Dia.	0.236" (6.0mm)
Edge Width	0.020"~0.079" (0.5mm ~ 2.0mm)
Grooving Depth	0.039"~0.118" (1.0mm ~ 3.0mm)
Ref. Page	G95



Twin Bar Horizontal Type

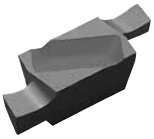
Twin Bar Vertical Type

Small Diameter Face Grooving Ø0.315" (Ø8mm)~



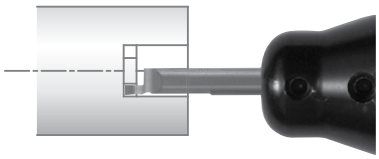
Type	GFVS-AA
Min. Face Groove Dia.	0.315" (8.0mm)
Edge Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.0866" (2.2mm)
Ref. Page	G124

Type	GFVT-AA
Min. Face Groove Dia.	0.315" (8.0mm)
Edge Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.0866" (2.2mm)
Ref. Page	G124

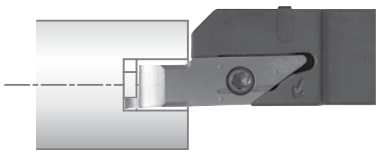


Ground Chipbreaker

Small Diameter Face Grooving Ø0.197"~, Ø0.315"~ (Ø5mm~, Ø8mm~)



Type	EZFG
Min. Face Groove Dia.	0.197", 0.236", 0.315" (5.0mm, 6.0mm, 8.0mm)
Edge Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.079"~0.118" (1.5mm ~ 3.0mm)
Ref. Page	G90

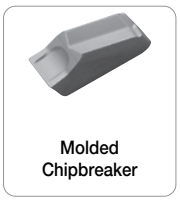


Type	VNFG
Min. Face Groove Dia.	0.315" (8.0mm)
Edge Width	0.039"~0.118" (1.0mm ~ 3.0mm)
Grooving Depth	0.079"~0.118" (2.0mm ~ 3.0mm)
Ref. Page	G92

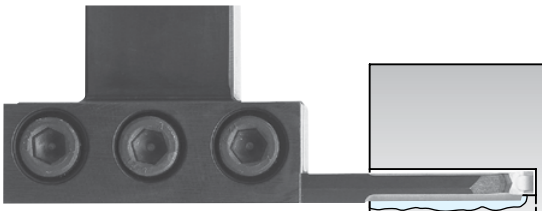
EZ-Bar

Swiss IQ Bar

Face Grooving Ø0.787" (Ø20mm)~

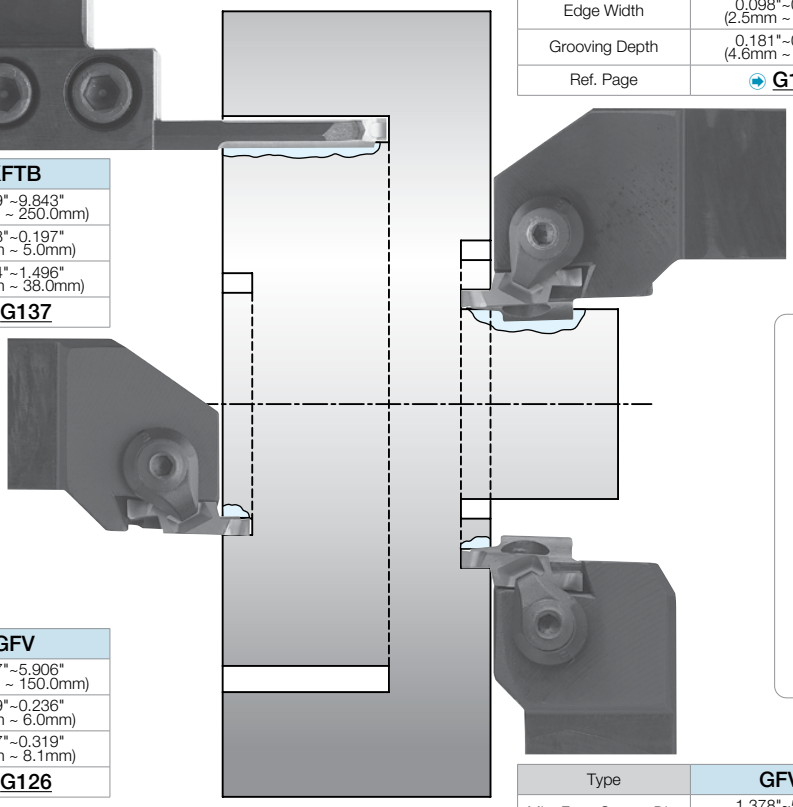


Molded Chipbreaker

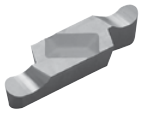


Type	KFTB
Min. Face Groove Dia.	2.559"~9.843" (65.0mm ~ 250.0mm)
Edge Width	0.158"~0.197" (4.0mm ~ 5.0mm)
Grooving Depth	0.984"~1.496" (25.0mm ~ 38.0mm)
Ref. Page	G137

Type	GFVS
Min. Face Groove Dia.	1.378"~5.906" (35.0mm ~ 150.0mm)
Edge Width	0.098"~0.236" (2.5mm ~ 6.0mm)
Grooving Depth	0.181"~0.319" (4.6mm ~ 8.1mm)
Ref. Page	G128



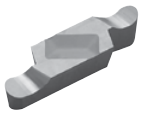
Ground Chipbreaker



Ground Chipbreaker Full-R

Type	GFV
Min. Face Groove Dia.	0.787"~5.906" (20.0mm ~ 150.0mm)
Edge Width	0.079"~0.236" (2.0mm ~ 6.0mm)
Grooving Depth	0.087"~0.319" (2.2mm ~ 8.1mm)
Ref. Page	G126

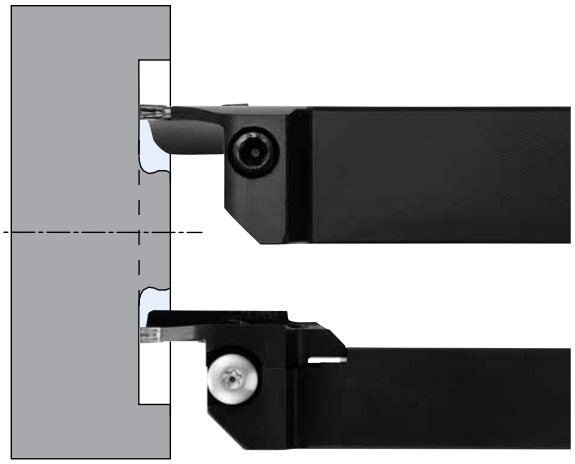
Ground Chipbreaker



Ground Chipbreaker Full-R

Type	GFVT
Min. Face Groove Dia.	1.378"~5.906" (35.0mm ~ 150.0mm)
Edge Width	0.098"~0.236" (2.5mm ~ 6.0mm)
Grooving Depth	0.181"~0.319" (4.6mm ~ 8.1mm)
Ref. Page	G128

KGDF Face Grooving Ø0.984" (Ø25mm)~ (G86~G113)



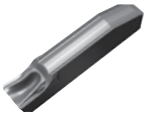
Type	KGDF-Z
Min. Face Groove Dia.	1.969" (50.0mm)
Edge Width	0.118"~0.197" (3.0mm ~ 5.0mm)
Grooving Depth	0.591" (15.0mm)
Ref. Page	G110

Type	*KGDF
Min. Face Groove Dia.	0.984" (25.0mm)
Edge Width	0.079"~0.236" (2.0mm ~ 6.0mm)
Grooving Depth	0.236"~1.260" (6.0mm ~ 32.0mm)
Ref. Page	G100

*The SwitchBlade type toolholders can accept all blades if their hand is matching.

Grooving and Turning
GM

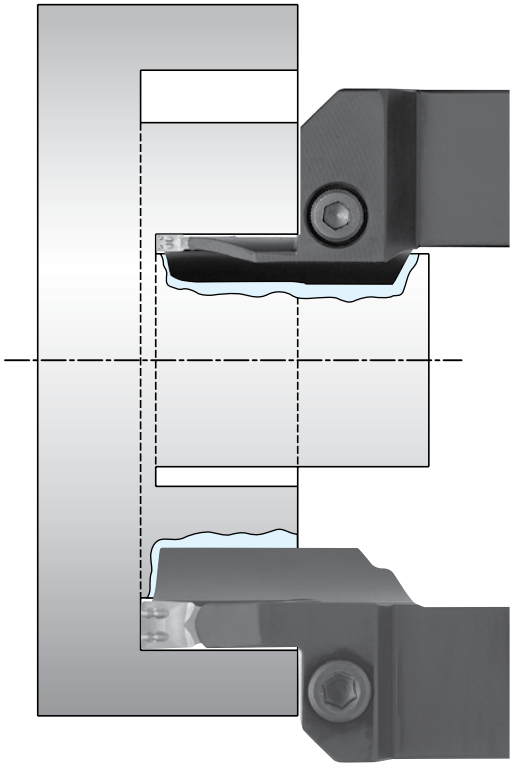
Deep Grooving and Turning
DM



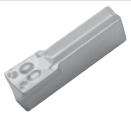
High Feed Rate
GH

Full Radius (R)
CM

Face Grooving & Turning Ø0.984" (Ø25mm)~



Type	KFMS
Min. Face Groove Dia.	0.984"~9.252" (25.0mm~235.0mm)
Edge Width	0.118"~0.236" (3.0mm ~ 6.0mm)
Grooving Depth	0.512"~1.260" (13.0mm ~ 32.0mm)
Ref. Page	G134

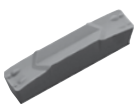


Molded Chipbreaker

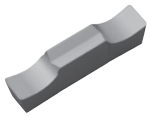
Type	KKCE
Min. Face Groove Dia.	0.940"~1.630"
Edge Width	0.125"~0.189" (3.15mm~4.80mm)
Grooving Depth	0.060"~0.150" (1.52mm~3.81mm)
Ref. Page	G133

Ground Chipbreaker

Type	KFMS-8
Min. Face Groove Dia.	2.126"~6.102" (54.0mm~155.0mm)
Edge Width	0.315" (8.0mm)
Grooving Depth	0.984" (25.0mm)
Ref. Page	G136



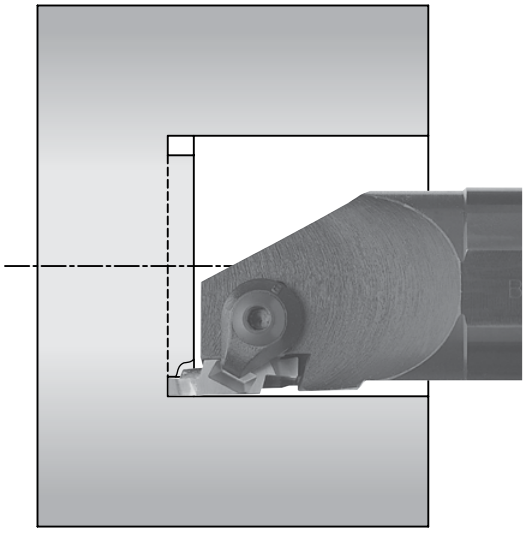
Molded Chipbreaker



Ground Chipbreaker

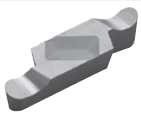
Molded Chipbreaker Full-R

Face Grooving Ø1.378" (Ø35mm)~



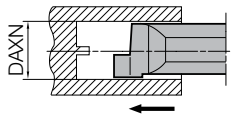
Type	GIFV
Min. Face Groove Dia.	1.378"~1.969" (35.0mm~50.0mm)
Edge Width	0.079"~0.236" (2.0mm~6.0mm)
Grooving Depth	0.087"~0.319" (2.2mm~8.1mm)
Ref. Page	G138

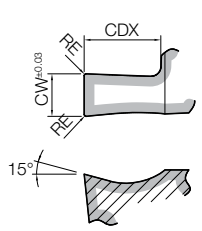
Ground Chipbreaker



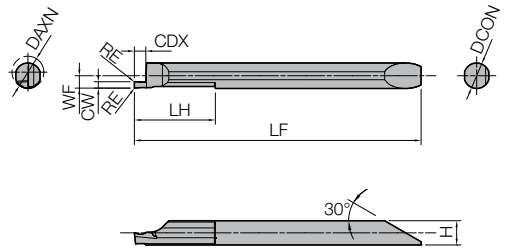
Ground Chipbreaker Full-R

EZFG





Edge Detail



• Right-hand shown

Dimensions

Part Number	Min. Face Groove Dia.	Dimensions (mm)								MEGACOAT (NEW)		Carbide (NEW)	Applicable Sleeve ➡ G91
	DAXN	$CW^{\pm 0.03}$	RE	DCON	H	LF	LU	WF	CDX	PR1225 R	PR1225 L	GW05 R	
EZFGR 050040-100	5	1.0	$^{\pm 0.013}$ 0.05	4	3.8	45.0	12	1.9	1.5	●	●	●	EZH040..
050040-150		1.5							2.0	●	●	●	
EZFGR 060050-100	6	1.0	$^{\pm 0.013}$ 0.05	5	4.8	53.2	15	2.4	1.5	●	●	●	EZH050..
060050-150		1.5							2.5	●	●	●	
060050-200		2.0							3.0	●	●	●	
EZFGR 080070-100	8	1.0	$^{\pm 0.013}$ 0.05	7	6.8	64.2	25	3.4	2.0	●	●	●	EZH070..
080070-150		1.5							2.5	●	●	●	
080070-200		2.0							3.0	●	●	●	
080070-300		3.0								●	●	●	

• Dimension **CDX** shows the available grooving depth.

Recommended Cutting Conditions

Workpiece Material	Insert Grade (Vc: sfm)		EZFGR 050040-100 EZFGR 060050-100 EZFGR 080070-100	EZFGR 050040-150 EZFGR 060050-150 EZFGR 080070-150	EZFGR 060050-200 EZFGR 080070-200	EZFGR 080070-300	Notes
	MEGACOAT	Carbide					
	PR1225	GW05	Feed Rate (ipr)				
Carbon Steel / Alloy Steel	★ 100~330	-	~0.0008	~0.0012	~0.0016	~0.0020	Wet
Stainless Steel	★ 100~260	-	~0.0004	~0.0008	~0.0008	~0.0012	
Non-Ferrous	-	★ ~980	~0.0012	~0.0020	~0.0024	~0.0031	

★ : 1st Recommendation

EZ-Bar Sleeve Identification System (Face Grooving)

EZ FG R 050 040 – 100

EZ Symbol of Bar	Application	Hand of Tool	Min. Bore Dia.	Shank Dia.	Groove Width
	FG : Face Grooving	**R** : Right-hand **L** : Left-hand	**050** : 5mm **060** : 6mm **080** : 8mm	**040** : 4mm **050** : 5mm **070** : 7mm	**100** : 1.0mm **150** : 1.5mm **200** : 2.0mm **300** : 3.0mm

EZ Bars are sold in 1 piece boxes.

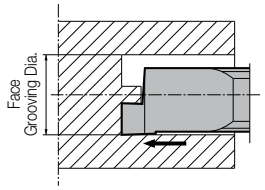
(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

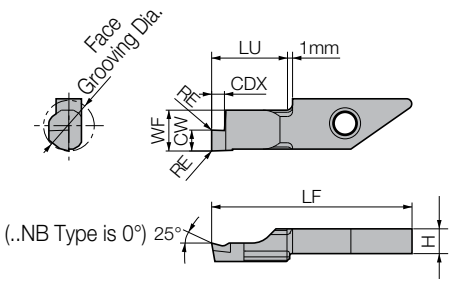
Applicable Sleeves

Sleeve Part Number				Applicable Bar for Internal Face Grooving		
EZH-CT (Adjustable Overhang Length / with Coolant Hole) F30~F31	EZH-HP (Adjustable Overhang Length) F32~F33	EZH-ST F34	Sleeve Shank Dia. DCON (mm)	EZFG	EZ Bar Shank Dia. DCON (mm)	Applicable Machine Manufacturer
-	-	EZH 04012ST-80	12.00	EZFG®L 050040-...	4	(General Purpose)
		05012ST-80		EZFG®L 060050-...	5	
		07012ST-80		EZFG®L 080070-...	7	
-	EZH 04016HP-100	EZH 04016ST-100	16.00	EZFG®L 050040-...	4	(General Purpose)
	05016HP-100	05016ST-100		EZFG®L 060050-...	5	
	07016HP-100	07016ST-100		EZFG®L 080070-...	7	
EZH 04019CT-120	EZH 04019HP-120	EZH 04019ST-120	0.750"	EZFG®L 050040-...	4	Citizen Machinery
05019CT-120	05019HP-120	05019ST-120		EZFG®L 060050-...	5	
07019CT-120	07019HP-120	07019ST-120		EZFG®L 080070-...	7	
EZH 04020CT-120	EZH 04020HP-120	EZH 04020ST-120	20.00	EZFG®L 050040-...	4	Amada Machine Tools / Eguro / Tsugami / Citizen Machinery / (General purpose)
05020CT-120	05020HP-120	05020ST-120		EZFG®L 060050-...	5	
07020CT-120	07020HP-120	07020ST-120		EZFG®L 080070-...	7	
EZH 04022CT-135	EZH 04022HP-135	EZH 04022ST-135	22.00	EZFG®L 050040-...	4	Star Micronics / Nomura DS / Tsugami
05022CT-135	05022HP-135	05022ST-135		EZFG®L 060050-...	5	
07022CT-135	07022HP-135	07022ST-135		EZFG®L 080070-...	7	
EZH 04025.0CT-135	EZH 04025.0HP-135	EZH 04025.0ST-135	25.00	EZFG®L 050040-...	4	Amada Machine Tools / Eguro / Tsugami / Citizen Machinery / (General purpose)
05025.0CT-135	05025.0HP-135	05025.0ST-135		EZFG®L 060050-...	5	
07025.0CT-135	07025.0HP-135	07025.0ST-135		EZFG®L 080070-...	7	
EZH 04025.4CT-120	EZH 04025.4HP-120	EZH 04025.4ST-120	1.000"	EZFG®L 050040-...	4	Citizen Machinery
05025.4CT-120	05025.4HP-120	05025.4ST-120		EZFG®L 060050-...	5	
07025.4CT-120	07025.4HP-120	07025.4ST-120		EZFG®L 080070-...	7	

- Choose sleeves with a **DCON** dimension that matches the **DCB** dimension of the EZ Bar.
- **EZH-ST** sleeves are not adjustable. To adjust overhang of the **EZFG** bars, please use **EZH-CT/HP** sleeves.
- Machine manufacturers in random order.

VNFG (Swiss IQ Bar)





• Right-hand shown

Dimensions

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		MEGA COAT	PVD Coated Carbide	Carbide	PCD	
		PR1225	PR930	KW10	KPD001	KPD010
P	Carbon Steel / Alloy Steel	●	○			
M	Stainless Steel	●	○			
K	Cast Iron			●		
N	Non-ferrous Metals			○	●	
S	Titanium Alloy			○	●	
H	Hard materials (≤40HRC)	○	○			
	Hard materials (≥40HRC)					

Part Number	Face Grooving Dia.		Dimensions (mm)								MEGA COAT	PVD Coated Carbide	Carbide	PCD		Ref. Page for Toolholder
	DAXN (MIN)	DAXX (MAX)	CW±0.001 inch	CW±0.03 mm	RE	H	LF	LU	WF	CDX	PR1225	PR930	KW10	KPD001	KPD010	
VNFGR 0810-10	8 (0)	∞ (∞)	0.039	1.0	0.05	3.9	29.6	10	7.3	2.0	●	●	●			F38 F39
0820-10			0.079	2.0	0.05	3.9	29.6	10	7.3	2.0		●	●			
0830-10			0.118	3.0	0.05	3.9	29.6	10	7.3	3.0		●	●			
VNFGR 0820-10NB			0.079	2.0	0.05	3.9	29.6	10	7.3	2.0				□	□	
0830-10NB			0.118	3.0	0.05	3.9	29.6	10	7.3	3.0				□	□	

• Dimension **CDX** shows the available grooving depth

• Face grooving diameter **DAXN (0)** means that you can make the initial groove within **DAXN** (min) - **DAXX** (max) and then widen it to the center.

Swiss IQ Bars are sold in 5 piece boxes. *CBN & PCD Inserts are sold in 1 piece boxes.*

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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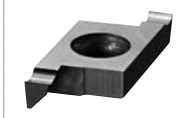
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

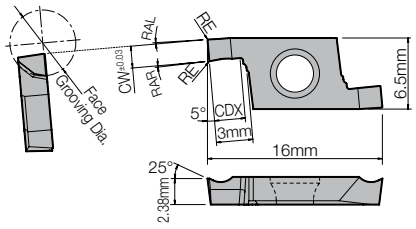
Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)			VNFG0810	VNFG0820	VNFG0830	Notes
	MEGACOAT	PVD Coated Carbide	Carbide				
	PR1225	**PR930**	**KW10**	**Feed Rate (ipr)**			
Carbon Steel / Alloy Steel	★ 100~330	☆ 100~330	-	~0.0008	~0.0016	~0.0020	Wet
Stainless Steel	★ 100~260	☆ 100~260	-	~0.0004	~0.0008	~0.0012	
Non-ferrous Metals	-	-	★ ~980	~0.0016	~0.0024	~0.0031	

★ : 1st Recommendation ☆ : 2nd Recommendation

TWFG (Horizontal Type)





• Left-hand Shown

Part Number	Face Grooving Dia.		Dimensions (mm)				Angle (°)	Insert Grade		
	DAXN (MIN)	DAXX (MAX)	CW inch	CW mm	RE	CDX	RA	MEGA COAT NANO PR1535	PVD Coated Carbide PR1025	Carbide KW10
TWFGL 050	6 (0)	∞ (∞)	0.020	0.50	0.05	1.0	1.5°	●	△	●
080			0.031	0.80	0.05	1.5	1.5°	●	△	●
100			0.039	1.00	0.05	2.2	2.0°	●	△	●
125			0.049	1.25	0.05	2.2	2.0°	●	△	●
150			0.059	1.50	0.05	2.2	2.0°	●	△	●
180			0.071	1.80	0.05	3.0	2.0°	●	△	●
200			0.079	2.00	0.05	3.0	2.0°	●	△	●

• Dimension **CDX** shows the available grooving depth

• Face grooving diameter **DAXN (0)** means that you can make the initial groove within **DAXN** (min) - **DAXX** (max) and then widen it to the center.

STW (Square Shank for Horizontal Type)

Right-hand toolholder for boring, see Page F42

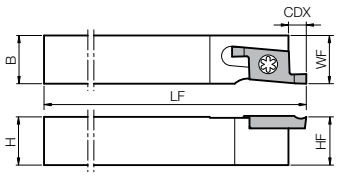


Fig.1

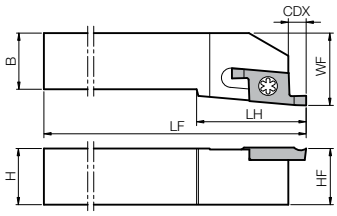


Fig.2

• Left-hand Shown

Toolholder Dimensions

Part Number	Stock	Dimensions (mm) H	HF	B	LF	LH	WF	CDX	Drawing	Spare Parts Clamp Screw	Wrench	Applicable Inserts Above
STWL 1616K-15	●	16	16	16	125	-	16	3	Fig.1	SB-3080TR	LTW-10S	TWFGL ○○○
2020K-15	●	20	20	20	125	25	25	3	Fig.2	SB-3080TR	LTW-10S	TWFGL ○○○
2525M-15	●	25	25	25	150	25	32	3				

• Dimension **CDX** shows the distance from the Toolholder to the cutting edge. See dimension **CDX** of insert table for available Groove Depth.

S...-STW (Round Shank for Horizontal Type)

Right-hand toolholder for boring, see Page F42

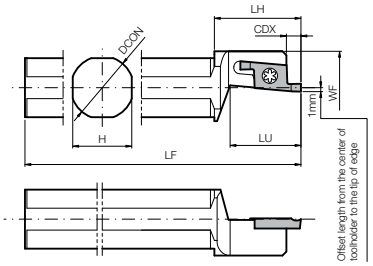


Fig.1

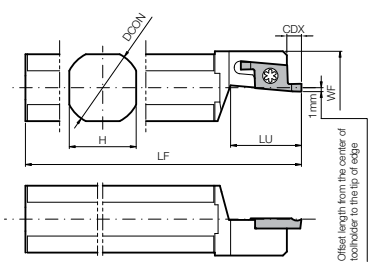


Fig.2

• Left-hand Shown

Toolholder Dimensions

Part Number	Stock	Dimensions (mm) DCON	WF	H	LF	LU	LH	CDX	Drawing	Spare Parts Clamp Screw	Wrench	Applicable Inserts Above
S12F- STWL15	●	12.000	20.0	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWFGL ○○○
S16F- STWL15	●	16.000	20.0	15	85	18	22	3				
S19G- STWL15	●	0.750"	18.5	17	90	18	-	3	Fig.2	SB-3080TR	LTW-10S	TWFGL ○○○
S19K- STWL15	●	0.750"	18.5	17	120	18	-	3				
S20K- STWL15	●	20.000	19.5	18	120	18	-	3				
S22K- STWL15	●	22.000	21.5	20	125	22	-	3				
S25.0J- STWL15	●	25.000	24.5	23	110	22	-	3				
S25K- STWL15	●	1.000"	25.0	23	120	22	-	3				

• Dimension **CDX** shows the distance from the Toolholder to the cutting edge. See dimension **CDX** of insert table for available Groove Depth.

Twin Bars are sold in 5 piece boxes

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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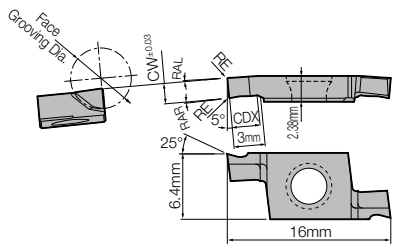
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

TWFGT (Vertical Type)



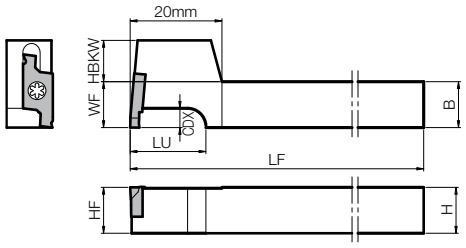
• Right-hand shown

Part Number	Face Grooving Dia.		Dimensions (mm)				Angle (°)	Insert Grade		
	DAXN (MIN)	DAXX (MAX)	CW inch	CW mm	RE	CDX	RA	MEGA COAT NANO PR1535	PVD Coated Carbide PR1025	Carbide KW10
TWFGTR 050	6 (0)	∞ (∞)	0.020	0.50	0.05	1.0	1.5°	●	△	●
080			0.031	0.80	0.05	1.5	1.5°	●	△	●
100			0.039	1.00	0.05	2.2	2.0°	●	△	●
125			0.049	1.25	0.05	2.2	2.0°	●	△	●
150			0.059	1.50	0.05	2.2	2.0°	●	△	●
180			0.071	1.80	0.05	3.0	2.0°	●	△	●
200			0.079	2.00	0.05	3.0	2.0°	●	△	●

• Dimension **CDX** shows the available grooving depth

• Face grooving diameter **DAXN (0)** means that you can make the initial groove within **DAXN** (min) - **DAXX** (max) and then widen it to the center.

STWS (Square Shank for Vertical Type : L-Shape)



• Right-hand shown

Toolholder Dimensions

Part Number	Stock	Dimensions (mm) H	HF	B	LF	LU	WF	HBKW	CDX	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
STWSR 1010JX-15T	●	10	10	10	120	16	10	9	3	SB-3080TR	LTW-10S	TWFGTR ○○○
1212JX-15T	●	12	12	12	120	16	12	7				
1616JX-15T	●	16	16	16	120	20	16	3				
STWSR 1010F-15T	●	10	10	10	85	16	10	9				
1212F-15T	●	12	12	12	85	16	12	7				

• Dimension **CDX** shows the distance from the Toolholder to the cutting edge. See dimension **CDX** of insert table for available Groove Depth.

Recommended Cutting Conditions (TWFG / TWFGT)

Workpiece Material	Recommended Insert Grade (Vc sfm) MEGACOAT NANO PR1535	PVD Coated Carbide PR1025	Carbide KW10	TWFGL050 TWFGL080 TWFGL100 TWFGTR050 TWFGTR080 TWFGTR100	TWFGL125 TWFGL150 TWFGTR125 TWFGTR150	TWFGL180 TWFGL200 TWFGTR180 TWFGTR200	Notes
				Feed Rate (ipr)			
Carbon Steel / Alloy Steel	★ 100~330	☆ 100~330	-	~0.0008	~0.0012	~0.0016	
Stainless Steel	★ 100~260	☆ 100~260	-	~0.0004	~0.0008	~0.0008	Wet
Non-ferrous Metals	-	-	★ ~980	~0.0012	~0.0016	~0.0024	

★ : 1st Recommendation

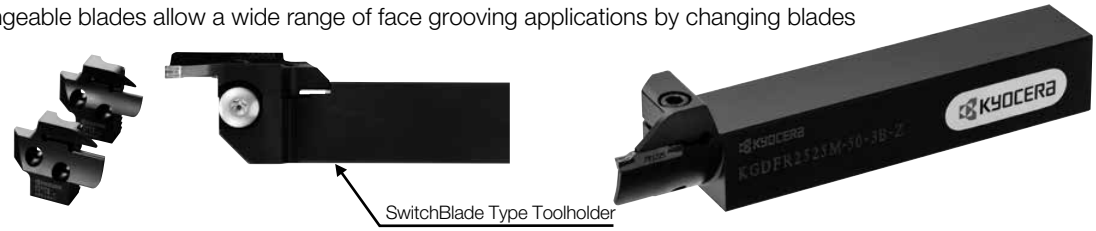
Twin Bars are sold in 5 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Features

SwitchBlade type toolholder (toolholder + blade) and Integral type toolholder are available.

Interchangeable blades allow a wide range of face grooving applications by changing blades

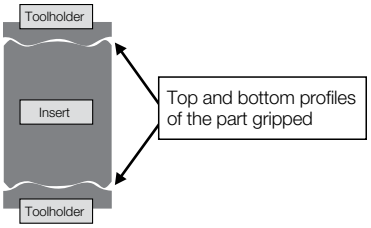


New insert clamping system "W Grip"

Unique "W Grip" (insert anti-slip structure) provides rigid clamping for stable machining quality

1) Prevents abnormal machining surface and / or insert breakage resulting from insert slippage.
2) Improves repeat accuracy of insert installation

GDFM and GDFMS inserts are not applicable to KGD external grooving and cut-off toolholders.



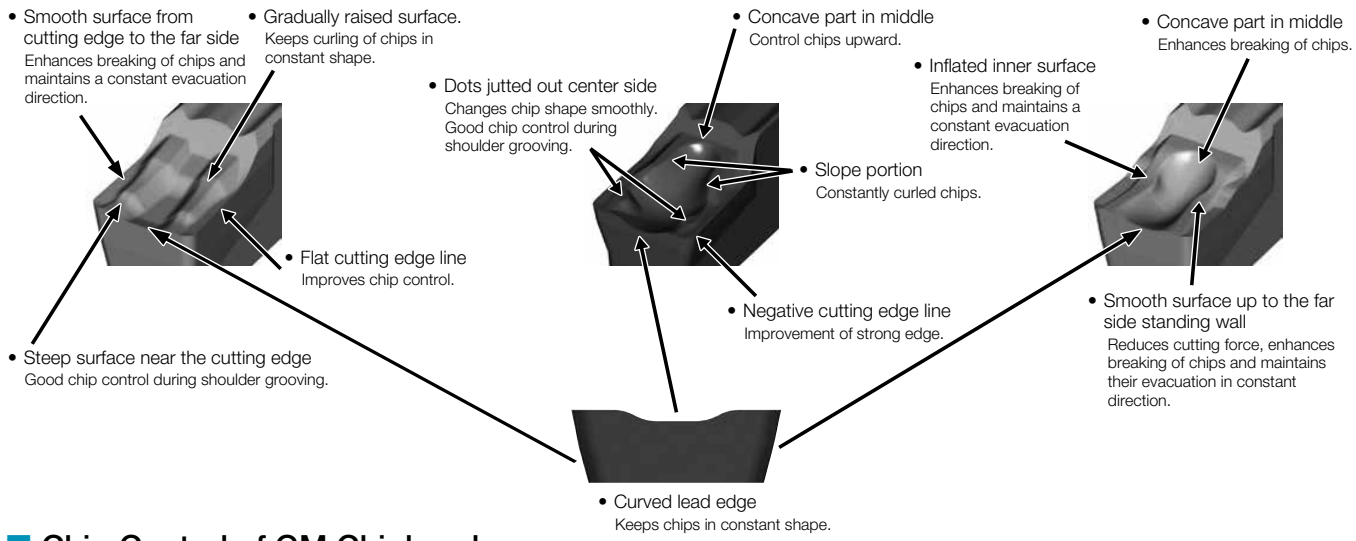
W Grip technology

Smooth chip control

GM chipbreaker for general purpose, GH chipbreaker for high speed grooving, and DM chipbreaker for deep grooving

Advantages of Chipbreaker

For General Purpose GM Chipbreaker	For High Feed Grooving GH Chipbreaker	For Deep Grooving DM Chipbreaker

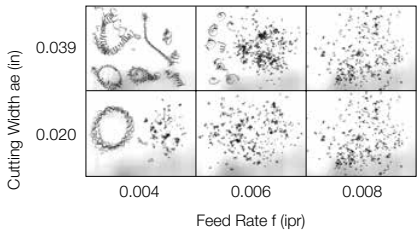


Chip Control of GM Chipbreaker

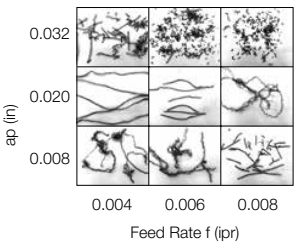
<Cutting Conditions>
Vc=490sfm f=0.002~0.008ipr GDFM5020N-040GM 4118 Wet

Face Grooving(Ø2.440" / Ø62)

Side Grooving



Turning



High precision edge preparation

High precision molding technology with tolerance ±0.03mm (Edge width 2, 3, 4mm types)

Highly-reputed MEGACOAT technology

Long tool life and high efficiency machining achieved by superior oxidation resistance and wear resistance.

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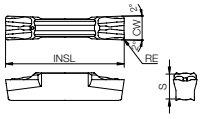
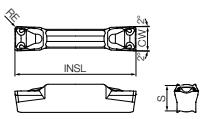
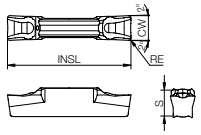
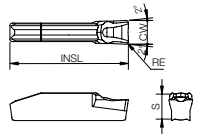
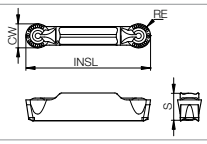
GDFM / GDFMS

Usage Classification
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	●		◕	◔
M	Stainless Steel			◕	◔
K	Cast Iron				◕
N	Non-ferrous Metals				
S	Titanium Alloy				
H	Hard materials (≤40HRC)				
	Hard materials (≥40HRC)				

Insert			Part Number		Dimensions (in)						Cermet		MEGA COAT		Ref. Page for Toolholder
					CW			RE	INSL	S	TN620	TN90	PR1225	PR1215	
					in	mm	Tolerance								
Grooving and Turning			GDFM	2020N-020GM	0.079	2.0	±0.0012	0.008	0.827	0.154		●	●	●	
				3020N-030GM	0.118	3.0		0.012	0.787	0.169		●	●	●	
				4020N-040GM	0.157	4.0		0.016		0.177		●	●	●	
				5020N-040GM	0.197	5.0	±0.0016	0.016				●	●	●	
				5020N-080GM	0.197	5.0		0.031				●	●	●	
				6020N-040GM	0.236	6.0		0.016				●	●	●	
				6020N-080GM	0.236	6.0		0.031				●	●	●	
Grooving and Turning (High Feed)			GDFM	4020N-040GH	0.157	4.0	±0.0012	0.016	0.787	0.177			●	●	
				5020N-040GH	0.197	5.0	±0.0016	0.016					●	●	
				5020N-080GH	0.197	5.0		0.031					●	●	
				6020N-040GH	0.236	6.0		0.016					●	●	
				6020N-080GH	0.236	6.0		0.031					●	●	
Deep Grooving and Turning			GDFM	3020N-030DM	0.118	3.0	±0.0012	0.012	0.787	0.169		●	●	●	G100 ~ G120
				4020N-040DM	0.157	4.0		0.016		0.177		●	●	●	
				5020N-040DM	0.197	5.0	±0.0016	0.016				●	●	●	
				6020N-040DM	0.236	6.0		0.016				●	●	●	
	1-Edge		GDFMS	3020N-030DM	0.118	3.0	±0.0012	0.012	0.787	0.169		●	●	●	
				4020N-040DM	0.157	4.0		0.016		0.177		●	●	●	
				5020N-040DM	0.197	5.0	±0.0016	0.016				●	●	●	
				6020N-040DM	0.236	6.0		0.016				●	●	●	
Full Radius (R) Grooving	Full (R)		GDFM	3020N-150R-CM	0.118	3.0	±0.0012	0.059	0.787	0.169	●		●	●	
				4020N-200R-CM	0.157	4.0		0.079	*0.827	0.177	●		●	●	
				5020N-250R-CM	0.197	5.0	±0.0016	0.098	*0.827		●		●	●	
				6020N-300R-CM	0.236	6.0		0.118	*0.866		●		●	●	

*GDFM 40/50/60-CM (Full R) have different **INSL** dimensions than other models to prevent interference between the holder and the workpiece.

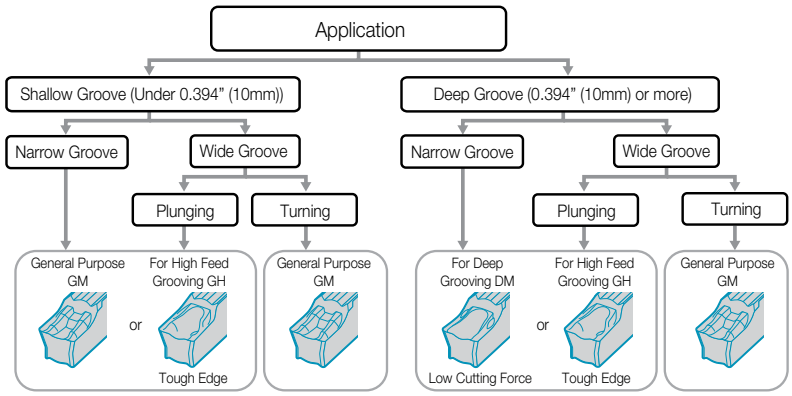
Recommended Cutting Conditions G122

Inserts are sold in 10 piece boxes.

Inserts Identification System

GDF	M	S	30	20	N	–	030	DM
Series	Tolerance Symbol	No. of edge	Width	Insert Length	Hand of Tool		Corner-R (rε)	Chipbreaker Symbol
	M : Class M	**No Indication** : 2-Edge	**20** : 2mm	**20** : 20mm	**N** : Neutral		**020** : 0.2mm	**GM** : Grooving and Turning
		S: 1-Edge	**30** : 3mm				**030** : 0.3mm	**DM** : Grooving
			:				**040** : 0.4mm	**GH** : High feed grooving
							150R : 1.5mm (Full-R)	**CM** : Full Radius

Chipbreaker Selection

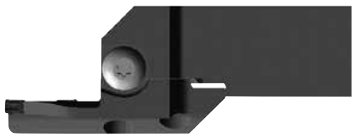
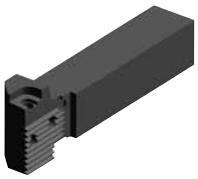
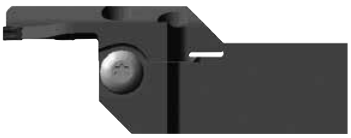
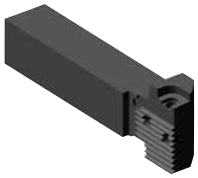


* If chip control is not stable when grooving with the general purpose GM chipbreaker, change the chipbreaker to the DM chipbreaker for deep grooving or GH chipbreaker for high feed grooving.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

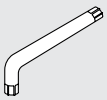
KGDF

Toolholder Assembly Identification

Unit Part Number (Unit Part Number is Not Printed)	Blade (Blade Part Number is Printed)	Toolholder (Toolholder Part Number is Printed)
Left-hand : KGDFL...S	Left-hand : KGDFL...-C	Right-hand : KGDR...-C
 • Left-hand shown	• Left-hand shown	 • Right-hand shown
Right-hand : KGDFR...S	Right-hand : KGDFR...-C	Left-hand : KGDL...-C
 • Right-hand shown	• Right-hand shown	 • Left-hand shown

- **Right-hand** Blade for **Left-hand** Toolholder, **Left-hand** Blade for **Right-hand** Toolholder.
- The Unit Part Number is not printed on the product. It is printed on the box label.
- Combination of the toolholder and blade (both sold separately) can make up the corresponding assembly.
- The insert clamping screw (BH6X10TR), blade fixing screw (SB-60120TR) and wrench (LTW-25) are included with the toolholder.

Spare Parts (Common with SwitchBlade Holders)

Unit Part Number	Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
			
KGDF$^{R}_{L}$...S	BH6X10TR	SB-60120TR	LTW-25

* The spare parts above are included with the toolholder and unit.

Face Grooving Toolholder Assembly Identification System (Face Grooving - SwitchBlade)

Hand of Tool	Toolholder Shank Size	Toolholder Length	Width	Symbol of Assembly Toolholder
R:Right-hand	**2020** : □20	**X** : Special	**2** : 2mm	**S** : indicates the unit description
L:Left-hand	**2525** : □25		**3** : 3mm	
			:	

KGDF R 2020 X 25 – 3 A S

Series	Min. Diameter in Face Grooving		Grooving Depth	
KGDF Face Grooving	Indicates the minimum external diameter suitable for the initial face grooving plunge.	* For the maximum external diameter which can be applied to the initial face grooving, see the MAX. value of "Face Grooving Dia. DAXX" in the dimension tables of toolholders and blades.	**A** : 6~13mm **B** : 13~15mm	2-Edge Insert (1-Edge Insert can also be used.)
	25 : 25mm		**C** : 20~25mm **D** : 32mm	1-Edge Insert
	:			
	235 : 235mm			

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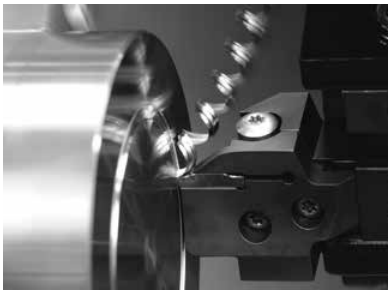
Face Grooving Dia. (DAXN / DAXX)

Face grooving diameter DAXN (min) ~ DAXX (max) is the suitable range for the initial grooving plunge on the unprocessed workpiece
(See Fig.1).
Then, you can widen it towards the inside or the outside within the tool's diameter range.



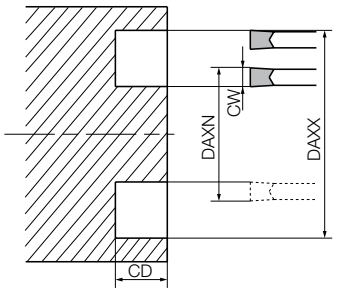
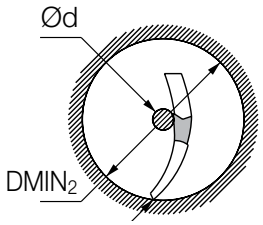


Fig.1

Limit of Turning toward Center

Turning towards the Center causes the toolholder to interfere with the groove wall depending on the initial cut's diameter.



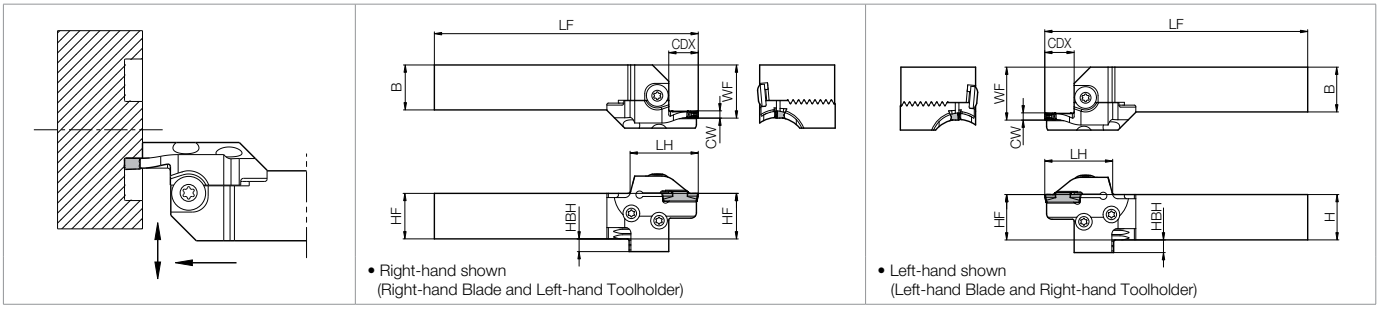
Remaining Boss Dia. Ød

Part Number		DMIN2 (mm)			
		25	26	27	28 and over
		Ød (mm)			
KGDFR/L	2020X25-3AS	4	2	0	(No Remaining Boss)
	2525X25-3AS				
KGDFR/L	2020X25-4AS	6	3	0	
	2525X25-4AS				
KGDFR/L	2020X25-5AS	7	4	1	
	2525X25-5AS				
KGDFR/L	2020X25-6AS	9	4	1	
	2525X25-6AS				

e.g.)
If a groove of external diameter Ø25mm is created using KGDFR2020X25-3AS and turning is made toward the inside, a Ø4mm portion will be left in the middle due to interference from toolholder.

KGDF Face Grooving 0° SwitchBlade Toolholders (Inch-Size)

0.079" Insert Width



• Right-hand shown
(Right-hand Blade and Left-hand Toolholder)

• Left-hand shown
(Left-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number ➡ G37	Stock R	Stock L	Blade Part Number ➡ G121	Stock R	Stock L	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX*
0°	0.079 (2mm)	□0.75	0.236 (6mm)	0.984	1.181	No Unit Part Number ➡	KGDL12-C		●	KGDFR -25-2A-C	●		0.750	0.750	0.510	0.750	4.528	1.299	0.927	0.236 (6mm)
				1.181	1.378					-30-2A-C	●									
				1.378	1.772					-35-2A-C	●									
				1.772	2.362					-45-2A-C	●									
				2.362	3.150					-60-2A-C	●									
				3.150	3.937					-80-2A-C	●									
				3.937	5.118					-100-2A-C	●									
			0.512 (13mm)	0.984	1.181					KGDFR -25-2B-C	●		0.750	0.750	0.510	0.750	4.646	1.417	0.927	0.512 (13mm)
			0.591 (15mm)	1.181	1.378					KGDFR -30-2B-C	●		0.750	0.750	0.510	0.750	4.724	1.496	0.927	0.591 (15mm)
				1.378	1.772					-35-2B-C	●									
				1.772	2.362					-45-2B-C	●									
				2.362	3.150					-60-2B-C	●									
				3.150	3.937					-80-2B-C	●									
				3.937	5.118					-100-2B-C	●									
		□1.00	0.236 (6mm)	0.984	1.181	No Unit Part Number ➡	KGDL16-C		●	KGDFR -25-2A-C	●		1.000	1.000	0.260	1.000	5.512	1.299	1.177	0.236 (6mm)
				1.181	1.378					-30-2A-C	●									
				1.378	1.772					-35-2A-C	●									
				1.772	2.362					-45-2A-C	●									
				2.362	3.150					-60-2A-C	●									
				3.150	3.937					-80-2A-C	●									
				3.937	5.118					-100-2A-C	●									
			0.512 (13mm)	0.984	1.181					KGDFR -25-2B-C	●		1.000	1.000	0.260	1.000	5.630	1.417	1.177	0.512 (13mm)
			0.591 (15mm)	1.181	1.378					KGDFR -30-2B-C	●		1.000	1.000	0.260	1.000	5.709	1.496	1.177	0.591 (15mm)
				1.378	1.772					-35-2B-C	●									
				1.772	2.362					-45-2B-C	●									
				2.362	3.150					-60-2B-C	●									
				3.150	3.937					-80-2B-C	●									
				3.937	5.118					-100-2B-C	●									

Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see ➡ G98

Applicable Inserts ➡ G97

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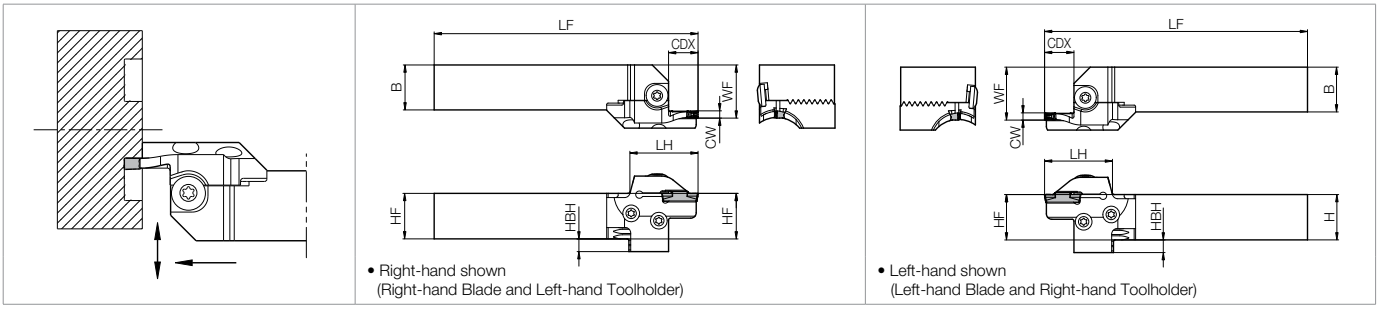
KGDF Face Grooving 0° SwitchBlade Toolholders (Inch-Size)

0.118" Insert Width



Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number G37	Stock R	Stock L	Blade Part Number G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX*
0°	0.118 (3mm)	□0.75	0.512 (13mm)	0.984	1.181	No Unit Part Number ➡	KGDL12-C		●	KGDFR -25-3A-C	●		0.750	0.750	0.510	0.750	4.650	1.420	0.927	0.512 (13mm)
				1.181	1.575					-30-3A-C	●									
				1.575	1.969					-40-3A-C	●									
			0.591 (15mm)	1.969	2.559					-50-3B-C	●		0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				2.559	3.346					-65-3B-C	●									
				3.346	4.331					-85-3B-C	●									
				4.331	5.709					-110-3B-C	●									
			0.866 (22mm)	1.969	2.559					KGDFR -50-3C-C	●		0.750	0.750	0.510	0.750	5.000	1.770	0.927	0.866 (22mm)
				2.559	3.346					-65-3C-C	●									
			0.984 (25mm)	3.346	4.331					-85-3C-C	●		0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				4.331	5.709					-110-3C-C	●									
		□1.00	0.512 (13mm)	0.984	1.181	No Unit Part Number ➡	KGDL16-C		●	KGDFR -25-3A-C	●		1.000	1.000	0.260	1.000	5.630	1.420	1.177	0.512 (13mm)
				1.181	1.575					-30-3A-C	●									
				1.575	1.969					-40-3A-C	●									
			0.591 (15mm)	1.969	2.559					-50-3B-C	●		1.000	1.000	0.260	1.000	5.710	1.500	1.177	0.591 (15mm)
				2.559	3.346					-65-3B-C	●									
				3.346	4.331					-85-3B-C	●									
				4.331	5.709					-110-3B-C	●									
			0.866 (22mm)	1.969	2.559					KGDFR -50-3C-C	●		1.000	1.000	0.260	1.000	5.980	1.770	1.177	0.866 (22mm)
				2.559	3.346					-65-3C-C	●									
			0.984 (25mm)	3.346	4.331					-85-3C-C	●		1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				4.331	5.709					-110-3C-C	●									
0°	0.118 (3mm)	□0.75	0.512 (13mm)	0.984	1.181	No Unit Part Number ➡	KGDR12-C	●		KGDFL -25-3A-C		●	0.750	0.750	0.510	0.750	4.650	1.420	0.927	0.512 (13mm)
				1.181	1.575					-30-3A-C		●								
				1.575	1.969					-40-3A-C		●								
			0.591 (15mm)	1.969	2.559					-50-3B-C		●	0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				2.559	3.346					-65-3B-C		●								
				3.346	4.331					-85-3B-C		●								
				4.331	5.709					-110-3B-C		●								
			0.866 (22mm)	1.969	2.559					KGDFL -50-3C-C		●	0.750	0.750	0.510	0.750	5.000	1.770	0.927	0.866 (22mm)
				2.559	3.346					-65-3C-C		●								
			0.984 (25mm)	3.346	4.331					-85-3C-C		●	0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				4.331	5.709					-110-3C-C		●								
		□1.00	0.512 (13mm)	0.984	1.181	No Unit Part Number ➡	KGDR16-C	●		KGDFL -25-3A-C		●	1.000	1.000	0.260	1.000	5.630	1.420	1.177	0.512 (13mm)
				1.181	1.575					-30-3A-C		●								
				1.575	1.969					-40-3A-C		●								
			0.591 (15mm)	1.969	2.559					-50-3B-C		●	1.000	1.000	0.260	1.000	5.710	1.500	1.177	0.591 (15mm)
				2.559	3.346					-65-3B-C		●								
				3.346	4.331					-85-3B-C		●								
				4.331	5.709					-110-3B-C		●								
			0.866 (22mm)	1.969	2.559					KGDFL -50-3C-C		●	1.000	1.000	0.260	1.000	5.980	1.770	1.177	0.866 (22mm)
				2.559	3.346					-65-3C-C		●								
			0.984 (25mm)	3.346	4.331					-85-3C-C		●	1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				4.331	5.709					-110-3C-C		●								

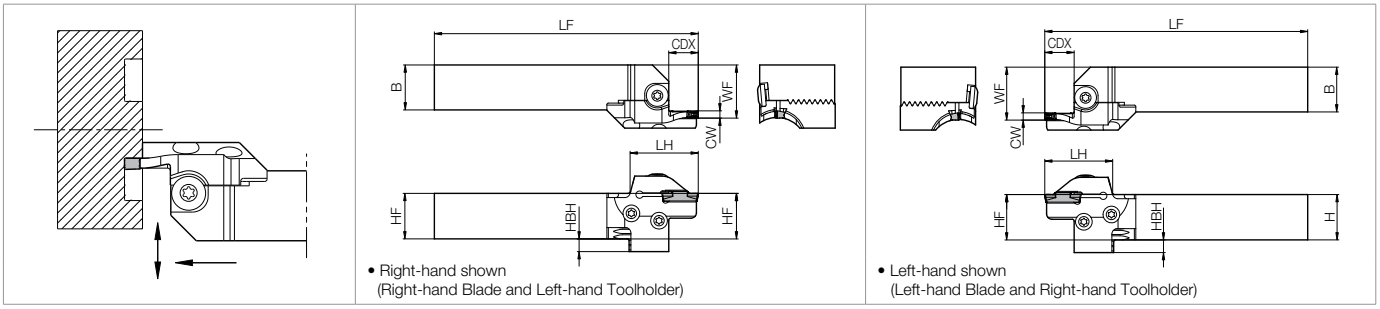
Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see G98

Applicable Inserts G97

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 0° SwitchBlade Toolholders (Inch-Size)

0.157" Insert Width



• Right-hand shown
(Right-hand Blade and Left-hand Toolholder)

• Left-hand shown
(Left-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number ➡ G37	Stock R	Stock L	Blade Part Number ➡ G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX*
0°	0.157 (4mm)	□0.75	0.512 (13mm)	0.984	1.378	No Unit Part Number ➡	KGDL12-C		●	KGDFR -25-4A-C	●		0.750	0.750	0.510	0.750	4.650	1.420	0.927	0.512 (13mm)
			0.591 (15mm)	1.378	1.969					-35-4B-C	●		0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				1.969	2.756					-50-4B-C	●									
				2.756	3.937					-70-4B-C	●									
				3.937	5.906					-100-4B-C	●									
				5.906	8.661					-150-4B-C	●									
				8.661	∞					-220-4B-C	●									
			0.984 (25mm)	1.378	1.969					KGDFR -35-4C-C	●		0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				1.969	2.756					-50-4C-C	●									
				2.756	3.937					-70-4C-C	●									
				3.937	5.906					-100-4C-C	●									
				5.906	8.661					-150-4C-C	●									
				8.661	∞					-220-4C-C	●									
		□1.00	0.512 (13mm)	0.984	1.378	No Unit Part Number ➡	KGDL16-C		●	KGDFR -25-4A-C	●		1.000	1.000	0.260	1.000	5.630	1.420	1.177	0.512 (13mm)
			0.591 (15mm)	1.378	1.969					-35-4B-C	●		1.000	1.000	0.260	1.000	5.710	1.500	1.177	0.591 (15mm)
				1.969	2.756					-50-4B-C	●									
				2.756	3.937					-70-4B-C	●									
				3.937	5.906					-100-4B-C	●									
				5.906	8.661					-150-4B-C	●									
				8.661	∞					-220-4B-C	●									
			0.984 (25mm)	1.378	1.969					KGDFR -35-4C-C	●		1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				1.969	2.756					-50-4C-C	●									
				2.756	3.937					-70-4C-C	●									
				3.937	5.906					-100-4C-C	●									
				5.906	8.661					-150-4C-C	●									
				8.661	∞					-220-4C-C	●									
0°	0.157 (4mm)	□0.75	0.512 (13mm)	0.984	1.378	No Unit Part Number ➡	KGDR12-C	●		KGDFL -25-4A-C		●	0.750	0.750	0.510	0.750	4.650	1.420	0.927	0.512 (13mm)
			0.591 (15mm)	1.378	1.969					-35-4B-C		●	0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				1.969	2.756					-50-4B-C		●								
				2.756	3.937					-70-4B-C		●								
				3.937	5.906					-100-4B-C		●								
				5.906	8.661					-150-4B-C		●								
				8.661	∞					-220-4B-C		●								
			0.984 (25mm)	1.378	1.969					KGDFL -35-4C-C		●	0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				1.969	2.756					-50-4C-C		●								
				2.756	3.937					-70-4C-C		●								
				3.937	5.906					-100-4C-C		●								
				5.906	8.661					-150-4C-C		●								
				8.661	∞					-220-4C-C		●								
		□1.00	0.512 (13mm)	0.984	1.378	No Unit Part Number ➡	KGDR16-C	●		KGDFL -25-4A-C		●	1.000	1.000	0.260	1.000	5.630	1.420	1.177	0.512 (13mm)
			0.591 (15mm)	1.378	1.969					-35-4B-C		●	1.000	1.000	0.260	1.000	5.710	1.500	1.177	0.591 (15mm)
				1.969	2.756					-50-4B-C		●								
				2.756	3.937					-70-4B-C		●								
				3.937	5.906					-100-4B-C		●								
				5.906	8.661					-150-4B-C		●								
				8.661	∞					-220-4B-C		●								
			0.984 (25mm)	1.378	1.969					KGDFL -35-4C-C		●	1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				1.969	2.756					-50-4C-C		●								
				2.756	3.937					-70-4C-C		●								
				3.937	5.906					-100-4C-C		●								
				5.906	8.661					-150-4C-C		●								
				8.661	∞					-220-4C-C		●								

Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see ➡ G98

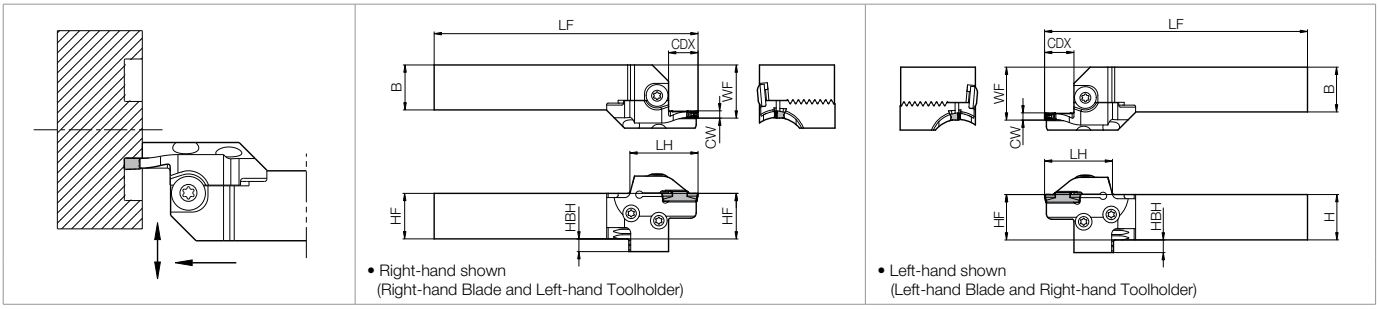
Applicable Inserts ➡ G97

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 0° SwitchBlade Toolholders (Inch-Size)

0.197" Insert Width



• Right-hand shown
(Right-hand Blade and Left-hand Toolholder)

• Left-hand shown
(Left-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number ➡ G37	Stock R	Stock L	Blade Part Number ➡ G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX*
0°	0.197 (5mm)	□0.75	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDL12-C		●	KGDFR -25-5B-C	●		0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				1.378	1.969					-35-5B-C	●									
				1.969	2.953					-50-5B-C	●									
				2.953	4.528					-75-5B-C	●									
				4.528	7.087					-115-5B-C	●									
				7.087	9.252					-180-5B-C	●									
				9.252	∞					-235-5B-C	●									
			0.787 (20mm)	0.984	1.378					KGDFR -25-5C-C	●		0.750	0.750	0.510	0.750	4.920	1.690	0.927	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-5C-C	●		0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				1.969	2.953					-50-5C-C	●									
				2.953	4.528					-75-5C-C	●									
				4.528	7.087					-115-5C-C	●									
				7.087	9.252					-180-5C-C	●									
				9.252	∞					-235-5C-C	●									
		□1.00	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDL16-C		●	KGDFR -25-5B-C	●		1.000	1.000	0.260	1.000	5.700	1.500	1.177	0.591 (15mm)
				1.378	1.969					-35-5B-C	●									
				1.969	2.953					-50-5B-C	●									
				2.953	4.528					-75-5B-C	●									
				4.528	7.087					-115-5B-C	●									
				7.087	9.252					-180-5B-C	●									
				9.252	∞					-235-5B-C	●									
			0.787 (20mm)	0.984	1.378					KGDFR -25-5C-C	●		1.000	1.000	0.260	1.000	5.900	1.690	1.177	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-5C-C	●		1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				1.969	2.953					-50-5C-C	●									
				2.953	4.528					-75-5C-C	●									
				4.528	7.087					-115-5C-C	●									
				7.087	9.252					-180-5C-C	●									
				9.252	∞					-235-5C-C	●									
0°	0.197 (5mm)	□0.75	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDR12-C	●		KGDFL -25-5B-C		●	0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				1.378	1.969					-35-5B-C		●								
				1.969	2.953					-50-5B-C		●								
				2.953	4.528					-75-5B-C		●								
				4.528	7.087					-115-5B-C		●								
				7.087	9.252					-180-5B-C		●								
				9.252	∞					-235-5B-C		●								
			0.787 (20mm)	0.984	1.378					KGDFL -25-5C-C		●	0.750	0.750	0.510	0.750	4.920	1.690	0.927	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-5C-C		●	0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				1.969	2.953					-50-5C-C		●								
				2.953	4.528					-75-5C-C		●								
				4.528	7.087					-115-5C-C		●								
				7.087	9.252					-180-5C-C		●								
				9.252	∞					-235-5C-C		●								
		□1.00	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDR16-C	●		KGDFL -25-5B-C		●	1.000	1.000	0.260	1.000	5.700	1.500	1.177	0.591 (15mm)
				1.378	1.969					-35-5B-C		●								
				1.969	2.953					-50-5B-C		●								
				2.953	4.528					-75-5B-C		●								
				4.528	7.087					-115-5B-C		●								
				7.087	9.252					-180-5B-C		●								
				9.252	∞					-235-5B-C		●								
			0.787 (20mm)	0.984	1.378					KGDFL -25-5C-C		●	1.000	1.000	0.260	1.000	5.900	1.690	1.177	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-5C-C		●	1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				1.969	2.953					-50-5C-C		●								
				2.953	4.528					-75-5C-C		●								
				4.528	7.087					-115-5C-C		●								
				7.087	9.252					-180-5C-C		●								
				9.252	∞					-235-5C-C		●								

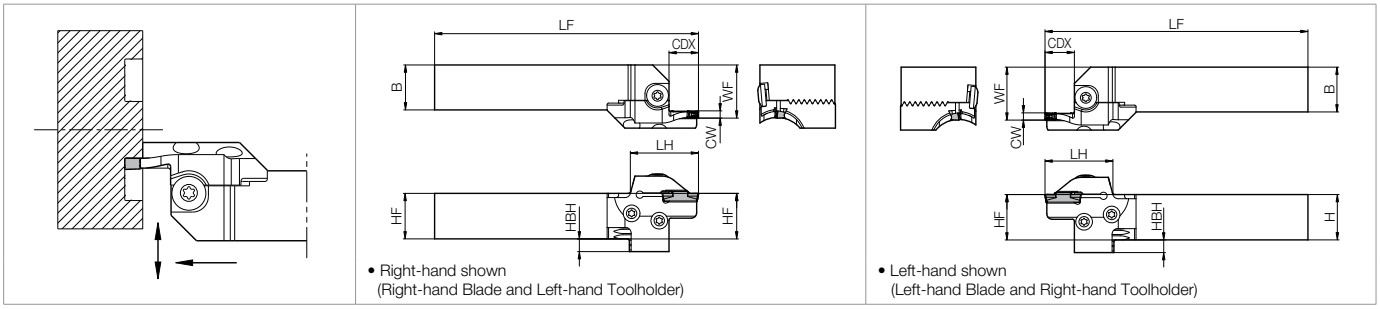
Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see ➡ G98

Applicable Inserts ➡ G97

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 0° SwitchBlade Toolholders (Inch-Size)

0.236" Insert Width



• Right-hand shown
(Right-hand Blade and Left-hand Toolholder)

• Left-hand shown
(Left-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number ➡ G37	Stock R	Stock L	Blade Part Number ➡ G121	Stock R	Stock L	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX*
0°	0.236 (6mm)	□0.75	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDL12-C		●	KGDFR -25-6B-C	●		0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				1.378	1.969					-35-6B-C	●									
				1.969	2.953					-50-6B-C	●									
				2.953	4.528					-75-6B-C	●									
				4.528	7.087					-115-6B-C	●									
				7.087	9.252					-180-6B-C	●									
				9.252	∞					-235-6B-C	●									
			0.787 (20mm)	0.984	1.378					KGDFR -25-6C-C	●		0.750	0.750	0.510	0.750	4.920	1.690	0.927	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-6C-C	●		0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				1.969	2.953					-50-6C-C	●									
				2.953	4.528					-75-6C-C	●									
				4.528	7.087					-115-6C-C	●									
				7.087	9.252					-180-6C-C	●									
				9.252	∞					-235-6C-C	●									
		□1.00	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDL16-C		●	KGDFR -25-6B-C	●		1.000	1.000	0.260	1.000	5.700	1.500	1.177	0.591 (15mm)
				1.378	1.969					-35-6B-C	●									
				1.969	2.953					-50-6B-C	●									
				2.953	4.528					-75-6B-C	●									
				4.528	7.087					-115-6B-C	●									
				7.087	9.252					-180-6B-C	●									
				9.252	∞					-235-6B-C	●									
			0.787 (20mm)	0.984	1.378					KGDFR -25-6C-C	●		1.000	1.000	0.260	1.000	5.900	1.690	1.177	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-6C-C	●		1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				1.969	2.953					-50-6C-C	●									
				2.953	4.528					-75-6C-C	●									
				4.528	7.087					-115-6C-C	●									
				7.087	9.252					-180-6C-C	●									
				9.252	∞					-235-6C-C	●									
0°	0.236 (6mm)	□0.75	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDR12-C	●		KGDFL -25-6B-C		●	0.750	0.750	0.510	0.750	4.720	1.500	0.927	0.591 (15mm)
				1.378	1.969					-35-6B-C		●								
				1.969	2.953					-50-6B-C		●								
				2.953	4.528					-75-6B-C		●								
				4.528	7.087					-115-6B-C		●								
				7.087	9.252					-180-6B-C		●								
				9.252	∞					-235-6B-C		●								
			0.787 (20mm)	0.984	1.378					KGDFL -25-6C-C		●	0.750	0.750	0.510	0.750	4.920	1.690	0.927	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-6C-C		●	0.750	0.750	0.510	0.750	5.120	1.890	0.927	0.984 (25mm)
				1.969	2.953					-50-6C-C		●								
				2.953	4.528					-75-6C-C		●								
				4.528	7.087					-115-6C-C		●								
				7.087	9.252					-180-6C-C		●								
				9.252	∞					-235-6C-C		●								
		□1.00	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDR16-C	●		KGDFL -25-6B-C		●	1.000	1.000	0.260	1.000	5.700	1.500	1.177	0.591 (15mm)
				1.378	1.969					-35-6B-C		●								
				1.969	2.953					-50-6B-C		●								
				2.953	4.528					-75-6B-C		●								
				4.528	7.087					-115-6B-C		●								
				7.087	9.252					-180-6B-C		●								
				9.252	∞					-235-6B-C		●								
			0.787 (20mm)	0.984	1.378					KGDFL -25-6C-C		●	1.000	1.000	0.260	1.000	5.900	1.690	1.177	0.787 (20mm)
			0.984 (25mm)	1.378	1.969					-35-6C-C		●	1.000	1.000	0.260	1.000	6.100	1.890	1.177	0.984 (25mm)
				1.969	2.953					-50-6C-C		●								
				2.953	4.528					-75-6C-C		●								
				4.528	7.087					-115-6C-C		●								
				7.087	9.252					-180-6C-C		●								
				9.252	∞					-235-6C-C		●								

Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see ➡ G98

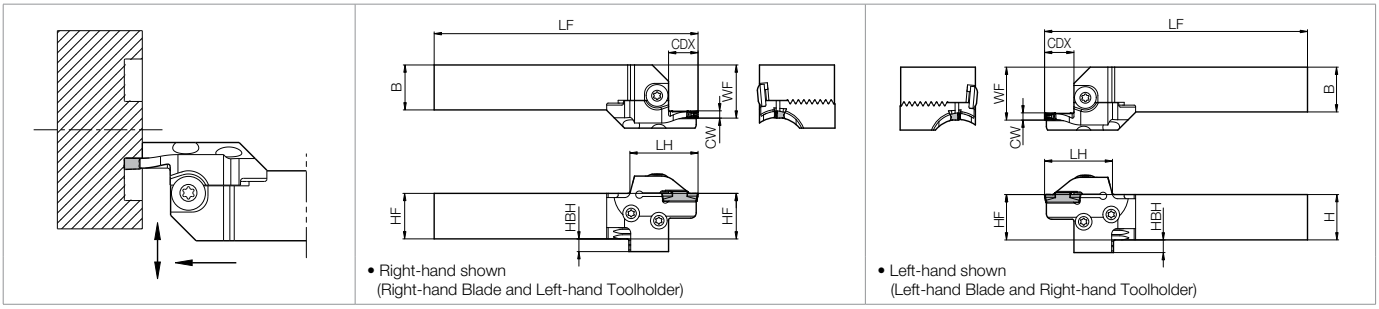
Applicable Inserts ➡ G97

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 0° SwitchBlade Toolholders (Metric-Size)

2mm Insert Width



• Right-hand shown
(Right-hand Blade and Left-hand Toolholder)

• Left-hand shown
(Left-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number → G37	Stock R	Stock L	Blade Part Number → G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX*
0°	2	□20	6	25	30	KGDFR 2020X25-2AS	●		KGDL2020-C		●	KGDFR -25-2A-C	●		20	20	12	20	115	33	24.5	6
				30	35	2020X30-2AS	△					-30-2A-C	●									
				35	45	2020X35-2AS	△					-35-2A-C	●									
				45	60	2020X45-2AS	△					-45-2A-C	●									
				60	80	2020X60-2AS	△					-60-2A-C	●									
				80	100	2020X80-2AS	△					-80-2A-C	●									
				100	130	2020X100-2AS	△					-100-2A-C	●									
			13	25	30	No Unit Part Number ➡						KGDFR -25-2B-C	●		20	20	12	20	118	36	24.5	13
			15	30	35							KGDFR -30-2B-C	●		20	20	12	20	120	38	24.5	15
				35	45							-35-2B-C	●									
				45	60							-45-2B-C	●									
				60	80							-60-2B-C	●									
				80	100							-80-2B-C	●									
				100	130							-100-2B-C	●									
		□25	6	25	30	KGDFR 2525X25-2AS	△		KGDL2525-C		●	KGDFR -25-2A-C	●		25	25	7	25	140	33	29.5	6
				30	35	2525X30-2AS	△					-30-2A-C	●									
				35	45	2525X35-2AS	△					-35-2A-C	●									
				45	60	2525X45-2AS	△					-45-2A-C	●									
				60	80	2525X60-2AS	△					-60-2A-C	●									
				80	100	2525X80-2AS	△					-80-2A-C	●									
				100	130	2525X100-2AS	△					-100-2A-C	●									
			13	25	30	No Unit Part Number ➡						KGDFR -25-2B-C	●		25	25	7	25	143	36	29.5	13
			15	30	35							KGDFR -30-2B-C	●		25	25	7	25	145	38	29.5	15
				35	45							-35-2B-C	●									
				45	60							-45-2B-C	●									
				60	80							-60-2B-C	●									
				80	100							-80-2B-C	●									
				100	130							-100-2B-C	●									
		□32	6	25	30	No Unit Part Number ➡			KGDL3232-C		●	KGDFR -25-2A-C	●		32	32	-	32	160	33	36.5	6
				30	35							-30-2A-C	●									
				35	45							-35-2A-C	●									
				45	60							-45-2A-C	●									
				60	80							-60-2A-C	●									
				80	100							-80-2A-C	●									
				100	130							-100-2A-C	●									
			13	25	30	No Unit Part Number ➡						KGDFR -25-2B-C	●		32	32	-	32	163	36	36.5	13
			15	30	35							KGDFR -30-2B-C	●		32	32	-	32	165	38	36.5	15
				35	45							-35-2B-C	●									
				45	60							-45-2B-C	●									
				60	80							-60-2B-C	●									
				80	100							-80-2B-C	●									
				100	130							-100-2B-C	●									

Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see → **G98**

Applicable Inserts → **G97**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

● Toolholder + Blade Dimensions

3mm Insert Width

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number ➡ G37	Stock R	Stock L	Blade Part Number ➡ G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX*
0°	3	□20	13	25	30	KGDFR/L 2020X25-3AS	△	△	KGDR/L 2020-C	●	●	KGDFR/L -25-3A-C	●	●	20		12	20	118	36	24.5	13
				30	40	2020X30-3AS	△	△				-30-3A-C	●	●								
				40	50	2020X40-3AS	△					-40-3A-C	●	●								
			15	50	65	2020X50-3BS	△					-50-3B-C	●	●	20		12	20	120	38	24.5	15
				65	85	2020X65-3BS	△					-65-3B-C	●	●								
				85	110	2020X85-3BS	△					-85-3B-C	●	●								
				110	145	2020X110-3BS	△					-110-3B-C	●	●								
			22	50	65	KGDFR/L 2020X50-3CS	△					KGDFR/L -50-3C-C	●	●	20		12	20	127	45	24.5	22
				65	85	2020X65-3CS	△					-65-3C-C	●	●								
			25	85	110	2020X85-3CS	△					-85-3C-C	●	●	20		12	20	130	48	24.5	25
				110	145	2020X110-3CS	△					-110-3C-C	●	●								
		□25	13	25	30	KGDFR/L 2525X25-3AS	△	△	KGDR/L 2525-C	●	●	KGDFR/L -25-3A-C	●	●	25		7	25	143	36	29.5	13
				30	40	2525X30-3AS	△	△				-30-3A-C	●	●								
				40	50	2525X40-3AS	△	△				-40-3A-C	●	●								
			15	50	65	2525X50-3BS	△	△				-50-3B-C	●	●	25		7	25	145	38	29.5	15
				65	85	2525X65-3BS	△	△				-65-3B-C	●	●								
				85	110	2525X85-3BS	△	△				-85-3B-C	●	●								
				110	145	2525X110-3BS	△	△				-110-3B-C	●	●								
			22	50	65	KGDFR/L 2525X50-3CS	△					KGDFR/L -50-3C-C	●	●	25		7	25	152	45	29.5	22
				65	85	2525X65-3CS	△					-65-3C-C	●	●								
			25	85	110	2525X85-3CS	△	△				-85-3C-C	●	●	25		7	25	155	48	29.5	25
				110	145	2525X110-3CS	△					-110-3C-C	●	●								
		□32	13	25	30	No Unit Part Number ➡			KGDR/L 3232-C	●	●	KGDFR/L -25-3A-C	●	●	32		-	32	163	36	36.5	13
				30	40							-30-3A-C	●	●								
				40	50							-40-3A-C	●	●								
			15	50	65							-50-3B-C	●	●	32		-	32	165	38	36.5	15
				65	85							-65-3B-C	●	●								
				85	110							-85-3B-C	●	●								
				110	145							-110-3B-C	●	●								
			22	50	65							KGDFR/L -50-3C-C	●	●	32		-	32	172	45	36.5	22
				65	85							-65-3C-C	●	●								
			25	85	110							-85-3C-C	●	●	32		-	32	175	48	36.5	25
				110	145							-110-3C-C	●	●								

Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see ➡ G98

Applicable Inserts ➡ G97

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

● Toolholder + Blade Dimensions

4mm Insert Width

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number ➡ G37	Stock R	Stock L	Blade Part Number ➡ G121	Stock R	Stock L	Dimensions (mm) Diagram on Page ➡ G105 H	HF	HBH	B	LF	LH	WF	CDX*
0°	4	□20	13	25	35	KGDF□ 2020X25-4AS	△	△	KGD□ 2020-C	●	●	KGDF□ -25-4A-C	●	●	20	20	12	20	118	36	24.5	13
			15	35	50	2020X35-4BS	△	△				-35-4B-C	●	●	20	20	12	20	120	38	24.5	15
				50	70	2020X50-4BS	△					-50-4B-C	●	●								
				70	100	2020X70-4BS	△					-70-4B-C	●	●								
				100	150	2020X100-4BS	△					-100-4B-C	●	●								
				150	220	2020X150-4BS	△					-150-4B-C	●	●								
				220	∞	2020X220-4BS	△					-220-4B-C	●	●								
			25	35	50	KGDF□ 2020X35-4CS	△					KGDF□ -35-4C-C	●	●	20	20	12	20	130	48	24.5	25
				50	70	2020X50-4CS	△	△				-50-4C-C	●	●								
				70	100	2020X70-4CS	△					-70-4C-C	●	●								
				100	150	2020X100-4CS	△					-100-4C-C	●	●								
				150	220	2020X150-4CS	△					-150-4C-C	●	●								
				220	∞	2020X220-4CS	△					-220-4C-C	●	●								
		□25	13	25	35	KGDF□ 2525X25-4AS	△	△	KGD□ 2525-C	●	●	KGDF□ -25-4A-C	●	●	25	25	7	25	143	36	29.5	13
			15	35	50	2525X35-4BS	△	△				-35-4B-C	●	●	25	25	7	25	145	38	29.5	15
				50	70	2525X50-4BS	△	△				-50-4B-C	●	●								
				70	100	2525X70-4BS	△	△				-70-4B-C	●	●								
				100	150	2525X100-4BS	△	△				-100-4B-C	●	●								
				150	220	2525X150-4BS	△	△				-150-4B-C	●	●								
				220	∞	2525X220-4BS	△	△				-220-4B-C	●	●								
			25	35	50	KGDF□ 2525X35-4CS	△					KGDF□ -35-4C-C	●	●	25	25	7	25	155	48	29.5	25
				50	70	2525X50-4CS	△	△				-50-4C-C	●	●								
				70	100	2525X70-4CS	△	△				-70-4C-C	●	●								
				100	150	2525X100-4CS	△	△				-100-4C-C	●	●								
				150	220	2525X150-4CS	△	△				-150-4C-C	●	●								
				220	∞	2525X220-4CS	△	△				-220-4C-C	●	●								
		□32	13	25	35	No Unit Part Number ➡			KGD□ 3232-C	●	●	KGDF□ -25-4A-C	●	●	32	32	-	32	163	36	36.5	13
			15	35	50							-35-4B-C	●	●	32	32	-	32	165	38	36.5	15
				50	70							-50-4B-C	●	●								
				70	100							-70-4B-C	●	●								
				100	150							-100-4B-C	●	●								
				150	220							-150-4B-C	●	●								
				220	∞							-220-4B-C	●	●								
			25	35	50							KGDF□ -35-4C-C	●	●	32	32	-	32	175	48	36.5	25
				50	70							-50-4C-C	●	●								
				70	100							-70-4C-C	●	●								
				100	150							-100-4C-C	●	●								
				150	220							-150-4C-C	●	●								
				220	∞							-220-4C-C	●	●								

Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see ➡ G98

Applicable Inserts ➡ G97

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

● Toolholder + Blade Dimensions

5mm Insert Width

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number G37	Stock R	Stock L	Blade Part Number G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX*
0°	5	□20	15	25	35	No Unit Part Number ➡			KGD□2020-C	●	●	KGDF□-25-5B-C	●	●	20	20	12	20	120	38	24.5	15
				35	50							-35-5B-C	●	●								
				50	75							-50-5B-C	●	●								
				75	115							-75-5B-C	●	●								
				115	180							-115-5B-C	●	●								
				180	235							-180-5B-C	●	●								
				235	∞							-235-5B-C	●	●								
			20	25	35							KGDF□-25-5C-C	●	●	20	20	12	20	125	43	24.5	20
			25	35	50							-35-5C-C	●	●	20	20	12	20	130	48	24.5	25
				50	75							-50-5C-C	●	●								
				75	115							-75-5C-C	●	●								
				115	180							-115-5C-C	●	●								
				180	235							-180-5C-C	●	●								
				235	∞							-235-5C-C	●	●								
			32	75	115							KGDF□-75-5D-C	●	●	20	20	12	20	137	55	24.5	32
				115	180							-115-5D-C	●	●								
				180	235							-180-5D-C	●	●								
				235	∞							-235-5D-C	●	●								
		□25	15	25	35	KGDF□2525X25-5BS	△		KGD□2525-C	●	●	KGDF□-25-5B-C	●	●	25	25	7	25	145	38	29.5	15
				35	50	2525X35-5BS	△					-35-5B-C	●	●								
				50	75	2525X50-5BS	△	△				-50-5B-C	●	●								
				75	115	2525X75-5BS	△	△				-75-5B-C	●	●								
				115	180	2525X115-5BS	△	△				-115-5B-C	●	●								
				180	235	2525X180-5BS	△					-180-5B-C	●	●								
				235	∞	2525X235-5BS	△	△				-235-5B-C	●	●								
			20	25	35	KGDF□2525X25-5CS	△	△				KGDF□-25-5C-C	●	●	25	25	7	25	150	43	29.5	20
			25	35	50	2525X35-5CS	△					-35-5C-C	●	●	25	25	7	25	155	48	29.5	25
				50	75	2525X50-5CS	△					-50-5C-C	●	●								
				75	115	No Unit Part Number ➡						-75-5C-C	●	●	25	25	7	25	155	48	29.5	25
				115	180							-115-5C-C	●	●								
				180	235							-180-5C-C	●	●								
				235	∞							-235-5C-C	●	●								
			32	75	115	KGDF□2525X75-5DS	△	△				KGDF□-75-5D-C	●	●	25	25	7	25	162	55	29.5	32
				115	180	2525X115-5DS	△	△				-115-5D-C	●	●								
				180	235	2525X180-5DS	△	△				-180-5D-C	●	●								
				235	∞	2525X235-5DS	△	△				-235-5D-C	●	●								
		□32	15	25	35	No Unit Part Number ➡			KGD□3232-C	●	●	KGDF□-25-5B-C	●	●	32	32	-	32	165	38	36.5	15
				35	50							-35-5B-C	●	●								
				50	75							-50-5B-C	●	●								
				75	115							-75-5B-C	●	●								
				115	180							-115-5B-C	●	●								
				180	235							-180-5B-C	●	●								
				235	∞							-235-5B-C	●	●								
			20	25	35							KGDF□-25-5C-C	●	●	32	32	-	32	170	43	36.5	20
			25	35	50							-35-5C-C	●	●	32	32	-	32	175	48	36.5	25
				50	75							-50-5C-C	●	●								
				75	115							-75-5C-C	●	●								
				115	180							-115-5C-C	●	●								
				180	235							-180-5C-C	●	●								
				235	∞							-235-5C-C	●	●								
			32	75	115							KGDF□-75-5D-C	●	●	32	32	-	32	182	55	36.5	32
				115	180							-115-5D-C	●	●								
				180	235							-180-5D-C	●	●								
				235	∞							-235-5D-C	●	●								

Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see ➡ **G98**

Applicable Inserts ➡ **G97**

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(Technical Support) **800.823.7284 - Option 2**
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

● Toolholder + Blade Dimensions

6mm Insert Width

(Choose **Right-hand** Blade for **Left-hand** Toolholder and **Left-hand** Blade for **Right-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number → G37	Stock R	Stock L	Blade Part Number → G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX*
0°	6	□20	15	25	35	No Unit Part Number →			KGDR/L 2020-C	●	●	KGDFR/L -25-6B-C	●	●	20	20	12	20	120	38	24.5	15
				35	50							-35-6B-C	●	●								
				50	75							-50-6B-C	●	●								
				75	115							-75-6B-C	●	●								
				115	180							-115-6B-C	●	●								
				180	235							-180-6B-C	●	●								
				235	∞							-235-6B-C	●	●								
			20	25	35							KGDFR/L -25-6C-C	●	●	20	20	12	20	125	43	24.5	20
			25	35	50							-35-6C-C	●	●	20	20	12	20	130	48	24.5	25
				50	75							-50-6C-C	●	●								
				75	115							-75-6C-C	●	●								
				115	180							-115-6C-C	●	●								
				180	235							-180-6C-C	●	●								
				235	∞							-235-6C-C	●	●								
			32	75	115							KGDFR/L -75-6D-C	●	●	20	20	12	20	137	55	24.5	32
				115	180							-115-6D-C	●	●								
				180	235							-180-6D-C	●	●								
				235	∞							-235-6D-C	●	●								
		□25	15	25	35	No Unit Part Number →			KGDR/L 2525-C	●	●	KGDFR/L -25-6B-C	●	●	25	25	7	25	145	38	29.5	15
				35	50							-35-6B-C	●	●								
				50	75							-50-6B-C	●	●								
				75	115							-75-6B-C	●	●								
				115	180							-115-6B-C	●	●								
				180	235							-180-6B-C	●	●								
				235	∞							-235-6B-C	●	●								
			20	25	35							KGDFR/L -25-6C-C	●	●	25	25	7	25	150	43	29.5	20
			25	35	50							-35-6C-C	●	●	25	25	7	25	155	48	29.5	25
				50	75							-50-6C-C	●	●								
				75	115							-75-6C-C	●	●								
				115	180							-115-6C-C	●	●								
				180	235							-180-6C-C	●	●								
				235	∞							-235-6C-C	●	●								
			32	75	115							KGDFR/L -75-6D-C	●	●	25	25	7	25	162	55	29.5	32
				115	180							-115-6D-C	●	●								
				180	235							-180-6D-C	●	●								
				235	∞							-235-6D-C	●	●								
		□32	15	25	35	No Unit Part Number →			KGDR/L 3232-C	●	●	KGDFR/L -25-6B-C	●	●	32	32	-	32	165	38	36.5	15
				35	50							-35-6B-C	●	●								
				50	75							-50-6B-C	●	●								
				75	115							-75-6B-C	●	●								
				115	180							-115-6B-C	●	●								
				180	235							-180-6B-C	●	●								
				235	∞							-235-6B-C	●	●								
			20	25	35							KGDFR/L -25-6C-C	●	●	32	32	-	32	170	43	36.5	20
			25	35	50							-35-6C-C	●	●	32	32	-	32	175	48	36.5	25
				50	75							-50-6C-C	●	●								
				75	115							-75-6C-C	●	●								
				115	180							-115-6C-C	●	●								
				180	235							-180-6C-C	●	●								
				235	∞							-235-6C-C	●	●								
			32	75	115							KGDFR/L -75-6D-C	●	●	32	32	-	32	182	55	36.5	32
				115	180							-115-6D-C	●	●								
				180	235							-180-6D-C	●	●								
				235	∞							-235-6D-C	●	●								

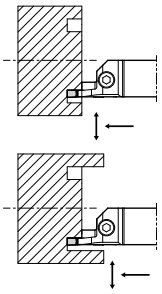
Note 1) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
2) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
3) Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) come with toolholder. For Spare Parts, see → G98

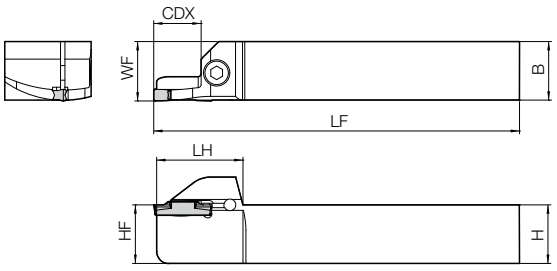
Applicable Inserts → G97

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF-Z

3mm / 4mm / 5mm Insert Width





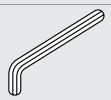
• Right-hand shown

Toolholder Dimensions

Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Part Number	Stock R	Stock L	Dimensions (mm) H	HF	B	LF	LH	WF	CDX
3	□20	15	50	65	KGDF[R/L] 2020K50-3B-Z	●	●	20	20	20	125	30.5	20.3	15
			65	85	2020K65-3B-Z	●	●							
			85	110	2020K85-3B-Z	●	●							
			110	145	2020K110-3B-Z	●	●							
	□25		50	65	KGDF[R/L] 2525M50-3B-Z	●	●	25	25	25	150	30.5	25.3	15
			65	85	2525M65-3B-Z	●	●							
			85	110	2525M85-3B-Z	●	●							
			110	145	2525M110-3B-Z	●	●							
4	□20	15	50	70	KGDF[R/L] 2020K50-4B-Z	●	●	20	20	20	125	30.5	20.3	15
			70	100	2020K70-4B-Z	●	●							
			100	150	2020K100-4B-Z	●	●							
	□25		50	70	KGDF[R/L] 2525M50-4B-Z	●	●	25	25	25	150	30.5	25.3	15
			70	100	2525M70-4B-Z	●	●							
			100	150	2525M100-4B-Z	●	●							
5	□20	15	50	75	KGDF[R/L] 2020K50-5B-Z	●	●	20	20	20	125	30.5	20.3	15
			75	115	2020K75-5B-Z	●	●							
			115	180	2020K115-5B-Z	●	●							
	□25		50	75	KGDF[R/L] 2525M50-5B-Z	●	●	25	25	25	150	30.5	25.3	15
			75	115	2525M75-5B-Z	●	●							
			115	180	2525M115-5B-Z	●	●							

Applicable Inserts ➡ G97

Spare Parts

Part Number	Spare Parts: Clamp Bolt	Spare Parts: Wrench
		
KGDF[R/L]····-Z	HH5X16	LW-4

Toolholder Identification System (Integral Type)

KGDF | **R** | **2525** | **M** | **50** | **3** | **B** | **Z**

Series	Hand of Tool	Shank Size	Toolholder Length	Min. Face Groove Dia.	Width	Grooving Depth	Toolholder Type
KGDF Face Grooving	**R**:Right-hand	**2020** : □20mm	**K** : 125mm	**50** : 50mm	**3** : 3mm	**B** : 15mm	**Z** : Integral Type
	L:Left-hand	**2525** : □25mm	**M** : 150mm	:	**4** : 4mm		
				115 : 115mm	**5** : 5mm		

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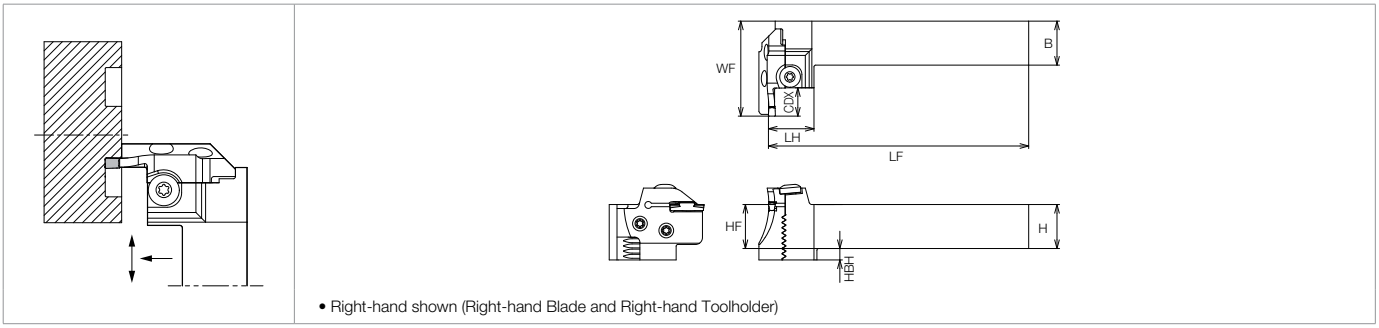
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 90° SwitchBlade Toolholders (Inch-Size)

0.079" Insert Width



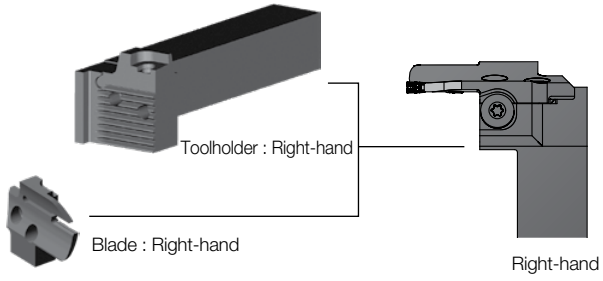
• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number G37	Stock R	Stock L	Blade Part Number G121	Stock R	Stock L	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX
90°	0.079 (2mm)	□0.75	0.236 (6mm)	0.984	1.181	No Unit Part Number ➡	KGDSR12-C	●		KGDFR -25-2A-C	●		0.750	0.750	0.510	0.750	4.921	0.988	1.957	0.236 (6mm)
				1.181	1.378					-30-2A-C	●									
				1.378	1.772					-35-2A-C	●									
				1.772	2.362					-45-2A-C	●									
				2.362	3.150					-60-2A-C	●									
				3.150	3.937					-80-2A-C	●									
				3.937	5.118					-100-2A-C	●									
			0.512 (13mm)	0.984	1.181					KGDFR -25-2B-C	●		0.750	0.750	0.510	0.750	4.921	0.988	2.075	0.512 (13mm)
			0.591 (15mm)	1.181	1.378					KGDFR -30-2B-C	●		0.750	0.750	0.510	0.750	4.921	0.988	2.154	0.591 (15mm)
				1.378	1.772					-35-2B-C	●									
				1.772	2.362					-45-2B-C	●									
				2.362	3.150					-60-2B-C	●									
				3.150	3.937					-80-2B-C	●									
				3.937	5.118					-100-2B-C	●									
		□1.00	0.236 (6mm)	0.984	1.181	No Unit Part Number ➡	KGDSR16-C	●		KGDFR -25-2A-C	●		1.000	1.000	0.260	1.000	5.910	0.988	1.957	0.236 (6mm)
				1.181	1.378					-30-2A-C	●									
				1.378	1.772					-35-2A-C	●									
				1.772	2.362					-45-2A-C	●									
				2.362	3.150					-60-2A-C	●									
				3.150	3.937					-80-2A-C	●									
				3.937	5.118					-100-2A-C	●									
			0.512 (13mm)	0.984	1.181					KGDFR -25-2B-C	●		1.000	1.000	0.260	1.000	5.910	0.988	2.075	0.512 (13mm)
			0.591 (15mm)	1.181	1.378					KGDFR -30-2B-C	●		1.000	1.000	0.260	1.000	5.910	0.988	2.154	0.591 (15mm)
				1.378	1.772					-35-2B-C	●									
				1.772	2.362					-45-2B-C	●									
				2.362	3.150					-60-2B-C	●									
				3.150	3.937					-80-2B-C	●									
				3.937	5.118					-100-2B-C	●									

Applicable Inserts ➡ **G97**

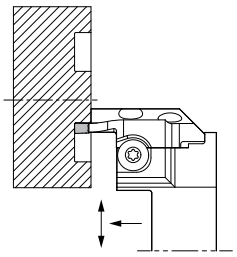


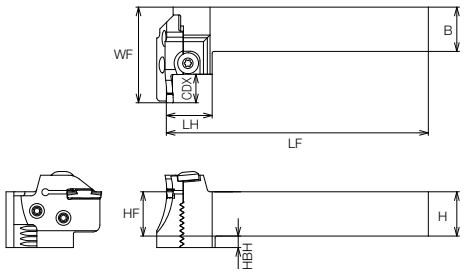
- KGDF 90° SwitchBlade type is not available as unit (toolholder + blade). Blade and toolholder are available to assemble when purchasing individually.
- **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.
- Insert clamp screw (BH6X10TR), Blade fixing screw (SB-60120TR) and Wrench (LTW-25) come with toolholder.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 90° SwitchBlade Toolholders (Inch-Size)

0.118" Insert Width





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions (0.118" Insert Width)

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number → G37	Stock R	Stock L	Blade Part Number → G121	Stock R	Stock L	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX
90°	0.118 (3mm)	□0.75	0.512 (13mm)	0.984	1.181	No Unit Part Number ➡	KGDS□12-C	●	●	KGDF□ -25-3A-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.075	0.512
				1.181	1.575					-30-3A-C	●	●								
				1.575	1.969					-40-3A-C	●	●								
			0.591 (15mm)	1.969	2.559					-50-3B-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.154	0.591
				2.559	3.346					-65-3B-C	●	●								
				3.346	4.331					-85-3B-C	●	●								
				4.331	5.709					-110-3B-C	●	●								
			0.866 (22mm)	1.969	2.559					KGDF□ -50-3C-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.350	0.866
				2.559	3.346					-65-3C-C	●	●								
			0.984 (25mm)	3.346	4.331					-85-3C-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.429	0.984
				4.331	5.709					-110-3C-C	●	●								
		□1.00	0.512 (13mm)	0.984	1.181	No Unit Part Number ➡	KGDS□16-C	●	●	KGDF□ -25-3A-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.075	0.512
				1.181	1.575					-30-3A-C	●	●								
				1.575	1.969					-40-3A-C	●	●								
			0.591 (15mm)	1.969	2.559					-50-3B-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.154	0.591
				2.559	3.346					-65-3B-C	●	●								
				3.346	4.331					-85-3B-C	●	●								
				4.331	5.709					-110-3B-C	●	●								
			0.866 (22mm)	1.969	2.559					KGDF□ -50-3C-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.350	0.866
				2.559	3.346					-65-3C-C	●	●								
			0.984 (25mm)	3.346	4.331					-85-3C-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.429	0.984
				4.331	5.709					-110-3C-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade). Blade and toolholder are available to assemble when purchasing individually.

Applicable Inserts → **G97**

• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see → **G98**

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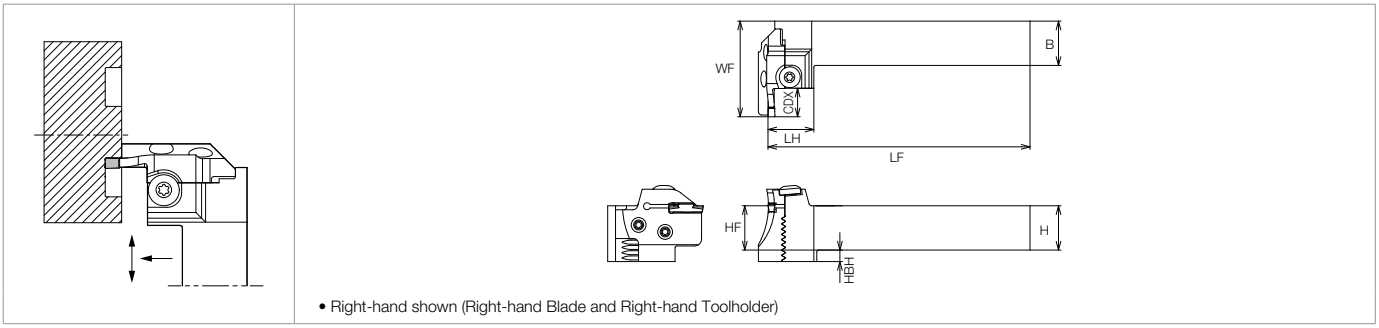
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 90° SwitchBlade Toolholders (Inch-Size)

0.157" Insert Width



• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions (0.157" Insert Width)

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number → G37	Stock R	Stock L	Blade Part Number → G121	Stock R	Stock L	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX
90°	0.157 (4mm)	□0.75	0.512 (13mm)	0.984	1.378	No Unit Part Number ➡	KGDS□12-C	●	●	KGDF□ -25-4A-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.075	0.512
			0.591 (15mm)	1.378	1.969					KGDF□ -35-4B-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.154	0.591
				1.969	2.756					-50-4B-C	●	●								
				2.756	3.937					-70-4B-C	●	●								
				3.937	5.906					-100-4B-C	●	●								
				5.906	8.661					-150-4B-C	●	●								
				8.661	∞					-220-4B-C	●	●								
			0.984 (25mm)	1.378	1.969					KGDF□ -35-4C-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.550	0.984
				1.969	2.756					-50-4C-C	●	●								
				2.756	3.937					-70-4C-C	●	●								
				3.937	5.906					-100-4C-C	●	●								
				5.906	8.661					-150-4C-C	●	●								
				8.661	∞					-220-4C-C	●	●								
		□1.00	0.512 (13mm)	0.984	1.378	No Unit Part Number ➡	KGDS□16-C	●	●	KGDF□ -25-4A-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.075	0.512
			0.591 (15mm)	1.378	1.969					KGDF□ -35-4B-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.154	0.591
				1.969	2.756					-50-4B-C	●	●								
				2.756	3.937					-70-4B-C	●	●								
				3.937	5.906					-100-4B-C	●	●								
				5.906	8.661					-150-4B-C	●	●								
				8.661	∞					-220-4B-C	●	●								
			0.984 (25mm)	1.378	1.969					KGDF□ -35-4C-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.550	0.984
				1.969	2.756					-50-4C-C	●	●								
				2.756	3.937					-70-4C-C	●	●								
				3.937	5.906					-100-4C-C	●	●								
				5.906	8.661					-150-4C-C	●	●								
				8.661	∞					-220-4C-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade).
Blade and toolholder are available to assemble when purchasing individually.

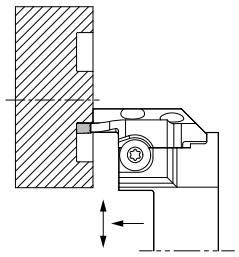
Applicable Inserts → **G97**

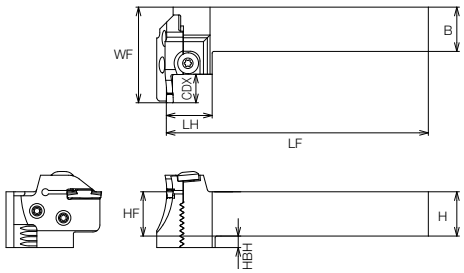
• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see → **G98**

KGDF Face Grooving 90° SwitchBlade Toolholders (Inch-Size)

0.197" Insert Width





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number → G37	Stock R	Stock L	Blade Part Number → G121	Stock R	Stock L	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX
90°	0.197 (5mm)	□0.75	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDS□12-C	●	●	KGDF□ -25-5B-C	●	●	0.750	0.750	0.510	0.750	4.921	0.927	2.154	0.591
				1.378	1.969					-35-5B-C	●	●								
				1.969	2.953					-50-5B-C	●	●								
				2.953	4.528					-75-5B-C	●	●								
				4.528	7.087					-115-5B-C	●	●								
				7.087	9.252					-180-5B-C	●	●								
				9.252	∞					-235-5B-C	●	●								
			0.787 (20mm)	0.984	1.378					KGDF□ -25-5C-C	●	●	0.750	0.750	0.510	0.750	4.921	0.927	2.35	0.787
			0.984 (25mm)	1.378	1.969					-35-5C-C	●	●	0.750	0.750	0.510	0.750	4.921	0.927	2.547	0.984
				1.969	2.953					-50-5C-C	●	●								
				2.953	4.528					-75-5C-C	●	●								
				4.528	7.087					-115-5C-C	●	●								
				7.087	9.252					-180-5C-C	●	●								
				9.252	∞					-235-5C-C	●	●								
			1.260 (32mm)	2.953	4.528					KGDF□ -75-5D-C	●	●	0.750	0.750	0.510	0.750	4.921	0.927	2.823	1.26
				4.528	7.087					-115-5D-C	●	●								
				7.087	9.252					-180-5D-C	●	●								
				9.252	∞					-235-5D-C	●	●								
		□1.00	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDS□16-C	●	●	KGDF□ -25-5B-C	●	●	1.000	1.000	0.260	1.000	5.906	1.177	2.154	0.591
				1.378	1.969					-35-5B-C	●	●								
				1.969	2.953					-50-5B-C	●	●								
				2.953	4.528					-75-5B-C	●	●								
				4.528	7.087					-115-5B-C	●	●								
				7.087	9.252					-180-5B-C	●	●								
				9.252	∞					-235-5B-C	●	●								
			0.787 (20mm)	0.984	1.378					KGDF□ -25-5C-C	●	●	1.000	1.000	0.260	1.000	5.906	1.177	2.35	0.787
			0.984 (25mm)	1.378	1.969					-35-5C-C	●	●	1.000	1.000	0.260	1.000	5.906	1.177	2.547	0.984
				1.969	2.953					-50-5C-C	●	●								
				2.953	4.528					-75-5C-C	●	●								
				4.528	7.087					-115-5C-C	●	●								
				7.087	9.252					-180-5C-C	●	●								
				9.252	∞					-235-5C-C	●	●								
			1.260 (32mm)	2.953	4.528					KGDF□ -75-5D-C	●	●	1.000	1.000	0.260	1.000	5.906	1.177	2.823	1.26
				4.528	7.087					-115-5D-C	●	●								
				7.087	9.252					-180-5D-C	●	●								
				9.252	∞					-235-5D-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade).
Blade and toolholder are available to assemble when purchasing individually.

Applicable Inserts → **G97**

• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see → **G98**

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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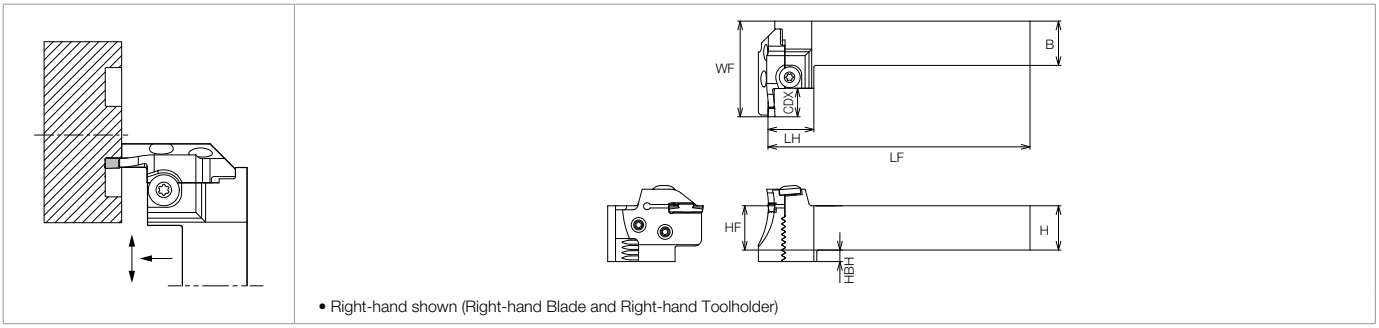
KGDF Face Grooving 90° SwitchBlade Toolholders (Inch-Size)

0.236" Insert Width



• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (in)	Shank Size (in)	Max. Grooving Depth (in)	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number G37	Stock R	Stock L	Blade Part Number G121	Stock R	Stock L	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX
90°	0.236 (6mm)	□0.75	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDS□12-C	●	●	KGDF□-25-6B-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.154	0.591
				1.378	1.969					-35-6B-C	●	●								
				1.969	2.953					-50-6B-C	●	●								
				2.953	4.528					-75-6B-C	●	●								
				4.528	7.087					-115-6B-C	●	●								
				7.087	9.252					-180-6B-C	●	●								
				9.252	∞					-235-6B-C	●	●								
			0.787 (20mm)	0.984	1.378					KGDF□-25-6C-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.350	0.787
			0.984 (25mm)	1.378	1.969					-35-6C-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.547	0.984
				1.969	2.953					-50-6C-C	●	●								
				2.953	4.528					-75-6C-C	●	●								
				4.528	7.087					-115-6C-C	●	●								
				7.087	9.252					-180-6C-C	●	●								
				9.252	∞					-235-6C-C	●	●								
			1.260 (32mm)	2.953	4.528					KGDF□-75-6D-C	●	●	0.750	0.750	0.510	0.750	4.921	0.988	2.823	1.260
				4.528	7.087					-115-6D-C	●	●								
				7.087	9.252					-180-6D-C	●	●								
				9.252	∞					-235-6D-C	●	●								
		□1.00	0.591 (15mm)	0.984	1.378	No Unit Part Number ➡	KGDS□16-C	●	●	KGDF□-25-6B-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.154	0.591
				1.378	1.969					-35-6B-C	●	●								
				1.969	2.953					-50-6B-C	●	●								
				2.953	4.528					-75-6B-C	●	●								
				4.528	7.087					-115-6B-C	●	●								
				7.087	9.252					-180-6B-C	●	●								
				9.252	∞					-235-6B-C	●	●								
			0.787 (20mm)	0.984	1.378					KGDF□-25-6C-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.350	0.787
			0.984 (25mm)	1.378	1.969					-35-6C-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.547	0.984
				1.969	2.953					-50-6C-C	●	●								
				2.953	4.528					-75-6C-C	●	●								
				4.528	7.087					-115-6C-C	●	●								
				7.087	9.252					-180-6C-C	●	●								
				9.252	∞					-235-6C-C	●	●								
			1.260 (32mm)	2.953	4.528					KGDF□-75-6D-C	●	●	1.000	1.000	0.260	1.000	5.906	0.988	2.823	1.260
				4.528	7.087					-115-6D-C	●	●								
				7.087	9.252					-180-6D-C	●	●								
				9.252	∞					-235-6D-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade). Blade and toolholder are available to assemble when purchasing individually.

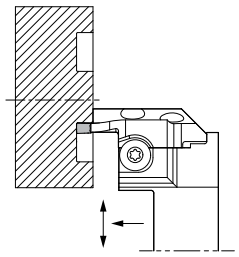
Applicable Inserts ➡ **G97**

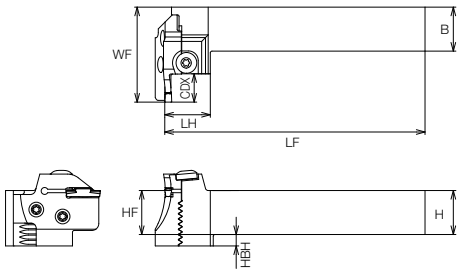
• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see ➡ **G98**

KGDF Face Grooving 90° SwitchBlade Toolholders (Metric-Size)

2mm Insert Width





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number G37	Stock R	Stock L	Blade Part Number G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX
90°	2	□20	6	25	30	No Unit Part Number ➡	KGDSR2020-C	●		KGDFR -25-2A-C	●		20	20	12	20	125	27.7	49.7	6
				30	35					-30-2A-C	●									
				35	45					-35-2A-C	●									
				45	60					-45-2A-C	●									
				60	80					-60-2A-C	●									
				80	100					-80-2A-C	●									
				100	130					-100-2A-C	●									
			13	25	30					KGDFR -25-2B-C	●		20	20	12	20	125	27.7	52.7	13
			15	30	35					KGDFR -30-2B-C	●		20	20	12	20	125	27.7	54.7	15
				35	45					-35-2B-C	●									
				45	60					-45-2B-C	●									
				60	80					-60-2B-C	●									
				80	100					-80-2B-C	●									
				100	130					-100-2B-C	●									
		□25	6	25	30	No Unit Part Number ➡	KGDSR2525-C	●		KGDFR -25-2A-C	●		25	25	7	25	150	27.7	49.7	6
				30	35					-30-2A-C	●									
				35	45					-35-2A-C	●									
				45	60					-45-2A-C	●									
				60	80					-60-2A-C	●									
				80	100					-80-2A-C	●									
				100	130					-100-2A-C	●									
			13	25	30					KGDFR -25-2B-C	●		25	25	7	25	150	27.7	52.7	13
			15	30	35					KGDFR -30-2B-C	●		25	25	7	25	150	27.7	54.7	15
				35	45					-35-2B-C	●									
				45	60					-45-2B-C	●									
				60	80					-60-2B-C	●									
				80	100					-80-2B-C	●									
				100	130					-100-2B-C	●									

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade).
Blade and toolholder are available to assemble when purchasing individually.

Applicable Inserts ➡ **G97**

• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

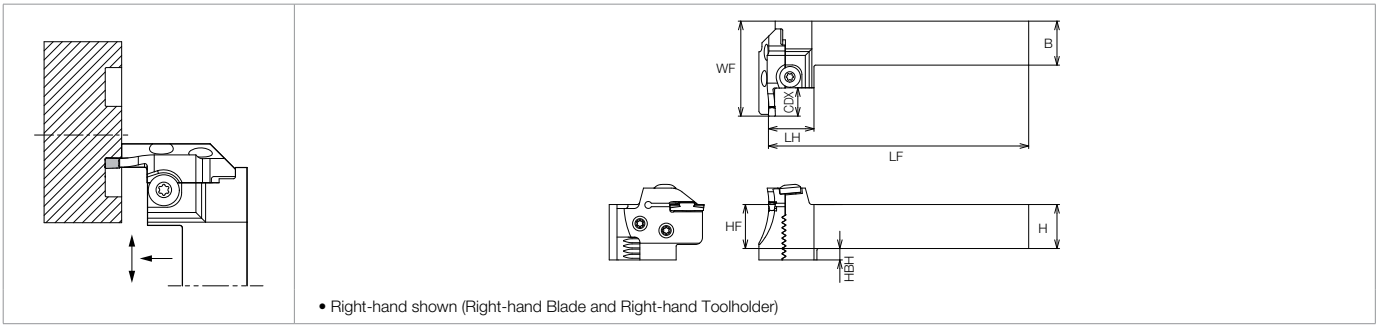
• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see ➡ **G98**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGDF Face Grooving 90° SwitchBlade Toolholders (Metric-Size)

3mm Insert Width



• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number G37	Stock R	Stock L	Blade Part Number G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX
90°	3	□20	13	25	30	No Unit Part Number ➡	KGDS□2020-C	●	●	KGDF□-25-3A-C	●	●	20	20	12	20	125	27.7	52.7	13
				30	40					-30-3A-C	●	●								
				40	50					-40-3A-C	●	●								
			15	50	65					KGDF□-50-3B-C	●	●	20	20	12	20	125	27.7	54.7	15
				65	85					-65-3B-C	●	●								
				85	110					-85-3B-C	●	●								
				110	145					-110-3B-C	●	●								
			22	50	65					KGDF□-50-3C-C	●	●	20	20	12	20	125	27.7	59.7	22
				65	85					-65-3C-C	●	●								
			25	85	110					-85-3C-C	●	●	20	20	12	20	125	27.7	61.7	25
				110	145					-110-3C-C	●	●								
		□25	13	25	30	No Unit Part Number ➡	KGDS□2525-C	●	●	KGDF□-25-3A-C	●	●	25	25	7	25	150	27.7	52.7	13
				30	40					-30-3A-C	●	●								
				40	50					-40-3A-C	●	●								
			15	50	65					-50-3B-C	●	●	25	25	7	25	150	27.7	54.7	15
				65	85					-65-3B-C	●	●								
				85	110					-85-3B-C	●	●								
				110	145					-110-3B-C	●	●								
			22	50	65					KGDF□-50-3C-C	●	●	25	25	7	25	150	27.7	59.7	22
				65	85					-65-3C-C	●	●								
			25	85	110					KGDF□-85-3C-C	●	●	25	25	7	25	150	27.7	61.7	25
				110	145					-110-3C-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade).
Blade and toolholder are available to assemble when purchasing individually.

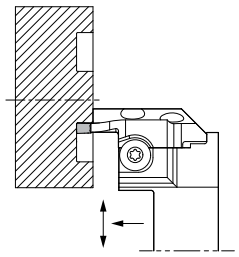
Applicable Inserts ➡ **G97**

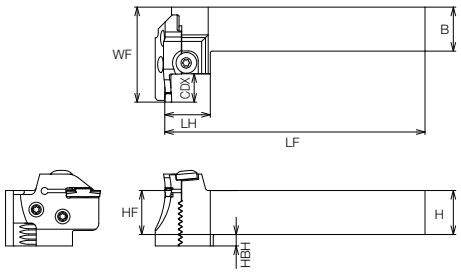
• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see ➡ **G98**

KGDF Face Grooving 90° SwitchBlade Toolholders (Metric-Size)

4mm Insert Width





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number → G37	Stock R	Stock L	Blade Part Number → G121	Stock R	Stock L	Dimensions (mm) H	HF	HBH	B	LF	LH	WF	CDX
90°	4	□20	13	25	35	No Unit Part Number ➡	KGDS□2020-C	●	●	KGDF□-25-4A-C	●	●	20	20	12	20	125	27.7	52.7	13
			15	35	50					-35-4B-C	●	●	20	20	12	20	125	27.7	54.7	15
				50	70					-50-4B-C	●	●								
				70	100					-70-4B-C	●	●								
				100	150					-100-4B-C	●	●								
				150	220					-150-4B-C	●	●								
				220	∞					-220-4B-C	●	●								
			25	35	50					KGDF□-35-4C-C	●	●	20	20	12	20	125	27.7	64.7	25
				50	70					-50-4C-C	●	●								
				70	100					-70-4C-C	●	●								
				100	150					-100-4C-C	●	●								
				150	220					-150-4C-C	●	●								
				220	∞					-220-4C-C	●	●								
		□25	13	25	35	No Unit Part Number ➡	KGDS□2525-C	●	●	KGDF□-25-4A-C	●	●	25	25	7	25	150	27.7	52.7	13
			15	35	50					-35-4B-C	●	●	25	25	7	25	150	27.7	54.7	15
				50	70					-50-4B-C	●	●								
				70	100					-70-4B-C	●	●								
				100	150					-100-4B-C	●	●								
				150	220					-150-4B-C	●	●								
				220	∞					-220-4B-C	●	●								
			25	35	50					KGDF□-35-4C-C	●	●	25	25	7	25	150	27.7	64.7	25
				50	70					-50-4C-C	●	●								
				70	100					-70-4C-C	●	●								
				100	150					-100-4C-C	●	●								
				150	220					-150-4C-C	●	●								
				220	∞					-220-4C-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade).
Blade and toolholder are available to assemble when purchasing individually.

Applicable Inserts → **G97**

• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see → **G98**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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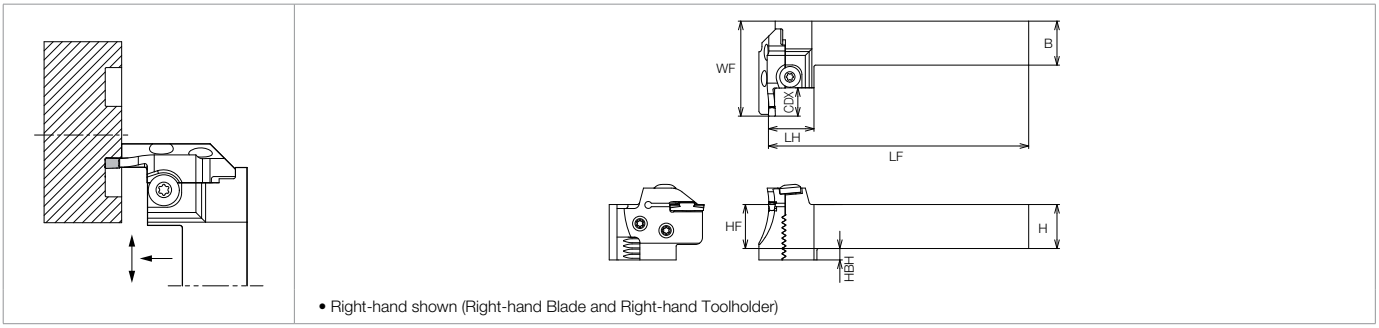
KGDF Face Grooving 90° SwitchBlade Toolholders (Metric-Size)

5mm Insert Width



• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number G37	Stock R	Stock L	Blade Part Number G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX
90°	5	□20	15	25	35	No Unit Part Number ➡	KGDS□2020-C	●	●	KGDF□-25-5B-C	●	●	20	20	12	20	125	27.7	54.7	15
				35	50					KGDF□-35-5B-C	●	●								
				50	75					KGDF□-50-5B-C	●	●								
				75	115					KGDF□-75-5B-C	●	●								
				115	180					KGDF□-115-5B-C	●	●								
				180	235					KGDF□-180-5B-C	●	●								
				235	∞					KGDF□-235-5B-C	●	●								
			20	25	35					KGDF□-25-5C-C	●	●	20	20	12	20	125	27.7	59.7	20
			25	35	50					KGDF□-35-5C-C	●	●	20	20	12	20	125	27.7	64.7	25
				50	75					KGDF□-50-5C-C	●	●								
				75	115					KGDF□-75-5C-C	●	●								
				115	180					KGDF□-115-5C-C	●	●								
				180	235					KGDF□-180-5C-C	●	●								
				235	∞					KGDF□-235-5C-C	●	●								
			32	75	115					KGDF□-75-5D-C	●	●	20	20	12	20	125	27.7	71.7	32
				115	180					KGDF□-115-5D-C	●	●								
				180	235					KGDF□-180-5D-C	●	●								
				235	∞					KGDF□-235-5D-C	●	●								
		□25	15	25	35	No Unit Part Number ➡	KGDS□2525-C	●	●	KGDF□-25-5B-C	●	●	25	25	7	25	150	27.7	54.7	15
				35	50					KGDF□-35-5B-C	●	●								
				50	75					KGDF□-50-5B-C	●	●								
				75	115					KGDF□-75-5B-C	●	●								
				115	180					KGDF□-115-5B-C	●	●								
				180	235					KGDF□-180-5B-C	●	●								
				235	∞					KGDF□-235-5B-C	●	●								
			20	25	35					KGDF□-25-5C-C	●	●	25	25	7	25	150	27.7	59.7	20
			25	35	50					KGDF□-35-5C-C	●	●	25	25	7	25	150	27.7	64.7	25
				50	75					KGDF□-50-5C-C	●	●								
				75	115					KGDF□-75-5C-C	●	●								
				115	180					KGDF□-115-5C-C	●	●								
				180	235					KGDF□-180-5C-C	●	●								
				235	∞					KGDF□-235-5C-C	●	●								
			32	75	115					KGDF□-75-5D-C	●	●	25	25	7	25	150	27.7	71.7	32
				115	180					KGDF□-115-5D-C	●	●								
				180	235					KGDF□-180-5D-C	●	●								
				235	∞					KGDF□-235-5D-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade).
Blade and toolholder are available to assemble when purchasing individually.

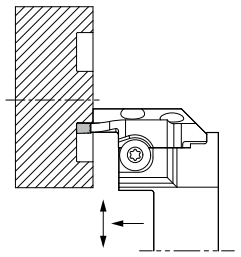
Applicable Inserts ➡ **G97**

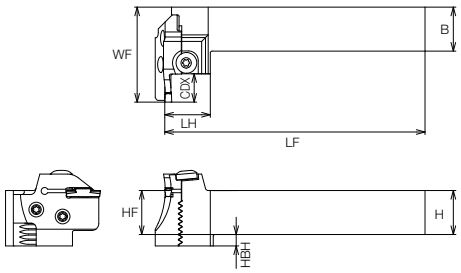
• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see ➡ **G98**

KGDF Face Grooving 90° SwitchBlade Toolholders (Metric-Size)

6mm Insert Width





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

Shank Angle	Insert Width CW (mm)	Shank Size (mm)	Max. Grooving Depth (mm)	Face Grooving Dia. (mm) DAXN (min)	Face Grooving Dia. (mm) DAXX (max)	Unit Part Number (Toolholder + Blade)	Toolholder Part Number → G37	Stock R	Stock L	Blade Part Number → G121	Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX
90°	6	□20	15	25	35	No Unit Part Number ➡	KGDS□2020-C	●	●	KGDF□-25-6B-C	●	●	20	20	12	20	125	27.7	54.7	15
				35	50					-35-6B-C	●	●								
				50	75					-50-6B-C	●	●								
				75	115					-75-6B-C	●	●								
				115	180					-115-6B-C	●	●								
				180	235					-180-6B-C	●	●								
				235	∞					-235-6B-C	●	●								
			20	25	35					KGDF□-25-6C-C	●	●	20	20	12	20	125	27.7	59.7	20
			25	35	50					-35-6C-C	●	●	20	20	12	20	125	27.7	64.7	25
				50	75					-50-6C-C	●	●								
				75	115					-75-6C-C	●	●								
				115	180					-115-6C-C	●	●								
				180	235					-180-6C-C	●	●								
				235	∞					-235-6C-C	●	●								
			32	75	115					KGDF□-75-6D-C	●	●	20	20	12	20	125	27.7	71.7	32
				115	180					-115-6D-C	●	●								
				180	235					-180-6D-C	●	●								
				235	∞					-235-6D-C	●	●								
		□25	15	25	35	No Unit Part Number ➡	KGDS□2525-C	●	●	KGDF□-25-6B-C	●	●	25	25	7	25	150	27.7	54.7	15
				35	50					-35-6B-C	●	●								
				50	75					-50-6B-C	●	●								
				75	115					-75-6B-C	●	●								
				115	180					-115-6B-C	●	●								
				180	235					-180-6B-C	●	●								
				235	∞					-235-6B-C	●	●								
			20	25	35					KGDF□-25-6C-C	●	●	25	25	7	25	150	27.7	59.7	20
			25	35	50					-35-6C-C	●	●	25	25	7	25	150	27.7	64.7	25
				50	75					-50-6C-C	●	●								
				75	115					-75-6C-C	●	●								
				115	180					-115-6C-C	●	●								
				180	235					-180-6C-C	●	●								
				235	∞					-235-6C-C	●	●								
			32	75	115					KGDF□-75-6D-C	●	●	25	25	7	25	150	27.7	71.7	32
				115	180					-115-6D-C	●	●								
				180	235					-180-6D-C	●	●								
				235	∞					-235-6D-C	●	●								

• KGDF 90° SwitchBlade type is not available as unit (toolholder + blade).
Blade and toolholder are available to assemble when purchasing individually.

Applicable Inserts → **G97**

• **Right-hand** Blade for **Right-hand** Toolholder, **Left-hand** Blade for **Left-hand** Toolholder.

• Insert clamp bolt (BH6x10TR) and Blade fixing bolt (SB-60120TR) and Wrench (LTW-25) come with toolholder. For Spare Parts, see → **G98**

Face Grooving Toolholder Assembly Identification System

Hand of Tool
R: Right-hand
L: Left-hand

Width	
2 : 2mm	**5** : 5mm
3 : 3mm	**6** : 6mm
4 : 4mm	

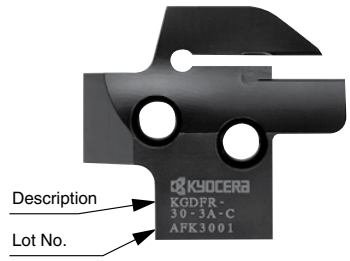
Blade Symbol
C : Applicable to toolholder with suffix "-C"

KGDF R – 25 – 3 A – C

Series
KGDF Face Grooving

Min. Diameter in Face Grooving
Indicates the minimum external diameter suitable for the initial face grooving.
25 : 25mm
:
235 : 235mm

Grooving Depth	
A : 13mm	2-Edge Insert
B : 15mm	(1-Edge Insert can also be used.)
C : 20~25mm	1-Edge Insert
D : 32mm	



Example of printing of blade number

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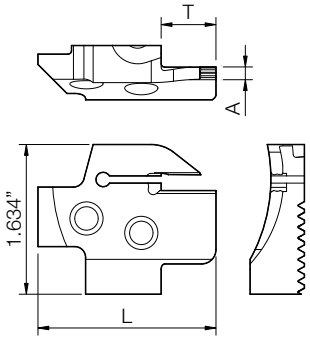
Blade Dimensions

Shape	Blade Part Number	Stock R	Stock L	Dimensions (in) L	Dimensions (in) T	Dimensions (in) A	Face Grooving Dia. (in) DAXN (min)	Face Grooving Dia. (in) DAXX (max)	Width (in) CW	Applicable Inserts ➡ G97	Toolholder Part Number ➡ G37
 Right-hand Shown	KGDFR -25-2A-C	●		1.746	0.236	0.059	0.984	1.181	0.079 (2mm)	GDFM 2020N-020GM	KGD□....-C KGDS□....-C
	-30-2A-C	●					1.181	1.378			
	-35-2A-C	●					1.378	1.772			
	-45-2A-C	●					1.772	2.362			
	-60-2A-C	●					2.362	3.150			
	-80-2A-C	●					3.150	3.937			
	-100-2A-C	●					3.937	5.118			
	-25-2B-C	●		1.864	0.512		0.984	1.181			
	-30-2B-C	●		1.943	0.591		1.181	1.378			
	-35-2B-C	●					1.378	1.772			
	-45-2B-C	●					1.772	2.362			
	-60-2B-C	●					2.362	3.150			
	-80-2B-C	●					3.150	3.937			
	-100-2B-C	●					3.937	5.118			
	KGDF□ -25-3A-C	●	●	1.864	0.512	0.079	0.984	1.181	0.118 (3mm)	GDFM 3020N-030GM GDFM 3020N-030DM GDFMS 3020N-030DM GDFM 3020N-150R-CM	
	-30-3A-C	●	●				1.181	1.575			
	-40-3A-C	●	●				1.575	1.969			
	-50-3B-C	●	●	1.943	0.591		1.969	2.559			
	-65-3B-C	●	●				2.559	3.346			
	-85-3B-C	●	●				3.346	4.331			
	-110-3B-C	●	●				4.331	5.709			
	-50-3C-C	●	●	2.219	0.866		1.969	2.559			
	-65-3C-C	●	●				2.559	3.346			
	-85-3C-C	●	●	2.337	0.984		3.346	4.331			
	-110-3C-C	●	●				4.331	5.709			
	KGDF□ -25-4A-C	●	●	1.864	0.512	0.118	0.984	1.378	0.157 (4mm)	GDFM 4020N-040GM GDFM 4020N-040GH GDFM 4020N-040DM GDFMS 4020N-040DM GDFM 4020N-200R-CM	
	-35-4B-C	●	●	1.943	0.591		1.378	1.969			
	-50-4B-C	●	●				1.969	2.756			
	-70-4B-C	●	●				2.756	3.937			
	-100-4B-C	●	●				3.937	5.906			
	-150-4B-C	●	●				5.906	8.661			
	-220-4B-C	●	●				8.661	∞			
	-35-4C-C	●	●	2.337	0.984		1.378	1.969			
	-50-4C-C	●	●				1.969	2.756			
	-70-4C-C	●	●				2.756	3.937			
	-100-4C-C	●	●				3.937	5.906			
	-150-4C-C	●	●				5.906	8.661			
	-220-4C-C	●	●				8.661	∞			
	KGDF□ -25-5B-C	●	●	1.943	0.591	0.157	0.984	1.378	0.197 (5mm)	GDFM 5020N-040GM GDFM 5020N-080GM GDFM 5020N-040GH GDFM 5020N-080GH GDFM 5020N-040DM GDFMS 5020N-040DM GDFM 5020N-250R-CM	
	-35-5B-C	●	●				1.378	1.969			
	-50-5B-C	●	●				1.969	2.953			
	-75-5B-C	●	●				2.953	4.528			
	-115-5B-C	●	●				4.528	7.087			
	-180-5B-C	●	●				7.087	9.252			
	-235-5B-C	●	●				9.252	∞			
	-25-5C-C	●	●	2.140	0.787		0.984	1.378			
	-35-5C-C	●	●	2.337	0.984		1.378	1.969			
	-50-5C-C	●	●				1.969	2.953			
	-75-5C-C	●	●				2.953	4.528			
	-115-5C-C	●	●				4.528	7.087			
	-180-5C-C	●	●				7.087	9.252			
	-235-5C-C	●	●				9.252	∞			
	-75-5D-C	●	●	2.612	1.260		2.953	4.528			
	-115-5D-C	●	●				4.528	7.087			
	-180-5D-C	●	●				7.087	9.252			
	-235-5D-C	●	●				9.252	∞			
	KGDF□ -25-6B-C	●	●	1.943	0.591	0.197	0.984	1.378	0.236 (6mm)	GDFM 6020N-040GM GDFM 6020N-080GM GDFM 6020N-040GH GDFM 6020N-080GH GDFM 6020N-040DM GDFMS 6020N-040DM GDFM 6020N-300R-CM	
	-35-6B-C	●	●				1.378	1.969			
	-50-6B-C	●	●				1.969	2.953			
	-75-6B-C	●	●				2.953	4.528			
	-115-6B-C	●	●				4.528	7.087			
	-180-6B-C	●	●				7.087	9.252			
	-235-6B-C	●	●				9.252	∞			
	-25-6C-C	●	●	2.140	0.787		0.984	1.378			
	-35-6C-C	●	●	2.337	0.984		1.378	1.969			
	-50-6C-C	●	●				1.969	2.953			
	-75-6C-C	●	●				2.953	4.528			
	-115-6C-C	●	●				4.528	7.087			
	-180-6C-C	●	●				7.087	9.252			
	-235-6C-C	●	●				9.252	∞			
	-75-6D-C	●	●	2.612	1.260		2.953	4.528			
	-115-6D-C	●	●				4.528	7.087			
	-180-6D-C	●	●				7.087	9.252			
	-235-6D-C	●	●				9.252	∞			

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

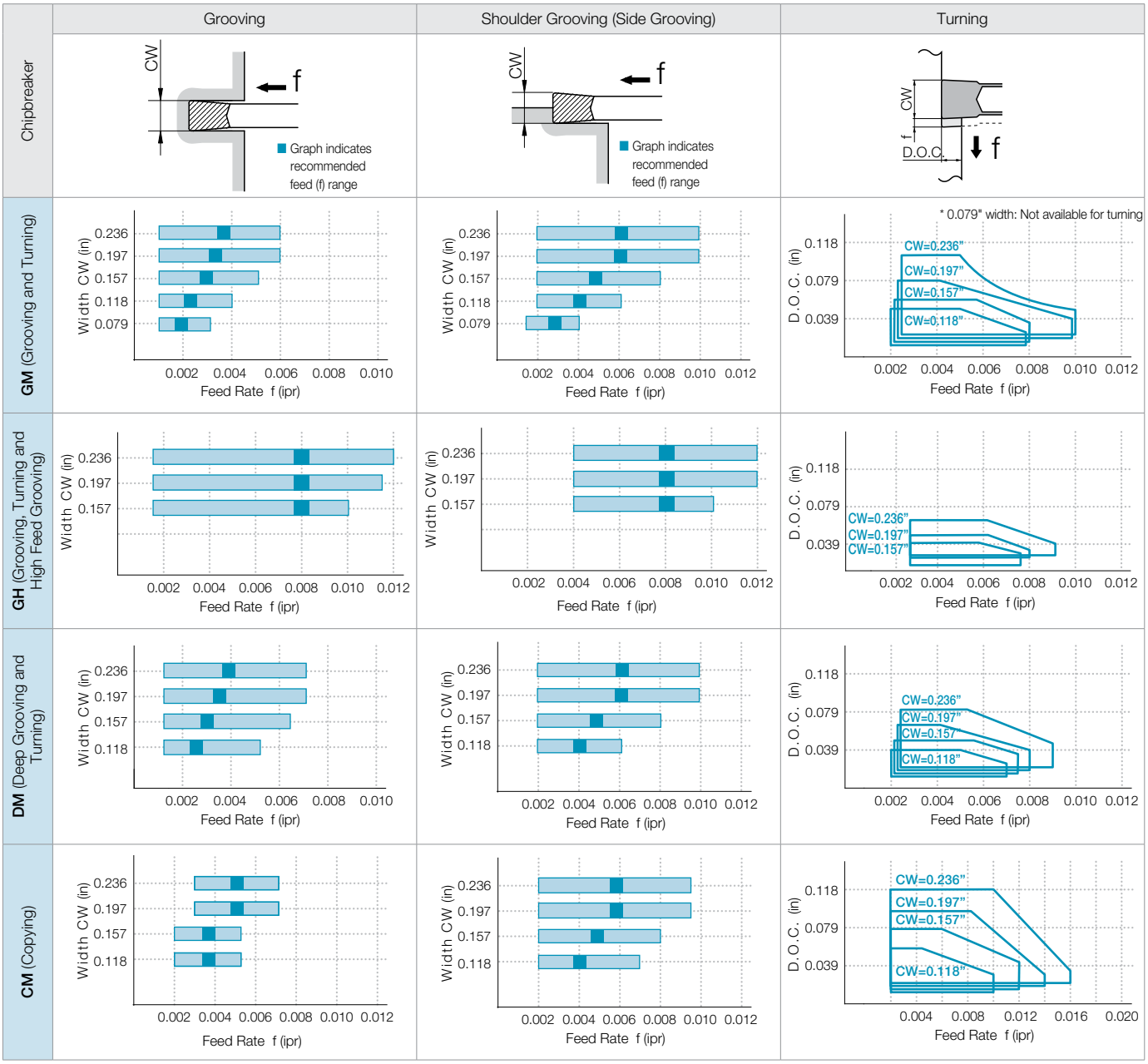
Recommended Cutting Conditions (Vc)

Workpiece Material	Recommended Insert Grade (Vc : sfm)				Notes
	Cermet		MEGACOAT		
	TN620	TN90	PR1225	PR1215	
Carbon Steel	☆ 200~660	☆ 260~660	★ 200~520	☆ 260~520	Wet
Alloy Steel	☆ 200~520	☆ 230~520	★ 200~490	☆ 200~490	
Stainless Steel	-	-	★ 160~390	☆ 160~390	
Cast Iron	-	-	-	★ 260~520	

★ : 1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Feed Rate / D.O.C.)

(Workpiece Material : 1049)



When shouldering,
- If D.O.C. is set smaller, set feed higher.
- If D.O.C. is set larger, set feed lower.

1) The above values reflect a **CDX** dimension that is 0.591" (15mm) or less.
When **CDX** dimension is over 0.669" (17mm), set the values for turning to less than 90% of recommended cutting conditions above.

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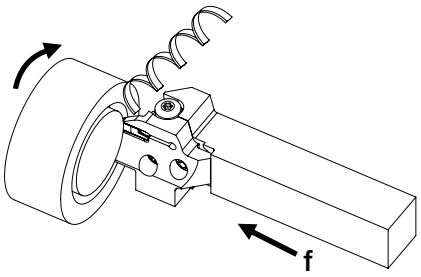
Face Grooving Guide

1 Toolholder Selection

Check the range of applicable "face grooving diameter" as well as the groove width and depth.

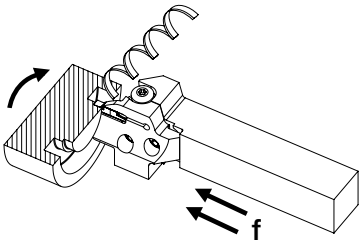
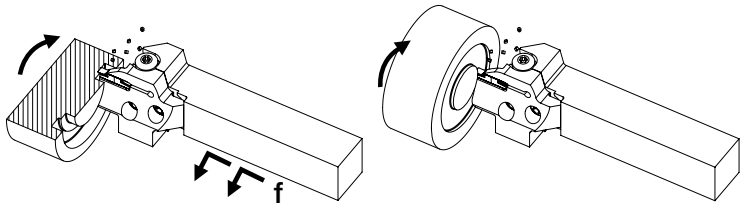
2 Cutting Conditions (Feed Rate : f)

When machining steel, set the feed rate (f) so that chips are created in a helical form when plunging.



3 Expanding Groove Width (Plunging and Turning)

Start machining from the outside and then proceed to the inside to improve chip control.

Plunging (Grooving + Side Grooving)	Turning
	

4 Guide for Turning

A. When the cutting amount (D.O.C.) is over 0.020" (0.5mm)

① Plunge
② Pull back tool by 0.004" (0.1mm)
(Failure to pull the tool back before turning will result in an unbalanced load applied on only one side of the cutting edge.)
③ Perform turning (see Fig.1)

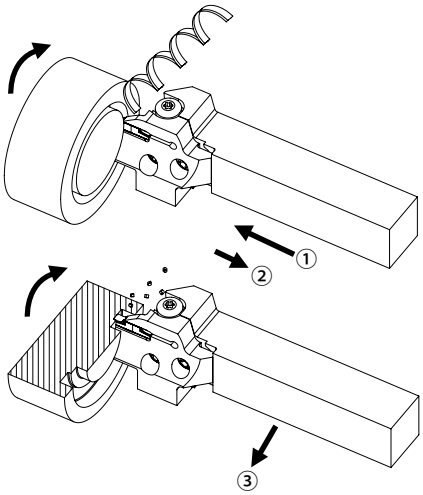
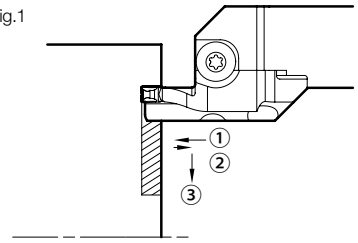


Fig.1

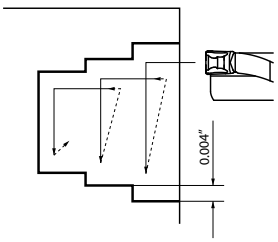


● **When Widening the Face Groove Width (see Fig.2)**

Use “Step Turning” as shown in Fig.2. This allows for the deflection that occurs during traversing.
To ensure perpendicularity of the side walls, two final shoulder plunges should be made.

Then perform finishing.

Fig.2



B. When the cutting amount (D.O.C.) is under 0.020"(0.5mm)

① Use plunging
② Perform turning
Machining without interruption is possible. (see **Fig.3**)

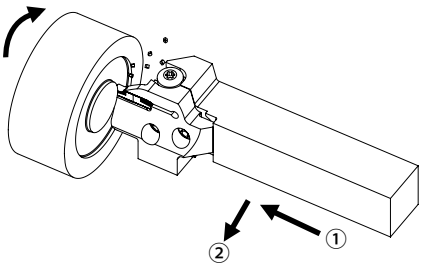
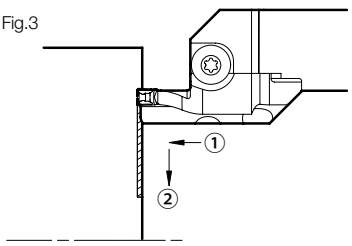
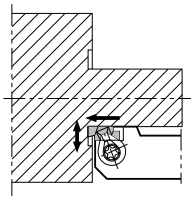
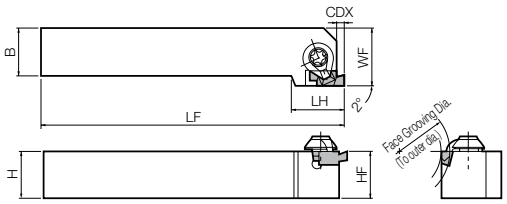


Fig.3

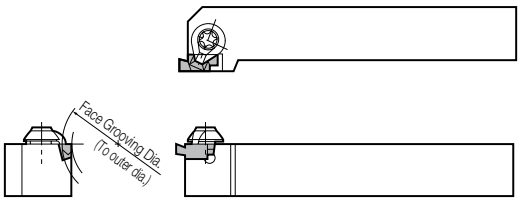


GFVS-AA





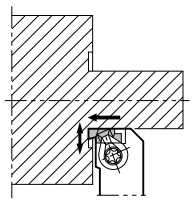
• Right-hand shown

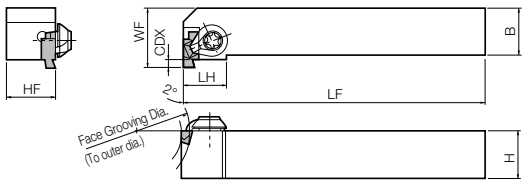


• Left-hand shown

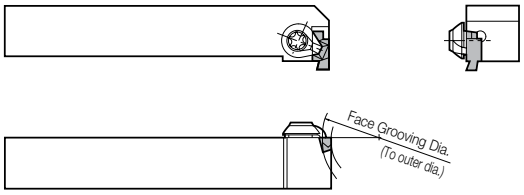
• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

GFVT-AA





• Right-hand shown



• Left-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Part Number		Stock		Dimensions (mm)							Face Grooving Dia.		Spare Parts		Applicable Inserts
													Clamp Set	Wrench	
		R	L	H	HF	B	LF	LH	WF	CDX	DAXN (min)	DAXX (max)			G125
GFVS R/L	2020K-08AA	●	●	20	20	20	125	18	25	2.2	8 (0)	∞ (∞)	CPS-5V	FT-15	GVF R/L 100-005AA ~ GVF R/L 300-005AA
	2525M-08AA	●	●	25	25	25	150	18	32	2.2					
GFVT R/L	2020K-08AA	●	●	20	20	20	125	14	25	2.2	8 (0)	∞ (∞)	CPS-5V	FT-15	GVF R/L 100-005AA ~ GVF R/L 300-005AA
	2525M-08AA	●	●	25	25	25	150	14	32	2.2					

Note 1. Dimension **CDX** shows available grooving depth.

2. The value ( ) of Face Grooving Dia. DAXX (max) in ( ) is the maximum outer diameter value after the initial groove between DAXN (min) ~ DAXX (max). It is possible to widen the groove to infinity ∞. The value ( ) of Face Grooving Dia. DAXN (min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between DAXN (min) ~ DAXX (max).

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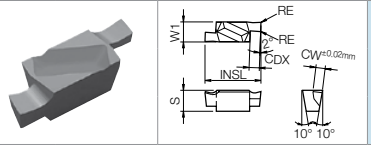
Applicable Inserts

(mm)

Part Number		W1	INSL	S
GVF□	100-…AA	4.3	12	4.5
	200-…AA	4.3	12	4.5
	300-…AA	4.3	12	4.5

P	Carbon Steel / Alloy Steel	●	○	
M	Stainless Steel	●	○	
K	Cast Iron			◕
N	Non-ferrous Metals			◕
S	Titanium Alloy			◕
H	Hard materials (≤40HRC)	●	○	
	Hard materials (≥40HRC)			

Classification of Usage
◕ : Light Interruption / 1st Choice
◴ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

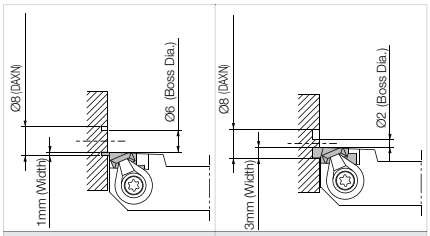
Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (mm) CW	CDX	RE	MEGACOAT PR1225	PVD PR930	Carbide KW10	Applicable Toolholders	Ref. Page for Toolholder
	GVF□ 100-005AA	GVF□ 100AA	1.00	2.2	0.05	●	●	●	GFVS□…-08AA GFVT□…-08AA	G124
	200-005AA	200AA	2.00	2.2		●	●	●		
	300-005AA	300AA	3.00	2.2		●	●	●		

- Dimension **CDX** shows available grooving depth.
- GVF□…005AA inserts are not compatible with GVF□…–OOOA (Ref. to Page **G128**) inserts because their Side Relief Angle is 10°.

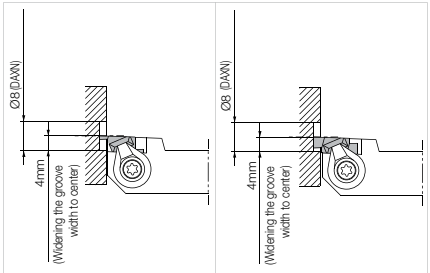
Face Grooving Diameter of GFVS-AA (also GFVT-AA)

Part Number		Face Grooving Dia. DAXN (min)	DAXX (max)	Applicable Inserts
GFVS□	2020K-08AA	8	∞	GVF□100-005AA ~ GVF□300-005AA
	2525M-08AA			
GFVT□	2020K-08AA	(0)	(∞)	
	2525M-08AA			

- Maximum diameter of initial groove plunge.
- When machining towards the outer diameter, there is no maximum limit to the groove diameter.
- Minimum Dia. of Initial Groove Plunge
  If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
- When widening the groove to center, This is minimum diameter.



Installing GVFL100-005AA | Installing GVFL300-005AA



Installing GVFL100-005AA | Installing GVFL300-005AA

Recommended Cutting Conditions (GFVS-AA / GFVT-AA)

Workpiece Material	Recommended Insert Grade (Vc sfm) MEGACOAT PR1225	PVD PR930	Carbide KW10	Grooving Feed Rate (ipr)	Turning D.O.C.	Turning Feed Rate (ipr)	Notes
Carbon Steel / Alloy Steel	★ 160~330	☆ 160~330	-	0.0004~0.0020	Max 0.0197	0.0004~0.0020	Wet
Stainless Steel	★ 160~260	☆ 160~260	-	0.0004~0.0012	Max 0.0118	0.0004~0.0008	
Non-ferrous Metals	-	-	★ ~660	0.0004~0.0031	Max 0.0197	0.0004~0.0031	

* D.O.C. has to be set for less than corner-R (RE) when turning with 0.039" edge (GVF□100-005AA).

★ : 1st Recommendation ☆ : 2nd Recommendation

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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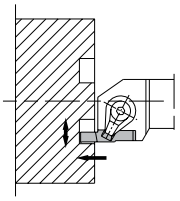
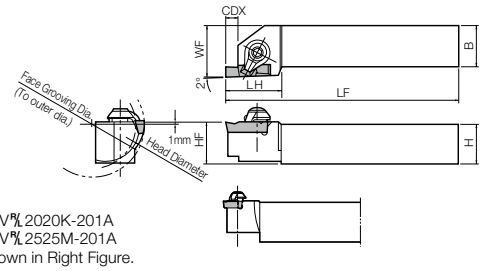
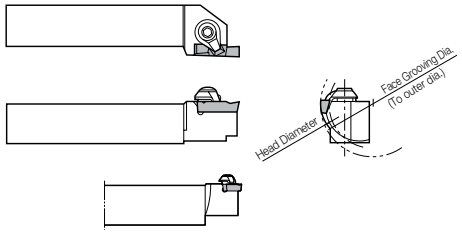
GFV





GVF□2020K-201A
GVF□2525M-201A
Shown in Right Figure.

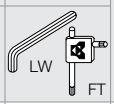
• Right-hand shown



• Left-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Part Number		Stock		Dimensions (mm)							Face Grooving Dia.		Spare Parts			Applicable Inserts ➔ G132
													Clamp Set		Wrench	
		R	L	H	HF	B	LF	LH	WF	CDX	DAXN (min)	DAXX (min)				
GVF□	2020K-201A	●	●	20	21	20	125	20	25	2.2	20 (12)	∞	CPS-5V	-	FT-15	GVF□200~340-020A GVF□200-…~300-…AR
	2525M-201A	●	●	25	26	25	150	23	32	2.2						
GVF□	2020K-351B	●	●	20	21	20	125	28	25	4.6	35 (25)	50 (∞)	-	CPS-6V	LW-3	GVF□250~350-020B GVF□300-150BR
	2525M-351B	●	●	25	26	25	150	30	32	4.6						
	2020K-352B	●	●	20	21	20	125	28	25	5.1						GVF□400~490-020B GVF□400-200BR
	2525M-352B	●	●	25	26	25	150	30	32	5.1						
	2020K-501B	●	●	20	21	20	125	28	25	4.6	50 (25)	70 (∞)	-	CPS-6V	LW-3	GVF□250~350-020B GVF□300-150BR
	2525M-501B	●	●	25	26	25	150	30	32	4.6						
	2020K-502B	●	●	20	21	20	125	28	25	5.1						GVF□400~490-020B GVF□400-200BR
	2525M-502B	●	●	25	26	25	150	30	32	5.1						
	2020K-701B	●	●	20	21	20	125	28	25	4.6	70 (25)	100 (∞)	-	CPS-6V	LW-3	GVF□250~350-020B GVF□300-150BR
	2525M-701B	●	●	25	26	25	150	30	32	4.6						
	2020K-702B	●	●	20	21	20	125	28	25	5.1						GVF□400~490-020B GVF□400-200BR
	2525M-702B	●	●	25	26	25	150	30	32	5.1						
GVF□	2525M-501C	●	●	25	26	25	150	35	32	6.6	50 (25)	70 (∞)	-	CPS-8V	LW-4	GVF□350~450-040C
	2525M-502C	●	●	25	26	25	150	35	32	8.1						GVF□500~600-040C
	2525M-701C	●	●	25	26	25	150	35	32	6.6	70 (25)	100 (∞)	-	CPS-8V	LW-4	GVF□350~450-040C
	2525M-702C	●	●	25	26	25	150	35	32	8.1						GVF□500~600-040C
	2525M-1001C	●	●	25	26	25	150	35	32	6.6	100 (25)	150 (∞)	-	CPS-8V	LW-4	GVF□350~450-040C
	2525M-1002C	●	●	25	26	25	150	35	32	8.1						GVF□500~600-040C
	2525M-1501C	●	●	25	26	25	150	35	32	6.6	150 (25)	250 (∞)	-	CPS-8V	LW-4	GVF□350~450-040C
	2525M-1502C	●	●	25	26	25	150	35	32	8.1						GVF□500~600-040C

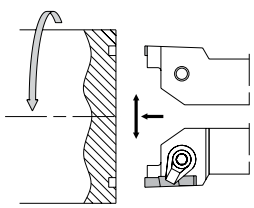
Note 1. Dimension **CDX** shows available grooving depth.

2. The value ( ) of Face Grooving Dia. DAXX (max) in ( ) is the maximum outer diameter value after the initial groove between DAXN (min) ~ DAXX (max). It is possible to widen the groove to infinity ∞. The value ( ) of Face Grooving Dia. DAXN (min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between DAXN (min) ~ DAXX (max).

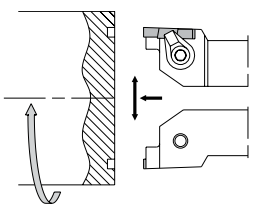
3. Standard toolholders are designed with the edge position 1.0mm above the center. When using non-standard Toolholders, set the Edge position 1.0mm above the center.

Selection of Toolholder & Insert

Toolholder	Right-hand (R)
Insert	Right-hand (R)



Toolholder	Left-hand (L)
Insert	Left-hand (L)



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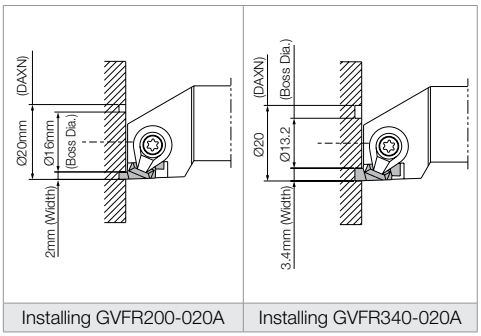
Face Grooving Diameter of GFV

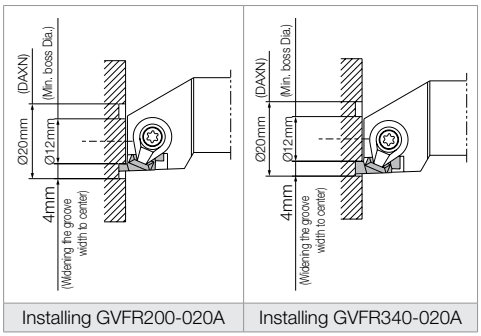
(1) e.g.) GFV[R/L]…-201A

Part Number	Face Grooving Dia. DAXN (min)	Face Grooving Dia. DAXX (min)	Applicable Inserts
GFV[R/L] 2020K-201A	20	∞	GVF[R/L]200~340-020A
2525M-201A	(12)	(∞)	GVF[R/L]200-…~300-…AR

- Maximum diameter (DAXX) of initial groove plunge.
- When machining towards the outer diameter, there is no maximum limit to the grooving diameter.
- When widening the groove to center, this is no minimum diameter.
- Minimum Dia. (DAXN: Ø20mm) of Initial Groove Plunge
  If the initial groove is made smaller than this, the toolholder interferes with the workpiece.



Installing GVFR200-020A | Installing GVFR340-020A

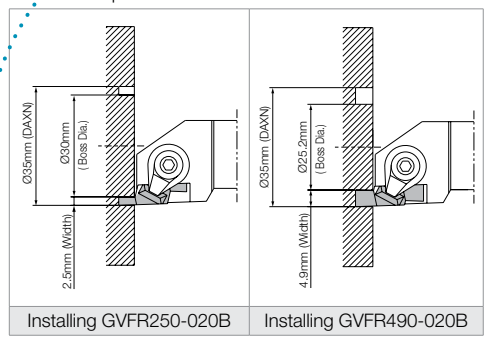


Installing GVFR200-020A | Installing GVFR340-020A

(2) e.g.) GFV[R/L]…-351B/352B (same as GFV[R/L]…-○○○B or GFV[R/L]…-○○○C)

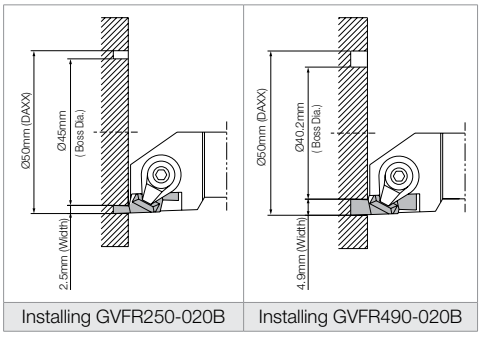
Part Number	Face Grooving Dia. DAXN (min)	Face Grooving Dia. DAXX (min)	Applicable Inserts
GFV[R/L] 2020K-351B	35	50	GVF[R/L]200~340-020A
2525M-351B	(25)	(∞)	GVF[R/L]200-…~300-…AR
2020K-352B			
2525M-352B			

- It is possible to widen the groove to infinity ∞ when machining the initial groove within DAXN ~ DAXX and then widening to outer diameter.
- When machining the initial groove on the face at (DAXN: Ø35mm)
  If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
  Boss Dia. depends on insert width.



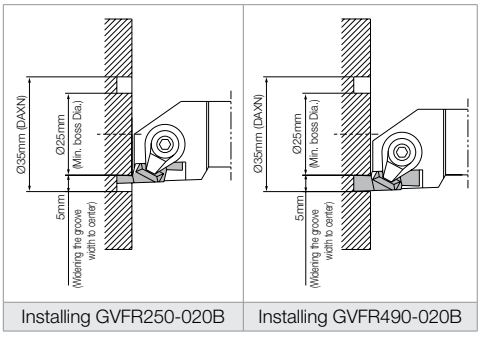
Installing GVFR250-020B | Installing GVFR490-020B

- When machining the initial groove on the face at (DAXX: Ø50mm).
  If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
  Boss Dia. depends on insert width.

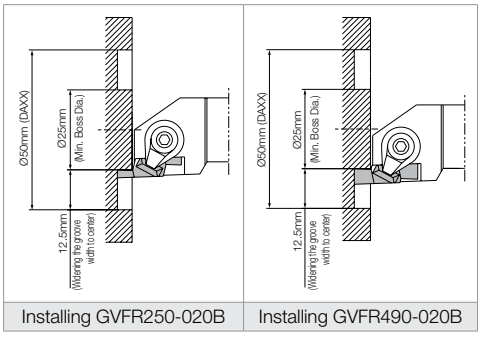


Installing GVFR250-020B | Installing GVFR490-020B

- When widening the groove width to inner diameter.
  Face Grooving Dia. (Ø25mm Boss Dia.) is the limitation regardless of insert width, even widening the groove width to the center from the initial groove at (DAXN: Ø35mm) or (DAXX: Ø50mm). The toolholder interferes with the workpiece when closer to the center.



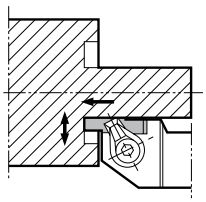
Installing GVFR250-020B | Installing GVFR490-020B

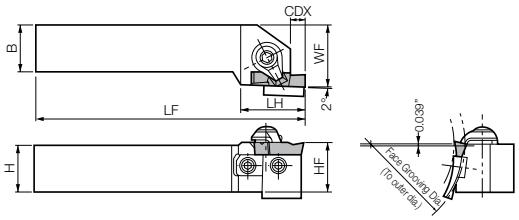


Installing GVFR250-020B | Installing GVFR490-020B

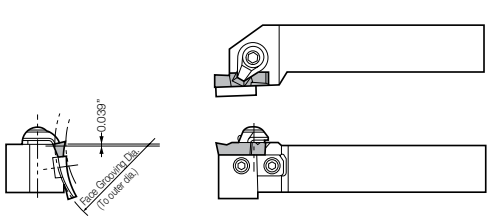
GFVS

This toolholder can machine various face grooving diameters by replacing the Blade.





• Right-hand shown

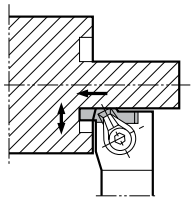


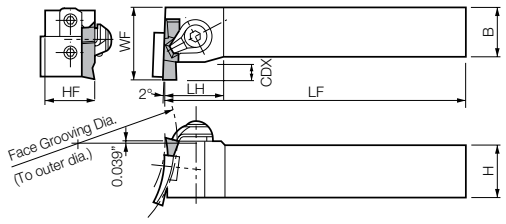
• Left-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

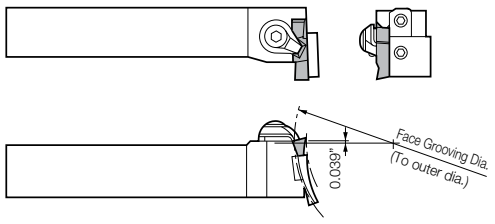
GFVT

This toolholder can machine various face grooving diameters by replacing the Blade.





• Right-hand shown

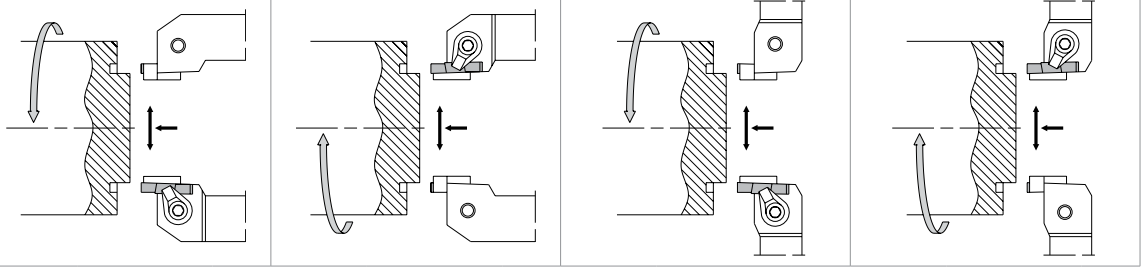


• Left-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

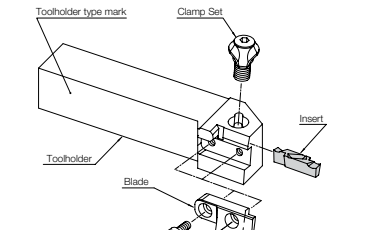
Selection of Toolholder & Insert

GFVS				GFVT			
Toolholder	Right-hand (R)	Toolholder	Left-hand (L)	Toolholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	Left-hand (L)	Insert	Right-hand (R)	Insert	Left-hand (L)	Insert	Right-hand (R)



Combination of Base-Holder & Blade (Inch Size)

Part Number of Toolholder (Stamped Below)	Stock R	Stock L	Blade Part Number	Toolholder Part Number (Integrated Tool)
GFVSR/L12-HB **GFVTR/L12-HB**	●	●	**SFR/L -351B**	**GFVSR/L12 -351B** **GFVTR/L12 -352B**
	●	●	**-352B**	**-501B**
			-501B	**-502B**
			-502B	**-701B**
			-701B	**-702B**
			-702B	
GFVSR/L16-HB **GFVTR/L16-HB**	●	●	**SFR/L -351B**	**GFVSR/L16 -351B** **GFVTR/L16 -352B**
	●	●	**-352B**	**-501B**
			-501B	**-502B**
			-502B	**-701B**
			-701B	**-702B**
			-702B	
GFVSR/L16-HC **GFVTR/L16-HC**	●	●	**SFR/L -501C**	**GFVSR/L16 -501C** **GFVTR/L16 -502C**
	●	●	**-502C**	**-701C**
			-701C	**-702C**
			-702C	**-1001C**
			-1001C	**-1002C**
			-1002C	**-1501C**
			-1501C	**-1502C**
			-1502C	



Example of Installation (GFVS)

How to refer to the face grooving toolholder and blade

Q: Though "GFVSR16-HC" is marked on the face grooving toolholder, the size of cutting dia. is unknown. How can it be found out?

A: Take off the blade. Description of the blade is listed on the back of the blade. Using the description, check the description of the toolholder in the catalog. If "SFR-1001C" is installed with "GFVSR16-HC", the description of the toolholder is "GVFSR16-1001C"

- Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.
- Installation of GFVT type follows installation example of GFVS type.

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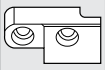
Toolholder Dimensions (Inch Size)

Part Number	Stock		Dimensions (in)							Face Grooving Dia.		Spare Parts				Applicable Inserts G132
												Clamp Set	Wrench	Blade	Screw	
	R	L	H	HF	B	LF	LH	WF	CDX	DAXN (min)	DAXX (max)					
GFVS□ 12-351B	●	●	0.75	0.79	0.75	5.00	1.18	1.00	0.20	1.378 (0.984)	1.969 (∞)	CPS-6V	LW-3	SF□-351B	HH4X12	GVF□250~350-020B GVF□300-150BR
16-351B	●	●	1.00	1.04	1.00	6.00	1.26	1.25	(0.18)							
12-352B	●	●	0.75	0.79	0.75	5.00	1.18	1.00	0.20					SF□-352B		GVF□400~490-020B GVF□400-200BR
16-352B	●	●	1.00	1.04	1.00	6.00	1.26	1.25	(0.20)							
12-501B	●	●	0.75	0.79	0.75	5.00	1.18	1.00	0.20	1.969 (0.984)	2.756 (∞)			SF□-501B		GVF□250~350-020B GVF□300-150BR
16-501B	●	●	1.00	1.04	1.00	6.00	1.26	1.25	(0.18)							
12-502B	●	●	0.75	0.79	0.75	5.00	1.18	1.00	0.20					SF□-502B		GVF□400~490-020B GVF□400-200BR
16-502B	●	●	1.00	1.04	1.00	6.00	1.26	1.25	(0.20)							
12-701B	●	●	0.75	0.79	0.75	5.00	1.18	1.00	0.20	2.756 (0.984)	3.937 (∞)			SF□-701B		GVF□250~350-020B GVF□300-150BR
16-701B	●	●	1.00	1.04	1.00	6.00	1.26	1.25	(0.18)							
12-702B	●	●	0.75	0.79	0.75	5.00	1.18	1.00	0.20					SF□-702B		GVF□400~490-020B GVF□400-200BR
16-702B	●	●	1.00	1.04	1.00	6.00	1.26	1.25	(0.20)							
GFVS□ 16-501C	●	●	1.00	1.04	1.00	6.00	1.38	1.25	0.32 (0.26)	1.969 (0.984)	2.756 (∞)	CPS-8V	LW-4	SF□-501C	HH4X12	GVF□350~450-040C
16-502C	●	●							0.32 (0.32)					SF□-502C		GVF□500~600-040C
16-701C	●	●							0.32 (0.26)	2.756 (0.984)	3.937 (∞)			SF□-701C		GVF□350~450-040C
16-702C	●	●							0.32 (0.32)					SF□-702C		GVF□500~600-040C
16-1001C	●	●							0.32 (0.26)	3.937 (0.984)	5.906 (∞)			SF□-1001C		GVF□350~450-040C
16-1002C	●	●							0.32 (0.32)					SF□-1002C		GVF□500~600-040C
16-1501C	●	●							0.32 (0.26)	5.906 (0.984)	9.843 (∞)			SF□-1501C		GVF□350~450-040C
16-1502C	●	●							0.32 (0.32)					SF□-1502C		GVF□500~600-040C
GFVT□ 12-351B	●	●	0.75	0.79	0.75	5.00	0.87	1.18	0.20	1.378 (0.984)	1.969 (∞)	CPS-6V	LW-3	SF□-351B	HH4X12	GVF□250~350-020B GVF□300-150BR
16-351B	●	●	1.00	1.04	1.00	6.00	0.98	1.38	(0.18)							
12-352B	●	●	0.75	0.79	0.75	5.00	0.87	1.18	0.20					SF□-352B		GVF□400~490-020B GVF□400-200BR
16-352B	●	●	1.00	1.04	1.00	6.00	0.98	1.38	(0.20)							
12-501B	●	●	0.75	0.79	0.75	5.00	0.87	1.18	0.20	1.969 (0.984)	2.756 (∞)			SF□-501B		GVF□250~350-020B GVF□300-150BR
16-501B	●	●	1.00	1.04	1.00	6.00	0.98	1.38	(0.18)							
12-502B	●	●	0.75	0.79	0.75	5.00	0.87	1.18	0.20					SF□-502B		GVF□400~490-020B GVF□400-200BR
16-502B	●	●	1.00	1.04	1.00	6.00	0.98	1.38	(0.20)							
12-701B	●	●	0.75	0.79	0.75	5.00	0.87	1.18	0.20	2.756 (0.984)	3.937 (∞)			SF□-701B		GVF□250~350-020B GVF□300-150BR
16-701B	●	●	1.00	1.04	1.00	6.00	0.98	1.38	(0.18)							
12-702B	●	●	0.75	0.79	0.75	5.00	0.87	1.18	0.20					SF□-702B		GVF□400~490-020B GVF□400-200BR
16-702B	●	●	1.00	1.04	1.00	6.00	0.98	1.38	(0.20)							
GFVT□ 16-501C	●	●	1.00	1.04	1.00	6.00	1.06	1.50	0.32(0.26)	1.969 (0.984)	2.756 (∞)	CPS-8V	LW-4	SF□-501C	HH4X12	GVF□350~450-040C
16-502C	●	●							0.32(0.32)					SF□-502C		GVF□500~600-040C
16-701C	●	●							0.32(0.26)	2.756 (0.984)	3.937 (∞)			SF□-701C		GVF□350~450-040C
16-702C	●	●							0.32(0.32)					SF□-702C		GVF□500~600-040C
16-1001C	●	●							0.32(0.26)	3.937 (0.984)	5.906 (∞)			SF□-1001C		GVF□350~450-040C
16-1002C	●	●							0.32(0.32)					SF□-1002C		GVF□500~600-040C
16-1501C	●	●							0.32(0.26)	5.906 (0.984)	9.843 (∞)			SF□-1501C		GVF□350~450-040C
16-1502C	●	●							0.32(0.32)					SF□-1502C		GVF□500~600-040C

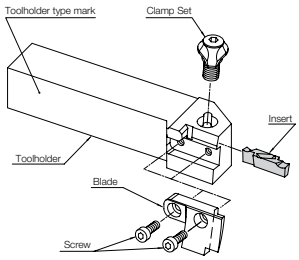
Note 1. Dimension **CDX** shows the distance from the Toolholder to the cutting edge. The grooving depth is shown in ( ).

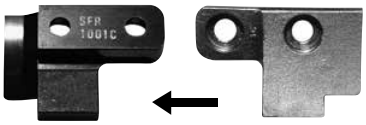
2. The value ( ) of Face Grooving diameter. (DAXX) is the maximum outer diameter value after the initial groove between DAXN - DAXX (It is possible to widen the groove to infinity ∞).
   The value ( ) of Face Grooving diameter. (DAXN) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between DAXN - DAXX.
3. Standard toolholders are designed with the edge position 0.039" above the center.
   When using non-standard Toolholders, set the Edge position 0.039" above the center.
4. GFVS and GFVT are composed of a base body and a blade.
   If the blade should be damaged, replace it with a new blade as listed in the left table.
   (e.g.) GFVSR12-HB+SFR-351B = GFVSR12-351B
   (e.g.) GFVTR12-HB+SFR-351B = GFVTR12-351B

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Combination of Base-Holder & Blade (Metric Size)

Part Number of Toolholder (Stamped Below)	Stock R	Stock L	Blade Part Number	Toolholder Part Number (Integrated Tool)
GFVSR/L 2020K-HB GFVTR/L 2020K-HB	●	●	SFR/L -351B	GFVSR/L 2020K -351B GFVTR/L 2020K -352B
	●	●	-352B	
			-501B	-501B
			-502B	-502B
			-701B	-701B
			-702B	-702B
GFVSR/L 2525M-HB GFVTR/L 2525M-HB	●	●	SFR/L -351B	GFVSR/L 2525M -351B GFVTR/L 2525M -352B
	●	●	-352B	
			-501B	-501B
			-502B	-502B
			-701B	-701B
			-702B	-702B
GFVSR/L 2525M-HC GFVTR/L 2525M-HC	●	●	SFR/L -501C	GFVSR/L 2525M -501C GFVTR/L 2525M -502C
	●	●	-502C	
			-701C	-701C
			-702C	-702C
			-1001C	-1001C
			-1002C	-1002C
			-1501C	-1501C
			-1502C	-1502C





Blade (Back side) (With Blade Description)

Blade (Face side)

Q: Though "GFVSR2525M-HC" is marked on the face grooving toolholder, the size of cutting dia. is unknown. How can it be found out?

A: Take off the blade. Description of the blade is listed on the back of the blade. Using the description, check the description of the toolholder in the catalog. If "SFR-1001C" is integrated to "GFVSR2525M-HC", the description of the toolholder is "GVFSR2525M-1001C"

- Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.
- Installation of GFVT type follows example installation of GFVS type.

Toolholder Dimensions (Metric Size)

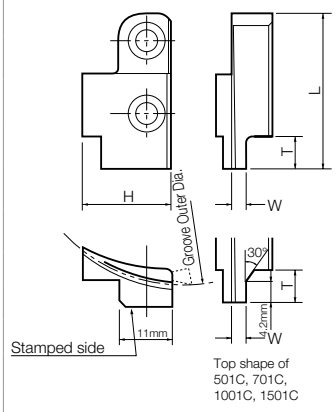
Part Number	Stock R	Stock L	H	HF	B	LF	LH	WF	CDX	Face Grooving Dia. DAXN (min)	Face Grooving Dia. DAXX (max)	Spare Parts: Clamp Set	Spare Parts: Wrench	Spare Parts: Blade	Spare Parts: Screw	Applicable Inserts
GFVSR/L 2020K-351B	●	●	20	21	20	125	30	25	5.1	35 (25)	50 (∞)	CPS-6V	LW-3	SFR/L-351B	HH4X12	GVFR/L250~350-020B GVFR/L300-150BR
2525M-351B	●	●	25	26	25	150	32	32	(4.6)							
2020K-352B	●	●	20	21	20	125	30	25	5.1					SFR/L-352B		GVFR/L400~490-020B GVFR/L400-200BR
2525M-352B	●	●	25	26	25	150	32	32	(5.1)							
2020K-501B	●	●	20	21	20	125	30	25	5.1	50 (25)	70 (∞)			SFR/L-501B		GVFR/L250~350-020B GVFR/L300-150BR
2525M-501B	●	●	25	26	25	150	32	32	(4.6)							
2020K-502B	●	●	20	21	20	125	30	25	5.1					SFR/L-502B		GVFR/L400~490-020B GVFR/L400-200BR
2525M-502B	●	●	25	26	25	150	32	32	(5.1)							
2020K-701B	●	●	20	21	20	125	30	25	5.1	70 (25)	100 (∞)			SFR/L-701B		GVFR/L250~350-020B GVFR/L300-150BR
2525M-701B	●	●	25	26	25	150	32	32	(4.6)							
2020K-702B	●	●	20	21	20	125	30	25	5.1					SFR/L-702B		GVFR/L400~490-020B GVFR/L400-200BR
2525M-702B	●	●	25	26	25	150	32	32	(5.1)							
GFVSR/L 2525M-501C	●	●	25	26	25	150	32	32	8.1 (6.6)	50 (25)	70 (∞)	CPS-8V	LW-4	SFR/L-501C	HH4X12	GVFR/L350~450-040C
2525M-502C	●	●	25	26	25	150	32	32	8.1 (8.1)					SFR/L-502C		GVFR/L500~600-040C
2525M-701C	●	●	25	26	25	150	32	32	8.1 (6.6)	70 (25)	100 (∞)			SFR/L-701C		GVFR/L350~450-040C
2525M-702C	●	●	25	26	25	150	32	32	8.1 (8.1)					SFR/L-702C		GVFR/L500~600-040C
2525M-1001C	●	●	25	26	25	150	32	32	8.1 (6.6)	100 (25)	150 (∞)			SFR/L-1001C		GVFR/L350~450-040C
2525M-1002C	●	●	25	26	25	150	32	32	8.1 (8.1)					SFR/L-1002C		GVFR/L500~600-040C
2525M-1501C	●	●	25	26	25	150	32	32	8.1 (6.6)	150 (25)	250 (∞)			SFR/L-1501C		GVFR/L350~450-040C
2525M-1502C	●	●	25	26	25	150	32	32	8.1 (8.1)					SFR/L-1502C		GVFR/L500~600-040C
GFVTR/L 2020K-351B	●	●	20	21	20	125	22	30	5.1	35 (25)	50 (∞)	CPS-6V	LW-3	SFR/L-351B	HH4X12	GVFR/L250~350-020B GVFR/L300-150BR
2525M-351B	●	●	25	26	25	150	25	35	(4.6)							
2020K-352B	●	●	20	21	20	125	22	30	5.1					SFR/L-352B		GVFR/L400~490-020B GVFR/L400-200BR
2525M-352B	●	●	25	26	25	150	25	35	(5.1)							
2020K-501B	●	●	20	21	20	125	22	30	5.1	50 (25)	70 (∞)			SFR/L-501B		GVFR/L250~350-020B GVFR/L300-150BR
2525M-501B	●	●	25	26	25	150	25	35	(4.6)							
2020K-502B	●	●	20	21	20	125	22	30	5.1					SFR/L-502B		GVFR/L400~490-020B GVFR/L400-200BR
2525M-502B	●	●	25	26	25	150	25	35	(5.1)							
2020K-701B	●	●	20	21	20	125	22	30	5.1	70 (25)	100 (∞)			SFR/L-701B		GVFR/L250~350-020B GVFR/L300-150BR
2525M-701B	●	●	25	26	25	150	25	35	(4.6)							
2020K-702B	●	●	20	21	20	125	22	30	5.1					SFR/L-702B		GVFR/L400~490-020B GVFR/L400-200BR
2525M-702B	●	●	25	26	25	150	25	35	(5.1)							
GFVTR/L 2525M-501C	●	●	25	26	25	150	27	38	8.1 (6.6)	50 (25)	70 (∞)	CPS-8V	LW-4	SFR/L-501C	HH4X12	GVFR/L350~450-040C
2525M-502C	●	●	25	26	25	150	27	38	8.1 (8.1)					SFR/L-502C		GVFR/L500~600-040C
2525M-701C	●	●	25	26	25	150	27	38	8.1 (6.6)	70 (25)	100 (∞)			SFR/L-701C		GVFR/L350~450-040C
2525M-702C	●	●	25	26	25	150	27	38	8.1 (8.1)					SFR/L-702C		GVFR/L500~600-040C
2525M-1001C	●	●	25	26	25	150	27	38	8.1 (6.6)	100 (25)	150 (∞)			SFR/L-1001C		GVFR/L350~450-040C
2525M-1002C	●	●	25	26	25	150	27	38	8.1 (8.1)					SFR/L-1002C		GVFR/L500~600-040C
2525M-1501C	●	●	25	26	25	150	27	38	8.1 (6.6)	150 (25)	250 (∞)			SFR/L-1501C		GVFR/L350~450-040C
2525M-1502C	●	●	25	26	25	150	27	38	8.1 (8.1)					SFR/L-1502C		GVFR/L500~600-040C

→ G132

Note 1. Dimension **CDX** shows the distance from the Toolholder to the cutting edge. The grooving depth is shown in ( ).
2. The value ( ) of Face Grooving diameter. (DAXX) is the maximum outer diameter value after the initial groove between DAXN - DAXX (It is possible to widen the groove to infinity ∞).
The value ( ) of Face Grooving diameter. (DAXN) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between DAXN - DAXX.
3. Standard toolholders are designed with the edge position 1.0mm above the center.
When using non-standard Toolholders, set the Edge position 1.0mm above the center.
4. GFVS and GFVT are composed of a base body and a blade.
If the blade should be damaged, replace it with a new blade as listed in the left table.
(e.g.) GFVSR2020K-HB+SFR-351B = GFVSR2020K-351B
(e.g.) GFVTR2020K-HB+SFR-351B = GFVTR2020K-351B

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Blade Dimensions

Shape	Blade Part Number		Stock R	Stock L	Dimensions (mm) L	H	T	W	Face Grooving Dia. DAXN (min)	DAXX (max)	Applicable Inserts	Applicable Toolholders
 Right-hand shown	SF□	-351B	●	●	30.5	11	4.7	2.0	35	50	GVF□250~350-020B GVF□300-150BR	GFV(S/T)□○○○○□ -○○○B (Toolholder Stamp (GFV(S/T)□○○○○□-HB))
		-352B	●	●	30.5	11	4.7	3.4	35	50	GVF□400~490-020B GVF□400-200BR	
	SF□	-501B	●	●	30.5	15	4.7	2.0	50	70	GVF□250~350-020B GVF□300-150BR	
		-502B	●	●	30.5	15	4.7	3.4	50	70	GVF□400~490-020B GVF□400-200BR	
	SF□	-701B	●	●	30.5	17	4.7	2.0	70	100	GVF□250~350-020B GVF□300-150BR	
		-702B	●	●	30.5	17	4.7	3.4	70	100	GVF□400~490-020B GVF□400-200BR	
	SF□	-501C	●	●	35.0	15	7.5	2.8	50	70	GVF□350~450-040C	GFV(S/T)□○○○○□ -○○○C (Toolholder Stamp (GFV(S/T)□○○○○□-HC))
		-502C	●	●	35.0	15	7.5	4.3	50	70	GVF□500~600-040C	
	SF□	-701C	●	●	35.0	20	7.5	2.8	70	100	GVF□350~450-040C	
		-702C	●	●	35.0	20	7.5	4.3	70	100	GVF□500~600-040C	
	SF□	-1001C	●	●	35.0	23	7.5	2.8	100	150	GVF□350~450-040C	
		-1002C	●	●	35.0	23	7.5	4.3	100	150	GVF□500~600-040C	
• Right-hand Blade for Right-hand Toolholder, Left-hand Blade for Left-hand Toolholder.	SF□	-1501C	●	●	35.0	23	7.5	2.8	150	250	GVF□350~450-040C	
		-1502C	●	●	35.0	23	7.5	4.3	150	250	GVF□500~600-040C	

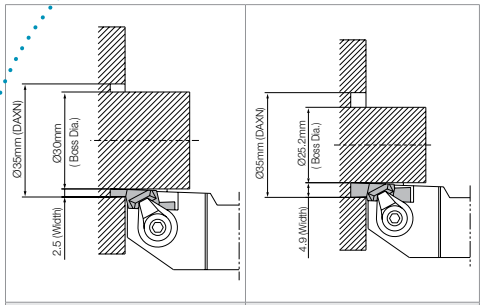
Face Groove Diameter of GFVS / GFVT

e.g.) GFVS□…-351B/352B
(same as GFVS□…-○○○B, …-○○○C G129~G130
GFVT□…-○○○B, …-○○○C G129~G130

Part Number		Face Grooving Dia. DAXN (min)	Face Grooving Dia. DAXX (min)	Applicable Inserts
GFVS□	2020K-351B	35 (25)	50 (∞)	GVF□250~350-020B GVF□300-150BR
	2525M-351B			
	2020K-352B			GVF□400~490-020B GVF□400-200BR
	2525M-352B			

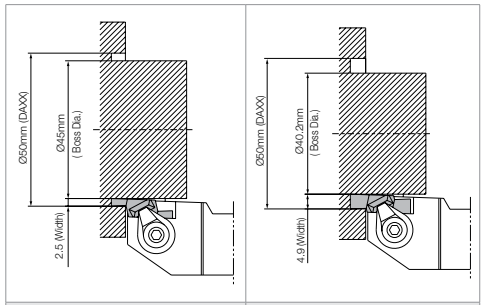
- It is possible to widen the groove to infinity ∞ when machining the initial groove within DAXN ~ DAXX and then widening to outer diameter.

- When machining the initial groove on the face at (DAXN: Ø35mm)
  If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
  Boss Dia. depends on insert width.



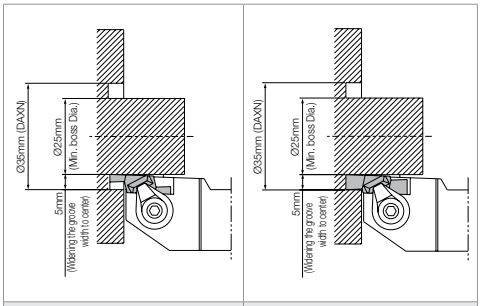
Installing GVFL250-020B | Installing GVFL490-020B

- When machining the initial groove on the face at (DAXX: Ø50mm).
  If the initial groove is made smaller than this, the toolholder interferes with the workpiece.
  Boss Dia. depends on insert width.

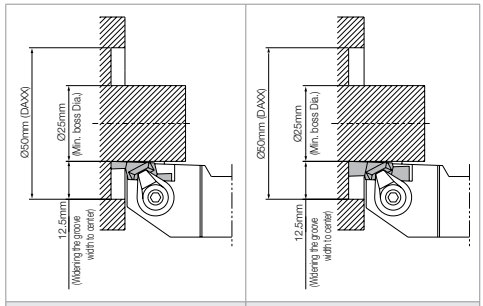


Installing GVFL250-020B | Installing GVFL490-020B

- When widening the groove width to inner diameter.
  Face Grooving Dia. (Ø25mm Boss Dia.) is the limitation regardless of insert width,
  even widening the groove width to the center from the initial groove at (DAXN: Ø35mm) or (DAXX: Ø50mm).
  The toolholder interferes with the workpiece when closer to the center.



Installing GVFL250-020B | Installing GVFL490-020B



Installing GVFL250-020B | Installing GVFL490-020B

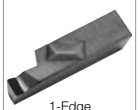
Applicable Inserts

(mm)

Part Number	W1	INSL	S
GVF□ ...-○○○A	4.3	12	4.5
...-○○○B	5.8	20	5.0
...-○○○C	7.0	27	7.0
····-○○○AR	4.3	12	4.5
····-○○○BR	5.8	20	5.0

		Cermet			MEGA	PVD	Carbide	PCD
P	Carbon Steel / Alloy Steel				●	◔		
M	Stainless Steel				●	◔		
K	Cast Iron						●	
N	Non-ferrous Metals						●	●
S	Titanium Alloy						●	●
H	Hard materials (≤40HRC)				●	○		
	Hard materials (≥40HRC)							

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (in) CW in	CW mm	CDX	RE	TN90 R	TN90 L	TC40 R	TC40 L	TC60 R	TC60 L	PR1225 R	PR1225 L	PR930 R	PR930 L	KW10 R	KW10 L	KPD010 R	KPD010 L	Applicable Toolholders	Ref. Page for Toolholder
	GVF□ 200-020A	GVF□ 200A	0.079	2.00	0.091	0.008	△	△	●	●	●	●	●	●	●	●	●	●			GFV□ ...-201A GIFV□ ...-201A	G126 G138
	230-020A	230A	0.091	2.30	0.091				●				●	●	●		●	●				
	250-020A	250A	0.098	2.50	0.091				●	●	●		●	●	●	●	●	●				
	270-020A	270A	0.106	2.70	0.091				△	△			●	●	●	●	●	●				
	290-020A	290A	0.114	2.90	0.091				●	●			●	●	●	●	●	●				
	340-020A	340A	0.134	3.40	0.091				●				●	●	●	●	●	●				
	GVF□ 250-020B	GVF□ 250B	0.098	2.50	0.189	0.008	△	△	●	●	●	●	●	●	●	●	●	●			GFV□ ...-○○1B GFVS□ ...-○○1B GFVT□ ...-○○1B GIFV□ ...-○○1B	G126 G129 G130 G138
	300-020B	300B	0.118	3.00	0.189		△	△	●	●	●	●	●	●	●	●	●	●				
	350-020B	350B	0.138	3.50	0.189		△	△	●	●	●	●	●	●	●	●	●	●				
	400-020B	400B	0.157	4.00	0.209		△	△	●	●	●	●	●	●	●	●	●	●			GFV□ ...-○○2B GFVS□ ...-○○2B GFVT□ ...-○○2B GIFV□ ...-○○2B	
	430-020B	430B	0.169	4.30	0.209				●	●	●	●	●	●	●	●	●	●				
	460-020B	460B	0.181	4.60	0.209				●	●			●	●	●	●	●	●				
	490-020B	490B	0.193	4.90	0.209				●	●	●	●	●	●	●	●	●	●				
	GVF□ 350-040C	GVF□ 350C	0.138	3.50	0.268	0.016	△	△	●	●	●	●	●	●	●	●	●	●			GFV□ ...-○○1C GFVS□ ...-○○1C GFVT□ ...-○○1C GIFV□ ...-○○1C	
	400-040C	400C	0.157	4.00	0.268		△	△	●	●	●	●	●	●	●	●	●	●				
	450-040C	450C	0.177	4.50	0.268				●	●	●	●	●	●	●	●	●	●				
	500-040C	500C	0.197	5.00	0.327		△	△	●	●	●	●	●	●	●	●	●	●			GFV□ ...-○○2C GFVS□ ...-○○2C GFVT□ ...-○○2C GIFV□ ...-○○2C	
	550-040C	550C	0.217	5.50	0.327						●	●	●	●	●	●	●	●				
	600-040C	600C	0.236	6.00	0.327				●	●	△	△	●	●	●	●	●	●				
 1-Edge	GVF□ 250-020B	GVF□ 250B	0.098	2.50	0.189	0.008													●	●	GFV□ ...-○○1B GFVS□ ...-○○1B GFVT□ ...-○○1B GIFV□ ...-○○1B	
	300-020B	300B	0.118	3.00	0.189														●	●		
	400-020B	400B	0.157	4.00	0.209														□	□	GFV□ ...-○○2B GFVS□ ...-○○2B GFVT□ ...-○○2B GIFV□ ...-○○2B	
	GVF□ 350-020C	-	0.138	3.50	0.268	0.008													□		GFV□ ...-○○1C GFVS□ ...-○○1C GFVT□ ...-○○1C GIFV□ ...-○○1C	
	400-020C	-	0.157	4.00	0.268														□			
	GVF□ 350-040C	GVF□ 350C	0.138	3.50	0.268	0.016													□			
	400-040C	400C	0.157	4.00	0.268														□			
 Full-R	GVF□ 200-100AR	GVF□ 100AR	0.079	2.00	0.091	0.039							●	●	●	●	●	●			GFV□ ...-201A GIFV□ ...-201A	G126 G138
	250-125AR	125AR	0.098	2.50	0.091	0.049							●	●	●		●	●				
	300-150AR	150AR	0.118	3.00	0.091	0.059							●	●	●	●	●	●				
	GVF□ 300-150BR	GVF□ 150BR	0.118	3.00	0.189	0.059							●	●	●	●	●	●			GFV□ ...-○○1B GFVS□ ...-○○1B GFVT□ ...-○○1B GIFV□ ...-○○1B	G126 G129
	400-200BR	200BR	0.157	4.00	0.209	0.079							●	●	●	●	●	●			GFV□ ...-○○2B GFVS□ ...-○○2B GFVT□ ...-○○2B GIFV□ ...-○○2B	G130 G138

- Dimension **CDX** shows available Grooving Depth.
- MEGA indicates MEGACOAT

Recommended Cutting Conditions ➔ **G145**

Inserts are sold in 10 piece boxes.

CBN & PCD Inserts are sold in 1 piece boxes.

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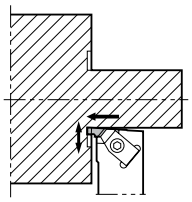
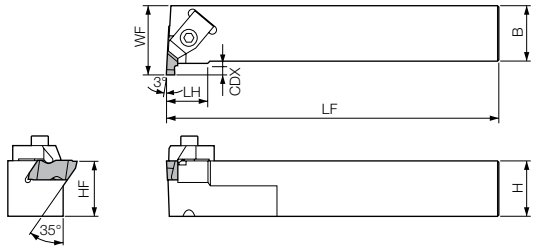
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KKCE





• Right-hand shown

• Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

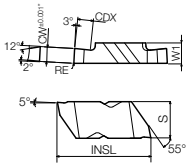
Part Number		Stock R	Stock L	H	HF	B	LF	LH	WF	CDX	Spare Parts: Clamp	Spare Parts: Clamp Screw	Spare Parts: Wrench
KKCE℞ℒ	12-3B	●	●	0.750	0.750	0.750	4.500	0.750	1.125	0.210	CKC-3℞ℒ	SKC-3	LW-156
	16-3D	●	●	1.000	1.000	1.000	6.000	0.750	1.250	0.210			
	20-3D	●	●	1.250	1.250	1.250	6.000	0.750	1.500	0.210			

Applicable Inserts

Application	Face Grooving
Ref. Page	**Below**
Insert / Toolholder	
KKCE℞ℒ...3	KCFP_3...

Face Grooving Limits		
Insert Part Number	Maximum Groove Depth	Minimum Groove Diameter
KCFP3...	0.060	0.940
	0.094	1.200
	0.125	1.420
	0.150	1.630

KCFP Inserts

Insert (Right-handed Insert Shown)		Part Number	Unit	CW (in)	CW (mm)	CDX	RE	W1	INSL	S	Insert Grade: Cermet TC40	Cermet TC60	PVD PR630	PVD PR930	Carbide KW10	Ceramic A65
		KCFP 3125℞ℒ	inch	0.125	3.15	0.150	0.008	0.195	0.886	0.344				●		
		3156℞ℒ		0.156	3.97	0.150	0.008	0.195	0.886	0.344				●		
		3189℞ℒ		0.189	4.80	0.150	0.023	0.195	0.886	0.344				●		

• Dimension **CDX** shows available Grooving Depth.

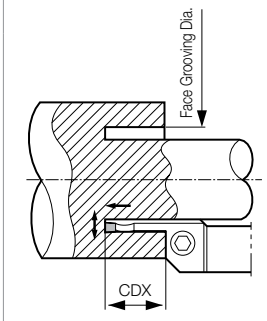
Recommended Cutting Conditions (Cera-Notch)

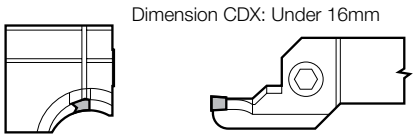
Workpiece Material	Cermet Feeds (ipr)	Carbide Feeds (ipr)	Recommended Insert Grade (Vc : sfm)						
			Cermet		MEGACOAT	Carbide			Ceramic
			TC40	**TC60**	**PR1215**	**PR660**	**PR930**	**KW10**	**A65**
Carbon Steel	0.002~0.005	0.002~0.010	300~900	250~900	300~800	200~550	250~650	-	-
Alloy Steel	0.002~0.005	0.002~0.010	250~800	250~800	300~750	100~500	150~550	-	-
Stainless Steel	0.002~0.005	0.002~0.010	-	200~600	300~600	100~550	100~550	-	-
Tool Steel	0.002~0.005	0.002~0.010	200~650	200~650	300~600	-	100~550	-	-
Hardened Steel (>45Rc)	-	-	-	-	-	-	-	-	250~500*
Gray Cast Iron	0.003~0.006	0.002~0.012	200~700	-	300~700	-	-	-	500~1000
Ductile Iron	0.003~0.006	0.002~0.012	-	150~600	300~600	-	-	-	500~1000
Aluminum	0.002~0.008	0.002~0.012	150~1600	-	-	-	-	500~1600	-

Speeds & Feeds listed are for external grooving. Reduce parameters by 10% for internal grooving.
*Feeds = 0.003~0.008 ipr

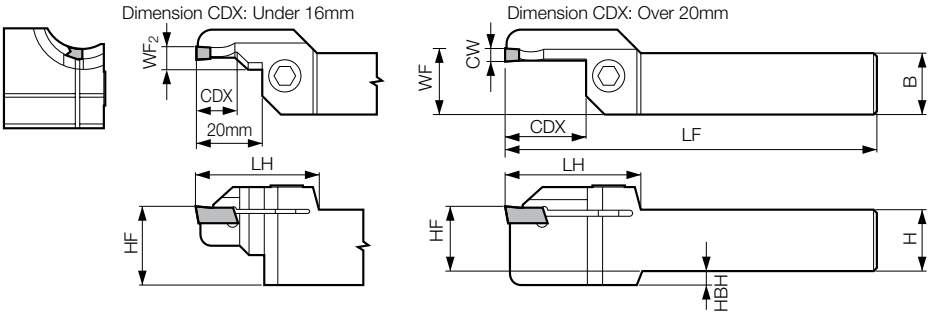
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KFMS (will be phased out and switched to **KGDF** ➔ **G100~G120**)





• Left-hand shown



• Right-hand shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH	WF	WF_2	CDX	Width CW	Face Grooving Dia. DAXN (min)	DAXX (min)	Spare Parts Clamp Bolt	Wrench	Washer
KFMS□L	16-3-4050	●		inch	1.000	1.000	-	1.000	6.000	1.539	1.027	0.240	0.512	0.118	1.575	1.969	HH5X25	LW-4	-
	16-3-5065	●								1.618		-	0.866		1.969	2.559			
KFMS□L	2020K2530-3	●		mm	20	20	-	20	125	39	20.7	6.1	13	3	25	30	HH5X20	LW-4	-
	2020K3040-3	●													30	40			
	2020K4050-3	●													40	50			
	2020K5065-3	●								41		-	22		50	65			
	2020K6585-3	●													65	85			
	2020K85110-3	●					5			44			25		85	110			
	2020K110145-3	●													110	145			
	2525M2530-3	●	●		25	25	-	25	150	39	25.7	6.1	13		25	30	HH5X25	LW-4	-
	2525M3040-3	●	●												30	40			
	2525M4050-3	●	●												40	50			
	2525M5065-3	●	●							41		-	22		50	65			
	2525M6585-3	●	●												65	85			
	2525M85110-3	●	●										25		85	110			
	2525M110145-3	●	●												110	145			
KFMS□L	2020K2535-4	●		mm	20	20	-	20	125	39	20.7	7.1	12	4	25	35	HH5X20	LW-4	-
	2020K3550-4	●											20		35	50			
	2020K5070-4	●								44		-	25		50	70			
	2020K70100-4	●													70	100			
	2020K100150-4	●													100	150			
	2020K150220-4	●													150	220			
	2020K220800-4	●													220	∞			
	2525M2535-4	●	●		25	25	-	25	150	39	25.7	7.1	12		25	35	HH5X25	LW-4	-
	2525M3550-4	●	●										20		35	50			
	2525M5070-4	●	●							44		-	25		50	70			
	2525M70100-4	●	●												70	100			
	2525M100150-4	●	●												100	150			
	2525M150220-4	●	●												150	220			
	2525M220800-4	●	●												220	∞			

- Dimension **CDX** shows available grooving depth.
- Face Grooving Dia. ØD: The diameter range of the initial groove.
- For KFMS□L····5 toolholder can hold a 0.236" width insert. ( ) value shows the dimension of a 0.236" width insert.

Applicable Inserts ➔ **G135**

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

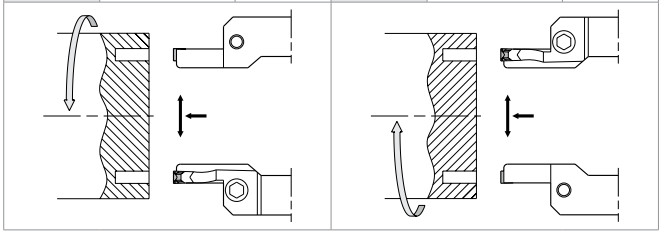
Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	H	HF	HBH	B	LF	LH	WF	WF_2	CDX	Width CW	Face Grooving Dia. DAXN (min)	Face Grooving Dia. DAXX (min)	Spare Parts: Clamp Bolt	Spare Parts: Wrench
KFMS®L 16-5-75115	●		inch	1.000		-	1.000	6.000	2.012	1.027 (1.047)	-	1.260	0.197 (0.236)	2.953	4.528	HH5X25	LW-4
16-5-115180	●													4.528	7.087		
16-5-180235	●													7.087	9.252		
KFMS®L 2020K2535-5	●		mm	20		-	20	125	39	20.7 (21.2)	-	20	5 (6)	25	35	HH5X20	LW-4
2020K3550-5	●													35	50		
2020K5075-5	●							125	44			25		50	75		
2020K75115-5	●					5								75	115		
2020K115180-5	●													115	180		
2020K180235-5	●													180	235		
2020K235800-5	●													235	∞		
2525M2535-5	●	●		25		-	25	150	39	25.7 (26.2)	-	20	5 (6)	25	35	HH5X25	LW-4
2525M3550-5	●	●												35	50		
2525M5075-5	●	●							44			25		50	75		
2525M75115-5	●	●												75	115		
2525M115180-5	●	●							51			32		115	180		
2525M180235-5	●	●												180	235		
2525M235800-5	●	●												235	∞		

- Dimension **CDX** shows available grooving depth.
- Face Grooving Dia.: The diameter range of the initial groove.
- For KFMS®L...-5 toolholder can hold a 0.236" width insert. ( ) value shows the dimension of a 0.236" width insert.

Selection of Toolholder & Insert

Toolholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	(No Hand)	Insert	(No Hand)



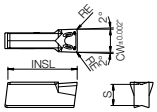
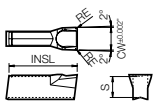
Applicable Inserts

(in)

Part Number	INSL	S
FMM30-03 FMM60-04	0.472	0.138
FMN3 FMN6	0.472	0.138

P	Carbon Steel / Alloy Steel				●			
M	Stainless Steel				●			
K	Cast Iron					●	◔	
N	Non-ferrous Metals						●	
S	Titanium Alloy						●	
H	Hard materials (≤40HRC)				○			

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

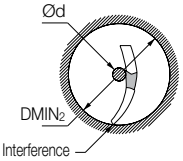
Insert		Part Number	Dimensions (in) CW inch	CW mm	RE	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR915	PR930	PR905	Carbide KW10	Applicable Toolholders
Face Grooving Chip Control Oriented / M Class		FMM 30-03	0.118	3.0	0.012	●	●	●	●	●	●	KFMS®L...-3(...)
		40-04	0.157	4.0	0.016	●	●	●	●	●	●	KFMS®L...-4(...)
		50-04	0.197	5.0	0.016	●	●	●	●	●	●	KFMS®L...-5(...)
		60-04	0.236	6.0	0.016	●	●		●	●	●	
Face Grooving Sharp-Cutting Oriented / M Class		FMN 3	0.118	3.0	0.010	●	●		●		●	KFMS®L...-3(...)
		4	0.157	4.0	0.010	●			●		●	KFMS®L...-4(...)
		5	0.197	5.0	0.010	●	●		●		●	KFMS®L...-5(...)
		6	0.236	6.0	0.010		●		●		●	

- FMN type inserts are only for Deep Grooving and not applicable for Turning.

Recommended Cutting Conditions ➔ G144

Limit of Turning Toward Center

It causes the toolholder to interfere with the groove wall depending on the initial cut's diameter.



Remaining Boss Dia. Ød

Part Number	$DMIN_2$ Ød (mm) 25	26	27	28 and over
KFMS®L 2020K2530-3	4	2	0	0
KFMS®L 2525M2530-3				
KFMS®L 2020K2535-4	6	3	0	
KFMS®L 2525M2535-4				
KFMS®L 2020K2535-5	7 *(5)	4 *(2)	1 *(0)	(No remaining boss)
KFMS®L 2525M2535-5				

e.g.) KFMSR 2525M2530-3 with Ø25 as first cut towards the center, it will cause a rubbing with the toolholder cartridge if Ød is 4.0mm.

*( ) value shows the Dimension using FMM60-04 Insert.

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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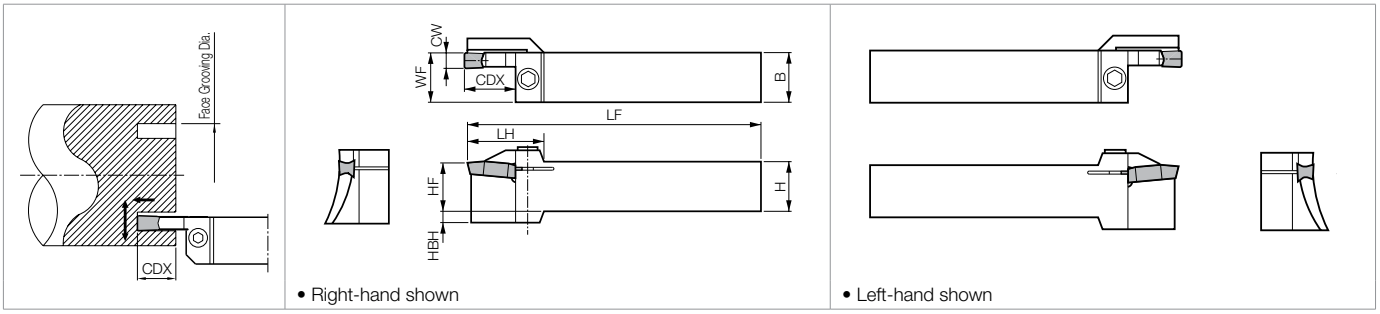
KFMS-8



• Right-hand shown

• Left-hand shown

Toolholder Dimensions

Part Number		Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	CDX	CW	Face Grooving Dia. DAXN (min)	Face Grooving Dia. DAXX (min)	Spare Parts: Clamp Bolt	Spare Parts: Wrench
KFMS□□	2525M5464-8	●	●	25	25	-	25	150	41	26	25	8	54 (0)	64 (∞)	HH6X25	LW-5
	2525M6382-8	●	●	25	25	2.4	25	150	41	26	25	8	63 (0)	82 (∞)		
	2525M80115-8	●	●	25	25	6.0	25	150	40	26	25	8	80 (0)	115 (∞)		
	2525M105160-8	●	●	25	25	6.0	25	150	40	26	25	8	105 (0)	160 (∞)		
	2525M155510-8	●	●	25	25	6.0	25	150	43	26	25	8	155 (0)	510 (∞)		
	3232P155510-8	●		32	32	-	32	170	43	33	25	8				

- Dimension **CDX** shows available grooving depth.
- The value ( ) of Face Grooving Dia. DAXX (max) is the maximum outer diameter value after the initial groove between DAXN (min) ~ DAXX (max) (It is possible to widen the groove to infinity ∞).
  The value ( ) of Face Grooving Dia. DAXN (min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between DAXN (min) ~ DAXX (max).

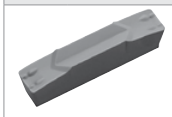
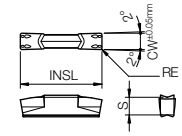
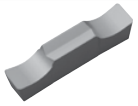
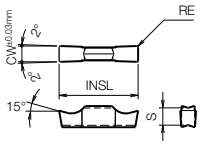
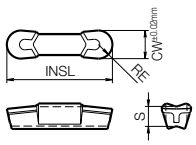
Applicable Inserts

(mm)

Part Number	INSL	S
GMM 8030-080MW	30	5.5
GMG 8030-050MG	30	5.5
GMGA 8030-400R	30	5.5

		Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide
		TN90	CR9025	PR915	PR930	PR905	KW10
P	Carbon Steel / Alloy Steel				●		
M	Stainless Steel				◔		
K	Cast Iron					●	◔
N	Non-ferrous Metals						●
S	Titanium Alloy						●
H	Hard materials (≤40HRC)				●		
	Hard materials (≥40HRC)						

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert		Part Number	Dimensions (mm) CW	Dimensions (mm) RE	TN90	CR9025	PR915	PR930	PR905	KW10	Applicable Toolholders
 Chip Control Oriented / M Class		GMM 8030-080MW	8.0	0.8		●		●	●	●	KFMS□□...8
 Sharp-Cutting Oriented / Precision Class Ground Chipbreaker		GMG 8030-050MG	8.0	0.5	●	●		●	●	●	
Sharp-Cutting Oriented / Precision Class Full-R / Copying		GMGA 8030-400R	8.0	4.0						●	

- If using a full-R insert with KIGM-8 type toolholder, you need to modify the corner of insert adapter of toolholder.

Recommended Cutting Conditions ➔ G147

Inserts are sold in 10 piece boxes.

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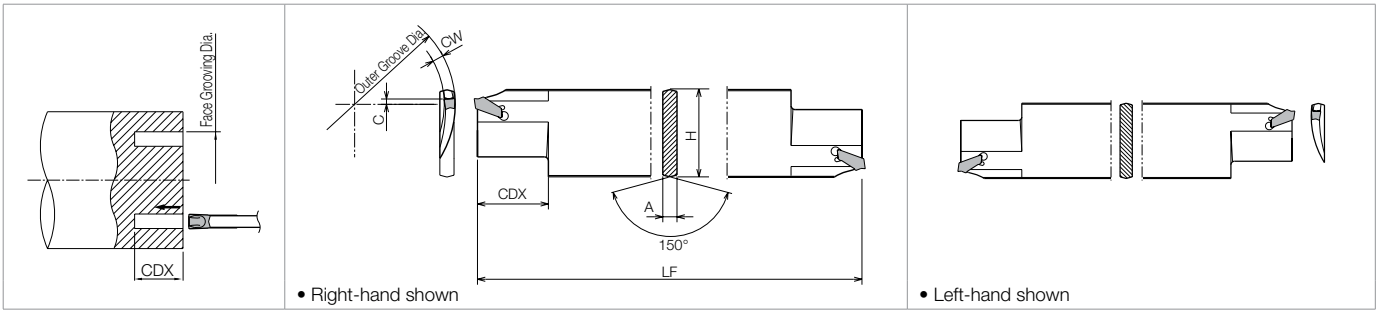
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KFTB-S



Toolholder Dimensions

Part Number		Stock R	Stock L	Dimensions (mm) *H	LF	A	CDX	C	CW	Face Grooving Dia. DAXN (min)	DAXX (min)	Spare Parts Releasing Wrench	Applicable Inserts	Applicable Tool Block H44
KFTB□	65100-4S	●	●	32	150	5.2	25	4	4.0	65	100	LTK-5	FTK4	KTKTB 20-32, 25-32, 32-32
	90150-4S	●	●	32	150	5.2	30	0	4.0	90	150			KTKTBF 25-32, 32-32
	150250-4S	●	●	32	150	5.2	30	0	4.0	140	250			
	250800-4S	●	●	32	150	3.2	30	0	4.0	230	∞			
KFTB□	90150-5S	●	●	32	150	5.2	30	0	5.0	90	150	LTK-5	FTK5	
	150250-5S	●	●	32	150	5.2	32	0	5.0	150	250			
	250800-5S	●	●	32	150	4.0	38	0	5.0	250	∞			

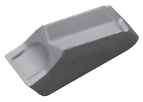
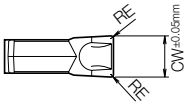
- Dimension **CDX** shows available grooving depth.
- Face Grooving Dia.: The diameter range of the initial groove.
- The insert has a Self-Clamping system and it is not suitable for tight tolerance grooves (tolerance ± 0.05mm).
- KFTB□65100-4S toolholder is designed with the edge position 4mm above the Center.

* Dimension H shows the length between virtual tops.

Applicable Inserts

P	Carbon Steel / Alloy Steel	●
M	Stainless Steel	●
K	Cast Iron	●
N	Non-ferrous Metals	●
S	Titanium Alloy	●
H	Hard materials (≤40HRC)	○
	Hard materials (≥40HRC)	

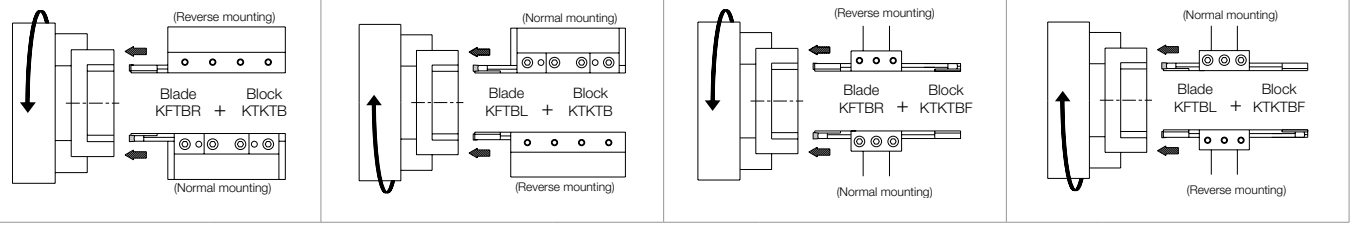
Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Insert		Part Number		Dimensions (mm) CW	RE	Cermet TN90	CVD Coated Carbide CR9025	PVD Coated Carbide PR660	PVD Coated Carbide PR930	Carbide KW10	Applicable Toolholders
		FTK	4	4.0	0.25	●	●		●	●	KFTB□ 65100-4S KFTB□ 90150-4S KFTB□ 150250-4S KFTB□ 250800-4S
			5	5.0		●	●		●	●	KFTB□ 90150-5S KFTB□ 150250-5S KFTB□ 250800-5S

Recommended Cutting Conditions G146

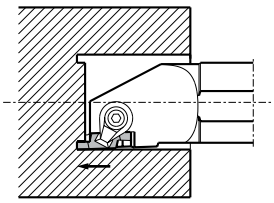
Selection of Blade and Insert

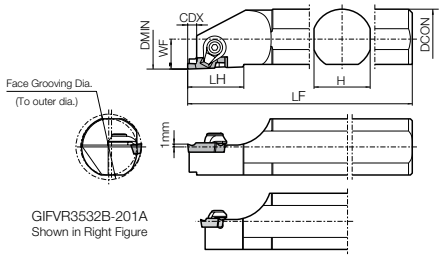
Combination of Blade + KTKTB			Combination of Blade + KTKTBF		
Blade	Right-hand (R)		Blade	Right-hand (R)	
Insert	Neutral		Insert	Neutral	
Blade	Left-hand (L)		Blade	Left-hand (L)	
Insert	Neutral		Insert	Neutral	



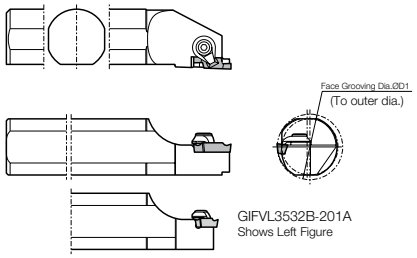
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

GIFV





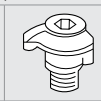
• Right-hand shown



• Left-hand shown

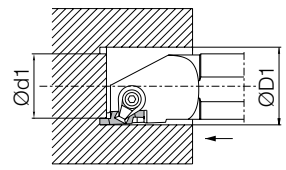
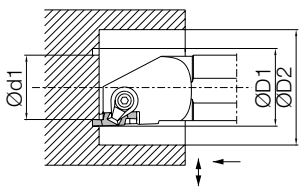
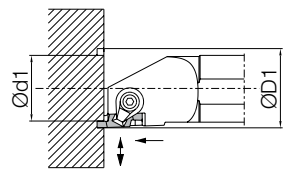
• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Part Number	Stock		Dimensions (mm)							Face Grooving Dia.		Spare Parts				Applicable Inserts
												Clamp Set		Wrench		
	R	L	DMIN	DCON	H	LF	LH	WF	CDX	DAXN (min)	DAXX (min)					G132
GIFVR/L **3532B-201A**	●	●	35	32	30	250	23	16	2.2	35 (12)	∞	CPS-5V	-	FT-15	-	GVFR/L...-...A GVFR/L...-...AR
GIFVR/L **3532B-351B**	●	●	35	32	30	250	30	16	4.6	35 (25)	50 (∞)	-	CPS-6V	-	LW-3	GVFR/L250~350-020B GVFR/L300-150BR
3532B-352B	●	●	35	32	30	250	30	16	5.1	35 (25)	50 (∞)					GVFR/L400~490-020B GVFR/L400-200BR
5032B-501B	●	●	50	32	30	250	30	16	4.6	50 (25)	70 (∞)					GVFR/L250~350-020B GVFR/L300-150BR
5032B-502B	●		50	32	30	250	30	16	5.1	50 (25)	70 (∞)					GVFR/L400~490-020B GVFR/L400-200BR
GIFVR/L **5032B-501C**	●	●	50	32	30	250	35	16	6.6	50 (25)	70 (∞)	-	CPS-8V	-	LW-4	GVFR/L350~450-040C
5032B-502C	●	●	50	32	30	250	35	16	8.1	50 (25)	70 (∞)					GVFR/L500~600-040C

Note 1. Dimension **CDX** shows available grooving depth.
2. Standard toolholders are designed with the edge position 1.0mm above the center.

Face Grooving Dia. ØD1 depends on the application.

Applications	Part Number	Face Grooving Dia. Ød1 (mm)	Face Grooving Dia. ØD (mm)			Notes
		(MIN)	MIN	MAX	(MAX)	
	**GIFV**R/L **3532B-201A**	-	35	∞	∞	-
	GIFVR/L **3532B-351B**			50		
	3532B-352B		50	70		
	5032B-501B					
	5032B-502B					
	GIFVR/L **5032B-501C**					
	5032B-502C					
	**GIFV**R/L **3532B-201A**	12	35	∞	∞	If ØD2 ≧ 58-2W, the Face Grooving Dia. can be expanded to Ød1 (MIN.) toward the Center. W = Edge Width If ØD2 ≧ 75-2W, the Face Grooving Dia. can be expanded to Ød1 (MIN.) toward the Center. W = Edge Width
	GIFVR/L **3532B-351B**	25		50		
	3532B-352B		50	70		
	5032B-501B					
	5032B-502B					
	GIFVR/L **5032B-501C**					
	5032B-502C					
	**GIFV**R/L **3532B-201A**	12	35	∞	∞	-
	GIFVR/L **3532B-351B**	25		50		
	3532B-352B		50	70		
	5032B-501B					
	5032B-502B					
	GIFVR/L **5032B-501C**					
	5032B-502C					

- The value ( ) of Face Grooving Dia. DAXX (max) is the maximum outer diameter value after the initial groove between DAXN (min) ~ DAXX (max) (It is possible to widen the groove to infinity ∞)
- The value ( ) of Face Grooving Dia. DAXN (min) is the minimum diameter of the boss which remains in the center when widening the groove width to a smaller value after the initial groove between DAXN (min) ~ DAXX (max)

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GBA (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)												① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)					Notes
	MC*	Cermet			M*	MN*	PVD			Carbide	CBN	PCD	GBA○○% 033 ~ 100 031N ~ 041N	GBA○○% 125 ~ 200 047N ~ 078N	GBA○○% 230 ~ 300 094N ~ 109N	GBA○○% 330 ~ 400 125N ~ 156N	GBA○○% 400 ~ 480 172N ~ 188N	
	PV7040	TN620	TC40	TN90	PR1215	PR1625	PR930	PR1115	PR905	KW10	KBN510 KBN525	KPD001 (KPD010)						
Carbon Steel	☆ 490~790	★ 260~720	☆ 490~720	☆ 490~720	★ 260~660	★ 260~590	☆ 260~590	☆ 260~590	-	-	-	-	① 0.0012~0.0031 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.031	
Alloy Steel	☆ 430~720	★ 260~660	☆ 430~660	☆ 430~660	★ 260~590	★ 260~520	☆ 260~520	☆ 260~520	-	-	-	-	① 0.0012~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.031	
Stainless Steel	-		-	☆ 230~490	☆ 200~490	★ 200~430	☆ 200~430	★ 200~430	-	-	-	-	① 0.0012~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.031	
Cast Iron	-		-	-	-		-	-	★ 260~590	☆ 200~390	★ 490~1310	-	① 0.0012~0.0031 ② Traversing N/A ③ Traversing N/A	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.031	Wet
Aluminum	-		-	-	-		-	-	-	★ 490~1310	-	★ 490~6560	① 0.0020~0.0047 ② Traversing N/A ③ Traversing N/A	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	
Brass	-		-	-	-		-	-	-	★ 490~980	-	★ 660~2620	① 0.0020~0.0047 ② Traversing N/A ③ Traversing N/A	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	
Hardened Materials	-		-	-	-		-	-	-	-	★ 260~390	-	① - ② - ③ -	① 0.0008~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0004~0.0016 ③ MAX 0.004	① - ② - ③ -	① - ② - ③ -	

• Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

* **MC**: MEGACOAT Cermet, **M**: MEGACOAT PVD, **MN**: MEGACOAT NANO PVD.

GBA (GM Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)			① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)					Notes
	Cermet	MEGACOAT NANO	MEGACOAT						
	TN620	**PR1625**	**PR1215**	GBA43℞ 140-010GM	GBA43℞ 150-020GM	GBA43℞ 175-020GM~ 230-020GM	GBA43℞ 250-030GM~ 350-030GM	GBA43℞ 400-040GM	
Carbon Steel	★ 260~790	★ 260~720	☆ 260~720	① 0.0012~0.0039 ② 0.0012~0.0031 ③ MAX 0.008	① 0.0012~0.0047 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0047 ② 0.0012~0.0035 ③ MAX 0.012	① 0.0016~0.0059 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0039 ③ MAX 0.031	
Alloy Steel	★ 260~720	★ 260~660	☆ 260~660	① 0.0012~0.0039 ② 0.0012~0.0031 ③ MAX 0.008	① 0.0012~0.0047 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0047 ② 0.0012~0.0035 ③ MAX 0.012	① 0.0016~0.0059 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0039 ③ MAX 0.031	Wet
Stainless Steel	-	★ 200~490	★ 200~490	① 0.0012~0.0039 ② 0.0012~0.0031 ③ MAX 0.008	① 0.0012~0.0039 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0039 ② 0.0012~0.0035 ③ MAX 0.012	① 0.0016~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0016~0.0047 ② 0.0020~0.0039 ③ MAX 0.031	

• Above cutting condition is for external grooving. Set both cutting speed and feed 20% lower for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

GBA (MY Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)								① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)					Notes
	Cermet		M	PVD		Carbide	CBN	PCD	GBA43℞ 175MY~ 200MY GBA43℞ 078MYN~ 200MY	GBA43℞ 230MY~ 265MY GBA43℞ 094MYN	GBA43℞ 300MY	GBA43℞ 330MY~ 350MY GBA43℞ 125MYN	GBA43℞ 400MY GBA43℞ 156MYN	
	TN6020	TC40	PR1215	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)						
Carbon Steel	☆ 490~720	-	★ 260~660	☆ 260~660	☆ 260~660	-	-	-	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.031	
Alloy Steel	☆ 430~660	-	★ 260~590	☆ 260~590	☆ 260~590	-	-	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.031	Wet
Stainless Steel	☆ 230~490	-	☆ 200~490	☆ 200~490	★ 200~490	-	-	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.031	

• Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

* **M**: MEGACOAT PVD

GBF Insert

Workpiece Material	Recommended Insert Grade (Vc sfm)			① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)				Notes
	MEGACOAT	MEGACOAT NANO	Carbide					
	PR1215	**PR1535**	**KW10**	GBF32R025... ~ GBF32R053...	GBF32R065... ~ GBF32R095...	GBF32R100... ~ GBF32R145...	GBF32R150... ~ GBF32R300...	
Carbon Steel	★ 260~590	☆ 230~530	-	① 0.0004~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	Wet
Alloy Steel	★ 260~590	☆ 230~530	-	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	
Stainless Steel	☆ 200~430	★ 160~390	-	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	
Cast Iron	-	-	★ 200~330	① 0.0004~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	
Aluminum Alloys	-	-	★ 490~1,310	① 0.0004~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	
Brass	-	-	★ 490~980	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	

★ : 1st Recommendation ☆ : 2nd Recommendation

GBF-GL Insert

Workpiece Material	Recommended Insert Grade (Vc sfm)		① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)				Notes
	MEGACOAT	MEGACOAT NANO					
	PR1215	**PR1535**	GBF32R075-005GL	GBF32R095-005GL ~ GBF32R100-005GL	GBF32R150-010GL ~ GBF32R200-010GL	GBF32R300-010GL	
Carbon Steel	★ 260~590	☆ 230~530	① 0.0004~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	Wet
Alloy Steel	★ 260~590	☆ 230~530	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	
Stainless Steel	☆ 200~430	★ 160~390	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	

★ : 1st Recommendation ☆ : 2nd Recommendation

TGF (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)							① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)				Notes
	Cermet	MEGA	PVD		Carbide	CBN	PCD					
	TC40	PR1215	PR930	PR1115	KW10	KBN510	KPD001 (KPD010)	TGF32R 033~050-005	TGF32R 075~095-010	TGF32R 100~145-010	TGF32R 150~250-010	
Carbon Steel	☆ 490~720	★ 260~590	☆ 260~590	☆ 260~590	-	-	-	① 0.0004~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	Wet
Alloy Steel	☆ 430~660	★ 260~520	☆ 260~520	☆ 260~520	-	-	-	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	
Stainless Steel	-	☆ 200~430	☆ 200~430	★ 200~430	-	-	-	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	
Cast Iron	-	-	-	-	★ 200~330	-	-	① 0.0004~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	
Aluminum	-	-	-	-	★ 490~1310	-	★ 490~6560	① 0.0004~0.0020 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0028 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0024 ③ MAX 0.008	
Brass	-	-	-	-	★ 490~980	-	★ 660~2620	① 0.0004~0.0016 ② Traversing N/A ③ Traversing N/A	① 0.0008~0.0024 ② Traversing N/A ③ Traversing N/A	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	① 0.0012~0.0028 ② 0.0008~0.0020 ③ MAX 0.008	

* MEGA indicates MEGACOAT.

★ : 1st Recommendation ☆ : 2nd Recommendation

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GH (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)								① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)				Notes
	Cermet			PVD	Carbide	Ceramic			GH 40~50...	GH 55~70...	GH 75~80...	GH 100~120...	
	TN90	TC40	TC60	PR930	KW10	A65	A66N	PT600M					
Carbon Steel	☆ 490~720	☆ 490~720	☆ 330~490	★ 260~590	-	-	-	-	① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039	① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039	① 0.0039~0.0098 ② 0.0039~0.0079 ③ MAX 0.059	① 0.0059~0.0118 ② 0.0059~0.0098 ③ MAX 0.079	Wet
Alloy Steel	☆ 430~660	☆ 430~660	☆ 260~430	★ 260~520	-	-	-	-	① 0.0028~0.0071 ② 0.0028~0.0051 ③ MAX 0.039	① 0.0028~0.0071 ② 0.0028~0.0051 ③ MAX 0.039	① 0.0039~0.0091 ② 0.0039~0.0071 ③ MAX 0.059	① 0.0059~0.0106 ② 0.0059~0.0087 ③ MAX 0.079	
Stainless Steel	☆ 230~490	-	☆ 200~330	★ 200~430	-	-	-	-	① 0.0028~0.0063 ② 0.0028~0.0051 ③ MAX 0.039	① 0.0028~0.0063 ② 0.0028~0.0051 ③ MAX 0.039	① 0.0039~0.0083 ② 0.0039~0.0071 ③ MAX 0.059	① 0.0059~0.0098 ② 0.0059~0.0087 ③ MAX 0.079	
Cast Iron	-	-	-	-	★ 200~330	☆ 490~980	☆ 490~980	☆ 490~980	**KW10** ① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039 **A65 / A66N** ① 0.0012~0.0028 ② Traversing N/A ③ Traversing N/A	**KW10** ① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039 **A65 / A66N** ① 0.0012~0.0028 ② Traversing N/A ③ Traversing N/A	**KW10** ① 0.0039~0.0098 ② 0.0039~0.0079 ③ MAX 0.059 **A65 / A66N** ① 0.002~0.0035 ② Traversing N/A ③ Traversing N/A	**KW10** ① 0.0059~0.0118 ② 0.0059~0.0098 ③ MAX 0.079 **A65 / A66N** ① 0.002~0.0035 ② Traversing N/A ③ Traversing N/A	
Aluminum	-	-	-	-	★ 490~1310	-	-	-	① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039	① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039	① 0.0039~0.0098 ② 0.0039~0.0079 ③ MAX 0.059	① 0.0059~0.0118 ② 0.0059~0.0098 ③ MAX 0.079	
Brass	-	-	-	-	★ 490~980	-	-	-	① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039	① 0.0028~0.0079 ② 0.0028~0.0059 ③ MAX 0.039	① 0.0039~0.0098 ② 0.0039~0.0079 ③ MAX 0.059	① 0.0059~0.0118 ② 0.0059~0.0098 ③ MAX 0.079	
Hardened Materials	-	-	-	-	-	☆ 130~260	☆ 130~260	☆ 130~260	① 0.0008~0.0020 ② 0.0004~0.0012 ③ MAX 0.004	① 0.0008~0.0020 ② 0.0004~0.0012 ③ MAX 0.008	① 0.0008~0.002 ② 0.0004~0.0016 ③ MAX 0.008	① - ② - ③ -	

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

GHU (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)								① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)			Notes
	Cermet			CVD	PVD		Ceramic		GHU 40~20	GHU 50~20	GHU 60~20	
	TN60	TC40	TC60	CR9025	PR630	PR930	A65	A66N				
Carbon Steel	☆ 430~660	-	-	☆ 260~590	-	-	-	-	① 0.0024~0.0047 ② 0.0020~0.0039 ③ MAX 0.039	① 0.0024~0.0047 ② 0.0020~0.0039 ③ MAX 0.039	① 0.0024~0.0059 ② 0.0020~0.0047 ③ MAX 0.059	Wet
Alloy Steel	☆ 330~590	-	-	☆ 260~520	-	-	-	-	① 0.0024~0.0047 ② 0.0020~0.0039 ③ MAX 0.039	① 0.0024~0.0047 ② 0.0020~0.0039 ③ MAX 0.039	① 0.0024~0.0059 ② 0.0020~0.0047 ③ MAX 0.059	
Stainless Steel	-	-	-	☆ 200~430	-	-	-	-	① 0.0024~0.0039 ② 0.0020~0.0031 ③ MAX 0.031	① 0.0024~0.0039 ② 0.0020~0.0031 ③ MAX 0.031	① 0.0024~0.0047 ② 0.0020~0.0039 ③ MAX 0.047	

* Above cutting condition is for external grooving. Set both cutting speed and feed 10% lower for internal grooving.

★ : 1st Recommendation ☆ : 2nd Recommendation

GA (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)							① f (feed) during Grooving (ipr) / ② f (feed) during Traversing (ipr) / ③ D.O.C. during Traversing (in)			Notes
	Cermet				CVD	PVD	Carbide	GA 30	GA 40	GA 50	
	TN60	TN90	TC40	TC60	CR9025	PR630	PR930	KW10				
Carbon Steel	☆ 430~660	-	-	-	★ 260~590	-	-	-	① 0.0024~0.0071 ② 0.0020~0.0059 ③ MAX 0.031	① 0.0024~0.0083 ② 0.0020~0.0067 ③ MAX 0.039	① 0.0024~0.0098 ② 0.0020~0.0079 ③ MAX 0.051	Wet
Alloy Steel	☆ 330~590	-	-	-	★ 260~520	-	-	-	① 0.0024~0.0059 ② 0.0020~0.0047 ③ MAX 0.012	① 0.0024~0.0071 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0024~0.0087 ② 0.0020~0.0071 ③ MAX 0.031	
Stainless Steel	-	-	-	-	★ 200~430	-	-	-	① 0.0024~0.0039 ② 0.0020~0.0031 ③ MAX 0.031	① 0.0024~0.0039 ② 0.0020~0.0031 ③ MAX 0.031	① 0.0024~0.0047 ② 0.0020~0.0039 ③ MAX 0.047	

★ : 1st Recommendation ☆ : 2nd Recommendation

SIGC

Workpiece	Recommended Insert Grade (Vc : sfm)		(1) Feed Rate for Grooving (ipr)			Notes
	MEGACOAT NANO PLUS	MEGACOAT NANO	(2) Feed Rate for Traversing (ipr)			
			(3) D.O.C. for Traversing (in)			
	PR1725	**PR1535**	**GC08R/L...**	**GC10R/L, GC12R/L 100 ~ 200...**	**GC10R/L, GC12R/L 250 ~ 300...**	
Carbon Steel	★ 160 - 260	☆ 160 - 260	(1) 0.0004 ~ 0.0012	(1) 0.0008 ~ 0.0016	(1) 0.0008 ~ 0.0016	Coolant
			(2) 0.0004 ~ 0.0012	(2) 0.0008 ~ 0.0016	(2) 0.0008 ~ 0.0016	
			(3) Max. 0.0020	(3) Max. 0.0020	(3) Max. 0.0039	
Alloy Steel	★ 160 - 260	☆ 160 - 260	(1) 0.0004 ~ 0.0012	(1) 0.0008 ~ 0.0016	(1) 0.0008 ~ 0.0016	
			(2) 0.0004 ~ 0.0012	(2) 0.0008 ~ 0.0016	(2) 0.0008 ~ 0.0016	
			(3) Max. 0.0020	(3) Max. 0.0020	(3) Max. 0.0039	
Stainless Steel	☆ 160 - 260	★ 160 - 260	(1) 0.0004 ~ 0.0012	(1) 0.0004 ~ 0.0012	(1) 0.0004 ~ 0.0012	
			(2) 0.0004 ~ 0.0012	(2) 0.0004 ~ 0.0012	(2) 0.0004 ~ 0.0012	
			(3) Max. 0.0020	(3) Max. 0.0020	(3) Max. 0.0039	

★ : 1st Recommendation ☆ : 2nd Recommendation

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◆ SIGE (Ground Chipbreaker : GE□...A(R), GE□...B(R))

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)			Notes
	Cermet	MEGACOAT	PVD	Carbide	GE□031-002A ~ GE□078-004A GE□100-005A ~ GE□200-010A GER100-050AR ~ GER200-100AR	GE□031-002B ~ GE□088-004B GE□100-005B ~ GE□200-010B GER100-050BR ~ GER200-100BR	GE□094-004B ~ GE□122-008B GE□250-020B ~ GE□300-020B	
	TN6020	**PR1225**	**PR1025**	**KW10**				
Carbon Steel	☆ 160~260	★ 160~260	☆ 160~260	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	Wet
Alloy Steel	☆ 160~260	★ 160~260	☆ 160~260	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	
Stainless Steel	-	★ 160~260	☆ 160~260	-	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	
Cast Iron	-	-	-	★ 160~260	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0020	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	
Aluminum	-	-	-	★ 160~330	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0079	
Brass	-	-	-	★ 160~330	① 0.0004~0.0012 ② 0.0004~0.0012 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0039	① 0.0008~0.0016 ② 0.0008~0.0016 ③ Max. 0.0079	

• Use PVD coated grade or uncoated carbide for traversing with edge width 0.0394"(1mm). (GE□100-005A/100-005B)

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ SIGE (Ground Chipbreaker : GE□...C(R),GE□...D(R),GE□...E)

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)						Notes
	Cermet	MEGA-COAT	PVD	Carbide	GE□ 100~200-010C 200-100CR	GE□ 250~350-020C 250~300-150CR					
	TN6020	**PR1225**	**PR1025**	**GW15**	GE□ 100~145-010D	GE□ 150~195-010D	GE□ 200~280-020D 200-100DR		GE□ 300~400-020D 300-150DR		
					GE□ 100-010E	GE□ 150~195-010E	GE□ 200~225-010E 230-020E	GE□ 250~330-020E		GE□ 350~430-020E	GE□ 450~500-020E
Carbon Steel	☆ 390~590	★ 200~460	☆ 200~460	-	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	Wet
Alloy Steel	☆ 330~520	★ 200~390	☆ 200~390	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	
Stainless Steel	☆ 230~430	★ 200~360	☆ 200~360	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0012~0.0028 ② 0.0012~0.0039 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0016~0.0031 ② 0.0016~0.0031 ③ Max. 0.0118	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0197	
Cast Iron	-	-	-	★ 200~330	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0012~0.0031 ② 0.0012~0.0031 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0016~0.0035 ② 0.0016~0.0035 ③ Max. 0.0118	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0197	
Aluminum	-	-	-	★ 490~980	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	
Brass	-	-	-	★ 330~820	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0047 ② 0.0020~0.0047 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0020~0.0059 ② 0.0020~0.0059 ③ Max. 0.0197	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	① 0.0031~0.0059 ② 0.0031~0.0059 ③ Max. 0.0315	

• Use PVD coated grade or uncoated carbide for traversing with edge width 0.0394" (1mm). (GE□100-010C / 100-010D / 100-010E)

★ : 1st Recommendation ☆ : 2nd Recommendation

◆ SIGE (Molded Chipbreaker : GER...CM, GER...DM, GER...EM)

Workpiece Material	Recommended Insert Grade (Vc sfm)				① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)						Notes
	Cermet	MEGA COAT	PVD	Carbide	GER 150~200-010CM	GER 250~350-020CM					
	TN6020	**PR1225**	**PR1025**	**GW15**	GER 150~200-010DM		GER 230~250-020DM	GER 300~400-020DM			
					GER 150~200-010EM			GER 250~350-020EM	GER 350~400-020EM	GER 450~500-020CM	
Carbon Steel	-	★ 200~520	☆ 200~520	-	① 0.0012~0.0039 ② 0.0012~0.0039 ③ Max. 0.0394	① 0.0012~0.0047 ② 0.0012~0.0039 ③ Max. 0.0591	① 0.0016~0.0047 ② 0.0016~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	Wet
Alloy Steel	-	★ 200~460	☆ 200~460	-	① 0.0012~0.0039 ② 0.0012~0.0039 ③ Max. 0.0394	① 0.0012~0.0039 ② 0.0012~0.0039 ③ Max. 0.0591	① 0.0016~0.0047 ② 0.0016~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0047 ② 0.0020~0.0039 ③ Max. 0.0591	
Stainless Steel	-	★ 200~360	☆ 200~360	-	① 0.0012~0.0031 ② 0.0012~0.0039 ③ Max. 0.0394	① 0.0012~0.0031 ② 0.0012~0.0039 ③ Max. 0.0591	① 0.0016~0.0031 ② 0.0016~0.0039 ③ Max. 0.0591	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0591	① 0.0020~0.0039 ② 0.0020~0.0039 ③ Max. 0.0591	

★ : 1st Recommendation ☆ : 2nd Recommendation

GIA (Molded Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)								① f (feed) during Grooving (ipr)			Notes
	Cermet				CVD	PVD		Carbide	② f (feed) during Traversing (ipr)			
	TN60	TN90	TC40	TC60	CR9025	PR630	PR930	KW10	③ D.O.C. during Traversing (in)			
									GIA 30	GIA 40	GIA 50	
Carbon Steel	☆ 200~390	-	-	-	★ 200~390	-	-	-	① 0.0016~0.0031 ② 0.0008~0.0031 ③ MAX 0.012	① 0.0016~0.0035 ② 0.0008~0.0031 ③ MAX 0.016	① 0.0020~0.0039 ② 0.0020~0.0031 ③ MAX 0.020	Wet
Alloy Steel	☆ 200~330	-	-	-	★ 200~330	-	-	-	① 0.0016~0.0028 ② 0.0008~0.0028 ③ MAX 0.012	① 0.0016~0.0028 ② 0.0008~0.0028 ③ MAX 0.016	① 0.0020~0.0031 ② 0.0020~0.0031 ③ MAX 0.020	
Stainless Steel	-	-	-	-	★ 200~260	-	-	-	① 0.0016~0.0028 ② 0.0008~0.0028 ③ MAX 0.012	① 0.0016~0.0028 ② 0.0008~0.0028 ③ MAX 0.016	① 0.0020~0.0031 ② 0.0020~0.0031 ③ MAX 0.020	

★ : 1st Recommendation ☆ : 2nd Recommendation

FMM / FMN

Workpiece Material	Recommended Insert Grade (Vc sfm)						Face Grooving (FMM / FMN)			Traversing (FMM)			Notes
	Cermet	CVD	PVD			Carbide	Edge Width (in)			Edge Width (in)			
	TN90	CR9025	PR915	PR930	PR905	KW10	0.1181	0.1575	0.1969 / 0.2362	0.1181	0.1575	0.1969 / 0.2362	
							Feed Rate (ipr)			Feed Rate (ipr)			
Carbon Steel	☆ 330~720	☆ 260~660	☆ 260~660	★ 260~660	-	-	0.0012~0.0020	0.0012~0.0031	0.0020~0.0039	0.0020~0.0039	0.0020~0.0098	0.0039~0.0118	Wet
Alloy Steel	☆ 260~660	☆ 230~590	☆ 230~590	★ 230~590	-	-	0.0012~0.0020	0.0012~0.0031	0.0020~0.0039	0.0020~0.0039	0.0020~0.0098	0.0039~0.0118	
Stainless Steel	☆ 230~520	☆ 200~490	★ 200~490	☆ 200~490	-	-	0.0012~0.0020	0.0012~0.0031	0.0020~0.0039	0.0020~0.0039	0.0020~0.0098	0.0039~0.0118	
Cast Iron	-	-	-	-	★ 260~590	☆ 230~490	0.0012~0.0020	0.0012~0.0031	0.0020~0.0039	0.0020~0.0039	0.0020~0.0098	0.0039~0.0118	
Aluminum	-	-	-	-	-	★ 660~1640	0.0012~0.0020	0.0012~0.0031	0.0020~0.0039	0.0020~0.0039	0.0020~0.0098	0.0039~0.0118	
Brass	-	-	-	-	-	★ 330~660	0.0012~0.0020	0.0012~0.0031	0.0020~0.0039	0.0020~0.0039	0.0020~0.0098	0.0039~0.0118	

- Set the feed rate 1/100 of edge width on the first groove and check chip evacuation.
- FMN type Inserts are only for Deep Grooving, and when used for turning, set to D.O.C. = 0.079" and under.

★ : 1st Recommendation ☆ : 2nd Recommendation

Turning Conditions

① **FMM Toolholder**

	Recommended Cutting Conditions	
D.O.C. (MAX) (in)	Under 50% of Edge Width	D.O.C. ≤ 0.0197CW
f (MAX) (ipr)	Under 3~5% of Edge Width	f≤ [0.0012(Min.) ~ 0.0020(Max.)]CW

- (D.O.C.) x (f) should be as follows.

Edge Width (in) / Load (in^2)	0.1181	0.1575	0.1969	0.2362
D.O.C. x Feed Rate (f)	~0.004	~0.006	~0.010	~0.014

- D.O.C. x f ≤ $0.0004CW^2$

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GV (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)						① f (feed) during Grooving (ipr)						Notes
	Cermet			MEGA	PVD	Carbide	② f (feed) during Turning (ipr)						
							③ D.O.C. during Turning (in)						
	TN90	TC40	TC60	PR1225	PR930	KW10	GV® 100~300-...SS 100~300-...S GV® 100~340-...A 200~300-...AR	GV® 145~185-...B	GV® 200~280-...B GV® 200-100BR	GV® 300~400-...B GV® 300-150BR	GV® 280~300-...C	GV® 340~400-...C GV® 430~500-...C	
Carbon Steel	☆ 390~590	☆ 390~590	☆ 260~390	★ 260~520	☆ 260~460	-	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0016~0.0035 ② 0.0020~0.0039 ③ MAX 0.012	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	Wet
Alloy Steel	☆ 330~520	☆ 330~520	☆ 260~330	★ 260~460	☆ 260~390	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0016~0.0031 ② 0.0020~0.0039 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	
Stainless Steel	☆ 230~430	-	☆ 200~330	★ 200~430	☆ 200~360	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0016~0.0031 ② 0.0020~0.0039 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	
Cast Iron	-	-	-	-	-	★ 200~330	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0016~0.0035 ② 0.0020~0.0039 ③ MAX 0.012	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	
Aluminum	-	-	-	-	-	★ 490~980	① 0.0020~0.0047 ② 0.0020~0.0047 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0047 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	
Brass	-	-	-	-	-	★ 330~820	① 0.0020~0.0047 ② 0.0020~0.0047 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0047 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	

* Use MEGACOAT, PVD coated grade or carbide for turning with edge width 0.0394" (1mm) (GV® 100SS/100S/100A)

★ : 1st Recommendation ☆ : 2nd Recommendation

GVF (Ground Chipbreaker)

Workpiece Material	Recommended Insert Grade (Vc sfm)							① f (feed) during Grooving (ipr)					Notes
	Cermet				MEGA	PVD	Carbide	② f (feed) during Traversing (ipr)					
								③ D.O.C. during Traversing (in)					
	TN60	TN90	TC40	TC60	PR1225	PR930	KW10	GVF® 200~340...A GVF® 200-100AR ~300-150AR	GVF® 250~350...B GVF® 300-150BR	GVF® 400~490...B GVF® 400-200BR	GVF® 350~450...C	GVF® 500~600...C	
Carbon Steel	-	☆ 490~720	☆ 490~720	☆ 330~490	★ 260~660	☆ 260~590	-	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.031	Wet
Alloy Steel	-	☆ 430~660	☆ 430~660	☆ 260~430	★ 260~590	☆ 260~520	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.031	
Stainless Steel	-	☆ 230~490	-	☆ 200~330	★ 260~490	☆ 200~430	-	① 0.0012~0.0028 ② 0.0012~0.0039 ③ MAX 0.012	① 0.0016~0.0031 ② 0.0016~0.0031 ③ MAX 0.012	① 0.0020~0.0035 ② 0.0020~0.0035 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.031	
Cast Iron	-	-	-	-	-	-	★ 200~330	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0039 ③ MAX 0.031	
Aluminum	-	-	-	-	-	-	★ 490~1310	① 0.0020~0.0047 ② 0.0020~0.0047 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	
Brass	-	-	-	-	-	-	★ 490~980	① 0.0020~0.0047 ② 0.0020~0.0047 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	① 0.0031~0.0059 ② 0.0031~0.0059 ③ MAX 0.031	

- Apply a sufficient amount of coolant.
- The D.O.C. should be under 0.020" (0.5mm) if a good surface finish is required.

★ : 1st Recommendation ☆ : 2nd Recommendation

FTK

	Recommended Insert Grade (Vc sfm)					Edge Width (in)		Notes
	Cermet	CVD	PVD		Carbide	0.1575	0.1969	
	TN90	**CR9025**	**PR660**	**PR930**	**KW10**	Feed Rate (ipr)		
Carbon Steel	☆ 390~660	★ 260~590	☆ 200~430	☆ 200~430	-	0.0020~0.0059	0.0020~0.0059	Wet
Alloy Steel	☆ 330~520	★ 230~490	☆ 200~430	☆ 200~430	-	0.0020~0.0059	0.0020~0.0059	
Stainless Steel	☆ 260~490	☆ 200~460	★ 160~390	☆ 160~390	-	0.0020~0.0059	0.0020~0.0059	
Cast Iron	-	-	-	-	★ 160~330	0.0039~0.0118	0.0039~0.0118	
Aluminum	-	-	-	-	★ 660~1480	0.0020~0.0098	0.0020~0.0098	
Brass	-	-	-	-	★ 330~660	0.0020~0.0098	0.0020~0.0098	

★ : 1st Recommendation ☆ : 2nd Recommendation

GMN (CBN / PCD)

Workpiece Material	Recommended Insert Grade (Vc sfm)		① f (feed) during Grooving (ipr) ② f (feed) during Traversing (ipr) ③ D.O.C. during Traversing (in)				Notes
	CBN	PCD					
	KBN510 KBN525	**KPD001 (KPD010)**	GMN2	GMN3	GMN4 GMN5	GMN6	
Aluminum	-	★ 490~6560	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.031	① 0.0031~0.0071 ② 0.0031~0.0071 ③ MAX 0.031	① 0.0039~0.0079 ② 0.0039~0.0079 ③ MAX 0.031	Wet
Brass	-	★ 660~2620	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.031	① 0.0031~0.0071 ② 0.0031~0.0071 ③ MAX 0.031	① 0.0039~0.0079 ② 0.0039~0.0079 ③ MAX 0.031	
Cast Iron	★ 490~1310	-	① 0.0016~0.0035 ② 0.0016~0.0035 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.020	① 0.0020~0.0047 ② 0.0020~0.0047 ③ MAX 0.020	① 0.0020~0.0059 ② 0.0020~0.0059 ③ MAX 0.031	
Hardened Materials	★ 260~390	-	① 0.0008~0.0020 ② 0.0004~0.0012 ③ MAX 0.004	① 0.0012~0.0028 ② 0.0004~0.0020 ③ MAX 0.008	① 0.0012~0.0031 ② 0.0012~0.0031 ③ MAX 0.012	① 0.0020~0.0039 ② 0.0020~0.0039 ③ MAX 0.016	

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◆ GMG / GMM / GMN / GMGA

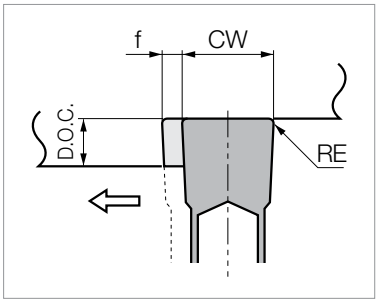
Workpiece Material	Recommended Insert Grade (Vc sfm)						Grooving				Traversing				Notes
	Cermet	CVD	PVD			Carbide	Edge Width (in)				Edge Width (in)				
	TN90	CR9025	PR915	PR930	PR905	KW10	0.0787~0.1181	0.1575	0.1969	0.2362/0.3150	0.0787~0.1181	0.1575	0.1969	0.2362/0.3150	
							Feed Rate (ipr)				Feed Rate (ipr)				
Carbon Steel	☆ 330~720	☆ 260~660	☆ 260~660	★ 260~660	-	-	0.0020~0.0059	0.0039~0.0098	0.0059~0.0138	0.0079~0.0138	0.0039~0.0079	0.0059~0.0118	0.0079~0.0157	0.0098~0.0157	Wet
Alloy Steel	☆ 260~660	☆ 230~590	☆ 230~590	★ 230~590	-	-	0.0020~0.0059	0.0039~0.0098	0.0059~0.0138	0.0079~0.0138	0.0039~0.0079	0.0059~0.0118	0.0079~0.0157	0.0098~0.0157	
Stainless Steel	☆ 230~520	☆ 200~490	★ 200~490	☆ 200~490	-	-	0.0020~0.0059	0.0039~0.0079	0.0059~0.0138	0.0079~0.0138	0.0039~0.0079	0.0059~0.0098	0.0079~0.0157	0.0098~0.0157	
Cast Iron	-	-	-	-	★ 330~660	☆ 230~490	0.0020~0.0079	0.0039~0.0118	0.0059~0.0157	0.0079~0.0157	0.0039~0.0098	0.0059~0.0138	0.0079~0.0177	0.0098~0.0177	
Aluminum	-	-	-	-	-	★ 660~1640	0.0020~0.0079	0.0031~0.0098	0.0039~0.0098	0.0047~0.0118	0.0039~0.0079	0.0039~0.0098	0.0039~0.0098	0.0059~0.0118	
Brass	-	-	-	-	-	★ 330~660	0.0020~0.0059	0.0031~0.0079	0.0039~0.0098	0.0047~0.0118	0.0039~0.0079	0.0039~0.0098	0.0039~0.0098	0.0059~0.0118	

★ : 1st Recommendation ☆ : 2nd Recommendation

Traversing Conditions

① **KGM Toolholder**

	Recommended Cutting Conditions	
D.O.C.(MAX) (in)	Under 80% of Edge Width	D.O.C.≤0.0315CW
f (MAX) (ipr)	Under 10% of Edge Width	f≤0.0039CW



• (D.O.C.) x (f) should not exceed ½ of D.O.C.(MAX) x f(MAX)

Edge Width (in) / Load (in²)	0.0787~0.0984	0.1181	0.1575	0.1969	0.2362	0.3150
D.O.C. x Feed Rate (f)	~0.0079	~0.0142	~0.0252	~0.0394	~0.0567	~0.1008

• D.O.C. x f ≤ ½ x 0.0315w x 0.0039w = 0.0016w²

② **KGM-T Toolholder** (Deep Grooving)

Use KGM-T toolholder under 90% lower cutting conditions than the KGM Toolholder

③ **KGMM / KGMS / KFMS-8 Toolholder**

	Recommended Cutting Conditions	
D.O.C.(MAX) (in)	Under 50% of Edge Width	D.O.C.≤0.0197CW
f (MAX) (ipr)	Under 4% of Edge Width	f≤0.0016CW

• (D.O.C.) x (f) should not exceed ½ of D.O.C.(MAX) x f(MAX)

Edge Width (in) / Load (in²)	0.0787~0.0984	0.1181	0.1575	0.1969	0.2362	0.3150
D.O.C. x Feed Rate (f)	~0.0039	~0.0071	~0.0126	~0.0197	~0.0283	~0.0504

• D.O.C. x f ≤ 0.0008w²

④ **KIGM Toolholder**

	Recommended Cutting Conditions	
D.O.C.(MAX) (in)	Under 70% of Edge Width	D.O.C.≤0.0276CW
f (MAX) (ipr)	Under 8% of Edge Width	f≤0.0031CW

• (D.O.C.) x (f) should be as follows. (under 70% of KGM)

Edge Width (in) / Load (in²)	0.1181	0.1575	0.1969
D.O.C. x Feed Rate (f)	~0.0098	~0.0173	~0.0276

• D.O.C. x f ≤ 0.0016CW²

◆ GMG / GMM / GMGA 8030 (Face Grooving)

Workpiece Material	Recommended Insert Grade (Vc sfm)						Face Grooving	Traversing	Notes
	Cermet	CVD	PVD			Carbide	Edge Width (in)	Edge Width (in)	
	TN90	CR9025	PR915	PR930	PR905	KW10	0.3150	0.3150	
							Feed Rate (ipr)	Feed Rate (ipr)	
Carbon Steel	☆ 330~720	☆ 260~520	☆ 260~520	★ 260~520	-	-	0.0039~0.0079	0.0039~0.0098	Wet
Alloy Steel	☆ 260~520	☆ 230~520	☆ 230~520	★ 230~520	-	-	0.0039~0.0079	0.0039~0.0098	
Stainless Steel	☆ 230~460	☆ 200~430	★ 200~430	☆ 200~430	-	-	0.0039~0.0079	0.0039~0.0098	
Cast Iron	-	-	-	-	★ 260~590	☆ 230~430	0.0039~0.0118	0.0039~0.0138	
Aluminum	-	-	-	-	-	★ 660~980	0.0031~0.0098	0.0031~0.0118	
Brass	-	-	-	-	-	★ 330~490	0.0031~0.0098	0.0031~0.0118	

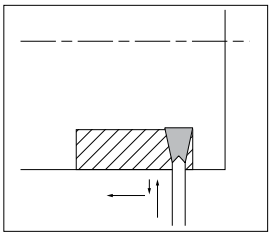
★ : 1st Recommendation ☆ : 2nd Recommendation

Guide for External Grooving

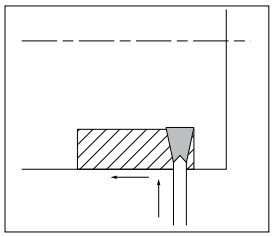
Point (I) (Traversing after Grooving)

1) Grooving Depth Over 0.5mm: At roughing (Refer to Fig.1)
Before Traversing, pull the tool back about 0.1mm after grooving.
(Failure to pull the tool back before traverse machining will result in an unbalanced load applied on only one side of the cutting edge.)

2) Grooving Depth under 0.5mm: At finishing (Refer to Fig.2)
Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
(Dwell time is not necessary.)



Before Traversing, pull the tool back about 0.1mm after grooving.
(Grooving Depth Over 0.5mm: At roughing)
Fig.1



Traversing subsequent to grooving is possible because there is only a small force on the cutting edge.
(Grooving Depth under 0.5mm: At finishing)
Fig.2

Point (II)

1) When widening the groove width
(Refer to Fig.3), apply the “Step Traversing” as shown in Fig.3.

2) The side walls should be finished with a plunging pass.
(For better chip control, ap over 0.5mm is recommended.)

Note) If the workpiece is not supported at the center, reduce the feed rate when grooving towards center.

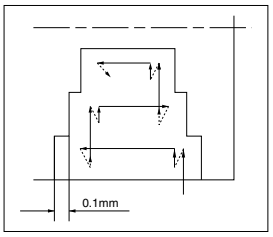


Fig.3

Guide for Face Grooving

<Toolholder Selection>

(1) Choose the best tool depending on the groove width.
The Cutting Dia. ØD listed in the catalog indicates the depth of the first plunge of face grooving as shown in Fig.1.

(2) Confirm Grooving Depth (dimension CDX)

(3) It is recommended to install the toolholder in the reverse position. (Fig. 2)
(This will provide smooth chip flow and chip clearance.)

<Guide for Traversing>

Traversing direction should be from the outer diameter to the inner diameter as shown in Fig.3
This improves chip evacuation.

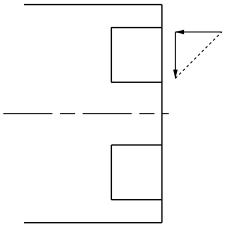


Fig.3

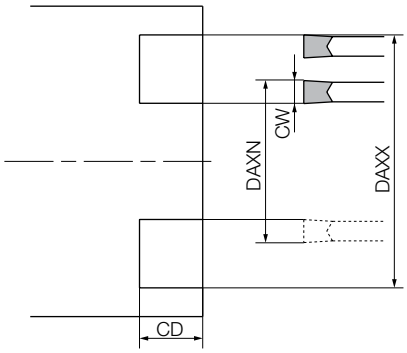


Fig.1

Toolholder	Right-hand (R)	Toolholder	Left-hand (L)
Insert	(No Hand)	Insert	(No Hand)

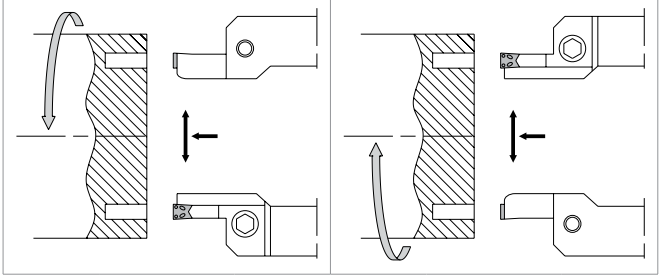


Fig.2 Toolholder's Hand and Rotation

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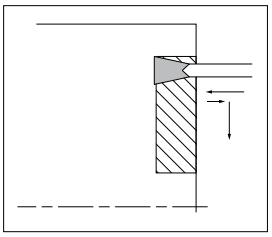
Guide for External Grooving (Continued)

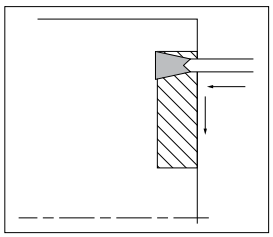
Point (I) (Traversing after Grooving)

1) Grooving Depth Over 0.5mm: At roughing (Refer to Fig.4)
Before Traversing, pull the tool back about 0.1mm after grooving.
(Failure to pull the tool back before traverse machining will result in an unbalanced load applied on only one side of the cutting edge.)



Before Traversing, pull the tool back about 0.1mm after grooving.
(Grooving Depth Over 0.5mm: At roughing)
Fig.4

2) Grooving Depth under 0.5mm: At finishing (Refer to Fig.5)
Traversing subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.
(Dwell time is not necessary.)



Traversing subsequent to grooving is possible because there is only a small force on the cutting edge.
(Grooving Depth under 0.5mm: At finishing)
Fig.5

Point (II)

1) When widening the groove width, apply the “Step Traversing” as shown in Fig. 6.
2) The side walls should be finished with a plunging pass.
(For better chip control, D.O.C. over 0.5mm is recommended.)

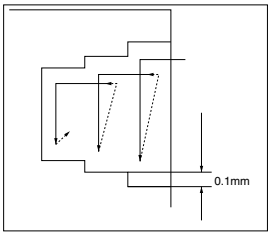


Fig.6

Troubleshooting

Trouble	Countermeasures
Whitish trace remains at the groove bottom.	(1) Increase the cutting speed for finishing process only. (This can handle most of the cases.) If the method is not successful, try (2) as follows. (2) Check the insert edge's parallelness. [Adjustment: Apply the insert edge to the work face and adjust the toolholder within the angle of ±5'. (Fig.7)]
Chips are entangled.	(1) Install the toolholder in the reverse position. Adjust the coolant flow to the cutting edge. (2) When widening the groove, do not machine one deep groove. Instead, repeat shallow grooving and Traversing.
Insert cracks when Traversing.	Reverse the facing direction.
Groove is not straight.	Check the edge's parallelness. Decrease the feed rate.

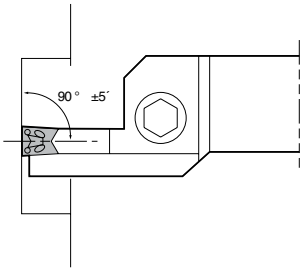


Fig.7

Guide for Grooving with Cermet Insert (Steel)

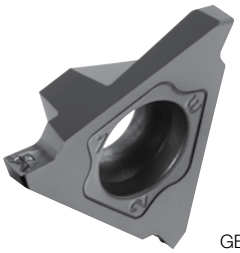
1. Set the feed under 0.0047" ipr (0.0020"~0.0039" ipr normally).
2. Coolant is recommended.
3. Set the cutting speed Vc = 490~720 sfm.
4. Set the toolholder overhang as short as possible.

How to Improve Surface Finish (when surface roughness below 3µm Rz is required)

1. Increase the cutting speed (Vc = 720 sfm MAX.)
2. Program retention time at the groove bottom.
3. Apply a light hone to the cutting edge.

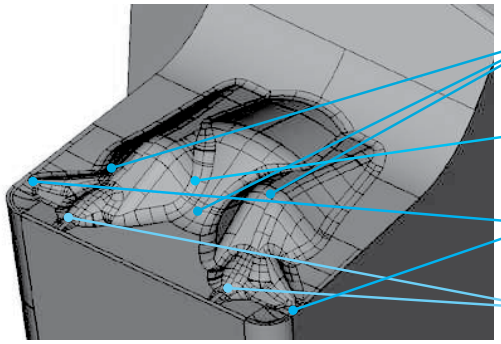
Chip Control of Grooving Insert with Molded Chipbreaker

1. Good chip control to cover a wide application range of stable chip control at high cutting speed, covering wide range of feed rates
2. Improved chip control and excellent surface finish
   Superior chip control performance
3. Chip control improvement with automated production line.
   (prevents frequent machine stops)



GBA type GM chipbreaker

Multi Bump Design



Center bump and dent squeeze chips for better control.

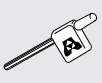
Helps modifying chip shape.

Stable chip control during shouldering and chamfering.

Front Bump: Stabilize chip control at low feed rates.

Smooth chip control due to optimized bump design of the chipbreaker

Alternative Toolholder Reference Table for Grooving Toolholder

Conventional Toolholder						Alternative Toolholder			
Part Number	Overall Length (mm)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Wrench	Part Number	Overall Length (mm)	Notes	Reference Page
								
KTGF 1010K-16F	125	SB-4070TRW	FT-8	-	KTGF 1010JX-16F	120		G20
1212M-16F	150				1212JX-16F	120		
1616M-16F	150				1616JX-16F	120		
KGM 0810K-1.5-125	125	SE-40120TR	-	LTW-15S	-	-	No replacement	
1010K-1.5-125	125				KGM 1010JX-1.5	120		
1212M-1.5-150	150				1212JX-1.5	120		
KGM 0810K-2-125	125	SE-40120TR	-	LTW-15S	-	-	No replacement	
1010K-2-125	125				KGM 1010JX-2	120		
1212M-2-150	150				1212JX-2	120		G48
1616M-2-150	150	SE-50125TR	-	LTW-20	1616JX-2	120		
KGM 1010K-2.5-125	125	SE-40120TR	-	LTW-15S	KGM 1010JX-2.5	120		
1212M-2.5-150	150				1212JX-2.5	120		
1616M-2.5-150	150	SE-50125TR	-	LTW-20	1616JX-2.5	120		
KGM 1616M-3-150	150	SE-50125TR	-	LTW-20	KGM 1616JX-3	120		

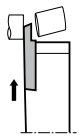
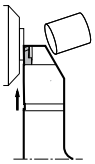
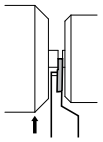
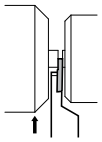
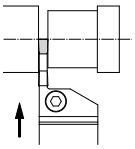
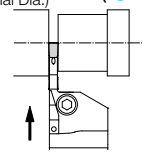
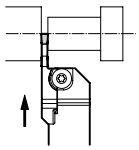
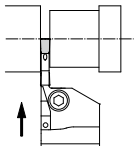
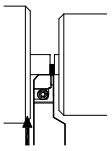
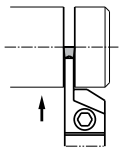
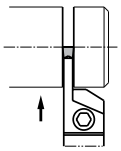
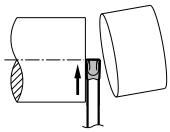
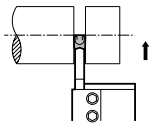
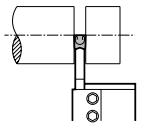
Note) The corresponding replacements may be different from the conventional parts in insert clamping system or insert size.
Make sure their specifications referring to the catalog or other documents.

CUT-OFF

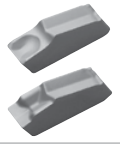
H1 - H54

PRODUCT LINEUP		H2
GUIDE FOR CUT-OFF		H3
SUMMARY OF CUT-OFF TOOLS		H4 - H5
SMALL DIAMETER CUT-OFF TOOLHOLDERS		H6 - H19
KTKF	Lateral Side Screw Clamp Holder	H8
KTKF-S (Sub Spindle)	Lateral Side Screw Clamp Holder	H10
KTKF-JCT (Coolant Through)	Lateral Side Screw Clamp Holder	H13
KTKF-Y (Y-Axis Holder)	Lateral Side Screw Clamp Holder	H16
KTKFS (Sub Spindle)	Lateral Side Screw Clamp Holder	H18
CUT-OFF TOOLHOLDERS (2-EDGE INSERT, KGD)		H20 - H33
KGD (Small Parts)	Integral Toolholder	H22
KGDS (Sub Spindle)	Integral Toolholder	H23
KGD-JCT (Small Parts, Coolant-Through)	Integral Toolholder	H25
KGD	Integral Toolholder	H26
KGD-JCT (Coolant Through)	Integral Toolholder	H29
KGD-S	SwitchBlade Toolholder	H30
CUT-OFF TOOLHOLDERS (2-EDGE INSERT, KGM)		H34 - H39
KGM (Small Parts)	Integral Toolholder	H36
KGM	Integral Toolholder	H36
KGM-T	Integral Toolholder	H37
CUT-OFF TOOLHOLDERS (1-EDGE INSERT)		H40 - H51
KPKB-JCT / KPKB	Blade	H43
KPKTB-JCT / KTKTB / KTKTBF	Tool Block	H44
KTKB-SS / KTKB-S	Blade	H49
KTKH-S	Integral Toolholder	H50
RECOMMENDED CUTTING CONDITIONS		H52
ALTERNATIVE CUT-OFF TOOLHOLDER REFERENCE		H54

Product Lineup

Small Diameter Cut-Off *Cut-Off Diameter* Ø0.197"~Ø0.472" ~Ø0.630" (Ø5mm~Ø12mm) (~Ø16mm)	**KTKF** (H8)  Width : (0.020"~0.079") Width : (0.5mm~2.0mm)	**KTKF-JCT** (H13)  Width : (0.020"~0.079") Width : (0.5mm~2.0mm)		Sub Spindle Tooling **KTKF-S** (H10)  Width : (0.039"~0.079") Width : (1.0mm~2.0mm)	**KTKFS** (H18)  Width : (0.039"~0.079") Width : (1.0mm~2.0mm)
KGD (Bolt Clamp) *Cut-Off Diameter* Ø0.472"~Ø1.575" (Ø12mm~Ø50mm)	**KGD** (H22, H26)  Width : (0.079"~0.158") Width : (1.3mm~4.0mm)	**KGD-JCT** (Smal Dia.) (H25)  Width : (0.079"~0.158") Width : (1.3mm~4.0mm)	**KGD-S** (H30)  Width : (0.079"~0.158") Width : (1.3mm~4.0mm)	**KGD-JCT** (H29)  Width : (0.079"~0.158") Width : (3mm~4.0mm)	Sub Spindle Tooling **KGDS** (H23)  Width : (1.3mm~3.0mm)
KGM (Bolt Clamp) *Cut-Off Diameter* Ø0.709"~Ø1.575" (Ø18mm~Ø60mm)	**KGM** (H36)  Width : 0.059"~0.158",0.118"~0.236" Width : (1.5mm~4mm, 3mm~8mm)	**KGM-T** (H37)  Width : 0.079"~0.197" Width : (2mm~6mm)			
KPKB **KTKB / KTKH** (1-edge Insert)	**Toolholders** *Cut-Off Diameter* Ø1.181"~Ø2.441" (Ø30mm~Ø79mm)	**KTKH-S** (H50)  Width : (0.020"~0.079") Width : (2.2mm~5.1mm)	**Blade Type** *Cut-Off Diameter* Ø0.551"~Ø0.630" (Ø32mm~Ø120mm)	**KPKB-JCT** (H43)  Width : (0.0.079"~0.157") Width : (2.0~4.0mm)	**KTKB-S(S)** (H49)  Width : (0.063"~0.378") Width : (1.6mm~9.6mm)

Cut-Off Tools

Series Name	Shape	Advantage	Applications
For Small Diameter Cut-Off		1) Insert clamp is side screw type from the side 2) 2-edge insert 3) Max. Cut-off Dia. : Ø0.630" (Ø16mm)	1) For cut-off and grooving of small workpieces 2) For small parts machining
KGD-JCT **KGD**		1) Insert is clamped from top side 2) 1-edge and 2-edge inserts available 3) Integral type and separate type are available 4) Max. Cut-off Dia. : Ø1.969" (Ø50mm) 5) JCT jet coolant-through styles available	1) PM Chipbreaker ··· For Cut-Off 2) PH Chipbreaker ··· For Cut-Off (High Feed Rate) / For Grooving 3) PG Chipbreaker ··· For Cut-Off (for Small Parts Machining) / Sharp-Cutting Oriented 4) PF Chipbreaker ··· For Cut-Off (for Small Parts Machining) / Low Feed 5) PQ Chipbreaker ··· For Cut-Off (for Small Parts Machining) / Medium Feed
KGM		1) Insert is clamped from top side 2) 1-edge and 2-edge inserts available 3) Max. Cut-off Dia. : Ø2.362" (Ø60mm)	1) For cut-off and grooving of small workpieces 2) For automatic lathe, small machine 3) TMR-Chipbreaker provides stable chip control up to high feed rate ranges
KPKB-JCT **KPKB**		1) Easy self-clamping insert replacement (no hammer required) 2) Firm insert clamp ensures safety and security 3) Max. Cut-off Dia. : Ø3.937" (Ø100mm)	1) For cut-off in Steel, Stainless, Cast Iron, and Non-ferrous 2) PM Chipbreaker ··· General Purpose Cut-Off (Lead angle styles available) 3) PH Chipbreaker ··· Tough Edge
KTKB **KTKH**		1) Self-Clamping System Tap the insert lightly with a plastic hammer to set it in the pocket 2) 1-edge insert 3) Blade type and Integral Shank type 4) Max. Cut-off Dia. : Ø4.724" (Ø120mm)	1) For cut-off and deep grooving 2) Standard chipbreaker is general cut-off type Feed rate: over 0.004ipr P-Chipbreaker is for cut-off at low feed rates Feed rate: 0.001~0.003ipr 

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Tool Selection

		Small Diameter Cut-Off	KGD	KGM	KPKB KTKB / KTKH
Insert	1. Insert's Edge Number 1-edge Insert··· For Larger Dia. Workpiece (Max. 4.724" / Ø120mm)	-	-	-	✓
	2-edge Insert··· For Smaller Dia. Workpiece Cost per corner is reduced	✓	✓	✓	-
	2. Use a neutral angle insert if there is no restriction to the size of boss left on part. (See **Fig.3** Below)	TKF...S TKF...NB TKFS...S	GDM GDMS	GMM	PKM TKN
	3. Use an angled insert to reduce the size of the remaining boss.	TKF...DR	GDM-R/L (Fig. 2)	GMM-R/L (Fig. 2)	PKMR/L / TKR/L (Fig. 1)
	4. Use a sharp-cornered lead-angled insert to make the remaining boss much smaller when machining small parts and thin parts.	TKF...DR	-	GMM-R/L (Fig. 2)	-
	5. Use the minimum width insert suitable for the machining.	✓	✓	✓	✓
Tololholder	1. Use a suitable toolholder (blade) for the workpiece dia.	✓	✓	✓	✓
	2. Use a more rigid toolholder (blade).	✓	✓	✓	✓
	3. Use a side screw or self clamp toolholder if there is no space for clamping tools from top side (for small tools).	✓	-	-	-

How to Select Cut-Off Inserts with or without Lead Angle

1) Use a neutral angle insert, when remaining boss is not a concern. (See **Fig.1**)

2) Use an angled insert to reduce the remaining boss. (See **Fig.2**)

3) Use a sharp-edged insert with lead angle to minimize the remaining boss when cutting small parts and thin parts. (See **Fig.3**)

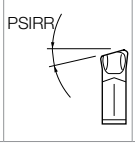
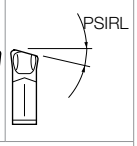
Lead Angle Hand	N (Neutral)	R (Right-Hand)	L (Left-Hand)
			
• Angled insert can reduce burr when cutting off. • When using a larger lead angle, cutting resistance becomes smaller. The feed rate should be reduced.			

Fig.1

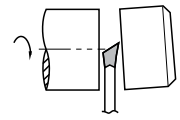
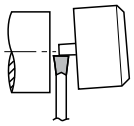
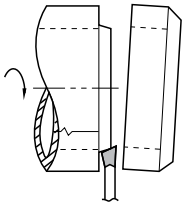
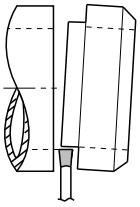
Lead Angle Hand	With Lead Angle (Right-Hand)	Without Lead Angle (Neutral)
		
		

Fig.2

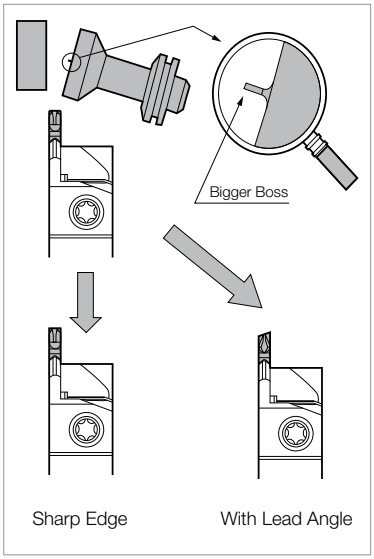


Fig.3

Caution

1) Set the cutting edge height 0.004"-0.008" above the center height
2) Always apply sufficient coolant to the cutting edge
3) Constant spindle revolution is recommended to obtain stable tool life
4) Cut-off as close to the chuck as possible
5) Decrease the feed rate from 1/2 to 1/3 when diameter is same as cut-off width
• Overuse of insert and toolholder (blade) may cause insert breakage and toolholder (blade) damage. • Do not rework the insert and toolholder (blade) to prevent damage • Clean the insert pocket well with compressed air when replacing insert

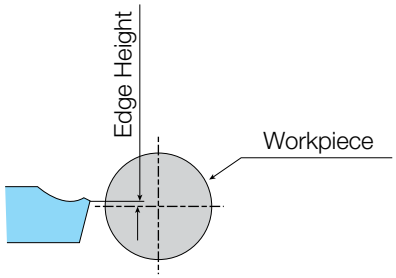
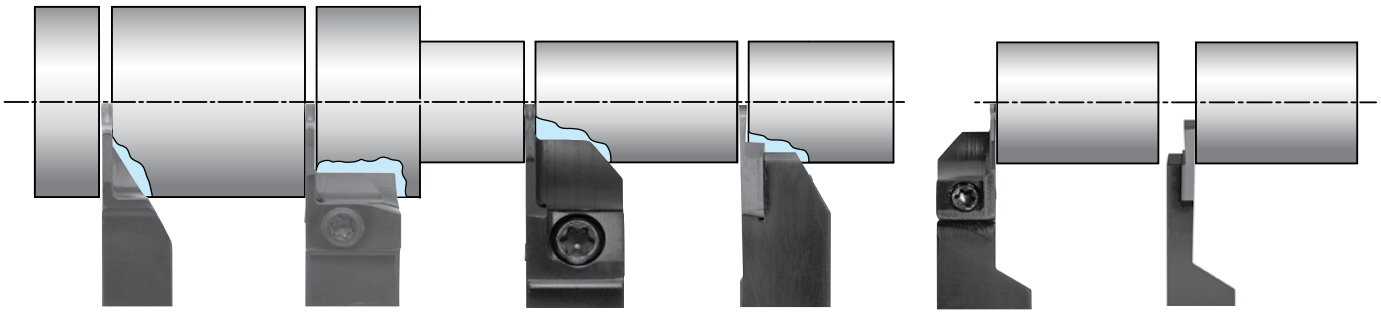


Fig.4

Small Diameter Cut-Off ~Ø1.653" / ~45mm

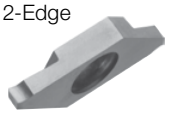
Small Shank



KTKH-S		KGM		KGD / KGD-JCT		KTKF		KGDS		KTKF-S/KTKFS	
Cut-Off Dia.	~Ø1.300"	Cut-Off Dia.	~Ø0.984"	Cut-Off Dia.	~Ø1.653"	Cut-Off Dia.	~Ø0.625"	Cut-Off Dia.	~Ø24mm	Cut-Off Dia.	~Ø0.630"
	~Ø45mm		~Ø32mm		~Ø42mm		~Ø16mm				~Ø16mm
Shank	0.375"~0.500"	Shank	0.375"~0.500"	Shank	0.0.375"~0.750"	Shank	0.375"~0.625"	Shank	16mm	Shank	0.375"~0.500"
	10mm~25mm		10mm~16mm		10mm~20mm		10mm~25mm				10mm~12mm
Edge Width	0.063"~0.094"	Edge Width	0.079"~0.118"	Edge Width	0.059"~0.157"	Edge Width	0.020"~0.079"	Edge Width	1.3mm~3.0mm	Edge Width	0.5mm~2.0mm (KTKF-S)
	2.2mm~4.1mm		1.5mm~4.0mm		1.3mm~4.0mm		0.5mm~2.0mm				0.059"~0.098" (KTKFS)
											1.0mm~2.0mm (KTKFS)
Self Clamp		Top Clamp		Top Clamp		Side Screw Clamp		Top Clamp		Side Screw Clamp	
➡ H50 ~ H51		➡ H36		➡ H22		➡ H8		➡ H23		➡ H10, H18	

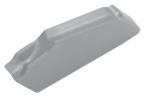
KTKF / KTKF-S KTKFS

2-Edge



Low Resistance Cut-Off Chipbreaker

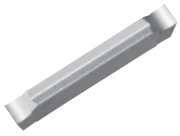
Chipbreaker for General Cut-Off



Chipbreaker for Low Feed Cut-Off

Chipbreaker Edge Shape	Cut-Off (Self Clamp) ➡ H35		
	General Cut-Off		Low Feed Cut-Off
	Chamfer + Honed	Sharp Edge	R Honed

2-Edge

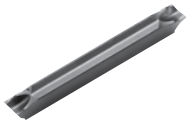


Sharp Cutting **PG Chipbreaker**

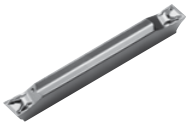
Low Feed **PF Chipbreaker**

Medium Feed **PQ Chipbreaker**

(15° Lead Angle)



(15° Lead Angle)



(15° Lead Angle)

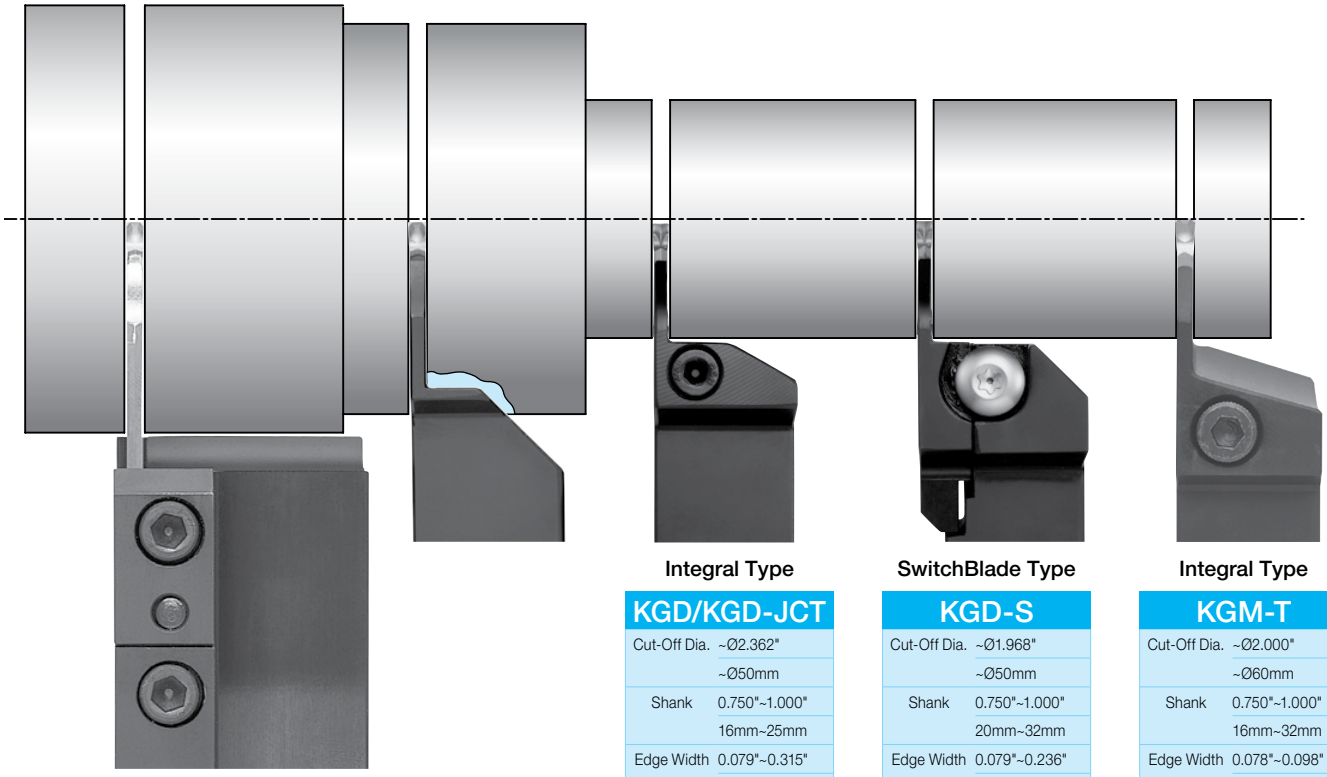
KTKH-S ➡ H50
(Self Clamp)

KGD ➡ H22
(Top Clamp)

KTKF ➡ H8
(Side Screw Clamp)

800.823.7284
Visit us online at KyoceraPrecisionTools.com

General Cut-Off ~Ø3.100" / ~120mm



Integral Type

KGD/KGD-JCT	
Cut-Off Dia.	~Ø2.362"
	~Ø50mm
Shank	0.750"~1.000"
	16mm~25mm
Edge Width	0.079"~0.315"
	2.0mm~4.0mm
Top Clamp	

H25 / H26

SwitchBlade Type

KGD-S	
Cut-Off Dia.	~Ø1.968"
	~Ø50mm
Shank	0.750"~1.000"
	20mm~32mm
Edge Width	0.079"~0.236"
	2.0mm~4.0mm
Top Clamp	

H30 ~ H31

Integral Type

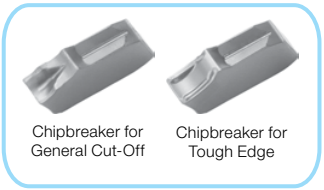
KGM-T	
Cut-Off Dia.	~Ø2.000"
	~Ø60mm
Shank	0.750"~1.000"
	16mm~32mm
Edge Width	0.078"~0.098"
	2.0mm~6.0mm
Top Clamp	

H37

Blade + Toolblock

KPKB / KPKB-JCT	
Cut-Off Dia.	~Ø100mm
Block Shank	20mm~25mm
Edge Width	2.0mm~4.0mm
Self Clamp	

H43



Chipbreaker for General Cut-Off

Chipbreaker for Tough Edge

Blade + Toolblock

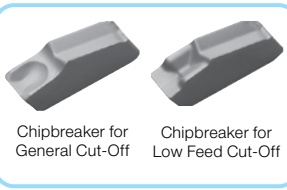
KTKB	
Cut-Off Dia.	~Ø120mm
Block Shank	0.750"~1.000" 16mm~32mm
Edge Width	1.6mm~9.6mm
Self Clamp	

H49

Integral Type

KTKH-S	
Cut-Off Dia.	~Ø3.100"
	~Ø79mm
Shank	0.750"~1.000"
	20mm~25mm
Edge Width	0.087"~0.201"
	3.1mm~5.1mm
Self Clamp	

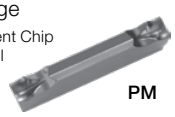
H50 ~ H51



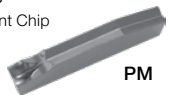
Chipbreaker for General Cut-Off

Chipbreaker for Low Feed Cut-Off

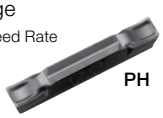
2-Edge
Excellent Chip Control
PM



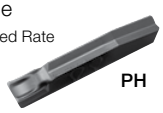
1-Edge
Excellent Chip Control
PM



2-Edge
High Feed Rate
PH



1-Edge
High Feed Rate
PH



2-Edge
Chipbreaker for Sharp Cutting

2-Edge
Chipbreaker for Stability

1-Edge
Chipbreaker for Stability

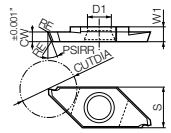
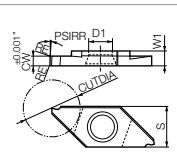
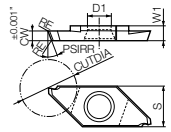
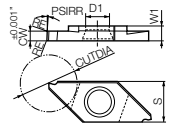
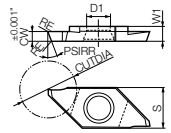
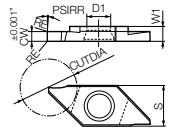
Blade + Toolblock		SwitchBlade Type	Integral Type		
KPKB ➡ H43	KTKB ➡ H49	KGD-S ➡ H30	KTKH-S ➡ H50	KGD ➡ H26	KGM ➡ H36

CUT-OFF TOOLHOLDERS (SMALL DIAMETER)

TKF12

Classification of Usage
- ● : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

		NEW						
P	Carbon Steel / Alloy Steel	●	◔	◔	◔	◔		
M	Stainless Steel	◔	◔	●	◔	◔		
K	Cast Iron							●
N	Non-ferrous Metals						●	◔

Insert (Right-handed Insert Shown)		Part Number	Dimensions (in) CW inch	CW mm	CUTDIA	RE	W1	S	D1	Angle (°) PSIRR	MEGACOAT NANO PR1725 R	PR1725 L	PR1425 R	PR1425 L	PR1535 R	PR1535 L	MEGACOAT PR1225 R	PR1225 L	PVD Coated Carbide PR1025 R	PR1025 L	DLC PDL025 R	PDL025 L	Carbide KW10 R	KW10 L	Ref. Page for Toolholder
Right Lead Angle		TKF12R/L 050-S-16DR	0.020	0.50	0.197	0.001	0.118	0.343	0.197	16°	●	●	△	△	●	●	●		△	△			●	●	
		070-S-16DR	0.028	0.70	0.315	0.001	0.118	0.343	0.197	16°	●	●	△	△	●	●	●	●	△	△			●	●	
		100-S-16DR	0.039	1.00	0.472	0.001	0.118	0.343	0.197	16°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		125-S-16DR	0.049	1.25	0.472	0.001	0.118	0.343	0.197	16°	●	●	△	△	●	●	●				●	●			
		150-S-16DR	0.059	1.50	0.472	0.001	0.118	0.343	0.197	16°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		200-S-16DR	0.079	2.00	0.472	0.001	0.118	0.343	0.197	16°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		TKF12R/L 050-S	0.020	0.50	0.197	0.001	0.118	0.343	0.197	0°	●	●	△	△	●	●	●		△	△	●	●	●	●	
		070-S	0.028	0.70	0.315	0.001	0.118	0.343	0.197	0°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		100-S	0.039	1.00	0.472	0.001	0.118	0.343	0.197	0°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		125-S	0.049	1.25	0.472	0.001	0.118	0.343	0.197	0°	●	●	△	△	●	●	●				●	●			
		150-S	0.059	1.50	0.472	0.001	0.118	0.343	0.197	0°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		200-S	0.079	2.00	0.472	0.001	0.118	0.343	0.197	0°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
Right Lead Angle Tough Edge		TKF12R/L 100-T-16DR	0.039	1.00	0.472	0.003	0.118	0.343	0.197	16°	●	●	△	△	●	●	●	●							
		150-T-16DR	0.059	1.50	0.472	0.003	0.118	0.343	0.197	16°	●	●	△	△	●	●	●	●							
		200-T-16DR	0.079	2.00	0.472	0.003	0.118	0.343	0.197	16°	●	●	△	△	●	●	●	●							
Tough Edge		TKF12R/L 100-T	0.039	1.00	0.472	0.003	0.118	0.343	0.197	0°	●	●	△	△	●	●	●	●							H8
		150-T	0.059	1.50	0.472	0.003	0.118	0.343	0.197	0°	●	●	△	△	●	●	●	●							
		200-T	0.079	2.00	0.472	0.003	0.118	0.343	0.197	0°	●	●	△	△	●	●	●	●							
Right Lead Angle		TKF12R/L 050-NB-20DR	0.020	0.50	0.197	0.000	0.118	0.343	0.197	20°	●	●	△	△	●	●			△				●	●	
		070-NB-20DR	0.028	0.70	0.315	0.000	0.118	0.343	0.197	20°	●	●	△	△	●	●			△				●	●	
		100-NB-20DR	0.039	1.00	0.472	0.000	0.118	0.343	0.197	20°	●	●	△	△	●	●			△	△			●	●	
		150-NB-20DR	0.059	1.50	0.472	0.000	0.118	0.343	0.197	20°	●	●	△	△	●	●			△	△			●	●	
		200-NB-20DR	0.079	2.00	0.472	0.000	0.118	0.343	0.197	20°	●	●	△	△	●	●			△	△			●	●	
Without Chipbreaker		TKF12R/L 050-NB	0.020	0.50	0.197	0.000	0.118	0.343	0.197	0°	●	●	△	△	●	●			△				●	●	
		070-NB	0.028	0.70	0.315	0.000	0.118	0.343	0.197	0°	●	●	△	△	●	●			△	△			●	●	
		100-NB	0.039	1.00	0.472	0.000	0.118	0.343	0.197	0°	●	●	△	△	●	●			△	△			●	●	
		150-NB	0.059	1.50	0.472	0.000	0.118	0.343	0.197	0°	●	●	△	△	●	●			△	△			●	●	
		200-NB	0.079	2.00	0.472	0.000	0.118	0.343	0.197	0°	●	●	△	△	●	●			△	△			●	●	

- Lead angle shows the angle when installed in the toolholder.
- As Fig.1 of H8 shows, the cutting diameter of the insert is measured when the lead edge passes 0.039" past the center line of part.

Recommended Cutting Conditions H52

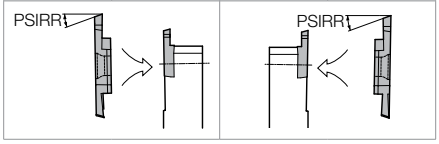
Indication of Description

TKF 12 R 050 - S - 16D R

- TKF: Insert Name
- 12: Insert Size
- 050: Width
- R: Insert Hand — R: Right-Hand; L: Left-Hand
- S: Name of Chipbreaker — S: S-Chipbreaker; T: T-Chipbreaker (Tough Edge); NB: Without Chipbreaker
- 16D: Lead Angle (PSIRR) (Front Cutting Edge Angle)
- R: Lead Angle Hand — R: R-Hand; L: L-Hand

Table 1

Toolholder	R-Hand (R)	Toolholder	L-Hand (L)
Insert	R-Hand (R)	Insert	L-Hand (L)
Lead Angle	R-Hand (R)	Lead Angle	R-Hand (R)



Inserts are sold in 10 piece boxes

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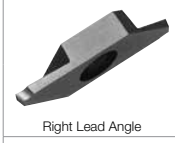
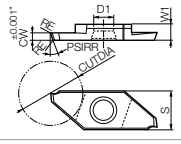
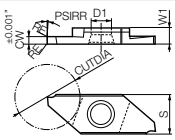
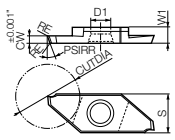
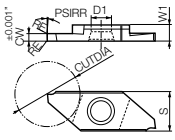
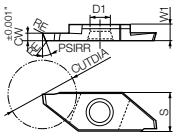
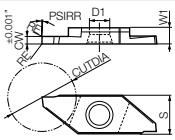
TKF16

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

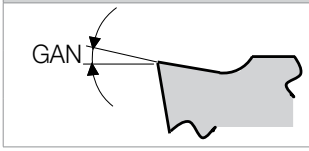
		NEW						
P	Carbon Steel / Alloy Steel	●	◔	◔	◔	◔		
M	Stainless Steel	◔	◔	●	◔	◔		
K	Cast Iron							●
N	Non-ferrous Metals						●	◔

Insert (Right-handed Insert Shown)		Part Number	Dimensions (in) CW inch	CW mm	CUTDIA	RE	W1	S	D1	Angle (°) PSIRR	MEGACOAT NANO PR1725 R	PR1725 L	PR1425 R	PR1425 L	PR1535 R	PR1535 L	MEGACOAT PR1225 R	PR1225 L	PVD Coated Carbide PR1025 R	PR1025 L	DLC PDL025 R	PDL025 L	Carbide KW10 R	KW10 L	Ref. Page for Toolholder
 Right Lead Angle		TKF16R/L 150-S-16DR	0.059	1.5	0.630	0.002	0.157	0.374	0.197	16°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	H8
		200-S-16DR	0.079	2.0	0.630	0.002	0.157	0.374	0.197	16°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		TKF16R/L 150-S	0.059	1.5	0.630	0.002	0.157	0.374	0.197	0°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
		200-S	0.079	2.0	0.630	0.002	0.157	0.374	0.197	0°	●	●	△	△	●	●	●	●	△	△	●	●	●	●	
Right Lead Angle Tough Edge		TKF16R/L 150-T-16DR	0.059	1.5	0.630	0.003	0.157	0.374	0.197	16°	●	●	△	△	●	●	●	●							
		200-T-16DR	0.079	2.0	0.630	0.003	0.157	0.374	0.197	16°	●	●	△	△	●	●	●	●							
Tough Edge		TKF16R/L 150-T	0.059	1.5	0.630	0.003	0.157	0.374	0.197	0°	●	●	△	△	●	●	●	●							
		200-T	0.079	2.0	0.630	0.003	0.157	0.374	0.197	0°	●	●	△	△	●	●	●	●							
Right Lead Angle Without Chipbreaker		TKF16R/L 150-NB-20DR	0.059	1.5	0.630	0.000	0.157	0.374	0.197	20°	●	●	△	△	●	●			△	△			●	●	
		200-NB-20DR	0.079	2.0	0.630	0.000	0.157	0.374	0.197	20°	●	●	△	△	●	●			△	△			●	●	
Without Chipbreaker		TKF16R/L 150-NB	0.059	1.5	0.630	0.000	0.157	0.374	0.197	0°	●	●	△	△	●	●			△	△			●	●	
		200-NB	0.079	2.0	0.630	0.000	0.157	0.374	0.197	0°	●	●	△	△	●	●			△	△			●	●	

• Lead angle shows the angle when installed in the toolholder.
• As Fig.1 of H8 shows, the cutting diameter of the insert is measured when the lead edge passes 0.039" past the center line of part.

Recommended Cutting Conditions H52

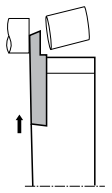
Descriptions of Chipbreaker Edge Shape

Edge Shape \ Chipbreaker	S-Chipbreaker GAN	S-Chipbreaker Part Number	T-Chipbreaker (Tough Edge) GAN	T-Chipbreaker (Tough Edge) Part Number	NB Chipbreaker GAN	NB Chipbreaker Part Number
	15°	TKF12...-S	12°	TKF...-T TKF...-T-16DR	0°	TKF...-NB TKF...-NB-20DR
	20°	TKF16...-S TKF16...-S-16DR				
	25°	TKF12...-S-16DR				

Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KTKF / KTKF Goose-neck Holder



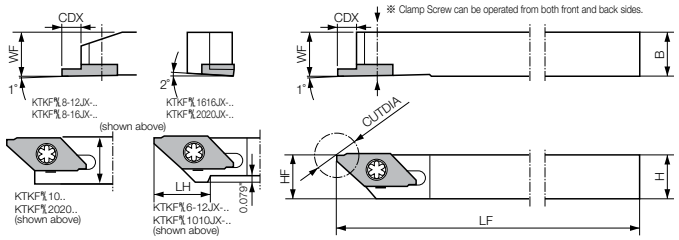
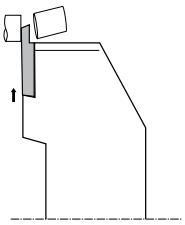


Fig.1

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder



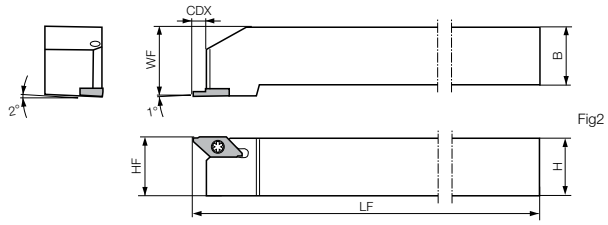
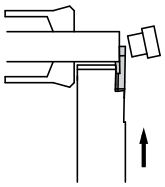


Fig2

• Right-hand shown

Right-hand Insert for Right-hand Toolholder



(Goose-neck Holder)

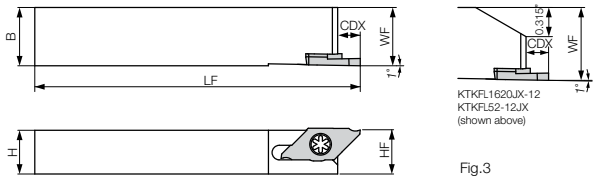


Fig.3

• Left-hand Shown

Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	CDX	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
KTKF□	6-12JX	●	●	inch	0.375	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKF12□...
	8-12JX	●	●		0.500	0.500	0.500	4.750	-	0.500	0.236				
	10-12JX	●	●		0.625	0.625	0.625	4.750	-	0.625	0.236				
KTKF□	6-16JX	●	●		0.375	0.375	0.375	4.750	0.787	0.375	0.315	Fig.1	SB-4590TRWN	LTW-10S	TKF16□...
	8-16JX	●	●		0.500	0.500	0.500	4.750	-	0.500	0.315				
	10-16JX	●	●		0.625	0.625	0.625	4.750	-	0.625	0.315				
KTKF□	1010JX-12	●	●	mm	10	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKF12□...
	1212JX-12	●	●		12	12	12	120	-	12	6				
	1616JX-12	●	●		16	16	16	120	-	16	6				
	2020JX-12	●	●		20	20	20	120	-	20	6				
KTKF□	1010JX-16	●	●		10	10	10	120	20	10	8	Fig.1	SB-4590TRWN	LTW-10S	TKF16□...
	1212JX-16	●	●		12	12	12	120	-	12	8				
	1616JX-16	●	●		16	16	16	120	-	16	8				
	2020JX-16	●	●		20	20	20	120	-	20	8				
KTKFR	1212F-12	●			12	12	12	85	-	12	6	Fig.1	SB-4590TRWN	LTW-10S	TKF12R...
	1212F-16	●			12	12	12	85	-	12	8				TKF16R...
NEW KTKFR	2525M-12	●			25	25	25	150	-	30	6	Fig.2	SB-4590TRWN	LTW-10S	TKF12R...
	2525M-16	●			25	25	25	150	-	30	8				TKF16R...
KTKFL	52-12JX		●	inch	0.500	0.500	0.625	4.750	-	0.625	0.236	Fig.3	SB-4590TRWN	LTW-10S	TKF12L...
	62.5-12JX		●		0.625	0.625	0.750	4.750	-	0.750	0.236				
KTKFL	1216JX-12		●	mm	12	12	16	120	-	16	6	Fig.3	SB-4590TRWN	LTW-10S	
	1620JX-12		●		16	16	20	120	-	20	6				

- Dimension **CDX** shows the distance from the toolholder to the cutting edge.
- See Page ➡ **H6~H7** for actual cutting diameter.

Note : Cutting diameter of -12 type toolholder (CUTDIA) depends on the insert grooving width.

Recommended Cutting Conditions ➡ **H52**

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How to Use

1) When using main spindle only

Workpiece maximum CUTDIA (**Fig.1**) = CUTDIA in toolholder table
Even if the cutting edge runs beyond the center line, the insert does not contact the workpiece, since the workpiece falls off.
(The clearance between the insert and the workpiece is 0.008")

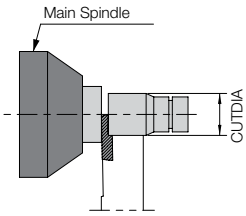


Fig.1
(When the edge is at the center)

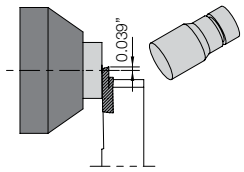


Fig.2
(When the edge is 0.008" beyond the center)

2) When using both Main and Sub spindles

In this case, when the cutting edge runs beyond the center line, the insert will contact the workpiece, since the workpiece does not fall off.
Therefore the programmed distance beyond the center must be considered.
e.g. When the cutting edge is programmed to run 1mm beyond the center.
Workpiece maximum, CUTDIA2 (**Fig.4**) = [CUTDIA - 0.039"×2] (in)
(The clearance between the insert and the workpiece is 0.008")

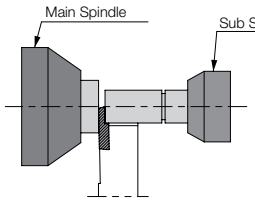


Fig.3
(When the edge is at the center)

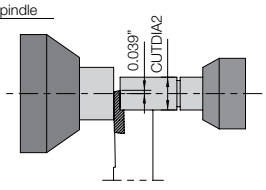
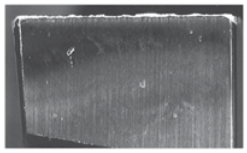
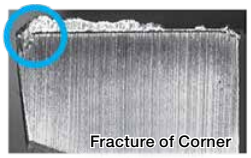


Fig.4
(When the edge is 0.008" beyond the center)

Tough Edge Type T Chipbreaker

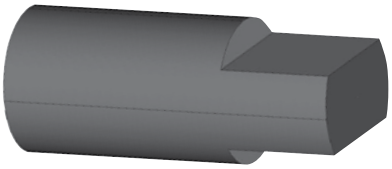
Fracture Resistance Comparison (Interrupted Machining)

Tough Edge Type T Chipbreaker (PR1225) 3,000 Passes	Competitor A 700 Passes	Competitor B 3,000 Passes
	Fracture of Corner	 Fracture of Corner

	1,000 Passes	2,000 Passes	3,000 Passes
Tough Edge Type T Chipbreaker (PR1225)	→	→	→
Competitor A	→ X		
Competitor B	→	→	→ X

Compared to Competitor A and B, Tough Edge "T Chipbreaker" achieves superior fracture resistance during interrupted cutting.

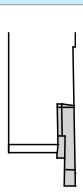
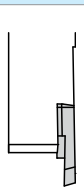
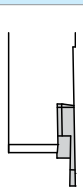
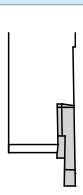
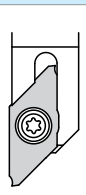
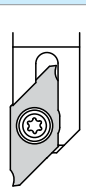
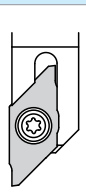
Cutting Conditions
Vc=250 f=0.0020ipr (Cut-Off 0.0006ipr)
Wet W1-9 (with flat cuts on two sides)
TKF12R200-T-16DR (PR1225)



Worpiece (with flat cuts on two sides)

How to Select Edge Preparation

Troubleshooting

Problems	Countermeasures	Countermeasures						
		Lead Angle (PSIRR)		Edge Width		Name of Chipbreaker		
		No (0°)	Yes	Narrower	Wider	S	T	NB
								
Insert Fracture	Insert Fracture Prevention	Effective			Effective		Effective	Effective
Long Cutting Time	Cutting Time Reduction	Effective			Effective		Effective	Effective
Entangled Chips	Chip Entanglement Prevention	Effective		Effective		Effective		
Large Boss Remains	Small Boss Remains		Effective	Effective		Effective		
Ring Remains (Hollow Workpiece)	Prevention of Ring		Effective	Effective		Effective		
Deformation of thin walled workpiece (pipe)	Preventing Deformation		Effective	Effective		Effective		

KTKF-S

Cut-Off Holders for Small Parts Machining and Sub-Spindle Operations

1 Recommended for Cut-off with Small Sub-Spindle Clearance

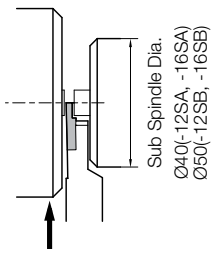
Thin holder head is great for when minimal clearance exists between the main spindle and sub spindle

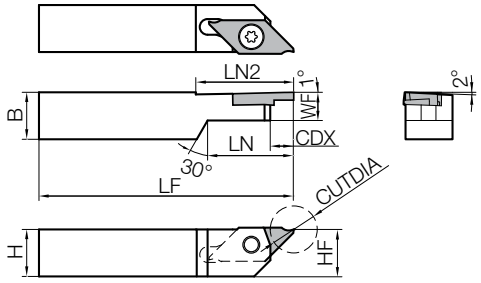
2 Wide Selection of Inserts for Various Applications

Available Chipbreakers : Right lead angle, S Chipbreaker, T Chipbreaker, Without Chipbreaker

Available Insert Grades : PR1425 for Steel Machining, PR1535 for Stainless Steel Machining, and PDL025 for Aluminum Machining

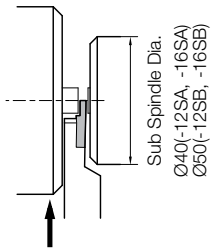
KTKF-S (For Small Diameter Cut-Off / Sub-Spindle)

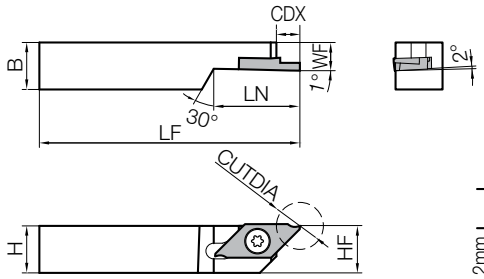


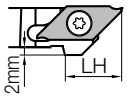


Right-hand Shown

Right-hand Insert for Right-hand Toolholder







KTKF□1010JX-12SA
KTKF□1010JX-16SA
shown in left figure

Left-hand Shown

Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Cut-Off Dia.	Dimensions (mm)									Spare Parts		Applicable Inserts ➡ H6~H7
													Clamp Screw	Wrench	
	R	L	CUTDIA	H	HF	B	LF	LH	LN	*LN2	WF	CDX			
KTKF□ 1010JX-12SA	●	●	5~12	10	10	10	120	15	22	26	7.2	6	SB-4570TRN	LTW-10S	TKF12□...
1212F-12SA	●	●		12	12	12	85	-							
KTKF□ 1212JX-12SB	●	●					120		26						
KTKF□ 1010JX-16SA	●	●	16	10	10	10	120	20	22	30	7.2	8			TKF16□...
1212F-16SA	●	●		12	12	12	85	-							
KTKF□ 1212JX-16SB	●	●					120		26						

- Dimension **CDX** shows the distance from the toolholder to the cutting edge.
- **CUTDIA** dimension differs depending on insert edge width. See Page ➡ **H6~H7** for actual cutting diameter.

*LN2 dimension only applies to right-hand toolholders

Recommended Cutting Conditions ➡ **H52**

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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How to Use

1) When using main spindle only

Workpiece maximum CUTDIA (**Fig.1**) = CUTDIA in toolholder table
Even if the cutting edge runs beyond the center line, the insert does not contact the workpiece, since the workpiece falls off.
(The clearance between the insert and the workpiece is 0.008")

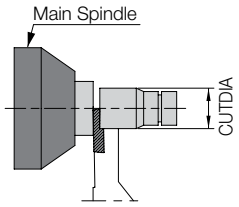


Fig.1
(When the edge is at the center)

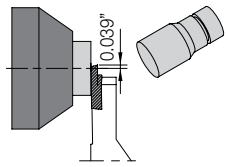


Fig.2
(When the edge is 0.008" beyond the center)

2) When using both Main and Sub spindles

In this case, when the cutting edge runs beyond the center line, the insert will contact the workpiece, since the workpiece does not fall off.
Therefore, the programmed distance beyond the center must be considered.
e.g. When the cutting edge is programmed to run 1mm beyond the center.
Workpiece maximum, CUTDIA2 (**Fig.4**) = [CUTDIA - 0.039"×2] (in)
(The clearance between the insert and the workpiece is 0.008")

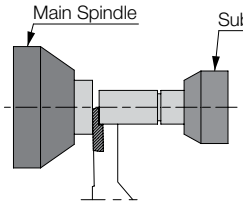


Fig.3
(When the edge is at the center)

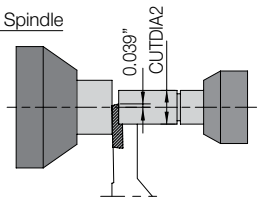


Fig.4
(When the edge is 0.008" beyond the center)

KTKF-JCT

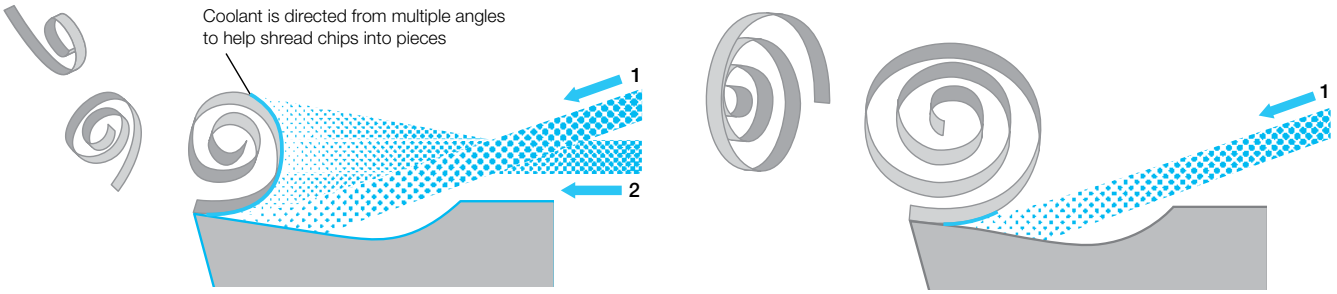
Cut-Off Holders for Small Parts Machining, Great for High Pressure Coolant

KTKF-JCT holders break chips evenly into small pieces with excellent chip control performance when machining difficult-to-cut material and stainless steel.

1 Excellent Chip Control Performance

The KTKF-JCT discharges coolant in two directions toward rake surface of insert and breaks chips into small pieces.

Coolant Discharge Structure Comparison



KTKF-JCT　　Competitor A

Chip Control Comparison (Internal Evaluation)

304

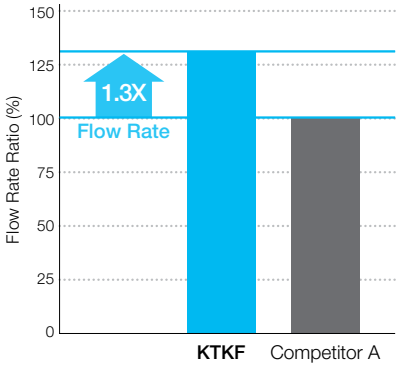
f (ipr)	0.0004	0.0008	0.0012
KTKF -JCT			
Competitor A			

Ti-6Al-4V

f (ipr)	0.0004	0.0008	0.0012
KTKF -JCT			
Competitor A			

Cutting Conditions: Vc = 260 sfm, Wet (Oil-based) Coolant Pressure: 218 psi (Internal)
Workpiece : Ø0.472"

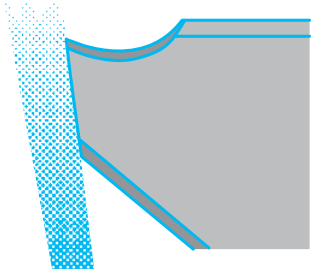
Coolant Flow Rate Comparison (Internal Evaluation)



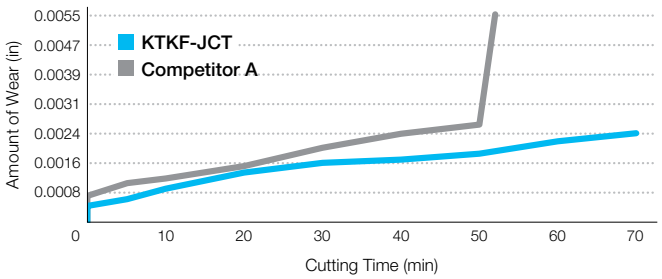
Coolant Pressure: 218 psi (Internal)

2 Superior Coolant Action Improves Tool Life

Coolant is also directed from the flank face of the insert to supply an ample amount of coolant to the tool edge area to help further suppress insert wear.



Wear Resistance Comparison (Internal Evaluation)

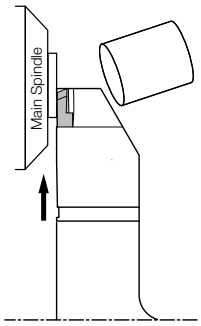


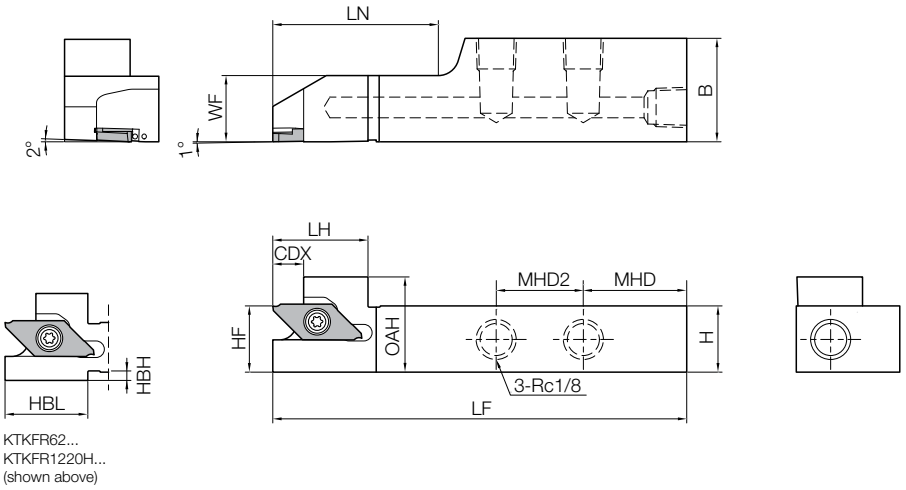
Cutting Conditions: Vc = 330 sfm, f = 0.0008 ipr, Wet (Oil-based)
Lubricating Pressure: 218 psi (Internal) Workpiece: Ti-6Al-4v Ø0.472"

NEW ITEMS!

KTKF-JCT

Right-hand (R)



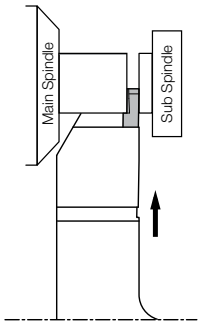


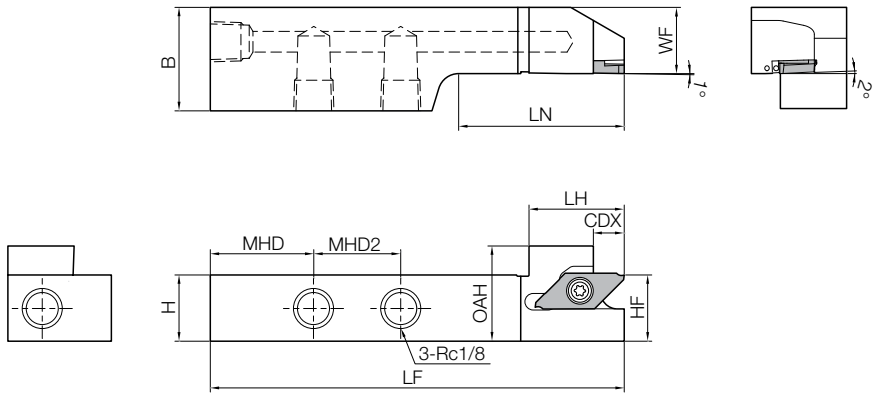
KTKFR62...
KTKFR1220H...
(shown above)

Right-hand Shown

Right-hand Insert for Right-hand Toolholder

Left-hand (L)





Left-hand Shown

Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H=HF	OAH	B	LF	HBH	HBL	LH	LN	WF	CDX	MHD	MHD2	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Plug	Applicable Inserts
NEW KTKFR 62-12JCT	●		inch	0.500	0.775	0.750	4.750	-	0.783	0.783	1.110	0.500	0.295	1.417	-	SB-4590TRWN	FT-10	GP-1	TKF12R...
NEW 82.5-12JCT	●		inch	0.625	0.900	1.000			-	0.901	1.582	0.625	0.295	0.984	1.811				
NEW KTKFR 82.5-16JCT	●		inch	0.625	0.900	1.000			-	0.901	1.582	0.625	0.378	0.984	1.811				TKF16R...
KTKFR 1220H-12JCT	●		mm	12	19	20	100	2	20	20	28	12	7.5	35	-	SB-4590TRWN	FT-10	GP-1	TKF12R...
KTKF[R/L] 1625H-12JCT	●	●	mm	16	23	25		-	-	23	40	16		25	46				TKF12[R/L]...
2025H-12JCT	●	●	mm	20	27	25						20							
KTKF[R/L] 1625H-16JCT	●	●	mm	16	23	25	100	-	-	23	40	16	9.6	25	46	SB-4590TRWN	FT-10	GP-1	TKF16[R/L]...
2025H-16JCT	●	●	mm	20	27	25					41	20							

Recommended Cutting Conditions ➡ **H52**

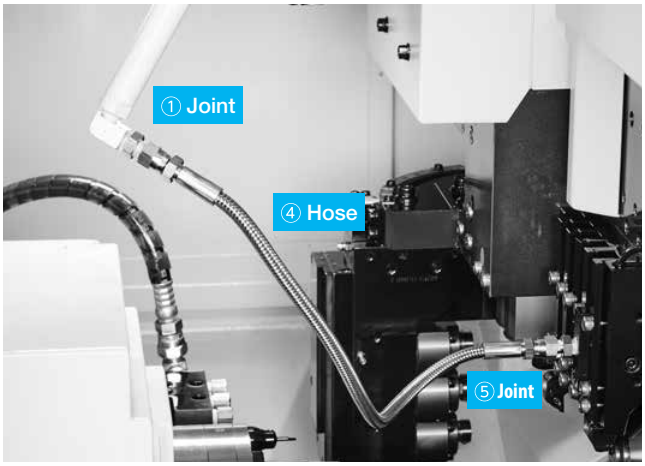
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Coolant Pipe Parts

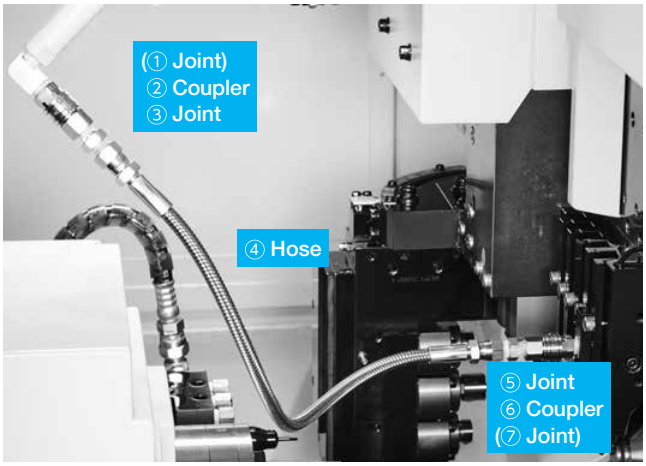
Pipe parts will be required separately if internal coolant is used.

Pump Pressure: up to 2,900 psi
Pump Pressure: up to 1,088 psi if couplers are used

Without Coupler (Pump Pressure: up to 2,900 psi)



With Coupler (Pump Pressure: up to 1,088 psi)



Combination Part Description Example

Part	Description
① Joint	J-ST-R1/8-G1/8
④ Hose	HS-G1/8-G1/8-500
⑤ Joint	J-ST-R1/8-G1/8

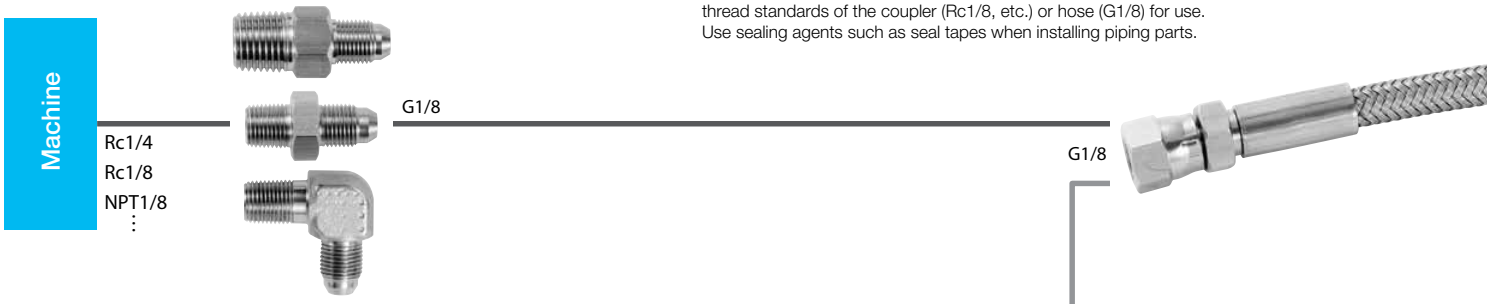
Convert the thread standards on the machine's side (Rc1/4, Rc1/8, NPT1/8, etc.) to the thread standard on the hose side (G1/8) for use.
Use sealing agents such as seal tapes when installing piping parts.

Combination Part Description Example

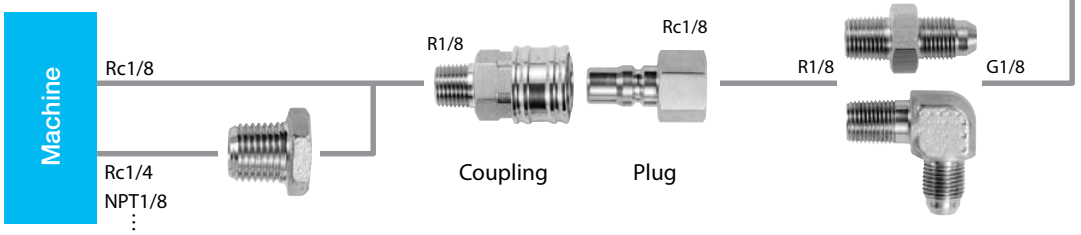
Part	Description
(① Joint)	-
② Coupler	CP-ST-R1/8, P-ST-RC1/8
③ Joint	J-ST-R1/8-G1/8
④ Hose	HS-G1/8-G1/8-500
⑤ Joint	J-ST-R1/8-G1/8
⑥ Coupler	P-ST-RC1/8, CP-ST-R1/8
(⑦ Joint)	-

Convert the thread standards on the machine's side (Rc1/4, Rc1/8, NPT1/8, etc.) to thread standards of the coupler (Rc1/8, etc.) or hose (G1/8) for use.
Use sealing agents such as seal tapes when installing piping parts.

Without Coupler (Pump Pressure: up to 2,900 psi)



With Coupler (Pump Pressure: up to 1,088 psi)



① Joint ② Coupler ③ Joint ④ Hose

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Piping Installation Parts Description

Joint (① ③ ⑤ ⑦)

Pressure Resistance: up to 2,900 psi

Exterior	Description	Thread Standard	Stock
	J-ST-R1/4-G1/8	R1/4 ⇔ G1/8	●
	J-ST-NPT1/8-G1/8	NPT1/8 ⇔ G1/8	●
	J-ST-R1/8-G1/8	R1/8 ⇔ G1/8	●
	J-AN-R1/8-G1/8		●
	J-ST-R1/4-RC1/8	R1/4 ⇔ Rc1/8	●
	J-ST-NPT1/8-RC1/8	NPT1/8 ⇔ Rc1/8	●
	J-ST-R1/8-RC1/8	Rc1/8 ⇔ R1/8 (Extension Joint)	●

● : U.S. Stock

Coupler (② ⑥)

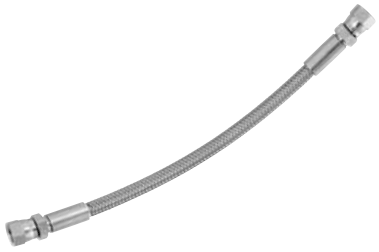
Pressure Resistance: up to 1,088 psi

Exterior	Description	Thread Standard	Stock
	CP-ST-R1/8	R1/8	●
	P-ST-RC1/8	Rc1/8	●

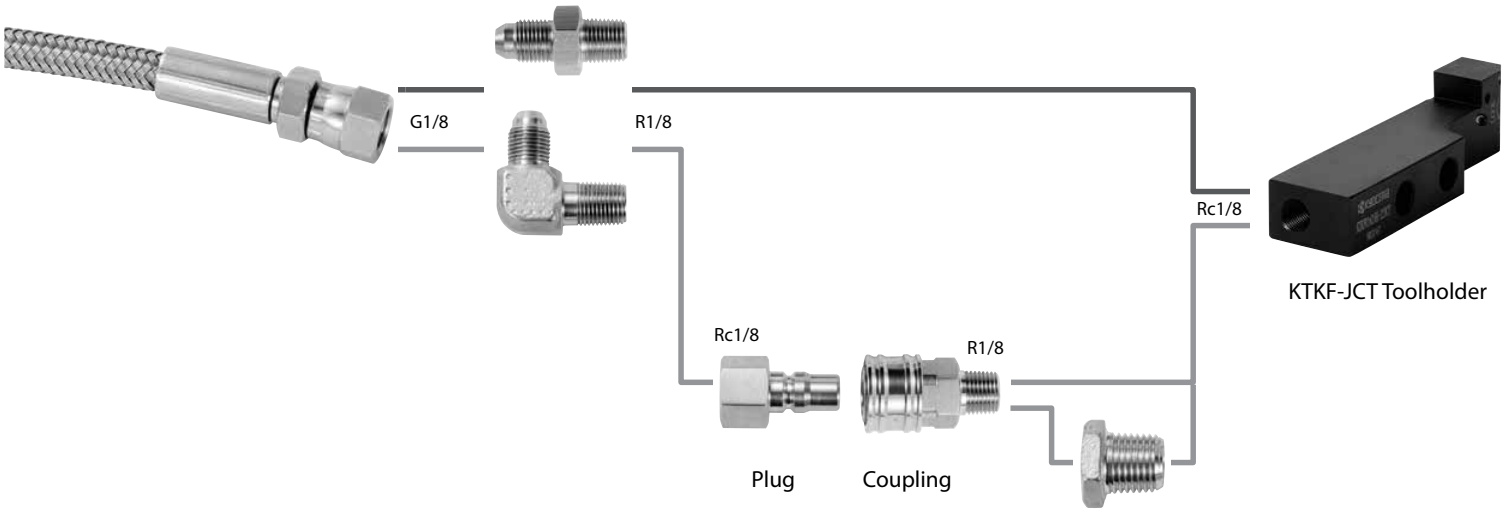
● : U.S. Stock

Hose (④)

Pressure Resistance: up to 2,900 psi

Exterior	Description	Thread Standard	Total Length (mm)	Stock
	**HS-G1/8-G1/8-200**	G1/8	200	●
	HS-G1/8-G1/8-300		300	●
	HS-G1/8-G1/8-400		400	●
	HS-G1/8-G1/8-500		500	●
	HS-G1/8-G1/8-600		600	●
	HS-G1/8-G1/8-800		800	●

● : U.S. Stock



④ Hose ⑤ Joint ⑥ Coupler ⑦ Joint (Extension Joint)

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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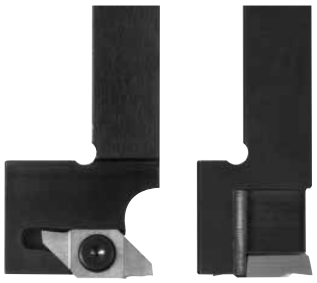
Y-axis Toolholders NEW

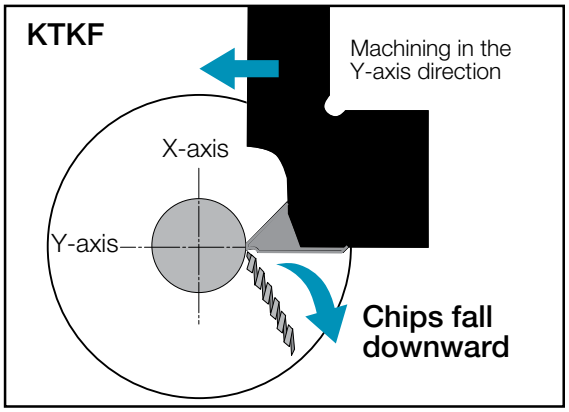
Improved Chip Control

New Toolholder Designs for Better Chip Evacuation in Small Parts Machining



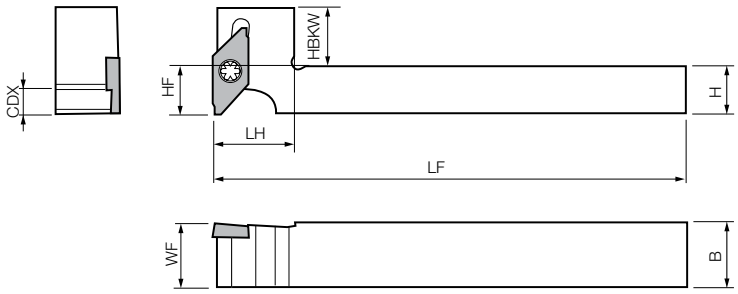
KTKFR-Y SDJCR-Y
E28

1 Controlled Chip Evacuation for Stable Machining



The Y-axis machining direction allows the chips to fall down and away from the workpiece, improving chip evacuation.

KTKF-Y (Y-axis Holder) NEW



• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock		Dimensions (mm)								Spare Parts		Applicable Inserts
												Clamp Screw	Wrench	
		R	L	H	HF	B	LF	LH	WF	LU	HBKW			
KTKFR	1216JX-12-Y	●		12	12	16	120	20	16	6	15	SB-4590TRWN	FT-10	TKF12R...
	1616JX-12-Y	●		16	16	16		25	16		11			

• Dimensions LU shows the distance from the toolholder to the cutting edge

Recommended Cutting Conditions H52

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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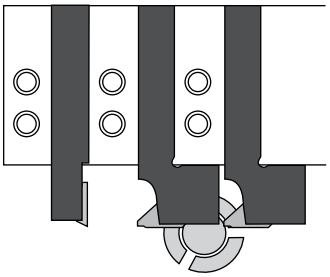
NEW ITEMS!

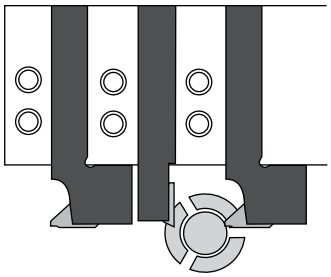
Precautions

Do not use Y-axis toolholders side-by-side to prevent interference (Only two Y-axis holders can be used at the same time)

Interference

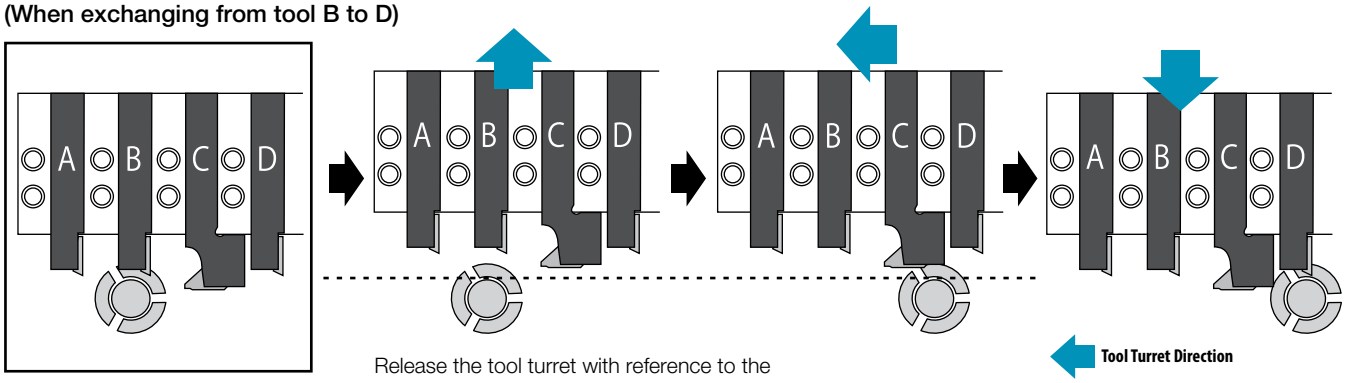


Without Interference



Standard toolholders may be mounted between two Y-axis toolholders

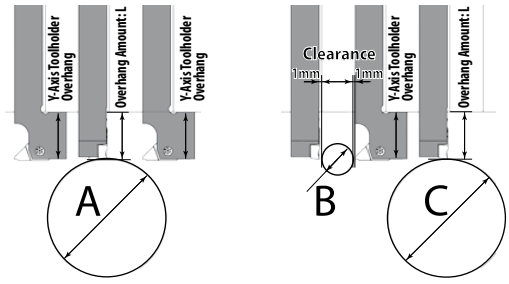
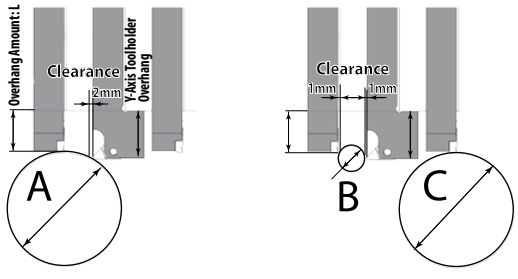
When changing the tool, set the retracted position with reference to the cutting edge of the Y-axis holder (When exchanging from tool B to D)



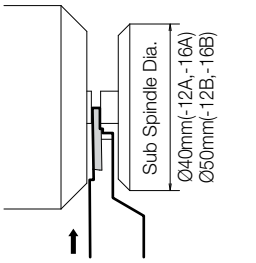
Release the tool turret with reference to the overhang amount of the Y-axis toolholder

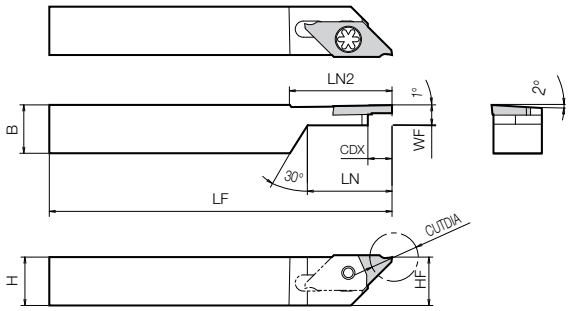
Note that using other toolholder styles together will result in different outside diameters

(Unit: mm)

Y-axis Toolholder Overhang	Examples	Overhang Amount : L / Available Outside Cutting Dia. (Ø)	20	22	25
20		A	Without Restriction	Without Restriction	Without Restriction
		B	13.0	13.0	13.0
		C	Without Restriction	Without Restriction	Without Restriction
25		A	38.0	58.0	Without Restriction
		B	14.9	13.6	13.0
		C	45.0	60.0	Without Restriction

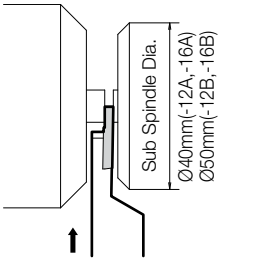
KTKFS (Small Diameter Cut-Off / Sub Spindle)

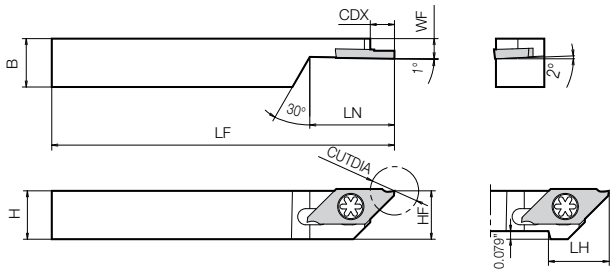




Right-hand Shown

Right-hand Insert for Right-hand Toolholder





KTKFSR/L 6-12JX
KTKFSR/L 6-16JX
KTKFSR/L 1010K-12A
KTKFSR/L 1010K-16A
only for left shape

Left-hand Shown

Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

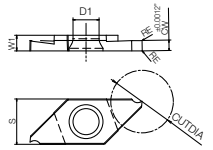
Part Number	Stock		Unit	Cut-Off Dia.	Dimensions									Spare Parts		Applicable Inserts ➡ H19
														Clamp Screw	Wrench	
	R	L		CUTDIA	H	HF	B	LF	LH	LN	*LN2	WF	CDX			
KTKFSR/L 6-12JX	●	●	inch	0.236~0.472	0.375	0.375	0.375	4.750	0.590	0.866	1.024	0.197	0.236	SB-4050TRN	LTW-10S	TKFS12R/L
8-12JX	●	●		0.236~0.472	0.500	0.500	0.500	4.750	-	1.024	1.024	0.197	0.236			
KTKFSR/L 6-16JX	●	●		0.551~0.630	0.375	0.375	0.375	4.750	0.787	0.866	1.181	0.197	0.315	SB-4050TRN	LTW-10S	TKFS16R/L
8-16JX	●	●		0.551~0.630	0.500	0.500	0.500	4.750	-	1.024	1.181	0.197	0.315			
KTKFSR/L 1010K-12A	△	△	mm	6~12	10	10	10	120	15	22	26	5	6	SB-4050TRN	LTW-10S	TKFS12R/L
1212F-12A	△	△		6~12	12	12	12	85	-	22	26	5	6			
1212K-12B	△	△		6~12	12	12	12	120	-	26	26	5	6			
KTKFSR/L 1010K-16A	△	△		14~16	10	10	10	120	20	22	30	5	8	SB-4050TRN	LTW-10S	TKFS16R/L
1212F-16A	△	△		14~16	12	12	12	85	-	22	30	5	8			
1212K-16B	△	△		14~16	12	12	12	120	-	26	30	5	8			

- Dimension **CDX** shows the distance from the toolholder to the cutting edge.
- **CUTDIA** dimension differs depending on insert edge width. See Page ➡ **H19** for actual cutting diameter.

*LN2 dimension only applies to right-hand toolholders

Recommended Cutting Conditions ➡ **H19**

TKFS (CUTDIA)

Insert (Right-handed Insert Shown)	Part Number	Dimensions CW inch	Dimensions CW mm	CUTDIA (in)
	TKFS12R/L 100-S	0.039	1.00	0.236
	150-S	0.059	1.50	0.354
	200-S	0.079	2.00	0.472
	TKFS16R/L 150-S	0.059	1.50	0.551
	200-S	0.079	2.00	0.630

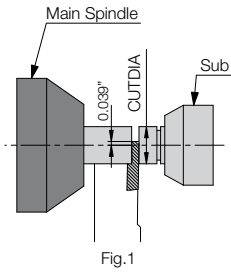


Fig.1

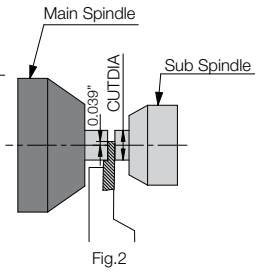


Fig.2

As **Fig.2** shows, the cutting diameter of the insert is measured when the lead edge passes 0.039" past the center line of part.

- As **Fig.1** shows, use KTKFL (Left-hand) when the distance between main spindle and sub spindle are long.
- As **Fig.2** shows, KTKFS is recommended when the workpiece diameters are small and the distance between the main spindle and sub spindle are short

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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NEW ITEMS!

Applicable Inserts

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

		NEW					
P	Carbon Steel / Alloy Steel	●	◔	◔	◔	◔	
M	Stainless Steel	◔	◔	●	◔	◔	
K	Cast Iron						●
N	Non-ferrous Metals						●

Insert (Right-handed Insert Shown)	Part Number	Dimensions (in) CW inch	CW mm	CUTDIA	RE	W1	S	D1	MEGACOAT NANO PR1725 R	PR1725 L	PR1425 R	PR1425 L	PR1535 R	PR1535 L	MEGACOAT PR1225 R	PR1225 L	PVD Coated Carbide PR1025 R	PR1025 L	Carbide KW10 R	KW10 L
	TKFS12R/L 100-S	0.039	1.0	0.236	0.002	0.087	0.343	0.173	●	●	△	△	●	●	●	●	△	△	●	●
	150-S	0.059	1.5	0.354					●	●	△	△	●	●	●	●	△	△	●	●
	200-S	0.079	2.0	0.472					●	●	△	△	●	●	●		△	△	●	●
	TKFS16R/L 150-S	0.059	1.5	0.551	0.002	0.087	0.374	0.173	●	●	△	△	●	●	●	●	△	△	●	●
	200-S	0.079	2.0	0.630					●	●	△	△	●	●	●	●	△	△	●	●

• Lead angle shows the angle when installed in the toolholder.
• As Fig.1 of H18 shows, the cutting diameter of the insert is measured when the lead edge passes 0.039" past the center line of part.

Recommended Cutting Conditions

Workpiece Material	Recommended Grade (Vc sfm) MEGACOAT NANO PLUS	MEGACOAT NANO	MEGACOAT NANO	MEGA COAT	Carbide	TKFS12 Width 0.039" (1.0mm)	TKFS12 Width 0.059" (1.5mm)	TKFS12 Width 0.079" (2.0mm)	TKFS16 Width 0.059" (1.5mm)	TKFS16 Width 0.079" (2.0mm)	Notes
	PR1425	PR1425	PR1535	PR1225	KW10	Feed Rate (ipr)			Feed Rate (ipr)		
Carbon Steel	★ 230~560	☆ 225~550	☆ 230~490	☆ 225~500	-	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	Wet
Alloy Steel	★ 230~560	☆ 225~550	☆ 230~490	☆ 225~500	-	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	
Stainless Steel	☆ 200~460	☆ 200~450	★ 200~400	☆ 200~400	-	0.0004~0.0008	0.0004~0.0008	0.0004~0.0012	0.0004~0.0008	0.0004~0.0012	
Cast Iron	-	-		-	★ 175~325	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	
Aluminum	-	-		-	★ 650~1475	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	0.0004~0.0012	
Brass	-	-		-	★ 325~650	0.0004~0.0016	0.0004~0.0016	0.0004~0.0016	0.0004~0.0016	0.0004~0.0016	

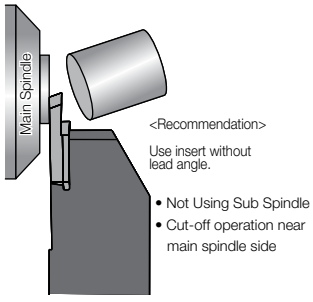
★ : 1st Recommendation ☆ : 2nd Recommendation

KTKF / KTKFS Selection Reference

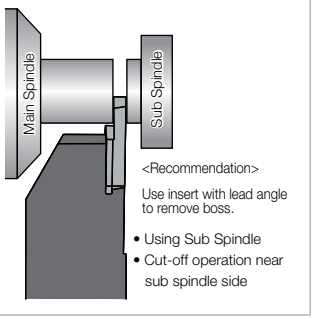
KTKF

• Both Right-hand and Left-hand types are applicable to gang tool post
• Left-hand type is used during cut-off operations using sub spindle

KTKFR Right-Hand Toolholder



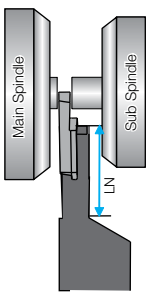
KTKFL Left-Hand Toolholder



KTKFS

• When machining workpiece with small diameter, use KTKFS to reduce overhang distance from the main spindle

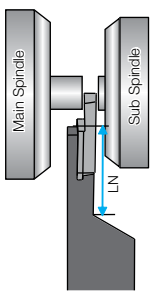
KTKFSR Right-Hand Toolholder



<How to Select> R-Hand
• Long workpiece and more rigidity
• Cut-off operation near main spindle side

<How to Select> LN Dimension
• Sub Spindle Dia. Ø40mm→22 (A type) Ø50mm→26 (B type)

KTKFSL Left-Hand Toolholder



<How to Select> L-Hand
• Short workpiece and less rigidity
• Cut-off operation near main spindle side

<How to Select> LN Dimension
• Sub Spindle Dia. Ø40mm→22 (A type) Ø50mm→26 (B type)

Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

GDM / GDG

Usage Classification
- ◕ : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

		MEGACOAT NANO	MEGA COAT		DLC	Carbide	
P	Carbon Steel / Alloy Steel	◔	◕	◔			
M	Stainless Steel	◕	◔	◔			
N	Non-ferrous Metals				◕	◔	

Insert (Right-handed Insert Shown)			Part Number	Dimensions (in) CW inch	CW mm	CW Tolerance	RE	INSL	S	Lead Angle PSIR℞	MEGACOAT NANO PR1535	MEGA COAT PR1225	MEGA COAT PR1215	DLC PDL025	Carbide GW15	Ref. Page for Toolholder
Cut-off / Low Feed	Low Feed 2-edge		GDM 1316N-003PF	0.051	1.3	±0.0016	0.0012	0.630	0.146	-	●	●	●			H22 H23
			1316N-015PF	0.051	1.3		0.0059				●	●	●			
			1516N-003PF	0.059	1.5		0.0012				●	●	●			
			1516N-015PF	0.059	1.5		0.0059				●	●	●			
			2020N-003PF	0.079	2.0		0.0012	0.787	0.169		●	●				H22 ~ H31
			2020N-015PF	0.079	2.0		0.0059				●	●	●			
			2520N-003PF	0.098	2.5		0.0012				●	●				
			2520N-015PF	0.098	2.5		0.0059				●	●	●			
			3020N-003PF	0.118	3.0		0.0012				●	●				
			3020N-015PF	0.118	3.0		0.0059				●	●	●			
	15° Lead Angle Low Feed / 2-edge		GDM 1316℞-003PF-15D	0.051	1.3		0.0012	0.630	0.146	15°	●	●	●			H22 H23
			1516℞-003PF-15D	0.059	1.5		0.0012				●	●	●			
			1516R-015PF-15D	0.059	1.5		0.0059				●	●	●			
			2020℞-003PF-15D	0.079	2.0		0.0012	0.787	0.169		●	●				
			2020R-015PF-15D	0.079	2.0		0.0059				●	●	●			
			2520℞-003PF-15D	0.098	2.5		0.0012				●	●				
			2520R-015PF-15D	0.098	2.5		0.0059				●	●	●			
			3020℞-003PF-15D	0.118	3.0		0.0012				●	●				
			3020R-015PF-15D	0.118	3.0		0.0059				●	●	●			
Cut-off / Medium Feed	Medium Feed 2-edge		GDM 2020N-010PQ	0.079	2.0	±0.0012	0.0039	0.787	0.169	-	●	●				H22 ~ H31
			2520N-010PQ	0.098	2.5						●	●				
			3020N-010PQ	0.118	3.0						●	●				
	15° Lead Angle Medium Feed / 2-edge		GDM 2020R-010PQ-15D	0.079	2.0	±0.0012	0.0039	0.787	0.169	15°	●	●				
			2520R-010PQ-15D	0.098	2.5						●	●				
			3020R-010PQ-15D	0.118	3.0						●	●				
Cut-off / Low Cutting Force	2-edge		GDG 2020N-005PG	0.079	2.0	±0.0008	0.0020	0.787	0.169	-	●	●		●	●	
			2520N-005PG	0.098	2.5						●	●		●	●	
			3020N-005PG	0.118	3.0						●	●		●	●	
	15° Lead Angle 2-edge		GDG 2020R-005PG-15D	0.079	2.0	±0.0008	0.0020	0.787	0.169	15°	●	●		●	●	
			2520R-005PG-15D	0.098	2.5						●	●		●	●	
			3020R-005PG-15D	0.118	3.0						●	●		●	●	

Using PM/PF Chipbreaker (designed for cut-off) for grooving will not create a flat bottom (See Fig.)

Recommended Cutting Conditions ➡ **H32~H33**

Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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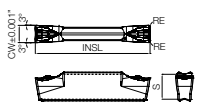
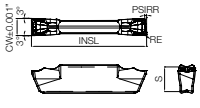
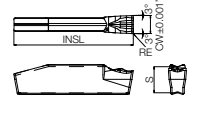
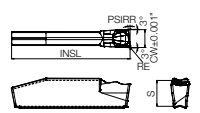
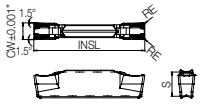
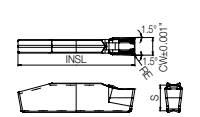
GDM / GDMS

Classification of Usage
● : Light Interruption / 1st Choice
◔ : Light Interruption / 2nd Choice
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

P	Carbon Steel / Alloy Steel	◔	●	◔
M	Stainless Steel	●	◔	◔
K	Cast Iron			

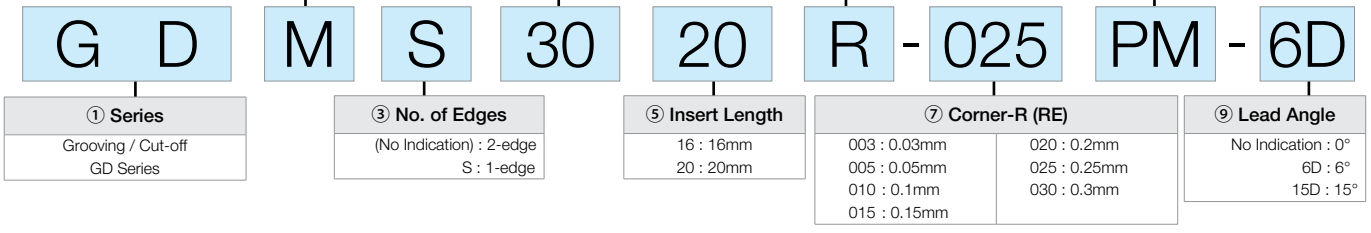
Insert (Right-handed Insert Shown)			Part Number	Dimensions (in) CW inch	CW mm	CW Tolerance	RE	INSL	S	Lead Angle PSIR°	MEGA COAT NANO PR1535	MEGACOAT PR1225	MEGACOAT PR1215	Ref. Page for Toolholder
Cut-off / General Purpose	2-edge		GDM 2020N-020PM	0.079	2.0	±0.0012	0.008	0.787	0.169	-	●	●	●	H22 ~ H31
			2520N-020PM	0.098	2.5		0.008				●	●	●	
			3020N-025PM	0.118	3.0		0.010				●	●	●	
			4020N-030PM	0.157	4.0		0.012				●	●	●	
	2-edge		GDM 2020R-020PM-6D	0.079	2.0	±0.0012	0.008	0.787	0.169	6°	●	●	●	
			2520R-020PM-6D	0.098	2.5		0.008				●	●	●	
			3020R-025PM-6D	0.118	3.0		0.010				●	●	●	
	1-edge		GDMS 2020N-020PM	0.079	2.0	±0.0012	0.008	0.787	0.169	-	●	●	●	
			3020N-025PM	0.118	3.0		0.010				●	●	●	
			4020N-030PM	0.157	4.0		0.012				●	●	●	
	1-edge		GDMS 2020R-020PM-6D	0.079	2.0	±0.0012	0.008	0.787	0.169	6°	●	●	●	
			3020R-025PM-6D	0.118	3.0		0.010				●	●	●	
			4020R-030PM-6D	0.157	4.0		0.012				●	●	●	
Grooving & Cut-Off / High Feed Rate	High feed 2-edge		GDM 2020N-020PH	0.079	2.0	±0.0012	0.008	0.787	0.169	-	●	●	●	
			3020N-030PH	0.118	3.0		0.012				●	●	●	
			4020N-030PH	0.157	4.0		0.012				●	●	●	
	High feed 1-edge		GDMS 2020N-020PH	0.079	2.0	±0.0012	0.008	0.787			●	●	●	
			3020N-030PH	0.118	3.0		0.012				●	●	●	
			4020N-030PH	0.157	4.0		0.012				●	●	●	

Using PM/PF Chipbreaker (designed for cut-off) for grooving will not create a flat bottom (See Fig.)

Recommended Cutting Conditions ➔ H32~H33

Inserts are sold in 10 piece boxes

Insert Identification System



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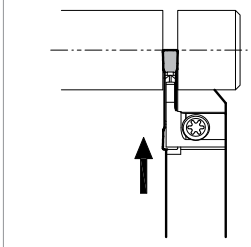
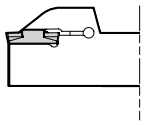
KGD (for Small Parts Machining)

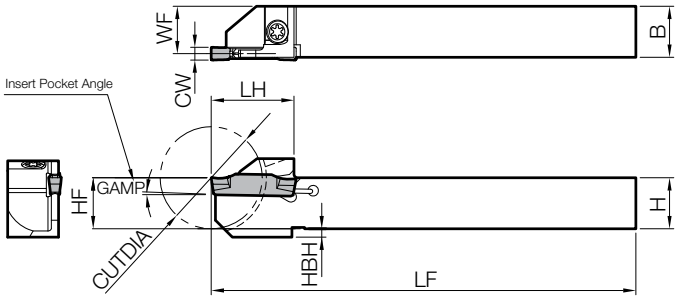
Insert Width: 0.059"~0.157" / 1.3mm~4.0mm





KGD□2012K-○D34
KGD□2020K-○D34
Shown in figure above

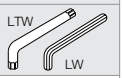
• Right-hand shown



Toolholder Dimensions (Inch Size)

Part Number	Stock		Cut-Off Dia.	Dimensions (in)							Angle (°)	Insert Width CW (in)		Spare Parts	
														Clamp Bolt	Wrench
	R	L	CUTDIA	H	HF	HBH	B	LF	LH	WF	GAMP	MIN	MAX		
KGD□ 6-1.5JX	●	●	0.787	0.375	0.375	0.098	0.375	4.75	0.709	0.351	1°	-	0.059	SB-40120TR	LTW-15S
8-1.5JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.476					
KGD□ 6-2JX	●	●	0.787	0.375	0.375	0.098	0.375	4.75	0.709	0.342	1°	0.079	0.118		
8-2JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.467					
10-2JX	●	●	1.259	0.625	0.625	-	0.625	4.75	0.965	0.592					
KGD□ 6-2.4JX	●	●	0.787	0.375	0.375	0.098	0.375	4.75	0.709	0.336	1°	0.094	0.118		
8-2.4JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.461					
10-2.4JX	●	●	1.259	0.625	0.625	-	0.625	4.75	0.965	0.586					
KGD□ 8-3JX	●	●	0.944	0.500	0.500	0.051	0.500	4.75	0.768	0.453	1°	0.118	0.118		
10-3JX	●	●	1.259	0.625	0.625	-	0.625	4.75	0.965	0.578			0.157		
KGD□ 10-3D38JX	●	●	1.496	0.625	0.625	-	0.625	4.75	1.142	0.578	1°	0.118	0.157	SE-50125TR	LTW-20
12-3D42JX	●	●	1.653	0.750	0.750	-	0.750	4.75	1.220	0.703					
43-3D42JX	●	●	1.653	0.750	0.750	-	0.500	4.75	1.220	0.453					

Toolholder Dimensions (Metric Size)

Part Number	Stock		Cut-Off Dia.	Dimensions (mm)							Angle (°)	Insert Width CW (mm)		Spare Parts	
														Clamp Bolt/Screw	Wrench
	R	L	CUTDIA	H	HF	HBH	B	LF	LH	WF	GAMP	MIN	MAX		
KGD□ 1010JX-1.3D16	●	●	16	10	10	2	10	120	18.0	9.9	5°	1.3	1.3	SB-40120TR	LTW-15S
1010JX-1.3	●	●	20	10	10	2	10	120	18.0	9.5					
1212F-1.3D16	●	●	16	12	12	2	12	85	19.5	11.9					
1212JX-1.3D16	●	●	16	12	12	2	12	120	19.5	11.9					
1212F-1.3	●	●	24	12	12	2	12	85	19.5	11.5					
1212JX-1.3	●	●	24	12	12	2	12	120	19.5	11.5					
KGD□ 1010JX-1.5D16	●	●	16	10	10	2	10	120	18.0	9.7	5°	1.5	1.5	SB-40120TR	LTW-15S
1010JX-1.5	●	●	20	10	10	2	10	120	18.0	9.4					
1212F-1.5D16	●	●	16	12	12	2	12	85	19.5	11.7					
1212JX-1.5D16	●	●	16	12	12	2	12	120	19.5	11.7					
1212F-1.5	●	●	24	12	12	2	12	85	19.5	11.4					
1212JX-1.5	●	●	24	12	12	2	12	120	19.5	11.4					
KGD□ 1010JX-2	●	●	20	10	10	2	10	120	18.0	9.2	1°	2.0	3.0	SB-40120TR	LTW-15S
1212F-2	●	●	24	12	12	2	12	85	19.5	11.2					
1212JX-2	●	●	24	12	12	2	12	120	19.5	11.2					
1616JX-2	●	●	32	16	16	-	16	120	24.5	15.2					
2012K-2D34	●	●	34	20	20	-	12	125	32.5	11.2	0°			HH5X16	LW-4
2020K-2D34	●	●	34	20	20	-	20	125	32.5	19.2					
KGD□ 1010JX-2.4	●	●	20	10	10	2	10	120	18.0	9.0	1°	2.4	3.0	SB-40120TR	LTW-15S
1212F-2.4	●	●	24	12	12	2	12	85	19.5	11.0					
1212JX-2.4	●	●	24	12	12	2	12	120	19.5	11.0					
1616JX-2.4	●	●	32	16	16	-	16	120	24.5	15.0					
2012K-2.4D34	●	●	34	20	20	-	12	125	32.5	11	0°			HH5X16	LW-4
2020K-2.4D34	●	●	34	20	20	-	20	125	32.5	19					
KGD□ 1212JX-3	●	●	24	12	12	2	12	120	19.5	10.8	1°	3.0	3.0	SB-40120TR	LTW-15S
1616JX-3	●	●	32	16	16	-	16	120	24.5	14.8			4.0		
1616JX-3D38	●	●	38	16	16	-	16	120	29.0	14.8	1°	3.0	4.0	SE-50125TR	LTW- 20
1913K-3D38	●	●	38	19	19	-	13	125	29.0	11.8					
2012JX-3D42	●	●	42	20	20	-	12	120	31.0	10.8					
2012JX-3D51	●	●	51	20	20	-	12	120	36.0	10.8					
2020JX-3D42	●	●	42	20	20	-	20	120	31.0	18.8					
2020JX-3D51	●	●	51	20	20	-	20	120	36.0	18.8					

Note 1) 0.157" (4mm) width insert can be installed in KGD□8-3JX and KGD□1212JX-3, but is not recommended due to the toolholder's rigidity.
2) Recommended tightening torque for clamp screw is 2.0Nm for SB-40120TR and 2.5Nm for SE-50125TR.
3) When machining material greater than Ø1.417" (36mm) with KGD□...-3D38(JX), KGD□...-3D42(JX), or KGD□...-3D51 toolholders, use 1-edge inserts. Max. workpiece diameter for 2-edge inserts is Ø1.417" (36mm)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **H20-H21**

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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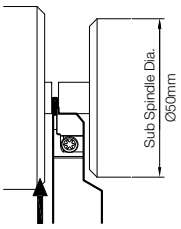
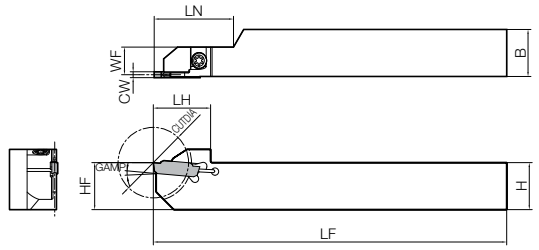
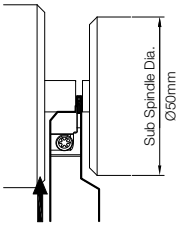
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

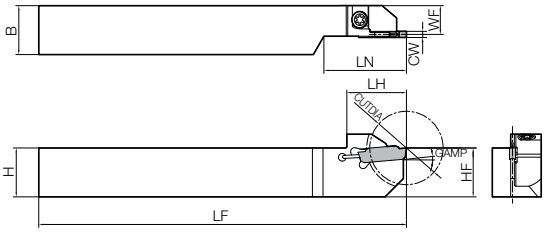
KGDS (Small Diameter Cut-Off / Sub Spindle)





Right-hand Shown





Left-hand Shown

Toolholder Dimensions

Part Number		Stock R	Stock L	Cut-Off Dia. CUTDIA	Dimensions (mm) H	HF	B	LF	LH	LN	WF	Angle (°) GAMP	Insert Width CW (mm) MIN	MAX	Spare Parts: Clamp Screw	Spare Parts: Wrench
KGDS[R/L]	1616JX-1.3B	●	●	24	16	16	16	120	19.5	27	9.50	5°	1.3	1.3	SB-40120TR	LTW-15S
	1616JX-1.5B	●	●								9.40		1.5	1.5		
	1616JX-2B	●	●								9.20	1°	2.0	3.0		

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **H20-H21**

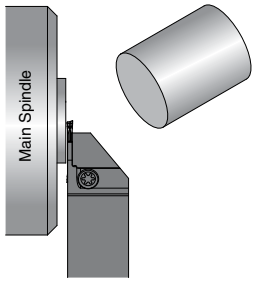
KGD / KGDS Selection Reference

KGD

Standard Type

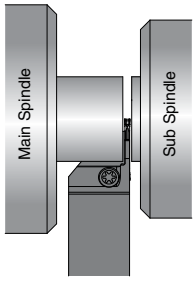
· Both Right-hand and Left-hand types are applicable to gang tool post.
· Left-hand type is used during cut-off operation using sub spindle.

KGDR (Right-hand Toolholder)



<1st. Recommendation>
Use insert with lead angle to remove boss.
· Not using sub spindle
· Cut-off operation near main spindle side

KGDL (Left-hand Toolholder)



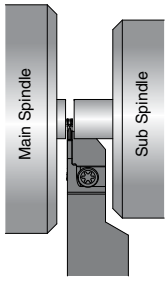
<1st. Recommendation>
Use insert without lead angle.
· Using sub spindle
· Cut-off operation near sub spindle side

KGDS

Sub Spindle Type

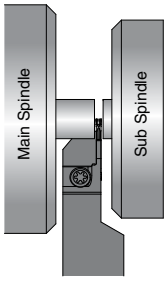
· When machining a workpiece with a small diameter, use KGDS to reduce overhang distance from the main spindle.

KGDSR (Right-hand Toolholder)



· Long workpiece and more rigidity
· Cut-off operation near main spindle side

KGDSL (Left-hand Toolholder)



· Short workpiece and less rigidity
· Cut-off operation near sub spindle side

Toolholder Identification System (Small Diameter)

KGD
KGDS

R	1616	JX	–	3	D38
				1.3	B

Hand of Tool	Shank Width	Overall Length	Compatible Insert Width	Other
R : Right-hand L : Left-hand	16mm X 16mm	120mm	GDM/GDMS Width: 1.3mm	B: Sub-spindle Compatible

Compatible Insert Width	Other
GDM/GDMS Width: 3~4mm	D38: CUTDIA = 38mm

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGD-JCT for Small Parts

Small Diameter Grooving / Cut-Off

Coolant-Through Cut-Off Holders for Small Parts Machining

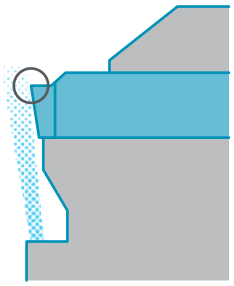
Improved Tool Life Lowers Machining Costs

Optimized Coolant Hole Position

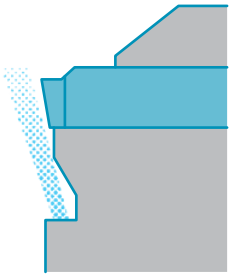
Discharges Coolant towards the Flank Face of the Insert

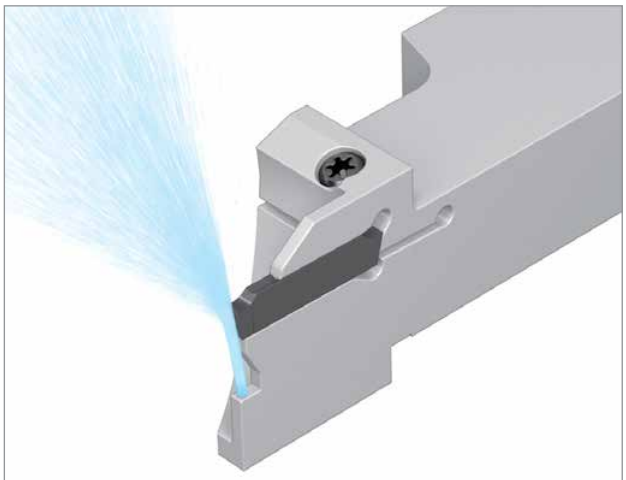
Coolant Discharge

KGD-JCT
Sufficient cooling towards the cutting edge



Competitor A
Coolant does not flow directly towards the cutting edge

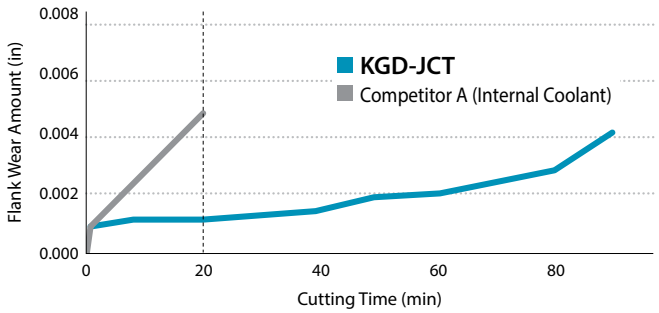




Effective Cooling of the Cutting Edge

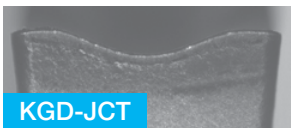
Wear Resistance Comparison

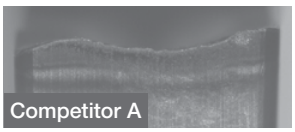
(Internal Evaluation)



Cutting Conditions : Vc = 260 sfm, f=0.0024 ipr (at~Ø 0.079" : f = 0.0007 (ipr)
KGDR1625H-2JCT, GDM2020N-015PF PR1535 (Insert Width : 0.079")
Workpiece : 304 (Ø0.984")
Internal Coolant(218 psi) Cut-off

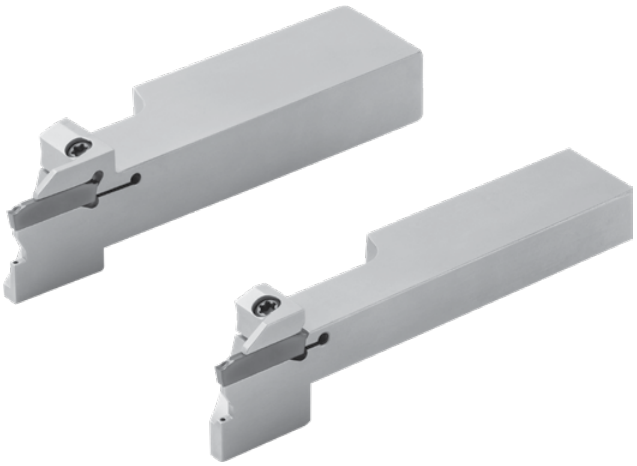
Cutting Edge (After Machining 20 min)





High density and high speeds coolant provides effective cooling of the cutting edge

Superior cooling action improves tool life



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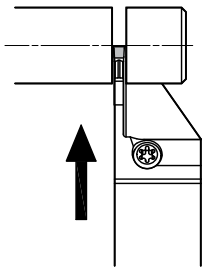
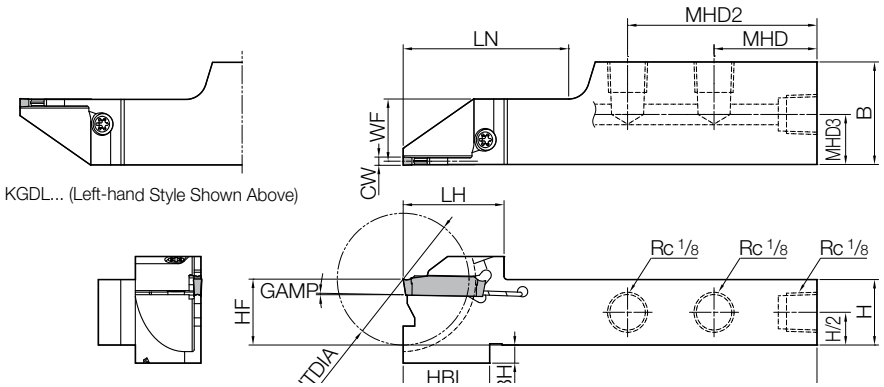
KGD-JCT (for Small Parts Machining / Jet Coolant-Through) NEW

Insert Width: 0.079"~0.157" / 2.0mm~4.0mm





• Right-hand shown

Toolholder Dimensions (Metric Size)

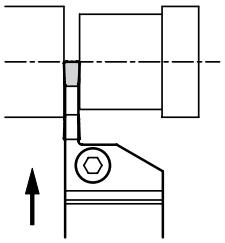
Part Number	Stock		Cut-Off Dia.	Dimensions (mm)												Insert Width CW (mm)		Spare Parts		
																		Clamp Bolt	Wrench	Plug
	R	L	CUTDIA	H=HF	HBH	B	LF	LH	HBL	LN	WF	MHD	MHD2	MHD3	GAMP	MIN	MAX			
KGDR 1220H-2JCT	●	●	24	12	8.5	20	100	19.5	21	44	11.2	35	-	8.4	1°	2.0	3.0	SB-40120TR	LTW-15S	GP-1
KGDL 1220H-2JCT	●	●							21.5					7.7						
KGDR 1625H-2JCT	●	●	32	16	4.5	25		24.5	21	40	15.2	25	46	12.2						
KGDL 1625H-2JCT	●	●												7.7						
KGDR 1220H-2.4JCT	●	●	24	12	8.5	20	100	19.5	21	44	11	35	-	8.4	1°	2.4	3.0			
KGDL 1220H-2.4JCT	●	●							21.5					7.7						
KGDR 1625H-2.4JCT	●	●	32	16	4.5	25		24.5	21	40	15	25	46	12.2						
KGDL 1625H-2.4JCT	●	●												7.7						
KGDR 1220H-3JCT	●	●	24	12	8.5	20	100	19.5	21	44	10.8	35	-	8.6	1°	3.0	3.0			
KGDL 1220H-3JCT	●	●							21.5					7.7						
KGDR 1625H-3JCT	●	●	32	16	4.5	25		24.5	21	40	14.8	25	46	12.2			4.0			
KGDL 1625H-3JCT	●	●												7.7						

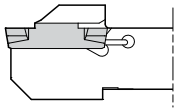
Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➔ **H20-H21**

Coolant Connections and Pipe Parts ➔ **H15-H16**
Recommended Cutting Conditions ➔ **H32~H33**

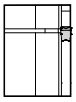
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

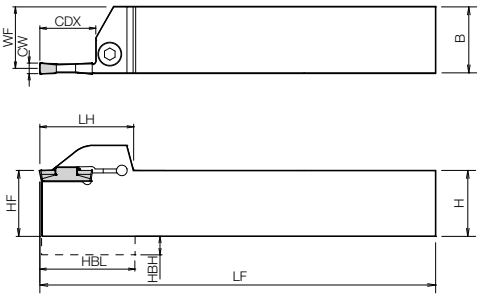
KGD (Integral-Style)





KGD□1216JX-3T06
KGD□1216JX-4T06
Shown in figure above





• Right-hand shown

Toolholder Dimensions (Inch Size)

Width (in)	Max. D.O.C. (in)	Part Number	Stock R	Stock L	H	HF	HBH	B	LF	LH	HBL	WF	CDX*	Insert Width CW (in) MIN	Insert Width CW (in) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench
0.079" (2mm)	0.669" (17mm)	KGD□ 12-2T17	●	●	0.75	0.75	-	0.75	4.92	1.28	-	0.71	0.669" (17mm)	0.079" (2mm)	0.118" (3mm)	HH5X16	LW-4
		16-2T17	●	●	1.00	1.00	-	1.00	5.90	1.28	-	0.96				HH5X25	
0.118" (3mm)	0.393" (10mm)	KGD□ 12-3T10	●	●	0.75	0.75	-	0.75	4.92	1.20	-	0.70	0.393" (10mm)	0.118" (3mm)	0.157" (4mm)	HH5X16	LW-4
		16-3T10	●	●	1.00	1.00	-	1.00	5.90	1.20	-	0.95				HH5X25	
	0.787" (20mm)	KGD□ 12-3T20	●	●	0.75	0.75	-	0.75	4.92	1.35	-	0.70	0.787" (20mm)			HH5X16	LW-4
		16-3T20	●	●	1.00	1.00	-	1.00	5.90	1.39	-	0.95				HH5X25	
	NEW 1.000" (25.4mm)	KGD□ 12-3T254	●	●	0.75	0.75	-	0.75	4.92	1.52	-	0.70	1.000" (25.4mm)			HH5X16	LW-4
		16-3T254	●	●	1.00	1.00	-	1.00	5.90	1.52	-	0.95				HH5X25	
0.157" (4mm)	0.393" (10mm)	KGD□ 12-4T10	●	●	0.75	0.75	-	0.75	4.92	1.20	-	0.68	0.393" (10mm)	0.157" (4mm)	0.197" (5mm)	HH5X16	LW-4
		16-4T10	●	●	1.00	1.00	-	1.00	5.90	1.20	-	0.93				HH5X25	
	0.787 (20mm)	KGD□ 12-4T20	●	●	0.75	0.75	-	0.75	4.92	1.35	-	0.68	0.787 (20mm)			HH5X16	LW-4
		16-4T20	●	●	1.00	1.00	-	1.00	5.90	1.39	-	0.93				HH5X25	
	0.984 (25mm)	KGD□ 16-4T25	●	●	1.00	1.00	-	1.00	5.90	1.59	-	0.93	0.984 (25mm)			HH5X25	LW-4
0.197" (5mm)	0.393 (10mm)	KGD□ 12-5T10	●	●	0.75	0.75	-	0.75	4.92	1.20	-	0.66	0.393 (10mm)	0.197" (5mm)	0.236" (6mm)	HH5X16	LW-4
		16-5T10	●	●	1.00	1.00	-	1.00	5.90	1.20	-	0.91				HH5X25	
	0.669 (17mm)	KGD□ 12-5T17	●	●	0.75	0.75	-	0.75	4.92	1.47	-	0.66	0.669 (17mm)			HH5X16	LW-4
		16-5T17	●	●	1.00	1.00	-	1.00	5.90	1.47	-	0.91				HH5X25	
	0.984 (25mm)	KGD□ 16-5T25	●	●	1.00	1.00	-	1.00	5.90	1.59	-	0.91	0.984 (25mm)			HH5X25	LW-4
0.236" (6mm)	0.591 (15mm)	KGD□ 16-6T15	●	●	1.00	1.00	-	1.00	5.90	1.28	-	0.89	0.591 (15mm)	0.236" (6mm)	0.236" (6mm)	HH5X25	LW-4
	1.181 (30mm)	KGD□ 16-6T30	●	●	1.00	1.00	-	1.00	5.90	1.79	-	0.89	1.181 (30mm)				
0.315" (8mm)	0.984 (25mm)	KGD□ 16-8T25	●	●	1.00	1.00	0.26	1.00	5.90	1.65	1.69	0.88	0.984 (25mm)	0.315" (8mm)	0.315" (8mm)	HH6X25	LW-5

Note 1) Dimension CDX* : Shows the maximum grooving depth. If the dimension CDX is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
2) Recommended tightening torque for clamp bolt is 6.5Nm for HH5X○○ and 8.0Nm for HH6X25.
3) Above toolholders can also be used for cut-off applications.

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **H20-H21**

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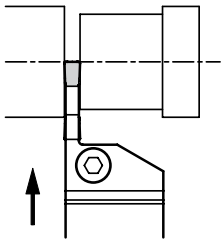
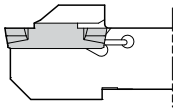
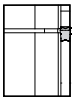
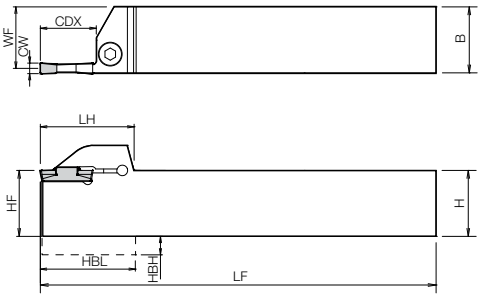
KGD (Integral-Style)





KGD□1216JX-3T06
KGD□1216JX-4T06
Shown in figure above





• Right-hand shown

Toolholder Dimensions (Metric Size)

Width (mm)	Max. D.O.C. (mm)	Part Number	Stock R	Stock L	H	HF	HBH	B	LF	LH	HBL	WF	CDX*	Insert Width CW (mm) MIN	Insert Width CW (mm) MAX	Spare Parts: Clamp Bolt/Screw	Spare Parts: Wrench
2.0	6	KGD□ 1616H-2T06	●	●	16	16	4.0	16	100	27.7	28.0	15.2	6	2.0	3.0	HH5X16	LW-4
		2020K-2T06	●	●	20	20	-	20	125	28.0	-	19.2				HH5X16	
		2525M-2T06	●	●	25	25	-	25	150	28.0	-	24.2				HH5X25	
	10	KGD□ 1616H-2T10	●	●	16	16	4.0	16	100	30.2	30.5	15.2	10			HH5X16	LW-4
		2020K-2T10	●	●	20	20	-	20	125	30.5	-	19.2				HH5X16	
		2525M-2T10	●	●	25	25	-	25	150	30.5	-	24.2				HH5X25	
	17	KGD□ 1616H-2T17	●	●	16	16	4.0	16	100	31.2	31.5	15.2	17			HH5X16	LW-4
		2012K-2T17	●	●	20	20	-	12	125	32.5	-	11.2				HH5X16	
		2020K-2T17	●	●	20	20	-	20	125	32.5	-	19.2				HH5X16	
		2525M-2T17	●	●	25	25	-	25	150	32.5	-	24.2				HH5X25	
2.4	17	KGD□ 2012K-2.4T17	●	●	20	20	-	12	125	32.5	-	11.0	17	2.4	3.0	HH5X16	LW-4
		2020K-2.4T17	●	●	20	20	-	20	125	32.5	-	19.0				HH5X16	
3.0	6	KGD□ 1216JX-3T06	●	●	12	12	2.0	16	120	19.5	19.0	14.8	6	3.0	4.0	SE-50125TR	LTW-20
		1616H-3T06	●	●	16	16	4.0	16	100	27.7	28.0	14.8				HH5X16	LW-4
		2020K-3T06	●	●	20	20	-	20	125	28.0	-	18.8				HH5X16	
		2525M-3T06	●	●	25	25	-	25	150	28.0	-	23.8				HH5X25	
	10	KGD□ 1616H-3T10	●	●	16	16	4.0	16	100	30.2	30.5	14.8	10			HH5X16	LW-4
		2020K-3T10	●	●	20	20	-	20	125	30.5	-	18.8				HH5X16	
		2525M-3T10	●	●	25	25	-	25	150	30.5	-	23.8				HH5X25	
	20	KGD□ 1616H-3T20	●	●	16	16	4.0	16	100	34.2	34.5	14.8	20			HH5X16	LW-4
		2012K-3T20	●	●	20	20	-	12	125	34.5	-	10.8				HH5X16	
		2020K-3T20	●	●	20	20	-	20	125	34.5	-	18.8				HH5X16	
		2525M-3T20	●	●	25	25	-	25	150	35.5		23.8				HH5X25	
4.0	6	KGD□ 1216JX-4T06	●	●	12	12	2.0	16	120	19.5	19.0	14.3	6	4.0	5.0	SE-50125TR	LTW-20
	10	KGD□ 2020K-4T10	●	●	20	20	-	20	125	30.5	-	18.3	10			HH5X16	LW-4
		2525M-4T10	●	●	25	25	-	25	150	30.5	-	23.3				HH5X25	
	20	KGD□ 2020K-4T20	●	●	20	20	-	20	125	34.5	-	18.3	20			HH5X16	
		2525M-4T20	●	●	25	25	-	25	150	35.5	-	23.3				HH5X25	
	25	KGD□ 2525M-4T25	●	●	25	25	-	25	150	40.5	-	23.3	25			HH5X25	

Note 1) Dimension CDX* : Shows the maximum grooving depth. If the dimension CDX is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).
2) Recommended tightening torque for clamp bolt/screw is 6.5Nm for HH5X○○, 8.0Nm for HH6X25 and 2.5Nm for SE-50125TR.
3) Above toolholders can also be used for cut-off applications.

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **H20-H21**

KGD-JCT

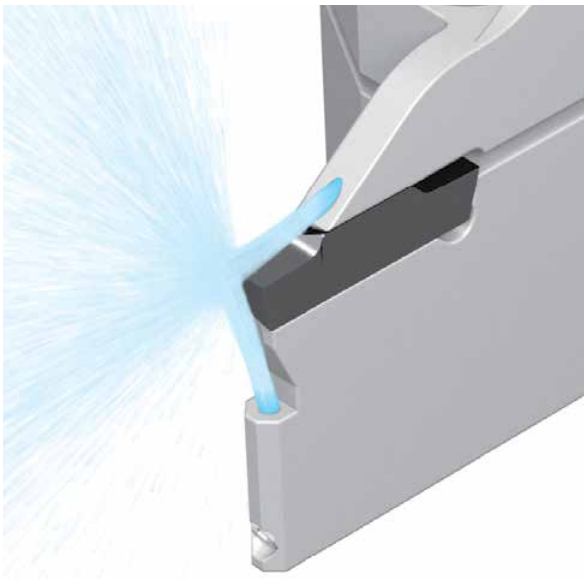
Coolant-Through Holders for External Grooving and Cut-Off

Coolant is Directed from the Rake Surface and the Flank Face of the Insert
Improved Chip Control and Longer Tool Life for External Grooving and Cut-off

1 Superior Chip Control Performance

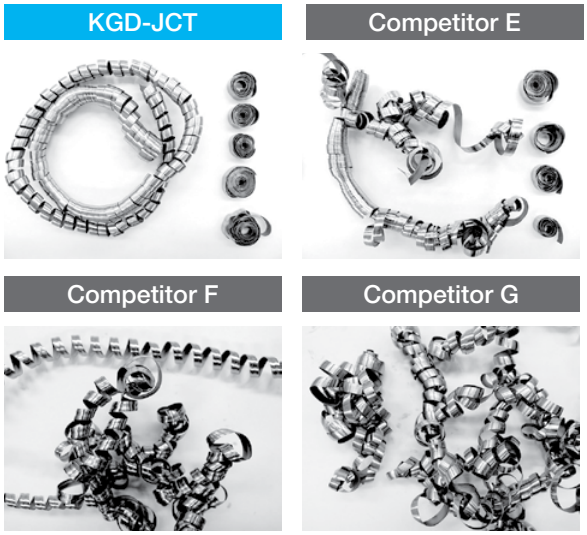
Coolant towards the rake face

Coolant hole position and angle improve chip control



Chip Control Comparison (Internal Evaluation)

KGD-JCT showed better chip control performance even at lower feed rates
f = 0.002 ipr (218 psi)

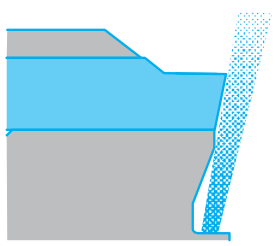


Cutting Conditions: Vc = 490 sfm, f = 0.002 ipr, d = 0.315", Wet
Edge Width 4 mm (0.157") Workpiece: 4131 Grooving

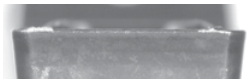
2 Keeping the Cutting Edge Cool Leads to Longer Tool Life

Coolant towards the rake surface and the flank face of the insert
Directing coolant towards the cutting edge lengthens tool life

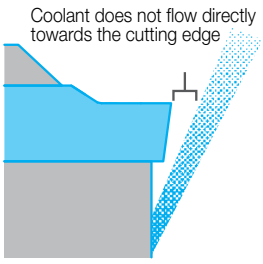
KGD-JCT



After Machining 39 min

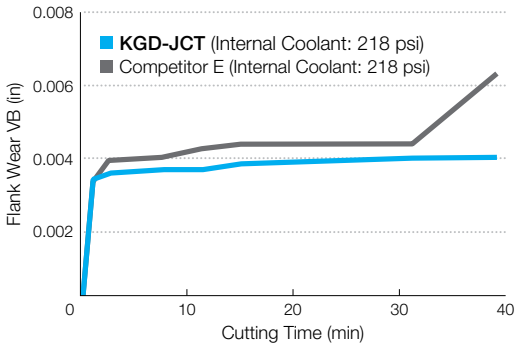


Competitor E



Defect

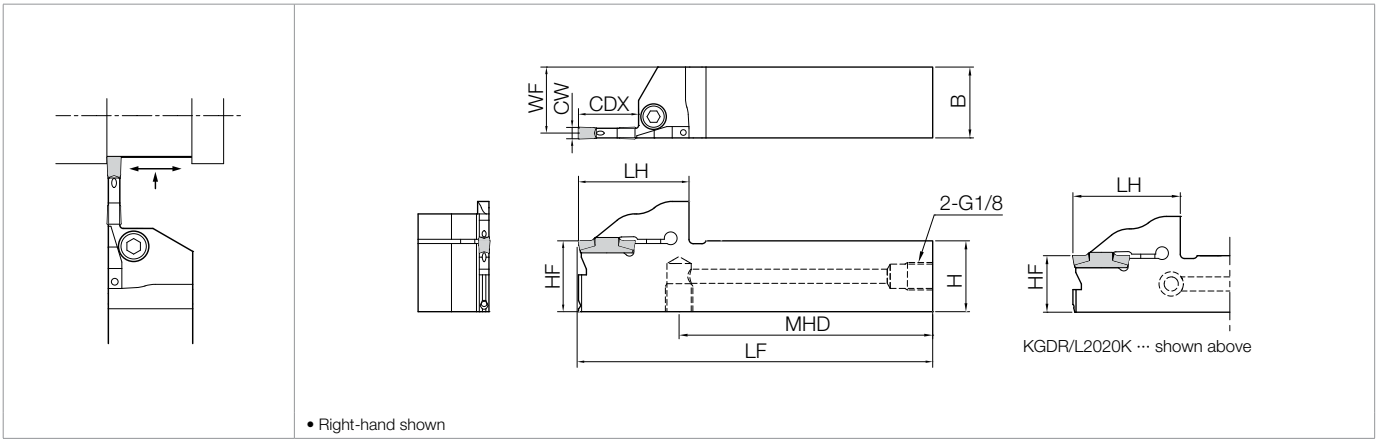
Wear Resistance Comparison (Internal Evaluation)



Cutting Conditions: Vc = 590 sfm, f = 0.006 ipr, d = 0.354", Wet
Edge Width 0.158" Workpiece: 4131 Grooving

KGD-JCT Minimizes Wear and Provides Longer Tool Life without Insert Fracturing

KGD-JCT (Integral Style / Jet Coolant-Through) NEW



• Right-hand shown

Toolholder Dimensions (Inch Size)

Pressure Resistance: up to 2,175 psi

Width (mm)	Max. Grooving Depth (mm)	Part Number	Stock R	Stock L	H	HF	B	LF	LH	WF	CDX	MHD	Insert Width CW (in) MIN	Insert Width CW (in) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench	Spare Parts: Plug
0.118 (3mm)	0.787 (20mm)	KGD□ 12-3T20JCT	●	●	0.750	0.750	0.750	5.000	1.496	0.702	0.787 (20mm)	3.590	0.118 (3mm)	0.157 (4mm)	HH5X16	LW-4	HSG1/8X8.0
		16-3T20JCT	●	●	1.000	1.000	1.000	5.000	1.535	0.952		3.551			HH5X25		
0.157 (4mm)	0.787 (20mm)	KGD□ 12-4T20JCT	●		0.750	0.750	0.750	5.000	1.496	0.683	0.787 (20mm)	3.590	0.157 (4mm)	0.197 (5mm)	HH5X16		
		16-4T20JCT	●	●	1.000	1.000	1.000	5.000	1.535	0.933		3.551			HH5X25		
	1.000 (25.4mm)	KGD□ 16-4T25.4JCT	●	●	1.000	1.000	1.000	5.000	1.732	0.933	1.000 (25.4mm)	3.354			HH5X25		

Toolholder Dimensions (Metric Size)

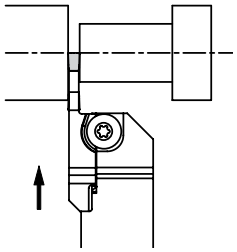
Pressure Resistance: up to 2,175 psi

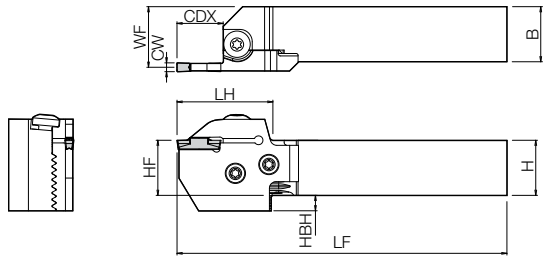
Width (mm)	Max. Grooving Depth (mm)	Part Number	Stock R	Stock L	H	HF	B	LF	LH	WF	CDX	MHD	Insert Width CW (mm) MIN	Insert Width CW (mm) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench	Spare Parts: Plug
3	6	KGD□ 2020K-3T06JCT	●	●	20	20	20	125	31.5	18.8	6	96.2	3.0	4.0	HH5X16	LW-4	HSG1/8X8.0
		2525K-3T06JCT	●	●	25	25	25		31.5	23.8		96.5			HH5X25		
	10	2020K-3T10JCT	●	●	20	20	20		34.0	18.8	10	94.2			HH5X16		
		2525K-3T10JCT	●	●	25	25	25		34.0	23.8		94.5			HH5X25		
	20	2020K-3T20JCT	●	●	20	20	20		38.0	18.8	20	90.2			HH5X16		
		2525K-3T20JCT	●	●	25	25	25		39.0	23.8		89.5			HH5X25		
4	10	KGD□ 2020K-4T10JCT	●	●	20	20	20	125	34.0	18.8	10	94.2	4.0	5.0	HH5X16	LW-4	HSG1/8X8.0
		2525K-4T10JCT	●	●	25	25	25		34.0	23.8		94.5			HH5X25		
	20	KGD□ 2020K-4T20JCT	●	●	20	20	20		38.0	18.8	20	90.2			HH5X16		
		2525K-4T20JCT	●	●	25	25	25		39.0	23.8		89.5			HH5X25		
	25	KGD□ 2525K-4T25JCT	●	●	25	25	25		44.0	23.8	25	84.5					

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ **H20-H21**

Coolant Connections and Pipe Parts ➡ **D11**
Recommended Cutting Conditions ➡ **H32~H33**

KGD-S (0° SwitchBlade Type)





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions (Inch Size)

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

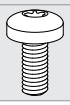
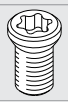
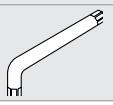
Shank Angle	Width (in)	Max. D.O.C. (in)	Shank Size (in)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number G37	Blade Part Number G37	Dimensions (in) H	HF	HBH	B	LF	LH	WF	CDX*	Insert Width CW (in) MIN.	MAX.
0°	0.079 (2mm)	0.669 (17mm)	□0.75	KGD□ 12X-2T17S	●	●	KGD□12-C	KGD□-2T17-C	0.75	0.75	0.472	0.75	4.80	1.57	0.88	0.669 (17mm)	0.079 (2mm)	0.118 (3mm)
			□1.00	16X-2T17S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.78	1.57	1.13			
	0.118 (3mm)	0.394 (10mm)	□0.75	KGD□ 12X-3T10S	●	●	KGD□12-C	KGD□-3T10-C	0.75	0.75	0.472	0.75	4.52	1.29	0.86	0.394 (10mm)	0.118 (3mm)	0.157 (4mm)
			□1.00	16X-3T10S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.51	1.29	1.11			
		0.787 (20mm)	□0.75	KGD□ 12X-3T20S	●	●	KGD□12-C	KGD□-3T20-C	0.75	0.75	0.472	0.75	4.92	1.68	0.86	0.787 (20mm)		
			□1.00	16X-3T20S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.90	1.68	1.11			
	0.157 (4mm)	0.394 (10mm)	□0.75	KGD□ 12X-4T10S	●	●	KGD□12-C	KGD□-4T10-C	0.75	0.75	0.472	0.75	4.52	1.29	0.84	0.394 (10mm)	0.157 (4mm)	0.197 (5mm)
			□1.00	16X-4T10S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.51	1.29	1.09			
		0.787 (20mm)	□0.75	KGD□ 12X-4T20S	●	●	KGD□12-C	KGD□-4T20-C	0.75	0.75	0.472	0.75	4.92	1.68	0.84	0.787 (20mm)		
			□1.00	16X-4T20S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	5.90	1.68	1.09			
		0.984 (25mm)	□0.75	KGD□ 12X-4T25S	●	●	KGD□12-C	KGD□-4T25-C	0.75	0.75	0.472	0.75	5.11	1.88	0.84	0.984 (25mm)		
			□1.00	16X-4T25S	●	●	KGD□16-C		1.00	1.00	0.276	1.00	6.10	1.88	1.09			

Note 1) When using the toolholder in normal mounting position, the lower jaw of the toolholder may interfere with the tool presetter.
2) The toolholder and blade part numbers are printed on the toolholder body. (Unit part numbers are not printed)
KGD-S: Right-hand blades for right-hand toolholders, and left-hand blades for left-hand toolholders.
3) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
4) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table H20-H21

Spare Parts (Common with SwitchBlade Types)

* The parts are included in the toolholder and unit.

Unit Part Number	Spare Parts: Clamp Bolt (for Insert Clamp)	Clamp Screw (for Blade)	Wrench
			
KGD□·····S	BH6X10TR	SB-60120TR	LTW-25

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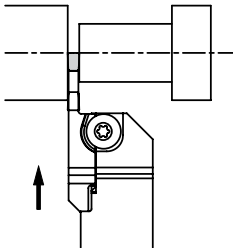
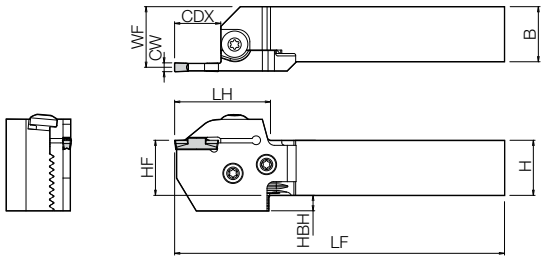
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGD-S (0° SwitchBlade Type)





• Right-hand shown (Right-hand Blade and Right-hand Toolholder)

Toolholder + Blade Dimensions (Metric Size)

(Choose **Right-hand** Blade for **Right-hand** Toolholder and **Left-hand** Blade for **Left-hand** Toolholder)

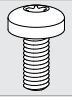
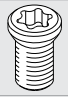
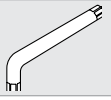
Shank Angle	Width (mm)	Max. D.O.C. (mm)	Shank Size (mm)	Unit Part Number (Toolholder + Blade)	Stock R	Stock L	Toolholder Part Number G37	Blade Part Number G37	H	HF	HBH	B	LF	LH	WF	CDX*	Insert Width CW (mm) MIN.	Insert Width CW (mm) MAX.
0°	2	17	□20	KGD□ 2020X-2T17S	●	△	KGD□2020-C	KGD□-2T17-C	20	20	12	20	122	40	23.4	17	2.0	3.0
			□25	2525X-2T17S	●	●	KGD□2525-C		25	25	7	25	147	40	28.4			
			□32	No Unit Part Number ➡			KGD□3232-C		32	32	-	32	167	40	35.4			
	3	10	□20	KGD□ 2020X-3T10S	●	△	KGD□2020-C	KGD□-3T10-C	20	20	12	20	115	33	23.0	10	3.0	4.0
			□25	2525X-3T10S	●	△	KGD□2525-C		25	25	7	25	140	33	28.0			
			□32	3232X-3T10S	△		KGD□3232-C		32	32	-	32	160	33	35.0			
		20	□20	KGD□ 2020X-3T20S	●	●	KGD□2020-C	KGD□-3T20-C	20	20	12	20	125	43	23.0	20		
			□25	2525X-3T20S	●	●	KGD□2525-C		25	25	7	25	150	43	28.0			
			□32	3232X-3T20S	●	△	KGD□3232-C		32	32	-	32	170	43	35.0			
	4	10	□20	KGD□ 2020X-4T10S	●		KGD□2020-C	KGD□-4T10-C	20	20	12	20	115	33	22.5	10	4.0	5.0
			□25	2525X-4T10S	●		KGD□2525-C		25	25	7	25	140	33	27.5			
			□32	No Unit Part Number ➡			KGD□3232-C		32	32	-	32	160	33	34.5			
		20	□20	KGD□ 2020X-4T20S	●		KGD□2020-C	KGD□-4T20-C	20	20	12	20	125	43	22.5	20		
			□25	2525X-4T20S	●	●	KGD□2525-C		25	25	7	25	150	43	27.5			
			□32	3232X-4T20S	●	△	KGD□3232-C		32	32	-	32	170	43	34.5			
		25	□20	KGD□ 2020X-4T25S	●	●	KGD□2020-C	KGD□-4T25-C	20	20	12	20	130	48	22.5	25		
			□25	2525X-4T25S	●	●	KGD□2525-C		25	25	7	25	155	48	27.5			
			□32	3232X-4T25S	●	△	KGD□3232-C		32	32	-	32	175	48	34.5			

Note 1) When using the toolholder in normal mounting position, the lower jaw of the toolholder may interfere with the tool presetter.
2) The toolholder and blade part numbers are printed on the toolholder body. (Unit part numbers are not printed)
KGD-S: Right-hand blades for right-hand toolholders, and left-hand blades for left-hand toolholders.
3) If the unit part number is not listed (No Unit Part Number), please purchase toolholder and blade separately.
4) Dimension **CDX*** : Shows the maximum grooving depth. If the dimension **CDX** is 0.787" (20mm) or more, using a 2-edge insert, the maximum grooving depth is 0.709" (18mm).

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table ➡ H20-H21

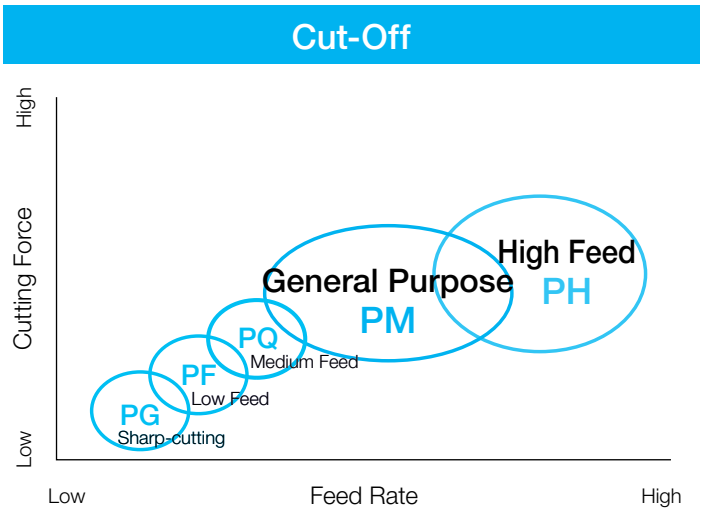
Spare Parts (Common with SwitchBlade Types)

* The parts are included in the toolholder and unit.

Unit Part Number	Spare Parts: Clamp Bolt (for Insert Clamp)	Spare Parts: Clamp Screw (for Blade)	Spare Parts: Wrench
			
KGD□·····S	BH6X10TR	SB-60120TR	LTW-25

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Application Map



Recommended Cutting Conditions (PF / PQ / PG Chipbreakers) ★ : 1st Recommendation ☆ : 2nd Recommendation

PF Chipbreaker

Workpiece	Cutting Conditions (Vc : sfm)			Feed Rate (f : ipr)						Notes
	Recommended Insert Grade			**PF (RE = 0.0012)**			**PF (RE = 0.0059)**			
	MEGACOAT NANO	MEGACOAT		CW (Insert Width)			CW (Insert Width)			
	PR1535	**PR1225**	**PR1215**	0.051" - 0.059" 1.3mm - 1.5mm	0.079" 2.0mm	0.098" - 0.118" 2.5mm - 3.0mm	0.051" - 0.059" 1.3mm - 1.5mm	0.079" 2.0mm	0.098" - 0.118" 2.5mm - 3.0mm	
Carbon Steel	☆ 230 - 490	★ 230 - 490	☆ 230 - 590	0.0004 - 0.0016	0.0008 - 0.0024	0.0008 - 0.0031	0.0004 - 0.0020	0.0012 - 0.0031	0.0016 - 0.0039	Coolant
Alloy Steel	☆ 230 - 490	★ 230 - 490	☆ 230 - 590							
Stainless Steel	★ 200 - 390	☆ 200 - 390	☆ 200 - 490	0.0004 - 0.0012	0.0004 - 0.0016	0.0004 - 0.0020	0.0004 - 0.0016	0.0012 - 0.0028	0.0016 - 0.0031	
Cast Iron	-	-	★ 260 - 660	0.0004 - 0.0020	0.0008 - 0.0028	0.0012 - 0.0031	0.0004 - 0.0024	0.0012 - 0.0035	0.0016 - 0.0039	

PQ / PG Chipbreaker

Workpiece	Cutting Conditions (Vc : sfm)					Feed Rate (f : ipr)				Notes
	Recommended Insert Grade					**PQ**		**PG**		
	MEGACOAT NANO	MEGACOAT		DLC Coated Carbide	Carbide	CW (Insert Width)		CW (Insert Width)		
	PR1535	**PR1225**	**PR1215**	**PDL025**	**GW15**	0.079" 2.0mm	0.098" - 0.118" 2.5mm - 3.0mm	0.079" 2.0mm	0.098" - 0.118" 2.5mm - 3.0mm	
Carbon Steel	☆ 230 - 490	★ 230 - 490	☆ 230 - 590	-	-	0.0012 - 0.0039	0.0016 - 0.0047	0.0004 - 0.0016	0.0004 - 0.0020	Coolant
Alloy Steel	☆ 230 - 490	★ 230 - 490	☆ 230 - 590	-	-					
Stainless Steel	★ 200 - 390	☆ 200 - 390	☆ 200 - 490	-	-	0.0008 - 0.0028	0.0008 - 0.0031	0.0004 - 0.0012	0.0004 - 0.0016	
Cast Iron	-	-	★ 260 - 660	-	☆ 160 - 330	0.0016 - 0.0039	0.0016 - 0.0047	0.0004 - 0.0016	0.0004 - 0.0020	
Aluminum Alloy	-	-	-	★ 660 - 1,640	☆ 660 - 1,480	-	-	0.0004 - 0.0020	0.0004 - 0.0024	
Brass	-	-	-	-	★ 330 - 660	-	-	0.0004 - 0.0028	0.0004 - 0.0031	

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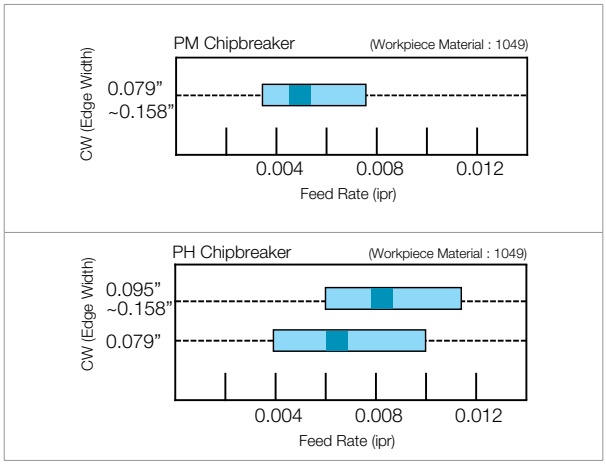
Recommended Cutting Conditions (PM / PH Chipbreakers) ★ : 1st Recommendation ☆ : 2nd Recommendation

Workpiece Material	Recommended Insert Grade (Vc sfm)			Feed Rate (ipr)			Remarks
				PM	PH		
	MEGACOAT NANO	MEGACOAT		CW (Insert Width)	CW (Insert Width)		
	PR1535	PR1225	PR1215	0.079"~0.158" (2mm~4mm)	0.079" (2mm)	0.095"~0.158" (3mm~4mm)	
Carbon Steel	☆ 260~660	★ 260~660	☆ 330~660	0.0031~0.0071	0.0039~0.0098	0.0059~0.0110	Wet
Alloy Steel	☆ 230~590	★ 230~590	☆ 260~590				
Stainless Steel	★ 200~490	☆ 200~490	☆ 200~490	0.0024~0.0047	0.0020~0.0047	0.0031~0.0059	
Cast Iron	-	-	★ 330~660	0.0031~0.0071	0.0039~0.0098	0.0059~0.0110	

★ : 1st Recommendation ☆ : 2nd Recommendation

Feed Examples



■ : Indicates the center value of feed (f)

CAUTION During Cut-Off

1) Flood coolant is recommended. Apply enough coolant to the cutting edge

2) Keep spindle revolution constant during processing to achieve longer tool life

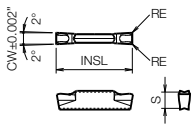
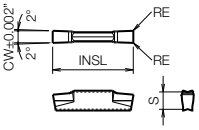
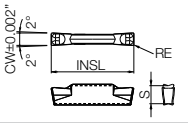
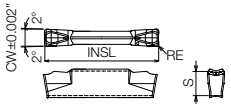
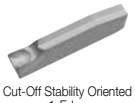
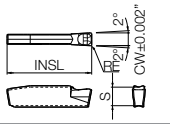
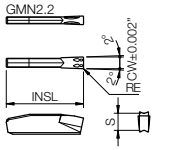
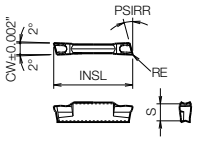
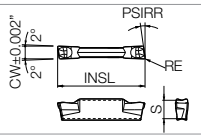
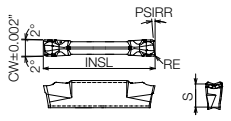
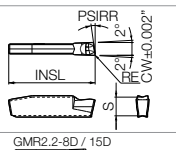
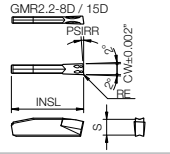
3) Cut off as close to the chuck as possible

4) Reduce feed rate by 30-50% when diameter is same as cut-off insert width to prevent impact

GMM / GMN / GMR/L

Classification of Usage
- ◕ : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

		Cermet	CVD Coated Carbide	PVD Coated Carbide			Carbide
		TN90	CR9025	PR915	PR930	PR1115	KW10
P	Carbon Steel / Alloy Steel	○	◔	◕	◔	◕	
M	Stainless Steel		◔	◕	◔	◕	
K	Cast Iron						◕
N	Non-ferrous Metals						◕

Insert (Right-handed Insert Shown)	Part Number	CW inch	CW mm	RE	INSL	S	Lead Angle PSIR/L	Ref. Page for Toolholder
Neutral								
Deep Grooving / Cut-Off Sharp Cutting Oriented		GMM 1520-MT	0.059	1.5	0 / 0.002	0.787	0.169	-	H36
		2020-MT	0.079	2.0	0 / 0.002	0.787	0.169	-	
		2520-MT	0.098	2.5	0 / 0.002	0.787	0.169	-	H36 H37
		3020-MT	0.118	3.0	0 / 0.002	0.787	0.169	-	
Deep Grooving / Cut-Off Sharp Cutting Oriented Without Chipbreaker		GMM 1520-NB	0.059	1.5	0 / 0.002	0.787	0.169	-	H36
		2020-NB	0.079	2.0	0 / 0.002	0.787	0.169	-	
		2520-NB	0.098	2.5	0 / 0.002	0.787	0.169	-	
		3020-NB	0.118	3.0	0 / 0.002	0.787	0.169	-	
Deep Grooving / Cut-Off Stability Oriented		GMM 2020-TK	0.079	2.0	0.008	0.787	0.169	-	
		2520-TK	0.098	2.5	0.008	0.787	0.169	-	
		3020-TK	0.118	3.0	0.010	0.787	0.169	-	
Cut-Off / High Feed 2-Edge		GMM 2020-TMR	0.079	2.0	0.008	0.169	0.059	-	
		2520-TMR	0.098	2.5	0.008	0.169	0.075	-	H36 H37
		3020-TMR	0.118	3.0	0.010	0.169	0.091	-	
 Cut-Off Stability Oriented 1-Edge		GMN 2-TK	0.079	2.0	0.008	0.787	0.169	-	
		3-TK	0.118	3.0	0.010	0.787	0.169	-	
		4-TK	0.158	4.0	0.012	0.787	0.169	-	
Deep Grooving / Cut-Off 1-Edge		GMN 2.2	0.087	2.2	0.007	0.787	0.169	-	
		3	0.118	3.0	0.008	0.787	0.169	-	
		4	0.158	4.0	0.010	0.787	0.169	-	
		5	0.197	5.0	0.031	0.787	0.169	-	
		6	0.236	6.0	0.031	0.787	0.169	-	
								R L	
With Lead Angle								
Cut-Off Sharp Cutting Oriented		GMM 1520R/L-MT-15D	0.059	1.5	0 / 0.002	0.787	0.169	15°	H36
		2020R/L-MT-15D	0.079	2.0	0 / 0.002	0.787	0.169	15°	
		2520R/L-MT-15D	0.098	2.5	0 / 0.002	0.787	0.169	15°	
		3020R/L-MT-15D	0.118	3.0	0 / 0.002	0.787	0.169	15°	
Cut-Off Stability Oriented		GMM 2020R/L-TK-8D	0.079	2.0	0.008	0.787	0.169	8°	
		2520R/L-TK-8D	0.098	2.5	0.008	0.787	0.169	8°	
		3020R/L-TK-8D	0.118	3.0	0.010	0.787	0.169	8°	
Cut-Off / High Feed 2-Edge		GMM 2020R/L-TMR-6D	0.079	2.0	0.008	0.169	0.059	6°	
		2520R/L-TMR-6D	0.098	2.5	0.008	0.169	0.075	6°	H36 H37
		3020R/L-TMR-6D	0.118	3.0	0.010	0.169	0.091	6°	
Cut-Off Stability Oriented 1-Edge		GMR 2-TK-8D	0.079	2.0	0.008	0.787	0.169	8°	
		3-TK-8D	0.118	3.0	0.010	0.787	0.169	8°	
		4-TK-8D	0.158	4.0	0.012	0.787	0.169	8°	
Cut-Off Sharp Cutting Oriented 1-Edge		GMR/L 2.2-8D	0.087	2.2	0.007	0.787	0.169	8°	
		2.2-15D	0.087	2.2	0.000	0.787	0.169	15°	
		3-4D	0.118	3.0	0.008	0.787	0.169	4°	
		4-4D	0.158	4.0	0.010	0.787	0.169	4°	

* Corner-R (RE) varies based on grade

Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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(Technical Support) 800.823.7284 - Option 2
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Edge Prep. and Chipbreakers (CERACUT Plunge & Turn)

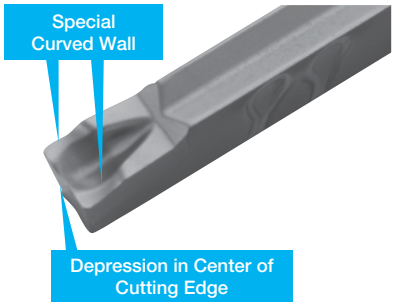
Name	**MT** Chipbreaker		**TK** Chipbreaker		**TMR** Chipbreaker	Without Chipbreaker **(NB)**	
Edge Preparation	Chamfered + Honed	Chamfered + Honed	Chamfered + Honed	Sharp Edge	Chamfered + Honed	Honed Cutting Edge	Sharp Edge
	Corner-R 0.002" 0.05mm	Sharp Edge	Corner-R 0.008"~0.012" 0.20~0.30mm	Corner-R 0.008"~0.012" 0.20~0.30mm	Corner-R 0.008" 0.20mm	Corner-R 0.002" 0.05mm	Sharp Edge
	CR9025 / PR915	**PR930 / KW10**	**CR9025 / PR915**	**PR930 / KW10**	**PR1115**	**CR9025**	**PR930 / KW10**

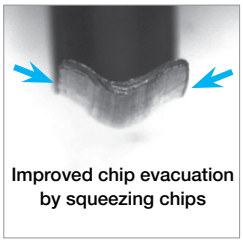
• Sharp Edge can reduce cutting resistance by 40%, compared with chamfered edge

Name	Advantages
GMM-MT	Specific chipbreaker for cut-off operations requiring sharp cutting performance Minimizes the boss
GMM-NB	Cutting edge is flat with no chipbreaker. Good performance for brass, etc.
GMM-TK	Stable design with chipbreaker for cut-off. Large corner-R 2-edge for economical performance
GMN-TK	Same chipbreaker geometry as GMM-TK 1-edge. Wide application range.
GMN (Std.)	Mainly for deep grooving, but available for groove widening and traversing due to projection near side cutting edge. 1-edge and wide application range. Available for cut-off applications.

TMR Chipbreaker

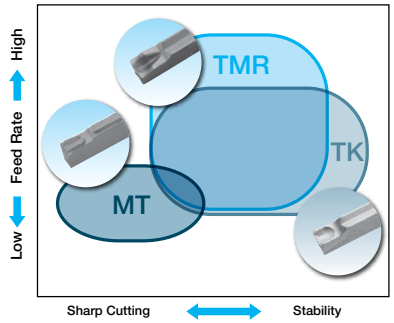
Chipbreaker Advantages





Chip Width < Grooving Width

GMM Chipbreaker Map



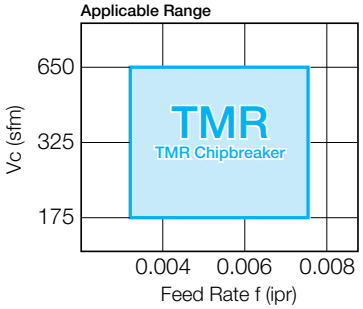
The TMR Chipbreaker Provides Stable Chip Control at High Feed Rates

Good chip control even when cutting speed (spindle revolution) is increased

(Cutting Conditions : 15CrMo4, Ø30, Constant Spindle Revolution)

Part Number	n=1060min^{-1}(Vc=325sfm)		n=2123min^{-1}(Vc=650sfm)	
	f=0.0008ipr	f=0.0047ipr	f=0.0008ipr	f=0.0047ipr
GMM 3020-TMR (Neutral)				
GMM 3020R-TMR-6D (Right-Hand)				

Applicable Range



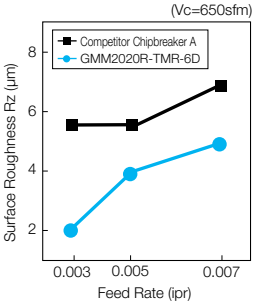
Recommended Cutting Conditions

Workpiece Material	Vc (sfm)	Feed Rate (ipr)
Carbon Steel	200~650	0.003~0.007
Alloy Steel	200~500	
Stainless Steel	175~450	

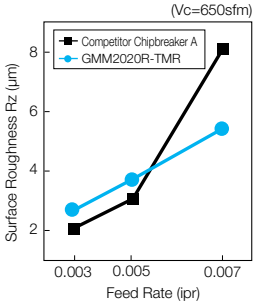
Workpiece Surface Roughness

TMR Chipbreaker provides good surface roughness on the workpiece end face at high feed rate ranges.

• GMM2020R-TMR-6D (Vc=650sfm)

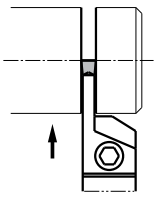


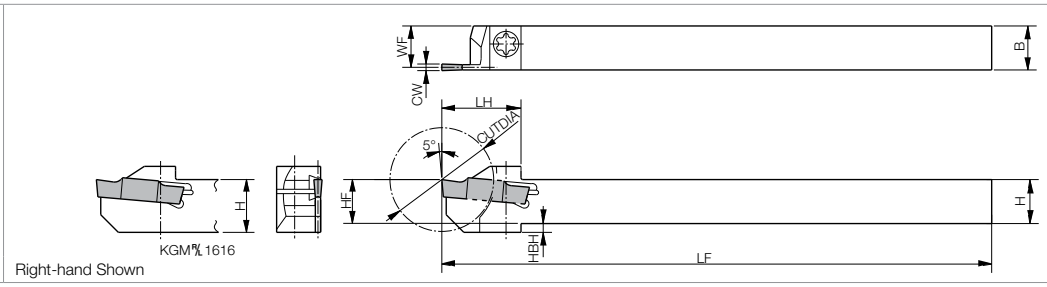
• GMM2020-TMR (Vc=650sfm)



KGM (Small Parts) - Will be phased out and removed from catalog. Switch to KGD H22

Insert Width : 0.079"~0.118" / 1.5mm~4.0mm





Right-hand Shown

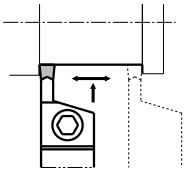
Toolholder Dimensions

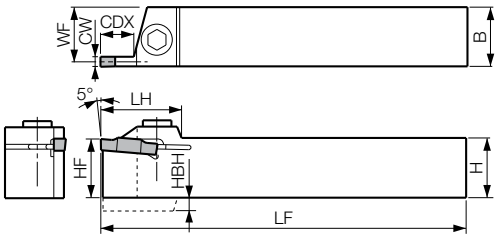
Part Number	Stock R	Stock L	Unit	Cut-Off Dia. CUTDIA	Dimensions H	HF	HBH	B	LF	LH	WF	Insert Width CW MIN	MAX	Spare Parts Clamp Screw	Wrench
KGM 6-2-5	●	●	inch	0.787	0.375	0.375	0.079	0.375	5.000	0.750	0.342	0.079	0.118	SE-40120TR	LTW-15S
8-2-6	●	●		0.984	0.500	0.500	0.051	0.500	6.000	0.830	0.467	0.079	0.118		
KGM 1010JX-1.5	●	●	mm	18	10	10	2	10	120	18.0	9.40	1.5	2.0	SE-40120TR	LTW-15S
1212JX-1.5	●	●		23	12	12	2	12	120	20.5	11.40	1.5	2.0		
KGM 1010JX-2	●	●		18	10	10	2	10	120	18.0	9.15	2.0	3.0	SE-40120TR	LTW-15S
1212JX-2	●	●		23	12	12	2	12	120	19.0	11.15	2.0	3.0		
1616JX-2	●	●		30	16	16	-	16	120	24.5	15.15	2.0	3.0	SE-50125TR	LTW-20
KGM 1212JX-2.5	●	●		23	12	12	2	12	120	20.5	11.00	2.4	3.0	SE-40120TR	LTW-15S
1616JX-2.5	●	●		30	16	16	-	16	120	25.5	15.00	2.4	3.0	SE-50125TR	LTW-20
KGM 1616JX-3	●	●		30	16	16	-	16	120	25.5	14.80	3.0	4.0	SE-50125TR	LTW-20
KGM 1212F-1.5-85	●			23	12	12	2	12	85	19.0	11.40	1.5	2.0	SE-40120TR	LTW-15S
1212F-2-85	●			23	12	12	2	12	85	19.0	11.15	2.0	3.0		
1212F-2.5-85	●			23	12	12	2	12	85	19.0	11.00	2.4	3.0		

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **H34**

KGM - Will be phased out and removed from catalog. Switch to KGD H22~H31

Insert Width : 0.750"~1.000" / 3mm~8mm





Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH	WF	CDX	Insert Width CW MIN	MAX	Spare Parts Clamp Screw		Wrench	Wrench
KGM 12-3	●		inch	0.750	0.750	-	0.750	5.000	1.070	0.702	0.354	0.118	0.157	-	HH5X16	-	LW-4
16-3	●			1.000	1.000	-	1.000	6.000	1.070	0.953	0.354	0.118	0.157		HH5X25		
KGM 1212H-3	●		mm	12	12	4	12	100	27	10.8	9	3.0	3.0	SB-5TR	-	LTW-20	-
1616H-3	●			16	16	4	16	100	27	14.8	9	3.0	4.0	-	HH5X16	-	LW-4
2020K-3	●	●		20	20	-	20	125	27	18.8	9	3.0	4.0				
2525M-3	●	●		25	25	-	25	150	27	23.8	9	3.0	4.0		HH5X25		
KGM 2020K-4	●			20	20	-	20	125	27	18.3	10	4.0	5.0	-	HH5X16	-	LW-4
2525M-4	●	●		25	25	-	25	150	27	23.3	10	4.0	5.0		HH5X25		
KGM 2020K-5	●	△		20	20	-	20	125	27	17.8	10	5.0	6.0	-	HH5X16	-	LW-4
2525M-5	●			25	25	-	25	150	27	22.8	10	5.0	6.0		HH5X25		
KGM 2525M-8	●	●		25	25	7.5	25	150	40	22.0	25	8.0	8.0	-	HH6X25	-	LW-5

- Dimension **CDX** shows vailable grooving depth
- 4.0mm width insert can be installed in KGM 1212H-3, but is not recommended due to the toolholder's rigidity

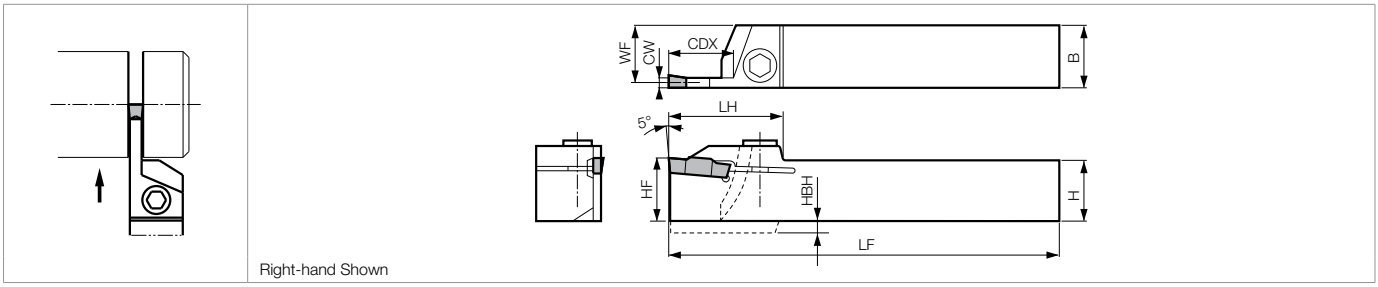
Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **H34**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGM-T - Will be phased out and removed from catalog. Switch to KGD H22~H31

Insert Width : 0.078"~0.236" / 2.0mm~6.0mm



Right-hand Shown

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH	WF	CDX	Insert Width CW MIN	MAX	Spare Parts Clamp Screw		Wrench	Wrench
KGM®L 12-2T	●	●	inch	0.75	0.75	-	0.75	5.0	1.30	0.717	0.669	0.078	0.118	-	HH5X16	-	LW-4
16-2T	●			1.00	1.00		1.00	6.0		0.967					HH5X25		
KGM®L 12-3T	●	●		0.75	0.75	-	0.75	5.0	1.42	0.702	0.787	0.118	0.157	-	HH5X16	-	
16-3T	●	●		1.00	1.00		1.00	6.0		0.953					HH5X25		
KGM®L 12-4T	●	●		0.75	0.75	-	0.75	5.0	1.42	0.683	0.787	0.157	0.197	-	HH5X16	-	
16-4T	●	●		1.00	1.00		1.00	6.0	1.22	0.933	0.984				HH5X25		
KGM®L 16-5T	●	●		1.00	1.00	-	1.00	6.0	1.22	0.913	0.984	0.197	0.236	-	HH5X25	-	-
KGM®L 2012K-2T17		●	mm	20	20	-	12	125	33	11.15	17	2.0	3.0	SB-5TR	-	LTW-20	-
2020K-2T17	●	●					20	125		19.15				-	HH5X16	-	LW-4
2525M-2T17	●	●		25	25		25	150		24.15					HH5X25		
KGM®L 1616H-3T20	●			16	16	4	16	100	36	14.8	20	3.0	4.0	-	HH5X16	-	LW-4
2012K-3T20		●		20	20	-	12	125		10.8				SB-5TR	-	LTW-20	-
2020K-3T20	●	●					20			18.8				-	HH5X16	-	LW-4
2525M-3T20	●	●		25	25		25	150		23.8					HH5X25		
KGM®L 2020K-4T20	●			20	20	-	20	125	36	18.3	20	4.0	5.0	-	HH5X16	-	LW-4
2525M-4T20	●			25	25		25	150		23.3					HH5X25		
2525M-4T25	●	●							41		25						
KGM®L 2525M-5T25	●	●		25	25	-	25	150	42	22.8	25	5.0	6.0	-	HH5X25	-	LW-4
3232P-5T25	●			32	32		32	170		29.8							
KGM®L 2525M-6T30	●			25	25		25	150	45	22.4	30	6.0	6.0	-	HH5X25	-	LW-4

- Dimension **CDX** shows the distance from the toolholder to the cutting edge. Refer to the table (**H34**) for the relationship between available grooving depth and cutting diameter
- When using GMG / GMM type 2-edge insert, set groove depth under 0.591"(15mm)

Choose insert with width that falls within **MIN** and **MAX** parameters shown in table above. Insert table **H34**

Applicable Inserts

Application	Grooving / Traversing	Grooving / Traversing	Grooving	Full-R / Copying	Full-R / Copying	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving	Cut-Off / Deep Grooving
Ref. Page	G44	G44	G44	G44	G45	H34	H34	H34	H34	H34
Shape / Toolholder	MW	MS	MG			MT	NB	TK / TMR	TK	
KGM®L...1.5	-	-	-	-	-	GMM1520...MT GMM2020...MT GMM1520®L...MT GMM2020®L...MT	GMM1520...NB GMM2020...NB	GMM2020...T.. GMM2020®L...T..	GMN2...TK GM®L2...TK	-
KGM®L...-2- KGM®L...-2(T)	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	-	GMM2020...MT GMM2520...MT GMM3020...MT GMM2020®L...MT GMM2520®L...MT GMM3020®L...MT	GMM2020...NB GMM2520...NB GMM3020...NB	GMM2020...T.. GMM2520...T.. GMM3020...T.. GMM2020®L...T.. GMM2520®L...T.. GMM3020®L...T..	GMN2...TK GMN3...TK GM®L2...TK GM®L3...TK	GMN2.2 GMN3 GM®L2.2 GM®L3
KGM®L...2.5	GMM2420...MW GMM3020...MW	GMG3020...MS GMM3020...MS	GMG2520...MG GMG3020...MG	GMG3020...R GMM3020...R	-	GMM2520...MT GMM3020...MT GMM2520®L...MT GMM3020®L...MT	GMM2520...NB GMM3020...NB	GMM2520...T.. GMM3020...T.. GMM2520®L...T.. GMM3020®L...T..	GMN3...TK GM®L3...TK	GMN3 GM®L3
KGM®L...-3(T)	GMM3020...MW GMM4020...MW	GMG3020...MS GMM3020...MS GMG4020...MS GMM4020...MS	GMG3020...MG GMG3520...MG GMG4020...MG	GMG3020...R GMM3020...R GMG4020...R GMM4020...R	-	GMM3020...MT GMM3020®L...MT	GMM3020...NB	GMM3020...T.. GMM3020®L...T..	GMN3...TK GMN4...TK GM®L3...TK GM®L4...TK	GMN3 GMN4 GM®L3 GM®L4
KGM®L...-4(T)	GMM4020...MW GMM5020...MW	GMG4020...MS GMM4020...MS GMG5020...MS GMM5020...MS	GMG4020...MG GMG5020...MG	GMG4020...R GMM4020...R GMG5020...R GMM5020...R	-	-	-	-	GMN4...TK GM®L4...TK	GMN4 GMN5 GM®L4
KGM®L...-5(T)	GMM5020...MW GMM6020...MW	GMG5020...MS GMM5020...MS GMG6020...MS GMM6020...MS	GMG5020...MG GMG6020...MG	GMG5020...R GMM5020...R GMG6020...R GMM6020...R	GMGA6020...R	-	-	-	-	GMN5 GMN6
KGM®L...-6T	GMM6020...MW	GMG6020...MS GMM6020...MS	GMG6020...MG	GMG6020...R GMM6020...R	GMGA6020...R	-	-	-	-	GMN6
KGM®L...8	GMM8030...MW	-	GMG8030...MG	-	GMGA8030...R	-	-	-	-	-

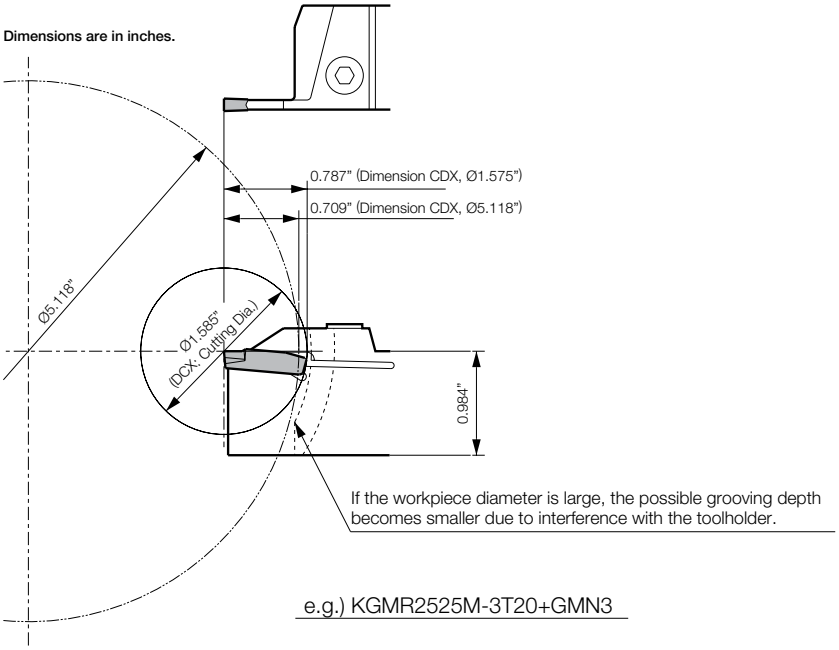
Recommended Cutting Condtions **H52**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KGM • KGM-T Available Cutting Diameter

There is a limit to available grooving depth depending on the workpiece diameter

Dimensions are in inches.



e.g.) KGMR2525M-3T20+GMN3

KGM Available Cutting Diameter Table

Toolholders		DCX Cutting Diameter																
KGM	0810K-1.5-125	-	-	-	-	-	-	-	-	-	-	-	-	10mm	14mm	16mm	32mm	∞
	1010○-1.5…	-	-	-	-	-	-	-	20mm	25mm	32mm	40mm	60mm	∞	∞	∞	∞	
	1212○-1.5…	-	-	-	-	25mm	26mm	28mm	32mm	36mm	40mm	60mm	100mm					
	0810K-2-125	-	-	-	-	-	-	-	-	-	-	-	-	10mm	14mm	16mm	32mm	
	6-2-5								0.80"	1.00"	1.28"	1.60"	2.40"	∞	∞	∞	∞	
	1010○-2…	-	-	-	-	-	-	-	20mm	25mm	32mm	40mm	60mm					
	8-2-6					1.00"	1.04"	1.12"	2.00"	∞	∞	∞	∞					
	1212○-2…	-	-	-	-	25mm	26mm	28mm	50mm									
	1616○-2…	32mm	40mm	50mm	60mm	80mm	100mm	∞	∞									
	1010○-2.5…	-	-	-	-	-	-	-	20mm	25mm	32mm	40mm	60mm					
	1212○-2.5…	-	-	-	-	25mm	26mm	28mm	32mm	36mm	40mm	60mm	100mm					
	1616○-2.5…	32mm	40mm	50mm	60mm	80mm	100mm	∞	∞	∞	∞	∞	∞					
	1616○-3…	32mm	40mm	50mm	60mm	80mm	100mm											
Available Grooving Depth CDX (in)		0.64"	0.60"	0.56"	0.52"	0.50"	0.48"	0.44"	0.40"	0.36"	0.32"	0.28"	0.24"	0.20"	0.16"	0.12"	0.08"	0.04"
Available Grooving Depth CDX (mm)		16mm	15mm	14mm	13mm	12.5mm	12mm	11mm	10mm	9mm	8mm	7mm	6mm	5mm	4mm	3mm	2mm	1mm

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KGM-T Available Cutting Diameter Table (GMN, GM℠ When Using 1-edge Insert)

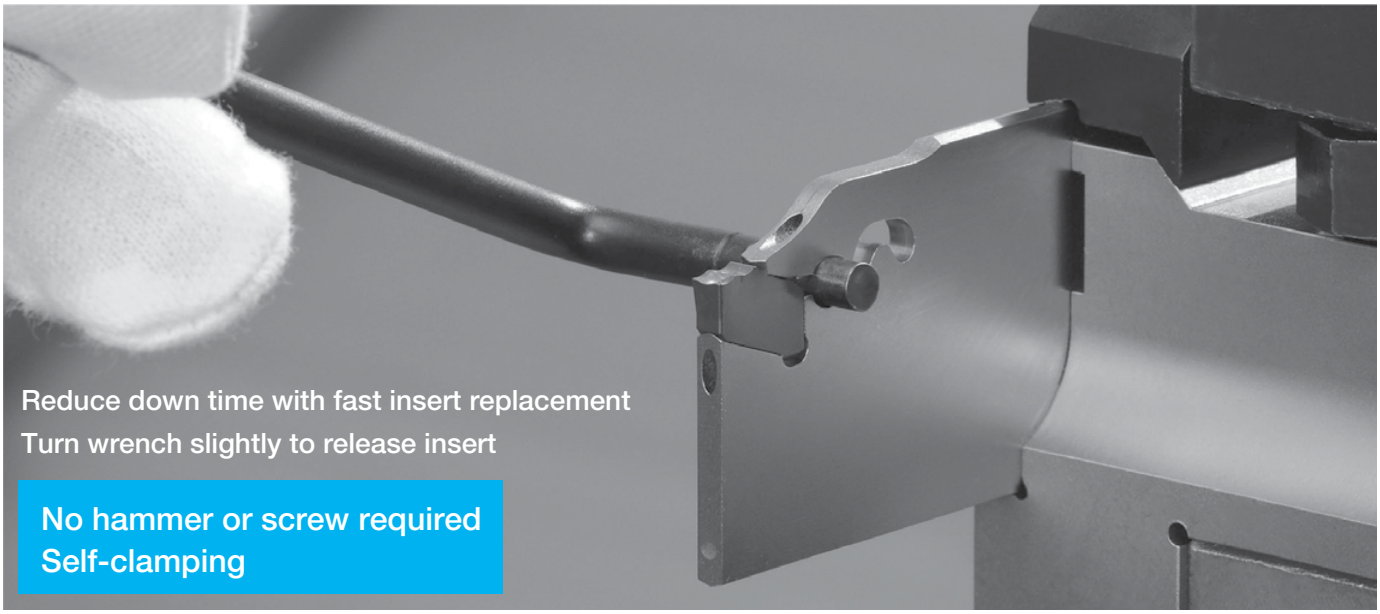
Toolholders		DCX Cutting Diameter												
KGM℠	2012K-2T17	-	-	-	-	-	-	-	-	66mm	80mm	130mm	260mm	
	12-2T	-	-	-	-	-	-	-	-	2.64"	3.20"	5.20"	10.40"	
	2020K-2T17	-	-	-	-	-	-	-	-	66mm	80mm	130mm	260mm	
	16-2T	-	-	-	-	-	-	-	-	2.64"	3.20"	5.20"	10.40"	
	2525M-2T1710	-	-	-	-	-	-	-	-	66mm	80mm	130mm	260mm	
	1616H-3T20	-	-	-	-	-	40mm	54mm	70mm	100mm	180mm			
	2012K-3T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	12-3T	-	-	-	-	-	1.60"	3.60"	5.20"	9.60"				
	2020K-3T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	16-3T	-	-	-	-	-	1.60"	3.60"	5.20"	9.60"				
	2525M-3T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	12-4T	-	-	-	-	-	1.60"	3.60"	5.20"	9.60"				
	2020K-4T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	2525M-4T20	-	-	-	-	-	40mm	90mm	130mm	240mm				
	16-4T	-	-	2.00"	5.60"	9.60"								
	2525M-4T25	-	-	50mm	140mm	240mm								
	16-5T	-	-	2.00"	5.60"	9.60"								
	2525M-5T25	-	-	50mm	140mm	240mm								
	3232P-5T25	-	-	50mm	280mm	600mm								
	2525M-6T30	100mm	300mm	∞	∞	∞								
Available Grooving Depth CDX (in)		1.20"	1.08"	1.00"	0.92"	0.88"	0.80"	0.76"	0.72"	0.68"	0.64"	0.60"	0.56"	<0.52"
Available Grooving Depth CDX (mm)		30mm	27mm	25mm	23mm	22mm	20mm	19mm	18mm	17mm	16mm	15mm	14mm	<13mm

KPK Series

High-Performance Cut-Off Solutions

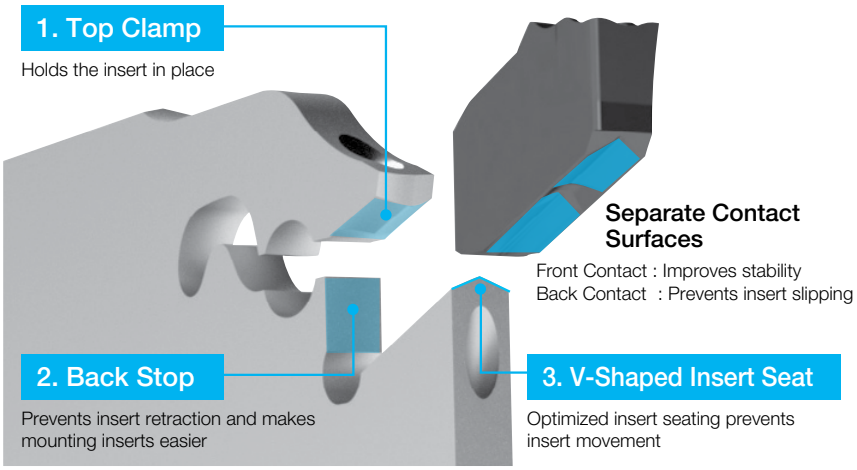
Easy Insert Replacement Reduces Downtime
High-Performance, Long Tool Life and Stable Machining with Strong Clamping Mechanism

1 Easy Insert Replacement

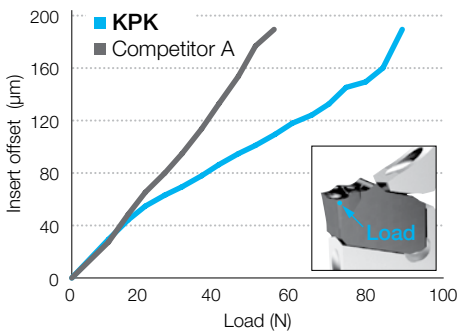


2 Firm Insert Clamp Ensures Added Safety and Security

The firmly secured insert uses three contact surfaces to eliminate sliding or chattering



Insert Deviation Comparison (Internal Evaluation)



Measured tool : KPKB32-3 PKM30N-025PM

NEW ITEMS!

3 Unique Chipbreaker Designs for Long Tool Life and Stable Machining

Advanced chipbreaker technology inherited from KGD lineup provides excellent chip control

PM Chipbreaker
General Purpose

Insert Grades

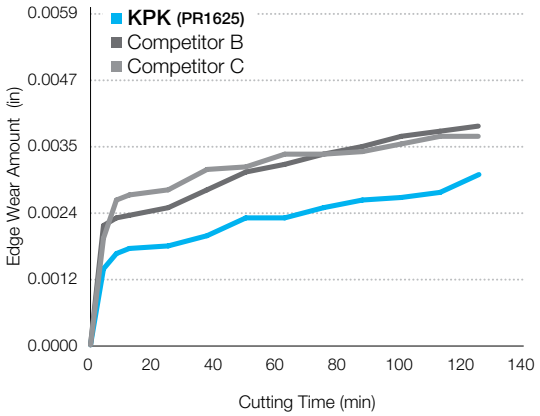
Steel	**: PR1625**
Stainless Steel	**: PR1535**
Cast Iron and Aluminum	**: GW15**

PH Chipbreaker
Tough Edge
High-Feed

Insert Grades

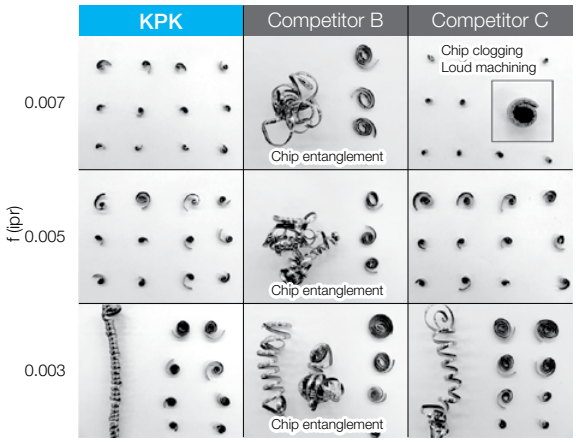
Steel	**: PR1625**
Stainless Steel	**: PR1535**

Wear Resistance Comparison (Internal Evaluation)



Cutting Conditions : n = 955 RPM (constant), Vc = ~ 490 sfm
f = 0.005 ipr (~ ø0.394" : f = 0.002 ipr) Wet (External Coolant)
Workpiece : 4131 (ø1.969") Cutting Width : 0.118" (3mm), PM Chipbreaker

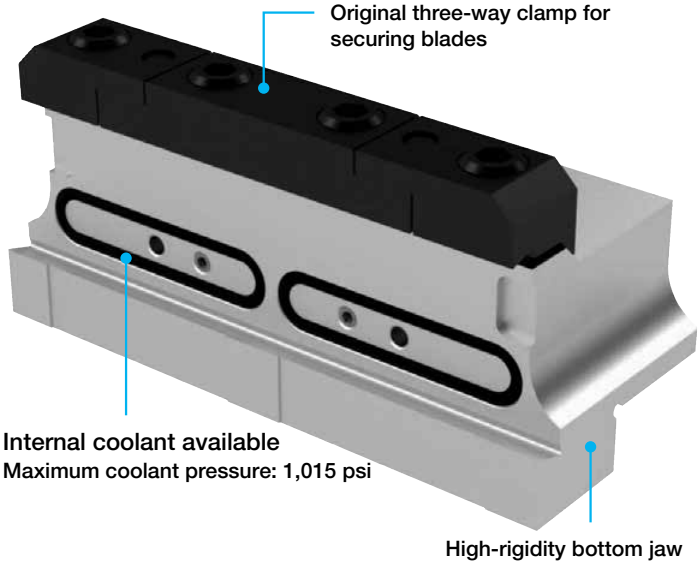
Chip Control Comparison (Internal Evaluation)



Cutting Conditions : n = RPM (constant) , Vc = ~ 390 sfm , Wet (External Coolant)
Workpiece : 4131 (ø1.969") Cutting Width : 0.118" (3mm), PM Chipbreaker

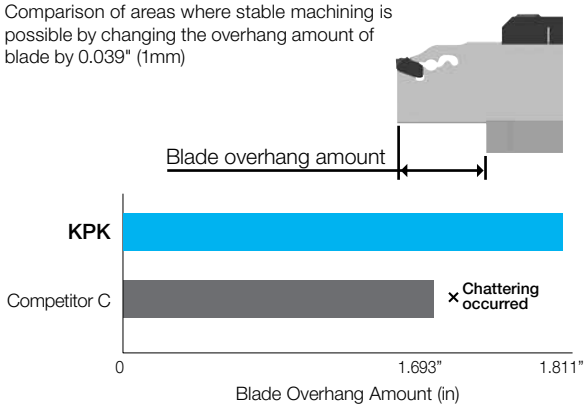
4 Rigid Tool Holder Block Prevents Chattering and Provides Internal Coolant

KPKTB-JCT



Chatter Resistance Comparison (Internal evaluation)

Comparison of areas where stable machining is possible by changing the overhang amount of blade by 0.039" (1mm)



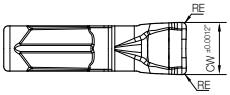
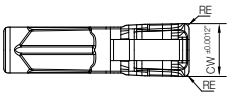
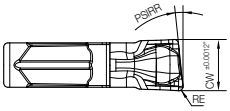
Cutting Conditions : n = 650 RPM (Constant), Vc = ~ 330 sfm, f = 0.005 ipr
Wet (Internal Coolant : Normal Pressure), Workpiece : 4137 (ø1.969")
Cutting Width : 0.118" (3mm), PM Chipbreaker

KTKTB block is compatible with internal coolant with an optional internal connector. (~145 psi)

See Coolant Supply Method (Type C) H46

PKM Inserts NEW

Classification of Usage						
● : Light Interruption / 1st Choice	P	Carbon Steel / Alloy Steel	●	◔		Ref. Page for Toolholder
◔ : Light Interruption / 2nd Choice	M	Stainless Steel	◔	●		
● : Continuous / 1st Choice	K	Cast Iron			●	
○ : Continuous / 2nd Choice	N	Non-ferrous Metals			●	

Insert (Right-handed Insert Shown)			Part Number	Dimensions (in) CW inch	CW mm	RE	Angle (°) PSIR/L	MEGACOAT NANO PR1625	MEGACOAT NANO PR1535	Carbide GW15	Ref. Page for Toolholder
Neutral	General Purpose		PKM 20N-020PM	0.079	2.0	0.008		●	●	●	H43
			30N-025PM	0.118	3.0	0.010	-	●	●	●	
			40N-030PM	0.157	4.0	0.012		●	●	●	
	Tough Edge		PKM 20N-020PH	0.079	2.0	0.008		●	●		
			30N-030PH	0.118	3.0	0.012	-	●	●		
			40N-030PH	0.157	4.0	0.012		●	●		
								R L	R L	R L	
With Lead Angle			PKM 20°-020PM-6D	0.079	2.0	0.008		● ●	● ●	● ●	
			30°-025PM-6D	0.118	3.0	0.010	6°	● ●	● ●	● ●	H43
			40°-030PM-6D	0.157	4.0	0.012		● ●	● ●	● ●	

Recommended Cutting Conditions

Workpiece Material	Recommended Grade (Vc sfm) MEGACOAT NANO PR1625	MEGACOAT NANO PR1535	Carbide GW15	PM Width (CW) 0.079"~0.157" (2.00mm~4.00mm) Feed Rate (ipr)	PH Width (CW) 0.079" (2.00mm) Feed Rate (ipr)	PH Width (CW) 0.118"~0.157" (3.00mm~4.00mm) Feed Rate (ipr)	Notes
Carbon Steel	★ 260 ~ 720	☆ 260 ~ 720	-	0.003 ~ 0.007	0.004 ~ 0.009	0.006 ~ 0.011	Wet
Alloy Steel	★ 230 ~ 660	☆ 230 ~ 660	-				
Stainless Steel	☆ 200 ~ 490	★ 200 ~ 490	-	0.002 ~ 0.005	0.002 ~ 0.005	0.003 ~ 0.006	
Cast Iron	-	-	★ 160 ~ 330	0.003 ~ 0.007	-	-	
Aluminum	-	-	★ 660 ~ 1,480	0.003 ~ 0.007	-	-	
Brass	-	-	★ 330 ~ 660	0.003 ~ 0.007	-	-	

Reduce feed to 1/2 ~ 1/3 when nearing the center of the workpiece.

★ : 1st Recommendation ☆ : 2nd Recommendation

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

KPKB-JCT (Jet Coolant-Through) NEW

Coolant Piping Parts ➡ H47 Pressure 1,015 psi

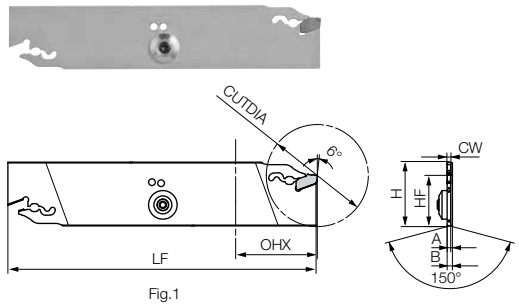


Fig.1

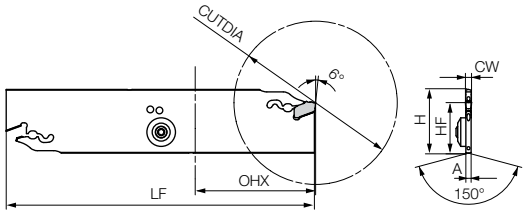


Fig.2

Blade Dimensions (Metric Sizes)

Part Number	Stock	Cut-Off Dia.	Dimensions (mm)						Insert Width	Drawing	Spare Parts				Applicable Inserts ➡ H42	Applicable Blocks ➡ H44
		CUTDIA	OHX*1	H*2	HF	B	LF	A	CW		Insert Wrench	Coolant Plug	Screw	Wrench		
KPKB 26-2JCT	●	50	40	26	21.4	2.6	110	1.8	2.0	Fig.1	LPW-5	CCP-4	SB-4065TR	FT-15	PKM20…	KPKTB○○-26JCT KTKTB○○-26
26-3JCT	●	75				-		2.6	3.0	Fig.2					PKM30…	
26-4JCT	●	80						3.4	4.0						PKM40…	
KPKB 32-2JCT	●	50	59	32	25.0	2.6	150	1.8	2.0	Fig.1		Coolant Plug Screw Tightening Torque 3.0 Nm			PKM20…	KPKTB○○-32JCT KTKTB○○-32 KTKTBF○○-32
32-3JCT	●	100				-		2.6	3.0	Fig.2					PKM30…	
32-4JCT	●	100						3.4	4.0						PKM40…	

See **Page** ➡ H45 for insert mounting and removal instructions.
When using internal coolant with KTKTB, KTKTBF type tool holder blocks, coolant supply piping (**CCN -5**) sold separately.
*1 OHX: Maximum overhang length while using internal coolant *2 H: Length between virtual apex

KPKB (Not Coolant-Through) NEW

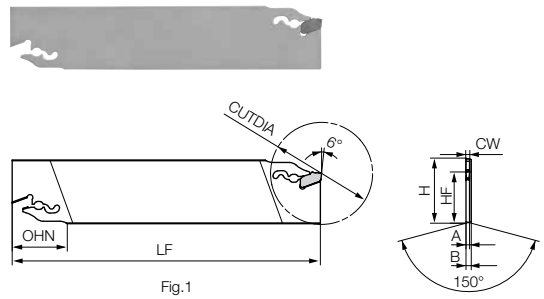


Fig.1

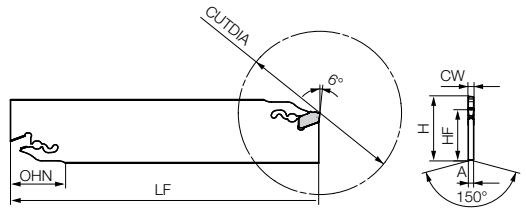


Fig.2

Blade Dimensions (Metric Sizes)

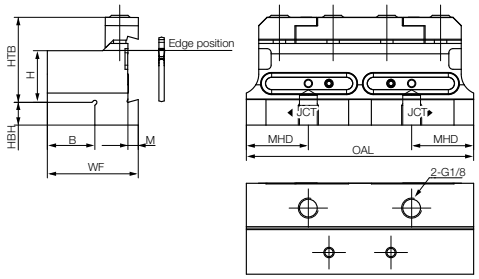
Part Number	Stock	Cut-Off Dia.	Dimensions (mm)						Insert Width	Drawing	Spare Parts	Applicable Inserts ➡ H42	Applicable Blocks ➡ H44
		CUTDIA	OHN	H*2	HF	B	LF	A	CW		Insert Wrench		
KPKB 26-2	●	50	25	26	21.4	-	110	1.8	2.0	Fig.2	LPW-5	PKM20…	KPKTB○○-26JCT KTKTB○○-26
26-3	●	75						2.6	3.0			PKM30…	
26-4	●	80	24					3.4	4.0			PKM40…	
KPKB 32-2	●	50	27	32	25.0	2.6	150	1.8	2.0	Fig.1		PKM20…	KPKTB○○-32JCT KTKTB○○-32 KTKTBF○○-32
32-3	●	100				-		2.6	3.0	Fig.2		PKM30…	
32-4	●	100						3.4	4.0			PKM40…	

See **Page** ➡ H45 for insert mounting and removal instructions.
*2 H: Length between virtual apex

TOOL BLOCKS (BLADE HOLDER)

KPKTB-JCT (Jet Coolant-Through) NEW

Coolant Piping Parts ➡ H47 Pressure 1,015 psi



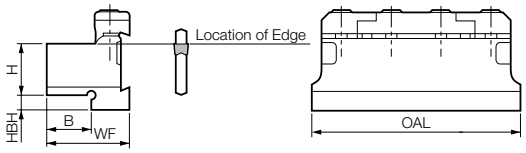
Toolblock Dimensions (Metric Sizes)

Part Number		Stock	Dimensions (mm) H	HTB	HTH	B	WF	M	MHD	OAL	Spare Parts: Clamp Set (Switchblade type)	Screw	Wrench	O-ring	Plug 1	Plug 2	Applicable Blades ➡ H43, H49 ➡ G137
KPKTB	20-26JCT	●	20	33	12.4	19	39	4	23.5	86	BCS-2	HH6x16	LW-5	GR-020	HS3x4	HSG1/8X8.0	KPKB26-○JCT KTKB26-○
	20-32JCT	●	20	41	16		40	5	25	100	BCS-3			GR-026	HS4x4		KPKB32-○JCT KTKB32-○
	25-32JCT	●	25		11	23	44		30	110	BCS-4			GR-029			KFTB□□...-4S KFTB□□...-5S
	26-4JCT	●						3.4									

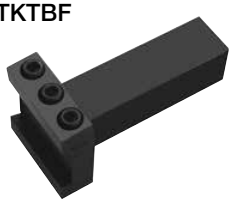
Includes only one **HSG1/8X8.0** plug.
KPKTB-JCT type block is also compatible with conventional KTKB type blades.
When using internal coolant, the coolant may appear to leak slightly, but this should not affect machining performance. (If the O-ring is damaged, order a new one separately.)

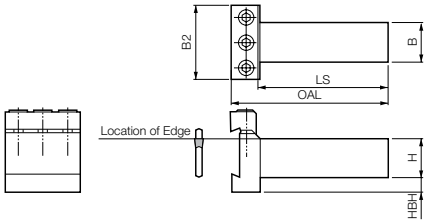
KTKTB / KTKTBF (Separate Toolblock Holder / Perpendicular Type)

KTKTB



KTKTBF





Toolblock Dimensions

Part Number		Stock	Unit	Dimensions H	HBH	B	B2	OAL	LS	Spare Parts: Clamp Set Separate Type	Clamp Set Integral Type	Screw	Wrench	Applicable Blade: Cut-Off ➡ H43 ➡ H49	Face Grooving ➡ G137
KTKTB	19-19	●	Inch	0.75	0.19	0.720	1.31	2.99	-	-	BCS-1	HH5X25	LW-4	KTKB19-○S KTKB19-1SS	-
	19-26	●		0.75	0.39	0.720	1.39	3.39	-	BCS-2	-	HH6X30	LW-5	※ KPKB26-○ (JCT) KTKB26-○S KTKB26-1SS	-
	25.4-32	●		1.00	0.30	0.905	1.65	4.33	-	BCS-4	-	HH6X30	LW-5	※ KPKB32-○ (JCT) KTKB32-○S KTKB32-1SS KTKB□32-○S	KFTB□□...-4S KFTB□□...-5S
KTKTB	16-19	●	mm	16	4	15.5	29.5	76	-	-	BCS-1	HH5X25	LW-4	KTKB19-○S KTKB19-1SS	-
	20-19	●		20	4	19	34	76	-						
	16-26	●		16	13	15.5	31.5	86	-	BCS-2	-	HH6X30	LW-5	※ KPKB26-○ (JCT) KTKB26-○S KTKB26-1SS	-
	20-26	●		20	9	19	36	86	-						
	20-32	●		20	13	19	38	100	-	BCS-3	-	HH6X30	LW-5	※ KPKB32-○ (JCT) KTKB32-○S KTKB32-1SS KTKB□32-○S	KFTB□□...-4S KFTB□□...-5S
	25-32	●		25	8	23	42	110	-	BCS-4					
	32-32	●		32	5	29	48	110	-						
KTKTBF	25-32	●	mm	25	9.5	25	48	102	84.5	-	BCS-5	HH6X30	LW-5	※ KPKB32-○ (JCT) KTKB32-○S KTKB32-1SS KTKB□32-○S	KFTB□□...-4S KFTB□□...-5S
	32-32	●		32	2.5	32	48	117	99.5						

※ KPKB-JCT Blades can be used with internal coolant by utilizing compatible coolant piping (CCN-5). See Page ➡ H47

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How to Mount and Remove Inserts from Blade

1. Insert provided wrench and turn upwards as shown in (Fig. 1)
2. Slide insert into the blade's insert pocket from the front and push in until the back of the insert contacts the blade's back stop surface. (Fig. 2)

Completely eliminate chips from the insert pocket and the wrench insertion area by using compressed air.
Check to make sure the insert is straight and not tilted.
When removing the insert, follow the same procedure as shown in Fig. 2

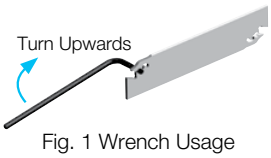


Fig. 1 Wrench Usage

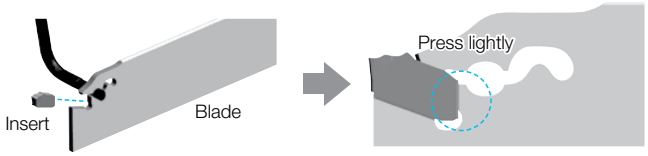
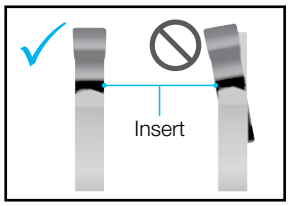
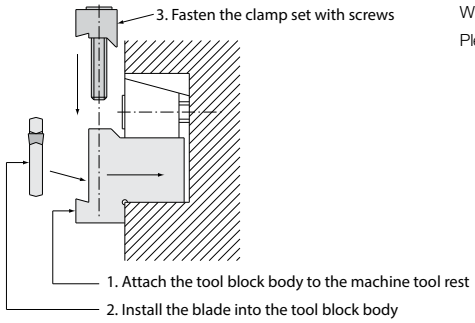


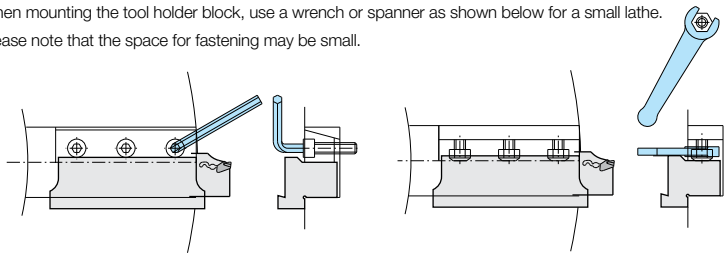
Fig. 2 Mounting Method



Tool Block and Blade Installation Guide

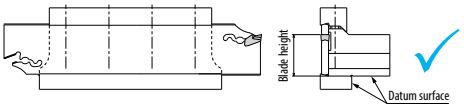


When mounting the tool holder block, use a wrench or spanner as shown below for a small lathe.
Please note that the space for fastening may be small.

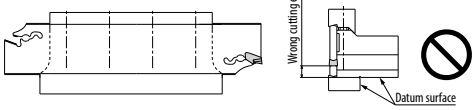


How to Install the Tool Block and Blade

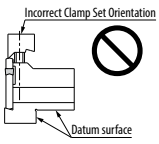
Correct blade installation



Incorrect blade installation



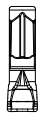
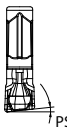
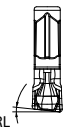
Incorrect Clamp Set Orientation

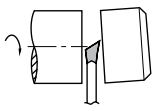
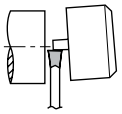
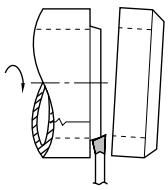
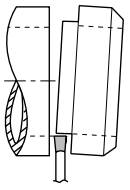


If the clamp set is mounted in the reverse direction, a large gap is created between the tool holder block main body and the clamp set as shown in the left figure. If you continue to use the product, the blade may break off. Reinstall in the correct orientation.

Lead Angle Direction and Usage

1. If there is no restriction on the finished shape, use an insert without lead angle.
2. Insert with lead angle is recommended to prevent remaining boss.
3. If you want to make the remaining boss smaller when machining small or thin parts, use insert with lead angle.

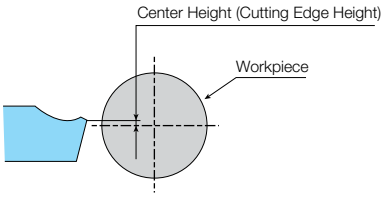
Handed insert with lead angle	N (Neutral)	R (Right-hand)	L (Left-hand)
		 PSIRR	 PSIRL
	· Inserts with lead angle (PSIR R/L) reduce burrs in cut-off machining. · The larger the lead angle (PSIR R/L), the smaller the cutting force. The feed also needs to be lower.		

Solid Workpiece	Right-hand (R) Lead Neutral	Neutral	Hollow Workpiece (Pipe)	Right-hand (R) Lead Neutral	Neutral
					

Machining Precautions

1. Set cutting edge height 0.004" (0.1mm) above core height.
2. Machining with ample supply of coolant is recommended
3. Machine at constant speeds to gain stable tool life
4. Make the cut-off as close as possible to the chuck
5. To prevent impacts, reduce feed rate by 1/2 ~ 1/3 when nearing the center of the workpiece

Excessive use of the insert may cause chipping or damage to the holder



Internal Coolant Connection Methods (Method will be determined by machine specifications and requirements)

A : Coolant Hose Assembly

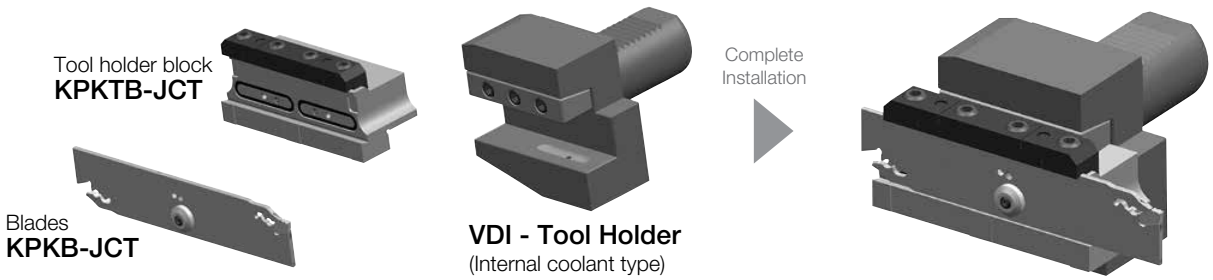
Maximum coolant pressure: 1,015 psi

See Page H47

B : VDI Holder Assembly

(Internal coolant type)

Maximum coolant pressure: 1,015 psi



C: Coolant Pipe Assembly

Maximum coolant pressure: 145 psi

See Page H47

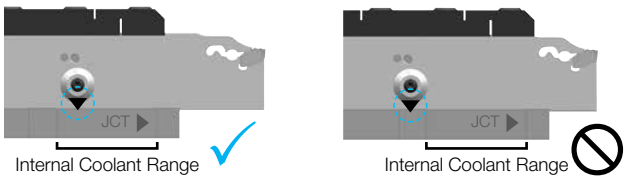
Coolant Supply Pipe Mounting Method

Attach to the blade with the supplied screw
Form pipe to the required shape and connect it to the piping of the machine.

Precautions

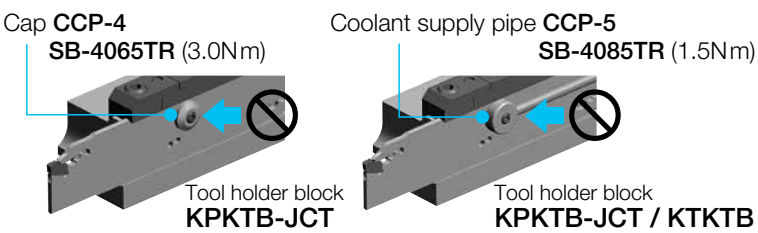
When mounting KPKB-JCT blade

When using internal coolant, keep the arrow (▼) on the blade within the range marked on the tool holder block.



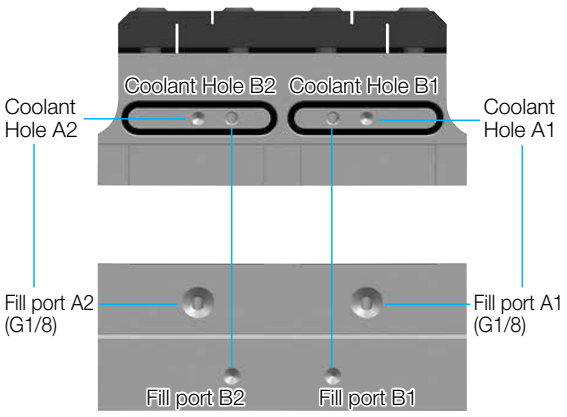
When the cap and coolant supply pipe are mounted

Coolant cannot be supplied correctly if it is mounted in the wrong position.



When using a tool block

When using the discharge port B1 (B2), use a sealant for the filler cap (HSG 1/8 X 8.0) of the accessory part of the coolant supply port A1 (A2).



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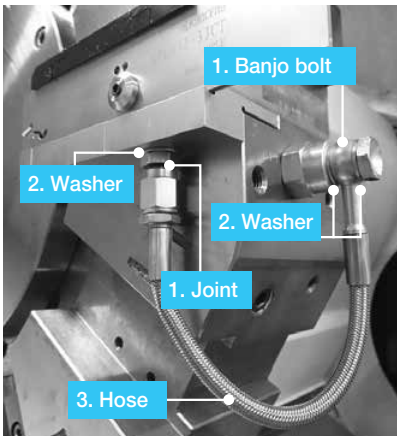
A : Coolant Hose Assembly

Connection Method and Piping Parts

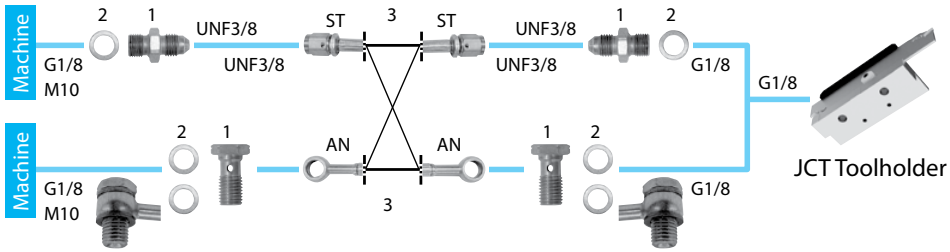


Easy to use with high-pressure hose and joint

Can be used for internal coolant at normal pressure without a high pressure pump unit

Banjo bolts (for angled hoses) are also available.

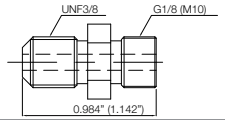
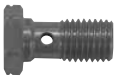
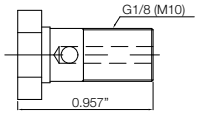
<Piping Installation Guide>



Depending on machine specifications and piping methods, 1.Joint/Banjo bolt x2 2.Washer x2-4 3.Hose x1

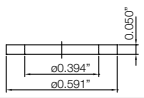
1. Joint / Banjo Bolt (Sold Separately)

Pressure Resistance: ~ 4,350 psi

Shape		Part Number	Stock	Thread Standard: Toolholder Machine Connection Side
		J-G1/8-UNF3/8	●	G1/8
		J-M10X1.5-UNF3/8	●	M10X1.5
Banjo Bolt (for Angled Hoses) 		BB-G1/8	●	G1/8
		BB-M10X1.5	●	M10X1.5

2. Washer (Sold Separately)

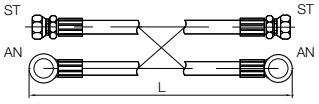
Pressure Resistance: ~ 4,350 psi

Shape		Part Number	Stock
		WS-10	●

*If you are using a banjo bolt, two washers are needed.

3. Hose (Sold Separately)

Pressure Resistance: ~ 4,350 psi

Shape		Part Number	Stock	Thread Standard		Dimensions (mm) L
Straight/Straight		HS-ST-ST-200	●	UNF3/8	UNF3/8	200
		HS-ST-ST-250	●			250
Straight/Angled		HS-ST-AN-200	●	UNF3/8	– (Banjo Bolt)	200
		HS-ST-AN-250	●			250
Angled/Angled		HS-AN-AN-200	●	– (Banjo Bolt)	– (Banjo Bolt)	200
		HS-AN-AN-250	●			250

Precautions

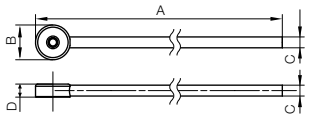
1. Make sure machine door is completely closed before use of these parts.
2. Use appropriate seal for the male thread of the piping parts and make sure the connection is secure. Use plugs to seal off unused coolant holes.
3. Connect and fasten the coolant hose firmly.
4. The use of copper washers may cause leakage but will have no effect on the performance.
5. Commercial piping parts can be used if the thread standards are same. Check the pressure resistance before use.
6. Regularly changing the coolant filter is recommended.

C: Coolant Pipe Assembly

Piping Parts

Coolant Supply Pipe (Sold Separately)

Pressure Resistance: 145 psi

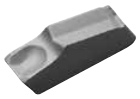
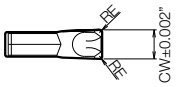
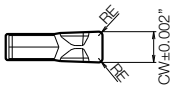
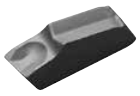
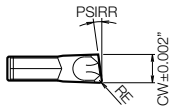
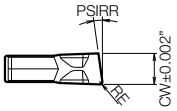
Shape		Part Number	Stock	Dimensions (mm) A	B	C	D	Spare Parts (Screw)
		CCN-5	●	190	16	5	6	SB-4085TR

Use wrench (FT -15) supplied with the blade when connecting.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

TKN / TKR/L

Classification of Usage			P	M	K	N	Carbon Steel / Alloy Steel	Stainless Steel	Cast Iron	Non-ferrous Metals
● : Light Interruption / 1st Choice			○				●			
◔ : Light Interruption / 2nd Choice				◔				●		
● : Continuous / 1st Choice										
○ : Continuous / 2nd Choice				○			○	○		●

Insert (Right-handed Insert Shown)			Part Number	Dimensions (in) CW inch	CW mm	RE	Angle (°) PSIR R/L	Cermet TN620	Cermet TN90	CVD Coated Carbide CR9025	MEGACOAT NANO PR1535	PVD Coated Carbide PR660	PVD Coated Carbide PR930	Carbide KW10	Ref. Page for Toolholder
Neutral			TKN 1.6	0.063	1.6	0.006			●	●	●		●	●	H49
			2	0.087	2.2	0.008		●	●	●	●		●	●	
			2.4	0.094	2.4	0.008		●	●	●	●		●	●	
			3	0.122	3.1	0.010		●	●	●	●		●	●	H49
			4	0.161	4.1	0.012		●	●	●	●		●	●	H50
			4.8	0.189	4.8	0.012	-			●	●				
			5	0.201	5.1	0.012				●	●		●	●	
			6	0.252	6.4	0.014				●	●			●	
			8	0.315	8.0	0.016				●	●				
			9	0.378	9.6	0.018				●	●				H49
	Low Feed		TKN 1.6-P	0.063	1.6	0.008				●	●			●	
			2-P	0.087	2.2	0.008	-	●	●	●	●		●	●	H49
			3-P	0.122	3.1	0.010		●	●	●	●		●	●	H50
								R L	R L	R L	R L	R L	R L	R L	
With Lead Angle			TKR/L 1.6	0.063	1.6	0.006				●	●		●	●	H49
			2	0.087	2.2	0.008		● ●	●	●	●	△	●	●	
			2.4	0.094	2.4	0.008				●	●		●	●	
			3	0.122	3.1	0.010	8°	●	●	●	●		● ●	●	
			4	0.161	4.1	0.012		●	●	●	●			●	
			5	0.201	5.1	0.012				●	●			●	H49
	Low Feed		TKR/L 1.6-P	0.063	1.6	0.008					●				H50
			2-P	0.087	2.2	0.008	8°			●	●		●	●	
			3-P	0.122	3.1	0.010		●	●	●	●		●	●	

Recommended Cutting Condtions ➔ **H53**

Cut-Off Tools

Name	Chipbreaker		Advantages
General Cut-Off	Standard (No Indication)		General cut-off type for feed rates over 0.004ipr Superior chip evacuation
Low Feed Cut-Off	P		Chipbreaker specially designed for low feed machining on automatic lathes, etc. Chips are controlled at feed rates between 0.0012~0.0032ipr

Insert's Edge Shape (CERACUT Cut-Off)

	Chamfered + Honed	Sharp Edge	Honed Cutting Edge
Edge Preparation			
Standard Chipbreaker	TN90 CR9025 / PR660	PR1535 PR930 / KW10	-
P-Chipbreaker	-	-	TN620 / TN90 / CR9025 / PR1535 PR660 / PR930 / KW10

• Sharp edge can reduce cutting resistance by 40%, compared with chamfered edge.

TKN / TKR/L Setup

1. Tap the insert lightly with a plastic hammer to push it tight enough that it cannot be removed by hand. **(Fig.1)**
2. Remove the insert with the supplied wrench. **(Fig.2)**

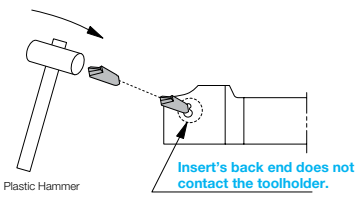


Fig. 1 How to Attach Inserts

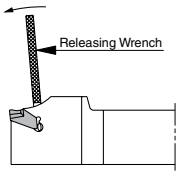


Fig. 2 How to Detach Inserts

Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
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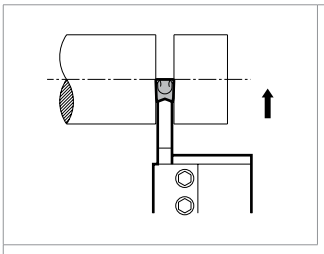
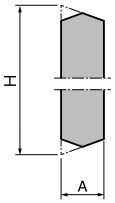
KTKB-SS / KTKB-S





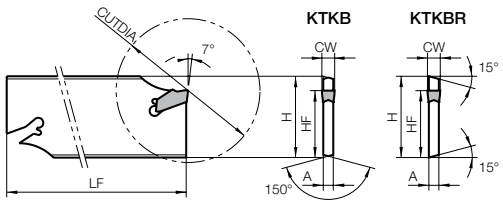


Fig.1

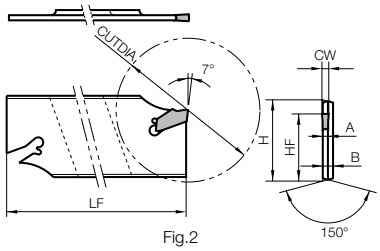


Fig.2

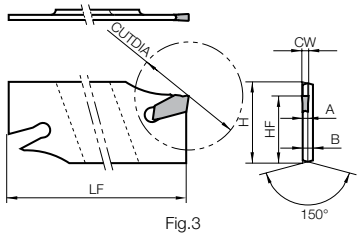


Fig.3

Blade Dimensions

Part Number		Stock	Cut-Off Dia.	Dimensions (mm)					Insert Width	Drawing	Applicable Inserts ➡ H48				Applicable Blocks ➡ H44
			CUTDIA	*H	HF	B	LF	A	CW			Low Feed	Lead Angle	Low Feed / Lead Angle	
KTKB	**19-1SS**	●	32	19	15.7	2.4	86	1.2	1.6	Fig. 3	TKN1.6	TKN1.6-P	TK®1.6	TK®1.6-P	KTKTB 16-19 20-19
KTKB	**26-1SS**	●	35	26	21.4	2.4	110	1.2	1.6	Fig. 3	TKN1.6	TKN1.6-P	TK®1.6	TK®1.6-P	KTKTB 16-26 20-26 KPKTB 20-26JCT
KTKB	**32-1SS**	●	35	32	25	2.4	150	1.2	1.6	Fig. 3	TKN1.6	TKN1.6-P	TK®1.6	TK®1.6-P	KTKTB 20-32 25-32 32-32 KTKTBF 25-32 32-32 KPKTB 20-32JCT 25-32JCT 32-32JCT
KTKB	**19-2S**	●	40	19	15.7	-	86	1.8	2.2 2.4	Fig. 1	TKN2 TKN2.4	TKN2-P	TK®2 TK®2.4	TK®2-P	KTKTB 16-19 20-19
KTKB	**26-2S**	●	50	26	21.4	-	110	1.8	2.2 2.4	Fig. 1	TKN2 TKN2.4	TKN2-P	TK®2 TK®2.4	TK®2-P	KTKTB 16-26 20-26 KPKTB 20-26JCT
	26-3S	●	75					2.6	3.1		TKN3	TKN3-P	TK®3	TK®3-P	
	26-4S	●	80					3.4	4.1		TKN4	-	TK®4	-	
	26-5S	●	80					4.2	4.8 5.1		TKN4.8 TKN5	-	TK®5	-	
KTKB	**32-2S**	●	50	32	25	2.6	150	1.8	2.2 2.4	Fig. 2	TKN2 TKN2.4	TKN2-P	TK®2 TK®2.4	TK®2-P	KTKTB 20-32 25-32 32-32 KTKTBF 25-32 32-32 KPKTB 20-32JCT 25-32JCT 32-32JCT
	32-3S	●	100			-		2.6	3.1	Fig. 1	TKN3	TKN3-P	TK®3	TK®3-P	
	32-4S	●	100					3.4	4.1		TKN4	-	TK®4	-	
	32-5S	●	120					4.2	4.8 5.1		TKN4.8 TKN5	-	TK®5	-	
	32-6S	●	120					5.4	6.4		TKN6	-	-	-	
KTKB®	**32-8S**	●	120	32	25	-	150	6.8	8.0	Fig. 1	TKN8	-	-	-	
KTKBR	**32-9S**	●	120					8.0	9.6		TKN9	-	-	-	

Note) 1. "**-SS**" means hard coated
2. Releasing wrench is "**LTK-5**"

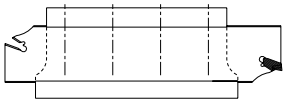
* Dimension H shows virtual apex distance.

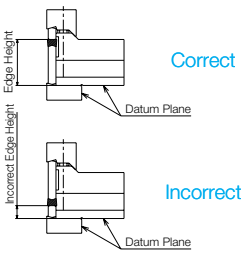
Recommended Cutting Condtions ➡ **H53**

Toolblock and Blade Installation

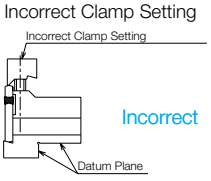
Correct Way

Incorrect Way





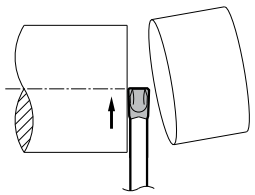
Incorrect Clamp Setting



If the clamp element is mounted backward, a large gap will occur between the clamp and the toolblock, and the blade may come off during machining. Be careful when installing the clamp for safety.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KTKH-S



For Small Parts Machining (Long Shank)

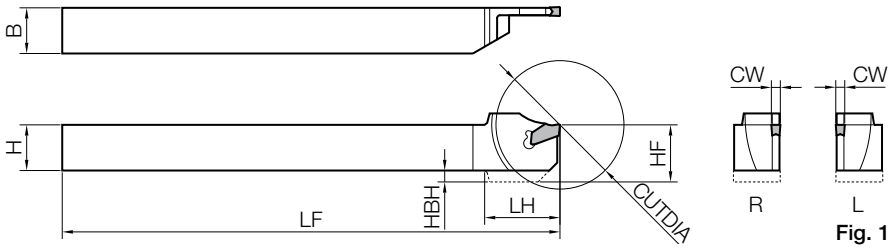


Fig. 1

For General Cut-Off

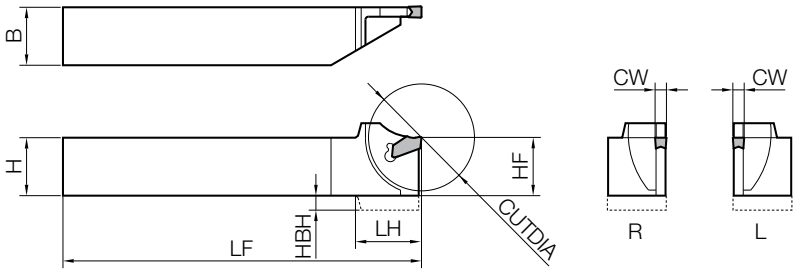


Fig. 2

For General Cut-Off

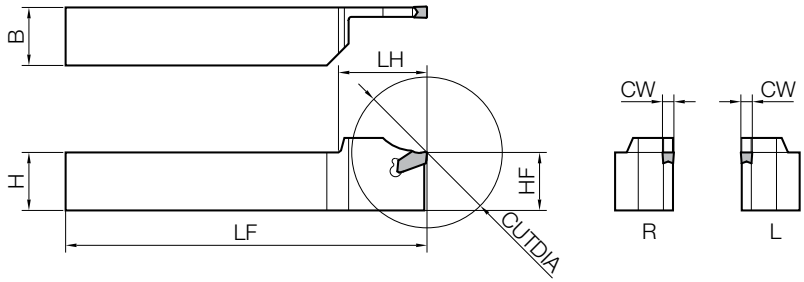


Fig. 3

Right-hand Shown

Toolholder Dimensions for Small Parts Machining (Long Shank Type)

Part Number		Stock R	Stock L	Unit	Cut-Off Dia. CUTDIA	Dimensions (in) H	HF	HBH	B	LF	LH	Insert Width CW	Drawing	Spare Parts Supplied Wrench
KTKH[R/L]	8-1.6-6S	●	●	inch	1.100	0.500	0.500	0.000	0.500	6.000	0.670	0.063	Fig.1	LTK-5
	6-2-5S	●	●		1.100	0.375	0.375	0.200	0.375	5.000	0.690	0.087 0.094		
	8-2-6S	●	●		1.100	0.500	0.500	0.160	0.500	6.000	0.700			

Recommended Cutting Condtions ➡ H53

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Toolholder Dimensions for General Cut-Off

Part Number		Stock R	Stock L	Unit	Cut-Off Dia. CUTDIA	Dimensions H	HF	HBH	B	LF	LH	Insert Width CW	Drawing	Spare Parts Supplied Wrench
KTKHR/L	12-2S	●		inch	1.400	0.750	0.750	0.000	0.750	5.000	0.870	0.087 0.094	Fig.2	LTK-5
	12-3S	●	●		2.000	0.750	0.750	-	0.750	5.000	1.190	0.122	Fig.3	
	16-3S	●	□		2.000	1.000	1.000		1.000	6.000	1.210	0.122		
	12-4S	●			2.300	0.750	0.750		0.750	5.000	1.350	0.161		
	16-4S	●			2.600	1.000	1.000		1.000	6.000	1.360	0.161		
	16-5S	●	□		3.000	1.000	1.000		1.000	6.000	1.560	0.189 0.201		
KTKHR/L	1010F-2S	●	●	mm	28	10	10	5	10	80	18.6	2.2 2.4	Fig.2	LTK-5
	1212H-2S	●	●		31	12	12	4	12	100	19.8			
	1612H-2S	●	●		31	16	16	-	12	100	19.8			
	1616H-2S	●	●		31	16	16	-	16	100	19.8			
	2012K-2S	●	●		36	20	20	-	12	125	22.8			
	2020K-2S	●	●		36	20	20	-	20	125	22.8			
	1612H-3S	●	●		35	16	16	4	12	100	21.7	3.1	Fig.2	
	1616H-3S	●	●		35	16	16	4	16	100	21.7			
	2012K-3S	●	●		40	20	20	-	12	125	25.3			
	2020K-3S	●	●		51	20	20	-	20	125	31.0		Fig.3	
	2525M-3S	●	●		52	25	25	-	25	150	31.5			
	2012K-4S	●	●		43	20	20	-	12	125	26.3	4.1	Fig.2	
	2020K-4S	●	●		59	20	20	-	20	125	35.0		Fig.3	
	2525M-4S	●	●		66	25	25	-	25	150	38.0			
	2525M-5S	●	●		77	25	25	-	25	150	43.5	4.8, 5.1	Fig.3	
KTKHR/L	2020K-3T17S	●	●		33	20	20	-	20	125	21.8	3.1	Fig.2	LTK-5
	2525M-3T22S	●	●		43	25	25	-	25	150	26.8			
	2020K-4T22S	●	●		44	20	20	-	20	125	26.8	4.1		
	2525M-4T22S	●	●		44	25	25	-	25	150	26.8			

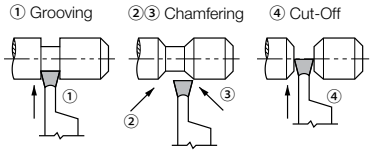
Recommended Cutting Condtions ➡ H53

Applicable Inserts

Ref. Page	➡ H48			
Shape / Toolholder		Low Feed	With Lead Angle	Low Feed / Lead-Angle
KTKHR/L ...-1.6...	TKN1.6	TKN1.6-P	TKR/L1.6	TKR/L1.6-P
KTKHR/L ...-2...	TKN2 TKN2.4	TKN2-P	TKR/L2 TKR/L2.4	TKR/L2-P
KTKHR/L ...-3...	TKN3	TKN3-P	TKR/L3	TKR/L3-P
KTKHR/L ...-4...	TKN4	-	TKR/L4	-
KTKHR/L ...-5...	TKN4.8 TKN5	-	TKR/L5	-

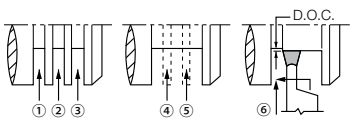
Usage Example of Cut-Off

1. Cut-Off after chamfering



2. Wide Grooving

① ~ ⑤ Groove Widening
⑥ Traverse Finishing
(Value of ap shall be under the value of Corner-R)



In order to maintain equal wear on both corners

TKF12

Workpiece Material	Recommended Grade (Vc sfm)							TKF12 Width (CW)						Notes
	MEGACOAT NANO			MEGA COAT	PVD Coated Carbide	DLC	Carbide	0.020" (0.50mm)	0.028" (0.70mm)	0.039" (1.00mm)	0.049" (1.25mm)	0.059" (1.50mm)	0.079" (2.00mm)	
	PR1725	PR1425	PR1535	PR1225	PR1025	PDL025	KW10	Feed Rate (ipr)						
Carbon Steel	★ 230~560 (160~460)	☆ 225~550 (175~450)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	☆ 200~425	-	-	0.0004~0.0008	0.0004~0.0012	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016	0.0004~0.0016 (0.0008~0.0039)	0.0004~0.0016 (0.0008~0.0039)	Wet
Alloy Steel	★ 230~560 (160~460)	☆ 225~550 (175~450)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	☆ 200~425	-	-	0.0004~0.0008	0.0004~0.0012	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016	0.0004~0.0016 (0.0008~0.0039)	0.0004~0.0016 (0.0008~0.0039)	
Stainless Steel	☆ 200~460 (130~390)	☆ 200~450 (125~400)	★ 200~400 (130~330)	☆ 200~400 (125~325)	☆ 175~325	-	-	0.0002~0.0006	0.0004~0.0008	0.0004~0.0008 (0.0004~0.0012)	0.0004~0.0008	0.0004~0.0008 (0.0004~0.0020)	0.0004~0.0008 (0.0004~0.0020)	
Cast Iron	-	-	-	-	-	-	★ 175~325	0.0004~0.0012	0.0004~0.0016	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	
Aluminum	-	-	-	-	-	★ 660~1640	☆ 650~1475	0.0004~0.0012	0.0004~0.0016	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	0.0004~0.0020	
Brass	-	-	-	-	-		★ 325~650	0.0004~0.0012	0.0004~0.0016	0.0004~0.0024	0.0004~0.0024	0.0004~0.0024	0.0004~0.0024	

Values in parentheses ( ) are cutting conditions for tough edge inserts style TKF..T..

★ : 1st Recommendation ☆ : 2nd Recommendation

TKF16

Workpiece Material	Recommended Grade (Vc sfm)							TKF16 Width (CW)		Notes
	MEGACOAT NANO			MEGA COAT	PVD Coated Carbide	DLC	Carbide	0.059" (1.50mm)	0.079" (2.00mm)	
	PR1725	PR1425	PR1535	PR1225	PR1025	PDL025	KW10	Feed Rate (ipr)		
Carbon Steel	★ 230~560 (160~460)	☆ 225~550 (175~450)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	☆ 200~425	-	-	0.0008~0.0028 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	Wet
Alloy Steel	★ 230~560 (160~460)	☆ 225~550 (175~450)	☆ 230~500 (160~400)	☆ 225~500 (175~400)	☆ 200~425	-	-	0.0008~0.0028 (0.0008~0.0039)	0.0008~0.0028 (0.0008~0.0039)	
Stainless Steel	☆ 200~460 (130~390)	☆ 200~450 (125~400)	★ 200~400 (130~330)	☆ 200~400 (125~325)	☆ 175~325	-	-	0.0004~0.0016 (0.0004~0.0020)	0.0004~0.0016 (0.0004~0.0020)	
Cast Iron	-	-	-	-	-	-	★ 175~325	0.0008~0.0032	0.0008~0.0032	
Aluminum	-	-	-	-	-	★ 660~1640	☆ 650~1475	0.0008~0.0032	0.0008~0.0032	
Brass	-	-	-	-	-		★ 325~650	0.0008~0.0039	0.0008~0.0039	

Values in parentheses ( ) are cutting conditions for tough edge inserts style TKF..T..

★ : 1st Recommendation ☆ : 2nd Recommendation

GMM-MT / GMM-TK / GMM-NB

Workpiece Material	Recommended Grade (Vc sfm)				Width (CW)				Notes
	CVD Coated Carbide	PVD Coated Carbide		Carbide	0.059" (1.5mm)	0.079"~0.098" (2.0mm~2.5mm)	0.118" (3.0mm)	0.158" (4.0mm)	
	CR9025	PR915	PR930	KW10	Feed Rate (ipr)				
Carbon Steel	☆ 250~600	★ 200~500	☆ 200~425	-	0.0004~0.0016	0.0008~0.0059	0.0012~0.0079	0.0032~0.0118	Wet
Alloy Steel	☆ 225~500	★ 200~500	☆ 200~425	-	0.0004~0.0016	0.0008~0.0059	0.0012~0.0079	0.0032~0.0118	
Stainless Steel	☆ 200~450	★ 175~450	☆ 175~400	-	0.0004~0.0012	0.0008~0.0039	0.0012~0.0059	0.0032~0.0098	
Cast Iron	-	-	-	★ 175~325	0.0004~0.0020	0.0020~0.0047	0.0039~0.0098	0.0039~0.0118	
Aluminum	-	-	-	★ 650~1475	0.0004~0.0020	0.0020~0.0039	0.0020~0.0079	0.0020~0.0098	
Brass	-	-	-	★ 325~650	0.0004~0.0020	0.0020~0.0039	0.0020~0.0059	0.0020~0.0079	

• When using PR930, decrease the feed rate by 20%

★ : 1st Recommendation ☆ : 2nd Recommendation

GMM-TMR (PR1115)

Workpiece Material	Vc (sfm)		Notes
Carbon Steel	200~650	0.003~0.007	Wet
Alloy Steel	225~500		
Stainless Steel	175~450		

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PKM

Workpiece Material	Recommended Grade (Vc sfm)			PM	PH		Notes
				Width (CW)			
	MEGACOAT NANO		Carbide	0.079"~0.157" (2.00mm~4.00mm)	0.079" (2.00mm)	0.118"~0.157" (3.00mm~4.00mm)	
	PR1625	**PR1535**	**GW15**	Feed Rate (ipr)			
Carbon Steel	★ 260 ~ 720	☆ 260 ~ 720	-	0.003 ~ 0.007	0.004 ~ 0.009	0.006 ~ 0.011	Wet
Alloy Steel	★ 230 ~ 660	☆ 230 ~ 660	-				
Stainless Steel	☆ 200 ~ 490	★ 200 ~ 490	-	0.002 ~ 0.005	0.002 ~ 0.005	0.003 ~ 0.006	
Cast Iron	-	-	★ 160 ~ 330	0.003 ~ 0.007	-	-	
Aluminum	-	-	★ 660 ~ 1,480	0.003 ~ 0.007	-	-	
Brass	-	-	★ 330 ~ 660	0.003 ~ 0.007	-	-	

Reduce feed to 1/2 ~ 1/3 when nearing the center of the workpiece.

★ : 1st Recommendation ☆ : 2nd Recommendation

TKN / TKR/L

Workpiece Material	Recommended Grade (Vc sfm)							Width (CW)					Notes
	Cermet		CVD Coated Carbide	MEGACOAT NANO	PVD Coated Carbide		Carbide	1.6mm	2.0~2.4mm	3.1mm	4.1mm	4.8~9.6mm	
	TN620	**TN90**	**CR9025**	**PR1535**	**PR660**	**PR930**	**KW10**	Feed Rate (ipr)					
Carbon Steel	☆ 200~660	☆ 400~650	★ 250~600	☆ 200~490	☆ 200~425	☆ 200~425	-	0.0008~0.0032	0.0016~0.0071	0.0020~0.0098	0.0032~0.0118	0.0059~0.0157	Wet
Alloy Steel	☆ 200~530	☆ 325~525	★ 225~500	☆ 200~490	☆ 200~425	☆ 200~425	-	0.0008~0.0032	0.0016~0.0071	0.0020~0.0098	0.0032~0.0118	0.0059~0.0157	
Stainless Steel	☆ 200~490	☆ 250~500	☆ 200~450	★ 160~390	☆ 175~400	☆ 200~450	-	0.0008~0.0012	0.0016~0.0047	0.0020~0.0071	0.0032~0.0098	0.0039~0.0118	
Cast Iron			-		-	-	★ 175~325	0.0008~0.0032	0.0020~0.0047	0.0039~0.0098	0.0039~0.0118	0.0059~0.0138	
Aluminum			-		-	-	★ 325~1475	0.0008~0.0039	0.0020~0.0039	0.0020~0.0079	0.0020~0.0098	0.0039~0.0787	
Brass			-		-	-	★ 325~650	0.0008~0.0039	0.0020~0.0039	0.0020~0.0059	0.0020~0.0079	0.0039~0.0787	

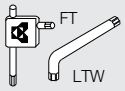
★ : 1st Recommendation ☆ : 2nd Recommendation

Swiss Style Length Toolholder Reference Table (KTKF / KGM)

Conventional Toolholder				Alternative Toolholder			
Part Number	Overall Length (mm)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Part Number	Overall Length (mm)	Notes	Reference Page
KTKF□ 1010K-12	125	SB-4590TRWN	LTW-10S	KTKF□ 1010JX-12	120		H8
KTKF□ 1212M-12	150			KTKF□ 1212JX-12	120		
KTKF□ 1616M-12	150			KTKF□ 1616JX-12	120		
KTKF□ 1010K-16	125			KTKF□ 1010JX-16	120		
KTKF□ 1212M-16	150			KTKF□ 1212JX-16	120		
KTKF□ 1616M-16	150			KTKF□ 1616JX-16	120		
KGM□ 0810K-1.5-125	125	SE-40120TR	LTW-15S	-	-	No Replacement	H36
KGM□ 1010K-1.5-125	125			KGM□ 1010JX-1.5	120		
KGM□ 1212M-1.5-150	150			KGM□ 1212JX-1.5	120		
KGM□ 0810K-2-125	125	SE-40120TR	LTW-15S	-	-	No Replacement	
KGM□ 1010K-2-125	125			KGM□ 1010JX-2	120		
KGM□ 1212M-2-150	150			KGM□ 1212JX-2	120		
KGM□ 1616M-2-150	150	SE-50125TR	LTW-20	KGM□ 1616JX-2	120		
KGM□ 1010K-2.5-125	125	SE-40120TR	LTW-15S	-	-	No Replacement	
KGM□ 1212M-2.5-150	150			KGM□ 1212JX-2.5	120		
KGM□ 1616M-2.5-150	150	SE-50125TR	LTW-20	KGM□ 1616JX-2.5	120		
KGM□ 1616M-3-150	150	SE-50125TR	LTW-20	KGM□ 1616JX-3	120		

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

Swiss Style Length Toolholder Reference Table (KTKH-B / KTKH-S)

Conventional Toolholder					Alternative Toolholder			
Part Number	Cut-Off Diameter (mm)	Spare Parts: Releasing Wrench	Spare Parts: Clamp Screw	Spare Parts: Wrench	Part Number	Cut-Off Diameter (mm)	Notes	Reference Page
								
KTKH□ 0808K-1.6-125B	Ø10	-	SE-40120TR	FT-15	-	-	No Replacement	H36
KTKH□ 1010K-1.6-125B	Ø20				KGM□ 1010JX-1.5	Ø20		
KTKH□ 1212M-1.6-150B	Ø25				KGM□ 1212JX-1.5	Ø25		
KTKH□ 1414M-1.6-150B	Ø26				-	-	No Replacement	
KTKH□ 1010K-2-125B	Ø20	-	SE-40120TR	FT-15	KGM□ 1010JX-2	Ø20		
KTKH□ 1212M-2-150B	Ø25				KGM□ 1212JX-2	Ø25		
KTKH□ 1616M-2-150B	Ø32	-	SE-50125TR	LTW-20	KGM□ 1616JX-2	Ø32		
KTKH□ 1616M-3-150B	Ø32				KGM□ 1616JX-3	Ø32		
KTKHR 1010K-2-125S	Ø30	LTK-5	-	-	KGMR 1010JX-2	Ø20	Small Machining Dia.	
KTKH□ 1212M-2-150S	Ø30				KGM□ 1212JX-2	Ø25	Small Machining Dia.	
KTKH□ 1616M-2-150S	Ø36				KGM□ 1616JX-2	Ø32	Small Machining Dia.	
KTKH□ 1616M-3-150S	Ø45				KGM□ 1616JX-3	Ø32	Small Machining Dia.	

Note) The corresponding alternative toolholder may be different from the conventional toolholder in insert clamping system or insert size.
Make sure of their specifications by referring to the catalog or other documents.

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THREADING

J

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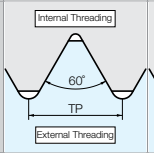
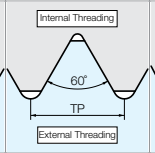
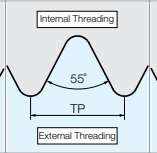
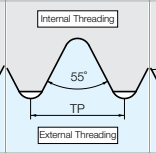
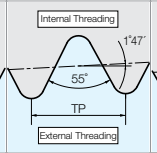
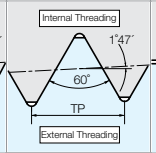
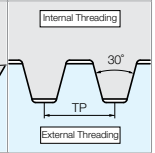
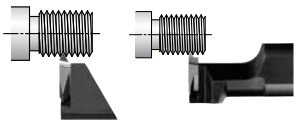
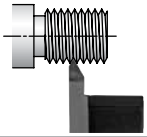
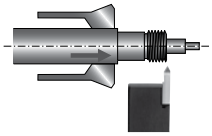
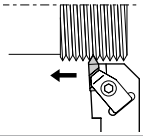
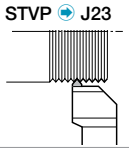
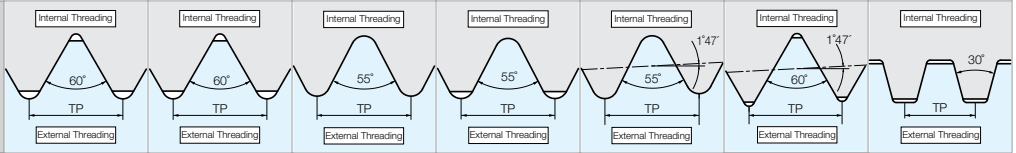
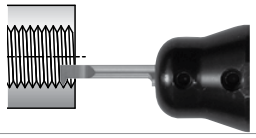
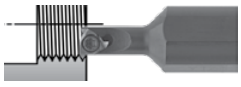
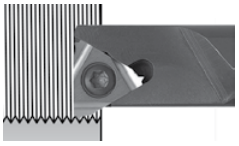
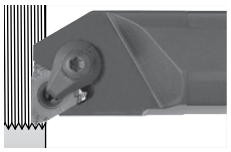
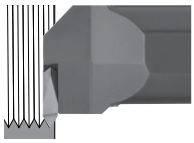
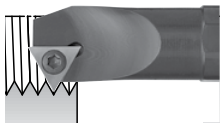
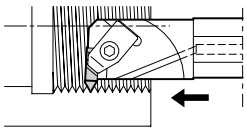
Tooling Application (External)

Thread Types		Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Pipe	30° Trapezoidal
		M	UN, UNC UNF, UNEF	G (PF)	W	R (PT) (BSPT)	NPT	Tr
Thread Shape								
Toolholder Shape / Pitch		mm	TPI	TPI	TPI	TPI	TPI	mm
KTN ➡ J20 (KTN-JCT) ➡ J21	Full Profile	0.50~5.00 (0.50~3.00) ➡ J6	24~8 (24~8) ➡ J8	19~11 (19~11) ➡ J10	16~11 (16~11) ➡ J10	28~11 (28~11) ➡ J12	18.0~11.5 (18.0~11.5) ➡ J14	-
	Partial Profile	0.50~5.00 (0.50~3.00) ➡ J16	48~5 (48~8) ➡ J16	28~11 (28~11) ➡ J18	40~5 (40~8) ➡ J18	28~11 (28~11) ➡ J18	-	2.00~5.00 (2.00~3.00) ➡ J18
KTNS ➡ J20	Full Profile	0.50~3.00 ➡ J6	24~8 ➡ J8	19~11 ➡ J10	16~11 ➡ J10	28~11 ➡ J12	18.0~11.5 ➡ J14	-
	Partial Profile	0.50~3.00 ➡ J16	48~8 ➡ J16	28~11 ➡ J18	40~8 ➡ J18	28~11 ➡ J18	-	2.00~3.00 ➡ J18
KTT ➡ J30	Full Profile	1.00~2.00 ➡ J30	-	-	-	-	-	-
	Partial Profile	0.50~3.50 ➡ J30	56~8 ➡ J30	28~11 ➡ J30	24~7 ➡ J30	28~11 ➡ J30	-	-
KTTX ➡ J28 S-KTTX ➡ J28 	Partial Profile	0.50~2.00 ➡ J29	56~14 ➡ J29	28~11 ➡ J29	24~11 ➡ J29	28~11 ➡ J29	-	-
KTKF ➡ J26 	Partial Profile	0.20~1.50 ➡ J26	64~18 ➡ J26	28~19 ➡ J26	40~16 ➡ J26	28~19 ➡ J26	-	-
KTKF ➡ J26 (Goose-neck Holders) 								
KKC ➡ J24 	Partial Profile	0.70~4.00 ➡ J25	44~5 ➡ J25	-	-	-	-	-
STVP ➡ J23 	Partial Profile	0.50~4.00 ➡ J23	72~6 ➡ J23	-	-	-	-	-

- Threading Inserts Identification System
  Full Profile See Page ➡ **J6**
  Partial Profile See Page ➡ **J16**
- Pitch in parentheses ( ) applies to the KTN-JCT

Tooling Application (Internal)

Thread Types		Metric	Unified	Parallel Pipe	Whitworth	Tapered Pipe	American National Pipe	30° Trapezoidal
		M	UN, UNC UNF, UNEF	G (PF) Rp (PS)	W	Rc (PT) (BSPT)	NPT	Tr
Thread Shape								
Toolholder Shape / Pitch		mm	TPI	TPI	TPI	TPI	TPI	mm
EZT ➡ J32 	Partial Profile	0.50~1.75 ➡ J32	36~16 ➡ J32	28~19 ➡ J32	24~18 ➡ J32	28~19 ➡ J32	18~14 ➡ J32	-
VNT ➡ J36	Partial Profile	0.75~1.50 ➡ J36	28~18 ➡ J36	-	-	-	-	-
SIN ➡ J22 	Full Profile	0.50~5.00 ➡ J7	24~8 ➡ J9	19~11 ➡ J11	16~11 ➡ J11	28~11 ➡ J13	18~11.5 ➡ J15	-
	Partial Profile	0.50~5.00 ➡ J17	48~5 ➡ J17	28~11 ➡ J19	40~5 ➡ J19	28~11 ➡ J19	-	2.00~5.00 ➡ J19
CIN ➡ J22 	Full Profile	1.00~5.00 ➡ J7	24~8 ➡ J9	19~11 ➡ J11	16~11 ➡ J11	28~11 ➡ J13	18~11.5 ➡ J15	-
	Partial Profile	0.50~5.00 ➡ J17	48~5 ➡ J17	28~11 ➡ J19	40~5 ➡ J19	28~11 ➡ J19	-	2.00~5.00 ➡ J19
KITG ➡ J31 	Partial Profile	0.50~3.00 ➡ J31	48~8 ➡ J31	28~11 ➡ J31	24~8 ➡ J31	28~11 ➡ J31	-	-
STWP ➡ J37 	Partial Profile	0.75~3.50 ➡ J37	28~8 ➡ J37	-	-	-	-	-
A-KKC ➡ J25 	Partial Profile	2.50~3.50 ➡ J25	44~5 ➡ J25	-	-	-	-	-

TQ Chipbreaker

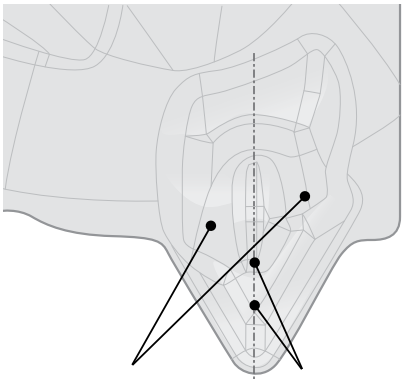
Advanced Productivity with Chip Control Improvements
Prolonged Tool Life with Newly Added Grades

1 Stable Chip Control

Stable Chip Control with Asymetrical Chipbreaker Design

Chipbreaker Geometry

Stable chip control regardless of cutting direction

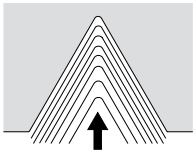


For Radial Infeed
Asymmetric dot design controls chip-flow direction

For Flank Infeed / Flank Compound Infeed
Breaks chips easily with shallow chipbreaker depth

Chip Control Comparison (Internal Evaluation)

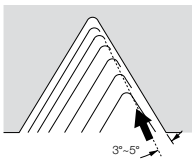
Radial Infeed



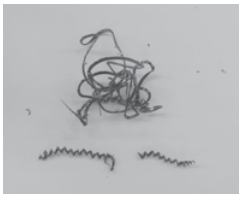
TQ Chipbreaker

Competitor A

Flank Compound Infeed



TQ Chipbreaker



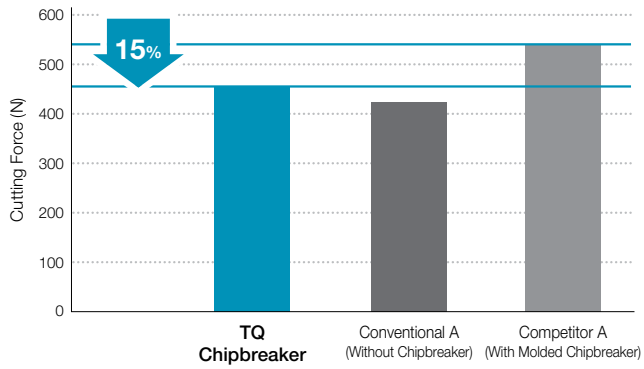
Competitor A

Cutting Conditions: Vc = 490 sfm, D.O.C. = 0.005" (4th pass), L = 0.984", Wet,
16ER150ISO type, M45 × TP1.5 Workpiece Material: 4115

2 Low Cutting Force and Resists Vibration

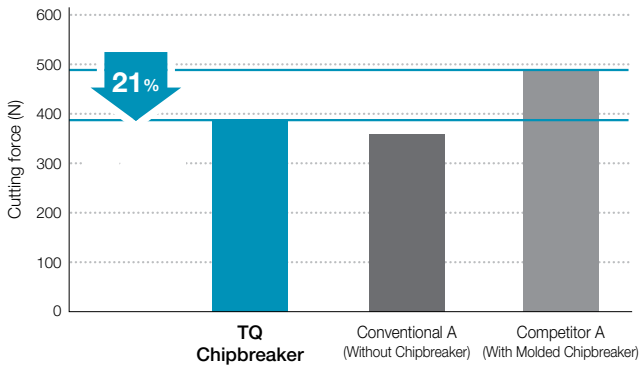
Strong Edge and Low Cutting Forces

Cutting Force Comparison with Radial Infeed (Internal Evaluation)



Cutting Conditions: Vc = 490 sfm, Wet, 16ER150ISO type
Cutting force is average of total passes (6 passes), M35 × TP1.5 Workpiece Material: 4115

Cutting Force Comparison with Flank Compound Infeed (Internal Evaluation)



Cutting Conditions: Vc = 490 sfm, Adjusted Angle 5°, Wet, 16ER150ISO type
Cutting force is average of total passes (6 passes), M35 × TP1.5 Workpiece Material: 4115

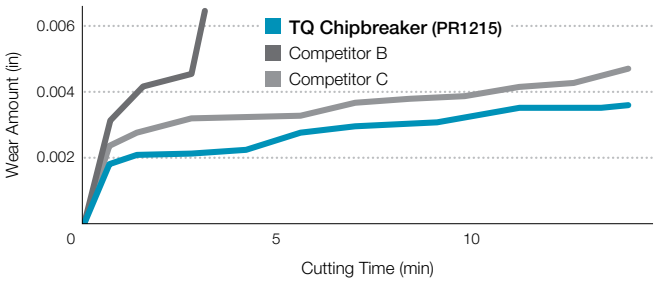
NEW ITEMS!

3 Improved Tool Life with Newly Added Grades

PR1215 for Steel Machining
PR1515 / PR1535 (Stability Oriented) for Stainless Steel Machining

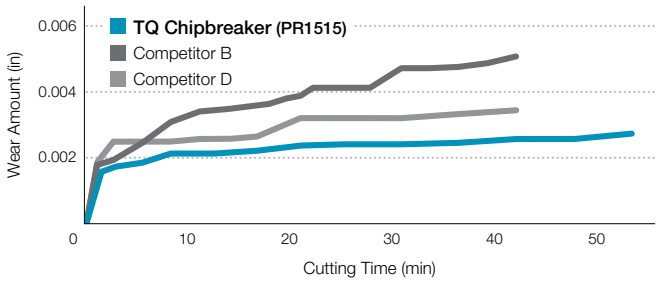
Wear Resistance Comparison (Internal Evaluation)

Workpiece Material : 4137



Cutting Conditions: Vc = 490 sfm, TP = 1.5 mm, No. of Passes = 6, Wet, 16ER150ISO type Radial Infeed

Workpiece Material : 304



Cutting Conditions: Vc = 330 sfm, TP = 1.5 mm, No. of Passes = 8, Wet, 16ER150ISO type Radial Infeed

KTKF J26

"JX" Toolholders (Overall Length 4.75") Are Available!

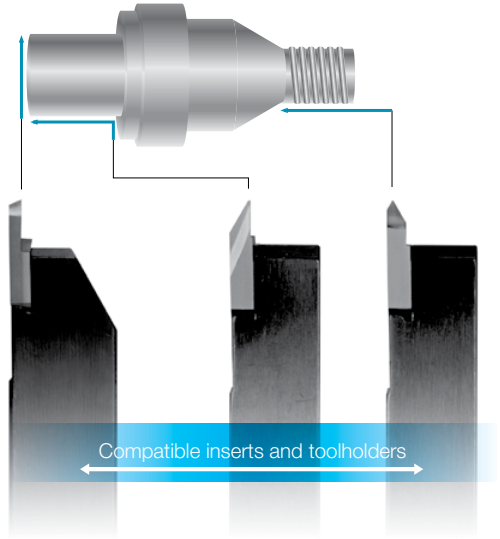
Threading

For Threading

TKFT

● Applicable for various types of threading

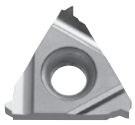
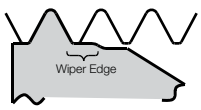
Metric (M)	Parallel Pipe [G(PF)]
Unified (UN)	Tapered Pipe [R(PT), (BSPT)]



Small Parts Cut-Off **TKF** | Back Turning **TKFB** | Threading **TKFT**

Threading Insert Features

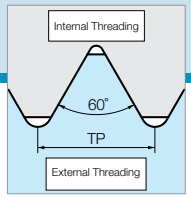
● Full Profile and Partial Profile

	Shape	Function	Advantages
Full Profile			① Burr-free thread surface; high quality (smooth feeling) ② Leave the workpiece diameter slightly oversized for full topping ③ Every pitch size requires a specific insert
Partial Profile			① Threads crest tends to be sharp edged ② Thread's O.D. or I.D. needs to be finished to the size before threading ③ One insert can machine various pitch sizes

● Thread Precision

Thread Type		Thread Precision: Tight ← → Loose		
Metric	External Threading	4h (1st Class)	6g (2nd Class)	8g (3rd Class)
	Internal Threading	5h (1st Class)	6h (2nd Class)	7h (3rd Class)
Unified	External Threading	3A	2A	1A
	Internal Threading	3B	2B	1B
Applicable Accuracy with Wiper Edge		※X	✓	✓

※ Not recommended if tight thread precision is required



External Threading Inserts

Metric (M)

60° Full Profile (mm)

Part Number	Previous Part Number	IC	S	D1
16ER/L	TNN32ER/L	9.525	3.68	4.00
22ER/L	TNN43ER/L	12.70	4.9	4.85

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							●
N	Non-ferrous							●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread M Pitch mm	Dimensions (mm) RE	PDX	Angle PNA	Cermet TC60 R	TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16ER 100ISO-TF	-	1.00	0.12	0.80	60°									●				
	16ER 125ISO-TF	-	1.25	0.15	0.90	60°									●				
	16ER 150ISO-TF	-	1.50	0.19	1.00	60°			●		●		●		●				
	16ER 175ISO-TF	-	1.75	0.22	1.60	60°									●				
	16ER 200ISO-TF	-	2.00	0.25	1.50	60°									●				
	16ER 250ISO-TF	-	2.50	0.33	1.60	60°									●				
	16ER 300ISO-TF	-	3.00	0.41	1.60	60°									●				
	16ER 050ISO	TNN32ER 050M	0.50	0.06	0.40	60°	●								●		●		
	16ER 075ISO	TNN32ER 075M	0.75	0.09	0.53	60°	●								●		●		
	16ER 100ISO	TNN32ER 100M	1.00	0.12	0.80	60°	●										●		
	16ER 125ISO	TNN32ER 125M	1.25	0.15	0.90	60°									●		●		
	16ER 150ISO	TNN32ER 150M	1.50	0.19	1.00	60°	●										●		
	16ER 175ISO	TNN32ER 175M	1.75	0.22	1.50	60°	●												
	16ER 200ISO	TNN32ER 200M	2.00	0.25	1.50	60°	●										●		
	16ER 250ISO	TNN32ER 250M	2.50	0.32	1.60	60°	●											●	
	22ER 300ISO	TNN43ER 300M	3.00	0.41	2.10	60°	●								●				
	22ER 350ISO	TNN43ER 350M	3.50	0.48	2.10	60°	●								●				
	22ER 400ISO	TNN43ER 400M	4.00	0.55	2.80	60°	●								●				
	22ER 450ISO	TNN43ER 450M	4.50	0.62	2.80	60°	●								●				
	22ER 500ISO	TNN43ER 500M	5.00	0.70	2.80	60°	●								●				
NEW Molded Chipbreaker	16ER 100ISO-TQ	-	1.00	0.12	0.80	60°			●		●		●						
	16ER 125ISO-TQ	-	1.25	0.15	0.90	60°			●		●		●						
	16ER 150ISO-TQ	-	1.50	0.19	1.00	60°			●		●		●						
	16ER 200ISO-TQ	-	2.00	0.25	1.50	60°			●		●		●						

J39

Applicable Toolholders

Recommended Cutting Conditions J38

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) / KTNSR...-16	J20~J21
16EL...	KTNL...-16	
22ER...	KTNR...-22	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Threading Insert Identification System (Full Profile) J6~ J15

16	E	R	100	ISO	-TF
①	②	③	④	⑤	⑥

① Insert Size	
11	6.350
16	9.525
22	12.70
Symbol	I.C. Size (mm)

② External / Internal	
E	External Threading
I	Internal Threading

③ Insert Hand	
R	Right hand
L	Left hand

④ Pitch	
Metric (M)	
100	Pitch 1.0mm
150	Pitch 1.5mm
Inch Screw Threading	
24	24 TPI
20	20 TPI
Full Profile	

⑤ Applicable Thread	
ISO	Metric (M)
M	Metric (M)
UN	Unified
W	Whitworth
BSPT	Tapered Pipe
NPT	American National Pipe
Full Profile	

⑥ Optional Code	
-TF	TF Cutting Edge
-TQ	Molded Chipbreaker

TC60 Threading Inserts sold in 10 piece boxes.

All other grade Inserts are sold in 5 piece boxes.

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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NEW ITEMS!

Internal Threading Inserts

Metric (M)

60° Full Profile (mm)

Part Number	Previous Part Number	IC	S	D1
11I℞	TNN22I℞	6.350	3.18	3.0
16I℞	TNN32I℞	9.525	3.68	4.0
22IR	TNN43IR	12.70	4.9	4.85

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●			
M	Stainless Steel			●	○	
K	Cast Iron					●
N	Non-ferrous					●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread M Pitch mm	RE	PDX	PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	11IR 100ISO-TF	-	1.00	0.07	0.80	60°									●				
	11IR 125ISO-TF	-	1.25	0.08	1.10	60°									●				
	11IR 150ISO-TF	-	1.50	0.11	1.10	60°									●				
	11IR 175ISO-TF	-	1.75	0.12	1.10	60°									●				
	16IR 100ISO-TF	-	1.00	0.07	0.80	60°									●				
	16IR 125ISO-TF	-	1.25	0.08	1.10	60°									●				
	16IR 150ISO-TF	-	1.50	0.11	1.10	60°									●				
	16IR 175ISO-TF	-	1.75	0.12	1.10	60°									●				
	16IR 200ISO-TF	-	2.00	0.14	1.50	60°									●				
	16IR 250ISO-TF	-	2.50	0.17	1.50	60°									●				
	16IR 300ISO-TF	-	3.00	0.19	1.60	60°									●				
	11I℞ 050ISO	TNN22I℞ 050M	0.50	0.03	0.55	60°	●								●		●		J39
	11I℞ 075ISO	TNN22I℞ 075M	0.75	0.05	0.68	60°	●								●		●		
	11I℞ 100ISO	TNN22I℞ 100M	1.00	0.07	0.80	60°	●									●	●		
	11I℞ 125ISO	TNN22I℞ 125M	1.25	0.08	1.10	60°	●										●		
	11I℞ 150ISO	TNN22I℞ 150M	1.50	0.11	1.10	60°	●									●	●		
	11I℞ 175ISO	TNN22I℞ 175M	1.75	0.12	1.10	60°	●												
	11I℞ 200ISO	TNN22I℞ 200M	2.00	0.14	0.90	60°									●				
	16I℞ 100ISO	TNN32I℞ 100M	1.00	0.07	0.80	60°	●									●	●		
	16I℞ 125ISO	TNN32I℞ 125M	1.25	0.08	1.10	60°	●												
	16I℞ 150ISO	TNN32I℞ 150M	1.50	0.11	1.10	60°	●										●	●	
	16I℞ 175ISO	TNN32I℞ 175M	1.75	0.12	1.10	60°	●												
	16I℞ 200ISO	TNN32I℞ 200M	2.00	0.14	1.50	60°	●										●	●	
	16I℞ 250ISO	TNN32I℞ 250M	2.50	0.16	1.50	60°	●											●	
	16I℞ 300ISO	TNN32I℞ 300M	3.00	0.19	1.60	60°												●	
	22IR 300ISO	TNN43IR 300M	3.00	0.19	1.80	60°	●												
	22IR 350ISO	TNN43IR 350M	3.50	0.23	2.10	60°	●								●				
	22IR 400ISO	TNN43IR 400M	4.00	0.26	2.80	60°	●								●				
	22IR 450ISO	TNN43IR 450M	4.50	0.30	2.80	60°	●								●				
	22IR 500ISO	TNN43IR 500M	5.00	0.34	2.80	60°	●								●				
NEW Molded Chipbreaker	16IR 100ISO-TQ	-	1.00	0.07	0.80	60°			●		●		●						
	16IR 125ISO-TQ	-	1.25	0.08	1.10	60°			●		●		●						
	16IR 150ISO-TQ	-	1.50	0.11	1.10	60°			●		●		●						
	16IR 200ISO-TQ	-	2.00	0.14	1.50	60°			●		●		●						

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
11IR...	SINR...-11E SINR...-11	J22
11IL...	SINL...-11E SINL...-11	

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16 CINR...-16	J22
16IL...	SINL...-16 CINL...-16	
22IR...	SINR...-22 CINR...-22	

Applicable Thread		
	M: Metric	R, Rc, (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes. *All other grade Inserts are sold in 5 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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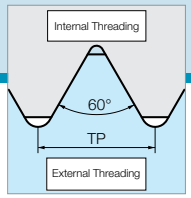


External Threading Inserts

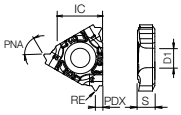
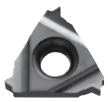
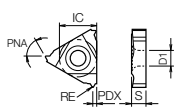
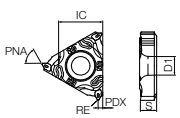
Unified (UN)

60° Full Profile (in)

Part Number	Previous Part Number	IC	S	D1
16ER	TNN32ER	0.375	0.145	0.157
22ER	TNN43ER	0.500	0.193	0.191

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							
N	Non-ferrous							

Insert (Right-handed Insert Shown)		Part Number	Previous Part Number	Applicable Thread UN, UNF Pitch TPI	Dimensions (in) RE	Dimensions (in) PDX	Angle PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile			16ER 24UN-TF	-	24	0.0047	0.0315	60°								●				
			20UN-TF		20	0.0059	0.0394									●				
			18UN-TF		18	0.0071	0.0394									●				
			16UN-TF		16	0.0079	0.0433									●				
			14UN-TF		14	0.0091	0.0591									●				
			13UN-TF		13	0.0098	0.0591									●				
			12UN-TF		12	0.0106	0.0591									●				
			10UN-TF		10	0.0134	0.0591									●				
			08UN-TF		8	0.0169	0.0689									●				
			16ER/L 24UN	TNN32ER 24UN	24	0.0051	0.0315	60°	●											J39
			20UN	20UN	20	0.0063	0.0394		●											
			16UN	16UN	16	0.0079	0.0433			●										
			14UN	14UN	14	0.0091	0.0591		●											
			12UN	12UN	12	0.0106	0.0591		●											
			22ER 08UN	TNN43ER 08UN	8	0.0169	0.0827		●					●		●				
	NEW		16ER 24UN-TQ	-	24	0.0047	0.0315	60°			●		●		●					
			20UN-TQ		20	0.0059	0.0394				●		●		●					
			18UN-TQ		18	0.0071	0.0394				●		●		●					
			16UN-TQ		16	0.0079	0.0433				●		●		●					
			14UN-TQ		14	0.0091	0.0591				●		●		●					
			13UN-TQ		13	0.0098	0.0591				●		●		●					
			12UN-TQ		12	0.0106	0.0591				●		●		●					
			10UN-TQ		10	0.0134	0.0591				●		●		●					
			08UN-TQ		8	0.0169	0.0689				●		●		●					

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21
22ER...	KTNR...-22	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes.
All other grade Inserts are sold in 5 piece boxes.

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NEW ITEMS!

Internal Threading Inserts

Unified (UN)

60° Full Profile (in)

Part Number	Previous Part Number	IC	S	D1
16IR	TNN32IR	0.375	0.145	0.157
22IR	TNN43IR	0.500	0.193	0.191

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							
N	Non-ferrous							

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread UN, UNF Pitch TPI	Dimensions (in) RE	Dimensions (in) PDX	Angle PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16IR 24UN-TF	-	24	0.0024	0.0315	60°									●				
	16IR 20UN-TF	-	20	0.0031	0.0394	60°									●				
	16IR 18UN-TF	-	18	0.0035	0.0394	60°									●				
	16IR 16UN-TF	-	16	0.0039	0.0433	60°									●				
	16IR 14UN-TF	-	14	0.0047	0.0591	60°									●				
	16IR 13UN-TF	-	13	0.0051	0.0591	60°									●				
	16IR 12UN-TF	-	12	0.0055	0.0591	60°									●				
	16IR 10UN-TF	-	10	0.0067	0.0591	60°									●				
	16IR 08UN-TF	-	8	0.0083	0.0709	60°									●				
	16IR 24UN	TNN32IR 24UN	24	0.0020	0.0315	60°	●												J39
	16IR 20UN	TNN32IR 20UN	20	0.0028	0.0394	60°	●												
	16IR 18UN	TNN32IR 18UN	18	0.0035	0.0394	60°	●												
	16IR 16UN	TNN32IR 16UN	16	0.0039	0.0433	60°	●												
	16IR 14UN	TNN32IR 14UN	14	0.0047	0.0591	60°	●												
	16IR 12UN	TNN32IR 12UN	12	0.0055	0.0591	60°	●												
	22IR 08UN	TNN43IR 08UN	9	0.0055	0.0591	60°	●								●				
NEW	16IR 24UN-TQ	-	24	0.0024	0.0315	60°			●		●		●						
	16IR 20UN-TQ	-	20	0.0031	0.0394	60°			●		●		●						
	16IR 18UN-TQ	-	18	0.0035	0.0394	60°			●		●		●						
	16IR 16UN-TQ	-	16	0.0039	0.0433	60°			●		●		●						
	16IR 14UN-TQ	-	14	0.0047	0.0591	60°			●		●		●						
	16IR 13UN-TQ	-	13	0.0051	0.0591	60°			●		●		●						
	16IR 12UN-TQ	-	12	0.0055	0.0591	60°			●		●		●						
	16IR 10UN-TQ	-	10	0.0067	0.0591	60°			●		●		●						
	16IR 08UN-TQ	-	8	0.0083	0.0709	60°			●		●		●						

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16 CINR...-16	J22
22IR...	SINR...-22 CINR...-22	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

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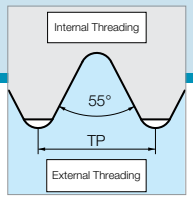

External Threading Inserts

Parallel Pipe [G (PF)], Whitworth (W)

55° Full Profile (in)

Part Number	Previous Part Number	IC	S	D1
16ER	TNN32ER	0.375	0.145	0.157

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							
N	Non-ferrous							

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread G (PF) Pitch TPI	Applicable Thread W Pitch TPI	RE	PDX	PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	16ER 19W-TF	-	19	-	0.0063	0.0394	55°									●				
	16W-TF		-	16	0.0075	0.0433										●				
	14W-TF		14	14	0.0091	0.0591										●				
	11W-TF		11	11	0.0118	0.0591										●				
	16ER 19W	TNN32ER 19W	19	-	0.0063	0.0394	55°	●												J40
	14W	14W	14	14	0.0091	0.0591		●												
	11W	11W	11	11	0.0118	0.0591		●												
NEW Molded Chipbreaker	16ER 19W-TQ	-	19	-	0.0063	0.0394	55°			●		●		●						
	14W-TQ		14	14	0.0091	0.0591				●		●		●						
	11W-TQ		11	11	0.0118	0.0591				●		●		●						

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

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NEW ITEMS!

Internal Threading Inserts

Parallel Pipe [G (PF)], Whitworth (W)

55° Full Profile (in)

Part Number	Previous Part Number	IC	S	D1
16IR	TNN32IR	0.375	0.145	0.157

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							
N	Non-ferrous							

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread G (PF)	Applicable Thread W	Dimensions (in) RE	Dimensions (in) PDX	Angle PNA	Cermet TC60	MEGACOAT / MEGACOAT NANO PR1215	MEGACOAT / MEGACOAT NANO PR1515	MEGACOAT / MEGACOAT NANO PR1535	PVD Coated Carbide PR1115	Carbide GW15	Ref. Page for D.O.C. & Number of Passes
			Pitch TPI					R L	R L	R L	R L	R L	R L	
Full Profile	16IR 19W-TF	-	19	-	0.0063	0.0394	55°					●		
	16IR 16W-TF	-	-	16	0.0075	0.0433	55°					●		
	16IR 14W-TF	-	14	14	0.0091	0.0591	55°					●		
	16IR 11W-TF	-	11	11	0.0118	0.0591	55°					●		
	16IR 14W	TNN32IR 14W	14	14	0.0091	0.0591	55°	●						J40
	16IR 11W	TNN32IR 11W	11	11	0.0118	0.0591	55°	●						
NEW Molded Chipbreaker	16IR 14W-TQ	-	14	14	0.0091	0.0591	55°		●	●	●			
	16IR 11W-TQ	-	11	11	0.0118	0.0591	55°		●	●	●			

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16	J22

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

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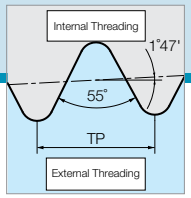


External Threading Insert

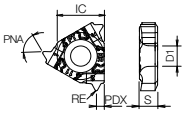
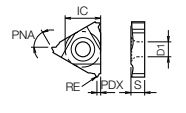
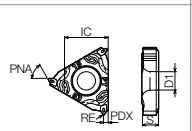
Tapered Pipe [R(PT), (BSPT)]

55° Full Profile (in)

Part Number	Previous Part Number	IC	S	D1
16ER	TNN32ER	0.375	0.145	0.157

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							●
N	Non-ferrous							●

Insert (Right-handed Insert Shown)			Part Number	Previous Part Number	Applicable Thread R (PT) (BSPT) Pitch TPI	Dimensions (in) RE	PDX	Angle PNA	Cermet TC60 R	TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile			16ER 28BSPT-TF	-	28	0.0039	0.0315	55°									●				
			16ER 19BSPT-TF		19	0.0063	0.0394										●				
			16ER 14BSPT-TF		14	0.0087	0.0630										●				
			16ER 11BSPT-TF		11	0.0114	0.0630										●				
			16ER 28BSPT	TNN32ER 28PT	28	0.0039	0.0315	55°	●										●		J40
			16ER 19BSPT	19PT	19	0.0063	0.0394		●										●		
			16ER 14BSPT	14PT	14	0.0087	0.0630		●										●		
			16ER 11BSPT	11PT	11	0.0114	0.0630		●										●		
	NEW Molded Chipbreaker		16ER 19BSPT-TQ	-	19	0.0063	0.0394	55°			●		●		●						
			16ER 14BSPT-TQ		14	0.0087	0.0630				●		●		●						
			16ER 11BSPT-TQ		11	0.0114	0.0630				●		●		●						

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes. *All other grade Inserts are sold in 5 piece boxes.*

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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NEW ITEMS!

Internal Threading Insert

Tapered Pipe [Rc(PT), (BSPT)]

55° Full Profile (in)

Part Number	Previous Part Number	IC	S	D1
11IR	TNN22IR	0.250	0.125	0.118
16IR	TNN32IR	0.375	0.145	0.157

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							●
N	Non-ferrous							●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread RC (PT) (BSPT) / Pitch / TPI	RE	PDX	PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile	11IR 28BSPT-TF		28	0.0039	0.0236	55°									●				
	11IR 19BSPT-TF	-	19	0.0063	0.0307										●				
	11IR 14BSPT-TF		14	0.0087	0.0382										●				
	16IR 14BSPT-TF	-	14	0.0087	0.0382	55°									●				
	16IR 11BSPT-TF		11	0.0114	0.0591										●				
	11IR 28BSPT	TNN22IR 28PT	28	0.0039	0.0236	55°	●										●		J40
	11IR 19BSPT	TNN22IR 19PT	19	0.0063	0.0307		●										●		
	11IR 14BSPT	TNN22IR 14PT	14	0.0087	0.0382												●		
	16IR 14BSPT	TNN32IR 14PT	14	0.0087	0.0382	55°	●										●		
	16IR 11BSPT	TNN32IR 11PT	11	0.0114	0.0591		●										●		
NEW Molded Chipbreaker	11IR 19BSPT-TQ	-	19	0.0063	0.0307	55°			●		●		●						
	11IR 14BSPT-TQ		14	0.0087	0.0382				●		●		●						
NEW Molded Chipbreaker	16IR 14BSPT-TQ	-	14	0.0087	0.0382	55°			●		●		●						
	16IR 11BSPT-TQ		11	0.0114	0.0591				●		●		●						

Recommended Cutting Conditions J38

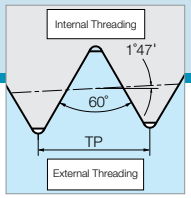
Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
11IR ..	SINR...-11E SINR...-11	J22
16IR ..	SINR...-16 CINR...-16	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes. *All other grade Inserts are sold in 5 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology



External Threading Insert

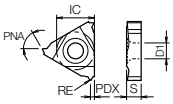
American National Pipe [NPT]

60° Full Profile (in)

Part Number	Previous Part Number	IC	S	D1
16ER	**TNN32ER**	0.375	0.145	0.157

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel					●				
M	Stainless Steel					●				
K	Cast Iron									●
N	Non-ferrous									●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread NPT / Pitch TPI	Dimensions (in) RE	PDX	Angle PNA	Cermet TC60 R	TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Full Profile 	**16ER 18NPT**	**TNN32ER 18NPT**	18.0	0.0016	0.0354	60°	●								●		●		J40
	14NPT	**14NPT**	14.0	0.0020	0.0591		●								●		●		
	11.5NPT	**11.5NPT**	11.5	0.0024	0.0591		●								●		●		

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21

Applicable Thread	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes.

All other grade Inserts are sold in 5 piece boxes.

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Internal Threading Insert

American National Pipe [NPT]

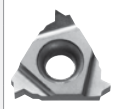
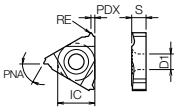
60° Full Profile

(in)

Part Number	Previous Part Number	IC	S	D1
16IR	**TNN32IR**	0.375	0.145	0.157

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel					●				
M	Stainless Steel					●				
K	Cast Iron						●			
N	Non-ferrous						●			

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread	Dimensions (in)		Angle	Cermet	MEGACOAT / MEGACOAT NANO			PVD Coated Carbide	Carbide	Ref. Page for D.O.C. & Number of Passes
			NPT / Pitch / TPI	RE	PDX	PNA	TC60	PR1215	PR1515	PR1535	PR1115	GW15	
							R L	R L	R L	R L	R L	R L	
Full Profile  	**16IR 18NPT**	**TNN32IR 18NPT**	18.0	0.0016	0.0354	60°	●				●	●	J40
	14NPT	**14NPT**	14.0	0.0020	0.0591	60°	●				●	●	
	11.5NPT	**11.5NPT**	11.5	0.0024	0.0591	60°	●				●	●	

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16 CINR...-16	J22

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

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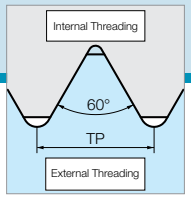


External Threading Insert

Metric (M), Unified (UN)

60° Partial Profile (in)

Part Number	Previous Part Number	IC	S	D1
16ER	TNN32ER	0.375	0.145	0.157
22ER	TNN43ER	0.500	0.193	0.191

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●				
M	Stainless Steel			●	○		
K	Cast Iron						●
N	Non-ferrous						●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread M	Applicable Thread UN UNF Pitch mm	Applicable Thread UN UNF Pitch TPI	RE	PDX	PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Partial Profile	16ER A60-TF			0.50~1.50	48~16	0.002	0.039										●				
	16ER G60-TF	-		1.75~3.00	14~8	0.009	0.063	60°									●				
	16ER AG60-TF			0.50~3.00	48~8	0.002	0.063										●				J40 J41
	16ER A60			0.50~1.50	48~16	0.002	0.039												●		
	16ER G60	-		1.75~3.00	14~8	0.009	0.063	60°											●		
	16ER AG60			0.50~3.00	48~8	0.002	0.063												●		
	22ER N60			3.50~5.00	7~5	0.019	0.098	60°									●		●		
	16ER 6001	TNN32ER 6001		1.00~2.50	24~11	0.004	0.059	60°	●												J44
	6002	6002		1.50~2.50	16~11	0.008	0.059		●												
NEW Molded Chipbreaker	16ER A60-TQ			0.50~1.50	48~16	0.002	0.039				●		●		●						
	16ER G60-TQ	-		1.75~3.00	14~8	0.009	0.063	60°			●		●		●						J40 J41
	16ER AG60-TQ			0.50~300	48~8	0.002	0.063				●		●		●						

Recommended Cutting Conditions ➡ J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	➡ J20~J21
22ER...	KTNR...-22	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Threading Insert Identification System (Partial Profile) ➡ J16 ~ ➡ J19

16	E	R	A60	-TF
①	②	③	④	⑤

① Insert Size

06	3.970
08	4.760
11	6.350
16	9.525
22	12.70
Symbol	I.C. Size (mm)

② External / Internal

E	External Threading
I	Internal Threading

③ Insert Hand

R	Right hand
L	Left hand

④ Pitch

60°	A60	60° Angle (Partial Profile) 0.50mm~1.50mm
	G60	60° Angle (Partial Profile) 1.75mm~3.00mm
	AG60	60° Angle (Partial Profile) 0.50mm~3.00mm
55°	A55	55° Angle (Partial Profile) 40~16 TPI
	G55	55° Angle (Partial Profile) 14~8 TPI
	AG55	55° Angle (Partial Profile) 40~8 TPI
Vertex Angle		Partial Profile

⑤ Optional Code

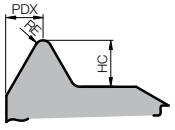
-TF	TF Cutting Edge
-TQ	Molded Chipbreaker

④ Pitch

60°	6001	60° Angle (Partial Profile) R Corner-R(RE)=0.10mm 1.00mm~2.50mm
55°	5501	55° Angle (Partial Profile) R Corner-R(RE)=0.10mm 28~11 TPI
Vertex Angle		Partial Profile

Note: Pitch and threads per inch of an insert without wiper depend on the size of insert.

• Example shape of A, G and AG



Part Number	Dimensions (mm) RE	PDX	HC
16ER A60-TF	0.002	0.039	0.059
16ER G60-TF	0.009	0.063	0.102
16ER AG60-TF	0.002	0.063	0.106

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Internal Threading Insert

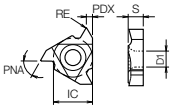
Metric (M), Unified (UN)

60° Partial Profile (in)

Part Number	Previous Part Number	IC	S	D1
06IR	TNN06IR	0.156	0.075	0.091
08IR	TNN08IR	0.187	0.094	0.091
11IR	TNN22IR	0.250	0.125	0.118
16IR	TNN32IR	0.375	0.145	0.157
22IR	TNN43IR	0.500	0.193	0.191

Usage Classification
● : 1st Choice
○ : 2nd Choice

		TC60	PR1215	PR1515	PR1535	PR1115	GW15
P	Carbon Steel / Alloy Steel					●	
M	Stainless Steel					●	
K	Cast Iron						●
N	Non-ferrous						●

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread M	Applicable Thread UN UNF	Dimensions (in) RE	Dimensions (in) PDX	Angle PNA	TC60 R	TC60 L	PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PR1115 R	PR1115 L	GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
			Pitch mm	Pitch TPI																
Partial Profile 	11IR A60	-	0.50~1.50	48~16	0.001	0.039	60°									●		●		
	16IR A60		0.50~1.50	48~16	0.001	0.039										●		●		
	G60		1.75~3.00	14~8	0.004	0.067	60°									●		●		
	AG60		0.50~3.00	48~8	0.001	0.067										●		●		J41 J42
	22IR N60		3.50~5.00	7~5	0.009	0.098	60°									●		●		
	06IR 60005	TNN06IR 60005	0.75~1.25	28~20	0.002	0.024	60°									●				
	08IR 60007	TNN08IR 60007	1.00~1.75	20~16	0.003	0.031	60°									●				
	11IR 60005	TNN22IR 60005	0.75~1.50	32~16	0.002	0.039	60°	●												
	16IR 6001	TNN32IR 6001	1.50~2.50	16~10	0.004	0.059	60°	●												J44
	60015	60015	2.50	11~10	0.006	0.059		●												

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
06IR...	SINR...-06E	J22
08IR...	SINR...-08E	
11IR...	SINR...-11E SINR...-11	
16IR...	SINR...-16 CINR...-16	
22IR...	SINR...-22 CINR...-22	

Applicable Thread		
	M: Metric	R, Rc, (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Corner-R (RE) Selection for Partial Profiling Inserts

	External Threading	Internal Threading
External Threading	RE ≦ 0.1443 X P	RE ≦ 0.0720 X P
Parallel Pipe Whitworth Tapered Pipe	For Both External and Internal Thread RE ≦ 0.1373 X P	

• Metric, Unified Thread

Corner-R (RE) at Internal Threading is almost half of that of External.

• Parallel Pipe, Tapered Pipe, Whitworth Thread

Same Corner-R (RE) for both External and Internal Threading.

RE : Corner-R TP : Pitch (TPI) ($= \frac{1}{n}$) n : TPI

TP : Pitch (Metric) ($= \frac{25.4}{n}$)

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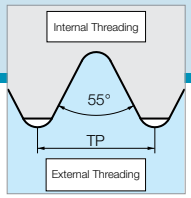


External Threading Insert

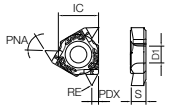
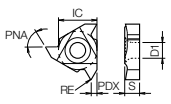
Parallel Pipe [G (PF)], Tapered Pipe [R, (PT), (BSPT)], Whitworth (W)

55° Partial Profile (in)

Part Number	Previous Part Number	IC	S	D1
16ER	TNN32ER	0.375	0.145	0.157
22ER	TNN43ER	0.500	0.193	0.191

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							●
N	Non-ferrous							●

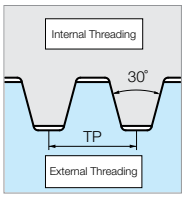
Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread G(PF) R(PT)	Applicable Thread W Pitch TPI	Dimensions (in) RE	Dimensions (in) PDX	Angle PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Partial Profile 	16ER A55-TF	-	28, 19	40~16	0.002	0.039	55°									●				
	G55-TF		14, 11	14~8	0.009	0.063										●				
	AG55-TF		28~11	40~8	0.002	0.063										●				
Partial Profile 	16ER A55	-	28, 19	40~16	0.002	0.039	55°											●		J42 J43
	G55		14, 11	14~8	0.009	0.063												●		
	AG55		28~11	40~8	0.002	0.063												●		
	22ER N55		-	7~5	0.019	0.098	55°									●		●		
	16ER 5501	TNN32ER 5501	28~11	24~10	0.004	0.059	55°	●												J44
	5502	5502	14, 11	16~9	0.006	0.059		●												

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21
22ER...	KTNR...-22	

Recommended Cutting Conditions J38

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal



External Threading Insert

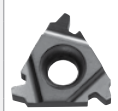
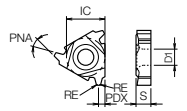
Trapezoidal (Tr)

30° Partial Profile (mm)

Part Number	Previous Part Number	IC	S	D1
16ER	TNN32ER	9.525	3.68	4.0
22ER	TNN43ER	12.70	4.9	4.85

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel						●	
M	Stainless Steel						●	
K	Cast Iron							
N	Non-ferrous							

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread Tr Pitch mm	Dimensions (mm) RE	Dimensions (mm) PDX	Angle PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Partial Profile  	16ER 200TR	TNN32ER 200TR	2.00	0.20	1.60	30°	●								●				
	300TR	300TR	3.00	0.20	1.60		●								●				
	22ER 400TR	TNN43ER 400TR	4.0	0.20	2.5	30°	●								●				J43
	500TR	500TR	5.0	0.20	2.5		●								●				

Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16ER...	KTNR...-16(JCT) KTNSR...-16	J20~J21
22ER...	KTNR...-22	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes. *All other grade Inserts are sold in 5 piece boxes.*

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Internal Threading Insert

Parallel Pipe [G(PF)], Tapered Pipe [Rc, (PT), (BSPT)], Whitworth (W)

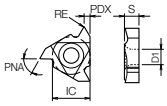
55° Partial Profile (in)

Part Number	Previous Part Number	IC	S	D1
06IR	TNN06IR	0.156	0.075	0.091
08IR	TNN08IR	0.187	0.094	0.091
11IR	TNN22IR	0.250	0.125	0.118
16IR	TNN32IR	0.375	0.145	0.157
22IR	TNN43IR	0.500	0.193	0.191

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel		●					
M	Stainless Steel			●	○			
K	Cast Iron							
N	Non-ferrous							

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread G(PF) Rc(PT)	Applicable Thread W Pitch TPI	RE	PDX	PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Partial Profile	11IR A55		28, 19	40~16	0.002	0.039	55°									●		●		
	16IR A55		28, 19	40~16	0.002	0.039										●		●		
	G55		14, 11	14~8	0.009	0.067	55°									●		●		
	AG55	-	28~11	40~8	0.002	0.067										●		●		J42 J43
	22IR N55		-	7~5	0.019	0.098	55°									●		●		
	06IR 5501		28	24	0.004	0.024	55°									●				
	08IR 5501		28, 19	24, 20	0.004	0.031	55°									●				
	11IR 55005	TNN22IR 55005	28~14	24~14	0.002	0.043	55°	●												
	16IR 5501	TNN32IR 5501	28~11	24~11	0.004	0.059	55°	●												J44
	5502	5502	14~11	16~11	0.008	0.059		●												



Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
06IR...	SINR...-06E	J22
08IR...	SINR...-08E	
11IR...	SINR...-11E SINR...-11	

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16 CINR...-16	J22
22IR...	SINR...-22 CINR...-22	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

Internal Threading Insert

Trapezoidal (Tr)

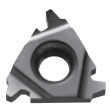
30° Partial Profile (mm)

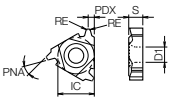
Part Number	Previous Part Number	IC	S	D1
16IR	TNN32IR	9.525	3.68	4.0
22IR	TNN43IR	12.70	4.9	4.85

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel						●	
M	Stainless Steel						●	
K	Cast Iron							
N	Non-ferrous							

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Applicable Thread Tr Pitch mm	RE	PDX	PNA	Cermet TC60 R	Cermet TC60 L	MEGACOAT / MEGACOAT NANO PR1215 R	PR1215 L	PR1515 R	PR1515 L	PR1535 R	PR1535 L	PVD Coated Carbide PR1115 R	PR1115 L	Carbide GW15 R	GW15 L	Ref. Page for D.O.C. & Number of Passes
Partial Profile	16IR 200TR	TNN32IR 200TR	2.00	0.20	1.60	30°									●				
	300TR	300TR	3.00	0.20	1.60										●				J43
	22IR 400TR	TNN43IR 400TR	4.0	0.20	2.5	30°									●				
	500TR	500TR	5.0	0.20	2.5										●				





Recommended Cutting Conditions J38

Applicable Toolholders

Part Number	Applicable Toolholders	Ref. Page for Toolholder
16IR...	SINR...-16 CINR...-16	J22
22IR...	SINR...-22 CINR...-22	

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

TC60 Threading Inserts sold in 10 piece boxes. *All other grade Inserts are sold in 5 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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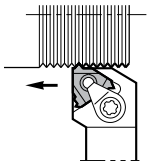
KTN



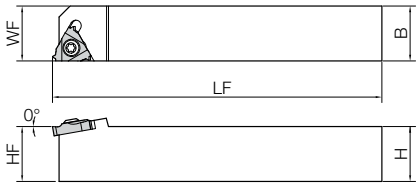


Fig. 1

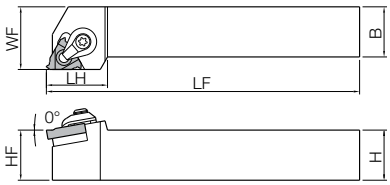
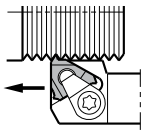


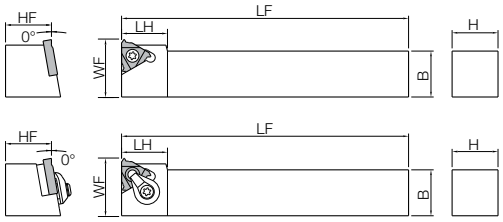
Fig. 2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

KTNS (For Gang Type NC Lathe)





KTNSR1010H-16
1212K-16

Fig. 3

KTNSR1616K-16
2020K-16

Fig. 4

• Thread to shoulder

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Drawing	Spare Parts: Clamp Set (5S 6S)	Insert Screw	Wrench (FT LTW LW)	Shim	Shim Screw	Applicable Inserts
KTN℞	12-3	●	□	inch	0.750	0.750	0.750	5.00	0.87	0.875	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	16E℞…
	16-3	●	□		1.000	1.000	1.000	6.00		1.250							
KTN℞	1216JX-16F	●	●	mm	12	12	16	120	-	16	Fig.1	-	SB-3.5TR	LTW-15S	-	-	16E℞…
	1616H-16	●	●		16	16		100	25	20	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	
	1616JX-16F	●	●					120	-	16	Fig.1	-	SB-3.5TR	LTW-15S	-	-	
	2020H-16*	●			20	20	20	100	25	25	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	
	2020JX-16F	●	●					120	-	20	Fig.1	-	SB-3.5TR	LTW-15S	-	-	
	2020K-16	●	●					125	25	25	Fig.2	CPS-5S	-	FT-15	TN-32	SP3X8	
	2525M-16	●	●		25	25	25	150		30							
	2525M-22	●			25	25	25	150	29	32		CPS-6S	-	LW-3	TN-43	SP3X8	22ER…
	3225P-22	●			32	32		170	34								
KTNSR	1010H-16	●			10	10	10	100	16	16	Fig.3	-	SB-3.5TR	FT-15	-	-	16ER…
	1212K-16	●			12	12	12	125	18	18							
	1616K-16	●			16	16	16			22	Fig.4	CPS-5S	-		TN-32	SP3X8	
	2020K-16	●			20	20	20		20	27.4							

* Mark indicates short shank type.

Reference Page for Applicable Inserts

Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	J6	J16	R (PT), (BSPT): Tapered Pipe	J12	J18
UN: Unified	J8	J16	W: Whitworth	J10	J18
UNF: Unified Fine Thread	J8	J16	NPT: American National Pipe	J14	-
G (PF): Parallel Pipe	J10	J16	Tr: 30° Trapezoidal	-	J18

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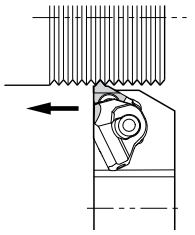
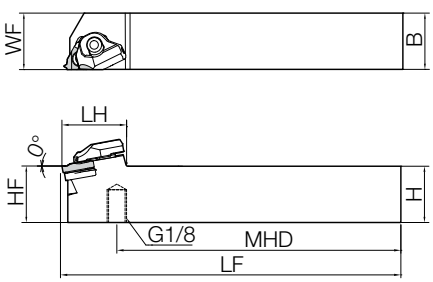
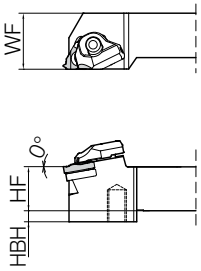
KTN-JCT (Jet Coolant-Through) NEW







KTNR2020K-16JCT shown above
KTNR12-16JCT shown above

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	WF	LF	LH	MHD	Spare Parts: Clamp Set	Pipe Connection (*1 with O-Ring)	Wrench	Shim	Shim Screw	Applicable Inserts
KTNR	12-16JCT	●		inch	0.750	0.750	0.234	0.750	0.875	5.000	1.122	4.042	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER…
	16-16JCT	●			1.000	1.000	-	1.000	1.000	6.000	1.122	5.042						
KTNR	2020K-16JCT	●		mm	20	20	5	20	25	125	33.3	100.7	CPS-5S-R-JCT	FP-12	FT-15	TN-32	SP3X8	16ER…
	2525M-16JCT	●			25	25	-	25	25	150	-	125.7						

*1 O-ring (SS-035) is available to order separately

Coolant Connections and Pipe Parts ➡ D11

Reference Page for Applicable Inserts

Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	➡ J6	➡ J16	R (PT), (BSPT): Tapered Pipe	➡ J12	➡ J18
UN: Unified	➡ J8	➡ J16	W: Whitworth	➡ J10	➡ J18
UNF: Unified Fine Thread	➡ J8	➡ J16	NPT: American National Pipe	➡ J14	-
G (PF): Parallel Pipe	➡ J10	➡ J16	Tr: 30° Trapezoidal	-	➡ J18

SIN / CIN

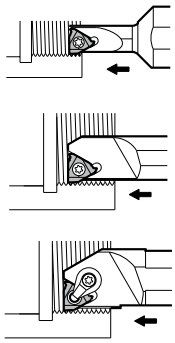


Fig.1

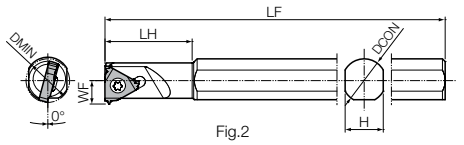


Fig.2

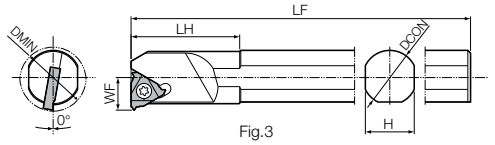


Fig.3

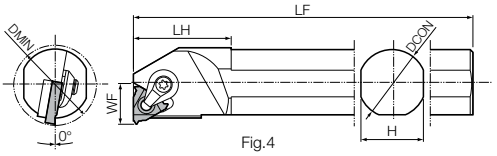


Fig.4

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	Dimensions H	Dimensions LF	Dimensions LH	Dimensions WF	Drawing	Spare Parts: Insert Screw	Spare Parts: Clamp Set	Spare Parts: Wrench	Spare Parts: Shim	Spare Parts: Shim Screw	Applicable Inserts
S10M- SINR-2	●		inch	0.590	0.625	0.56	5.91	1.18	0.295	Fig.1	SB-2TR	-	FT-8	-	-	11IR…
S10M- SINR-3	●			0.790		0.584		1.46	0.369	Fig.3	SB-3.5TR		FT-15			16IR…
S12X- SINR-3	●			0.940	0.750	0.710	7.09	1.57	0.470							
SIN□ 0612S-06E	●		mm	6.4	12	11	100	10	3.8	Fig.1	SB-2040TR	-	FT-6	-	-	06IR…
0816S-08E	●			7.8	16	15	125	16	4.0		SB-2050TR	-	FT-6	-	-	08IR…
1216S-11E	●	●		12	16	14	150	25	6.3		SB-2TR	-	FT-8	-	-	11IR…
1516S-11	●	●		15				30	7.5							
1616S-16	●			16	16	14	150	32	8.6	Fig.2	SB-3.5TR	-	FT-15	-	-	16IR…
2016S-16	●	●		20				37	10.0	Fig.3						
2420S-16	●	●		24	20	18	180	40	12.0							
2420S-22	●			24	20	18	180	40	13.5		SB-4085TR	-	FT-15	-	-	22IR…
CIN□ 3025S-16	●	●		30	25	23	200	36	15.0	Fig.4	-	CPS-5S	FT-15	TN-32	SP3X8	16IR…
3732S-16	●			37	32	30	250	45	18.5							
3025S-22	●			30	25	23	200	40	16.5		-	CPS-6S	LW-3	TN-43	SP3X8	22IR…
3732S-22	●			37	32	30	250	45	20							

Reference Page for Applicable Inserts

Applicable Thread	Full Profile	Partial Profile	Applicable Thread	Full Profile	Partial Profile
M: Metric	J7	J17	R (PT), (BSPT): Tapered Pipe	J13	J19
UN: Unified UNF: Unified Fine Thread	J9	J17	W: Whitworth	J11	J19
			NPT: American National Pipe	J15	-
G (PF): Parallel Pipe	J11	J19	Tr: 30° Trapezoidal	-	J19

Guide for Internal Threading

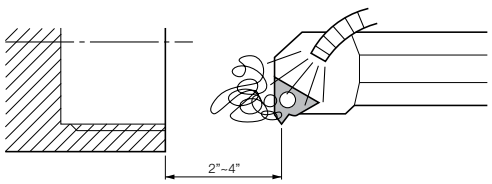
For internal threading, ensure consistent diameter and pay attention to chip evacuation.

1. Consistent diameters of pre-drilled holes
   Because fine pitch internal threads have small corner radii, any variation in the diameter of pre drilled holes will greatly affect the tool life of the insert. Please minimize any variation of pre drilled holes and add an air pass to the first thread pass for safety.

2. Chip evacuation
   If chips become entangled on the holder or in the part it may damage the insert. We suggest starting each thread pass at least 2" from the part to allow room for the coolant to remove chips from the tool on each pass.

< 1 When running the first part of a setup>
Run the program in single block to make sure coolant can remove the chips from the tool after each threading pass.

< 2 When running the second part of a setup>
Run through the full threading cycle and again check that chips are removed from the tool before going into production.



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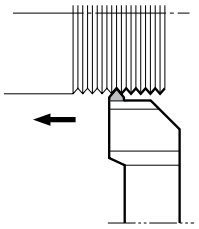
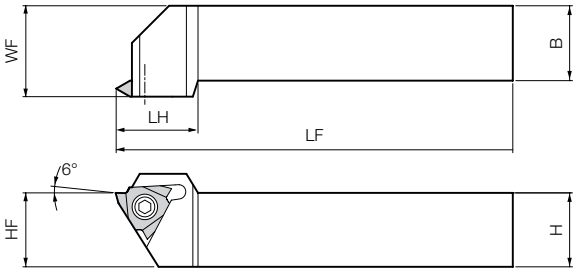
STVP





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	Spare Parts: Insert Screw	Spare Parts: Wrench
STVPR/L 12-3	●		inch	0.750	0.750	0.750	4.50	0.750	0.875	SB-4TR	FT-15
16-3	●			1.000	1.000	1.000	6.00	0.750	1.125		
16-4	●			1.000	1.000	1.000	6.00	0.950	1.125	GS-50	LW-3

Applicable Inserts

Part Number	Applicable Inserts	Ref. Page for Inserts
STVPR/L..-3	TPMC32NV TNMC32NV	See Below
STVPR/L..-4	TPMC43NV TNMC43NV	

External Threading Inserts

TNMC / TPMC

Shape (Right-handed Insert Shown)	Part Number	Applicable Thread	Pitch mm	Pitch TPI	Dimensions (in) IC	S	D1	RE	Angle (°) PNA	Insert Grade Cermet TC40	TC60
Partial Profile	TNMC 32NV60004	M UN	0.75~4.25	36~6	0.375	0.125	0.150	0.004	60°		●
	TNMC 43NV60004	M UN	0.75~4.25	36~6	0.500	0.188	0.203				●
	TPMC 32NV60002	M UN	0.35~3.00	72~8	0.375	0.125	0.177	0.002	60°		●
	32NV60004	M UN	0.75~3.00	36~8				0.004			●
	32NV60008	M UN	1.50~3.00	18~8				0.008		●	
	TPMC 43NV60004	M UN	0.75~4.25	36~6	0.500	0.188	0.217	0.004	60°		●

Inserts are sold in 10 piece boxes.

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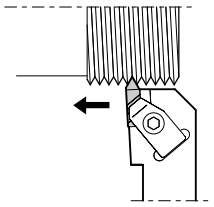
KKC (Cera-Notch Toolholders)



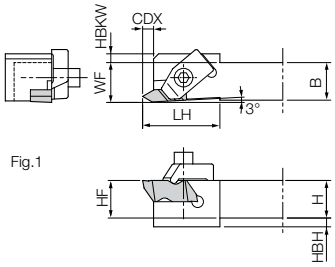


Fig.1

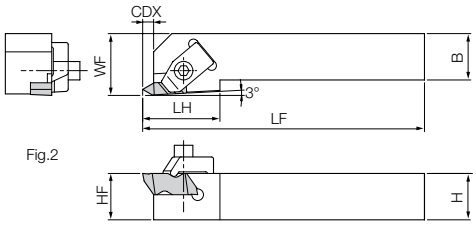


Fig.2

• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	HBH	B	LF	LH	WF	HBKW	CDX*	Drawing	Spare Parts Clamp	Clamp Bolt	Wrench
KKCR	**1212M-2-150F**	●		mm (inch)	12 (0.472)	12 (0.472)	-	12 (0.472)	150 (5.906)	19.05 (0.750)	12.25 (0.482)	-	3.5 (0.138)	Fig.1	CKC-2R	SKC-2	(7/64 hex)
KKCR/L	**6-2X**	●	●		0.375	0.375	-	0.375	2.500	0.750	0.562	-	0.138	Fig.2			
	6-2CF	●	●		0.375	0.375	0.125	0.375	5.000	0.750	0.385	0.125	0.138	Fig.1			
	8-2X	●	●		0.500	0.500	-	0.500	3.500	0.750	0.750	-	0.138	Fig.2	CKC-2R/L	SKC-2	(7/64 hex)
	8-2DF	●	●		0.500	0.500	-	0.500	6.000	0.750	0.510	-	0.138	Fig.1			
	10-2DF	●	●		0.625	0.625	-	0.625	6.00	0.750	0.635	-	0.138	Fig.1			
	12-2B	●	●		0.750	0.750	-	0.750	4.50	0.750	1.000	-	0.138	Fig.2			
	12-2C	●	□		0.750	0.750	-	0.750	5.00	0.750	1.000	-	0.138	Fig.2			
	16-2C	●	●		1.000	1.000	-	1.000	5.00	0.750	1.250	-	0.138	Fig.2	CKC-2R/L	SKC-2	(7/64 hex)
	16-2D	●	●	inch	1.000	1.000	-	1.000	6.00	0.750	1.250	-	0.138	Fig.2			
KKCR/L	**12-3B**	●	●		0.750	0.750	-	0.750	4.50	1.250	1.000	-	0.210	Fig.2			
	12-3C	●	●		0.750	0.750	-	0.750	5.00	1.250	1.000	-	0.210	Fig.2			
	16-3C	●	●		1.000	1.000	-	1.000	5.00	1.250	1.250	-	0.210	Fig.2			
	16-3D	●	●		1.000	1.000	-	1.000	6.00	1.250	1.250	-	0.210	Fig.2	CKC-3R/L	SKC-3	(LW-156)
	20-3D	●	●		1.250	1.250	-	1.250	6.00	1.250	1.500	-	0.210	Fig.2			
	16-4D	●	●		1.000	1.000	-	1.000	6.00	1.380	1.250	-	0.294	Fig.2			
	20-4D	●	●		1.250	1.250	-	1.250	6.00	1.380	1.500	-	0.294	Fig.2			

• Dimension **CDX** shows the distance from the toolholder to the cutting edge.

Also Available for Grooving. See Page ➔ **G43**

• **Right-hand** bars require **Right-hand** inserts and clamps.
Left-hand bars require **Left-hand** inserts and clamps

• Spare parts in parentheses ( ) are not included with toolholder. Please order separately.

Applicable Inserts

Part Number	Applicable Inserts	Ref. Page for Inserts
KKCR/L **...2-**	**KCT-2**R/L**, KCTK-2**R/L**, KCTP-2**R/L	➔ **J25**
KKCR/L **...3-**	**KCT-3**R/L**, KCTK-3**R/L**, KCTP-3**R/L	
KKCR/L **...4-**	**KCT-4**R/L**, KCTP-4**R/L	

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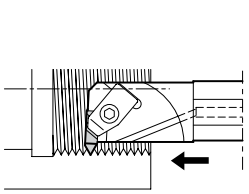
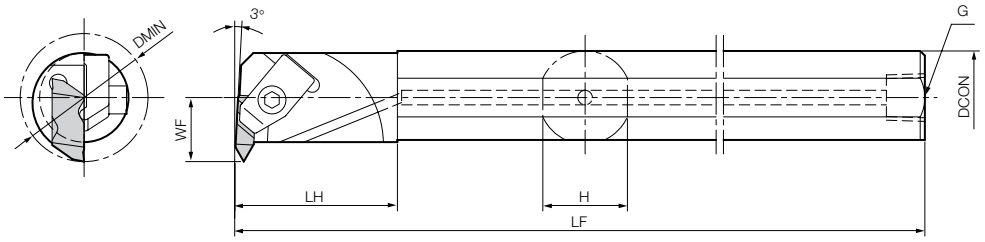
A-KKC (Cera-Notch Toolholders)





• Right-hand shown

• Right-hand Insert for Left-hand Toolholder, Left-hand Insert for Right-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Unit	Min. Bore Dia.	Dimensions						Spare Parts		
											Clamp	Clamp Bolt	Wrench
	R	L		DMIN	DCON	H	LF	LH	WF	G			
A10M-KKCR-2	●		inch	1.000	0.625	0.596	6.00	1.153	0.500	1/8-27 NPT	CKC-2℞	SKC-2	(7/64 Hex)
A10S-KKCR-2	●			1.000	0.625	0.596	10.00	1.153	0.500				
A12R-KKCR-2	●			1.125	0.750	0.728	8.00	1.171	0.562				
A12S-KKCR-2	●			1.125	0.750	0.728	10.00	1.171	0.562				
A16T-KKC℞-2	●	●		1.375	1.000	0.910	12.00	1.100	0.688	1/8-27 NPT	CKC-3℞	SKC-3	(LW-156)
A16X-KKC℞-3	●			1.375	1.000	0.910	9.00	1.750	0.688				
A16T-KKC℞-3	●	●		1.375	1.000	0.910	12.00	1.750	0.688	1/4-18 NPT			
A20U-KKC℞-3	●	●		1.750	1.250	1.138	14.00	1.750	0.875				
A24U-KKC℞-3	●	●		2.000	1.500	1.366	14.00	1.750	1.000				
A28U-KKC℞-3	●			2.250	1.750	1.593	14.00	1.750	1.125				
A32V-KKC℞-3	●	●		2.500	2.000	1.820	16.00	1.750	1.250				
A28U-KKC℞-4	●	●		2.500	1.750	1.593	14.00	1.750	1.250	1/4-18 NPT			(LW-156)
A32V-KKC℞-4	●	●		2.750	2.000	1.820	16.00	1.750	1.375				

Also Available for Internal Grooving. See Page ➡ **G85**

Applicable Inserts

Part Number	Applicable Inserts	Ref. Page for Inserts
A...KKC℞-2	**KCT-2℞, KCTK-2℞, KCTP-2℞**	**See Below**
A...KKC℞-3	**KCT-3℞, KCTK-3℞, KCTP-3℞**	
A...KKC℞-4	**KCT-4℞, KCTP-4℞**	

• **Right-hand** bars require **Left-hand** inserts and clamps.
Left-hand bars require **Right-hand** inserts and clamps

• Spare parts in parentheses ( ) are not included with toolholder. Please order separately.

Cera-Notch External Threading Inserts

KCT / KCTP / KCTK

Shape (Right-handed Insert Shown)	Part Number	Applicable Thread	Pitch mm External	Pitch mm Internal	Pitch TPI External	Pitch TPI Internal	RE	W1	S	PDX	Angle (°) PNA	Insert Grade Cermet TC60 R	TC60 L	MEGA COAT CVD PR1215 R	PR1215 L	Carbide PR660 R	PR660 L	Ref. Page for Toolholder
Partial Profile	**KCT 2℞**	M UN	3.00-0.75	3.50-1.25	8-36	7-20	0.004	0.150	0.219	0.075	60°	●	●	●	●		●	➡ **J24** ➡ **J25**
	3℞	M UN	4.25-1.25	5.00-2.00	6-20	5-12	0.007	0.195	0.344	0.098		●	●	●	●	●	●	
	4℞	M UN	6.35-1.25	6.35-2.00	4-20	4-12	0.008	0.255	0.453	0.128				●	●			
	KCTP 2℞	M UN	3.00-0.75	3.50-1.25	8-36	7-20	0.004	0.150	0.219	0.075	60°	●	●	●	●	●		
	3℞	M UN	4.25-1.25	5.00-2.00	6-20	5-12	0.007	0.195	0.344	0.098				●	●	●	●	
	4℞	M UN	6.35-1.25	6.35-2.00	4-20	4-12	0.008	0.255	0.459	0.128				●	●			
	KCTK 2℞	M UN	1.75-0.50	2.00-1.00	14-44	12-24	0.003	0.150	0.219	0.110	60°	●		●	●	●	●	
	3℞	M UN	2.50-0.50	2.80-1.00	10-44	9-24	0.003	0.195	0.344	0.141		●	●	●	●	●	●	

Cera-Notch Conversion Table ➡ R45

Recommended Cutting Conditions ➡ **J38**

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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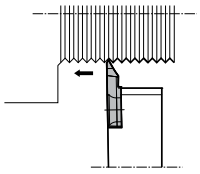
KTKF / KTKF Goose-neck Holder



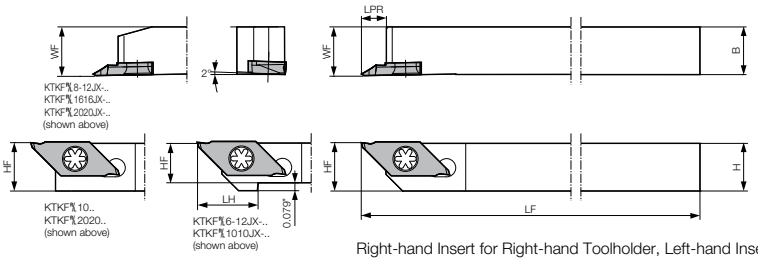
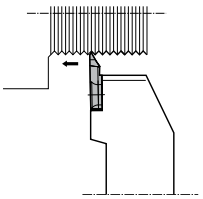


Fig.1

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder



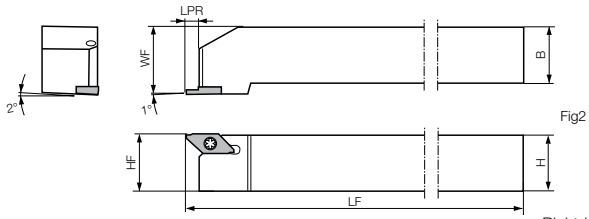
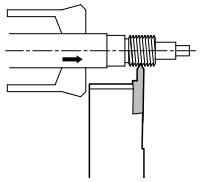


Fig2

• Right-hand shown

Right-hand Insert for Right-hand Toolholder



(Goose-neck Holder)

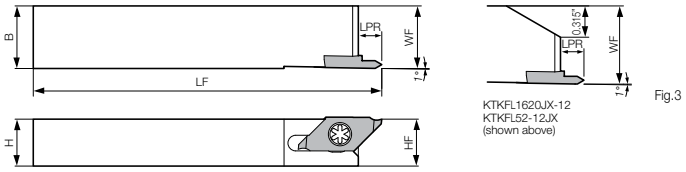


Fig.3

• Left-hand Shown

Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	Unit	Dimensions H	HF	B	LF	LH	WF	LPR	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts
KTKF□	6-12JX	●	●	inch	0.375	0.375	0.375	4.750	0.590	0.375	0.236	Fig.1	SB-4590TRWN	LTW-10S	TKFT12□...
	8-12JX	●	●		0.500	0.500	0.500	4.750	-	0.500	0.236				
	10-12JX	●	●		0.625	0.625	0.625	4.750	-	0.625	0.236				
KTKF□	1010JX-12	●	●	mm	10	10	10	120	15	10	6	Fig.1	SB-4590TRWN	LTW-10S	TKFT12□...
	1212JX-12	●	●		12	12	12	120	-	12	6				
	1616JX-12	●	●		16	16	16	120	-	16	6				
	2020JX-12	●	●		20	20	20	120	-	20	6				
KTKFR	1212F-12	●			12	12	12	85	-	12	6	Fig.1	SB-4590TRWN	LTW-10S	TKFT12R...
NEW KTKFR	2525M-12	●			25	25	25	150	-	30	6	Fig.2	SB-4590TRWN	LTW-10S	TKFT12R...
KTKFL	52-12JX		●	inch	0.500	0.500	0.625	4.750	-	0.625	0.236	Fig.3	SB-4590TRWN	LTW-10S	TKFT12L...
	62.5-12JX		●		0.625	0.625	0.750	4.750	-	0.750	0.236				
KTKFL	1216JX-12		●	mm	12	12	16	120	-	16	6	Fig.3	SB-4590TRWN	LTW-10S	
	1620JX-12		●		16	16	20	120	-	20	6				

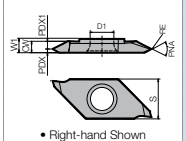
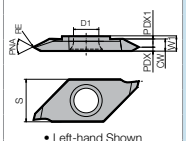
• Dimension **LPR** shows the distance from the toolholder to the cutting edge.

For Coolant-Through Holders, See ➡ **H14**
For Y-Axis Holders, See ➡ **H16**

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel	●	○	○	○	○		
M	Stainless Steel	○	●	○	○	○		
K	Cast Iron						●	
N	Non-ferrous Metals						●	

Applicable Inserts

Insert (Right-handed Insert Shown)			Part Number	Applicable Thread	Pitch mm	Pitch TPI	Dimensions (in) W1	CW	S	D1	RE	PDX	PDX1	Angle (°) PNA	MEGACOAT NANO PR1725	PR1535	PR1425	MEGA COAT PR1225	PVD Coated Carbide PR1025	Carbide KW10	Applicable Toolholders
Partial Profile		 • Right-hand Shown	TKFT 12RA6000	M UN	0.20~0.60	64~48	0.118	0.098	0.343	0.205	Max 0.002 or Flat	0.016	0.083	60°	●	●	△	●	△	●	KTKFR ...12
			12RB6000				0.118	0.098	0.343	0.205		0.083	0.016		●	●	△	●	△	●	
			12RA60005		0.50~1.25	48~24	0.118	0.098	0.343	0.205	0.002	0.031	0.067		●	●	△	●	△	●	
			12RB60005				0.118	0.098	0.343	0.205		0.067	0.031		●	●	△	●	△	●	
			12RN6001		1.00~1.50	24~18	0.118	0.098	0.343	0.205	0.004	0.049	0.049		●	●	△	●	△	●	
			12RA55005	G,R W	-	40~16	0.118	0.098	0.343	0.205	0.002	0.031	0.067		●	●	△	●	△	●	
			12RB55005				0.118	0.098	0.343	0.205		0.067	0.031		●	●	△	△		●	
		 • Left-hand Shown	TKFT 12LA6000	M UN	0.20~0.60	64~48	0.118	0.098	0.343	0.205	Max 0.002 or Flat	0.083	0.016	60°	●	●	△	△	△	●	KTKFL ...12
			12LB6000				0.118	0.098	0.343	0.205		0.016	0.083		●	●	△	△		●	
			12LA60005		0.50~1.25	48~24	0.118	0.098	0.343	0.205	0.002	0.067	0.031		●	●	△	●	△	●	
			12LB60005				0.118	0.098	0.343	0.205		0.031	0.067		●	●	△	●	△	●	
			12LN6001		1.00~1.50	24~18	0.118	0.098	0.343	0.205	0.004	0.049	0.049		●	●	△	●	△	●	
			12LA55005	G,R W	-	40~16	0.118	0.098	0.343	0.205	0.002	0.067	0.031		●	●	△	△		●	
			12LB55005				0.118	0.098	0.343	0.205		0.031	0.067		●	●	△	△		●	

Inserts are sold in 10 piece boxes.

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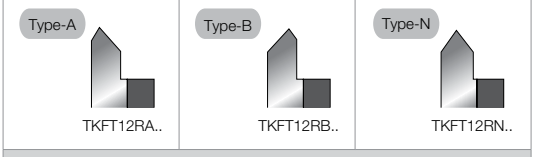
Indication of Description (See Table 1)

TKFT | **12** | **R** | **A** | **60** | **00**

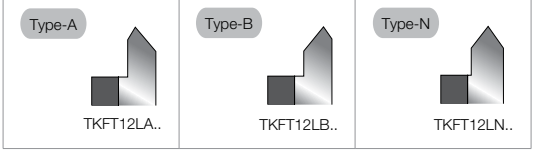
- TKFT: Name of Insert
- 12: Insert Size
- R: Insert Hand (R: Right-hand, L: Left-hand)
- A: Location of Edge
- 60: Angle of Thread Shape
- 00: Corner-R(RE)

Table 1

R-hand Inserts



L-hand Inserts



Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade					
	MEGACOAT NANO			MEGA COAT	PVD Coated Carbide	Carbide
	PR1725	PR1535	PR1425	PR1225	PR1025	KW10
Carbon Steel	Vc (sfm) = 230-560 First D.O.C. (Radial) under 0.0079"				Vc (sfm) = 200-490 First D.O.C. (Radial) under 0.0079"	-
Alloy Steel	Vc (sfm) = 230-560 First D.O.C. (Radial) under 0.0079"				Vc (sfm) = 200-490 First D.O.C. (Radial) under 0.0079"	-
Stainless Steel	Vc (sfm) = 200-330 First D.O.C. (Radial) under 0.0079"				Vc (sfm) = 160-260 First D.O.C. (Radial) under 0.0079"	-
Cast Iron	-				-	Vc (sfm) = 330 First D.O.C. (Radial) under 0.0079"
Aluminum	-				-	Vc (sfm) = 490-1310 First D.O.C. (Radial) under 0.0079"
Brass	-				-	Vc (sfm) = 490-980 First D.O.C. (Radial) under 0.0079"

- Coolant is recommended.
- In case of threading stainless steel, please set two to three passes more than <D.O.C. - passes> listed above.

D.O.C. & Number of Passes

60° / 55° Partial Profile

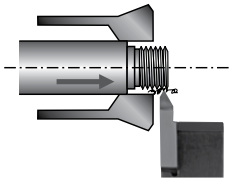
(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric	External Threading	0.20mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.15	4	0.06	0.04	0.03	0.02								
		0.25mm			0.19	4	0.07	0.06	0.04	0.02								
		0.30mm			0.23	4	0.08	0.07	0.06	0.02								
		0.35mm			0.27	5	0.08	0.07	0.06	0.04	0.02							
		0.40mm			0.30	5	0.10	0.08	0.06	0.04	0.02							
		0.45mm			0.34	6	0.10	0.08	0.06	0.04	0.04	0.02						
		0.50mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02						
			12R/L A/B60005	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02							
		0.60mm	TKFT 12R/L A/B6000	Max 0.05 Flat	0.45	7	0.10	0.10	0.08	0.06	0.05	0.04	0.02					
			12R/L A/B60005	0.05	0.40	6	0.10	0.10	0.08	0.06	0.04	0.02						
		0.70mm	TKFT 12R/L A/B60005	0.05	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02						
		0.75mm		0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02					
		0.80mm		0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02					
		1.00mm	TKFT 12R/L A/B60005 12R/L N6001	0.05	0.71	8	0.15	0.15	0.12	0.10	0.08	0.06	0.03	0.02				
				0.10	0.66	7	0.18	0.15	0.12	0.10	0.06	0.03	0.02					
		1.25mm		0.05	0.90	9	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.05	0.02			
				0.10	0.85	8	0.20	0.18	0.13	0.10	0.10	0.07	0.05	0.02				
		1.50mm	TKFT 12R/L N6001	0.10	1.04	10	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05	0.02		
Parallel Pipe	External Threading	28 TPI	TKFT 12R/L A/B55005	0.0020	0.0264	7	0.007	0.006	0.005	0.004	0.002	0.002	0.001					
		19 TPI		0.0020	0.0398	9	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001			
Whitworth	External Threading	24 TPI	TKFT 12R/L A/B55005	0.0020	0.0311	8	0.007	0.007	0.005	0.004	0.003	0.003	0.002	0.001				
		20 TPI		0.0020	0.0378	9	0.008	0.008	0.006	0.004	0.004	0.003	0.002	0.002	0.001			
		18 TPI		0.0020	0.0421	10	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001		
		16 TPI		0.0020	0.0476	11	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001	

Swiss Tool Automatic Lathe (Guide Bush System)

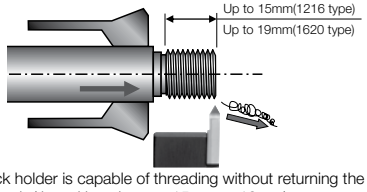
Goose-neck Holder is applicable to automatic lathes whose toolholder does not move in longitudinal direction (Z-axis)

Conventional Threading Tool



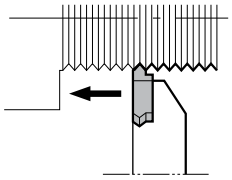
Chips may come into the guide bush and scratch the thread surface.

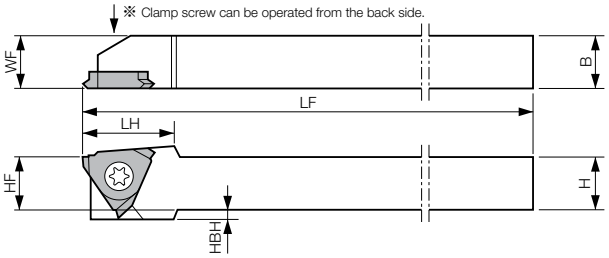
Goose-neck Holder (for Threading)



Goose-neck holder is capable of threading without returning the thread part into the guide bush (thread length up to 15mm or 19mm).

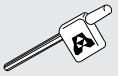
KTTX





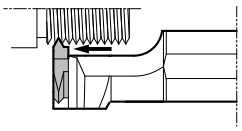
• Thread to shoulder • Right-hand shown • Right-hand Insert for Right-hand Toolholder

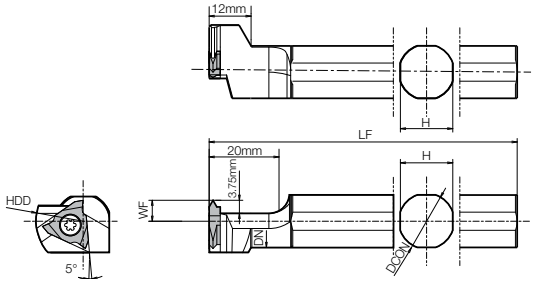
Toolholder Dimensions

Part Number	Stock	Unit	Dimensions							Spare Parts	
										Insert Screw	Wrench
			H	HF	HBH	B	LF	LH	WF		
KTTXR 6-3JXF	●	inch	0.375	0.375	0.079	0.375	4.750	0.693	0.383	SB-4070TRW	FT-8
8-3JXF	●		0.500	0.500	-	0.500	4.750	0.693	0.508		
10-3JXF	●		0.625	0.625	-	0.625	4.750	0.693	0.633		
KTTXR 1010JX-16F	●	mm	10	10	2	10	120	17.6	10	SB-4070TRW	FT-8
1212JX-16F	●		12	12	-	12	120	17.6	12		
1616JX-16F	●		16	16	-	16	120	17.6	16		
KTTXR 1212F-16F	●		12	12	-	12	85	17.6	12		
2020K-16F	●		20	20	-	20	125	17.6	20		

Applicable Inserts J29

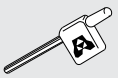
S···KTTX (External Sleeve Holder)





• Thread to shoulder • Left-hand shown • Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock	Dimensions (mm)						Spare Parts	
								Insert Screw	Wrench
		DCON	LF	WF	DN	HDD	H		
S12F-KTTXL16	●	12	80	6.0	11.0	27	11	SB-4070TRW	FT-8
S14H-KTTXL16	●	14	100	6.0	13.0	27	13		
S15F-KTTXL16	●	5/8"	85	6.0	14.6	27	15		
S16F-KTTXL16	●	16	85	6.0	14.6	27	15		
S19G-KTTXL16	●	3/4"	90	6.0	17.6	27	17		
S19K-KTTXL16	●	3/4"	120	6.0	17.6	27	17		
S20G-KTTXL16	●	20	90	6.0	18.6	27	18		
S20K-KTTXL16	●	20	120	6.0	18.6	27	18		
S25.0H-KTTXL16	●	25	100	10.0	23.6	32	23		
S25K-KTTXL16	●	1"	120	10.0	23.6	32	23		

Applicable Inserts J29

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Applicable Inserts

(in)

Part Number	IC	S	D1
TTX32R	0.375	0.125	0.173

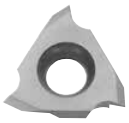
P	Carbon Steel / Alloy Steel	○	○	●		
M	Stainless Steel		○	●		
K	Cast Iron					●
N	Non-ferrous Metals					●

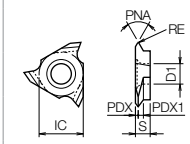
Classification of Usage
- ◕ : Light Interruption / 1st Choice
- ◔ : Light Interruption / 2nd Choice
- ● : Continuous / 1st Choice
- ○ : Continuous / 2nd Choice

Shape

Right-handed Insert Shown

Partial Profile



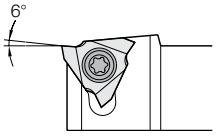
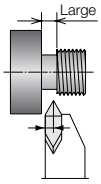
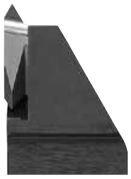
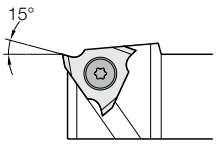
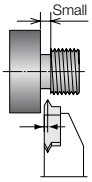


Part Number	Applicable Thread	Pitch mm	Pitch TPI	Dimensions (in) RE	PDX	PDX1	Angle PNA	Cermet TC60	PVD Coated Carbide PR930	PVD Coated Carbide PR1115	Carbide KW10	Applicable Toolholders	Ref. Page for D.O.C. & Number of Passes
TTX32R 6000	M UN	0.5~1.0 -	- 56~32	0.000	0.024	0.044	60°				●	KTTXR...-3 KTTXR...-16 S...KTTXL16	J46
60005		0.5~1.0 -	- 48~32	0.002	0.024	0.044	60°	●	●	●	●		
6001		1.0~2.0 -	- 28~14	0.004	0.043	0.064	60°	●	●	●	●		
TTX32R 6000S	M UN	0.5 -	- 56~48	0.000	0.012	0.044	60°		●	●	●		
60005S		0.5 -	- 48	0.002	0.012	0.044	60°		●	●	●		
TTX32R 5501	G,R W	-	28~19 24~20	0.004	0.030	0.040	55°	●	●	●	●		
55015		-	19~11 20~11	0.006	0.047	0.057	55°	●	●		●		

Recommended Cutting Conditions J38

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	

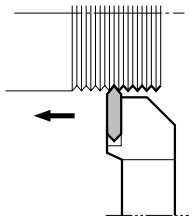
Advantages of TTX

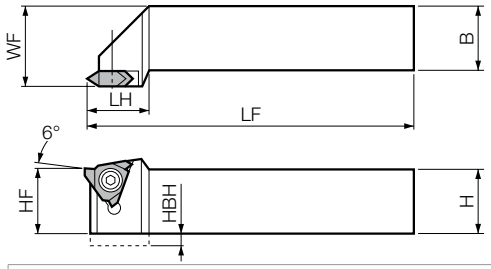
Type	Insert	Advantages: Rake Angle after Installation	Condition	Dead Space
TT			• One insert can machine various pitch sizes	
TTX			• The Least Cutting Resistance • Thread to shoulder (Less dead space) • 3-edge	

PR930/PR1115 Threading Inserts are sold in 5 piece boxes. *All other grade Inserts are sold in 10 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KTT





• Right-hand shown

• Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number		Stock R	Stock L	H	HF	HBH	B	LF	LH	WF	Spare Parts: Insert Screw	Insert Screw	Wrench	Wrench
KTT®	1010F-16	●	●	10	10	4	10	80	18	12	SB-4070TRS	-	FT-10	-
	1212H-16	●	●	12	12	2	12	100		16				
	1616H-16	●	●	16	16	-	16	100		20				
	2020K-16	●	●	20	20		20	125		25	SB-4TR	-	FT-15	-
	2525M-16	●	●	25	25		25	150		30				
	2020K-22	●	●	20	20	-	20	125	25	25	-	GS-50	-	LW-3
	2525M-22	●	●	25	25		25	150		30				

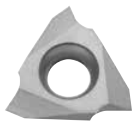
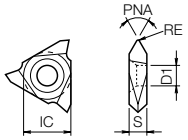
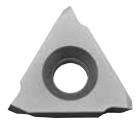
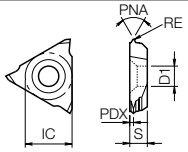
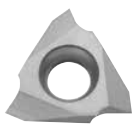
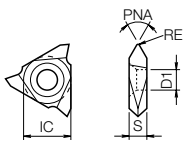
Applicable Inserts

(in)

Part Number	IC	S	D1
TT32®	0.375	0.125	0.173
TT43®	0.500	0.187	0.217

P	Carbon Steel / Alloy Steel	○	○	●	
M	Stainless Steel		○	●	
K	Cast Iron				●
N	Non-ferrous Metals				●

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Shape (Right-handed Insert Shown)				Part Number		Applicable Thread	Pitch mm	Pitch TPI	Dimensions (in) RE	Dimensions (in) PDX	Angle PNA	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR930 R	PR930 L	PR1115 R	PR1115 L	Carbide KW10 R	KW10 L	Applicable Toolholders	Ref. Page for D.O.C. & Number of Passes
Partial Profile				TT32®	6000	M UN	0.5~2.5 -	- 56~10	0.000	-	60°	●	●	●	●	●	●			KTT®...-16	J45
					6001	M UN	1.0~2.5 -	- 24~10	0.004			●	●	●	●	●	●	●	●		
					6002	M UN	1.5~2.5 -	- 16~10	0.008			●	●	●	●	●	●	●	●		
					6003	M UN	2.5 -	- 11~10	0.012			●	●	●		●					
				TT32®	5501	G,PT W	-	28~11 24~10	0.004	-	55°	●		●	●	●		●	●		
					5502	G,PT W	-	14~11 14~10	0.008			●		●	●	●		●	●		
Full Profile				TT43ER	100M	M	1.00	-	0.005	0.031	60°	●		●		●				KTT®...-22	J46
					125M		1.25		0.006	0.035		●		●		●					
					150M		1.50		0.007	0.039		●		●		●					
					200M		2.00		0.010	0.067		●		●		●					
Partial Profile				TT43®	6001	M UN	1.0~3.5 -	- 24~8	0.004	-	60°	●		●	●	●	●	●	●		
					6002	M UN	1.5~3.5 -	- 16~8	0.008			●	●	●	●	●	●	●	●		
					6003	M UN	2.5~3.5 -	- 11~8	0.012			●	●	●	●	●					
					6004	M UN	3.0~3.5 -	- 8	0.016			●	●	●	●	●					J45
				TT43®	5501	G,PT W	-	28~11 24~7	0.004	-	55°	●		●		●		●	●		
					5502	G,PT W	-	14~11 16~7	0.008			●	●	●		●		●	●		
					5503	G,PT W	-	11 10~7	0.012			●		●		●					
					5504	G,PT W	-	- 8~7	0.016			●	●								

Recommended Cutting Conditions J38

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	Tr: 30° Trapezoidal

PR930/PR1115 Threading Inserts are sold in 5 piece boxes.

All other grade Inserts are sold in 10 piece boxes.

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(Technical Support) 800.823.7284 - Option 2
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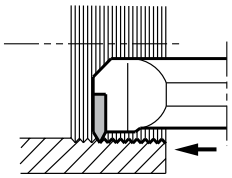
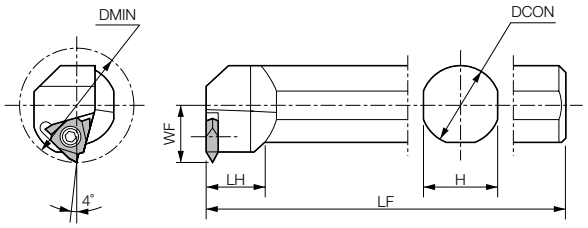
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KITG





• Right-hand shown

• Right-hand Insert for Left-hand Toolholder, Right-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Min. Bore Dia.	Dimensions (mm)					Spare Parts			
									Insert Screw		Wrench	
	R	L	DMIN	DCON	H	LF	LH	WF				
KITG 3525T-16	●	●	35	25	23	220	18	17.5	SB-4TR	-	FT-15	-
KITG 4532T-22	●	●	45	32	30	250	20	22.5	-	GS-50	-	LW-3

• Max. available Pitch: KITG 3525T-16···P2.5 or 10TPI, KITG 4532T-22···P3.0 or 8TPI.

Applicable Inserts

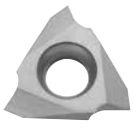
(in)

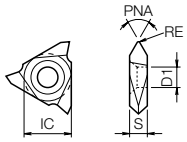
Part Number	IC	S	D1
TT32	0.375	0.125	0.173
TT43	0.500	0.187	0.217

P	Carbon Steel / Alloy Steel	○	○	●	
M	Stainless Steel		○	●	
K	Cast Iron				●
N	Non-ferrous Metals				●

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Shape (Right-handed Insert Shown)	Part Number	Applicable Thread	Pitch mm	Pitch TPI	Dimensions (in) RE	Angle PNA	Cermet TC60 R	Cermet TC60 L	PVD Coated Carbide PR930 R	PR930 L	PR1115 R	PR1115 L	Carbide KW10 R	KW10 L	Applicable Toolholders	Ref. Page for D.O.C. & Number of Passes
Partial Profile	TT32 6000	M UN	0.5~2.5 -	- 48~10	0.000	60°	●	●	●	●	●	●			KITG...-16	J45 J46
	TT32 6001	M UN	1.0~2.5 -	- 16~10	0.004		●	●	●	●	●	●	●	●		
	TT32 5501	G,PT W	-	28~11 24~10	0.004	55°	●		●	●	●		●	●		
	TT32 5502	G,PT W		- 16~18	0.008		●		●	●	●		●	●		
	TT43 6001	M UN	1.5~3.0 -	14~11 16~10	0.004	60°	●		●	●	●	●	●	●	KITG...-22	
	TT43 6002	M UN	3.0 -	- 8	0.008		●	●	●	●	●	●	●	●		
	TT43 5501	G,PT W	-	28~11 24~8	0.004	55°	●		●		●		●	●		
	TT43 5502	G,PT W		14~11 16~8	0.008		●	●	●		●		●	●		
	TT43 5503	G,PT W		11 11~8	0.012		●		●		●					
	TT43 5504	G,PT W		- 8	0.016		●	●								





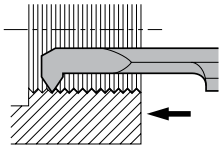
Recommended Cutting Conditions ➔ **J38**

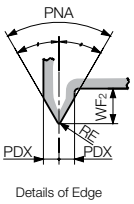
Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	

PR930/PR1115 Threading Inserts are sold in 5 piece boxes.

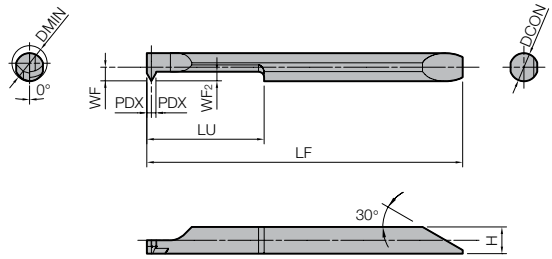
All other grade Inserts are sold in 10 piece boxes.

EZT





Details of Edge



• Right-hand shown

Toolholder Dimensions

Part Number	Min. Bore Dia.	Dimensions (mm)										MEGA COAT	Carbide	Applicable Screw					
														Metric		Unified		American National Pipe	
	DMIN	DCON	H	LF	LU	WF	WF_2	PDX	RE	PNA		PR1225	GW05	Applicable Thread	Pitch (mm)	Applicable Thread	Pitch (TPI)	Applicable Thread	Pitch (TPI)
EZTR 030025-60-002	3.0	2.5	2.3	35.0	6.5	1.19	1.0	0.5	$0.02^{\pm0.01}$	60°		●	●	M4 or more Fine Thread: M3.5 or more	P0.5~P0.8	No.8-32UNC No.8-36UNF or more	36~32	-	-
035030-60-002	3.5	3.0	2.8	39.0	9.0	1.44	1.2	0.6				●	●	M4.5 or more Fine Thread: M4.5 or more	P0.5~P1.0	No.10-24UNC No.8-36UNF or more	36~24	-	-
040035-60-004	4.0	3.5	3.3	42.0	11.0	1.69	1.2	0.6	$0.04^{\pm0.01}$			●	●	M5 or more Fine Thread: M5 or more	P0.75~P1.25	No.12-24UNC No.12-28UNF or more	28~20	-	-
050040-60-004	5.0	4.0	3.8	45.0	16.0	1.94	1.3	0.65				●	●	M7 or more Fine Thread: M6 or more	P0.75~P1.5	1/4-20UNC 1/4-28UNF or more	28~18	-	-
060050-60-004	6.0	5.0	4.8	53.2	20.0	2.44	1.6	0.8				●	●	M8 or more Fine Thread: M7 or more	P0.75~P1.5	5/16-18UNC 5/16-24UNF or more	24~16	1/4NPT 3/8NPT	18
070060-60-004	7.0	6.0	5.8	61.2	25.0	2.94	2.0	1.0				●	●	M9 or more Fine Thread: M8 or more	P0.75~P1.75	3/8-16UNC 3/8-24UNF or more	24~16	1/4NPT or more	18,14
														Whitworth		Parallel Pipe / Tapered Pipe			
EZTR 060050-55-008	6.0	5.0	4.8	53.2	20.0	2.44	1.6	0.8	$0.085^{-0.01}$	55°		●	●	W10 TPI 24 or more	24~20	G1/16 R1/16 or more	28		
080070-55-008	8.0	7.0	6.8	64.2	20.5	3.44	2.0	1.0				●	●	W11 TPI 20 or more	20~18	G1/8 R1/8 or more	28,19		

• For American National Pipe (NPT), use EZTR..-60-004 see **J35**

For applicable sleeve see **J33**

Bars are sold in 1 piece boxes

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

EZH Sleeves EZ Bar Sleeves (Listed by Sleeve Shank Dia.)

Sleeve Part Number							EZ Bar Part Number		Applicable Machine Manufacturer
EZH-CT (Adjustable Overhang Length / with Coolant Hole) F30~F31		EZH-HP (Adjustable Overhang Length) F32~F33		EZH-ST F34		Sleeve Shank Dia DCON (mm)	EZT	EZ Bar Shank Dia DCON (mm)	
-		-		EZH	02512ST-80	12.00	EZTR 030025-...	2.5	General Machines
					03012ST-80		EZTR 035030-...	3.0	
					03512ST-80		EZTR 040035-...	3.5	
					04012ST-80		EZTR 050040-...	4.0	
					05012ST-80		EZTR 060050-...	5.0	
					06012ST-80		EZTR 070060-...	6.0	
					07012ST-80		EZTR 080070-...	7.0	
-		EZH	02516HP-100	EZH	02516ST-100	16.00	EZTR 030025-...	2.5	General Machines
			03016HP-100		03016ST-100		EZTR 035030-...	3.0	
			03516HP-100		03516ST-100		EZTR 040035-...	3.5	
			04016HP-100		04016ST-100		EZTR 050040-...	4.0	
			05016HP-100		05016ST-100		EZTR 060050-...	5.0	
			06016HP-100		06016ST-100		EZTR 070060-...	6.0	
			07016HP-100		07016ST-100		EZTR 080070-...	7.0	
EZH	02519CT-120	EZH	02519HP-120	EZH	02519ST-120	0.750"	EZTR 030025-...	2.5	Citizen Machinery
	03019CT-120		03019HP-120		03019ST-120		EZTR 035030-...	3.0	
	03519CT-120		03519HP-120		03519ST-120		EZTR 040035-...	3.5	
	04019CT-120		04019HP-120		04019ST-120		EZTR 050040-...	4.0	
	05019CT-120		05019HP-120		05019ST-120		EZTR 060050-...	5.0	
	06019CT-120		06019HP-120		06019ST-120		EZTR 070060-...	6.0	
	07019CT-120		07019HP-120		07019ST-120		EZTR 080070-...	7.0	
EZH	02520CT-120	EZH	02520HP-120	EZH	02520ST-120	20.00	EZTR 030025-...	2.5	Amada Machine Tools Eguro Tsugami Citizen Machinery General Machines
	03020CT-120		03020HP-120		03020ST-120		EZTR 035030-...	3.0	
	03520CT-120		03520HP-120		03520ST-120		EZTR 040035-...	3.5	
	04020CT-120		04020HP-120		04020ST-120		EZTR 050040-...	4.0	
	05020CT-120		05020HP-120		05020ST-120		EZTR 060050-...	5.0	
	06020CT-120		06020HP-120		06020ST-120		EZTR 070060-...	6.0	
	07020CT-120		07020HP-120		07020ST-120		EZTR 080070-...	7.0	
EZH	02522CT-135	EZH	02522HP-135	EZH	02522ST-135	22.00	EZTR 030025-...	2.5	Star Micronics Nomura DS Tsugami
	03022CT-135		03022HP-135		03022ST-135		EZTR 035030-...	3.0	
	03522CT-135		03522HP-135		03522ST-135		EZTR 040035-...	3.5	
	04022CT-135		04022HP-135		04022ST-135		EZTR 050040-...	4.0	
	05022CT-135		05022HP-135		05022ST-135		EZTR 060050-...	5.0	
	06022CT-135		06022HP-135		06022ST-135		EZTR 070060-...	6.0	
	07022CT-135		07022HP-135		07022ST-135		EZTR 080070-...	7.0	
EZH	02525.0CT-135	EZH	02525.0HP-135	EZH	02525.0ST-135	25.00	EZTR 030025-...	2.5	Amada Machine Tools Eguro Tsugami Citizen Machinery General Machines
	03025.0CT-135		03025.0HP-135		03025.0ST-135		EZTR 035030-...	3.0	
	03525.0CT-135		03525.0HP-135		03525.0ST-135		EZTR 040035-...	3.5	
	04025.0CT-135		04025.0HP-135		04025.0ST-135		EZTR 050040-...	4.0	
	05025.0CT-135		05025.0HP-135		05025.0ST-135		EZTR 060050-...	5.0	
	06025.0CT-135		06025.0HP-135		06025.0ST-135		EZTR 070060-...	6.0	
	07025.0CT-135		07025.0HP-135		07025.0ST-135		EZTR 080070-...	7.0	
EZH	02525.4CT-120	EZH	02525.4HP-120	EZH	02525.4ST-120	1.000"	EZTR 030025-...	2.5	Citizen Machinery
	03025.4CT-120		03025.4HP-120		03025.4ST-120		EZTR 035030-...	3.0	
	03525.4CT-120		03525.4HP-120		03525.4ST-120		EZTR 040035-...	3.5	
	04025.4CT-120		04025.4HP-120		04025.4ST-120		EZTR 050040-...	4.0	
	05025.4CT-120		05025.4HP-120		05025.4ST-120		EZTR 060050-...	5.0	
	06025.4CT-120		06025.4HP-120		06025.4ST-120		EZTR 070060-...	6.0	
	07025.4CT-120		07025.4HP-120		07025.4ST-120		EZTR 080070-...	7.0	

- Choose sleeves (DCB) to meet with DCON dimension of bar.
- Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT/HP sleeves.
- Machine manufacturers in random order.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)	
	MEGACOAT	Carbide
	PR1225	**GW05**
Carbon Steel/Alloy Steel	★ 100-160	-
Stainless Steel	★ 100-160	-
Non-ferrous Metals	-	★ 100-160

★ : 1st Recommendation

Note:
1) The table feed may not follow the expected conditions when machining small diameter workpieces at high speeds. Variable RPMs due to constant surface speed can result in inaccurate threads. Constant RPM programming is recommended.

2) Coolant is recommended.

D.O.C. & Number of Passes (Metric)

Pitch (mm)	Total D.O.C. (mm)	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass	20 Pass
0.50	0.30	9	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02											
0.70	0.42	10	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02										
0.75	0.45	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03										
0.80	0.48	11	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.03									
1.00	0.61	12	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03								
1.25	0.77	14	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03						
1.50	0.93	17	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03			
1.75	1.10	20	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03

D.O.C. & Number of Passes (Whitworth)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
24	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001				
20	0.0319	15	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001		
18	0.0358	17	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

D.O.C. & Number of Passes (Unified: UN, UNC, UNF, UNEF)

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
36	0.0173	8	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001								
32	0.0197	10	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001							
28	0.0217	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001						
24	0.0256	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001						
20	0.0307	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001				
18	0.0346	17	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	
16	0.0390	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001

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Application of Parallel Pipe and Tapered Pipe Thread

Parallel Pipe: G (PF), Rp (PS)

Applicable Thread		TPI	Internal Threading (G, Rp)		Min. Bore Dia. (mm)	Same Root Radius
Inch	Symbol Previous Symbol		Insert			
-	G 1/16 (-)	28	**EZTR**	**06005-55-008**	6.56	0.12
'1/8	G 1/8 (PF 1/8)	28		**08007-55-008**	8.57	0.12
'2/8	G 1/4 (PF 1/4)	19	**EZTR**	**08007-55-008**	11.45	0.18
'3/8	G 3/8 (PF 3/8)	19		**08007-55-008**	14.95	0.18

Tapered Pipe: R, Rc (PT) (BSPT)

Applicable Thread		TPI	Internal Threading (Rc)		Min. Bore Dia. (mm)	Same Root Radius
Inch	Symbol Previous Symbol		Insert			
-	R 1/16, Rc 1/16 (-)	28	**EZTR**	**06005-55-008**	-	0.12
'1/8	R 1/8, Rc 1/8 (PT 1/8)	28		**08007-55-008**	-	0.12
'2/8	R 1/4, Rc 1/4 (PT 1/4)	19	**EZTR**	**08007-55-008**	-	0.18
'3/8	R 3/8, Rc 3/8 (PT 3/8)	19		**08007-55-008**	-	0.18

• When using "EZT type" for Parallel Pipe / Tapered Pipe threading, the thread's corners become sharp edged due to its partial profile, and the shape will not be the same as the standard shape for Parallel Pipe / Tapered Pipe.

D.O.C. & Number of Passes (Parallel Pipe / G(PF), Tapered Pipe / BSPT (PT) (Rc))

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass
28	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001						
19	0.0374	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001

Application of American National Tapered Pipe Thread (NPT)

Applicable Thread	TPI	Internal Threading		
		Toolholder	Insert	
			Partial Profile	Full Profile
1/16 NPT	27	**No Tools Available**		
1/8 NPT		**No Tools Available**		
1/4 NPT	18	**EZH Sleeve**	**EZTR060050-60-004**	-
3/8 NPT			**EZTR070060-60-004**	-
1/2 NPT	14	**EZH Sleeve**	**EZTR070060-60-004**	-
3/4 NPT				-
1/2 NPT	14	**SINR1616S-16**	-	**16IR14NPT**
3/4 NPT		**SINR2016S-16**	-	**16IR14NPT**

• Application of NPTF Thread

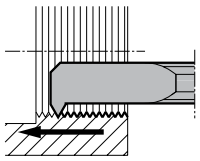
NPTF is the thread for sealing pipes without using any sealing material.

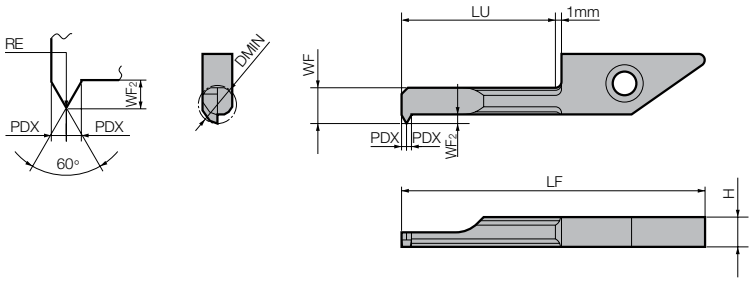
Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above inserts are not applicable to NPTF.

D.O.C. & Number of Passes (American National Tapered Pipe (NPT))

TPI	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
18	0.0484	16	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001			
14	0.0614	19	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001

VNT (Swiss IQ Bar)





Right-hand Shown

Tip-Bar Dimensions

Part Number		Min. Bore Dia.	Dimensions (mm)							Insert Grades			Applicable Thread			
										MEGA COAT	PVD Coated Carbide	Carbide	Metric		Unified	
		DMIN	H	LF	LU	WF	WF_2	PDX	RE	PR1225	PR930	KW10	Applicable Thread	Pitch (mm)	Applicable Thread	Pitch TPI
VNTR	045-11	4.5	3.9	30.8	11	3.6	1.3	0.6	$^{+0}_{-0.02}$ 0.05	●	●	●	M6 or more	P0.75~P1.25	1/4-20UNC, 1/4-28UNF or more	28~20
	060-11	6.0	3.9	30.8	11	4.6	1.6	0.8		●	●	●	M8 or more	P0.75~P1.50	5/16-18UNC, 5/16-24UNF or more	24~18

• See Page F34~F35 for applicable toolholders.

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grade (Vc sfm)		
	MEGACOAT	PVD Coated Carbide	Carbide
	PR1225	**PR930**	**KW10**
Carbon Steel/Alloy Steel	★ 100-160	☆ 100-160	-
Stainless Steel	★ 100-160	☆ 100-160	-
Non-ferrous Metals	-	-	★ 100-160

★ : 1st Recommendation ☆ : 2nd Recommendation

D.O.C. & Number of Passes (Metric)

Pitch (mm)	Total D.O.C. (mm)	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
0.75	0.44	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03							
1.00	0.60	12	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.03	0.03					
1.25	0.76	14	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.03			
1.50	0.92	17	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.03

Note:
1) The table feed may not follow the expected conditions when machining small diameter workpieces at high speeds. Variable RPMs due to constant surface speed can result in inaccurate threads. Constant RPM programming is recommended.

2) Coolant is recommended.

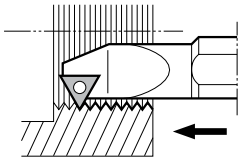
Tip-Bar is sold in 1 piece boxes.

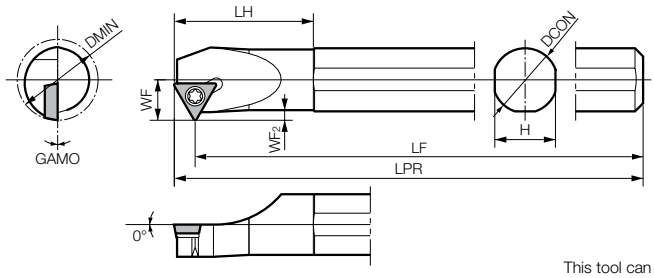
Swiss IQ Bar is sold in 5 piece boxes.

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

S...STWP

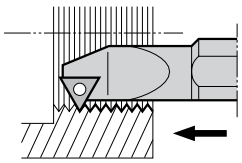


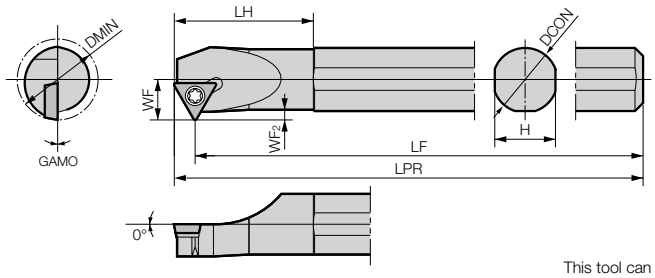


Right-hand Shown

This tool can also be used as a boring bar.

S...STWP-E Excellent Bar





Right-hand Shown

This tool can also be used as a boring bar.

Toolholder Dimensions

Part Number	Previous Part Number	Stock R	Stock L	Unit	Min. Bore Dia. DMIN	Dimensions DCON	H	LPR	LH	WF	WF_2	GAMO	Available Pitch (TPI / mm)	Spare Parts: Clamp Screw	Spare Parts: Wrench
S06M -STWP[R/L]-2		●		inch	0.476	0.375	0.340	6.00	0.910	0.238	0.050	0.050	14-32 TPI	SB-3STR	FT-10
S08M -STWP[R/L]-2		●			0.630	0.500	0.475	6.00	1.200	0.315	0.065	0.065			
S10X -STWP[R/L]-2	-	●			0.786	0.625	0.595	7.00	1.400	0.393	0.080	0.080	8-32 TPI		
S12R -STWP[R/L]-2		●			0.970	0.750	0.720	8.00	1.600	0.485	0.110	0.110			
S16R -STWP[R/L]-2		●			1.240	1.000	0.970	8.00	2.00	0.620	0.120	0.120			
S10M -STWPR11-12	SITR 1210-11	●		mm	12	10	9.2	150	23	6	1.0	1.0	1.5 and under	SB-3STR	FT-10
S12M -STWPR11-16	1612-11	●			16	12	11	150	30	8	1.5	1.5	2.0 and under		
S16Q -STWPR11-20	2016-11	●			20	16	15	180	35	10	2.0	2.0	3.0 and under	SB-3TR	
S20R -STWPR11-25	2520-11	●			25	20	19	200	40	12.5	2.5	2.5	3.5 and under		
S10M -STWP[R/L]11-12E		●	●		12	10	9.2	150	23	6	1.0	1.0	1.5 and under	SB-3STR	FT-10
S12M -STWP[R/L]11-16E		●	●		16	12	11	150	30	8	1.5	1.5	2.0 and under		
S16R -STWP[R/L]11-20E	-	●	●		20	16	15	200	35	10	2.0	2.0	3.0 and under	SB-3TR	
S20X -STWP[R/L]11-25E		●	●		25	20	19	220	40	12.5	2.5	2.5	3.5 and under		

Applicable Inserts

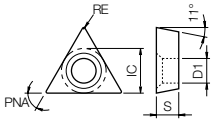
(in)

Part Number	IC	S	D1
TPGB215...	1/4	3/32	0.138
TPGB22...	1/4	1/8	0.130

P	Carbon Steel / Alloy Steel		●		
M	Stainless Steel				
K	Cast Iron				●
N	Non-ferrous Metals				●

Classification of Usage
● : Continuous / 1st Choice
○ : Continuous / 2nd Choice

Shape (Right-handed Insert Shown)	Part Number	Applicable Thread	Pitch mm	Pitch TPI	Dimensions (in) RE	Angle (°) PNA	Cermet TN620	Cermet TN60	PVD PV720	Carbide KW10	Applicable Toolholders	Ref. Page for D.O.C. & Number of Passes
Partial Profile	TPGB 21501	M UN	0.75~1.5 -	- 28~16	0.002	60°		●		●	S06M-STWP[R/L]-2 ...STWP[R/L]11-12(E)	J47
	21502	M UN	1.5 -	- 16	0.004			●		●		
	2202	M UN	1.5~3.5 -	- 16~8	0.004			●			...STWP[R/L]-2 ...STWP[R/L]11-16(E) ...STWP[R/L]11-20(E) ...STWP[R/L]11-25(E)	
	2205	M UN	3.0~3.5 -	- 8	0.20		●	●	●	●		



Recommended Cutting Conditions J38

Applicable Thread		
	M: Metric	R, Rc (PT), (BSPT): Tapered Pipe
	UN: Unified	W: Whitworth
	UNF: Unified Fine Thread	NPT: American National Pipe
	G (PF): Parallel Pipe	

Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

KTN / KTNS / SIN / CIN

Workpiece Material	Recommended Insert Grade (Vc sfm)					
	Cermet	MEGACOAT	MEGACOAT NANO		PVD Coated Carbide	Carbide
	TC60	**PR1215**	**PR1515**	**PR1535**	**PR1115**	**GW15**
Carbon Steel	☆ 330-490	★ 330-490	-	-	☆ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	-	-	0.0118" or less	-
Alloy Steel	☆ 330-490	★ 330-490	-	-	☆ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	-	-	0.0118" or less	-
Stainless Steel	☆ 200-260	-	★ 200-330	☆ 130-260	☆ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	-	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	-	-	0.0118" or less
Aluminum	-	-	-	-	-	★ 490~1310
Initial D.O.C. (Radial)	-	-	-	-	-	0.0118" or less
Brass	-	-	-	-	-	★ 490~980
Initial D.O.C. (Radial)	-	-	-	-	-	0.0118" or less

• For 06IR / 08IR inserts, we recommend 40% lower sfm.

KTT

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide		Carbide
	TC60	**PR930**	**PR1115**	**KW10**
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 490~1310
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Brass	-	-	-	★ 490~980
Initial D.O.C. (Radial)	-	-	-	0.0118" or less

S...STWP (-E)

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide		Carbide
	TN6020	**TN60**	**PV7020**	**KW10**
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Stainless Steel	-	-	-	-
Initial D.O.C. (Radial)	-	-	-	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0098" or less
Aluminum	-	-	-	★ 490~1310
Initial D.O.C. (Radial)	-	-	-	0.0098" or less
Brass	-	-	-	★ 490~980
Initial D.O.C. (Radial)	-	-	-	0.0098" or less

KTTX / S-KTTX

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide		Carbide
	TC60	**PR930**	**PR1115**	**GW15**
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 490~1310
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Brass	-	-	-	★ 490~980
Initial D.O.C. (Radial)	-	-	-	0.0118" or less

KITG

Workpiece Material	Recommended Insert Grade (Vc sfm)			
	Cermet	PVD Coated Carbide		Carbide
	TC60	**PR930**	**PR1115**	**GW15**
Carbon Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Alloy Steel	☆ 330-490	☆ 330-490	★ 330-490	-
Initial D.O.C. (Radial)	0.0118" or less	0.0118" or less	0.0118" or less	-
Stainless Steel	☆ 200-260	☆ 200-260	★ 200-260	-
Initial D.O.C. (Radial)	0.0098" or less	0.0098" or less	0.0098" or less	-
Cast Iron	-	-	-	★ 330
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Aluminum	-	-	-	★ 490~1310
Initial D.O.C. (Radial)	-	-	-	0.0118" or less
Brass	-	-	-	★ 490~980
Initial D.O.C. (Radial)	-	-	-	0.0118" or less

KKC / A-KKC (Cera-Notch)

Workpiece Material	Recommended Insert Grade (Vc sfm)			Initial D.O.C. (Radial)
	Cermet	PVD Coated Carbide	MEGACOAT	
	TC60	**PR660**	**PR1215**	
Carbon Steel	☆ 300-650	☆ 300-500	★ 300-550	0.012" Max
Alloy Steel	☆ 300-600	☆ 300-450	★ 300-500	0.012" Max
Stainless Steel	☆ 200-300	☆ 150-250	★ 200-300	0.010" Max
Cast Iron	☆ 150-350	-	★ 150-350	0.012" Max
Heat-Resistant Alloy	-	☆ 25-100	★ 25-150	0.010" Max

★ : 1st Recommendation ☆ : 2nd Recommendation

- Coolant is recommended.
- When using cermet inserts if edge chipping occurs lightly hone cutting edge with diamond file.
- For stainless steel threading, please set smaller initial D.O.C. and two or three more passes than threading for carbon steel.

★ : 1st Recommendation ☆ : 2nd Recommendation

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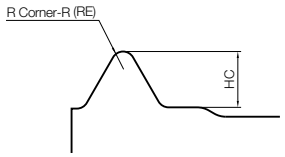
Visit us online at KyoceraPrecisionTools.com

Usage caution for Full Profile insert.

1) Max. D.O.C. is based on the value of (HC+0.0020")-(HC+0.0031").
2) Final D.O.C. for Finishing should be 0.0008"-0.0020".
3) To improve insert life, pre chamfer to thread minor diameter.
4) Coolant is recommended.



(D.O.C. shows the value of radial D.O.C.)

11 / 16 / 22 (Full Profile)

Thread Type		Pitch mm & TPI	Part Number		HC (mm)	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
Metric (mm)	External Thread	1.00mm	16ER	100ISO-TF/TQ	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05														
		1.25mm		125ISO-TF/TQ	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05													
		1.50mm		150ISO-TF/TQ	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05													
		1.75mm		175ISO-TF/TQ	1.11	1.19	8	0.26	0.22	0.19	0.16	0.13	0.10	0.08	0.05											
		2.00mm		200ISO-TF/TQ	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05									
		2.50mm		250ISO-TF/TQ	1.57	1.65	12	0.26	0.23	0.21	0.18	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05							
		3.00mm		300ISO-TF/TQ	1.87	1.95	14	0.26	0.24	0.22	0.20	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.02					
		0.50mm	16E✓	050ISO	0.33	0.38	4	0.14	0.12	0.08	0.04															
		0.75mm		075ISO	0.48	0.53	5	0.17	0.14	0.10	0.08	0.04														
		1.00mm		100ISO	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05														
		1.25mm		125ISO	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05													
		1.50mm		150ISO	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05													
		2.00mm		200ISO	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05									
		2.50mm		250ISO	1.57	1.65	12	0.26	0.23	0.21	0.18	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05							
		3.00mm	22ER	300ISO	1.87	1.95	14	0.26	0.24	0.22	0.20	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.02					
		3.50mm		350ISO	2.18	2.26	15	0.28	0.25	0.22	0.20	0.20	0.18	0.16	0.15	0.15	0.12	0.10	0.10	0.08	0.05	0.02				
		4.00mm		400ISO	2.48	2.56	17	0.28	0.25	0.24	0.22	0.20	0.18	0.16	0.15	0.15	0.14	0.12	0.12	0.10	0.10	0.08	0.05	0.02		
		4.50mm		450ISO	2.79	2.87	18	0.30	0.28	0.26	0.24	0.22	0.20	0.18	0.16	0.16	0.14	0.14	0.13	0.12	0.10	0.10	0.07	0.05	0.02	
		5.00mm		500ISO	3.10	3.18	19	0.30	0.28	0.27	0.26	0.23	0.20	0.18	0.18	0.17	0.16	0.16	0.15	0.15	0.13	0.12	0.10	0.07	0.05	0.02
	Internal Thread	1.00mm	11IR	100ISO-TF/TQ	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04														
		1.25mm		125ISO-TF/TQ	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04												
		1.50mm		150ISO-TF/TQ	0.88	0.96	8	0.24	0.18	0.14	0.10	0.10	0.08	0.07	0.05											
		1.75mm		175ISO-TF/TQ	1.02	1.10	9	0.24	0.18	0.16	0.14	0.10	0.10	0.08	0.05	0.05										
		0.50mm	11I✓	050ISO	0.31	0.36	4	0.14	0.10	0.08	0.04															
		0.75mm		075ISO	0.45	0.50	5	0.15	0.14	0.10	0.07	0.04														
		1.00mm		100ISO	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04														
		1.25mm		125ISO	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04												
		1.50mm		150ISO	0.88	0.96	8	0.24	0.18	0.14	0.10	0.10	0.08	0.07	0.05											
		1.75mm		175ISO	1.02	1.10	9	0.24	0.18	0.16	0.14	0.10	0.10	0.08	0.05	0.05										
		2.00mm		200ISO	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05									
		1.00mm	16IR	100ISO-TF/TQ	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04														
		1.25mm		125ISO-TF/TQ	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04												
		1.50mm		150ISO-TF/TQ	0.88	0.96	8	0.22	0.18	0.14	0.12	0.10	0.08	0.07	0.05											
		1.75mm		175ISO-TF/TQ	1.02	1.10	9	0.22	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05										
		2.00mm		200ISO-TF/TQ	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05									
		2.50mm		250ISO-TF/TQ	1.46	1.54	12	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.05							
		3.00mm		300ISO-TF/TQ	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02					
		1.00mm	16I✓	100ISO	0.60	0.68	5	0.20	0.18	0.15	0.11	0.04														
		1.25mm		125ISO	0.74	0.82	7	0.20	0.18	0.14	0.12	0.08	0.06	0.04												
		1.50mm		150ISO	0.88	0.96	8	0.22	0.18	0.14	0.12	0.10	0.08	0.07	0.05											
		2.00mm		200ISO	1.18	1.26	10	0.24	0.20	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.05									
		2.50mm		250ISO	1.46	1.54	12	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.05	0.05							
		3.00mm		300ISO	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02					
		3.00mm	22IR	300ISO	1.76	1.84	14	0.26	0.24	0.21	0.18	0.16	0.15	0.13	0.12	0.10	0.10	0.07	0.05	0.05	0.02					
		3.50mm		350ISO	2.05	2.13	15	0.26	0.24	0.22	0.20	0.17	0.17	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.05	0.02				
		4.00mm		400ISO	2.34	2.42	17	0.26	0.24	0.22	0.20	0.18	0.18	0.16	0.15	0.14	0.13	0.12	0.12	0.10	0.10	0.05	0.05	0.02		
		4.50mm		450ISO	2.63	2.71	18	0.26	0.25	0.24	0.22	0.22	0.20	0.18	0.17	0.15	0.13	0.13	0.12	0.12	0.10	0.10	0.05	0.05	0.02	
		5.00mm		500ISO	2.92	3.00	19	0.28	0.26	0.24	0.22	0.20	0.20	0.18	0.18	0.16	0.16	0.15	0.14	0.13	0.12	0.11	0.10	0.10	0.05	0.02
Unified (in)	External Thread	24 TPI	16ER	24UN-TF/TQ	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002														
		20 TPI		20UN-TF/TQ	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002													
		18 TPI		18UN-TF/TQ	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002													
		16 TPI		16UN-TF/TQ	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002												
		14 TPI		14UN-TF/TQ	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002											
		13 TPI		13UN-TF/TQ	0.0488	0.0520	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002										
		12 TPI		12UN-TF/TQ	0.0528	0.0559	11	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002								
		10 TPI		10UN-TF/TQ	0.0626	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002							
		8 TPI		08UN-TF/TQ	0.0780	0.0811	14	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002					
		24 TPI	16ER	24UN	0.0264	0.0295	5	0.009	0.008	0.006	0.004	0.002														
		20 TPI		20UN	0.0315	0.0346	6	0.009	0.008	0.006	0.005	0.004	0.002													
		18 TPI		18UN	0.0350	0.0382	6	0.010	0.009	0.007	0.006	0.004	0.002													
		16 TPI		16UN	0.0398	0.0429	7	0.010	0.009	0.007	0.006	0.005	0.004	0.002												
		14 TPI		14UN	0.0453	0.0484	8	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.002											
		12 TPI		12UN	0.0528	0.0559	11	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002								
		8 TPI	22ER	08UN	0.0780	0.0811	15	0.012	0.010	0.009	0.008	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.001				
	Internal Thread	24 TPI	16IR	24UN-TF/TQ	0.0244	0.0276	5	0.009	0.008	0.006	0.004	0.002														
		20 TPI		20UN-TF/TQ	0.0295	0.0327	6	0.009	0.008	0.006	0.005	0.003	0.002													
		18 TPI		18UN-TF/TQ	0.0327	0.0358	6	0.009	0.008	0.007	0.006	0.004	0.002													
		16 TPI		16UN-TF/TQ	0.0370	0.0402	7	0.009	0.008	0.007	0.006	0.004	0.004	0.002												
		14 TPI		14UN-TF/TQ	0.0421	0.0453	8	0.009	0.009	0.007	0.006	0.005	0.004	0.004	0.002											
		13 TPI		13UN-TF/TQ	0.0453	0.0484	9	0.009	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.002										
		12 TPI		12UN-TF/TQ	0.0488	0.0520	11	0.009	0.009	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002								
		10 TPI		10UN-TF/TQ	0.0583	0.0614	12	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002							
		8 TPI		08UN-TF/TQ	0.0732	0.0764	14	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002					
		24 TPI	16IR	24UN	0.0244	0.0276	5	0.009	0.008	0.006	0.004	0.002														
		20 TPI		20UN	0.0295	0.0327	6	0.009	0.008	0.006	0.005	0.003	0.002													
		18 TPI		18UN	0.0327	0.0358	6	0.009	0.007	0.006	0.006	0.004	0.002													
		16 TPI		16UN	0.0370	0.0402	7	0.009	0.008	0.007	0.006	0.004	0.004	0.002												
		14 TPI		14UN	0.0421	0.0453	8	0.009	0.009	0.007	0.006	0.005	0.004	0.004	0.002											
		12 TPI		12UN	0.0488	0.0520	11	0.009	0.009	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002								
		8 TPI	22IR	08UN	0.0724	0.0756	15	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.002	0.002	0.001				

11 / 16 (Full Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch TPI	Part Number	HC (mm)	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass
Parallel Pipe	External Thread	19 TPI	16ER 19W-TF/TQ	0.0350	0.0382	6	0.011	0.009	0.007	0.006	0.004	0.002										
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
	Internal Thread	19 TPI	16IR 19W-TF/TQ	0.0346	0.0378	6	0.010	0.008	0.008	0.006	0.004	0.002										
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
Whitworth	External Thread	16 TPI	16ER 16W-TF/TQ	0.0413	0.0445	8	0.010	0.008	0.007	0.006	0.005	0.003	0.003	0.002								
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
	Internal Thread	16 TPI	16IR 16W-TF/TQ	0.0413	0.0445	8	0.010	0.008	0.007	0.006	0.005	0.003	0.003	0.002								
		14 TPI	14W-TF/TQ	0.0469	0.0500	9	0.011	0.009	0.007	0.006	0.004	0.004	0.004	0.003	0.002							
		11 TPI	11W-TF/TQ	0.0591	0.0622	12	0.011	0.009	0.007	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.003	0.002				
Tapered Pipe	External Thread	28 TPI	16ER 28BSPT-TF/TQ	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT-TF/TQ	0.0339	0.0370	6	0.010	0.008	0.007	0.006	0.004	0.002										
		14 TPI	14BSPT-TF/TQ	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT-TF/TQ	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
		28 TPI	16ER 28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT	0.0339	0.0370	6	0.010	0.008	0.007	0.006	0.004	0.002										
		14 TPI	14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
	Internal Thread	28 TPI	11IR 28BSPT-TF/TQ	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT-TF/TQ	0.0339	0.0370	7	0.009	0.008	0.007	0.006	0.004	0.002	0.002									
		14 TPI	14BSPT-TF/TQ	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		28 TPI	11IR 28BSPT	0.0228	0.0248	5	0.008	0.006	0.005	0.004	0.002											
		19 TPI	19BSPT	0.0339	0.0370	7	0.009	0.008	0.007	0.006	0.004	0.002	0.002									
		14 TPI	14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		14 TPI	16IR 14BSPT-TF/TQ	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT-TF/TQ	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
		14 TPI	16IR 14BSPT	0.0457	0.0488	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	11BSPT	0.0583	0.0614	12	0.010	0.009	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002				
American National Tapered Pipe	External Thread	18 TPI	16ER 18NPT	0.0449	0.0480	13	0.008	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001			
		14 TPI	14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.002	0.001	
		11.5 TPI	11.5NPT	0.0697	0.0728	16	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001
	Internal Thread	18 TPI	16IR 18NPT	0.0449	0.0480	13	0.008	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001			
		14 TPI	14NPT	0.0575	0.0606	15	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.002	0.001	
		11.5 TPI	11.5NPT	0.0697	0.0728	16	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001

60° / 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass
Metric	External Thread	0.50mm	16ER A60-TF/TQ	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
			AG60-TF/TQ	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
		0.75mm	16ER A60-TF/TQ	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
			AG60-TF/TQ	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
		1.00mm	16ER A60-TF/TQ	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
			AG60-TF/TQ	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
		1.25mm	16ER A60-TF/TQ	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
			AG60-TF/TQ	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
		1.50mm	16ER A60-TF/TQ	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
			AG60-TF/TQ	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
		1.75mm	16ER G60-TF/TQ	0.22	1.11	8	0.24	0.20	0.18	0.16	0.13	0.10	0.06	0.04							
			AG60-TF/TQ	0.06	1.27	11	0.22	0.20	0.18	0.13	0.11	0.09	0.09	0.08	0.07	0.06	0.04				
		2.00mm	16ER G60-TF/TQ	0.22	1.30	10	0.24	0.20	0.18	0.16	0.14	0.12	0.09	0.07	0.06	0.04					
			AG60-TF/TQ	0.06	1.46	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.06	0.04				
		2.50mm	16ER G60-TF/TQ	0.22	1.67	12	0.25	0.22	0.20	0.18	0.16	0.14	0.12	0.12	0.10	0.08	0.06	0.04			
			AG60-TF/TQ	0.06	1.84	13	0.25	0.22	0.20	0.19	0.17	0.16	0.14	0.11	0.10	0.09	0.09	0.07	0.05		
		3.00mm	16ER G60-TF/TQ	0.22	2.05	14	0.25	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.07	0.05	
			AG60-TF/TQ	0.06	2.22	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.08	0.05
		0.50mm	16ER A60	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
			AG60	0.06	0.33	5	0.10	0.08	0.07	0.05	0.03										
		0.75mm	16ER A60	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
			AG60	0.06	0.51	6	0.14	0.11	0.09	0.07	0.06	0.04									
		1.00mm	16ER A60	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
			AG60	0.06	0.70	7	0.18	0.13	0.12	0.09	0.08	0.06	0.04								
		1.25mm	16ER A60	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
			AG60	0.06	0.89	8	0.18	0.15	0.14	0.12	0.10	0.08	0.07	0.05							
		1.50mm	16ER A60	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
			AG60	0.06	1.08	9	0.21	0.17	0.16	0.14	0.11	0.09	0.08	0.07	0.05						
		1.75mm	16ER G60	0.22	1.11	8	0.24	0.20	0.18	0.16	0.13	0.10	0.06	0.04							
			AG60	0.06	1.27	11	0.22	0.20	0.18	0.13	0.11	0.09	0.09	0.08	0.07	0.06	0.04				
		2.00mm	16ER G60	0.22	1.30	10	0.24	0.20	0.18	0.16	0.14	0.12	0.09	0.07	0.06	0.04					
			AG60	0.06	1.46	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.06	0.04				
		2.50mm	16ER G60	0.22	1.67	12	0.25	0.22	0.20	0.18	0.16	0.14	0.12	0.12	0.10	0.08	0.06	0.04			
			AG60	0.06	1.84	13	0.25	0.22	0.20	0.19	0.17	0.16	0.14	0.11	0.10	0.09	0.09	0.07	0.05		
		3.00mm	16ER G60	0.22	2.05	14	0.25	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.07	0.05	
			AG60	0.06	2.22	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.12	0.11	0.10	0.09	0.08	0.05

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60° / 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
Metric	External Thread	3.50mm	22ER N60	0.48	2.17	15	0.27	0.25	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.07	0.05				
		4.00mm			2.55	17	0.28	0.26	0.24	0.22	0.20	0.18	0.17	0.16	0.14	0.13	0.12	0.10	0.09	0.08	0.07	0.06	0.05		
		4.50mm			2.93	18	0.30	0.28	0.26	0.25	0.24	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.10	0.09	0.08	0.07	0.06	0.05	
		5.00mm			3.31	19	0.30	0.28	0.27	0.26	0.25	0.24	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.10	0.09	0.08	0.07	0.06	0.05
	Internal Thread	0.75mm	06IR 60005	0.05	0.44	10	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.03									
		1.00mm	06IR 60005	0.05	0.60	12	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.03							
			08IR 60007	0.07	0.58	12	0.07	0.06	0.06	0.06	0.06	0.05	0.04	0.04	0.04	0.04	0.03	0.03							
		1.25mm	06IR 60005	0.05	0.76	14	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.03					
			08IR 60007	0.07	0.74	14	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.03	0.03					
		1.50mm	08IR 60007	0.07	0.90	17	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.03		
		1.75mm	60007	0.07	1.07	19	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03
		0.50mm	11IR A60	0.02	0.30	5	0.08	0.07	0.06	0.05	0.04														
		1.00mm			0.63	6	0.16	0.14	0.12	0.10	0.07	0.04													
		1.50mm			0.95	9	0.18	0.16	0.13	0.12	0.10	0.08	0.08	0.06	0.04										
		0.50mm	16IR A60	0.02	0.30	5	0.08	0.07	0.06	0.05	0.04														
			AG60	0.02	0.30	5	0.08	0.07	0.06	0.05	0.04														
		0.75mm	16IR A60	0.02	0.47	6	0.12	0.10	0.08	0.07	0.06	0.04													
			AG60	0.02	0.47	6	0.12	0.10	0.08	0.07	0.06	0.04													
		1.00mm	16IR A60	0.02	0.63	6	0.16	0.14	0.12	0.10	0.07	0.04													
			AG60	0.02	0.63	6	0.16	0.14	0.12	0.10	0.07	0.04													
		1.25mm	16IR A60	0.02	0.79	7	0.16	0.15	0.14	0.13	0.10	0.07	0.04												
			AG60	0.02	0.79	7	0.16	0.15	0.14	0.13	0.10	0.07	0.04												
		1.50mm	16IR A60	0.02	0.95	9	0.18	0.16	0.13	0.12	0.10	0.08	0.08	0.06	0.04										
			AG60	0.02	0.95	9	0.18	0.16	0.13	0.12	0.10	0.08	0.08	0.06	0.04										
		1.75mm	16IR G60	0.11	1.03	9	0.20	0.17	0.15	0.13	0.11	0.10	0.08	0.05	0.04										
			AG60	0.02	1.12	10	0.20	0.18	0.16	0.13	0.12	0.10	0.08	0.06	0.05	0.04									
		2.00mm	16IR G60	0.11	1.19	10	0.20	0.18	0.17	0.15	0.13	0.11	0.08	0.07	0.06	0.04									
			39G60	0.02	1.28	12	0.20	0.17	0.15	0.13	0.12	0.11	0.10	0.09	0.07	0.06	0.04	0.04							
		2.50mm	16IR G60	0.11	1.51	14	0.20	0.18	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05	0.04	0.02					
			AG60	0.02	1.6	16	0.20	0.18	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.05	0.05	0.04	0.04	0.02			
		3.00mm	16IR G60	0.11	1.84	16	0.20	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.12	0.10	0.10	0.08	0.07	0.06	0.04	0.02			
			AG60	0.02	1.93	18	0.20	0.18	0.17	0.16	0.15	0.14	0.13	0.13	0.12	0.10	0.10	0.08	0.07	0.06	0.05	0.04	0.03	0.02	
		3.50mm	22IR N60	0.22	2.05	14	0.26	0.25	0.22	0.20	0.18	0.16	0.14	0.12	0.12	0.11	0.10	0.08	0.06	0.05					
		4.00mm			2.38	16	0.26	0.24	0.23	0.22	0.20	0.18	0.16	0.14	0.13	0.12	0.11	0.10	0.10	0.08	0.06	0.05			
		4.50mm			2.70	18	0.26	0.24	0.23	0.22	0.20	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.10	0.10	0.08	0.06	0.05	
		5.00mm			3.03	19	0.30	0.27	0.25	0.24	0.22	0.20	0.18	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.10	0.10	0.08	0.06	0.05
Unified (inch)	External Thread	48 TPI	16ER A60-TF	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
			AG60-TF	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
		24 TPI	16ER A60-TF	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
			AG60-TF	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
		20 TPI	16ER A60-TF	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
			AG60-TF	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
		18 TPI	16ER A60-TF	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
			AG60-TF	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
		16 TPI	16ER A60-TF	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
			AG60-TF	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
		14 TPI	16ER G60-TF	0.0087	0.0453	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002										
			AG60-TF	0.0024	0.0520	11	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002								
		13 TPI	16ER G60-TF	0.0087	0.0496	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002										
			AG60-TF	0.0024	0.0563	11	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	16ER G60-TF	0.0087	0.0543	10	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002									
			AG60-TF	0.0024	0.0610	12	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		10 TPI	16ER G60-TF	0.0087	0.0673	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002							
			AG60-TF	0.0024	0.0736	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
		9 TPI	16ER G60-TF	0.0087	0.0756	13	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
			AG60-TF	0.0024	0.0819	14	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		8 TPI	16ER G60-TF	0.0087	0.0862	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
			AG60-TF	0.0024	0.0925	16	0.012	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
		48 TPI	16ER A60	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
			AG60	0.0024	0.0138	5	0.004	0.003	0.003	0.002	0.002														
		24 TPI	16ER A60	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
			AG60	0.0024	0.0295	7	0.007	0.006	0.005	0.004	0.003	0.003	0.002												
		20 TPI	16ER A60	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
			AG60	0.0024	0.0358	8	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002											
		18 TPI	16ER A60	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
			AG60	0.0024	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002											
		16 TPI	16ER A60	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
			AG60	0.0024	0.0453	10	0.009	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002									
		14 TPI	16ER G60	0.0087	0.0453	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002										
			AG60	0.0024	0.0520	11	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002								
		13 TPI	16ER G60	0.0087	0.0496	9	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002										
			AG60	0.0024	0.0563	11	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	16ER G60	0.0087	0.0543	10	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002									
			AG60	0.0024	0.0610	12	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		10 TPI	16ER G60	0.0087	0.0673	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002							
			AG60	0.0024	0.0736	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
		9 TPI	16ER G60	0.0087	0.0756	13	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002						
			AG60	0.0024	0.0819	14	0.011	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		8 TPI	16ER G60	0.0087	0.0862	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
			AG60	0.0024	0.0925	16	0.012	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
		7 TPI	22ER N60	0.0189	0.0894	15	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002				
		6 TPI			0.1075	18	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.003	0.002	0.002	
		5 TPI			0.1327	19	0.012	0.011	0.011	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002
	Internal Thread	28 TPI	06IR 60005	0.0020	0.0213	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001							
		24 TPI		0.0020	0.0252	12	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001							
		20 TPI	06IR 60005	0.0020	0.0303	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001						
			08IR 60007	0.0028	0.0295	14	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001					

60° / 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
Unified (inch)	Internal Thread	18 TPI	**08IR 60007**	0.0028	0.0335	17	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001		
		16 TPI	**08IR 60007**	0.0028	0.0378	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	
		48 TPI			0.0126	5	0.003	0.003	0.003	0.002	0.002														
		24 TPI			0.0264	7	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
		20 TPI	**11IR A60**	0.0008	0.0315	8	0.006	0.005	0.005	0.005	0.004	0.003	0.002	0.002											
		18 TPI			0.0354	9	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002										
		16 TPI			0.0398	10	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.002									
		48 TPI	**16IR A60**	0.0008	0.0126	5	0.003	0.003	0.003	0.002	0.002														
			AG60	0.0008	0.0126	5	0.003	0.003	0.003	0.002	0.002														
		24 TPI	**16IR A60**	0.0008	0.0264	7	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
			AG60	0.0008	0.0264	7	0.006	0.005	0.005	0.004	0.003	0.002	0.002												
		20 TPI	**16IR A60**	0.0008	0.0315	8	0.006	0.005	0.005	0.005	0.004	0.003	0.002	0.002											
			AG60	0.0008	0.0315	8	0.006	0.005	0.005	0.005	0.004	0.003	0.002	0.002											
		18 TPI	**16IR A60**	0.0008	0.0354	9	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002										
			AG60	0.0008	0.0354	9	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.002										
		16 TPI	**16IR A60**	0.0008	0.0398	10	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.002									
			AG60	0.0008	0.0398	10	0.006	0.006	0.005	0.005	0.005	0.004	0.003	0.003	0.002	0.002									
		14 TPI	**16IR G60**	0.0043	0.0421	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002										
			AG60	0.0008	0.0457	11	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002								
		13 TPI	**16IR G60**	0.0043	0.0457	10	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002	0.002									
			AG60	0.0008	0.0492	12	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.002							
		12 TPI	**16IR G60**	0.0043	0.0496	11	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002	0.002								
			AG60	0.0008	0.0531	13	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002	0.002	0.002						
		10 TPI	**16IR G60**	0.0043	0.0606	14	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.001					
			AG60	0.0008	0.0642	16	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002	0.002	0.002	0.002	0.002	0.001		
		9 TPI	**16IR G60**	0.0043	0.0677	16	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.001			
			AG60	0.0008	0.0713	17	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001		
		8 TPI	**16IR G60**	0.0043	0.0768	17	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001		
			AG60	0.0008	0.0803	19	0.008	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002	0.002	0.002	0.001	0.001
		7 TPI			0.0843	14	0.010	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002					
		6 TPI	**22IR N60**	0.0087	0.0996	17	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.002		
		5 TPI			0.1213	18	0.012	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002
Parallel Pipe / Tapered Pipe	External Thread	28 TPI	**16ER A55-TF/TQ**	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
			AG55-TF/TQ	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	**16ER A55-TF/TQ**	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
			AG55-TF/TQ	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		14 TPI	**16ER G55-TF/TQ**	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
			AG55-TF/TQ	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		11 TPI	**16ER G55-TF/TQ**	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
			AG55-TF/TQ	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
		28 TPI	**16ER A55**	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
			AG55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	**16ER A55**	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
			AG55	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		14 TPI	**16ER G55**	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
			AG55	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		11 TPI	**16ER G55**	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
			AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
	Internal Thread	28 TPI	**06IR 5501**	0.0039	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001							
			08IR 5501	0.0039	0.0240	12	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001							
		19 TPI	**08IR 5501**	0.0039	0.0374	18	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	
		28 TPI	**11IR A55**	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	**11IR A55**	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		28 TPI	**16IR A55**	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
			AG55	0.0024	0.0264	7	0.006	0.006	0.004	0.004	0.003	0.002	0.002												
		19 TPI	**16IR A55**	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
			AG55	0.0024	0.0402	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002											
		14 TPI	**16IR G55**	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
			AG55	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		11 TPI	**16IR G55**	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
			AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
Whitworth	External Thread	48 TPI	**16ER A55-TF/TQ**	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														
			AG55-TF/TQ	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														
		24 TPI	**16ER A55-TF/TQ**	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
			AG55-TF/TQ	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
		20 TPI	**16ER A55-TF/TQ**	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002											
			AG55-TF/TQ	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002											
		18 TPI	**16ER A55-TF/TQ**	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002										
			AG55-TF/TQ	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002										
		16 TPI	**16ER A55-TF/TQ**	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002								
			AG55-TF/TQ	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002								
		14 TPI	**16ER G55-TF/TQ**	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
			AG55-TF/TQ	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	**16ER G55-TF/TQ**	0.0087	0.0567	10	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
			AG55-TF/TQ	0.0024	0.0646	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		11 TPI	**16ER G55-TF/TQ**	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
			AG55-TF/TQ	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
		10 TPI	**16ER G55-TF/TQ**	0.0087	0.0701	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002							
			AG55-TF/TQ	0.0024	0.0780	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		9 TPI	**16ER G55-TF/TQ**	0.0087	0.0791	14	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002					
			AG55-TF/TQ	0.0024	0.0866	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
		8 TPI	**16ER G55-TF/TQ**	0.0087	0.0902	15	0.011	0.010	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002				
			AG55-TF/TQ	0.0024	0.0980	16	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
		48 TPI	**16ER A55**	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														
			AG55	0.0024	0.0146	5	0.005	0.004	0.003	0.002	0.002														

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60° / 55° (Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass	18 Pass	19 Pass
Whitworth	External Thread	24 TPI	16ER A55	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
			AG55	0.0024	0.0311	7	0.007	0.006	0.006	0.004	0.003	0.003	0.002												
		20 TPI	16ER A55	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002											
			AG55	0.0024	0.0378	8	0.008	0.007	0.006	0.005	0.004	0.003	0.003	0.002											
		18 TPI	16ER A55	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002										
			AG55	0.0024	0.0421	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002										
		16 TPI	16ER A55	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002								
			AG55	0.0024	0.0480	11	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002								
		14 TPI	16ER G55	0.0087	0.0472	9	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002										
			AG55	0.0024	0.0551	11	0.009	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002								
		12 TPI	16ER G55	0.0087	0.0567	10	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002									
			AG55	0.0024	0.0646	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.003	0.002	0.002							
		11 TPI	16ER G55	0.0087	0.0630	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
			AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
		10 TPI	16ER G55	0.0087	0.0701	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002							
			AG55	0.0024	0.0780	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		9 TPI	16ER G55	0.0087	0.0791	14	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002					
			AG55	0.0024	0.0866	15	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
		8 TPI	16ER G55	0.0087	0.0902	15	0.011	0.010	0.009	0.009	0.008	0.006	0.006	0.005	0.005	0.005	0.004	0.004	0.004	0.003	0.002				
			AG55	0.0024	0.0980	16	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002			
		7 TPI	22ER N55	0.0185	0.0957	16	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.004	0.004	0.004	0.003					
		6 TPI			0.1150	18	0.012	0.011	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002		
		5 TPI			0.1417	21	0.012	0.011	0.011	0.010	0.010	0.009	0.009	0.008	0.007	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.004	0.003
							0.002	0.002																	
	Internal Thread	28 TPI	06IR 5501 08IR 5501	0.0039	0.0256	13	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001						
		19 TPI	08IR 5501	0.0039	0.0319	15	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001				
		24 TPI	11IR A55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002												
		20 TPI			0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002											
		18 TPI			0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002											
		16 TPI			0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002										
		24 TPI	16IR A55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002												
			AG55	0.0024	0.0283	7	0.006	0.006	0.005	0.004	0.003	0.003	0.002												
		20 TPI	16IR A55	0.0024	0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002											
			AG55	0.0024	0.0343	8	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.002											
		18 TPI	16IR A55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002											
			AG55	0.0024	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002											
		16 TPI	16IR A55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002										
			AG55	0.0024	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002										
		14 TPI	16IR G55	0.0087	0.0417	8	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002											
			AG55	0.0024	0.0500	11	0.008	0.007	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.002								
		12 TPI	16IR G55	0.0087	0.0504	9	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.003	0.002										
			AG55	0.0024	0.0583	11	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.002	0.002	0.002								
		11 TPI	16IR G55	0.0087	0.0559	10	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002									
			AG55	0.0024	0.0638	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.003	0.002	0.002							
		10 TPI	16IR G55	0.0087	0.0626	12	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.002							
			AG55	0.0024	0.0705	13	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001						
		9 TPI	16IR G55	0.0087	0.0705	12	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002							
			AG55	0.0024	0.0783	14	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002					
		8 TPI	16IR G55	0.0087	0.0807	14	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.004	0.003	0.003	0.002					
			AG55	0.0024	0.0886	15	0.011	0.01	0.009	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.004	0.003	0.002				
		7 TPI	22IR N55	0.0185	0.0823	14	0.009	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.003	0.002					
		6 TPI			0.0996	16	0.012	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.004	0.003	0.002	0.002			
		5 TPI			0.1236	19	0.012	0.011	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.004	0.003	0.002	0.002
30° Trapezoidal	External Thread	2.00mm	16ER 200TR	-	1.25	10	0.22	0.20	0.17	0.16	0.13	0.12	0.10	0.07	0.05	0.03									
		3.00mm	16ER 300TR	-	1.75	14	0.24	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.10	0.10	0.07	0.05	0.03					
		4.00mm	22ER 400TR	-	2.24	15	0.26	0.23	0.22	0.20	0.20	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03				
		5.00mm	22ER 500TR	-	2.73	17	0.28	0.26	0.24	0.22	0.21	0.20	0.19	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03		
	Internal Thread	2.00mm	16IR 200TR	-	1.25	10	0.22	0.20	0.17	0.16	0.13	0.12	0.10	0.07	0.05	0.03									
		3.00mm	16IR 300TR	-	1.75	14	0.24	0.20	0.18	0.16	0.15	0.14	0.12	0.11	0.10	0.10	0.10	0.07	0.05	0.03					
		4.00mm	22IR 400TR	-	2.24	15	0.26	0.23	0.22	0.20	0.20	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03				
		5.00mm	22IR 500TR	-	2.73	17	0.28	0.26	0.24	0.22	0.21	0.20	0.19	0.18	0.16	0.15	0.14	0.13	0.12	0.10	0.07	0.05	0.03		

Corner-R (R) Selection for Partial Profiling Inserts

	External Thread	Internal Thread
Metric Unified	RE≦0.1443 X TP	RE≦0.0720 X TP
Parallel Pipe Whitworth Tapered Pipe	For Both External and Internal Thread RE≦0.1373 X TP	

- Metric, Unified Thread

Corner-R(RE) at Internal Threading is almost half of that of External.

- Parallel Pipe, Tapered Pipe, Whitworth Thread

Same Corner-R(RE) for both External and Internal Threading.

RE : Corner-RE TP : Pitch (TPI) = $(\frac{1}{n})$ n : TPI

TP : Pitch (Metric) = $(\frac{25.4}{n})$

11 / 16 (60° / 55° Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number	Previous Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass
Metric (60°)	External Thread	1.00mm	16ER 6001	TNN32ER 6001	0.10	0.66	5	0.20	0.18	0.12	0.09	0.05									
		1.25mm	16ER 6001	TNN32ER 6001	0.10	0.85	6	0.23	0.20	0.14	0.12	0.07	0.05								
		1.50mm	16ER 6001	TNN32ER 6001	0.10	1.04	8	0.23	0.21	0.19	0.15	0.11	0.06	0.05	0.04						
			6002	6002	0.20	0.94	7	0.23	0.20	0.18	0.14	0.10	0.05	0.04							
		1.75mm	16ER 6001	TNN32ER 6001	0.10	1.23	9	0.25	0.22	0.20	0.17	0.14	0.09	0.07	0.05	0.04					
			6002	6002	0.20	1.13	8	0.25	0.22	0.20	0.16	0.14	0.07	0.05	0.04						
		2.00mm	16ER 6001	TNN32ER 6001	0.10	1.42	11	0.25	0.22	0.20	0.16	0.14	0.12	0.10	0.08	0.06	0.05	0.04			
			6002	6002	0.20	1.32	10	0.25	0.22	0.20	0.16	0.14	0.12	0.08	0.07	0.04	0.04				
		2.50mm	16ER 6001	TNN32ER 6001	0.10	1.79	13	0.25	0.22	0.20	0.18	0.16	0.16	0.14	0.12	0.10	0.09	0.08	0.05	0.04	
			6002	6002	0.20	1.69	12	0.25	0.22	0.20	0.18	0.16	0.16	0.12	0.12	0.10	0.08	0.06	0.04		
	Internal Thread	0.75mm	11IR 60005	TNN22IR 60005	0.05	0.44	5	0.14	0.12	0.10	0.06	0.02									
		1.00mm	11IR 60005	TNN22IR 60005	0.05	0.60	6	0.18	0.15	0.10	0.08	0.05	0.04								
		1.25mm	11IR 60005	TNN22IR 60005	0.05	0.76	7	0.18	0.15	0.12	0.10	0.10	0.07	0.04							
		1.50mm	11IR 60005	TNN22IR 60005	0.05	0.92	9	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.06	0.04					
			16IR 6001	TNN32IR 6001	0.10	0.87	8	0.18	0.16	0.12	0.10	0.10	0.08	0.08	0.05						
		1.75mm	16IR 6001	TNN32IR 6001	0.10	1.04	9	0.20	0.18	0.15	0.12	0.12	0.10	0.08	0.05	0.04					
		2.00mm	16IR 6001	TNN32IR 6001	0.10	1.20	11	0.20	0.18	0.15	0.12	0.12	0.10	0.10	0.08	0.06	0.05	0.04			
		2.50mm	16IR 6001	TNN32IR 6001	0.10	1.52	14	0.20	0.18	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.06	0.04	0.02
			60015	60015	0.15	1.47	13	0.20	0.18	0.16	0.15	0.14	0.12	0.12	0.10	0.10	0.08	0.06	0.04	0.02	
Parallel Pipe / Tapered Pipe (55°)	External Thread	28 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0240	5	0.008	0.006	0.005	0.003	0.002									
		19 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0374	7	0.009	0.008	0.006	0.006	0.004	0.003	0.002							
		14 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0528	10	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.002				
			5502	5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002					
		11 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.001	
			5502	5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001		
	Internal Thread	28 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0264	7	0.007	0.006	0.005	0.003	0.002	0.002	0.001							
			16IR 5501	TNN32IR 5501	0.0039	0.0240	6	0.007	0.006	0.005	0.003	0.002	0.001								
		19 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0398	8	0.008	0.007	0.006	0.006	0.005	0.003	0.003	0.002						
			16IR 5501	TNN32IR 5501	0.0039	0.0374	7	0.008	0.007	0.006	0.006	0.005	0.004	0.002							
		14 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0547	11	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002			
			16IR 5501	TNN32IR 5501	0.0039	0.0528	10	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.004	0.003	0.002				
			5502	5502	0.0079	0.0480	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		11 TPI	16IR 5501	TNN32IR 5501	0.0039	0.0681	12	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002		
			5502	5502	0.0079	0.0638	11	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.003	0.002			
Whitworth (55°)	External Thread	24 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0287	6	0.009	0.007	0.005	0.004	0.003	0.002									
		20 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0354	6	0.009	0.007	0.007	0.006	0.005	0.002									
		18 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0398	7	0.009	0.008	0.007	0.006	0.004	0.003	0.002							
		16 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0453	9	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.002					
			5502	5502	0.0079	0.0409	8	0.009	0.008	0.006	0.006	0.004	0.003	0.003	0.002						
		14 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0528	10	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.004	0.003	0.002				
			5502	5502	0.0079	0.0480	9	0.009	0.008	0.007	0.006	0.004	0.004	0.004	0.003	0.002					
		12 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0622	12	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.003	0.003	0.002		
			5502	5502	0.0079	0.0575	11	0.010	0.008	0.007	0.006	0.006	0.006	0.004	0.003	0.003	0.003	0.002			
		11 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0681	12	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002		
			5502	5502	0.0079	0.0638	11	0.010	0.008	0.007	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002			
		10 TPI	16ER 5501	TNN32ER 5501	0.0039	0.0756	14	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.001
			5502	5502	0.0079	0.0709	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001	
		9 TPI	16ER 5502	TNN32ER 5502	0.0079	0.0799	14	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.003	0.002	0.001
	Internal Thread	24 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0280	7	0.007	0.006	0.005	0.004	0.003	0.002	0.001							
			16IR 5501	TNN32IR 5501	0.0039	0.0256	6	0.007	0.006	0.005	0.004	0.003	0.001								
		20 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0343	8	0.007	0.006	0.006	0.005	0.004	0.002	0.002	0.002						
			16IR 5501	TNN32IR 5501	0.0039	0.0319	7	0.007	0.006	0.006	0.005	0.004	0.002	0.002							
		18 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0382	8	0.008	0.007	0.006	0.006	0.004	0.003	0.002	0.002						
			16IR 5501	TNN32IR 5501	0.0039	0.0358	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002							
		16 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0429	9	0.008	0.007	0.006	0.006	0.004	0.004	0.003	0.003	0.002					
			16IR 5501	TNN32IR 5501	0.0039	0.0409	8	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002						
			5502	5502	0.0079	0.0362	7	0.008	0.007	0.006	0.006	0.004	0.003	0.002							
		14 TPI	11IR 55005	TNN22IR 55005	0.0020	0.0496	10	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.004	0.003	0.002				
			16IR 5501	TNN32IR 5501	0.0039	0.0472	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
			5502	5502	0.0079	0.0425	8	0.008	0.007	0.007	0.006	0.005	0.004	0.003	0.002						
		12 TPI	16IR 5501	TNN32IR 5501	0.0039	0.0559	10	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002				
			5502	5502	0.0079	0.0512	9	0.010	0.009	0.007	0.006	0.006	0.005	0.004	0.003	0.002					
		11 TPI	16IR 5501	TNN32IR 5501	0.0039	0.0614	11	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002			
			5502	5502	0.0079	0.0567	10	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002				

<How to use>

1) Select the insert with suitable corner-R (RE) determined by the pitch.
2) Do not exceed 0.0118" for the 1st D.O.C.
3) Final D.O.C. for Finishing should be 0.0008" - 0.0020".
4) To improve insert life, pre chamfer to thread minor diameter.
5) Coolant is recommended.

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TT (60° / 55° Partial Profile)

(D.O.C. shows the value of radial D.O.C.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass
Metric (60°)	External Thread	0.50mm	TT32℄ 6000	0.00	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02										
		0.70mm	TT32℄ 6000	0.00	0.53	7	0.10	0.10	0.10	0.08	0.07	0.06	0.02									
		0.75mm	TT32℄ 6000	0.00	0.57	8	0.10	0.10	0.10	0.08	0.08	0.05	0.04	0.02								
		0.80mm	TT32℄ 6000	0.00	0.61	8	0.10	0.10	0.10	0.10	0.08	0.06	0.05	0.02								
		1.00mm	TT32℄ 6000	0.00	0.76	8	0.15	0.12	0.12	0.11	0.10	0.08	0.06	0.02								
			TT32/43℄ 6001	0.10	0.66	6	0.20	0.15	0.12	0.10	0.07	0.02										
		1.25mm	TT32℄ 6000	0.00	0.95	9	0.18	0.16	0.14	0.12	0.10	0.10	0.08	0.05	0.02							
			TT32/43℄ 6001	0.10	0.85	7	0.25	0.20	0.13	0.10	0.10	0.05	0.02									
		1.50mm	TT32℄ 6000	0.00	1.14	10	0.20	0.18	0.16	0.14	0.12	0.10	0.10	0.07	0.05	0.02						
			TT32/43℄ 6001	0.10	1.04	9	0.25	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.02							
			6002	0.20	0.94	8	0.25	0.18	0.14	0.12	0.10	0.08	0.05	0.02								
		1.75mm	TT32℄ 6000	0.00	1.33	11	0.25	0.23	0.20	0.13	0.10	0.10	0.10	0.08	0.07	0.05	0.02					
			TT32/43℄ 6001	0.10	1.23	10	0.25	0.23	0.20	0.13	0.10	0.10	0.08	0.07	0.05	0.02						
			6002	0.20	1.13	9	0.25	0.23	0.20	0.13	0.10	0.08	0.07	0.05	0.02							
		2.00mm	TT32℄ 6000	0.00	1.52	12	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.10	0.10	0.08	0.05	0.02				
			TT32/43℄ 6001	0.10	1.42	11	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.10	0.08	0.05	0.02					
			6002	0.20	1.32	10	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.08	0.05	0.02						
		2.50mm	TT32℄ 6000	0.00	1.89	13	0.27	0.25	0.20	0.18	0.17	0.15	0.14	0.14	0.13	0.10	0.08	0.06	0.02			
			TT32/43℄ 6001	0.10	1.79	12	0.27	0.25	0.20	0.18	0.17	0.15	0.14	0.13	0.12	0.10	0.06	0.02				
			6002	0.20	1.69	11	0.27	0.25	0.20	0.18	0.17	0.15	0.14	0.13	0.10	0.08	0.02					
			6003	0.30	1.59	11	0.27	0.25	0.20	0.18	0.17	0.15	0.12	0.10	0.08	0.05	0.02					
		3.00mm	TT43℄ 6001	0.10	2.17	14	0.30	0.25	0.23	0.20	0.20	0.18	0.16	0.14	0.14	0.12	0.10	0.08	0.05	0.02		
			6002	0.20	2.07	13	0.30	0.25	0.23	0.20	0.20	0.18	0.15	0.14	0.13	0.12	0.10	0.05	0.02			
			6003	0.30	1.97	12	0.30	0.25	0.23	0.20	0.20	0.18	0.15	0.14	0.12	0.10	0.08	0.02				
			6004	0.40	1.87	12	0.30	0.25	0.23	0.20	0.20	0.18	0.14	0.12	0.10	0.08	0.05	0.02				
		3.50mm	TT43℄ 6001	0.10	2.55	16	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.10	0.08	0.05	0.02
			6002	0.20	2.45	15	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.10	0.10	0.05	0.02	
			6003	0.30	2.35	14	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.15	0.14	0.12	0.10	0.08	0.02		
			6004	0.40	2.25	14	0.30	0.27	0.23	0.22	0.20	0.18	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.02		
	Internal Thread	0.50mm	TT32℄ 6000	0.00	0.32	5	0.12	0.08	0.06	0.04	0.02											
		0.70mm	TT32℄ 6000	0.00	0.45	6	0.15	0.10	0.08	0.06	0.04	0.02										
		0.75mm	TT32℄ 6000	0.00	0.49	6	0.15	0.12	0.08	0.07	0.05	0.02										
		0.80mm	TT32℄ 6000	0.00	0.52	6	0.15	0.12	0.10	0.08	0.05	0.02										
		1.00mm	TT32℄ 6000	0.00	0.65	7	0.15	0.14	0.12	0.10	0.08	0.04	0.02									
		1.25mm	TT32℄ 6000	0.00	0.81	8	0.18	0.16	0.14	0.12	0.10	0.05	0.04	0.02								
		1.50mm	TT32℄ 6000	0.00	0.97	9	0.20	0.18	0.16	0.14	0.10	0.08	0.05	0.04	0.02							
			TT32/43℄ 6001	0.10	0.87	8	0.20	0.18	0.16	0.14	0.08	0.05	0.04	0.02								
		1.75mm	TT32℄ 6000	0.00	1.14	10	0.20	0.18	0.16	0.13	0.12	0.10	0.10	0.08	0.05	0.02						
			TT32/43℄ 6001	0.10	1.04	9	0.20	0.18	0.16	0.13	0.12	0.10	0.08	0.05	0.02							
		2.00mm	TT32℄ 6000	0.00	1.30	12	0.20	0.18	0.16	0.13	0.13	0.12	0.10	0.10	0.08	0.05	0.03	0.02				
			TT32/43℄ 6001	0.10	1.20	11	0.20	0.18	0.16	0.13	0.13	0.12	0.10	0.08	0.05	0.03	0.02					
		2.50mm	TT32℄ 6000	0.00	1.62	14	0.23	0.20	0.18	0.18	0.13	0.13	0.12	0.10	0.10	0.08	0.07	0.05	0.03	0.02		
			TT32/43℄ 6001	0.10	1.52	13	0.23	0.20	0.18	0.18	0.13	0.13	0.12	0.10	0.08	0.07	0.05	0.03	0.02			
		3.00mm	TT43℄ 6001	0.10	1.85	15	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.10	0.10	0.08	0.07	0.05	0.05	0.02	
			6002	0.20	1.75	14	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.10	0.08	0.07	0.05	0.05	0.02		
Parallel Pipe / Tapered Pipe (55°)	External Thread	28 TPI	TT32℄ 5501	0.0039	0.0240	5	0.008	0.007	0.006	0.002	0.001											
		19 TPI	TT32/43℄ 5501	0.0039	0.0374	8	0.008	0.007	0.006	0.005	0.005	0.004	0.002	0.001								
		14 TPI	TT32/43℄ 5501	0.0039	0.0528	10	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
			5502	0.0079	0.0480	9	0.010	0.009	0.008	0.007	0.005	0.004	0.003	0.002	0.001							
		11 TPI	TT32/43℄ 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.001			
			5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001				
			5503	0.0118	0.0591	11	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001					
	Internal Thread	28 TPI	TT32/43℄ 5501	0.0039	0.0240	6	0.007	0.006	0.005	0.003	0.002	0.001										
		19 TPI	TT32/43℄ 5501	0.0039	0.0374	7	0.008	0.007	0.006	0.006	0.005	0.004	0.002									
		14 TPI	TT32/43℄ 5501	0.0039	0.0528	10	0.008	0.007	0.007	0.006	0.006	0.006	0.004	0.004	0.003	0.002						
			5502	0.0079	0.0480	9	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002							
		11 TPI	TT32/43℄ 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.001			
			5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001				
			5503	0.0118	0.0591	11	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001					
Whitworth (55°)	External Thread	24 TPI	TT32/43℄ 5501	0.0039	0.0287	6	0.008	0.007	0.006	0.005	0.002	0.001										
		20 TPI	TT32/43℄ 5501	0.0039	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001									
		18 TPI	TT32/43℄ 5501	0.0039	0.0398	8	0.008	0.007	0.007	0.006	0.005	0.004	0.002	0.001								
		16 TPI	TT32/43℄ 5501	0.0039	0.0453	9	0.010	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001							
			5502	0.0079	0.0409	8	0.010	0.008	0.007	0.006	0.004	0.003	0.003	0.001								
		14 TPI	TT32/43℄ 5501	0.0039	0.0528	10	0.010	0.009	0.008	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
			5502	0.0079	0.0480	9	0.010	0.009	0.008	0.007	0.005	0.004	0.003	0.002	0.001							
		12 TPI	TT32/43℄ 5501	0.0039	0.0622	12	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.001				
			5502	0.0079	0.0575	11	0.010	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001					
		11 TPI	TT32/43℄ 5501	0.0039	0.0681	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.002	0.002	0.001			
			5502	0.0079	0.0638	12	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001				
			TT43℄ 5503	0.0118	0.0591	11	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001					
		10 TPI	TT32/43℄ 5501	0.0039	0.0756	14	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.005	0.004	0.004	0.003	0.003	0.002	0.001		
			5502	0.0079	0.0709	13	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.004	0.003	0.003	0.002	0.001			
			TT43℄ 5503	0.0118	0.0661	12	0.010	0.009	0.008	0.007	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001				
		9 TPI	TT43℄ 5501	0.0039	0.0843	14	0.010	0.009	0.009	0.008	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001		
			5502	0.0079	0.0799	13	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.001			
			5503	0.0118	0.0752	12	0.012	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001				
		8 TPI	TT43℄ 5501	0.0039	0.0957	15	0.011	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.005	0.005	0.004	0.002	0.001	
			5502	0.0079	0.0909	14	0.011	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.002	0.001		
			5503	0.0118	0.0862	13	0.012	0.011	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.002	0.001			
			5504	0.0157	0.0819	12	0.012	0.011	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.003	0.002	0.001				

TT (60° / 55° Partial Profile) Continued...

(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass
Whitworth (55°)	Internal Thread	24 TPI	TT32/43°% 5501	0.0039	0.026	0.236	0.008	0.006	0.005	0.004	0.002	0.001									
		20 TPI	TT32/43°% 5501	0.0039	0.032	0.276	0.008	0.007	0.006	0.005	0.003	0.002	0.001								
		18 TPI	TT32/43°% 5501	0.0039	0.036	0.315	0.008	0.007	0.006	0.006	0.004	0.002	0.002	0.001							
		16 TPI	TT32/43°% 5501	0.0039	0.041	0.354	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001						
			5502	0.0079	0.036	0.315	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.001							
		14 TPI	TT32/43°% 5501	0.0039	0.047	0.394	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001					
			5502	0.0079	0.043	0.354	0.008	0.007	0.006	0.006	0.006	0.004	0.003	0.002	0.001						
		12 TPI	TT32/43°% 5501	0.0039	0.056	0.394	0.009	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001					
			5502	0.0079	0.051	0.354	0.010	0.009	0.008	0.007	0.006	0.005	0.004	0.002	0.001						
		11 TPI	TT32/43°% 5501	0.0039	0.061	0.433	0.010	0.009	0.009	0.007	0.006	0.006	0.005	0.004	0.004	0.002	0.001				
			5502	0.0079	0.057	0.394	0.010	0.009	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001					
			TT43°% 5503	0.0118	0.052	0.354	0.010	0.009	0.008	0.007	0.006	0.006	0.004	0.002	0.001						
		10 TPI	TT32/43°% 5501	0.0039	0.068	0.472	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.004	0.002	0.001			
			5502	0.0079	0.063	0.433	0.010	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.002	0.001				
			TT43°% 5503	0.0118	0.059	0.394	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.002	0.001					
		9 TPI	TT43°% 5501	0.0039	0.076	0.512	0.010	0.009	0.009	0.008	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001		
			5502	0.0079	0.072	0.472	0.010	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.002	0.001			
			5503	0.0118	0.067	0.433	0.010	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.004	0.002	0.001				
		8 TPI	TT43°% 5501	0.0039	0.086	0.591	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.002	0.001
			5502	0.0079	0.081	0.551	0.011	0.010	0.009	0.008	0.008	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.002	0.001	
			5503	0.0118	0.077	0.512	0.012	0.010	0.009	0.009	0.008	0.007	0.006	0.005	0.004	0.003	0.002	0.002	0.001		
			5504	0.0157	0.072	0.472	0.012	0.010	0.009	0.008	0.008	0.007	0.006	0.005	0.003	0.002	0.002	0.001			

TT (60° / 55° Full Profile)

(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric	External Thread	1.00mm	TT43E°% 100M	0.64	0.72	5	0.23	0.19	0.15	0.10	0.05							
		1.25mm	125M	0.80	0.88	6	0.26	0.21	0.16	0.12	0.08	0.05						
		1.50mm	150M	0.95	1.03	6	0.26	0.24	0.21	0.16	0.11	0.05						
		2.00mm	200M	1.27	1.35	10	0.26	0.21	0.18	0.16	0.14	0.12	0.10	0.08	0.05	0.05		

TTX (60° / 55° Partial Profile)

(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass
Metric (60°)	External Thread	0.50mm	TTX32R 6000	0.00	0.38	6	0.10	0.10	0.07	0.05	0.04	0.02						
			6000S															
			60005	0.05	0.33	5	0.10	0.10	0.07	0.04	0.02							
			60005S															
		0.70mm	TTX32R 6000	0.00	0.53	7	0.10	0.10	0.10	0.08	0.07	0.06	0.02					
			60005	0.05	0.48	6	0.10	0.10	0.10	0.10	0.06	0.02						
		0.75mm	TTX32R 6000	0.00	0.57	8	0.10	0.10	0.10	0.08	0.08	0.05	0.04	0.02				
			60005	0.05	0.52	7	0.10	0.10	0.10	0.08	0.07	0.05	0.02					
		0.80mm	TTX32R 6000	0.00	0.61	8	0.10	0.10	0.10	0.10	0.08	0.06	0.05	0.02				
			60005	0.05	0.56	7	0.10	0.10	0.10	0.10	0.08	0.06	0.02					
		1.00mm	TTX32R 6000	0.00	0.76	8	0.15	0.13	0.12	0.12	0.10	0.08	0.04	0.02				
			60005	0.05	0.71	7	0.18	0.15	0.12	0.10	0.08	0.06	0.02					
			6001	0.10	0.66	6	0.20	0.15	0.12	0.10	0.07	0.02						
		1.25mm	TTX32R 6001	0.10	0.85	7	0.25	0.20	0.13	0.10	0.10	0.05	0.02					
		1.50mm	6001	0.10	1.04	9	0.25	0.18	0.14	0.12	0.10	0.10	0.08	0.05	0.02			
		1.75mm	6001	0.10	1.23	10	0.25	0.23	0.20	0.13	0.10	0.10	0.08	0.07	0.05	0.02		
		2.00mm	6001	0.10	1.42	11	0.25	0.23	0.20	0.16	0.13	0.10	0.10	0.10	0.08	0.05	0.02	0.02
Parallel Pipe (55°)	External Thread	28 TPI	TTX32R 5501	0.0039	0.0240	5	0.008	0.007	0.006	0.002	0.001							
		19 TPI	TTX32R 5501	0.0039	0.0374	8	0.008	0.007	0.006	0.005	0.005	0.004	0.002	0.001				
			55015	0.0059	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001					
		14 TPI	TTX32R 55015	0.0059	0.0504	10	0.010	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001		
		11 TPI	55015	0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001
Whitworth (55°)	External Thread	24 TPI	TTX32R 5501	0.0039	0.0287	6	0.008	0.007	0.006	0.005	0.002	0.001						
		20 TPI	TTX32R 5501	0.0039	0.0354	7	0.008	0.007	0.006	0.006	0.005	0.003	0.001					
			TTX32R 55015	0.0059	0.0331	7	0.008	0.007	0.006	0.005	0.004	0.002	0.001					
		18 TPI		0.0059	0.0374	8	0.008	0.007	0.006	0.006	0.005	0.004	0.002	0.001				
		16 TPI		0.0059	0.0433	9	0.008	0.007	0.006	0.006	0.005	0.005	0.004	0.002	0.001			
		14 TPI	TTX32R 55015	0.0059	0.0504	10	0.010	0.008	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001		
		12 TPI		0.0059	0.0598	11	0.010	0.008	0.007	0.006	0.006	0.006	0.006	0.006	0.005	0.004	0.002	0.001
		11 TPI		0.0059	0.0657	12	0.010	0.009	0.008	0.007	0.006	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001

<How to use>

1) Select the insert with suitable corner-R (RE) determined by the pitch.
2) Do not exceed 0.0118" for the 1st D.O.C.
3) Final D.O.C. for Finishing should be 0.0008" - 0.0020".
4) To improve insert life, pre chamfer to thread minor diameter.
5) Coolant is recommended.

TTX Type

Suitable for threading to the shoulder.

Insert Part Number \ Thread Type		Metric (mm)	Unified TPI	Parallel Pipe TPI	Whitworth TPI
TTX32R	6000	0.5~1.0	56~32	-	-
	60005	0.5~1.0	48~32	-	-
	6001	1.0~2.0	28~14	-	-
TTX32R	6000S	0.5	56~48	-	-
	60005S	0.5	48	-	-
TTX32R	5501	-	-	28~19	24~20
	55015	-	-	19~11	20~14

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TPGB Type (60° Partial Profile)

(D.O.C. shows the value of radial ap.)

Thread Type		Pitch mm & TPI	Part Number	RE	Total D.O.C.	No. of Passes	1 Pass	2 Pass	3 Pass	4 Pass	5 Pass	6 Pass	7 Pass	8 Pass	9 Pass	10 Pass	11 Pass	12 Pass	13 Pass	14 Pass	15 Pass	16 Pass	17 Pass
Metric (60°)	Internal Thread	0.75mm	TPGB 21501	0.05	0.44	5	0.15	0.12	0.10	0.05	0.02												
			TPGB 2201																				
		0.80mm	TPGB 21501	0.05	0.47	5	0.15	0.14	0.10	0.06	0.02												
			TPGB 2201																				
		1.00mm	TPGB 21501	0.05	0.60	6	0.18	0.14	0.12	0.10	0.04	0.02											
			TPGB 2201																				
		1.25mm	TPGB 21501	0.05	0.76	7	0.18	0.16	0.14	0.12	0.10	0.04	0.02										
			TPGB 2201																				
		1.50mm	TPGB 21501	0.05	0.92	8	0.20	0.18	0.16	0.14	0.10	0.08	0.04	0.02									
			TPGB 2201																				
			TPGB 21502	0.10	0.87	8	0.20	0.18	0.16	0.14	0.08	0.05	0.04	0.02									
			TPGB 2202																				
		1.75mm	TPGB 21501	0.05	1.09	9	0.20	0.18	0.16	0.14	0.13	0.12	0.10	0.04	0.02								
			TPGB 2201																				
			TPGB 2202	0.10	1.04	9	0.20	0.18	0.16	0.13	0.12	0.10	0.08	0.05	0.02								
		2.00mm	TPGB 21501	0.05	1.25	11	0.20	0.18	0.16	0.14	0.13	0.12	0.10	0.10	0.06	0.04	0.02						
			TPGB 2201																				
			TPGB 2202	0.10	1.20	11	0.20	0.18	0.16	0.13	0.13	0.12	0.10	0.08	0.05	0.03	0.02						
		2.50mm	TPGB 21501	0.05	1.57	13	0.23	0.20	0.18	0.18	0.14	0.13	0.12	0.10	0.08	0.07	0.07	0.05	0.02				
			TPGB 2201																				
			TPGB 2202	0.10	1.52	13	0.23	0.20	0.18	0.18	0.13	0.13	0.12	0.10	0.08	0.07	0.05	0.03	0.02				
		3.00mm	TPGB 21501	0.05	1.90	15	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.12	0.10	0.08	0.08	0.07	0.05	0.02		
			TPGB 2201																				
			TPGB 2202	0.10	1.85	15	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.10	0.10	0.08	0.07	0.05	0.05	0.02		
			TPGB 2205	0.20	1.75	14	0.25	0.22	0.20	0.18	0.14	0.14	0.13	0.12	0.10	0.08	0.07	0.05	0.05	0.02			
		3.50mm	TPGB 21501	0.05	2.22	16	0.25	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.12	0.10	0.10	0.08	0.05	0.02	
			TPGB 2201																				
			TPGB 2202	0.10	2.17	16	0.25	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.10	0.10	0.08	0.07	0.05	0.02	
			TPGB 2205	0.20	2.07	15	0.25	0.22	0.20	0.18	0.18	0.16	0.16	0.14	0.14	0.12	0.10	0.08	0.07	0.05	0.02		

Guide for Internal Threading

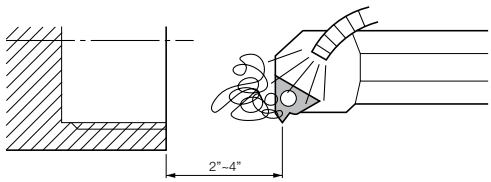
For internal threading, ensure consistent diameter and pay attention to chip evacuation.

1. Stabilizing diameters of pre-drilled holes
   Because small pitch internal threads have a small corner radius any variation in the diameter of pre drilled holes will greatly affect the tool life of the insert. Please minimize any variation of pre drilled holes and add an air pass to the first thread pass for safety.

2. Chip evacuation
   If the threading cycle continues with chips tangled on the holder or in the part it may damage the insert. We suggest starting each thread pass at least 2" from the part to allow room for the coolant to remove chips from the tool on each pass.

< 1 When running the first part of a setup>
Run the program in single block to make sure coolant can remove the chips from the tool after each threading pass.

< 2 When running the second part of a setup>
Run through the full threading cycle and again check that chips are removed from the tool before going into production.



The standard specification of the inch size thread is based on the dimension of 1/8".

In Applicable Toolholders and Inserts Lists on **J34~J37**, Right-hand Insert / Right-hand Toolholder descriptions are listed based on the previous TNN type inserts. For other applicable inserts / toolholders or stock availability of Left-hand, see each relevant page and **J40**.

Parallel Pipe : G (PF), Rp (PS)

Nominal Thread		TPI	External Thread (G)			Internal Thread (G,Rp)				Root Radius Ext./Int. (mm)
Inch	Symbol (Previous Symbol)		Toolholder	Insert		Toolholder	Insert		Min. Bore Dia.(mm)	
				Partial Profile	Full Profile		Partial Profile	Full Profile		
-	G 1/16 (-)	28	**KTNR○○○○□-16** **KTNSR○○○○□-16**	16ERA55-TF/TQ 16ERAG55-TF/TQ 16ERA55 16ERAG55	-	**SINR0612S-06E** (EZT ➡ **J32**)	06IR5501	-	6.56	0.12
'1/8	G 1/8 (PF 1/8)							-	8.57	
'2/8	G 1/4 (PF 1/4)	19		16ERA55-TF/TQ 16ERAG55-TF/TQ 16ERA55 16ERAG55	16ER19W-TF/TQ 16ER19W	**SINR0816S-08E** (EZT ➡ **J32**)	08IR5501	-	11.45	0.18
'3/8	G 3/8 (PF 3/8)					**SINR1216S-11E** (EZT ➡ **J32**)	11IRA55 11IR55005	-	14.95	
'4/8	G 1/2 (PF 1/2)	14	**KTNR○○○○□-16** **KTNSR○○○○□-16**	16ERAG55-TF/TQ 16ERG55-TF/TQ 16ERAG55 16ERG55	16ER14W-TF/TQ 16ER14W	**SINR1516S-11**	11IR55005	-	18.63	0.25
'5/8	G 5/8 (PF 5/8)					**SINR1616S-16**	16IRAG55 16IRG55 16IR5501 16IR5502	16IR14W-TF/TQ 16IR14W	20.59	
'6/8	G 3/4 (PF 3/4)					**SINR2016S-16**			24.12	
'7/8	G 7/8 (PF 7/8)					**SINR2420S-16**			27.88	
'8/8	G 1 (PF 1)	11	**KTNR○○○○□-16** **KTNSR○○○○□-16**	16ERAG55-TF/TQ 16ERG55-TF/TQ 16ERAG55 16ERG55	16ER11W-TF/TQ 16ER11W	**SINR2420S-16**	16IRAG55 16IRG55 16IR5501 16IR5502	16IR11W-TF/TQ 16IR11W	30.29	0.32
'9/8	G 1 1/8 (PF 1 1/8)					**CINR3025S-16**			34.95	
'10/8	G 1 1/4 (PF 1 1/4)					**CINR3732S-16**			38.95	
			Hereafter, all the threads are 11 TPI and the root radius 0.32. The same tool for G 1 1/4 is recommended.							

Tapered Pipe : R, Rc(PT), (BSPT)

Nominal Thread		TPI	External Thread (G)			Internal Thread (Rc)			Root Radius Ext./Int. (mm)
Inch	Symbol (Previous Symbol)		Toolholder	Insert		Toolholder	Insert		
				Partial Profile	Full Profile		Partial Profile	Full Profile	
-	R 1/16, Rc 1/16 (-)	28	**KTNR○○○○□-16** **KTNSR○○○○□-16**	(16ERA55-TF/TQ) (16ERAG55-TF/TQ) (16ERA55) (16ERAG55)	16ER28BSPT-TF/TQ 16ER28BSPT	**SINR0612S-06E** (EZT ➡ **J32**)	06IR5501	-	0.12
'1/8	R 1/8, Rc 1/8 (PT 1/8)	28							
'2/8	R 1/4, Rc 1/4 (PT 1/4)	19	**KTNR○○○○□-16** **KTNSR○○○○□-16**	(16ERA55-TF/TQ) (16ERAG55-TF/TQ) (16ERA55) (16ERAG55)	16ER19BSPT-TF/TQ 16ER19BSPT	**SINR0816S-08E** (EZT ➡ **J32**)	08IR5501	-	0.18
'3/8	R 3/8, Rc 3/8 (PT 3/8)	19				**SINR1216S-11E** (EZT ➡ **J32**)	(11IRA55) (11IR55005)	11IR19BSPT-TF/TQ 11IR19BSPT	
'4/8	R 1/2, Rc 1/2 (PT 1/2)	14	**KTNR○○○○□-16** **KTNSR○○○○□-16**	(16ERAG55-TF/TQ) (16ERG55-TF/TQ) (16ERAG55) (16ERG55)	16ER14BSPT-TF/TQ 16ER14BSPT	**SINR1516S-11**	(11IR55005)	11IR14BSPT-TF/TQ 11IR14BSPT	0.25
						SINR1616S-16	(16IRAG55) (16IRG55) (16IR5501) (16IR5502)	16IR14BSPT-TF/TQ 16IR14BSPT	
'6/8	R 3/4, Rc 3/4 (PT 3/4)	14				**SINR2016S-16**			
'8/8	R 1, Rc 1 (PT 1)	11	**KTNR○○○○□-16** **KTNSR○○○○□-16**	(16ERAG55-TF/TQ) (16ERG55-TF/TQ) (16ERAG55) (16ERG55)	16ER11BSPT-TF/TQ 16ER11BSPT	**SINR2420S-16**	(16IRAG55) (16IRG55) (16IR5501) (16IR5502)	16IR11BSPT-TF/TQ 16IR11BSPT	0.32
'10/8	R 1 1/4, Rc 1 1/4 (PT 1 1/4)					**CINR3025S-16**			
'12/8	R 1 1/2, Rc 1/2 (PT 1/2)					**CINR3732S-16**			
			Hereafter, all the threads are 11 TPI and the root's radius 0.32. The same tool for G 1 1/2 is recommended.			Hereafter, all the threads are 11 TPI and the root radius 0.32. The same tool for G 1 1/4 is recommended.			

1) The largest toolholder available for the minimum bore dia. is recommended for the female threading in these tables.
Then, the toolholder whose min. bore dia. is smaller than the recommended toolholder can be used for threading
2) When using "Partial Profile" for Tapered Pipe threading, thread's corners become sharp edged, and the shape will not be the same as the standard shape for Tapered Pipe.

American National Pipe : NPT

Nominal Thread	TPI	External Thread			Internal Thread		
		Toolholder	Insert		Toolholder	Insert	
			Partial Profile	Full Profile		Partial Profile	Full Profile
1/16 NPT 1/8 NPT	27	**KTTR○○○○□-16** **KTTXR○○○○□-16F**	TT32R6000 TTX32R6000	-	No Tools Available		
1/4 NPT 3/8 NPT	18	**KTNR○○○○□-16** **KTNSR○○○○□-16**	-	16ER18NPT	**EZH Sleeve** (See J33)	**EZTR060050-60-004** **EZTR070060-60-004**	-
1/2 NPT 3/4 NPT	14	**KTNR○○○○□-16** **KTNSR○○○○□-16**	-	16ER14NPT	**EZH Sleeve** (See J33)	**EZTR070060-60-004**	-
1/2 NPT	14	**KTNR○○○○□-16** **KTNSR○○○○□-16**	-	16ER14NPT	**SINR1616S-16**	-	16IR14NPT
3/4 NPT					**SINR2016S-16**		
1 NPT	11.5	**KTNR○○○○□-16** **KTNSR○○○○□-16**	-	16ER11.5NPT	**SINR2420S-16**	-	16IR11.5NPT
1 1/4 NPT					**CINR3025S-16**		
1 1/2 NPT 2 NPT					**CINR3732S-16**		

• Application of NPTF Thread
NPTF is the thread for sealing pipes without using any sealing material.
Thread symbol is similar to NPT but the Tolerance is different from that of NPT and the above Inserts are not available to NPTF.

30° Trapezoidal : Tr

The JIS Standard Trapezoidal Size to be machined by TNN Insert are shown.

Nominal Thread	Pitch (mm)	External Thread			Internal Thread			Min. Bore Dia.(mm)
		Toolholder	Insert		Toolholder	Insert		
			Partial Profile	Full Profile		Partial Profile	Full Profile	
Tr 16X2 Tr 18X2 Tr 20X2	2	No Tools Available			No Tools Available	-	-	14.00
		KTNR○○○○□-16 **KTNSR○○○○□-16**	16ER200TR	-	**SINR1616S-16**	16IR200TR	-	16.00 18.00
Tr 22X3	3	**KTNR○○○○□-16** **KTNSR○○○○□-16**	16ER300TR	-	**SINR1616S-16**	16IR300TR	-	19.00
Tr 24X3 Tr 26X3	3				**SINR2016S-16**		-	21.00 23.00
Tr 28X3 Tr 30X3 Tr 32X3 Tr 34X3 Tr 36X3 Tr 38X3 Tr 40X3	3				**SINR2420S-16**	16IR300TR	-	25.00 27.00 29.00
					SINR3025S-16	16IR300TR	-	31.00 33.00 35.00 37.00
Tr 42X3 Tr 44X3 Tr 46X3 Tr 48X3 Tr 50X3 Tr 52X3 Tr 55X3 Tr 60X3 Tr 65X3	3				**CINR3732S-16**	16IR300TR	-	39.00 41.00 43.00 45.00 47.00 49.00 52.00 57.00 62.00
Tr 70X3 Tr 75X3 Tr 80X3 Tr 90X3 Tr 95X3 Tr 100X3 Tr 105X3 Tr 110X3	4	**KTNR○○○○□-22** **KTNSR○○○○□-22**	22ER400TR	-	**CINR3732S-22**	22IR400TR	-	66.00 71.00 76.00 86.00 91.00 96.00 101.00 106.00

TM Thread: TM Thread of old JIS 30°Trapezoidal Thread has been discontinued. But if the Nominal Dia. X Pitch is the same, the above Tr Thread can be used.
TW Thread: TW Thread is 29° Trapezoidal Thread and the above Inserts are not available.

Metric Coarse Thread : M

Nominal Thread	Pitch (mm)	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M1 • • • M3	0.25 0.50	No Tools Available	-	-	0.73 • • • 2.46
M4	0.70		EZTR030025-60-002		3.24
M5	0.80		EZTR040035-60-004		4.13
M6	1.00	-	VNTR045-11		4.92
M7	1.00		EZTR050040-60-004	-	5.92
			VNTR045-11		
M8	1.25	-	EZTR060050-60-004	-	6.65
		-	VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M9	1.25	-	EZTR070060-60-004	-	7.65
		SINR0612S-06E	06IR60005	-	
M10	1.50	SINR0816S-08E	08IR60007	-	8.38
M11	1.50				9.38
M12	1.75	SINR0816S-08E	08IR60007	-	10.11
M16	2.00	SINR1216S-11E	-	11IR200ISO	13.84
M18	2.50	No Tools Available			15.29
M20	2.50	SINR1616S-16	Table 5	16IR250ISO-□□	17.29
M22	2.50				19.29
M24	3.00	SINR2016S-16	Table 4	16IR300ISO-□□	20.75
M27	3.00				23.75
M30	3.5	SINR2420S-22	22IRN60	22IR350ISO	26.21
M33	3.5				29.21
M36	4.0	CINR3025S-22		22IR400ISO	31.67
M39	4.0				34.67
M42	4.5	CINR3732S-22		22IR450ISO	37.13
M45	4.5				40.13
M48	5.0	CINR3732S-22		22IR500ISO	42.59
M52	5.0				46.59
M56 • • •	5.5	* Threading of M56 and over is not available due to too large pitch size.			50.05 • • •

Metric Fine Thread : M

Part 1

Nominal Thread	Pitch (mm)	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M1.0×0.20 • • • M3.0×0.35	0.20 0.35	No Tools Available	-	-	0.78 • • • 4.96
M3.5×0.35	0.35	-	EZTR030025-60-002	-	5.19
M4.5×0.50	0.50	-	EZTR035030-60-002	-	5.19
M5.0×0.50	0.50	-	EZTR040035-60-004	-	
M6.0×0.75	0.75	-	VNTR045-11		5.19
M7.0×0.75	0.75	-	EZTR050040-60-004	-	6.20
		-	VNTR045-11		
M8.0×1.00	1.00	-	EZTR060050-60-004	-	6.92
		-	VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M8.0×0.75	0.75	-	EZTR060050-60-004	-	7.19
		-	VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M9.0×1.00	1.00	-	EZTR070060-60-004	-	7.92
		-	VNTR060-11		
		SINR0612S-06E	06IR60005	-	
		SINR0816S-08E	08IR60007	-	
M9.0×0.75	0.75	-	EZTR070060-60-004	-	8.19
		-	VNTR060-11		
		SINR0612S-06E	06IR60005	-	
M10.0×1.25	1.25	-	VNTR060-11		8.65
		SINR0816S-08E	08IR60007	-	
M10.0×1.00	1.00	-	VNTR060-11		8.92
		SINR0816S-08E	08IR60007	-	
M10.0×0.75	0.75	-	VNTR060-11		9.19
		SINR0612S-06E	06IR600005	-	
M11.0×1.00	1.00	-	VNTR060-11		9.92
		SINR0816S-08E	08IR60007	-	
M11.0×0.75	0.75	-	VNTR060-11		10.19
		SINR0612S-06E	06IR60005	-	

• Above shows the usage example of applicable Toolholders / Inserts.

Metric Fine Thread : M

Part 2

Nominal Thread	Pitch (mm)	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
M12.0×1.50	1.50	SINR0816S-08E	08IR60007	-	10.38
M12.0×1.25	1.25	SINR0816S-08E	08IR60007	-	10.65
M12.0×1.00	1.00	SINR0816S-08E	08IR60007	-	10.92
M14.0×1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	12.38
M14.0×1.25	1.25	SINR1216S-11E		11IR125ISO-□□	12.65
M14.0×1.00	1.00	SINR1216S-11E		11IR100ISO-□□	12.92
M15.0×1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	13.38
M15.0×1.00	1.00	SINR1216S-11E		11IR100ISO-□□	13.92
M16.0×1.50	1.50	SINR1216S-11E	11IRA60 11IR60005	11IR150ISO-□□	14.38
M16.0×1.00	1.00	SINR1216S-11E		11IR100ISO-□□	14.92
M17.0×1.50	1.50	SINR1516S-11E	11IRA60 11IR60005	11IR150ISO-□□	15.38
M17.0×1.00	1.00	SINR1516S-11E		11IR100ISO-□□	15.92
M18.0×2.00	2.00	SINR1516S-11E	-	11IR200ISO	15.84
M18.0×1.50	1.50	SINR1616S-16	Table 2	16IR150ISO-□□	16.38
M18.0×1.00	1.00	SINR1616S-16	Table 3	16IR100ISO-□□	16.92
M20.0×2.00	2.00	SINR1616S-16	Table 1	16IR200ISO-□□	17.84
M20.0×1.50	1.50	SINR1616S-16	Table 2	16IR150ISO-□□	18.38
M20.0×1.00	1.00	SINR1616S-16	Table 3	16IR100ISO-□□	18.92
M22.0×2.00	2.00	SINR1616S-16	Table 1	16IR200ISO-□□	19.84
M22.0×1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	20.38
M22.0×1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	20.92
M24.0×2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	21.84
M24.0×1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	22.38
M24.0×1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	22.92
M25.0×2.00	2.00	SINR2016S-16	Table 1	16IR200ISO-□□	22.84
M25.0×1.50	1.50	SINR2016S-16	Table 2	16IR150ISO-□□	23.38
M25.0×1.00	1.00	SINR2016S-16	Table 3	16IR100ISO-□□	23.92
M26.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	24.38
M27.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	24.84
M27.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	25.38
M27.0×1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	25.92
M28.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	25.84
M28.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	26.38
M28.0×1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	26.92
M30.0×3.00	3.00	SINR2420S-22	-	22IR300ISO	26.75
		SINR2420S-16	Table 4	16IR300ISO-□□	
M30.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	27.84
M30.0×1.50	1.50	SINR2420S-16	Table 2	16IR150ISO-□□	28.38
M30.0×1.00	1.00	SINR2420S-16	Table 3	16IR100ISO-□□	28.92
M32.0×2.00	2.00	SINR2420S-16	Table 1	16IR200ISO-□□	29.84
M32.0×1.50	1.50	CINR3025S-16	Table 2	16IR150ISO-□□	30.38
M33×3.0	3.0	SINR2420S-22	-	22IR300ISO	29.75
		SINR2420S-16	Table 4	16IR300ISO-□□	
M33×2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	30.84
M33×1.5	1.5		Table 2	16IR150ISO-□□	31.38
M35×1.5	1.5	CINR3025S-16	Table 2	16IR150ISO-□□	33.38
M36×3.0	3.0	CINR3025S-22	-	22IR300ISO	32.75
		CINR3025S-16	Table 4	16IR300ISO-□□	
M36×2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	33.84
M36×1.5	1.5		Table 2	16IR150ISO-□□	34.38
M38×1.5	1.5	CINR3025S-16	Table 2	16IR150ISO-□□	36.38
M39×3.0	3.0	CINR3025S-22	-	22IR300ISO	35.75
		CINR3025S-16	Table 4	16IR300ISO-□□	
M39×2.0	2.0	CINR3025S-16	Table 1	16IR200ISO-□□	36.84
M39×1.5	1.5	CINR3732S-16	Table 2	16IR150ISO-□□	37.38
M40×3.0	3.0	CINR3025S-22	-	22IR300ISO	36.75
		CINR3025S-16	Table 4	16IR300ISO-□□	
M40×2.0	2.0	CINR3732S-16	Table 1	16IR200ISO-□□	37.84
M40×1.5	1.5		Table 2	16IR150ISO-□□	38.38
M42×4.0	4.0	CINR3732S-22	22IRN60	22IR400ISO	37.67
M42×3.0	3.0		-	22IR300ISO	38.75
		CINR3732S-16	Table 4	16IR300ISO-□□	
M42×2.0	2.0	CINR3732S-16	Table 1	16IR200ISO-□□	39.84
M42×1.5	1.5		Table 2	16IR150ISO-□□	40.38
M45×4.0 • • •	5.5	* Threading of M45 and over can be machined by the same tool for M42. (P=4.0, 3.0, 2.0, 1.5)			40.67 • • •

Table 1 (P=2.0mm)

16IRG60
16IRAG60
16IR6001

Table 2 (P=1.5mm)

16IRA60
16IRAG60
16IR6001

Table 3 (P=1.0mm)

16IRA60
16IRAG60

Table 4 (P=3.0mm)

16IRG60
16IRAG60

Table 5 (P=2.5mm)

16IRG60
16IRAG60
16IR6001
16IR60015

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Unified Coarse Thread : UNC

Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
2-56 UNC • • • 6-32 UNC	56 32	No Tools Available	-	-	1.69 • • • 2.65
8-32 UNC	32	-	EZTR030025-60-002	-	3.31
10-24 UNC	24	-	EZTR035030-60-002	-	3.68
1/4-20 UNC	20	-	EZTR050040-60-004	-	4.98
		-	VNTR045-11		
5/16-18 UNC	18	-	EZTR060050-60-004	-	6.41
		-	VNTR060-11		
3/8-16 UNC	16	-	EZTR070060-60-004	-	7.81
		-	HPTR07507-60-005	-	
7/16-14 UNC	14	No Tools Available			9.15
1/2-13 UNC	13				10.58
9/16-12 UNC	12				12.00
5/8-11 UNC	11				13.38
3/4-10 UNC	10	SINR1616S-16	16IRG60 16IRAG60	16IR10UN-□□	16.30
7/8- 9 UNC	9			-	19.17
1-8 UNC	8	SINR2016S-16		16IR08UN-□□	21.96
1 1/8- 7 UNC 1 1/4- 7 UNC	7	SINR2420S-22	22IRN60	-	24.65 27.82
1 3/8- 6 UNC 1 1/2- 6 UNC	6	CINR3025S-22			30.34 33.52
1 3/4- 5 UNC	5	CINR3732S-22			38.95
1 3/4- 5 UNC	5	CINR3732S-22			38.95
2-4 1/2 UNC • • •	4 1/2	* 2-4 1/2 UNC and over cannot be machined, because no inserts are available for the TPI.			44.69 • • •

Unified Fine Thread : UNF

Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
0-80 UNF • • • 6-40 UNF	80 40	No Tools Available	-	-	1.18 • • • 2.82
8-36 UNF	36	-	EZTR030025-60-002	-	3.4
10-32 UNF	32	-	EZTR030025-60-002	-	3.97
1/4-28 UNF	28	-	EZTR050040-60-004	-	5.37
		-	VNTR045-11		
5/16-24 UNF	24	-	VNTR060-11		6.79
		SINR0612S-06E	06IR60005	-	
3/8-24 UNF	24	-	EZTR070060-60-004	-	8.38
		SINR0612S-06E	06IR60005	-	
7/16-20 UNF 1/2-20 UNF	20 20	SINR0816S-08E	08IR60007	-	9.74 11.33
9/16-18 UNF 5/8-18 UNF	18 18	SINR1216S-11E	11IRA60 11IR60005	-	12.76 14.35
3/4-16 UNF	16	SINR1516S-11	11IRA60 11IR60005	-	17.33
		SINR1616S-16		16IR16UN(-□□)	
7/8-14 UNF	14	SINR2016S-16		16IR14UN(-□□)	20.26
1-12 UNF	12	SINR2016S-16	16IRAG60 16IRG60 16IR6001		23.10
1 1/8-12 UNF 1 1/4-12 UNF	12	SINR2420S-16		16IR12UN(-□□)	26.28 29.46
1 3/8-12 UNF 1 1/2-12 UNF	12	CINR3025S-16			32.63 36.81

Whitworth Coarse Thread : W

Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
W 1/4 W 5/16	20 18	No Tools Available	-	-	4.91 6.34
W 3/8	16	No Tools Available			7.73
W 7/16	14				9.06
W 1/2 W 9/16	12 12				10.30 11.89
W 5/8	11				13.26
W 3/4	10	SINR1616S-16	16IRAG55 16IRG55	-	16.17
W 7/8	9				19.03
W 1	8	SINR2016S-16		-	21.08
W 1 1/8 W 1 1/4	7	SINR2420S-22	22IRN55	-	24.47 27.64
W 1 3/8 W 1 1/2	6	CINR3025S-22	22IRN55	-	30.13 33.30
W 1 5/8	5				35.52
W 1 3/4	5	CINR3732S-22	22IRN55	-	38.69
W 1 7/8 W 2	4 1/2	No Tools Available			41.23 44.41
W 2 1/4	4				49.96

• Above shows the usage example of applicable Toolholders / Inserts.

Whitworth Fine Thread : W

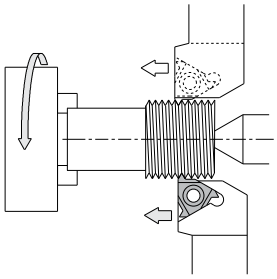
Nominal Thread	TPI	Internal Threading			Min. Bore Dia.(mm)
		Toolholder	Insert		
			Partial Profile	Full Profile	
W9.5 TPI 24 W10 TPI 24 W10.5 TPI 24	24	SINR0816S-08E	08IR5501	-	8.30 8.80 9.30
		-	EZTR060050-55-008		
W9.5 TPI 20 W10 TPI 20 W10.5 TPI 20 W11 TPI 20 W11.5 TPI 20 W12 TPI 20 W12.5 TPI 20 W13 TPI 20	20	SINR0816S-08E	08IR5501	-	8.06 8.56 9.06 9.56 10.06 10.56 11.06 11.56
		-	EZTR060050-55-008 EZTR080070-55-008		
W13.5 TPI 20	20	SINR1216S-11E	11IRA55 11IR55005	-	12.06
W11 TPI 18 W11.5 TPI 18 W12 TPI 18 W12.5 TPI 18	18	No Tools Available			9.40 9.90 10.40 10.90
W14 TPI 18 W14.5 TPI 18 W15 TPI 18 W16 TPI 18	18	SINR1216S-11E	11IRA55 11IR55005	-	12.40 12.90 13.40 14.40
W13 TPI 16 W13.5 TPI 16	16	No Tools Available			11.20 11.70
W14 TPI 16 W14.5 TPI 16 W15 TPI 16	16	SINR1216S-11E	11IRA55 11IR55005	-	12.20 12.70 13.20
W17 TPI 16		SINR1516S-11E			15.20
W18 TPI 16	16	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	(16IR16W-□□)	16.20
W19 TPI 16					17.20
W20 TPI 16					18.20
W16 TPI 14 W17 TPI 14	14	SINR1216S-11E	11IRA55 11IR55005	-	13.94 14.94
W18 TPI 14	14	SINR1516S-11			15.94
W21 TPI 14 W22 TPI 14	14	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	(16IR14W-□□) (16IR14W)	18.94 19.94
W23 TPI 14 W24 TPI 14 W25 TPI 14 W26 TPI 14	14	SINR2016S-16			20.94 21.94 22.94 23.94
W19 TPI 12 W20 TPI 12 W21 TPI 12 W22 TPI 12	12	SINR1616S-16	16IRAG55 16IRG55 16IR5501 16IR5502	-	16.60 17.60 18.60 19.60
W28 TPI 12 W30 TPI 12 W32 TPI 12	12	SINR2420S-16		-	25.60 27.60 29.60
W34 TPI 12 W35 TPI 12 W36 TPI 12 W38 TPI 12	12	CINR3025S-16		-	31.60 32.60 33.60 35.60
W40 TPI 12 W42 TPI 12 W44 TPI 12 W45 TPI 12 W46 TPI 12	12	CINR3732S-16		-	37.60 39.60 41.60 42.60 43.60
W48 TPI 12 W50 TPI 12 • • •	12	Hereafter, 12 TPI Whitworth Fine Thread can be machined by the same tool as above.			45.60 47.60 • • •
W23 TPI 10 W24 TPI 10 W25 TPI 10 W26 TPI 10	10	SINR2016S-16	16IRAG55 16IRG55	-	20.12 21.12 22.12 23.12
W28 TPI 9 W30 TPI 9 W32 TPI 9	9	SINR2420S-16		-	24.80 26.80 28.80
W34 TPI 8 W35 TPI 8 W36 TPI 8 W38 TPI 8 W40 TPI 8 W42 TPI 8	8	CINR3025S-16	16IRAG55 16IRG55	-	30.40 31.40 32.40 34.40 36.40 38.40
W44 TPI 7 W45 TPI 7 W46 TPI 7 W48 TPI 7 W50 TPI 7 W52 TPI 7	7	CINR3732S-22	22IRN55	-	39.89 40.89 41.89 43.89 45.89 47.89
W55 TPI 6 W58 TPI 6 W60 TPI 6 W62 TPI 6 • W72 TPI 6	6	CINR3732S-22	22IRN55	-	50.20 53.20 55.20 57.20 • 67.20
W75 TPI 5 • • W105 TPI 5	5	CINR3732S-22	22IRN55	-	69.24 • • 99.24
W110 TPI 4 • •	4	No Tools Available			102.8 • •

External Threading (R-hand Thread / L-hand Thread)

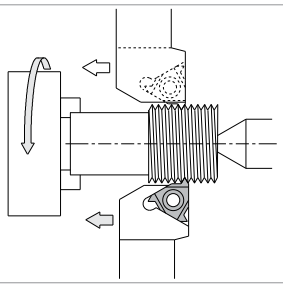
External Threading

Right-Hand Thread

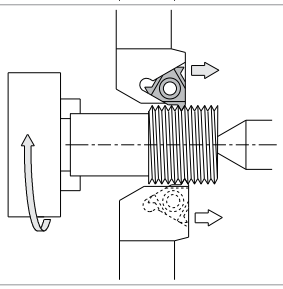
Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03



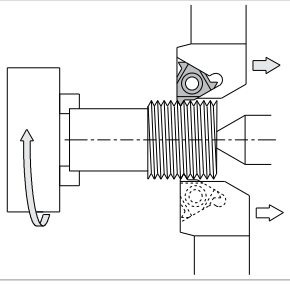
Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M03



Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M04

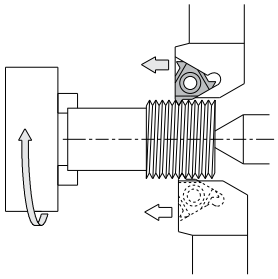


Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04

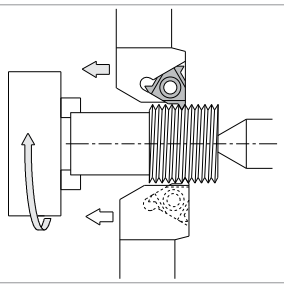


Left-Hand Thread

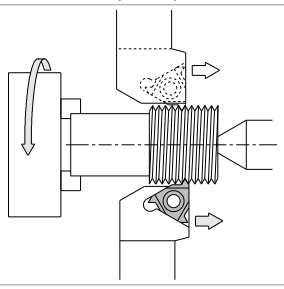
Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04



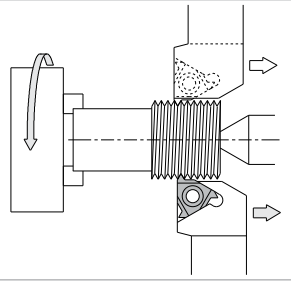
Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M04



Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M03



Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03

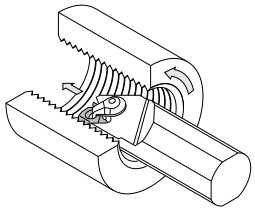


※ These tables are based on KTN / KTNS / KTT / KTTX Toolholder.

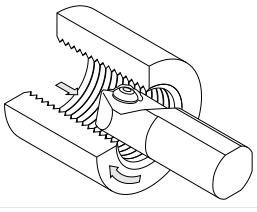
Internal Threading (R-hand Thread / L-hand Thread)

Internal Threading

Right-Hand Thread

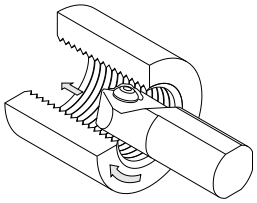


Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03

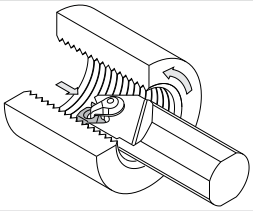


Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04

Left-Hand Thread



Toolholder	(L) L-hand
Insert	(L) L-hand
The direction of spindle revolution	M04



Toolholder	(R) R-hand
Insert	(R) R-hand
The direction of spindle revolution	M03

※ These tables are based on SIN / CIN type Toolholder.
For KITG type (for large internal threading), Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

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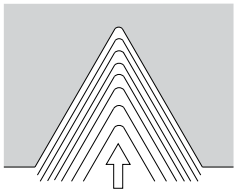
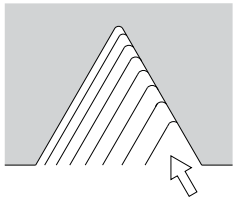
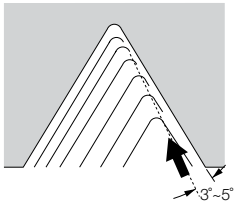
Infeed Methods

Infeed Methods	Features
 Radial Infeed	• The cutting edge moves toward the center of the workpiece every pass. • Suitable for relatively small pitch size threading. • V-shape chips are generated and chip control may be difficult depending on workpiece material. • Chips prevent coolant from reaching tool tip causing poor tool life.
 Flank Infeed	• Used for large pitch size threading. • No DOC on right side of the figure causes insert wear and on materials that work harden will cause hardening of this surface. • Chips flow to one side.
 Flank Compound Infeed	• Recommended method to reduce work hardening and improve insert life. • 3-5 degrees for steel and up to 12 degrees for stainless materials. • Chips flow to one side allowing coolant to reach insert tip. • This method is recommended to threading by 2-thread insert.

Lead Angle of Thread

Thread's Lead Angle β as shown in Fig. 1 decides from the Work Diameter (Pitch Dia.) "D" and Lead "L"(in case of Single-start Thread, it is the same as Pitch "P"). Rolling a right-angled Triangle around a Cylinder and the Angle ACB in Fig. 2 becomes the Lead Angle β. The Calculation Formula is shown as follows.

$$\tan\beta = \frac{L}{\pi D} = \frac{nTP}{\pi D}$$

[β: Lead Angle D: Pitch Dia. n: Number of Thread (such as double-start thread) P: Pitch
L: Lead (In case of single-start thread, it is equal to P. In case of n-start thread, it is equal to nxP)]

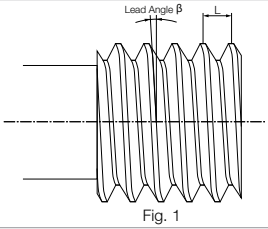


Fig. 1

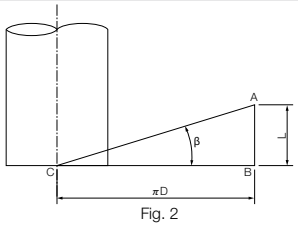


Fig. 2

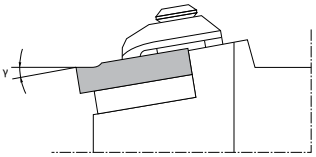


Fig. 3

Relief Angle of Thread

Against this Lead Angle, the Threading Insert needs Side Relief Angle α. TNN type Threading Insert is a negative Insert and it does not prepare the Relief Angle originally. But when installing the Insert on the Toolholder, the Edge Inclination Angle 3 is prepared as shown in Fig. 3, and it generates both the front Relief Angle and the Side Relief Angle α. This Side Relief Angle is obtained by the Formula as follows. (See Fig. 4)

$$\tan\alpha = \tan\gamma \times \tan\left(\frac{\theta}{2}\right)$$

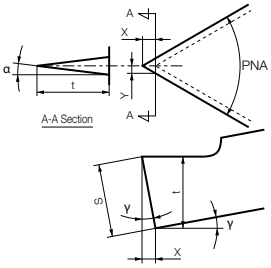


Fig. 4

Symbol	e.g.)
α: Side Relief Angle	
γ: Inclination Angle after Installing Insert	External Insert : 10° Internal Insert : 15°
PNA: Insert's Thread Angle	Metric : 60° Tapered Pipe : 55° 30° Trapezoidal : 30°
T: Insert Thickness	

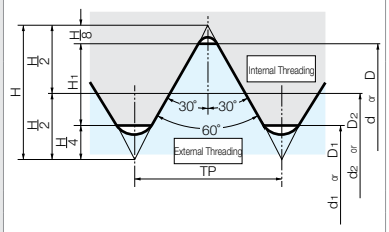
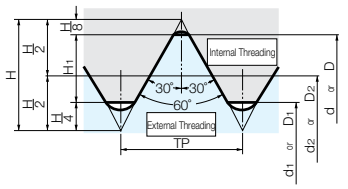
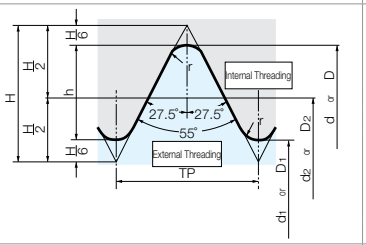
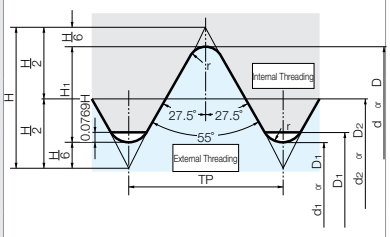
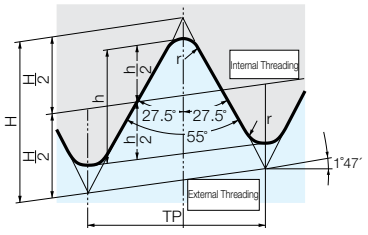
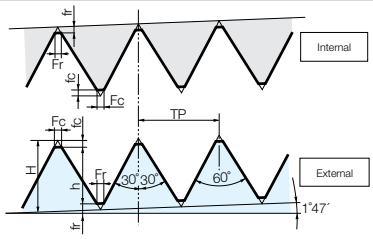
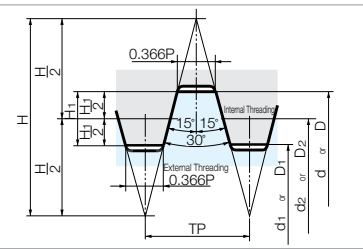
$$\begin{cases} X = S \cdot \sin\gamma \\ Y = X \cdot \tan(\theta/2) = t \cdot \tan\alpha \\ t = S \cdot \cos\gamma \end{cases}$$

Table 1

Inserts	Side Relief Angle α	
	External	Internal
60° Thread (M, UN, NPT)	5° 49′	8° 47′
55° Thread (W, G, PT)	5° 14′	7° 56′
30°Trapezoidal (Tr)	2° 43′	5° 7′

See table 1 for the Side Relief Angle depending on the insert.
However, the Side Relief Angle for 1°is set by the toolholder itself, and the actual Side Relief Angle becomes α + 1°.

Thread Types & Basic Profile / Applicable Toolholders & Inserts

Thread Type	Basic Profile	Symbol (Previous Symbol)	Thread Type	Applicable Insert	Applicable Toolholder
Metric		**M** e.g.) **M30**	External Thread	○○E型○○○ISO(-TF/TQ) ○○ER60(-TF/TQ) 16ER60○○	KTN型○○○○□-○○ KTNSR○○○○□-16
				TT43E型○○○M TT○○型60○○	KTT型○○○○□-○○
				TTX32R60○○	KTTXR○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○I型○○○ISO(-TF/TQ) ○○IR□□60 ○○IR60○○(○)	SIN型○○○○S-○○(E) CIN型○○○○S-○○
				TT○○型60○○	KITG型○○○○T-○○
				TPGB2○○○	S○○□-STWP型○-○○(E)
Unified		**UN** **UNC** **UNF** **UNEF** e.g.) **3/4 -16 UNF**	External Thread	TPMC○○NV	STVP型○○-○
				KCT(K/P)○型	KKC型○○-○
				○○ER○○UN(-TF/TQ) ○○ER□□60(-TF/TQ) 16ER60○○	KTNR○○○○□-○○ KTNSR○○○○□-16
				TT○○型60○○	KTT型○○○○□-○○
				TTX32R60○○	KTTXR○○○○□-16F, S○○-KTTXL16
			Internal Thread	○○IR○○UN-(TF/TQ) ○○IR□□60 ○○IR60○○(○)	SINR○○○○S-○○(E) CINR○○○○S-○○
				TT○○型60○○	KITG型○○○○T-○○
				TPGB2○○○	S○○□-STWP型○-○○(E)
				KCT(K/P)○型	S○○□-KKC型
Parallel Pipe		External Threading: **G(PF)** Internal Threading: **G(PF)** **Rp(PS)** e.g.) **G3/4 (PF3/4)**	External Thread	○○ER○○W(-TF/TQ) ○○ER□□55 16ER55○○	KTNR○○○○□-○○ KTNSR○○○○□-16
				TT○○型55○○	KTT型○○○○□-○○
				TTX32R55○○	KTTXR○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○IR○○W(-TF/TQ) ○○IR□□55 ○○IR55○○(○)	SINR○○○○S-○○(E) CINR○○○○S-○○
				TT○○型55○○	KITG型○○○○T-○○
Whitworth		**W** e.g.) **W3/8**	External Thread	○○ER○○W(-TF/TQ) ○○ER□□55 16ER55○○	KTNR○○○○□-○○ KTNSR○○○○□-16
				TT○○型55○○	KTT型○○○○□-○○
				TTX32R55○○	KTTXR○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○IR○○W(-TF/TQ) ○○IR□□55 ○○IR55○○(○)	SINR○○○○S-○○(E) CINR○○○○S-○○
				TT○○型55○○	KITG型○○○○T-○○
Tapered Pipe		External Threading: **R(PT)** **(BSPT)** Internal Threading: **Rc(PT)** **(BSPT)** e.g.) **R1/2 (PT1/2)**	External Thread	16ER○○BSPT(-TF/TQ)	KTNR○○○○□-○○ KTNSR○○○○□-16
				TT○○型55○○*	KTT型○○○○□-○○
				TTX32R55○○*	KTTXR○○○○□-16F, S○○□-KTTXL16
			Internal Thread	○○IR○○BSPT(-TF/TQ)	SINR○○○○S-○○(E) CINR○○○○S-○○
				TT○○型55○○*	KITG型○○○○T-○○
American National Pipe		**NPT** e.g.) **3/8 -18 NPT**	External Thread	16ER○○(.○)NPT	KTNR○○○○□-○○ KTNSR○○○○□-16
			Internal Thread	16IR○○(.○)NPT	SINR○○○○S-○○ CINR○○○○S-○○
30° Trapezoidal		**Tr** e.g.) **Tr 26×3**	External Thread	○○ER○○○TR	KTNR○○○○□-○○ KTNSR○○○○□-16
			Internal Thread	○○IR○○○TR	SINR○○○○S-○○ CINR○○○○S-○○

• Above shows the usage example of applicable Toolholders / Inserts.

*…For the case when the thread root's corner-R(RE) can be smaller than the standard.

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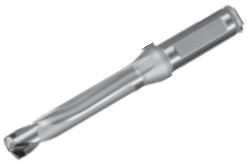
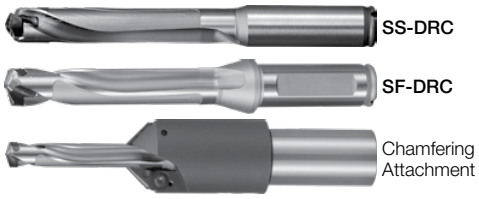
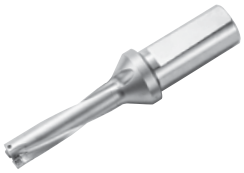
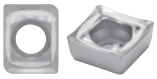
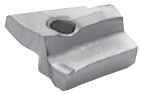
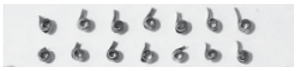
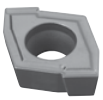
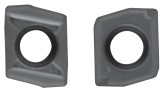
DRILLING

K1 - K119

PRODUCT LINEUP			K2
DRA MAGIC DRILL			K4 - K23
SF-DRA	Inch Size - 1.5xD / 3xD	Flange Shank	K9
SF-DRA	Inch Size - 5xD / 8xD	Flange Shank	K10
SS-DRA	Inch Size - 1.5xD / 3xD	Straight Shank	K11
SS-DRA	Inch Size - 5xD / 8xD	Straight Shank	K12
SF-DRA	Metric Size - 1.5xD / 3xD	Flange Shank	K13
SF-DRA	Metric Size - 5xD / 8xD / 12xD	Flange Shank	K14
SS-DRA	Metric Size - 1.5xD / 3xD	Straight Shank	K16
SS-DRA	Metric Size - 5xD / 8xD	Straight Shank	K17
DRC MAGIC DRILL			K24 - K39
SS-DRC	Metric Size - 3xD	Straight Shank	K27
SS-DRC	Metric Size - 5xD	Straight Shank	K28
SS-DRC	Metric Size - 8xD	Straight Shank	K29
Chamfering Attachment	for Straight Shank SS-DRC		K30
SF-DRC	Metric Size - 3xD	Flange Shank	K32
SF-DRC	Metric Size - 5xD	Flange Shank	K33
SF-DRC	Metric Size - 8xD	Flange Shank	K34
DRV MAGIC DRILL			K40 - K65
DRV	Inch Size - 2xD / 3xD	Ø0.500"~Ø2.000"	K45
DRV	Inch Size - 4xD / 5xD	Ø0.500"~Ø2.000"	K47
DRV	Inch Size - 6xD	Ø0.500"~Ø2.000"	K49
DRV	Metric Size - 2xD~6xD	Ø12mm~Ø60mm	K50-K58
DRS / DRZ / DRX MAGIC DRILL			K66 - K101
DRS Magic Drill Mini	Inch / Metric Size	Ø10mm~Ø12.5mm	K67
DRZ	Inch Size - 2xD~4xD	Ø0.562"~Ø2.000"	K68
DRZ	Inch Size - 5xD	Ø1.062"~Ø2.000"	K71
DRZ	Metric Dia. / Inch Shank 3xD	Ø13mm~49mm	K72
DRZ	Metric Size - 2xD~5xD	Ø13mm~59mm	K74
DRX	Inch Size - 5xD	Ø0.562"~Ø1.000"	K85
DRX	Metric Size - 2xD~5xD	Ø12mm~Ø60mm	K86
TROUBLESHOOTING	DRV / DRZ / DRX / DRS		K95
ADJUSTABLE SLEEVES	DRV / DRZ / DRX / DRS		K96
HOLESHOT™ DRILL			K102 - K108
COREMASTER COREDRILL			K109 - K112
STINGER DRILL			K113 - K115
COUNTERBORES / COUNTERSINKS			K116 - K117
CUSTOM DRILLS			K118 - K119

Product Lineup

Series Name	Image	Drill Dia. (Drilling Depth)	Cutting Edge	Notes
DRA **Magic Drill** ➡ K4	Screw Clamp	Ø0.313"~Ø1.004" Ø7.94mm~Ø25.5mm (1.5D / 3D / 5D / 8D / 12D)	Replaceable Insert Tip with Double Margins **DA**	Lineup **SS-DRA** **SF-DRA**
DRC **Magic Drill** ➡ K24	 Self-Clamping	Ø0.313"~Ø1.023" Ø7.94mm~Ø25.99mm (3D / 5D / 8D)	Replaceable Insert Tip with Double Margins **DC**	Lineup  **SS-DRC** **SF-DRC** Chamfering Attachment
DRV **Magic Drill** ➡ K40	 Silver Coating	Ø0.500"~Ø2.000" Ø12mm~Ø60mm (2D / 3D / 4D / 5D / 6D)	Individually Designed Inner & Outer Edges  Outer Edge Inside Edge **SCMT**	Chip Shape (Workpiece: 1049) Drill Dia. Ø20mm Chip from Outer Edge Chip from Inside Edge
DRS **Magic Drill Mini** ➡ K67	Silver Coating	Ø0.394"~Ø0.492" Ø10mm~Ø12.5mm (3.5D)	Inside and Outside Edge on One Insert  **DS**	Chip Shape (Workpiece: 1049) Drill Dia. Ø10mm Chip from Outer Edge  Chip from Inside Edge
DRZ **Magic Drill** ➡ K68		Ø0.562"~Ø2.000" Ø13mm~Ø59mm (2D / 3D) Ø0.562"~Ø2.000" Ø13mm~Ø50mm (4D) Ø0.1.062"~Ø2.000" Ø27mm~Ø50mm (5D)	Inside and Outside Edge on One Insert  **ZCMT**	Chip Shape (Workpiece: 1049) Drill Dia. Ø23mm Chip from Outer Edge Chip from Inside Edge
DRX **Magic Drill** ➡ K83	Silver Coating	Ø12mm, Ø12.5mm, Ø13mm (2D / 3D / 4D) Ø12mm, Ø13mm (5D)	2 Cutting Edges per Insert  Outer Edge Inside Edge **ZXMT03**	Chip Shape (Workpiece: 1049) Drill Dia. Ø12mm Chip from Outer Edge Chip from Inside Edge
		Ø13.5mm~Ø60mm (2D / 3D / 4D) Ø0.562~Ø1.000" Ø14mm~Ø60mm (5D)	1 Insert Type for Inside and Outside Edges **ZXMT**	Chip Shape (Workpiece: 1049) Drill Dia. Ø24mm Chip from Outer Edge Chip from Inside Edge

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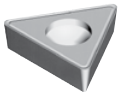
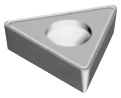
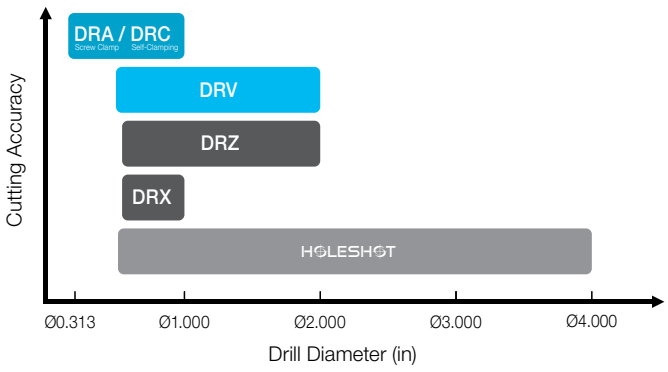
Product Lineup

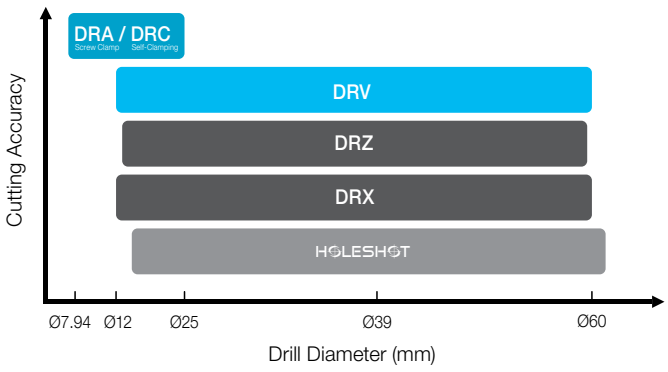
Series Name	Image	Drill Dia. (Drilling Depth)	Cutting Edge	Notes
DR **HOLESHOT** ➔ K102		Ø0.515"~Ø4.000"	 **WCMX**	• Flute design optimized for maximum rigidity and good chip evacuation • Swept back design enables drilling of stacked plates and welded assemblies
CD **Coremaster** **Coredrill** ➔ K109		Ø0.825"~Ø3.150"	 **WCMX**	• Available in both fixed pocket and adjustable cartridge providing 0.150" adjustment capability on diameter. • Fast, effective way to expand pre-existing holes. • Two effective flutes allow high feed-rates for improved productivity.
SDR **Stinger Drill** ➔ K113		Ø0.484"~Ø0.844"	Three cutting edges per insert  **TCMT**	• Economical alternative to the Magic Drill • Perfect for job shops or small quantity production • Ideal for low horsepower machines
Counterbore **Countersink** ➔ K116 ➔ K117			Three cutting edges per insert  **TCMT**	**Counterbores** • For socket head cap screws 1/4" to 3/4" and 6mm to 16mm **Countersinks** • For flat head cap screw sizes #10 to 3/4"

Magic Drill Series Application Map

Inch Size Lineup



Metric Size Lineup



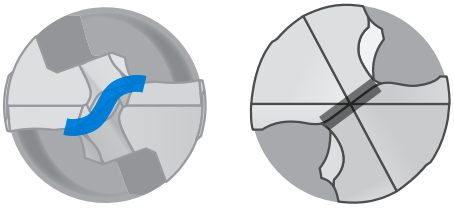
DRA Magic Drill

Excellent Hole Accuracy with a Low Cutting Force Design
5 Advantages to Efficiently Solve Common Drilling Difficulties

1 Low Cutting Force Design Improves Hole Accuracy

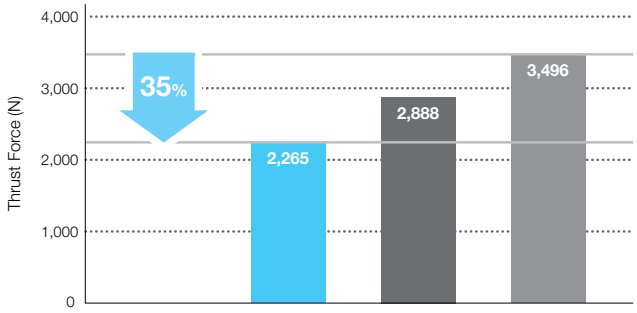
The special chisel edge with S-curve reduces thrust force and controls vibration

Cutting Edge Image



DRA Standard Drill

Low Cutting Force Comparison
(Internal Evaluation)

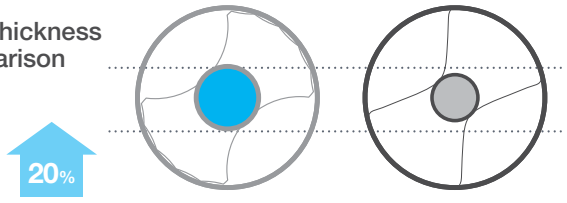


Cutting Conditions : Vc = 390 sfm, f = 0.010 ipr
Drilling Diameter Ø0.551", Drilling Depth 1.772", Wet Workpiece : 1049 Steel

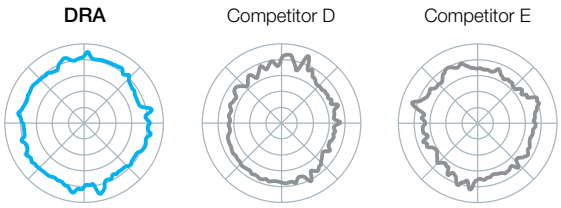
2 Optimal Web Thickness Limits Deflection

The hole accuracy is improved by controlling drill deflection with a 20% thicker web compared with Competitor A

Web Thickness Comparison



Roundness · Cylindricity Comparison
(Internal Evaluation)



	DRA	Competitor D	Competitor E
Roundness	18.7 µm	31.1 µm	27.3 µm
Cylindricity	23.6 µm	34.3 µm	30.1 µm

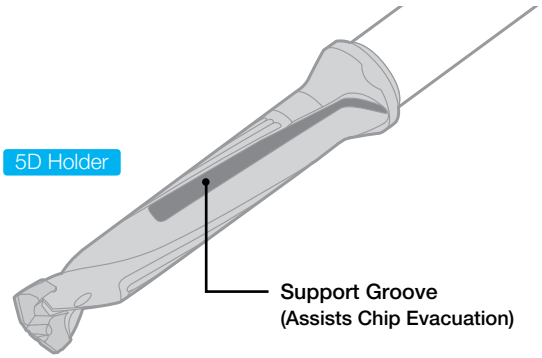
Cutting Conditions : Vc = 390 sfm, f = 0.012 ipr
Drilling Diameter Ø0.551", Measurement Position 2.165", Wet Workpiece : 1049 Steel

3 Fine Chip Breaking Even in Deep Hole Drilling Applications

Optimized chip thinning for stable chip evacuation
Support groove with wider flute (5D, 8D) enables smooth chip evacuation

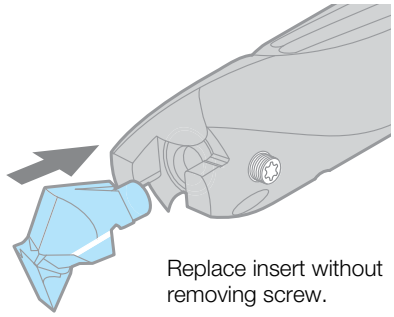
Chip Comparison
(Internal Evaluation)

Cutting Conditions : Vc = 200 sfm, f = 0.008 ipr, Drilling Diameter 0.551"
Drilling Depth 2.756", Wet Workpiece : 304 Stainless Steel

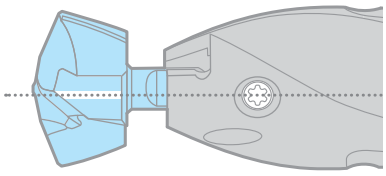


4 Easy Insert Replacement

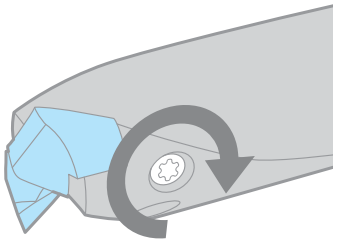
Replace insert without removing screw



Replace insert without removing screw.



Install the insert onto toolholder.
(Align insert guide line with screw position)



Fix the insert by tightening the screw.

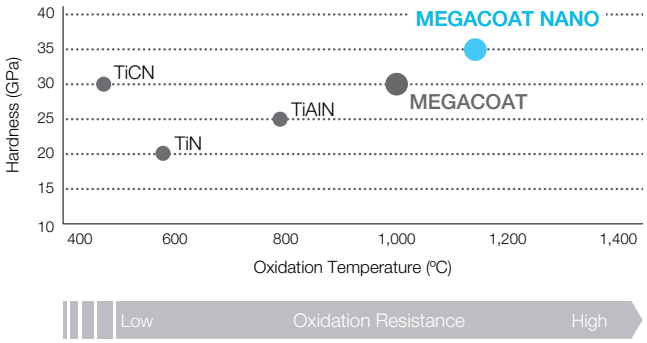
5 Long Tool Life and Stable Machining of Various Workpieces

MEGACOAT NANO grade PR1535 is used to machine various materials from steel to stainless steel, with the combination of a tough substrate and a special nano layer coating

1st Recommendations

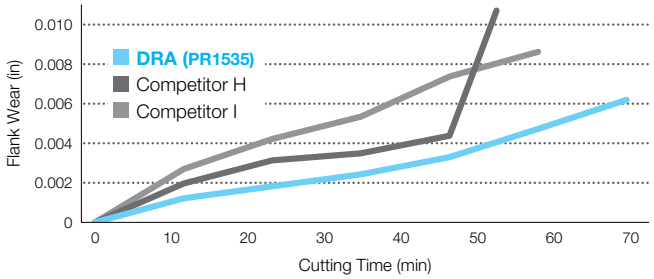
Steel	Cast Iron
PR1535	PR1525

Coating Properties



Wear Resistance Comparison

(Internal Evaluation)

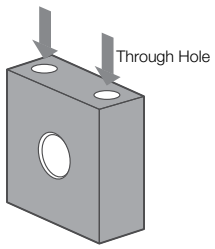


Cutting Conditions : Vc = 330 sfm, f = 0.010 ipr
Drilling Diameter Ø0.551", Cutting Depth 1.772", Wet Workpiece : 4140H

Case Studies

Attachment - Structural Steel

Vc = 230 sfm (n = 1,240 rpm)
f = 0.009 ipr (Vf = 11.221in/min)
Cutting Depth 3.937"
Wet (Internal Coolant)
With Center Hole Drilling
SF0750-DRA180M-8
DA1800M-GM PR1535



Cutting Time

DRA Ø0.709"-8D — **45 sec**

30% Cutting Time

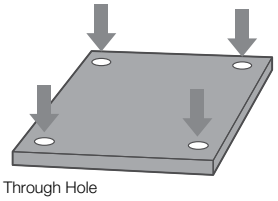
Competitor J Ø0.709"-7D — **65 sec**

Competitor J applied a peck cycle to avoid chip clogging.
DRA controlled chip evacuation without pecking.

(User Evaluation)

Plate - Stainless Steel

Vc = 195 sfm (n = 2,120 rpm)
f = 0.005 ipr (Vf = 10 in/min)
Cutting Depth 0.591"
Wet (Internal Coolant)
SS0375-DRA090M-3
DA0900M-GM PR1535



No. of Holes

DRA Ø0.354"-3D — **500**

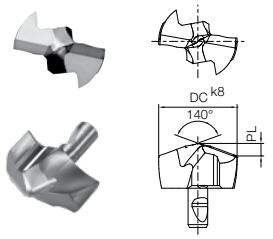
Tool Life X5

Competitor K Ø0.354"-3D — **100**

DRA extended the tool life by 5 times compared to Competitor K.
DRA maintained stable machining and excellent surface finish with less cutting noise.

(User Evaluation)

Applicable Inserts (GM - General Purpose)



k8 Tolerance

DC (in)	k8 (in)	DC (mm)	k8 (mm)
0.313~ 0.394	+0.0009 0	7.94~ 10.00	+0.022 0
0.398~ 0.709	+0.0011 0	10.10~ 18.00	+0.027 0
0.713~ 1.004	+0.0013 0	18.10~ 25.50	+0.033 0

k8 is the dimension tolerance of the insert.
It is not the tolerance of the cutting diameter.

Inserts

PR1535 (Steel / Stainless Steel) PR1525 (Cast Iron)

Part Number	Dimensions DC in	DC mm	PL (in)	Grade PR1535	PR1525	Applicable Toolholder
DA 0794M-GM	0.313	7.94	0.053	●	●	SS0375-DRA080M-O SF0500-DRA080M-O (SS10-DRA080M-O) (SF12-DRA080M-O)
0800M-GM	0.315	8.00	0.053	●	●	
0810M-GM	0.319	8.10	0.054	●	●	
0818M-GM	0.322	8.18	0.054	●	□	
0820M-GM	0.323	8.20	0.055	●	●	
0830M-GM	0.327	8.30	0.055	●	●	
0840M-GM	0.331	8.40	0.056	●	●	
DA 0850M-GM	0.335	8.50	0.057	●	●	SS0375-DRA085M-O SF0500-DRA085M-O (SS10-DRA085M-O) (SF12-DRA085M-O)
0860M-GM	0.339	8.60	0.057	●	●	
0870M-GM	0.343	8.70	0.058	●	●	
0880M-GM	0.346	8.80	0.059	●	●	
0890M-GM	0.350	8.90	0.060	●	●	
DA 0900M-GM	0.354	9.00	0.060	●	●	SS0375-DRA090M-O SF0500-DRA090M-O (SS10-DRA090M-O) (SF12-DRA090M-O)
0910M-GM	0.358	9.10	0.061	●	●	
0920M-GM	0.362	9.20	0.061	●	●	
0930M-GM	0.366	9.30	0.062	●	●	
0940M-GM	0.370	9.40	0.063	●	●	
DA 0950M-GM	0.374	9.50	0.063	●	●	SS0500-DRA095M-O SF0500-DRA095M-O (SS10-DRA095M-O) (SF12-DRA095M-O)
0953M-GM	0.375	9.53	0.064	●	□	
0960M-GM	0.378	9.60	0.064	●	●	
0970M-GM	0.382	9.70	0.065	●	●	
0980M-GM	0.386	9.80	0.066	●	●	
0990M-GM	0.390	9.90	0.066	●	●	
DA 1000M-GM	0.394	10.00	0.067	●	●	SS0500-DRA100M-O SF0625-DRA100M-O (SS12-DRA100M-O) (SF16-DRA100M-O)
1010M-GM	0.398	10.10	0.068	●	●	
1020M-GM	0.402	10.20	0.068	●	●	
1030M-GM	0.406	10.30	0.069	●	●	
1040M-GM	0.409	10.40	0.070	●	●	
DA 1050M-GM	0.413	10.50	0.071	●	●	SS0500-DRA105M-O SF0625-DRA105M-O (SS12-DRA105M-O) (SF16-DRA105M-O)
1060M-GM	0.417	10.60	0.071	●	●	
1070M-GM	0.421	10.70	0.072	●	●	
1072M-GM	0.422	10.72	0.072	●	□	
1080M-GM	0.425	10.80	0.073	●	●	
1090M-GM	0.429	10.90	0.073	●	●	
DA 1100M-GM	0.433	11.00	0.074	●	●	SS0500-DRA110M-O SF0625-DRA110M-O (SS12-DRA110M-O) (SF16-DRA110M-O)
1110M-GM	0.437	11.10	0.074	●	●	
1120M-GM	0.441	11.20	0.075	●	●	
1130M-GM	0.445	11.30	0.076	●	●	
1140M-GM	0.449	11.40	0.076	●	●	
DA 1150M-GM	0.453	11.50	0.077	●	●	SS0500-DRA115M-O SF0625-DRA115M-O (SS12-DRA115M-O) (SF16-DRA115M-O)
1160M-GM	0.457	11.60	0.078	●	●	
1170M-GM	0.461	11.70	0.079	●	●	
1180M-GM	0.465	11.80	0.079	●	●	
1190M-GM	0.469	11.90	0.080	●	●	
DA 1200M-GM	0.472	12.00	0.080	●	●	SS0625-DRA120M-O SF0625-DRA120M-O (SS14-DRA120M-O) (SF16-DRA120M-O)
1210M-GM	0.476	12.10	0.081	●	●	
1220M-GM	0.480	12.20	0.081	●	●	
1230M-GM	0.484	12.30	0.082	●	●	
1240M-GM	0.488	12.40	0.083	●	●	
DA 1250M-GM	0.492	12.50	0.083	●	●	SS0625-DRA125M-O SF0625-DRA125M-O (SS14-DRA125M-O) (SF16-DRA125M-O)
1260M-GM	0.496	12.60	0.084	●	●	
1270M-GM	0.500	12.70	0.085	●	●	
1280M-GM	0.504	12.80	0.086	●	●	
1290M-GM	0.508	12.90	0.086	●	●	
DA 1300M-GM	0.512	13.00	0.087	●	●	SS0625-DRA130M-O SF0625-DRA130M-O (SS14-DRA130M-O) (SF16-DRA130M-O)
1310M-GM	0.516	13.10	0.087	●	●	
1320M-GM	0.520	13.20	0.088	●	●	
1330M-GM	0.524	13.30	0.089	●	●	
1340M-GM	0.528	13.40	0.089	●	●	
DA 1350M-GM	0.531	13.50	0.090	●	●	SS0625-DRA135M-O SF0625-DRA135M-O (SS14-DRA135M-O) (SF16-DRA135M-O)
1360M-GM	0.535	13.60	0.091	●	●	
1370M-GM	0.539	13.70	0.092	●	●	
1380M-GM	0.543	13.80	0.092	●	●	
1390M-GM	0.547	13.90	0.093	●	●	
DA 1400M-GM	0.551	14.00	0.092	●	●	SS0625-DRA140M-O SF0625-DRA140M-O (SS16-DRA140M-O) (SF16-DRA140M-O)
1410M-GM	0.555	14.10	0.092	●	●	
1420M-GM	0.559	14.20	0.093	●	●	
1430M-GM	0.563	14.30	0.094	●	●	
1440M-GM	0.567	14.40	0.094	●	●	
DA 1450M-GM	0.571	14.50	0.095	●	●	SS0625-DRA145M-O SF0625-DRA145M-O (SS16-DRA145M-O) (SF16-DRA145M-O)
1460M-GM	0.575	14.60	0.096	●	●	
1468M-GM	0.578	14.68	0.096	●	□	
DA 1470M-GM	0.579	14.70	0.097	●	●	SS0625-DRA145M-O SF0625-DRA145M-O (SS16-DRA145M-O) (SF16-DRA145M-O)
1480M-GM	0.583	14.80	0.097	●	●	
1490M-GM	0.590	14.90	0.098	●	●	
DA 1500M-GM	0.591	15.00	0.099	●	●	SS0625-DRA150M-O SF0750-DRA150M-O (SS16-DRA150M-O) (SF20-DRA150M-O)
1510M-GM	0.594	15.10	0.100	●	●	
1520M-GM	0.598	15.20	0.101	●	●	
1530M-GM	0.602	15.30	0.101	●	●	
1540M-GM	0.606	15.40	0.102	●	●	
1550M-GM	0.610	15.50	0.103	●	●	
1560M-GM	0.614	15.60	0.103	●	●	
1570M-GM	0.618	15.70	0.104	●	●	
1580M-GM	0.622	15.80	0.105	●	●	
1588M-GM	0.625	15.88	0.106	●	□	
1590M-GM	0.626	15.90	0.106	●	●	
DA 1600M-GM	0.630	16.00	0.106	●	●	SS0750-DRA160M-O SF0750-DRA160M-O (SS18-DRA160M-O) (SF20-DRA160M-O)
1610M-GM	0.634	16.10	0.107	●	●	
1620M-GM	0.638	16.20	0.107	●	●	
1630M-GM	0.642	16.30	0.108	●	●	
1640M-GM	0.646	16.40	0.109	●	●	
1650M-GM	0.650	16.50	0.110	●	●	
1660M-GM	0.654	16.60	0.110	●	●	
1667M-GM	0.656	16.67	0.111	●	□	
1670M-GM	0.657	16.70	0.111	●	●	
1680M-GM	0.661	16.80	0.112	●	●	
1690M-GM	0.665	16.90	0.112	●	●	
DA 1700M-GM	0.669	17.00	0.113	●	●	SS0750-DRA170M-O SF0750-DRA170M-O (SS18-DRA170M-O) (SF20-DRA170M-O)
1710M-GM	0.673	17.10	0.113	●	●	
1720M-GM	0.677	17.20	0.114	●	●	
1730M-GM	0.681	17.30	0.115	●	●	
1740M-GM	0.685	17.40	0.116	●	●	
1746M-GM	0.687	17.46	0.116	●	□	
1750M-GM	0.689	17.50	0.116	●	●	
1760M-GM	0.693	17.60	0.117	●	●	
1770M-GM	0.697	17.70	0.118	●	●	
1780M-GM	0.701	17.80	0.118	●	●	
1790M-GM	0.705	17.90	0.119	●	●	
DA 1800M-GM	0.709	18.00	0.120	●	●	SS0750-DRA180M-O SF0750-DRA180M-O (SS20-DRA180M-O) (SF25-DRA180M-O)
1810M-GM	0.713	18.10	0.120	●	●	
1820M-GM	0.717	18.20	0.121	●	●	
1830M-GM	0.720	18.30	0.122	●	●	
1840M-GM	0.724	18.40	0.122	●	●	
1850M-GM	0.728	18.50	0.123	●	●	
1860M-GM	0.732	18.60	0.124	●	●	
1870M-GM	0.736	18.70	0.125	●	●	
1880M-GM	0.740	18.80	0.125	●	●	
1890M-GM	0.744	18.90	0.126	●	●	
DA 1900M-GM	0.748	19.00	0.126	●	●	SS1000-DRA190M-O SF0750-DRA190M-O (SS20-DRA190M-O) (SF25-DRA190M-O)
1905M-GM	0.750	19.05	0.127	●	□	
1910M-GM	0.752	19.10	0.127	●	●	
1920M-GM	0.756	19.20	0.128	●	●	
1930M-GM	0.760	19.30	0.129	●	●	
1940M-GM	0.764	19.40	0.129	●	●	
1950M-GM	0.768	19.50	0.130	●	●	
1960M-GM	0.772	19.60	0.131	●	●	
1970M-GM	0.776	19.70	0.132	●	●	
1980M-GM	0.780	19.80	0.132	●	●	
1990M-GM	0.783	19.90	0.133	●	●	
DA 2000M-GM	0.787	20.00	0.133	●	●	SS1000-DRA200M-O SF1000-DRA200M-O (SS25-DRA200M-O) (SF25-DRA200M-O)
2010M-GM	0.791	20.10	0.134	●	●	
2020M-GM	0.795	20.20	0.134	●	●	
2030M-GM	0.799	20.30	0.135	●	●	
2040M-GM	0.803	20.40	0.136	●	●	
2050M-GM	0.807	20.50	0.136	●	●	
2060M-GM	0.811	20.60	0.137	●	●	
2064M-GM	0.813	20.64	0.137	●	□	
2070M-GM	0.815	20.70	0.138	●	●	
2080M-GM	0.819	20.80	0.139	●	●	
2090M-GM	0.823	20.90	0.139	●	●	
DA 2100M-GM	0.827	21.00	0.140	●	●	SS1000-DRA210M-O SF1000-DRA210M-O (SS25-DRA210M-O) (SF25-DRA210M-O)
2150M-GM	0.846	21.50	0.143	●	●	
DA 2200M-GM	0.866	22.00	0.146	●	●	SS1000-DRA220M-O SF1000-DRA220M-O (SS25-DRA220M-O) (SF25-DRA220M-O)
2223M-GM	0.875	22.23	0.148	●	●	
2250M-GM	0.886	22.50	0.150	●	●	
DA 2300M-GM	0.906	23.00	0.153	●	●	SS1000-DRA230M-O SF1000-DRA230M-O (SS25-DRA230M-O) (SF25-DRA230M-O)
2350M-GM	0.925	23.50	0.156	●	●	
2381M-GM	0.937	23.81	0.158	●	□	
DA 2400M-GM	0.945	24.00	0.159	●	●	SS1000-DRA240M-O SF1000-DRA240M-O (SS25-DRA240M-O) (SF25-DRA240M-O)
2450M-GM	0.965	24.50	0.163	●	●	
DA 2500M-GM	0.984	25.00	0.165	●	●	SS1000-DRA250M-O SF1000-DRA250M-O (SS32-DRA250M-O) (SF25-DRA250M-O)
2540M-GM	1.000	25.40	0.168	●	□	
2550M-GM	1.004	25.50	0.169	●	●	

*Applicable Toolholders in ( ) are metric

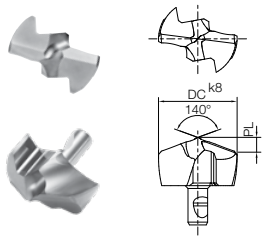
Recommended Cutting Conditions ➡ K18

Inserts are sold in 1 piece boxes

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

Applicable Inserts (KM - Cast Iron)



k8 Tolerance

DC (in)	k8 (in)	DC (mm)	k8 (mm)
0.313~ 0.394	+0.0009 0	7.94~ 10.00	+0.022 0
0.398~ 0.709	+0.0011 0	10.10~ 18.00	+0.027 0
0.713~ 1.004	+0.0013 0	18.10~ 25.50	+0.033 0

k8 is the dimension tolerance of the insert.
It is not the tolerance of the cutting diameter.

Inserts

PR1525 (Cast Iron)

Part Number	Dimensions DC in	DC mm	PL (in)	Grade PR1525	Applicable Toolholder
DA 0794M-KM	0.313	7.94	0.072	●	SS0375-DRA080M-O SF0500-DRA080M-O (SS10-DRA080M-O) (SF12-DRA080M-O)
0800M-KM	0.315	8.00	0.073	●	
0810M-KM	0.319	8.10	0.074	●	
0820M-KM	0.323	8.20	0.076	●	
0830M-KM	0.327	8.30	0.078	●	
0840M-KM	0.331	8.40	0.080	●	
DA 0850M-KM	0.335	8.50	0.081	●	SS0375-DRA085M-O SF0500-DRA085M-O (SS10-DRA085M-O) (SF12-DRA085M-O)
0860M-KM	0.339	8.60	0.083	●	
0870M-KM	0.343	8.70	0.084	●	
0880M-KM	0.346	8.80	0.086	●	
0890M-KM	0.350	8.90	0.088	●	
DA 0900M-KM	0.354	9.00	0.080	●	SS0375-DRA090M-O SF0500-DRA090M-O (SS10-DRA090M-O) (SF12-DRA090M-O)
0910M-KM	0.358	9.10	0.081	●	
0920M-KM	0.362	9.20	0.083	●	
0930M-KM	0.366	9.30	0.085	●	
0940M-KM	0.370	9.40	0.086	●	
DA 0950M-KM	0.374	9.50	0.088	●	SS0500-DRA095M-O SF0500-DRA095M-O (SS10-DRA095M-O) (SF12-DRA095M-O)
0960M-KM	0.378	9.60	0.089	●	
0970M-KM	0.382	9.70	0.091	●	
0980M-KM	0.386	9.80	0.093	●	
0990M-KM	0.390	9.90	0.094	●	
DA 1000M-KM	0.394	10.00	0.087	●	SS0500-DRA100M-O SF0625-DRA100M-O (SS12-DRA100M-O) (SF16-DRA100M-O)
1010M-KM	0.398	10.10	0.088	●	
1020M-KM	0.402	10.20	0.090	●	
1030M-KM	0.406	10.30	0.091	●	
1040M-KM	0.409	10.40	0.093	●	
DA 1050M-KM	0.413	10.50	0.095	●	SS0500-DRA105M-O SF0625-DRA105M-O (SS12-DRA105M-O) (SF16-DRA105M-O)
1060M-KM	0.417	10.60	0.096	●	
1070M-KM	0.421	10.70	0.098	●	
1080M-KM	0.425	10.80	0.100	●	
1090M-KM	0.429	10.90	0.101	●	
DA 1100M-KM	0.433	11.00	0.098	●	SS0500-DRA110M-O SF0625-DRA110M-O (SS12-DRA110M-O) (SF16-DRA110M-O)
1110M-KM	0.437	11.10	0.100	●	
1120M-KM	0.441	11.20	0.102	●	
1130M-KM	0.445	11.30	0.104	●	
1140M-KM	0.449	11.40	0.105	●	
DA 1150M-KM	0.453	11.50	0.107	●	SS0500-DRA115M-O SF0625-DRA115M-O (SS12-DRA115M-O) (SF16-DRA115M-O)
1160M-KM	0.457	11.60	0.108	●	
1170M-KM	0.461	11.70	0.110	●	
1180M-KM	0.465	11.80	0.112	●	
1190M-KM	0.469	11.90	0.113	●	
DA 1200M-KM	0.472	12.00	0.106	●	SS0625-DRA120M-O SF0625-DRA120M-O (SS14-DRA120M-O) (SF16-DRA120M-O)
1210M-KM	0.476	12.10	0.107	●	
1220M-KM	0.480	12.20	0.109	●	
1230M-KM	0.484	12.30	0.110	●	
1240M-KM	0.488	12.40	0.112	●	
DA 1250M-KM	0.492	12.50	0.114	●	SS0625-DRA125M-O SF0625-DRA125M-O (SS14-DRA125M-O) (SF16-DRA125M-O)
1260M-KM	0.496	12.60	0.115	●	
1270M-KM	0.500	12.70	0.117	●	
1280M-KM	0.504	12.80	0.119	●	
1290M-KM	0.508	12.90	0.120	●	
DA 1300M-KM	0.512	13.00	0.111	●	SS0625-DRA130M-O SF0625-DRA130M-O (SS14-DRA130M-O) (SF16-DRA130M-O)
1310M-KM	0.516	13.10	0.113	●	
1320M-KM	0.520	13.20	0.115	●	
1330M-KM	0.524	13.30	0.117	●	
1340M-KM	0.528	13.40	0.118	●	
DA 1350M-KM	0.531	13.50	0.120	●	SS0625-DRA135M-O SF0625-DRA135M-O (SS14-DRA135M-O) (SF16-DRA135M-O)
1360M-KM	0.535	13.60	0.121	●	
1370M-KM	0.539	13.70	0.123	●	
1380M-KM	0.543	13.80	0.125	●	
1390M-KM	0.547	13.90	0.126	●	
DA 1400M-KM	0.551	14.00	0.120	●	SS0625-DRA140M-O SF0625-DRA140M-O (SS16-DRA140M-O) (SF16-DRA140M-O)
1410M-KM	0.555	14.10	0.122	●	
1420M-KM	0.559	14.20	0.123	●	
1430M-KM	0.563	14.30	0.125	●	
1440M-KM	0.567	14.40	0.126	●	
DA 1450M-KM	0.571	14.50	0.128	●	SS0625-DRA145M-O SF0625-DRA145M-O (SS16-DRA145M-O) (SF16-DRA145M-O)
1460M-KM	0.575	14.60	0.130	●	
DA 1470M-KM	0.579	14.70	0.131	●	
1480M-KM	0.583	14.80	0.133	●	
1490M-KM	0.590	14.90	0.135	●	
DA 1500M-KM	0.591	15.00	0.128	●	SS0625-DRA150M-O SF0750-DRA150M-O (SS16-DRA150M-O) (SF20-DRA150M-O)
1510M-KM	0.594	15.10	0.129	●	
1520M-KM	0.598	15.20	0.131	●	
1530M-KM	0.602	15.30	0.133	●	
1540M-KM	0.606	15.40	0.134	●	
1550M-KM	0.610	15.50	0.136	●	
1560M-KM	0.614	15.60	0.137	●	
1570M-KM	0.618	15.70	0.139	●	
1580M-KM	0.622	15.80	0.141	●	
1590M-KM	0.626	15.90	0.143	●	
DA 1600M-KM	0.630	16.00	0.135	●	SS0750-DRA160M-O SF0750-DRA160M-O (SS18-DRA160M-O) (SF20-DRA160M-O)
1610M-KM	0.634	16.10	0.137	●	
1620M-KM	0.638	16.20	0.138	●	
1630M-KM	0.642	16.30	0.140	●	
1640M-KM	0.646	16.40	0.142	●	
1650M-KM	0.650	16.50	0.143	●	
1660M-KM	0.654	16.60	0.145	●	
1670M-KM	0.657	16.70	0.146	●	
1680M-KM	0.661	16.80	0.148	●	
1690M-KM	0.665	16.90	0.150	●	
DA 1700M-KM	0.669	17.00	0.142	●	SS0750-DRA170M-O SF0750-DRA170M-O (SS18-DRA170M-O) (SF20-DRA170M-O)
1710M-KM	0.673	17.10	0.144	●	
1720M-KM	0.677	17.20	0.145	●	
1730M-KM	0.681	17.30	0.147	●	
1740M-KM	0.685	17.40	0.149	●	
1750M-KM	0.689	17.50	0.150	●	
1760M-KM	0.693	17.60	0.152	●	
1770M-KM	0.697	17.70	0.154	●	
1780M-KM	0.701	17.80	0.156	●	
1790M-KM	0.705	17.90	0.157	●	
DA 1800M-KM	0.709	18.00	0.149	●	SS0750-DRA180M-O SF0750-DRA180M-O (SS20-DRA180M-O) (SF25-DRA180M-O)
1810M-KM	0.713	18.10	0.151	●	
1820M-KM	0.717	18.20	0.153	●	
1830M-KM	0.720	18.30	0.154	●	
1840M-KM	0.724	18.40	0.156	●	
1850M-KM	0.728	18.50	0.157	●	
1860M-KM	0.732	18.60	0.159	●	
1870M-KM	0.736	18.70	0.161	●	
1880M-KM	0.740	18.80	0.163	●	
1890M-KM	0.744	18.90	0.164	●	
DA 1900M-KM	0.748	19.00	0.156	●	SS1000-DRA190M-O SF0750-DRA190M-O (SS20-DRA190M-O) (SF25-DRA190M-O)
1910M-KM	0.752	19.10	0.158	●	
1920M-KM	0.756	19.20	0.159	●	
1930M-KM	0.760	19.30	0.161	●	
1940M-KM	0.764	19.40	0.163	●	
1950M-KM	0.768	19.50	0.165	●	
1960M-KM	0.772	19.60	0.166	●	
1970M-KM	0.776	19.70	0.168	●	
1980M-KM	0.780	19.80	0.169	●	
1990M-KM	0.783	19.90	0.171	●	
DA 2000M-KM	0.787	20.00	0.165	●	SS1000-DRA200M-O SF1000-DRA200M-O (SS25-DRA200M-O) (SF25-DRA200M-O)
2010M-KM	0.791	20.10	0.167	●	
2020M-KM	0.795	20.20	0.169	●	
2030M-KM	0.799	20.30	0.170	●	
2040M-KM	0.803	20.40	0.172	●	
2050M-KM	0.807	20.50	0.174	●	
2060M-KM	0.811	20.60	0.175	●	
2070M-KM	0.815	20.70	0.177	●	
2080M-KM	0.819	20.80	0.179	●	
2090M-KM	0.823	20.90	0.180	●	
DA 2100M-KM	0.827	21.00	0.172	●	SS1000-DRA210M-O SF1000-DRA210M-O (SS25-DRA210M-O) (SF25-DRA210M-O)
2150M-KM	0.846	21.50	0.181	●	
DA 2200M-KM	0.866	22.00	0.179	●	SS1000-DRA220M-O SF1000-DRA220M-O (SS25-DRA220M-O) (SF25-DRA220M-O)
2250M-KM	0.886	22.50	0.187	●	
DA 2300M-KM	0.906	23.00	0.187	●	SS1000-DRA230M-O SF1000-DRA230M-O (SS25-DRA230M-O) (SF25-DRA230M-O)
2350M-KM	0.925	23.50	0.194	●	
DA 2400M-KM	0.945	24.00	0.193	●	SS1000-DRA240M-O SF1000-DRA240M-O (SS25-DRA240M-O) (SF25-DRA240M-O)
2450M-KM	0.965	24.50	0.202	●	
DA 2500M-KM	0.984	25.00	0.200	●	SS1000-DRA250M-O SF1000-DRA250M-O (SS32-DRA250M-O) (SF25-DRA250M-O)
2550M-KM	1.004	25.50	0.208	●	

*Applicable Toolholders in ( ) are metric

Recommended Cutting Conditions ➔ K19

Inserts are sold in 1 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

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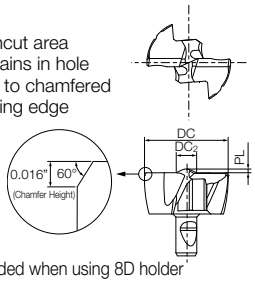
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

Applicable Inserts (FTP - Flat Bottom / Counterboring)



Note
Applicable to 1.5D, 3D, 5D and 8D holders. Guide hole (0.5xDC) is needed when using 8D holder

k8 Tolerance

DC (in)	k8 (in)	DC (mm)	k8 (mm)
0.313~ 0.394	+0.0009 0	8.00~ 10.00	+0.022 0
0.398~ 0.709	+0.0011 0	10.30~ 18.00	+0.027 0
0.713~ 1.004	+0.0013 0	18.50~ 25.40	+0.033 0

k8 is the dimension tolerance of the insert.
It is not the tolerance of the cutting diameter.

Inserts

PR1535 (Steel / Stainless Steel) **PR1525** (Cast Iron)

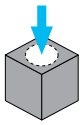
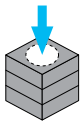
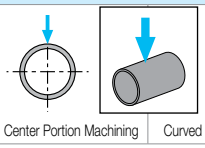
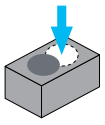
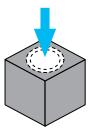
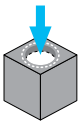
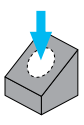
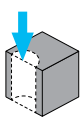
Part Number	Dimensions DC in	DC mm	DC2 in	DC2 mm	PL (in)	Grade PR1535	PR1525	Applicable Toolholder
DA 0800M-FTP	0.315	8.00	0.114	2.90	0.016	●	●	SS0375-DRA080M-O SF0500-DRA080M-O (SS10-DRA080M-O) (SF12-DRA080M-O)
0830M-FTP	0.327	8.30				●	●	
DA 0850M-FTP	0.335	8.50				●	●	SS0375-DRA085M-O SF0500-DRA085M-O (SS10-DRA085M-O) (SF12-DRA085M-O)
0880M-FTP	0.346	8.80				●	●	
DA 0900M-FTP	0.354	9.00	0.118	3.00	0.017	●	●	SS0375-DRA090M-O SF0500-DRA090M-O (SS10-DRA090M-O) (SF12-DRA090M-O)
0930M-FTP	0.366	9.30				●	●	
DA 0950M-FTP	0.374	9.50				●	●	SS0500-DRA095M-O SF0500-DRA095M-O (SS10-DRA095M-O) (SF12-DRA095M-O)
DA 1000M-FTP	0.394	10.00	0.130	3.30	0.018	●	●	SS0500-DRA100M-O SF0625-DRA100M-O (SS12-DRA100M-O) (SF16-DRA100M-O)
1030M-FTP	0.406	10.30				●	●	
DA 1050M-FTP	0.413	10.50				●	●	SS0500-DRA105M-O SF0625-DRA105M-O (SS12-DRA105M-O) (SF16-DRA105M-O)
1080M-FTP	0.425	10.80				●	●	
DA 1100M-FTP	0.433	11.00	0.134	3.40	0.020	●	●	SS0500-DRA110M-O SF0625-DRA110M-O (SS12-DRA110M-O) (SF16-DRA110M-O)
DA 1150M-FTP	0.453	11.50				●	●	SS0500-DRA115M-O SF0625-DRA115M-O (SS12-DRA115M-O) (SF16-DRA115M-O)
DA 1200M-FTP	0.472	12.00	0.146	3.70	0.021	●	●	SS0625-DRA120M-O SF0625-DRA120M-O (SS14-DRA120M-O) (SF16-DRA120M-O)
DA 1250M-FTP	0.492	12.50				●	●	SS0625-DRA125M-O SF0625-DRA125M-O (SS14-DRA125M-O) (SF16-DRA125M-O)
1270M-FTP	0.500	12.70				●	●	
DA 1300M-FTP	0.512	13.00	0.154	3.90	0.022	●	●	SS0625-DRA130M-O SF0625-DRA130M-O (SS14-DRA130M-O) (SF16-DRA130M-O)
1350M-FTP	0.531	13.50				●	●	SS0625-DRA135M-O SF0625-DRA135M-O (SS14-DRA135M-O) (SF16-DRA135M-O)

Part Number	Dimensions DC in	DC mm	DC2 in	DC2 mm	PL (in)	Grade PR1535	PR1525	Applicable Toolholder
DA 1400M-FTP	0.551	14.00	0.165	4.20	0.024	●	●	SS0625-DRA140M-O SF0625-DRA140M-O (SS16-DRA140M-O) (SF16-DRA140M-O)
DA 1450M-FTP	0.571	14.50				●	●	SS0625-DRA145M-O SF0625-DRA145M-O (SS16-DRA145M-O) (SF16-DRA145M-O)
DA 1500M-FTP	0.591	15.00	0.173	4.40	0.026	●	●	SS0625-DRA150M-O SF0750-DRA150M-O (SS16-DRA150M-O) (SF20-DRA150M-O)
1550M-FTP	0.610	15.50				●	●	
DA 1600M-FTP	0.630	16.00	0.181	4.60	0.028	●	●	SS0750-DRA160M-O SF0750-DRA160M-O (SS18-DRA160M-O) (SF20-DRA160M-O)
1650M-FTP	0.650	16.50				●	●	
DA 1700M-FTP	0.669	17.00	0.197	5.00	0.030	●	●	SS0750-DRA170M-O SF0750-DRA170M-O (SS18-DRA170M-O) (SF20-DRA170M-O)
1750M-FTP	0.689	17.50				●	●	
DA 1800M-FTP	0.709	18.00	0.197	5.00	0.031	●	●	SS0750-DRA180M-O SF0750-DRA180M-O (SS20-DRA180M-O) (SF25-DRA180M-O)
1850M-FTP	0.728	18.50				●	●	
DA 1900M-FTP	0.748	19.00	0.209	5.30	0.033	●	●	SS1000-DRA190M-O SF0750-DRA190M-O (SS20-DRA190M-O) (SF25-DRA190M-O)
1950M-FTP	0.768	19.50				●	●	
DA 2000M-FTP	0.787	20.00	0.224	5.70	0.035	●	●	SS1000-DRA200M-O SF1000-DRA200M-O (SS25-DRA200M-O) (SF25-DRA200M-O)
2050M-FTP	0.807	20.50				●	●	
DA 2100M-FTP	0.827	21.00	0.236	6.00	0.037	●	●	SS1000-DRA210M-O SF1000-DRA210M-O (SS25-DRA210M-O) (SF25-DRA210M-O)
2150M-FTP	0.846	21.50				●	●	
DA 2200M-FTP	0.866	22.00	0.252	6.40	0.039	●	●	SS1000-DRA220M-O SF1000-DRA220M-O (SS25-DRA220M-O) (SF25-DRA220M-O)
2250M-FTP	0.886	22.50				●	●	
DA 2300M-FTP	0.906	23.00	0.260	6.60	0.041	●	●	SS1000-DRA230M-O SF1000-DRA230M-O (SS25-DRA230M-O) (SF25-DRA230M-O)
2350M-FTP	0.925	23.50				●	●	
DA 2400M-FTP	0.945	24.00	0.268	6.80	0.043	●	●	SS1000-DRA240M-O SF1000-DRA240M-O (SS25-DRA240M-O) (SF25-DRA240M-O)
2450M-FTP	0.965	24.50				●	●	
DA 2500M-FTP	0.984	25.00	0.276	7.00	0.047	●	●	SS1000-DRA250M-O SF1000-DRA250M-O (SS32-DRA250M-O) (SF25-DRA250M-O)
2540M-FTP	1.000	25.40				●	●	

*Applicable Toolholders in ( ) are metric

Recommended Cutting Conditions ➡ K19

Applicable Workpieces for FTP Inserts

Plain Surface	Stacked Plates	Tubing	*Hole Expansion	Existing Hole	Concave Surface	Slant Surface	Half Cylindrical
		 Center Portion Machining / Curved Surface Portion					

1.5D Holder Recommended

Over 3D Holder Recommended

Over 3D Holder NOT Recommended

NOT Recommended

*Overlap should be under 1/3xD for hole expansion with 1.5D holder

Inserts are sold in 1 piece boxes

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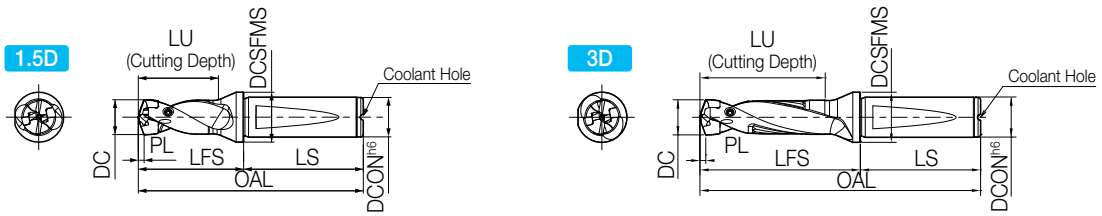
SF-DRA (Drilling Depth: 1.5xDC / 3xDC)

Flange Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 1.5D (Inch Size)

Part Number	Stock	Dimensions (in)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF0500-DRA080M-1.5	●	0.313	0.334	0.500	2.805	1.033	0.504	1.772	0.630	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SF0500-DRA085M-1.5	●	0.335	0.353		2.854	1.083	0.531			DA0850M-... ~ DA0890M-...		
SF0500-DRA090M-1.5	●	0.354	0.373		2.904	1.132	0.563			DA0900M-... ~ DA0940M-...		
SF0500-DRA095M-1.5	●	0.374	0.393		2.953	1.181	0.591			DA0950M-... ~ DA0990M-...		
SF0625-DRA100M-1.5	●	0.394	0.412	0.625	3.120	1.230	0.622	1.890	0.787	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SF0625-DRA105M-1.5	●	0.413	0.432		3.169	1.280	0.650			DA1050M-... ~ DA1090M-...		
SF0625-DRA110M-1.5	●	0.433	0.452		3.258	1.368	0.681			DA1100M-... ~ DA1140M-...		
SF0625-DRA115M-1.5	●	0.453	0.471		3.307	1.417	0.709			DA1150M-... ~ DA1190M-...		
SF0625-DRA120M-1.5	●	0.472	0.491		3.356	1.467	0.740			DA1200M-... ~ DA1240M-...		
SF0625-DRA125M-1.5	●	0.492	0.511		3.406	1.516	0.768			DA1250M-... ~ DA1290M-...		
SF0625-DRA130M-1.5	●	0.512	0.530		3.455	1.565	0.799			DA1300M-... ~ DA1340M-...		
SF0625-DRA135M-1.5	●	0.531	0.550		3.504	1.614	0.827			DA1350M-... ~ DA1390M-...		
SF0625-DRA140M-1.5	●	0.551	0.570		3.553	1.663	0.858			DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SF0625-DRA145M-1.5	●	0.571	0.590		3.602	1.713	0.886			DA1450M-... ~ DA1490M-...		
SF0750-DRA150M-1.5	●	0.591	0.629	0.750	3.819	1.850	0.917	1.969	0.984	DA1500M-... ~ DA1590M-...		
SF0750-DRA160M-1.5	●	0.630	0.668		3.957	1.988	0.976			DA1600M-... ~ DA1690M-...		
SF0750-DRA170M-1.5	●	0.669	0.708		4.055	2.087	1.035			DA1700M-... ~ DA1790M-...		
SF0750-DRA180M-1.5	●	0.709	0.747		4.193	2.224	1.094			DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SF0750-DRA190M-1.5	●	0.748	0.786		4.291	2.323	1.154			DA1900M-... ~ DA1990M-...		
SF1000-DRA200M-1.5	●	0.787	0.826	1.000	4.626	2.421	1.213	2.205	1.260	DA2000M-... ~ DA2090M-...		
SF1000-DRA210M-1.5	●	0.827	0.865		4.724	2.520	1.272			DA2100M-... ~ DA2150M-...		
SF1000-DRA220M-1.5	●	0.866	0.905		4.862	2.657	1.331			DA2200M-... ~ DA2250M-...		
SF1000-DRA230M-1.5	●	0.906	0.944		4.961	2.756	1.390			DA2300M-... ~ DA2381M-...		
SF1000-DRA240M-1.5	●	0.945	0.983		5.059	2.854	1.449			DA2400M-... ~ DA2450M-...		
SF1000-DRA250M-1.5	●	0.984	1.004		5.157	2.953	1.508			DA2500M-... ~ DA2550M-...		

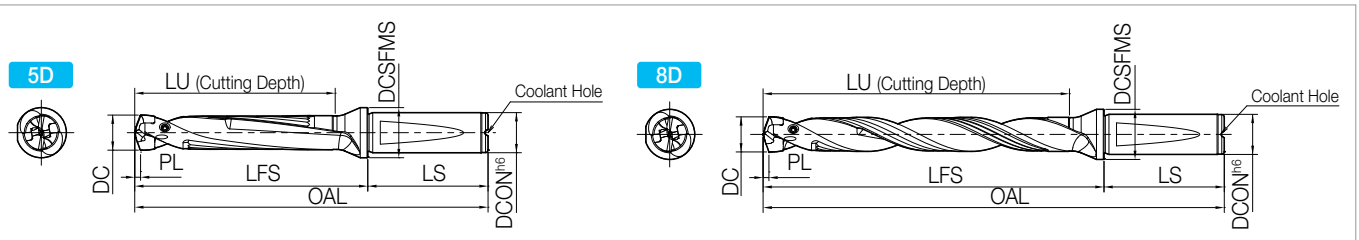
Toolholder Dimensions - 3D (Inch Size)

Part Number	Stock	Dimensions (in)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF0500-DRA080M-3	●	0.313	0.334	0.500	3.307	1.535	1.004	1.772	0.630	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SF0500-DRA085M-3	●	0.335	0.353		3.386	1.614	1.063			DA0850M-... ~ DA0890M-...		
SF0500-DRA090M-3	●	0.354	0.373		3.465	1.693	1.122			DA0900M-... ~ DA0940M-...		
SF0500-DRA095M-3	●	0.374	0.393		3.543	1.772	1.181			DA0950M-... ~ DA0990M-...		
SF0625-DRA100M-3	●	0.394	0.412	0.625	3.740	1.850	1.240	1.890	0.787	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SF0625-DRA105M-3	●	0.413	0.432		3.819	1.929	1.299			DA1050M-... ~ DA1090M-...		
SF0625-DRA110M-3	●	0.433	0.452		3.937	2.047	1.358			DA1100M-... ~ DA1140M-...		
SF0625-DRA115M-3	●	0.453	0.471		4.016	2.126	1.417			DA1150M-... ~ DA1190M-...		
SF0625-DRA120M-3	●	0.472	0.491		4.094	2.205	1.476			DA1200M-... ~ DA1240M-...		
SF0625-DRA125M-3	●	0.492	0.511		4.173	2.283	1.535			DA1250M-... ~ DA1290M-...		
SF0625-DRA130M-3	●	0.512	0.530		4.252	2.362	1.594			DA1300M-... ~ DA1340M-...		
SF0625-DRA135M-3	●	0.531	0.550		4.331	2.441	1.654			DA1350M-... ~ DA1390M-...		
SF0625-DRA140M-3	●	0.551	0.570		4.409	2.520	1.713			DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SF0625-DRA145M-3	●	0.571	0.590		4.488	2.598	1.772			DA1450M-... ~ DA1490M-...		
SF0750-DRA150M-3	●	0.591	0.629	0.750	4.764	2.795	1.890	1.969	0.984	DA1500M-... ~ DA1590M-...		
SF0750-DRA160M-3	●	0.630	0.668		4.961	2.992	2.008			DA1600M-... ~ DA1690M-...		
SF0750-DRA170M-3	●	0.669	0.708		5.118	3.150	2.126			DA1700M-... ~ DA1790M-...		
SF0750-DRA180M-3	●	0.709	0.747		5.315	3.346	2.244			DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SF0750-DRA190M-3	●	0.748	0.786		5.472	3.504	2.362			DA1900M-... ~ DA1990M-...		
SF1000-DRA200M-3	●	0.787	0.826	1.000	5.866	3.661	2.480	2.205	1.260	DA2000M-... ~ DA2090M-...		
SF1000-DRA210M-3	●	0.827	0.865		6.024	3.819	2.598			DA2100M-... ~ DA2150M-...		
SF1000-DRA220M-3	●	0.866	0.905		6.220	4.016	2.717			DA2200M-... ~ DA2250M-...		
SF1000-DRA230M-3	●	0.906	0.944		6.378	4.173	2.835			DA2300M-... ~ DA2381M-...		
SF1000-DRA240M-3	●	0.945	0.983		6.535	4.331	2.953			DA2400M-... ~ DA2450M-...		
SF1000-DRA250M-3	●	0.984	1.004		6.693	4.488	3.071			DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

SF-DRA (Drilling Depth: 5xDC / 8xDC)

Flange Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 5D (Inch Size)

Part Number	Stock	Dimensions (in)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF0500-DRA080M-5	●	0.313	0.334	0.500	3.976	2.205	1.673	1.772	0.630	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SF0500-DRA085M-5	●	0.335	0.353		4.094	2.323	1.772			DA0850M-... ~ DA0890M-...		
SF0500-DRA090M-5	●	0.354	0.373		4.213	2.441	1.870			DA0900M-... ~ DA0940M-...		
SF0500-DRA095M-5	●	0.374	0.393		4.331	2.559	1.969			DA0950M-... ~ DA0990M-...		
SF0625-DRA100M-5	●	0.394	0.412	0.625	4.567	2.677	2.067	1.890	0.787	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SF0625-DRA105M-5	●	0.413	0.432		4.685	2.795	2.165			DA1050M-... ~ DA1090M-...		
SF0625-DRA110M-5	●	0.433	0.452		4.843	2.953	2.264			DA1100M-... ~ DA1140M-...		
SF0625-DRA115M-5	●	0.453	0.471		4.961	3.071	2.362			DA1150M-... ~ DA1190M-...		
SF0625-DRA120M-5	●	0.472	0.491		5.079	3.189	2.461			DA1200M-... ~ DA1240M-...		
SF0625-DRA125M-5	●	0.492	0.511		5.197	3.307	2.559			DA1250M-... ~ DA1290M-...		
SF0625-DRA130M-5	●	0.512	0.530		5.315	3.425	2.657			DA1300M-... ~ DA1340M-...		
SF0625-DRA135M-5	●	0.531	0.550		5.433	3.543	2.756			DA1350M-... ~ DA1390M-...		
SF0625-DRA140M-5	●	0.551	0.570		5.551	3.661	2.854			DA1400M-... ~ DA1440M-...		
SF0625-DRA145M-5	●	0.571	0.590		5.669	3.780	2.953			DA1450M-... ~ DA1490M-...		
SF0750-DRA150M-5	●	0.591	0.629	0.750	6.024	4.055	3.150	1.969	0.984	DA1500M-... ~ DA1590M-...	HS-3048TRP	DTP-6
SF0750-DRA160M-5	●	0.630	0.668		6.299	4.331	3.346			DA1600M-... ~ DA1690M-...		
SF0750-DRA170M-5	●	0.669	0.708		6.535	4.567	3.543			DA1700M-... ~ DA1790M-...		
SF0750-DRA180M-5	●	0.709	0.747		6.811	4.843	3.740			DA1800M-... ~ DA1890M-...		
SF0750-DRA190M-5	●	0.748	0.786		7.047	5.079	3.937			DA1900M-... ~ DA1990M-...		
SF1000-DRA200M-5	●	0.787	0.826	1.000	7.520	5.315	4.134	2.205	1.260	DA2000M-... ~ DA2090M-...	HS-4067TRP	DTP-7
SF1000-DRA210M-5	●	0.827	0.865		7.756	5.551	4.331			DA2100M-... ~ DA2150M-...		
SF1000-DRA220M-5	●	0.866	0.905		8.031	5.827	4.528			DA2200M-... ~ DA2250M-...		
SF1000-DRA230M-5	●	0.906	0.944		8.268	6.063	4.724			DA2300M-... ~ DA2381M-...		
SF1000-DRA240M-5	●	0.945	0.983		8.504	6.299	4.921			DA2400M-... ~ DA2450M-...		
SF1000-DRA250M-5	●	0.984	1.004		8.740	6.535	5.116			DA2500M-... ~ DA2550M-...		

Toolholder Dimensions - 8D (Inch Size)

Part Number	Stock	Dimensions (in)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF0500-DRA080M-8	●	0.313	0.334	0.500	4.961	3.189	2.677	1.772	0.630	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SF0500-DRA085M-8	●	0.335	0.353		5.157	3.386	2.835			DA0850M-... ~ DA0890M-...		
SF0500-DRA090M-8	●	0.354	0.373		5.315	3.543	2.992			DA0900M-... ~ DA0940M-...		
SF0500-DRA095M-8	●	0.374	0.393		5.512	3.740	3.150			DA0950M-... ~ DA0990M-...		
SF0625-DRA100M-8	●	0.394	0.412	0.625	5.787	3.898	3.307	1.890	0.787	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SF0625-DRA105M-8	●	0.413	0.432		5.984	4.094	3.465			DA1050M-... ~ DA1090M-...		
SF0625-DRA110M-8	●	0.433	0.452		6.181	4.291	3.622			DA1100M-... ~ DA1140M-...		
SF0625-DRA115M-8	●	0.453	0.471		6.378	4.488	3.780			DA1150M-... ~ DA1190M-...		
SF0625-DRA120M-8	●	0.472	0.491		6.535	4.646	3.937			DA1200M-... ~ DA1240M-...		
SF0625-DRA125M-8	●	0.492	0.511		6.732	4.843	4.094			DA1250M-... ~ DA1290M-...		
SF0625-DRA130M-8	●	0.512	0.530		6.890	5.000	4.252			DA1300M-... ~ DA1340M-...		
SF0625-DRA135M-8	●	0.531	0.550		7.087	5.197	4.409			DA1350M-... ~ DA1390M-...		
SF0625-DRA140M-8	●	0.551	0.570		7.244	5.354	4.567			DA1400M-... ~ DA1440M-...		
SF0625-DRA145M-8	●	0.571	0.590		7.441	5.551	4.724			DA1450M-... ~ DA1490M-...		
SF0750-DRA150M-8	●	0.591	0.629	0.750	7.913	5.945	5.039	1.969	0.984	DA1500M-... ~ DA1590M-...	HS-3048TRP	DTP-6
SF0750-DRA160M-8	●	0.630	0.668		8.307	6.339	5.354			DA1600M-... ~ DA1690M-...		
SF0750-DRA170M-8	●	0.669	0.708		8.661	6.693	5.669			DA1700M-... ~ DA1790M-...		
SF0750-DRA180M-8	●	0.709	0.747		9.055	7.087	5.984			DA1800M-... ~ DA1890M-...		
SF0750-DRA190M-8	●	0.748	0.786		9.409	7.441	6.299			DA1900M-... ~ DA1990M-...		
SF1000-DRA200M-8	●	0.787	0.826	1.000	10.000	7.795	6.614	2.205	1.260	DA2000M-... ~ DA2090M-...	HS-4067TRP	DTP-7
SF1000-DRA210M-8	●	0.827	0.865		10.354	8.150	6.929			DA2100M-... ~ DA2150M-...		
SF1000-DRA220M-8	●	0.866	0.905		10.748	8.543	7.244			DA2200M-... ~ DA2250M-...		
SF1000-DRA230M-8	●	0.906	0.944		11.102	8.898	7.559			DA2300M-... ~ DA2381M-...		
SF1000-DRA240M-8	●	0.945	0.983		11.457	9.252	7.874			DA2400M-... ~ DA2450M-...		
SF1000-DRA250M-8	●	0.984	1.004		11.811	9.606	8.189			DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

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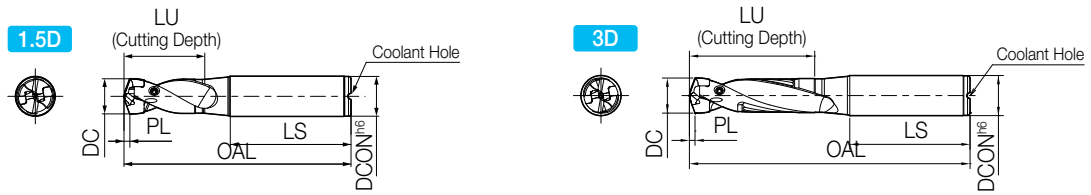
SS-DRA (Drilling Depth: 1.5xDC/ 3xDC)

Straight Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 1.5D (Inch Size)

Part Number	Stock	Dimensions (in)						Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
		min.	max.							
SS0375-DRA080M-1.5	●	0.313	0.334	0.375	2.608	0.504	1.575	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SS0375-DRA085M-1.5	●	0.335	0.353		2.657	0.531		DA0850M-... ~ DA0890M-...		
SS0375-DRA090M-1.5	●	0.354	0.373		2.707	0.563		DA0900M-... ~ DA0940M-...		
SS0500-DRA095M-1.5	●	0.374	0.393	0.500	2.953	0.591	1.772	DA0950M-... ~ DA0990M-...	HS-2534TRP	
SS0500-DRA100M-1.5	●	0.394	0.412		3.002	0.622		DA1000M-... ~ DA1040M-...		
SS0500-DRA105M-1.5	●	0.413	0.432		3.051	0.650		DA1050M-... ~ DA1090M-...		
SS0500-DRA110M-1.5	●	0.433	0.452		3.140	0.681		DA1100M-... ~ DA1140M-...		
SS0500-DRA115M-1.5	●	0.453	0.471		3.189	0.709		DA1150M-... ~ DA1190M-...		
SS0625-DRA120M-1.5	●	0.472	0.491	0.625	3.356	0.740	1.890	DA1200M-... ~ DA1240M-...		
SS0625-DRA125M-1.5	●	0.492	0.511		3.406	0.768		DA1250M-... ~ DA1290M-...		
SS0625-DRA130M-1.5	●	0.512	0.530		3.455	0.799		DA1300M-... ~ DA1340M-...		
SS0625-DRA135M-1.5	●	0.531	0.550		3.504	0.827		DA1350M-... ~ DA1390M-...		
SS0625-DRA140M-1.5	●	0.551	0.570		3.553	0.858		DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SS0625-DRA145M-1.5	●	0.571	0.590		3.602	0.886		DA1450M-... ~ DA1490M-...		
SS0625-DRA150M-1.5	●	0.591	0.629		3.740	0.917		DA1500M-... ~ DA1590M-...		
SS0750-DRA160M-1.5	●	0.630	0.668	0.750	3.957	0.976	1.969	DA1600M-... ~ DA1690M-...		
SS0750-DRA170M-1.5	●	0.669	0.708		4.055	1.035		DA1700M-... ~ DA1790M-...		
SS0750-DRA180M-1.5	●	0.709	0.747		4.193	1.094		DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SS1000-DRA190M-1.5	●	0.748	0.786	1.000	4.528	1.154	2.205	DA1900M-... ~ DA1990M-...		
SS1000-DRA200M-1.5	●	0.787	0.826		4.626	1.213		DA2000M-... ~ DA2090M-...		
SS1000-DRA210M-1.5	●	0.827	0.865		4.724	1.272		DA2100M-... ~ DA2150M-...		
SS1000-DRA220M-1.5	●	0.866	0.905		4.862	1.331		DA2200M-... ~ DA2250M-...		
SS1000-DRA230M-1.5	●	0.906	0.944		4.961	1.390		DA2300M-... ~ DA2381M-...		
SS1000-DRA240M-1.5	●	0.945	0.983		5.059	1.449		DA2400M-... ~ DA2450M-...		
SS1000-DRA250M-1.5	●	0.984	1.004		5.157	1.508		DA2500M-... ~ DA2550M-...		

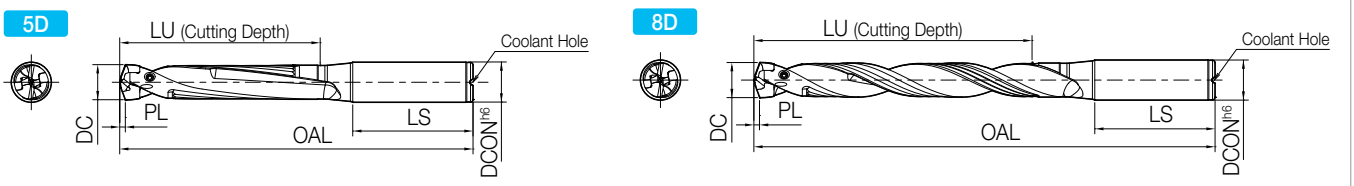
Toolholder Dimensions - 3D (Inch Size)

Part Number	Stock	Dimensions (in)						Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
		min.	max.							
SS0375-DRA080M-3	●	0.313	0.334	0.375	3.110	1.004	1.575	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SS0375-DRA085M-3	●	0.335	0.353		3.189	1.063		DA0850M-... ~ DA0890M-...		
SS0375-DRA090M-3	●	0.354	0.373		3.268	1.122		DA0900M-... ~ DA0940M-...		
SS0500-DRA095M-3	●	0.374	0.393	0.500	3.543	1.181	1.772	DA0950M-... ~ DA0990M-...	HS-2534TRP	
SS0500-DRA100M-3	●	0.394	0.412		3.622	1.240		DA1000M-... ~ DA1040M-...		
SS0500-DRA105M-3	●	0.413	0.432		3.701	1.299		DA1050M-... ~ DA1090M-...		
SS0500-DRA110M-3	●	0.433	0.452		3.819	1.358		DA1100M-... ~ DA1140M-...		
SS0500-DRA115M-3	●	0.453	0.471		3.898	1.417		DA1150M-... ~ DA1190M-...		
SS0625-DRA120M-3	●	0.472	0.491	0.625	4.094	1.476	1.890	DA1200M-... ~ DA1240M-...		
SS0625-DRA125M-3	●	0.492	0.511		4.173	1.535		DA1250M-... ~ DA1290M-...		
SS0625-DRA130M-3	●	0.512	0.530		4.252	1.594		DA1300M-... ~ DA1340M-...		
SS0625-DRA135M-3	●	0.531	0.550		4.331	1.654		DA1350M-... ~ DA1390M-...		
SS0625-DRA140M-3	●	0.551	0.570		4.409	1.713		DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SS0625-DRA145M-3	●	0.571	0.590		4.488	1.772		DA1450M-... ~ DA1490M-...		
SS0625-DRA150M-3	●	0.591	0.629		4.685	1.890		DA1500M-... ~ DA1590M-...		
SS0750-DRA160M-3	●	0.630	0.668	0.750	4.961	2.008	1.969	DA1600M-... ~ DA1690M-...		
SS0750-DRA170M-3	●	0.669	0.708		5.118	2.126		DA1700M-... ~ DA1790M-...		
SS0750-DRA180M-3	●	0.709	0.747		5.315	2.244		DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SS1000-DRA190M-3	●	0.748	0.786	1.000	5.472	2.362	2.205	DA1900M-... ~ DA1990M-...		
SS1000-DRA200M-3	●	0.787	0.826		5.866	2.480		DA2000M-... ~ DA2090M-...		
SS1000-DRA210M-3	●	0.827	0.865		6.024	2.598		DA2100M-... ~ DA2150M-...		
SS1000-DRA220M-3	●	0.866	0.905		6.220	2.717		DA2200M-... ~ DA2250M-...		
SS1000-DRA230M-3	●	0.906	0.944		6.378	2.835		DA2300M-... ~ DA2381M-...		
SS1000-DRA240M-3	●	0.945	0.983		6.535	2.953		DA2400M-... ~ DA2450M-...		
SS1000-DRA250M-3	●	0.984	1.004		6.693	3.070		DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

SS-DRA (Drilling Depth: 5xDC / 8xDC)

Straight Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 5D (Inch Size)

Part Number	Stock	Dimensions (in)						Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
		min.	max.							
SS0375-DRA080M-5	●	0.313	0.334	0.375	3.780	1.673	1.575	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SS0375-DRA085M-5	●	0.335	0.353		3.898	1.772		DA0850M-... ~ DA0890M-...		
SS0375-DRA090M-5	●	0.354	0.373		4.016	1.870		DA0900M-... ~ DA0940M-...		
SS0500-DRA095M-5	●	0.374	0.393	0.500	4.331	1.969	1.772	DA0950M-... ~ DA0990M-...	HS-2534TRP	
SS0500-DRA100M-5	●	0.394	0.412		4.449	2.067		DA1000M-... ~ DA1040M-...		
SS0500-DRA105M-5	●	0.413	0.432		4.567	2.165		DA1050M-... ~ DA1090M-...		
SS0500-DRA110M-5	●	0.433	0.452		4.724	2.264		DA1100M-... ~ DA1140M-...		
SS0500-DRA115M-5	●	0.453	0.471		4.843	2.362		DA1150M-... ~ DA1190M-...		
SS0625-DRA120M-5	●	0.472	0.491	0.625	5.079	2.461	1.890	DA1200M-... ~ DA1240M-...		
SS0625-DRA125M-5	●	0.492	0.511		5.197	2.559		DA1250M-... ~ DA1290M-...		
SS0625-DRA130M-5	●	0.512	0.530		5.315	2.657		DA1300M-... ~ DA1340M-...		
SS0625-DRA135M-5	●	0.531	0.550		5.433	2.756		DA1350M-... ~ DA1390M-...		
SS0625-DRA140M-5	●	0.551	0.570		5.551	2.854		DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SS0625-DRA145M-5	●	0.571	0.590		5.669	2.953		DA1450M-... ~ DA1490M-...		
SS0625-DRA150M-5	●	0.591	0.629		5.945	3.150		DA1500M-... ~ DA1590M-...		
SS0750-DRA160M-5	●	0.630	0.668	0.750	6.299	3.346	1.969	DA1600M-... ~ DA1690M-...		
SS0750-DRA170M-5	●	0.669	0.708		6.535	3.543		DA1700M-... ~ DA1790M-...		
SS0750-DRA180M-5	●	0.709	0.747		6.811	3.740		DA1800M-... ~ DA1890M-...		
SS1000-DRA190M-5	●	0.748	0.786	1.000	7.047	3.937	2.205	DA1900M-... ~ DA1990M-...	HS-4067TRP	DTP-7
SS1000-DRA200M-5	●	0.787	0.826		7.520	4.134		DA2000M-... ~ DA2090M-...		
SS1000-DRA210M-5	●	0.827	0.865		7.756	4.331		DA2100M-... ~ DA2150M-...		
SS1000-DRA220M-5	●	0.866	0.905		8.031	4.528		DA2200M-... ~ DA2250M-...		
SS1000-DRA230M-5	●	0.906	0.944		8.268	4.724		DA2300M-... ~ DA2381M-...		
SS1000-DRA240M-5	●	0.945	0.983		8.504	4.921		DA2400M-... ~ DA2450M-...		
SS1000-DRA250M-5	●	0.984	1.004		8.740	5.116		DA2500M-... ~ DA2550M-...		

Toolholder Dimensions - 8D (Inch Size)

Part Number	Stock	Dimensions (in)						Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
		min.	max.							
SS0375-DRA080M-8	●	0.313	0.334	0.375	4.764	2.677	1.575	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SS0375-DRA085M-8	●	0.335	0.353		4.961	2.835		DA0850M-... ~ DA0890M-...		
SS0375-DRA090M-8	●	0.354	0.373		5.118	2.992		DA0900M-... ~ DA0940M-...		
SS0500-DRA095M-8	●	0.374	0.393	0.500	5.512	3.150	1.772	DA0950M-... ~ DA0990M-...	HS-2534TRP	
SS0500-DRA100M-8	●	0.394	0.412		5.669	3.307		DA1000M-... ~ DA1040M-...		
SS0500-DRA105M-8	●	0.413	0.432		5.866	3.465		DA1050M-... ~ DA1090M-...		
SS0500-DRA110M-8	●	0.433	0.452		6.063	3.622		DA1100M-... ~ DA1140M-...		
SS0500-DRA115M-8	●	0.453	0.471		6.260	3.780		DA1150M-... ~ DA1190M-...		
SS0625-DRA120M-8	●	0.472	0.491	0.625	6.535	3.937	1.890	DA1200M-... ~ DA1240M-...		
SS0625-DRA125M-8	●	0.492	0.511		6.732	4.094		DA1250M-... ~ DA1290M-...		
SS0625-DRA130M-8	●	0.512	0.530		6.890	4.252		DA1300M-... ~ DA1340M-...		
SS0625-DRA135M-8	●	0.531	0.550		7.087	4.409		DA1350M-... ~ DA1390M-...		
SS0625-DRA140M-8	●	0.551	0.570		7.244	4.567		DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SS0625-DRA145M-8	●	0.571	0.590		7.441	4.724		DA1450M-... ~ DA1490M-...		
SS0625-DRA150M-8	●	0.591	0.629		7.835	5.039		DA1500M-... ~ DA1590M-...		
SS0750-DRA160M-8	●	0.630	0.668	0.750	8.307	5.354	1.969	DA1600M-... ~ DA1690M-...		
SS0750-DRA170M-8	●	0.669	0.708		8.661	5.669		DA1700M-... ~ DA1790M-...		
SS0750-DRA180M-8	●	0.709	0.747		9.055	5.984		DA1800M-... ~ DA1890M-...		
SS1000-DRA190M-8	●	0.748	0.786	1.000	9.409	6.299	2.205	DA1900M-... ~ DA1990M-...	HS-4067TRP	DTP-7
SS1000-DRA200M-8	●	0.787	0.826		10.000	6.614		DA2000M-... ~ DA2090M-...		
SS1000-DRA210M-8	●	0.827	0.865		10.354	6.929		DA2100M-... ~ DA2150M-...		
SS1000-DRA220M-8	●	0.866	0.905		10.748	7.244		DA2200M-... ~ DA2250M-...		
SS1000-DRA230M-8	●	0.906	0.944		11.102	7.559		DA2300M-... ~ DA2381M-...		
SS1000-DRA240M-8	●	0.945	0.983		11.457	7.874		DA2400M-... ~ DA2450M-...		
SS1000-DRA250M-8	●	0.984	1.004		11.969	8.189		DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

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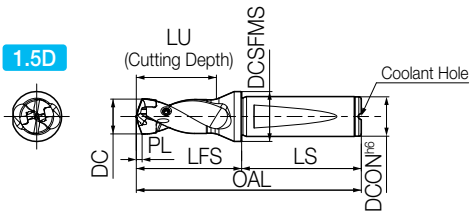
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

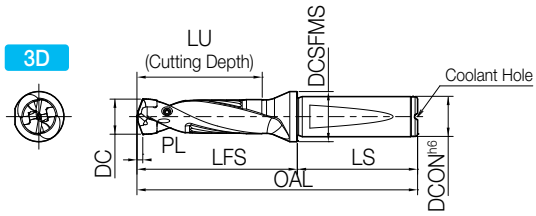
SF-DRA (Drilling Depth: 1.5xDC / 3xDC)

Flange Shank

1.5D



3D



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 1.5D (Metric Size)

Part Number	Stock	Dimensions (mm)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF12-DRA080M-1.5	●	7.94	8.49	12	71.2	26.2	12.8	45	16	DA0794M-...~DA0840M-...	HS-2524TRP	FTP-5
SF12-DRA085M-1.5	●	8.50	8.99		72.5	27.5	13.5			DA0850M-...~DA0890M-...		
SF12-DRA090M-1.5	●	9.00	9.49		73.7	28.7	14.3			DA0900M-...~DA0940M-...		
SF12-DRA095M-1.5	●	9.50	9.99		75.0	30.0	15.0			DA0950M-...~DA0990M-...		
SF16-DRA100M-1.5	●	10.00	10.49	16	79.2	31.2	15.8	48	20	DA1000M-...~DA1040M-...	HS-2534TRP	
SF16-DRA105M-1.5	●	10.50	10.99		80.5	32.5	16.5			DA1050M-...~DA1090M-...		
SF16-DRA110M-1.5	●	11.00	11.49		82.7	34.7	17.3			DA1100M-...~DA1140M-...		
SF16-DRA115M-1.5	●	11.50	11.99		84.0	36.0	18.0			DA1150M-...~DA1190M-...		
SF16-DRA120M-1.5	●	12.00	12.49		85.2	37.2	18.8			DA1200M-...~DA1240M-...		
SF16-DRA125M-1.5	●	12.50	12.99		86.5	38.5	19.5			DA1250M-...~DA1290M-...		
SF16-DRA130M-1.5	●	13.00	13.49		87.7	39.7	20.3			DA1300M-...~DA1340M-...		
SF16-DRA135M-1.5	●	13.50	13.99		89.0	41.0	21.0			DA1350M-...~DA1390M-...		
SF16-DRA140M-1.5	●	14.00	14.49		90.2	42.2	21.8			DA1400M-...~DA1440M-...	HS-3048TRP	DTP-6
SF16-DRA145M-1.5	●	14.50	14.99		91.5	43.5	22.5			DA1450M-...~DA1490M-...		
SF20-DRA150M-1.5	●	15.00	15.99	20	97.0	47.0	24.0	50	25	DA1500M-...~DA1590M-...		
SF20-DRA160M-1.5	●	16.00	16.99		100.5	50.5	25.5			DA1600M-...~DA1690M-...		
SF20-DRA170M-1.5	●	17.00	17.99		103.0	53.0	27.0			DA1700M-...~DA1790M-...		
SF25-DRA180M-1.5	●	18.00	18.99	25	112.5	56.5	28.5	56	32	DA1800M-...~DA1890M-...	HS-4067TRP	DTP-7
SF25-DRA190M-1.5	●	19.00	19.99		115.0	59.0	30.0			DA1900M-...~DA1990M-...		
SF25-DRA200M-1.5	●	20.00	20.99		117.5	61.5	31.5			DA2000M-...~DA2090M-...		
SF25-DRA210M-1.5	●	21.00	21.99		120.0	64.0	33.0			DA2100M-...~DA2150M-...		
SF25-DRA220M-1.5	●	22.00	22.99		123.5	67.5	34.5			DA2200M-...~DA2250M-...		
SF25-DRA230M-1.5	●	23.00	23.99		126.0	70.0	36.0			DA2300M-...~DA2350M-...		
SF25-DRA240M-1.5	●	24.00	24.99		128.5	72.5	37.5			DA2400M-...~DA2450M-...		
SF25-DRA250M-1.5	●	25.00	25.50		131.0	75.0	39.0			DA2500M-...~DA2550M-...		

Toolholder Dimensions - 3D (Metric Size)

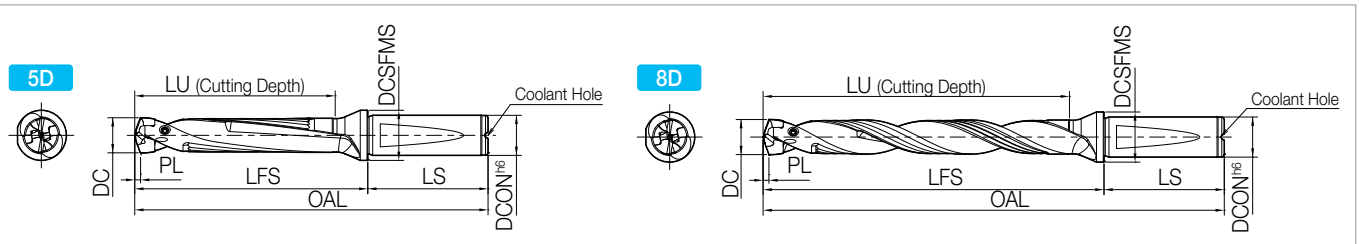
Part Number	Stock	Dimensions (mm)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF12-DRA080M-3	●	7.94	8.49	12	84	39	25.5	45	16	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SF12-DRA085M-3	●	8.50	8.99		86	41	27.0			DA0850M-... ~ DA0890M-...		
SF12-DRA090M-3	●	9.00	9.49		88	43	28.5			DA0900M-... ~ DA0940M-...		
SF12-DRA095M-3	●	9.50	9.99		90	45	30.0			DA0950M-... ~ DA0990M-...		
SF16-DRA100M-3	●	10.00	10.49	16	95	47	31.5	48	20	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SF16-DRA105M-3	●	10.50	10.99		97	49	33.0			DA1050M-... ~ DA1090M-...		
SF16-DRA110M-3	●	11.00	11.49		100	52	34.5			DA1100M-... ~ DA1140M-...		
SF16-DRA115M-3	●	11.50	11.99		102	54	36.0			DA1150M-... ~ DA1190M-...		
SF16-DRA120M-3	●	12.00	12.49		104	56	37.5			DA1200M-... ~ DA1240M-...		
SF16-DRA125M-3	●	12.50	12.99		106	58	39.0			DA1250M-... ~ DA1290M-...		
SF16-DRA130M-3	●	13.00	13.49		108	60	40.5			DA1300M-... ~ DA1340M-...		
SF16-DRA135M-3	●	13.50	13.99		110	62	42.0			DA1350M-... ~ DA1390M-...		
SF16-DRA140M-3	●	14.00	14.49		112	64	43.5			DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SF16-DRA145M-3	●	14.50	14.99		114	66	45.0			DA1450M-... ~ DA1490M-...		
SF20-DRA150M-3	●	15.00	15.99	20	121	71	48.0	50	25	DA1500M-... ~ DA1590M-...		
SF20-DRA160M-3	●	16.00	16.99		126	76	51.0			DA1600M-... ~ DA1690M-...		
SF20-DRA170M-3	●	17.00	17.99		130	80	54.0			DA1700M-... ~ DA1790M-...		
SF25-DRA180M-3	●	18.00	18.99	25	141	85	57.0	56	32	DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SF25-DRA190M-3	●	19.00	19.99		145	89	60.0			DA1900M-... ~ DA1990M-...		
SF25-DRA200M-3	●	20.00	20.99		149	93	63.0			DA2000M-... ~ DA2090M-...		
SF25-DRA210M-3	●	21.00	21.99		153	97	66.0			DA2100M-... ~ DA2150M-...		
SF25-DRA220M-3	●	22.00	22.99		158	102	69.0			DA2200M-... ~ DA2250M-...		
SF25-DRA230M-3	●	23.00	23.99		162	106	72.0			DA2300M-... ~ DA2350M-...		
SF25-DRA240M-3	●	24.00	24.99		166	110	75.0			DA2400M-... ~ DA2450M-...		
SF25-DRA250M-3	●	25.00	25.50		170	114	78.0			DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

SF-DRA (Drilling Depth: 5xDC / 8xDC)

Flange Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 5D (Metric Size)

Part Number	Stock	Dimensions (mm)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF12-DRA080M-5	●	7.94	8.49	12	101	56	42.5	45	16	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SF12-DRA085M-5	●	8.50	8.99		104	59	45.0			DA0850M-... ~ DA0890M-...		
SF12-DRA090M-5	●	9.00	9.49		107	62	47.5			DA0900M-... ~ DA0940M-...		
SF12-DRA095M-5	●	9.50	9.99		110	65	50.0			DA0950M-... ~ DA0990M-...		
SF16-DRA100M-5	●	10.00	10.49	16	116	68	52.5	48	20	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SF16-DRA105M-5	●	10.50	10.99		119	71	55.0			DA1050M-... ~ DA1090M-...		
SF16-DRA110M-5	●	11.00	11.49		123	75	57.5			DA1100M-... ~ DA1140M-...		
SF16-DRA115M-5	●	11.50	11.99		126	78	60.0			DA1150M-... ~ DA1190M-...		
SF16-DRA120M-5	●	12.00	12.49		129	81	62.5			DA1200M-... ~ DA1240M-...		
SF16-DRA125M-5	●	12.50	12.99		132	84	65.0			DA1250M-... ~ DA1290M-...		
SF16-DRA130M-5	●	13.00	13.49		135	87	67.5			DA1300M-... ~ DA1340M-...		
SF16-DRA135M-5	●	13.50	13.99		138	90	70.0			DA1350M-... ~ DA1390M-...		
SF16-DRA140M-5	●	14.00	14.49		141	93	72.5			DA1400M-... ~ DA1440M-...		
SF16-DRA145M-5	●	14.50	14.99		144	96	75.0			DA1450M-... ~ DA1490M-...		
SF20-DRA150M-5	●	15.00	15.99	20	153	103	80.0	50	25	DA1500M-... ~ DA1590M-...	HS-3048TRP	DTP-6
SF20-DRA160M-5	●	16.00	16.99		160	110	85.0			DA1600M-... ~ DA1690M-...		
SF20-DRA170M-5	●	17.00	17.99		166	116	90.0			DA1700M-... ~ DA1790M-...		
SF25-DRA180M-5	●	18.00	18.99	25	179	123	95.0	56	32	DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SF25-DRA190M-5	●	19.00	19.99		185	129	100.0			DA1900M-... ~ DA1990M-...		
SF25-DRA200M-5	●	20.00	20.99		191	135	105.0			DA2000M-... ~ DA2090M-...		
SF25-DRA210M-5	●	21.00	21.99		197	141	110.0			DA2100M-... ~ DA2150M-...		
SF25-DRA220M-5	●	22.00	22.99		204	148	115.0			DA2200M-... ~ DA2250M-...		
SF25-DRA230M-5	●	23.00	23.99		210	154	120.0			DA2300M-... ~ DA2350M-...		
SF25-DRA240M-5	●	24.00	24.99		216	160	125.0			DA2400M-... ~ DA2450M-...		
SF25-DRA250M-5	●	25.00	25.50		222	166	130.0			DA2500M-... ~ DA2550M-...		

Toolholder Dimensions - 8D (Metric Size)

Part Number	Stock	Dimensions (mm)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF12-DRA080M-8	●	7.94	8.49	12	126	81	68.0	45	16	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SF12-DRA085M-8	●	8.50	8.99		131	86	72.0			DA0850M-... ~ DA0890M-...		
SF12-DRA090M-8	●	9.00	9.49		135	90	76.0			DA0900M-... ~ DA0940M-...		
SF12-DRA095M-8	●	9.50	9.99		140	95	80.0			DA0950M-... ~ DA0990M-...		
SF16-DRA100M-8	●	10.00	10.49	16	147	99	84.0	48	20	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SF16-DRA105M-8	●	10.50	10.99		152	104	88.0			DA1050M-... ~ DA1090M-...		
SF16-DRA110M-8	●	11.00	11.49		157	109	92.0			DA1100M-... ~ DA1140M-...		
SF16-DRA115M-8	●	11.50	11.99		162	114	96.0			DA1150M-... ~ DA1190M-...		
SF16-DRA120M-8	●	12.00	12.49		166	118	100.0			DA1200M-... ~ DA1240M-...		
SF16-DRA125M-8	●	12.50	12.99		171	123	104.0			DA1250M-... ~ DA1290M-...		
SF16-DRA130M-8	●	13.00	13.49		175	127	108.0			DA1300M-... ~ DA1340M-...		
SF16-DRA135M-8	●	13.50	13.99		180	132	112.0			DA1350M-... ~ DA1390M-...		
SF16-DRA140M-8	●	14.00	14.49		184	136	116.0			DA1400M-... ~ DA1440M-...		
SF16-DRA145M-8	●	14.50	14.99		189	141	120.0			DA1450M-... ~ DA1490M-...		
SF20-DRA150M-8	●	15.00	15.99	20	201	151	128.0	50	25	DA1500M-... ~ DA1590M-...	HS-3048TRP	DTP-6
SF20-DRA160M-8	●	16.00	16.99		211	161	136.0			DA1600M-... ~ DA1690M-...		
SF20-DRA170M-8	●	17.00	17.99		220	170	144.0			DA1700M-... ~ DA1790M-...		
SF25-DRA180M-8	●	18.00	18.99	25	236	180	152.0	56	32	DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SF25-DRA190M-8	●	19.00	19.99		245	189	160.0			DA1900M-... ~ DA1990M-...		
SF25-DRA200M-8	●	20.00	20.99		254	198	168.0			DA2000M-... ~ DA2090M-...		
SF25-DRA210M-8	●	21.00	21.99		263	207	176.0			DA2100M-... ~ DA2150M-...		
SF25-DRA220M-8	●	22.00	22.99		273	217	184.0			DA2200M-... ~ DA2250M-...		
SF25-DRA230M-8	●	23.00	23.99		282	226	192.0			DA2300M-... ~ DA2350M-...		
SF25-DRA240M-8	●	24.00	24.99		291	235	200.0			DA2400M-... ~ DA2450M-...		
SF25-DRA250M-8	●	25.00	25.50		300	244	208.0			DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

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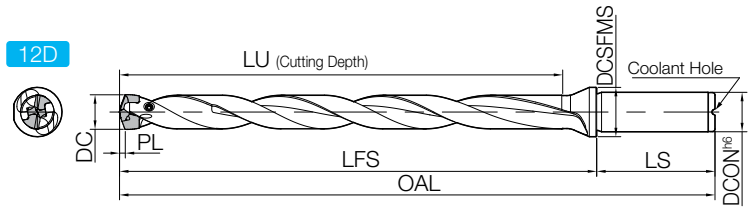
SF-DRA (Drilling Depth: 12xDC) NEW

Flange Shank



For PL dimension, reference insert dimension table.

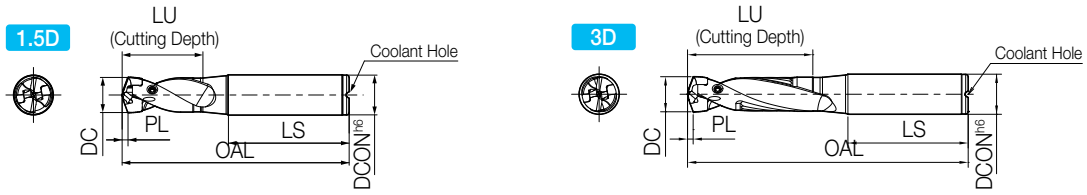
Toolholder Dimensions - 12D (Metric Size)

Part Number	Stock	Dimensions (mm)								Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LFS	LU	LS	DCSFMS		Clamp Screw	Wrench
		min.	max.									
SF16-DRA120M-12	●	12	12.49	16	216	168	150	48	20	DA1200M-... ~ DA1240M-...	HS-2534TRP	FTP-5
SF16-DRA125M-12	●	12.5	12.99		223	175	156			DA1250M-... ~ DA1290M-...		
SF16-DRA130M-12	●	13	13.49		229	181	162			DA1300M-... ~ DA1340M-...		
SF16-DRA135M-12	●	13.5	13.99		236	188	168			DA1350M-... ~ DA1390M-...		
SF16-DRA140M-12	●	14	14.49		242	194	174			DA1400M-... ~ DA1440M-...		
SF16-DRA145M-12	●	14.5	14.99		249	201	180			DA1450M-... ~ DA1490M-...		
SF20-DRA150M-12	●	15	15.99	20	265	215	192	50	25	DA1500M-... ~ DA1590M-...	HS-3048TRP	DTP-6
SF20-DRA160M-12	●	16	16.99		279	229	204			DA1600M-... ~ DA1690M-...		
SF20-DRA170M-12	●	17	17.99		292	242	216			DA1700M-... ~ DA1790M-...		
SF25-DRA180M-12	●	18	18.99	25	312	256	228	56	32	DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SF25-DRA190M-12	●	19	19.99		325	269	240			DA1900M-... ~ DA1990M-...		
SF25-DRA200M-12	●	20	20.99		338	282	252			DA2000M-... ~ DA2090M-...		
SF25-DRA210M-12	●	21	21.99		351	295	264			DA2100M-... ~ DA2150M-...		
SF25-DRA220M-12	●	22	22.99		365	309	276			DA2200M-... ~ DA2250M-...		
SF25-DRA230M-12	●	23	23.99		378	322	288			DA2300M-... ~ DA2350M-...		
SF25-DRA240M-12	●	24	24.99		391	335	300			DA2400M-... ~ DA2450M-...		
SF25-DRA250M-12	●	25	25.5		404	348	312			DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

SS-DRA (Drilling Depth: 1.5xDC / 3xDC)

Straight Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 1.5D (Metric Size)

Part Number	Stock	Dimensions (mm)						Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
		min.	max.							
SS10-DRA080M-1.5	●	7.94	8.49	10	66.2	12.8	40	DA0794M-...~DA0840M-...	HS-2524TRP	FTP-5
SS10-DRA085M-1.5	●	8.50	8.99		67.5	13.5		DA0850M-...~DA0890M-...		
SS10-DRA090M-1.5	●	9.00	9.49		68.7	14.3		DA0900M-...~DA0940M-...		
SS10-DRA095M-1.5	●	9.50	9.99		70.0	15.0		DA0950M-...~DA0990M-...		
SS12-DRA100M-1.5	●	10.00	10.49	12	76.2	15.8	45	DA1000M-...~DA1040M-...	HS-2534TRP	
SS12-DRA105M-1.5	●	10.50	10.99		77.5	16.5		DA1050M-...~DA1090M-...		
SS12-DRA110M-1.5	●	11.00	11.49		79.7	17.3		DA1100M-...~DA1140M-...		
SS12-DRA115M-1.5	●	11.50	11.99		81.0	18.0		DA1150M-...~DA1190M-...		
SS14-DRA120M-1.5	●	12.00	12.49	14	82.2	18.8		DA1200M-...~DA1240M-...		
SS14-DRA125M-1.5	●	12.50	12.99		83.5	19.5		DA1250M-...~DA1290M-...		
SS14-DRA130M-1.5	●	13.00	13.49		84.7	20.3		DA1300M-...~DA1340M-...		
SS14-DRA135M-1.5	●	13.50	13.99		86.0	21.0		DA1350M-...~DA1390M-...		
SS16-DRA140M-1.5	●	14.00	14.49	16	90.2	21.8	48	DA1400M-...~DA1440M-...	HS-3048TRP	DTP-6
SS16-DRA145M-1.5	●	14.50	14.99		91.5	22.5		DA1450M-...~DA1490M-...		
SS16-DRA150M-1.5	●	15.00	15.99		95.0	24.0		DA1500M-...~DA1590M-...		
SS18-DRA160M-1.5	●	16.00	16.99	18	98.5	25.5		DA1600M-...~DA1690M-...		
SS18-DRA170M-1.5	●	17.00	17.99		101.0	27.0		DA1700M-...~DA1790M-...		
SS20-DRA180M-1.5	●	18.00	18.99	20	106.5	28.5	50	DA1800M-...~DA1890M-...	HS-4067TRP	DTP-7
SS20-DRA190M-1.5	●	19.00	19.99		109.0	30.0		DA1900M-...~DA1990M-...		
SS25-DRA200M-1.5	●	20.00	20.99	25	117.5	31.5	56	DA2000M-...~DA2090M-...		
SS25-DRA210M-1.5	●	21.00	21.99		120.0	33.0		DA2100M-...~DA2150M-...		
SS25-DRA220M-1.5	●	22.00	22.99		123.5	34.5		DA2200M-...~DA2250M-...		
SS25-DRA230M-1.5	●	23.00	23.99		126.0	36.0		DA2300M-...~DA2350M-...		
SS25-DRA240M-1.5	●	24.00	24.99		128.5	37.5		DA2400M-...~DA2450M-...		
SS32-DRA250M-1.5	●	25.00	25.50	32	135.0	39.0	60	DA2500M-...~DA2550M-...		

Toolholder Dimensions - 3D (Metric Size)

Part Number	Stock	Dimensions (mm)						Applicable Insert See Page K6~K8	Spare Parts	
		DC		DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
		min.	max.							
SS10-DRA080M-3	●	7.94	8.49	10	79	25.5	40	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SS10-DRA085M-3	●	8.50	8.99		81	27.0		DA0850M-... ~ DA0890M-...		
SS10-DRA090M-3	●	9.00	9.49		83	28.5		DA0900M-... ~ DA0940M-...		
SS10-DRA095M-3	●	9.50	9.99		85	30.0		DA0950M-... ~ DA0990M-...		
SS12-DRA100M-3	●	10.00	10.49	12	92	31.5	45	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SS12-DRA105M-3	●	10.50	10.99		94	33.0		DA1050M-... ~ DA1090M-...		
SS12-DRA110M-3	●	11.00	11.49		97	34.5		DA1100M-... ~ DA1140M-...		
SS12-DRA115M-3	●	11.50	11.99		99	36.0		DA1150M-... ~ DA1190M-...		
SS14-DRA120M-3	●	12.00	12.49	14	101	37.5		DA1200M-... ~ DA1240M-...		
SS14-DRA125M-3	●	12.50	12.99		103	39.0		DA1250M-... ~ DA1290M-...		
SS14-DRA130M-3	●	13.00	13.49		105	40.5		DA1300M-... ~ DA1340M-...		
SS14-DRA135M-3	●	13.50	13.99		107	42.0		DA1350M-... ~ DA1390M-...		
SS16-DRA140M-3	●	14.00	14.49	16	112	43.5	48	DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SS16-DRA145M-3	●	14.50	14.99		114	45.0		DA1450M-... ~ DA1490M-...		
SS16-DRA150M-3	●	15.00	15.99		119	48.0		DA1500M-... ~ DA1590M-...		
SS18-DRA160M-3	●	16.00	16.99	18	124	51.0		DA1600M-... ~ DA1690M-...		
SS18-DRA170M-3	●	17.00	17.99		128	54.0		DA1700M-... ~ DA1790M-...		
SS20-DRA180M-3	●	18.00	18.99	20	135	57.0	50	DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SS20-DRA190M-3	●	19.00	19.99		139	60.0		DA1900M-... ~ DA1990M-...		
SS25-DRA200M-3	●	20.00	20.99	25	149	63.0	56	DA2000M-... ~ DA2090M-...		
SS25-DRA210M-3	●	21.00	21.99		153	66.0		DA2100M-... ~ DA2150M-...		
SS25-DRA220M-3	●	22.00	22.99		158	69.0		DA2200M-... ~ DA2250M-...		
SS25-DRA230M-3	●	23.00	23.99		162	72.0		DA2300M-... ~ DA2350M-...		
SS25-DRA240M-3	●	24.00	24.99		166	75.0		DA2400M-... ~ DA2450M-...		
SS32-DRA250M-3	●	25.00	25.50	32	174	78.0	60	DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

(Customer Service) 800.823.7284 - Option 1
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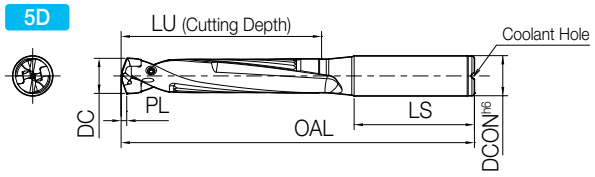
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

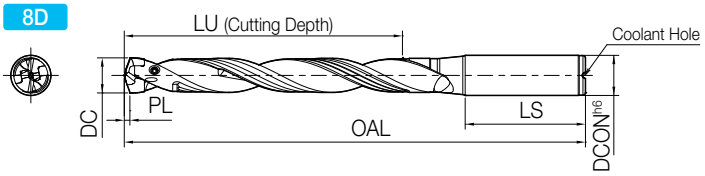
SS-DRA (Drilling Depth: 5xDC / 8xDC)

Straight Shank

5D



8D



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 5D (Metric Size)

Part Number	Stock	Dimensions (mm)						Applicable Insert See Page K6~K8	Spare Parts	
		DC min.	DC max.	DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
SS10-DRA080M-5	●	7.94	8.49	10	96	42.5	40	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SS10-DRA085M-5	●	8.50	8.99		99	45.0		DA0850M-... ~ DA0890M-...		
SS10-DRA090M-5	●	9.00	9.49		102	47.5		DA0900M-... ~ DA0940M-...		
SS10-DRA095M-5	●	9.50	9.99		105	50.0		DA0950M-... ~ DA0990M-...		
SS12-DRA100M-5	●	10.00	10.49	12	113	52.5	45	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SS12-DRA105M-5	●	10.50	10.99		116	55.0		DA1050M-... ~ DA1090M-...		
SS12-DRA110M-5	●	11.00	11.49		120	57.5		DA1100M-... ~ DA1140M-...		
SS12-DRA115M-5	●	11.50	11.99		123	60.0		DA1150M-... ~ DA1190M-...		
SS14-DRA120M-5	●	12.00	12.49	14	126	62.5		DA1200M-... ~ DA1240M-...		
SS14-DRA125M-5	●	12.50	12.99		129	65.0		DA1250M-... ~ DA1290M-...		
SS14-DRA130M-5	●	13.00	13.49		132	67.5		DA1300M-... ~ DA1340M-...		
SS14-DRA135M-5	●	13.50	13.99		135	70.0		DA1350M-... ~ DA1390M-...		
SS16-DRA140M-5	●	14.00	14.49	16	141	72.5	48	DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SS16-DRA145M-5	●	14.50	14.99		144	75.0		DA1450M-... ~ DA1490M-...		
SS16-DRA150M-5	●	15.00	15.99		151	80.0		DA1500M-... ~ DA1590M-...		
SS18-DRA160M-5	●	16.00	16.99	18	158	85.0		DA1600M-... ~ DA1690M-...		
SS18-DRA170M-5	●	17.00	17.99		164	90.0		DA1700M-... ~ DA1790M-...		
SS20-DRA180M-5	●	18.00	18.99	20	173	95.0	50	DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SS20-DRA190M-5	●	19.00	19.99		179	100.0		DA1900M-... ~ DA1990M-...		
SS25-DRA200M-5	●	20.00	20.99	25	191	105.0	56	DA2000M-... ~ DA2090M-...		
SS25-DRA210M-5	●	21.00	21.99		197	110.0		DA2100M-... ~ DA2150M-...		
SS25-DRA220M-5	●	22.00	22.99		204	115.0		DA2200M-... ~ DA2250M-...		
SS25-DRA230M-5	●	23.00	23.99		210	120.0		DA2300M-... ~ DA2350M-...		
SS25-DRA240M-5	●	24.00	24.99		216	125.0		DA2400M-... ~ DA2450M-...		
SS32-DRA250M-5	●	25.00	25.50	32	226	130.0	60	DA2500M-... ~ DA2550M-...		

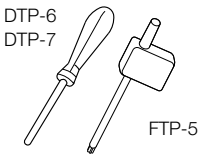
Toolholder Dimensions - 8D (Metric Size)

Part Number	Stock	Dimensions (mm)						Applicable Insert See Page K6~K8	Spare Parts	
		DC min.	DC max.	DCON (h6)	OAL	LU	LS		Clamp Screw	Wrench
SS10-DRA080M-8	●	7.94	8.49	10	121	68.0	40	DA0794M-... ~ DA0840M-...	HS-2524TRP	FTP-5
SS10-DRA085M-8	●	8.50	8.99		126	72.0		DA0850M-... ~ DA0890M-...		
SS10-DRA090M-8	●	9.00	9.49		130	76.0		DA0900M-... ~ DA0940M-...		
SS10-DRA095M-8	●	9.50	9.99		135	80.0		DA0950M-... ~ DA0990M-...		
SS12-DRA100M-8	●	10.00	10.49	12	144	84.0	45	DA1000M-... ~ DA1040M-...	HS-2534TRP	
SS12-DRA105M-8	●	10.50	10.99		149	88.0		DA1050M-... ~ DA1090M-...		
SS12-DRA110M-8	●	11.00	11.49		154	92.0		DA1100M-... ~ DA1140M-...		
SS12-DRA115M-8	●	11.50	11.99		159	96.0		DA1150M-... ~ DA1190M-...		
SS14-DRA120M-8	●	12.00	12.49	14	163	100.0		DA1200M-... ~ DA1240M-...		
SS14-DRA125M-8	●	12.50	12.99		168	104.0		DA1250M-... ~ DA1290M-...		
SS14-DRA130M-8	●	13.00	13.49		172	108.0		DA1300M-... ~ DA1340M-...		
SS14-DRA135M-8	●	13.50	13.99		177	112.0		DA1350M-... ~ DA1390M-...		
SS16-DRA140M-8	●	14.00	14.49	16	184	116.0	48	DA1400M-... ~ DA1440M-...	HS-3048TRP	DTP-6
SS16-DRA145M-8	●	14.50	14.99		189	120.0		DA1450M-... ~ DA1490M-...		
SS16-DRA150M-8	●	15.00	15.99		199	128.0		DA1500M-... ~ DA1590M-...		
SS18-DRA160M-8	●	16.00	16.99	18	209	136.0		DA1600M-... ~ DA1690M-...		
SS18-DRA170M-8	●	17.00	17.99		218	144.0		DA1700M-... ~ DA1790M-...		
SS20-DRA180M-8	●	18.00	18.99	20	230	152.0	50	DA1800M-... ~ DA1890M-...	HS-4067TRP	DTP-7
SS20-DRA190M-8	●	19.00	19.99		239	160.0		DA1900M-... ~ DA1990M-...		
SS25-DRA200M-8	●	20.00	20.99	25	254	168.0	56	DA2000M-... ~ DA2090M-...		
SS25-DRA210M-8	●	21.00	21.99		263	176.0		DA2100M-... ~ DA2150M-...		
SS25-DRA220M-8	●	22.00	22.99		273	184.0		DA2200M-... ~ DA2250M-...		
SS25-DRA230M-8	●	23.00	23.99		282	192.0		DA2300M-... ~ DA2350M-...		
SS25-DRA240M-8	●	24.00	24.99		291	200.0		DA2400M-... ~ DA2450M-...		
SS32-DRA250M-8	●	25.00	25.50	32	304	208.0	60	DA2500M-... ~ DA2550M-...		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K6~K8 for actual cutting diameters (DC).

Spare Parts

Clamp Screw	Part Number
	HS-2524TRP
	HS-2534TRP
	HS-3048TRP
	HS-4067TRP

Wrench	Part Number	Torque
	**FTP-5**	0.5 Nm (4.4 in/lb)
	DTP-6	0.8 Nm (7.1 in/lb)
	DTP-7	1.2 Nm (10.6 in/lb)

GM Insert - Recommended Cutting Conditions

Workpiece Material	Recommended Grade / Cutting Speed (sfm)		Cutting Dia. DC (in)	Cutting Dia. DC (mm)	Holder Type (Cutting Depth) Feed Rate (ipr)					Notes
	PR1535	**PR1525**			**1.5D**	**3D**	**5D**	**8D**	**12D**	
Low Carbon Steel	★ 330-590	☆ 330-590	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	Coolant See ➡ K22
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
Carbon Steel	★ 330-490	☆ 330-490	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
Alloy Steel	★ 230-390	☆ 230-390	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
Tool Steel	★ 160-300	☆ 160-300	0.313 - 0.429	7.94 - 10.90	0.0031 - 0.0067		0.0025 - 0.0054		0.0022 - 0.0047	
			0.433 - 0.547	11.00 - 13.90	0.0031 - 0.0087		0.0025 - 0.0069		0.0022 - 0.0061	
			0.551 - 0.705	14.00 - 17.90	0.0043 - 0.0098		0.0035 - 0.0079		0.0030 - 0.0069	
			0.709 - 0.846	18.00 - 21.50	0.0043 - 0.0110		0.0035 - 0.0088		0.0030 - 0.0077	
			0.866 - 0.965	22.00 - 24.50	0.0055 - 0.0126		0.0044 - 0.0101		0.0039 - 0.0088	
			0.984 - 1.004	25.00 - 25.50	0.0055 - 0.0126		0.0044 - 0.0101		0.0039 - 0.0088	
Stainless Steel ※	★ 130-230	☆ 130-230	0.313 - 0.429	7.94 - 10.90	0.0039 - 0.0094		0.0031 - 0.0076		0.0028 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0039 - 0.0094		0.0031 - 0.0076		0.0028 - 0.0066	
			0.551 - 0.705	14.00 - 17.90	0.0047 - 0.0118		0.0038 - 0.0094		0.0033 - 0.0083	
			0.709 - 0.846	18.00 - 21.50	0.0059 - 0.0118		0.0047 - 0.0094		0.0041 - 0.0083	
			0.866 - 0.965	22.00 - 24.50	0.0059 - 0.0118		0.0047 - 0.0094		0.0041 - 0.0083	
			0.984 - 1.004	25.00 - 25.50	0.0059 - 0.0138		0.0047 - 0.0110		0.0041 - 0.0096	
Gray Cast Iron	☆ 300-560	★ 300-560	0.313 - 0.429	7.94 - 10.90	0.0055 - 0.0114		0.0044 - 0.0091		0.0039 - 0.0080	
			0.433 - 0.547	11.00 - 13.90	0.0055 - 0.0146		0.0044 - 0.0117		0.0039 - 0.0102	
			0.551 - 0.705	14.00 - 17.90	0.0075 - 0.0169		0.0060 - 0.0135		0.0052 - 0.0119	
			0.709 - 0.846	18.00 - 21.50	0.0075 - 0.0177		0.0060 - 0.0142		0.0052 - 0.0124	
			0.866 - 0.965	22.00 - 24.50	0.0094 - 0.0177		0.0076 - 0.0142		0.0066 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0094 - 0.0177		0.0076 - 0.0142		0.0066 - 0.0124	
Nodular Cast Iron	☆ 130-390	★ 130-390	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	

As drilling depth increases (**1.5D → 3D → 5D → 8D**), feed rates should be reduced.
Recommended Feed Rate: **1.5D/3D** = 100%, **5D/8D** ≤ 80%, **12D** ≤ 70%
Recommended Cutting Speed: **8D** ≤ 80%, **12D** ≤ 70%

★ : 1st Recommendation ☆ : 2nd Recommendation

※ Feed Rate 0.006 ipr or less is recommended for stainless steel until drilling depth reaches 0.5DC.

Notes: The recommended cutting conditions are for drilling on plain surfaces.
The conditions for drilling on slant hole shows the depth from the top of workpiece.
Set the feed rate under 50% when inclination angle is under 30°.
Set the feed rate under 30% when inclination angle is over 30°.
Traversing is not recommended.
Applicable to 1.5D, 3D, 5D, 8D and 12D holders. Prepared hole (0.5DC) is needed when using 8D/12D holder.

KM Insert - Recommended Cutting Conditions

Workpiece Material	Cutting Speed (sfm) PR1525	Cutting Dia. DC (in)	Cutting Dia. DC (mm)	Holder Type (Cutting Depth) Feed Rate (ipr) 1.5D	3D	5D	8D	12D	Notes
Gray Cast Iron	★ 300-560	0.313 - 0.429	7.94 - 10.90	0.0067 - 0.0138		0.0054 - 0.0110		0.0047 - 0.0096	Coolant See K22
		0.433 - 0.547	11.00 - 13.90	0.0075 - 0.0165		0.0060 - 0.0132		0.0052 - 0.0116	
		0.551 - 0.705	14.00 - 17.90	0.0091 - 0.0209		0.0072 - 0.0167		0.0063 - 0.0146	
		0.709 - 0.846	18.00 - 21.50	0.0098 - 0.0236		0.0079 - 0.0189		0.0069 - 0.0165	
		0.866 - 0.965	22.00 - 24.50	0.0126 - 0.0236		0.0101 - 0.0189		0.0088 - 0.0165	
		0.984 - 1.004	25.00 - 25.50	0.0126 - 0.0236		0.0101 - 0.0189		0.0088 - 0.0165	
Nodular Cast Iron	★ 130-390	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
		0.433 - 0.547	11.00 - 13.90	0.0067 - 0.0142		0.0054 - 0.0113		0.0047 - 0.0099	
		0.551 - 0.705	14.00 - 17.90	0.0083 - 0.0189		0.0066 - 0.0151		0.0058 - 0.0132	
		0.709 - 0.846	18.00 - 21.50	0.0094 - 0.0236		0.0076 - 0.0189		0.0066 - 0.0165	
		0.866 - 0.965	22.00 - 24.50	0.0106 - 0.0236		0.0085 - 0.0189		0.0074 - 0.0165	
		0.984 - 1.004	25.00 - 25.50	0.0106 - 0.0236		0.0085 - 0.0189		0.0074 - 0.0165	

- As drilling depth increases (**3D** → **5D** → **8D**), feed rates should be reduced.
- Recommended Feed Rate: **3D** = 100%, **5D** ≤ 80%, **8D** ≤ 70%

★ : 1st Recommendation ☆ : 2nd Recommendation

FTP Insert - Recommended Cutting Conditions

Workpiece Material	Recommended Grade / Cutting Speed (sfm) PR1535	PR1525	Cutting Dia. DC (in)	Cutting Dia. DC (mm)	Holder Type (Cutting Depth) Feed Rate (ipr) 1.5D	3D	5D	8D	12D	Notes
Low Carbon Steel	★ 330-590	☆ 330-590	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
Carbon Steel	★ 330-490	☆ 330-490	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
Alloy Steel	★ 230-390	☆ 230-390	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0157		0.0063 - 0.0126		0.0055 - 0.0110	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
Tool Steel	★ 160-300	☆ 160-300	0.313 - 0.429	7.94 - 10.90	0.0031 - 0.0067		0.0025 - 0.0054		0.0022 - 0.0047	Coolant See K22
			0.433 - 0.547	11.00 - 13.90	0.0031 - 0.0087		0.0025 - 0.0069		0.0022 - 0.0061	
			0.551 - 0.705	14.00 - 17.90	0.0043 - 0.0098		0.0035 - 0.0079		0.0030 - 0.0069	
			0.709 - 0.846	18.00 - 21.50	0.0043 - 0.0110		0.0035 - 0.0088		0.0030 - 0.0077	
			0.866 - 0.965	22.00 - 24.50	0.0055 - 0.0118		0.0044 - 0.0094		0.0039 - 0.0083	
			0.984 - 1.004	25.00 - 25.50	0.0055 - 0.0126		0.0044 - 0.0101		0.0039 - 0.0088	
Stainless Steel ※	★ 130-230	☆ 130-230	0.313 - 0.429	7.94 - 10.90	0.0039 - 0.0079		0.0031 - 0.0063		0.0028 - 0.0055	
			0.433 - 0.547	11.00 - 13.90	0.0039 - 0.0079		0.0031 - 0.0063		0.0028 - 0.0055	
			0.551 - 0.705	14.00 - 17.90	0.0039 - 0.0094		0.0031 - 0.0076		0.0028 - 0.0066	
			0.709 - 0.846	18.00 - 21.50	0.0059 - 0.0094		0.0047 - 0.0076		0.0041 - 0.0066	
			0.866 - 0.965	22.00 - 24.50	0.0059 - 0.0094		0.0047 - 0.0076		0.0041 - 0.0066	
			0.984 - 1.004	25.00 - 25.50	0.0059 - 0.0110		0.0047 - 0.0088		0.0041 - 0.0077	
Gray Cast Iron	☆ 300-560	★ 300-560	0.313 - 0.429	7.94 - 10.90	0.0055 - 0.0114		0.0044 - 0.0091		0.0039 - 0.0080	
			0.433 - 0.547	11.00 - 13.90	0.0055 - 0.0146		0.0044 - 0.0117		0.0039 - 0.0102	
			0.551 - 0.705	14.00 - 17.90	0.0075 - 0.0169		0.0060 - 0.0135		0.0052 - 0.0119	
			0.709 - 0.846	18.00 - 21.50	0.0075 - 0.0177		0.0060 - 0.0142		0.0052 - 0.0124	
			0.866 - 0.965	22.00 - 24.50	0.0094 - 0.0177		0.0076 - 0.0142		0.0066 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0094 - 0.0177		0.0076 - 0.0142		0.0066 - 0.0124	
Nodular Cast Iron	☆ 130-390	★ 130-390	0.313 - 0.429	7.94 - 10.90	0.0047 - 0.0094		0.0038 - 0.0076		0.0033 - 0.0066	
			0.433 - 0.547	11.00 - 13.90	0.0047 - 0.0122		0.0038 - 0.0098		0.0033 - 0.0085	
			0.551 - 0.705	14.00 - 17.90	0.0063 - 0.0142		0.0050 - 0.0113		0.0044 - 0.0099	
			0.709 - 0.846	18.00 - 21.50	0.0063 - 0.0157		0.0050 - 0.0126		0.0044 - 0.0110	
			0.866 - 0.965	22.00 - 24.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	
			0.984 - 1.004	25.00 - 25.50	0.0079 - 0.0177		0.0063 - 0.0142		0.0055 - 0.0124	

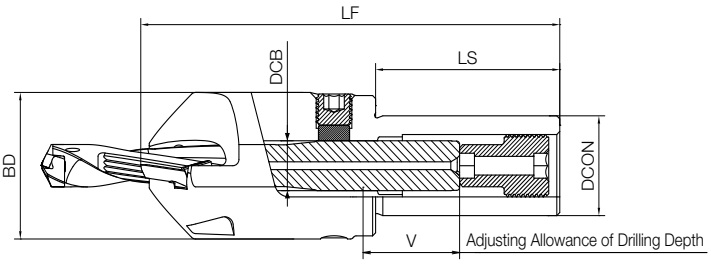
As drilling depth increases (**1.5D** → **3D** → **5D** → **8D**), feed rates should be reduced.
Recommended Feed Rate: **1.5D/3D** = 100%, **5D/8D** ≤ 80%, **12D** ≤ 70%
Recommended Cutting Speed: **8D** ≤ 80%, **12D** ≤ 70%

★ : 1st Recommendation ☆ : 2nd Recommendation

※ Feed Rate 0.006 ipr or less is recommended for stainless steel until drilling depth reaches 0.5DC.

Notes: The recommended cutting conditions are for drilling on plain surfaces.
The conditions for drilling on slant hole shows the depth from the top of workpiece.
Set the feed rate under 50% when inclination angle is under 30°.
Set the feed rate under 30% when inclination angle is over 30°.
Traversing is not recommended.
Applicable to 1.5D, 3D, 5D, 8D and 12D holders. Prepared hole (0.5DC) is needed when using 8D/12D holder.

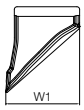
DRA Chamfering Attachment (for Straight Shank Only)



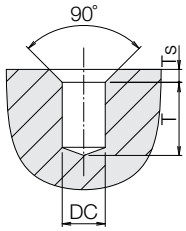
Chamfer Attachment Dimensions (Metric Size)

Part Number	Stock	Applicable Drill Shank Dia. DCB	Dimensions (mm)					Applicable Chamfer Insert
			DCON	BD	LF	LS	V (Max)	
S20-CH10-DRA	●	10	20	39	110	52	18	CT12T3-45DA
S32-CH12-DRA	●	12	32	43	130	62	24	
S32-CH14-DRA	●	14	32	45	130	62	24	
S32-CH16-DRA	●	16	32	47	141	62	24	
S32-CH18-DRA	●	18	32	49	145	62	24	
S32-CH20-DRA	●	20	32	53	150	62	24.5	

Applicable Insert

Shape			Part Number	MEGACOAT NANO	Dimensions (mm)	
				PR1535	W1	S
			**CT12T3-45DA**	●	13.54	3.97

Drilling & Chamfering Depths



Cutting Dia. (mm) DC		Drilling Depth (mm)						Chamfering Dimension (mm)		Applicable Chamfering Attachment
		T (3XD)		T (5XD)		T (8XD)				
min.	max.	min.	max.	min.	max.	min.	max.	Ts	Tsmax.	
7.94	8.49	12.5	20	18	36	43	60	2.5	8	**S20-CH10-DRA**
8.50	8.99	12.5	21.5	21.5	38.5	48	64			
9.00	9.49	12.5	23	24	41	52	68			
9.50	9.99	12.5	24.5	27.5	43.5	57.5	72.5			
10.00	10.49	15.5	26	22	46	52	76	4	8	**S32-CH12-DRA**
10.50	10.99	16	27.5	24.5	48.5	56	80			
11.00	11.49	16.5	29	27	51	60	84			
11.50	11.99	17.5	30.5	29.5	53.5	64	88			
12.00	12.49	18	32	32	56	68	92	4	8	**S32-CH14-DRA**
12.50	12.99	19	34	35	59	72.5	96.5			
13.00	13.49	19.5	35.5	37.5	61.5	76	100			
13.50	13.99	20	36.5	39.5	63.5	80	104			
14.00	14.49	21	38.5	42.5	66.5	84.5	108.5	4	8	**S32-CH16-DRA**
14.50	14.99	21.5	40	45	69	88.5	112.5			
15.00	15.99	22.5	41.5	47.5	71.5	92.5	116.5			
16.00	16.99	24	44.5	52.5	76.5	100.5	124.5	4	8	**S32-CH18-DRA**
17.00	17.99	25.5	47.5	57.5	81.5	108.5	132.5			
18.00	18.99	27.5	51	64	87	121	141	4	8	**S32-CH20-DRA**
19.00	19.99	29.5	54	69	92	129	149			

Ts: Max. chamfering dimension at the full feed.
Tsmax.: Max. chamfering dimension at a 50% feed reduction.

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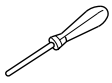
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Spare Parts

Chamfering Attachment	Adjusting Screw		For Fixing Drills					For Mounting Inserts		
			Clamp	Clamp Screw			Plug Screw	Clamp	Clamp Screw	Wrench
Part Number		Width Across Flat (mm)			Width Across Flat (mm)	Torque [N·m]				
S20-CH10-DRA	AJ-12X22	6	CP-CH10	HS8X8	4	12	BNP6	C09N	W6X18N	DTM-15
S32-CH12-DRA	AJ-16X30		CP-CH12			15				
S32-CH14-DRA	AJ-20X30	8	CP-CH14	HS10X10	5	20				
S32-CH16-DRA			CP-CH16	HS12X10	6	30				
S32-CH18-DRA	AJ-22x35	10	CP-CH18			30				
S32-CH20-DRA			CP-CH20	HS16X10	8	45				

1. Mount DRA drill into the chamfering attachment (Fig.1)

Fig.1 Install the DRA

2. Install an insert and tighten temporarily with clearance between the cutting edge and DRA body (Fig.2)

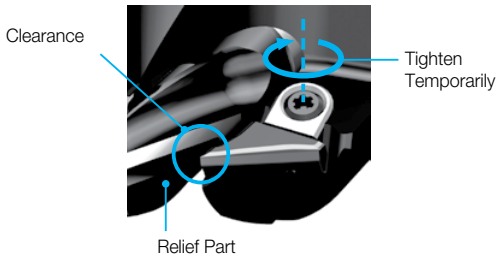


Fig.2 Install Inserts

3. Adjust drilling depth by turning adjustment screw with hexagon wrench (Fig.3)

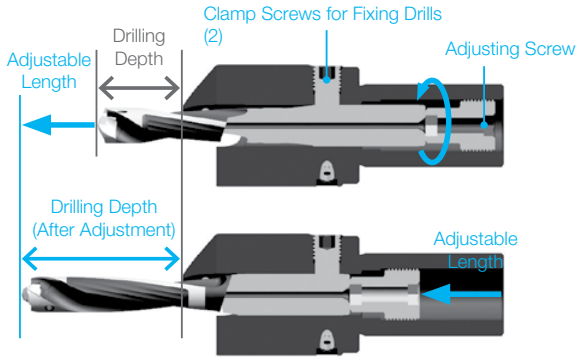


Fig.3 Adjustment of Drilling Depth

4. Align the flute edge and black relief part of the drill to the position shown by rotating the DRA drill (Fig.4)

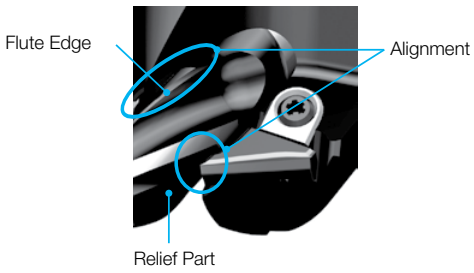


Fig.4 DRA Alignment

5. Fasten the two clamp screws for DRA (See table 1. for recommended torque)

Table1. Recommended Torque

Chamfering Attachment Part Number	Clamp Screw	
	Recommended Torque (N·m)	Width Across Flat (mm)
S20-CH10-DRA	12	4
S32-CH12-DRA	15	
S32-CH14-DRA	20	5
S32-CH16-DRA	30	6
S32-CH18-DRA	30	
S32-CH20-DRA	45	8

6. Tighten the inserts while lightly pressing the edge of insert against the relief part (Fig.5) (Recommended torque is 3.5Nm)

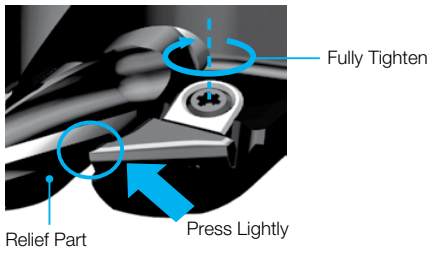


Fig.5 Fully Tighten

Cautions

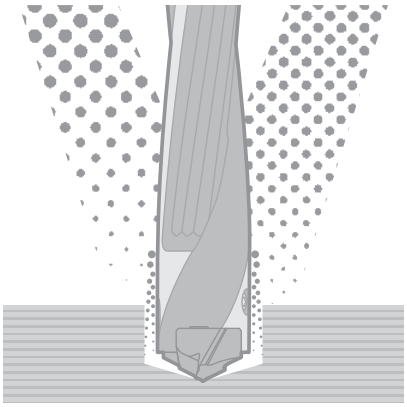
- Chamfering attachment is compatible with straight shank SS-DRA. It cannot be used for flanged shank SF-DRA.
- Chamfering requires two chamfering inserts. Using one insert is not recommended.
- Only fully remove clamp screws when replacing them.
- Clamps and clamp screws for mounting inserts need to be replaced regularly.
- Screw locking adhesive is applied to adjustment screw. The effect will eventually wear off if the screws are used for a long time. Regular replacement is recommended.
- Please do not operate the plug screws.

Coolant (Machining Dry is Not Recommended)

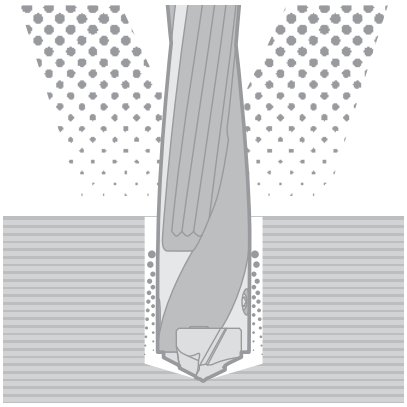
1st Recommendation

Internal + External Coolant

Drilling Depth is Less than 1D

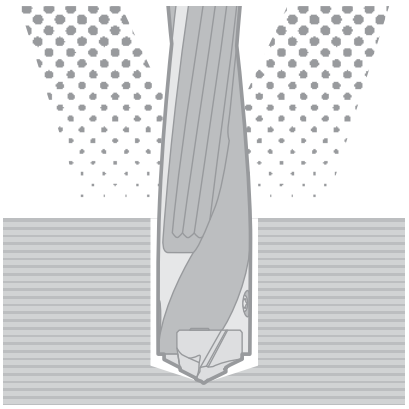


Stainless Steel or High-feed Machining



※ Dry cutting is not recommended.

External Coolant



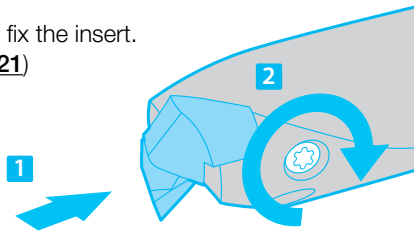
Lathe Application:
Max. Drill Depth 3D

Vertical M/C Application:
Max. Drill Depth 1.5D

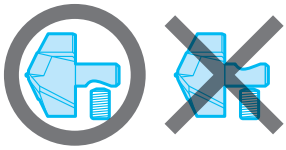
How to Attach Inserts

1 Install insert onto the toolholder in the right direction.

2 Tighten clamp screw to fix the insert. (Torque: see page K21)



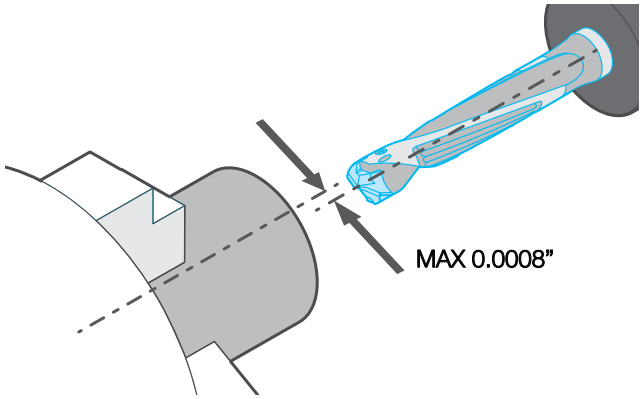
Be Careful of the Insert Direction



※1 Remove dust on insert pocket using air blow for every replacement.
※2 Make sure that the locating surfaces of the insert closely contacts the toolholder.

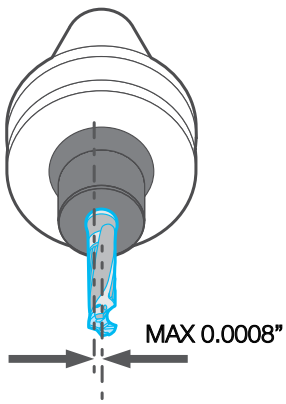
Core Deviation / Alignment Cautions

If Drill is Stationary



DRA works with both boring sleeve and collet-chuck. Center line deviation should be less than 0.0008" between workpiece and drill.

If Drill is Rotating



Do not use any arbor whose attachment surface is deformed. Center deviation must be less than 0.0008".

Machining Center Installation Cautions

How to Install DRA

1st Recommendation

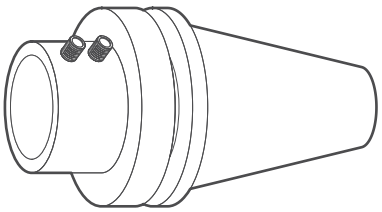
Hydro-chuck, Power-chuck, Collet-chuck

- Hydro-chuck
- Power-chuck
- Collet-chuck

Install DRA Into These Chucks

2nd Recommendation

Side-lock Arbor



Example of Side Lock Arbor

Other Cautions

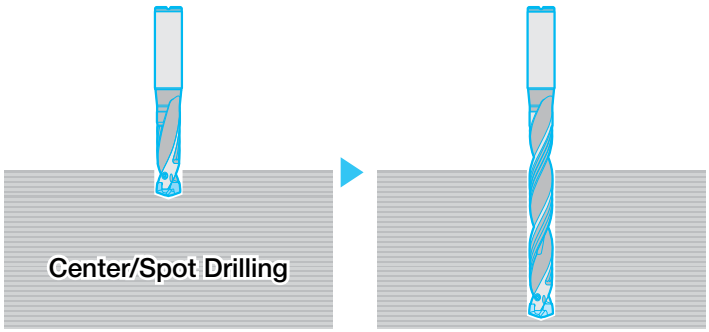
Cautions for Machining with 8D and 12D Holder

Recommended Machining

1. Make a center spot using DRA 1.5D/3D/5D
   (Center spot should be at least half of cutting diameter)
2. Then drill the hole using DRA (8D/12D type).

1 DRA1.5D/3D/5D

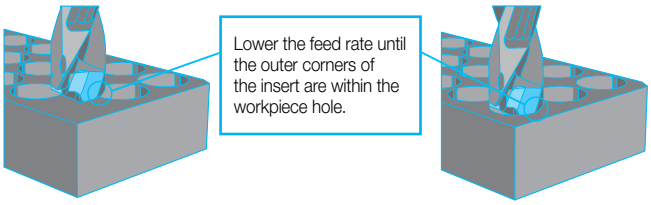
2 DRA 8D/12D



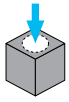
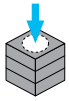
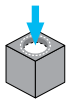
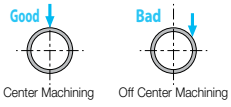
Using KM Inserts

When Drilling Cast Iron with KM Inserts

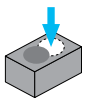
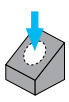
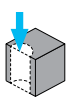
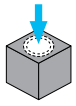
Reduce the feed to 0.006 ipr until the outer corners of the insert are within the workpiece hole



Applicable Workpieces for GM and KM Inserts

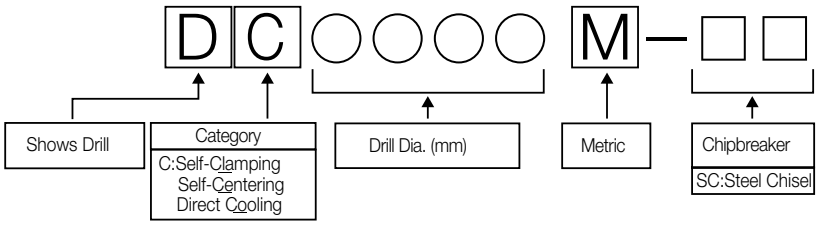
Application	Workpiece Shape	Machining Caution
Plain Surface		1. When machining stainless steel, for hole depths of up to 0.5D, keep feed rate at less than 0.006 ipr. 2. Thru coolant is recommended for smooth chip removal. For stainless steel, the combination of thru and external coolant is recommended.
Stacked Plates		1. Fix stacked plates securely to ensure they do not slip while machining.
Concave Surface		1. When machining concave holes, set the feed rate at less than half of recommended feed for continuous hole machining. 2. Utilize a pecking cycle if chips are not broken short at the inlet.
Tubing		1. Hole machining on the centerline of the tubing is possible. 2. Do not machine on curved surface areas. 

Not Recommended Workpieces for GM and KM Inserts

Application	Hole Expansion	Angled Surface	Half Cylindrical	Existing Hole
Workpiece Shape				

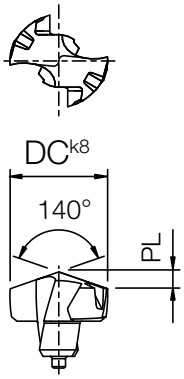
For FTP Insert Applicable Workpieces See Page K8

DC Insert Identification System



DC Inserts (Ø0.313"~0.488")

PR0315 is tough super micro grain carbide grade with TiAlN coating, with excellent wear resistance and fracture resistance. It maintains stable machining of carbon steel, alloy steel and cast iron.

Insert	Part Number	Dimensions DC in	Dimensions DC mm	Dimensions PL (in)	Grade PR0315	Applicable Toolholder See Page ➔ K27~K29, ➔ K32~K34
	DC 0794M-SC	0.313	7.94	0.054	●	SS10-DRC080M-○ SF12-DRC080M-○
	0800M-SC	0.315	8.00	0.054	●	
	0810M-SC	0.319	8.10	0.055	●	
	0820M-SC	0.323	8.20	0.056	●	
	0830M-SC	0.327	8.30	0.056	●	
	0840M-SC	0.331	8.40	0.057	●	
	DC 0850M-SC	0.335	8.50	0.058	●	SS10-DRC085M-○ SF12-DRC085M-○
	0860M-SC	0.339	8.60	0.058	●	
	0870M-SC	0.343	8.70	0.059	●	
	0880M-SC	0.346	8.80	0.060	●	
	0890M-SC	0.350	8.90	0.061	●	
	DC 0900M-SC	0.354	9.00	0.061	●	SS10-DRC090M-○ SF12-DRC090M-○
	0910M-SC	0.358	9.10	0.062	●	
	0920M-SC	0.362	9.20	0.063	●	
	0930M-SC	0.366	9.30	0.063	●	
	0940M-SC	0.370	9.40	0.064	●	
	DC 0950M-SC	0.374	9.50	0.065	●	SS10-DRC095M-○ SF12-DRC095M-○
	0960M-SC	0.378	9.60	0.065	●	
	0970M-SC	0.382	9.70	0.066	●	
	0980M-SC	0.386	9.80	0.067	●	
	0990M-SC	0.390	9.90	0.067	●	
	DC 1000M-SC	0.394	10.00	0.068	●	SS12-DRC100M-○ SF16-DRC100M-○
	1010M-SC	0.398	10.10	0.069	●	
	1020M-SC	0.402	10.20	0.069	●	
	1030M-SC	0.406	10.30	0.070	●	
	1040M-SC	0.409	10.40	0.071	●	
	DC 1050M-SC	0.413	10.50	0.071	●	SS12-DRC105M-○ SF16-DRC105M-○
	1060M-SC	0.417	10.60	0.072	●	
	1070M-SC	0.421	10.70	0.073	●	
	1080M-SC	0.425	10.80	0.073	●	
	1090M-SC	0.429	10.90	0.074	●	
	DC 1100M-SC	0.433	11.00	0.075	●	SS12-DRC110M-○ SF16-DRC110M-○
	1110M-SC	0.437	11.10	0.075	●	
	1120M-SC	0.441	11.20	0.076	●	
	1130M-SC	0.445	11.30	0.077	●	
	1140M-SC	0.449	11.40	0.078	●	
	DC 1150M-SC	0.453	11.50	0.078	●	SS12-DRC115M-○ SF16-DRC115M-○
	1160M-SC	0.457	11.60	0.079	●	
	1170M-SC	0.461	11.70	0.080	●	
	1180M-SC	0.465	11.80	0.080	●	
	1190M-SC	0.469	11.90	0.081	●	
	DC 1200M-SC	0.472	12.00	0.081	●	SS14-DRC120M-○ SF16-DRC120M-○
	1210M-SC	0.476	12.10	0.082	●	
	1220M-SC	0.480	12.20	0.083	●	
	1230M-SC	0.484	12.30	0.083	●	
	1240M-SC	0.488	12.40	0.084	●	

k8 Tolerance

DC (in)	k8 (in)	DC (mm)	k8 (mm)
0.313~ 0.394	+0.0009 0	7.94~ 10.00	+0.022 0
0.398~ 0.709	+0.0011 0	10.10~ 18.00	+0.027 0
0.713~ 1.023	+0.0013 0	18.10~ 25.99	+0.033 0

k8 is the dimension tolerance of the insert. It is not the tolerance of the cutting diameter.

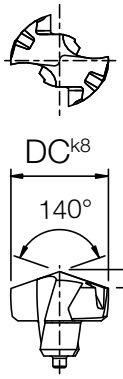
Recommended Cutting Conditions ➔ **K36**

Inserts are sold in 1 piece boxes

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DC Inserts (Ø0.492"~0.744")



k8 Tolerance

DC (in)	k8 (in)	DC (mm)	k8 (mm)
0.313~ 0.394	+0.0009 0	7.94~ 10.00	+0.022 0
0.398~ 0.709	+0.0011 0	10.10~ 18.00	+0.027 0
0.713~ 1.023	+0.0013 0	18.10~ 25.99	+0.033 0

k8 is the dimension tolerance of the insert.
It is not the tolerance of the cutting diameter.

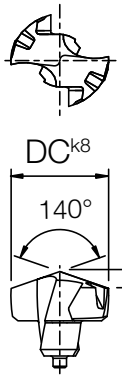
Insert	Part Number	Dimensions DC in	Dimensions DC mm	Dimensions PL (in)	Grade PR0315	Applicable Toolholder See Page ➡ K27~K29, ➡ K32~K34
	DC 1250M-SC	0.492	12.50	0.085	●	SS14-DRC125M-○ SF16-DRC125M-○
	1260M-SC	0.496	12.60	0.085	●	
	1270M-SC	0.500	12.70	0.086	●	
	1280M-SC	0.504	12.80	0.087	●	
	1290M-SC	0.508	12.90	0.088	●	
	DC 1300M-SC	0.512	13.00	0.088	●	SS14-DRC130M-○ SF16-DRC130M-○
	1310M-SC	0.516	13.10	0.089	●	
	1320M-SC	0.520	13.20	0.090	●	
	1330M-SC	0.524	13.30	0.091	●	
	1340M-SC	0.528	13.40	0.091	●	
	DC 1350M-SC	0.531	13.50	0.092	●	SS14-DRC135M-○ SF16-DRC135M-○
	1360M-SC	0.535	13.60	0.093	●	
	1370M-SC	0.539	13.70	0.093	●	
	1380M-SC	0.543	13.80	0.094	●	
	1390M-SC	0.547	13.90	0.094	●	
	DC 1400M-SC	0.551	14.00	0.095	●	SS16-DRC140M-○ SF16-DRC140M-○
	1410M-SC	0.555	14.10	0.096	●	
	1420M-SC	0.559	14.20	0.096	●	
	1430M-SC	0.563	14.30	0.097	●	
	1440M-SC	0.567	14.40	0.098	●	
	DC 1450M-SC	0.571	14.50	0.098	●	SS16-DRC145M-○ SF16-DRC145M-○
	1460M-SC	0.575	14.60	0.099	●	
	1470M-SC	0.579	14.70	0.100	●	
	1480M-SC	0.583	14.80	0.100	●	
	1490M-SC	0.587	14.90	0.101	●	
	DC 1500M-SC	0.591	15.00	0.102	●	SS16-DRC150M-○ SF20-DRC150M-○
	1510M-SC	0.594	15.10	0.102	●	
	1520M-SC	0.598	15.20	0.103	●	
	1530M-SC	0.602	15.30	0.104	●	
	1540M-SC	0.606	15.40	0.105	●	
	1550M-SC	0.610	15.50	0.106	●	
	1560M-SC	0.614	15.60	0.106	●	
	1570M-SC	0.618	15.70	0.107	●	
	1580M-SC	0.622	15.80	0.107	●	
	DC 1600M-SC	0.630	16.00	0.109	●	SS18-DRC160M-○ SF20-DRC160M-○
	1610M-SC	0.634	16.10	0.109	●	
	1620M-SC	0.638	16.20	0.110	●	
	1630M-SC	0.642	16.30	0.111	●	
	1640M-SC	0.646	16.40	0.111	●	
	1650M-SC	0.650	16.50	0.112	●	
	1660M-SC	0.654	16.60	0.113	●	
	1670M-SC	0.657	16.70	0.114	●	
	1680M-SC	0.661	16.80	0.114	●	
	1690M-SC	0.665	16.90	0.115	●	
	DC 1700M-SC	0.669	17.00	0.115	●	SS18-DRC170M-○ SF20-DRC170M-○
	1710M-SC	0.673	17.10	0.116	●	
	1720M-SC	0.677	17.20	0.117	●	
	1730M-SC	0.681	17.30	0.118	●	
	1740M-SC	0.685	17.40	0.118	●	
	1750M-SC	0.689	17.50	0.119	●	
	1760M-SC	0.693	17.60	0.120	●	
	1770M-SC	0.697	17.70	0.120	●	
	1780M-SC	0.701	17.80	0.121	●	
	1790M-SC	0.705	17.90	0.122	●	
	DC 1800M-SC	0.709	18.00	0.122	●	SS20-DRC180M-○ SF25-DRC180M-○
	1810M-SC	0.713	18.10	0.123	●	
	1820M-SC	0.717	18.20	0.124	●	
	1830M-SC	0.720	18.30	0.124	●	
	1840M-SC	0.724	18.40	0.125	●	
	1850M-SC	0.728	18.50	0.126	●	
	1860M-SC	0.732	18.60	0.126	●	
	1870M-SC	0.736	18.70	0.127	●	
	1880M-SC	0.740	18.80	0.128	●	
	1890M-SC	0.744	18.90	0.129	●	

Recommended Cutting Conditions ➡ K36

Inserts are sold in 1 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DC Inserts (Ø0.748"~1.023")

Insert	Part Number	Dimensions DC in	Dimensions DC mm	Dimensions PL (in)	Grade PR0315	Applicable Toolholder See Page K27~K29, K32~K34
	DC 1900M-SC	0.748	19.00	0.129	●	SS20-DRC190M-○ SF25-DRC190M-○
	1910M-SC	0.752	19.10	0.130	●	
	1920M-SC	0.756	19.20	0.130	●	
	1930M-SC	0.760	19.30	0.131	●	
	1940M-SC	0.764	19.40	0.132	●	
	1950M-SC	0.768	19.50	0.133	●	
	1960M-SC	0.772	19.60	0.133	●	
	1970M-SC	0.776	19.70	0.134	●	
	1980M-SC	0.780	19.80	0.135	●	
	1990M-SC	0.783	19.90	0.135	●	
	DC 2000M-SC	0.787	20.00	0.136	●	SS25-DRC200M-○ SF25-DRC200M-○
	2010M-SC	0.791	20.10	0.137	●	
	2020M-SC	0.795	20.20	0.137	●	
	2030M-SC	0.799	20.30	0.138	●	
	2040M-SC	0.803	20.40	0.139	●	
	2050M-SC	0.807	20.50	0.139	●	
	2060M-SC	0.811	20.60	0.140	●	
	2070M-SC	0.815	20.70	0.141	●	
	2080M-SC	0.819	20.80	0.141	●	
	2090M-SC	0.823	20.90	0.142	●	
	2099M-SC	0.826	20.99	0.143	●	
	DC 2100M-SC	0.827	21.00	0.143	●	SS25-DRC210M-○ SF25-DRC210M-○
	2150M-SC	0.846	21.50	0.146	●	
	2200M-SC	0.866	22.00	0.149	●	SS25-DRC220M-○ SF25-DRC220M-○
	2250M-SC	0.886	22.50	0.153	●	
	2300M-SC	0.906	23.00	0.156	●	SS25-DRC230M-○ SF25-DRC230M-○
	2350M-SC	0.925	23.50	0.160	●	
	2400M-SC	0.945	24.00	0.163	●	SS25-DRC240M-○ SF25-DRC240M-○
	2450M-SC	0.965	24.50	0.167	●	
	2500M-SC	0.984	25.00	0.170	●	SS32-DR250M-○ SF25-DRC250M-○
	2550M-SC	1.004	25.50	0.173	●	

k8 Tolerance

DC (in)	k8 (in)	DC (mm)	k8 (mm)
0.313~0.394	+0.0009 0	7.94~10.00	+0.022 0
0.398~0.709	+0.0011 0	10.10~18.00	+0.027 0
0.713~1.023	+0.0013 0	18.10~25.99	+0.033 0

k8 is the dimension tolerance of the insert.
It is not the tolerance of the cutting diameter.

Recommended Cutting Conditions ➡ K36

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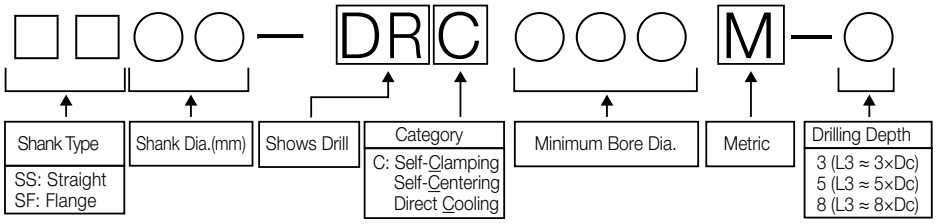
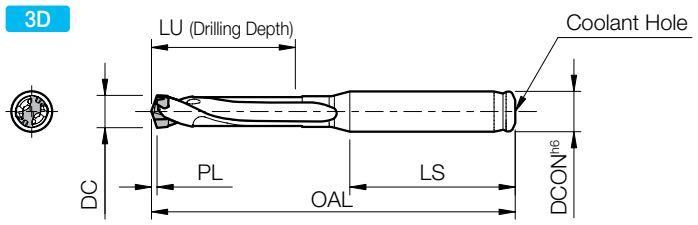
DRC Toolholder Identification System



SS-DRC (Drilling Depth: 3xDC)

Straight Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 3DC (Metric Size)

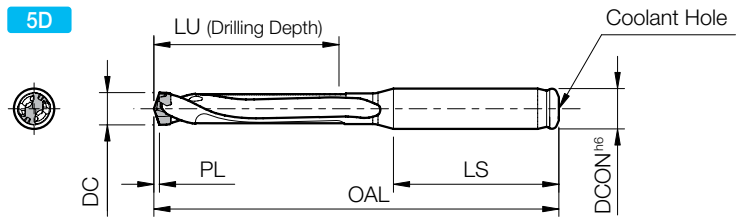
Part Number		Stock	Dimensions (mm)						Spare Parts	Applicable Insert See Page ➡ K24~K26	Applicable Chamfering Attachment and Insert	
			DC		DCON (h6)	OAL	LU	LS	Wrench ➡ K35		Chamfer Attachment ➡ K30	Chamfer Insert ➡ K31
			min.	max.								
SS10-	DRC080M-3	●	7.94	8.49	10	79	25.5	40	WDRC8 (WDRC17)	DC0794M-SC ~ DC0840M-SC	S20-CH10	CT08T2-45A
	DRC085M-3	●	8.50	8.99		81	27.0			DC0850M-SC ~ DC0890M-SC		
	DRC090M-3	●	9.00	9.49		83	28.5			DC0900M-SC ~ DC0940M-SC		
	DRC095M-3	●	9.50	9.99		85	30.0			DC0950M-SC ~ DC0990M-SC		
SS12-	DRC100M-3	●	10.00	10.49	12	92	31.5	45	WDRC10 (WDRC17)	DC1000M-SC ~ DC1040M-SC	S32-CH12	CT12T3-45A
	DRC105M-3	●	10.50	10.99		94	33.0			DC1050M-SC ~ DC1090M-SC		
	DRC110M-3	●	11.00	11.49		96	34.5			DC1100M-SC ~ DC1140M-SC		
	DRC115M-3	●	11.50	11.99		98	36.0			DC1150M-SC ~ DC1190M-SC		
SS14-	DRC120M-3	●	12.00	12.49	14	101	37.5		WDRC12 (WDRC17)	DC1200M-SC ~ DC1240M-SC	S32-CH14	
	DRC125M-3	●	12.50	12.99		103	39.0			DC1250M-SC ~ DC1290M-SC		
	DRC130M-3	●	13.00	13.49		105	40.5			DC1300M-SC ~ DC1340M-SC		
	DRC135M-3	●	13.50	13.99		107	42.0			DC1350M-SC ~ DC1390M-SC		
SS16-	DRC140M-3	●	14.00	14.49	16	112	43.5	48	WDRC14 (WDRC17)	DC1400M-SC ~ DC1440M-SC	S32-CH16	
	DRC145M-3	●	14.50	14.99		114	45.0			DC1450M-SC ~ DC1490M-SC		
	DRC150M-3	●	15.00	15.99		118	48.0			DC1500M-SC ~ DC1580M-SC		
SS18-	DRC160M-3	●	16.00	16.99	18	122	51.0			DC1600M-SC ~ DC1690M-SC	S32-CH18	
	DRC170M-3	●	17.00	17.99		127	54.0		WDRC17	DC1700M-SC ~ DC1790M-SC		
SS20-	DRC180M-3	●	18.00	18.99	20	133	57.0	50		DC1800M-SC ~ DC1890M-SC	-	-
	DRC190M-3	●	19.00	19.99		137	60.0			DC1900M-SC ~ DC1990M-SC		
SS25-	DRC200M-3	●	20.00	20.99	25	147	63.0	56		DC2000M-SC ~ DC2099M-SC		
	DRC210M-3	●	21.00	21.99		151	66.0			DC2100M-SC ~ DC2150M-SC		
	DRC220M-3	●	22.00	22.99		156	69.0			DC2200M-SC ~ DC2250M-SC		
	DRC230M-3	●	23.00	23.99		160	72.0			DC2300M-SC ~ DC2350M-SC		
	DRC240M-3	●	24.00	24.99		164	75.0			DC2400M-SC ~ DC2450M-SC		
SS32-	DRC250M-3	●	25.00	25.50	32	172	78.0	60		DC2500M-SC ~ DC2550M-SC		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page ➡ K24~K26 for actual cutting diameters (DC).

Recommended Cutting Conditions ➡ K36

SS-DRC (Drilling Depth: 5xDC)

Straight Shank



For Lp dimension, reference insert dimension table.

Toolholder Dimensions - 5DC (Metric Size)

Part Number		Stock	Dimensions (mm)						Spare Parts	Applicable Insert See Page ➡ K24~K26	Applicable Chamfering Attachment and Insert	
			DC min.	DC max.	DCON (h6)	OAL	LU	LS	Wrench ➡ K35		Chamfer Attachment ➡ K30	Chamfer Insert ➡ K31
SS10-	DRC080M-5	●	7.94	8.49	10	97	42.5	40	WDRC8 (WDRC17)	DC0794M-SC ~ DC0840M-SC	S20-CH10	CT08T2-45A
	DRC085M-5	●	8.50	8.99		100	45.0			DC0850M-SC ~ DC0890M-SC		
	DRC090M-5	●	9.00	9.49		103	47.5			DC0900M-SC ~ DC0940M-SC		
	DRC095M-5	●	9.50	9.99		107	50.0			DC0950M-SC ~ DC0990M-SC		
SS12-	DRC100M-5	●	10.00	10.49	12	115	52.5	45	WDRC10 (WDRC17)	DC1000M-SC ~ DC1040M-SC	S32-CH12	CT12T3-45A
	DRC105M-5	●	10.50	10.99		118	55.0			DC1050M-SC ~ DC1090M-SC		
	DRC110M-5	●	11.00	11.49		121	57.5			DC1100M-SC ~ DC1140M-SC		
	DRC115M-5	●	11.50	11.99		124	60.0			DC1150M-SC ~ DC1190M-SC		
SS14-	DRC120M-5	●	12.00	12.49	14	127	62.5		WDRC12 (WDRC17)	DC1200M-SC ~ DC1240M-SC	S32-CH14	
	DRC125M-5	●	12.50	12.99		130	65.0			DC1250M-SC ~ DC1290M-SC		
	DRC130M-5	●	13.00	13.49		133	67.5			DC1300M-SC ~ DC1340M-SC		
	DRC135M-5	●	13.50	13.99		137	70.0			DC1350M-SC ~ DC1390M-SC		
SS16-	DRC140M-5	●	14.00	14.49	16	143	72.5	48	WDRC14 (WDRC17)	DC1400M-SC ~ DC1440M-SC	S32-CH16	
	DRC145M-5	●	14.50	14.99		146	75.0			DC1450M-SC ~ DC1490M-SC		
	DRC150M-5	●	15.00	15.99		152	80.0			DC1500M-SC ~ DC1580M-SC		
SS18-	DRC160M-5	●	16.00	16.99	18	158	85.0			DC1600M-SC ~ DC1690M-SC	S32-CH18	
	DRC170M-5	●	17.00	17.99		165	90.0		WDRC17	DC1700M-SC ~ DC1790M-SC		
SS20-	DRC180M-5	●	18.00	18.99	20	173	95.0	50		DC1800M-SC ~ DC1890M-SC	-	-
	DRC190M-5	●	19.00	19.99		179	100.0			DC1900M-SC ~ DC1990M-SC		
SS25-	DRC200M-5	●	20.00	20.99	25	191	105.0	56		DC2000M-SC ~ DC2099M-SC		
	DRC210M-5	●	21.00	21.99		198	110.0			DC2100M-SC ~ DC2150M-SC		
	DRC220M-5	●	22.00	22.99		204	115.0			DC2200M-SC ~ DC2250M-SC		
	DRC230M-5	●	23.00	23.99		210	120.0			DC2300M-SC ~ DC2350M-SC		
	DRC240M-5	●	24.00	24.99		216	125.0			DC2400M-SC ~ DC2450M-SC		
SS32-	DRC250M-5	●	25.00	25.50	32	227	130.0	60		DC2500M-SC ~ DC2550M-SC		

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page ➡ K24~K26 for actual cutting diameters (DC).

Recommended Cutting Conditions ➡ K36

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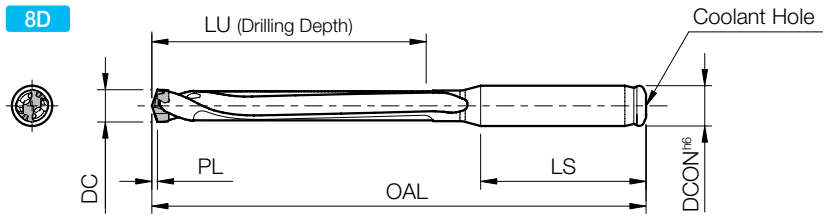
SS-DRC (Drilling Depth: 8xDC)

Straight Shank



For Lp dimension, reference insert dimension table.

Toolholder Dimensions - 8DC (Metric Size)

Part Number		Stock	Dimensions (mm)						Spare Parts	Applicable Insert See Page ➡ K24~K26	Applicable Chamfering Attachment and Insert	
			DC		DCON (h6)	OAL	LU	LS	Wrench ➡ K35		Chamfer Attachment ➡ K30	Chamfer Insert ➡ K31
			min.	max.								
SS10-	DRC080M-8	●	7.94	8.49	10	122.5	68	40	WDRC8 (WDRC17)	DC0794M-SC ~ DC0840M-SC	S20-CH10	CT08T2-45A
	DRC085M-8	●	8.50	8.99		127.0	72			DC0850M-SC ~ DC0890M-SC		
	DRC090M-8	●	9.00	9.49		131.5	76			DC0900M-SC ~ DC0940M-SC		
	DRC095M-8	●	9.50	9.99		137.0	80			DC0950M-SC ~ DC0990M-SC		
SS12-	DRC100M-8	●	10.00	10.49	12	146.5	84	45	WDRC10 (WDRC17)	DC1000M-SC ~ DC1040M-SC	S32-CH12	CT12T3-45A
	DRC105M-8	●	10.50	10.99		151.0	88			DC1050M-SC ~ DC1090M-SC		
	DRC110M-8	●	11.00	11.49		155.5	92			DC1100M-SC ~ DC1140M-SC		
	DRC115M-8	●	11.50	11.99		160.0	96			DC1150M-SC ~ DC1190M-SC		
SS14-	DRC120M-8	●	12.00	12.49	14	164.5	100		WDRC12 (WDRC17)	DC1200M-SC ~ DC1240M-SC	S32-CH14	
	DRC125M-8	●	12.50	12.99		169.0	104			DC1250M-SC ~ DC1290M-SC		
	DRC130M-8	●	13.00	13.49		173.5	108			DC1300M-SC ~ DC1340M-SC		
	DRC135M-8	●	13.50	13.99		179.0	112			DC1350M-SC ~ DC1390M-SC		
SS16-	DRC140M-8	●	14.00	14.49	16	186.5	116	48	WDRC14 (WDRC17)	DC1400M-SC ~ DC1440M-SC	S32-CH16	
	DRC145M-8	●	14.50	14.99		191.0	120			DC1450M-SC ~ DC1490M-SC		
	DRC150M-8	●	15.00	15.99		200.0	128			DC1500M-SC ~ DC1580M-SC		
SS18-	DRC160M-8	●	16.00	16.99	18	209.0	136			DC1600M-SC ~ DC1690M-SC	S32-CH18	
	DRC170M-8	●	17.00	17.99		219.0	144		WDRC17	DC1700M-SC ~ DC1790M-SC		
SS20-	DRC180M-8	●	18.00	18.99	20	230.0	152	50		DC1800M-SC ~ DC1890M-SC	-	-
	DRC190M-8	●	19.00	19.99		239.0	160			DC1900M-SC ~ DC1990M-SC		
SS25-	DRC200M-8	●	20.00	20.99	25	254.0	168	56		DC2000M-SC ~ DC2099M-SC		
	DRC210M-8	●	21.00	21.99		264.0	176			DC2100M-SC ~ DC2150M-SC		
	DRC220M-8	●	22.00	22.99		273.0	184			DC2200M-SC ~ DC2250M-SC		
	DRC230M-8	●	23.00	23.99		282.0	192			DC2300M-SC ~ DC2350M-SC		
	DRC240M-8	●	24.00	24.99		291.0	200			DC2400M-SC ~ DC2450M-SC		
SS32-	DRC250M-8	●	25.00	25.50	32	305.0	208	60		DC2500M-SC ~ DC2550M-SC		

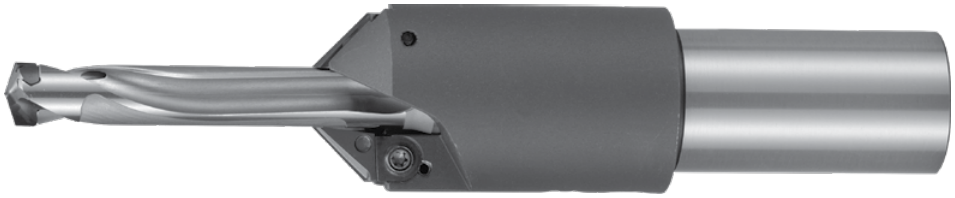
*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page ➡ K24~K26 for actual cutting diameters (DC).

Recommended Cutting Conditions ➡ K36

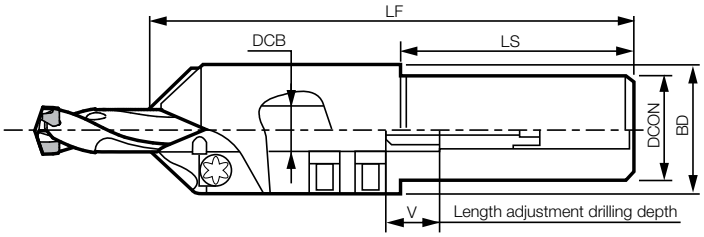
Chamfering Attachment

● Drilling and Chamfering Simultaneously

By using the chamfering attachment, the SS-DRC can perform drilling and chamfering in one set up.



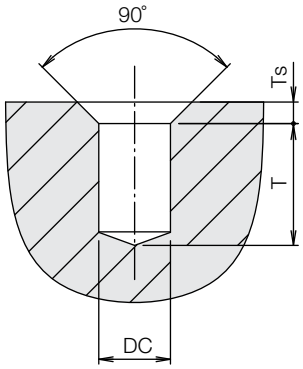
● Toolholder



Part Number	Stock	Applicable Drill Shank Dia. DCB	Dimensions (mm)					Applicable Chamfer Insert
			DCON	BD	LF	LS	V	
S20-CH10	●	10	20	29	122	52	17	**CT08T2-45A**
S32-CH12	□	12	32	38	133	62	21	**CT12T3-45A**
S32-CH14	□	14		40	137		16	
S32-CH16	●	16		42	141		19	
S32-CH18	□	18		47	144		15	

Note) Chamfering attachment is dedicated for Straight Shank SS-DRC type.
It cannot be used for Flanged Shank SF-DRC types.

● Drilling and Chamfering Depths



Cutting Dia. (in)		Drilling Depth (in)						Chamfering Dimension (in)		Applicable Chamfering Attachment
DC		T (3D)		T (5D)		T (8D)		Ts		
min.	max.	min.	max.	min.	max.	min.	max.	Ts 100	Ts max.	
Ø0.313	Ø0.334	0.433	0.748	0.827	1.457	1.850	2.480	0.0984	0.1969	**S20-CH10**
Ø0.335	Ø0.354	0.472	0.827	0.945	1.575	2.008	2.638			
Ø0.354	Ø0.374	0.472	0.906	1.063	1.693	2.205	2.835			
Ø0.374	Ø0.393	0.512	0.984	1.220	1.850	2.402	3.031			
Ø0.394	Ø0.413	0.512	1.024	1.102	1.929	2.362	3.189	0.1378	0.2756	**S32-CH12**
Ø0.413	Ø0.433	0.551	1.102	1.220	2.047	2.520	3.346			
Ø0.433	Ø0.452	0.551	1.181	1.339	2.165	2.717	3.543			
Ø0.453	Ø0.472	0.591	1.260	1.457	2.283	2.874	3.701			
Ø0.472	Ø0.492	0.591	1.181	1.614	2.205	3.110	3.701	0.1575	0.3150	**S32-CH14**
Ø0.492	Ø0.511	0.669	1.260	1.732	2.323	3.268	3.780			
Ø0.512	Ø0.531	0.748	1.339	1.850	2.441	3.465	4.055			
Ø0.531	Ø0.551	0.827	1.417	2.008	2.598	3.661	4.252			
Ø0.551	Ø0.570	0.748	1.457	1.969	2.677	3.701	4.409	0.1575	0.3150	**S32-CH16**
Ø0.571	Ø0.590	0.827	1.535	2.087	2.795	3.858	4.567			
Ø0.591	Ø0.630	0.984	1.693	2.323	3.031	4.213	4.921			
Ø0.630	Ø0.669	1.181	1.732	2.598	3.150	4.606	5.157	0.1575	0.3150	**S32-CH18**
Ø0.669	Ø0.708	1.378	1.929	2.874	3.425	5.000	5.551			

Ts 100: Max. chamfering dimension at the full feed.
Ts max.: Max. chamfering dimension at a 50% feed reduction.
(Max. chamfering dimension of machining possible without step feeding)

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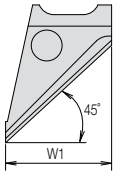
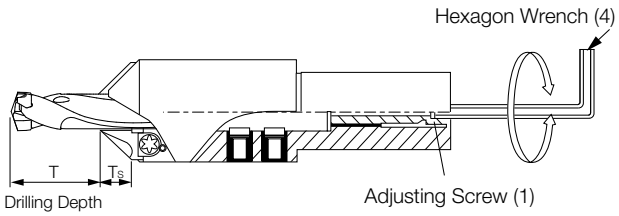
Applicable Inserts

Insert	Part Number	Dimensions (mm)		PVD Coated Carbide	Applicable Chamfering Attachment
		W1	S	PR0315	
	**CT08T2-45A**	8	2.83	●	**S20-CH10**
	CT12T3-45A	12	3.98	●	**S32-CH12 ~ S32-CH18**

● Method to use DRC chamfering attachment

1. Drilling Depth Adjustment

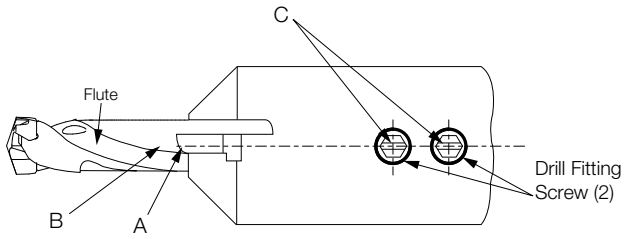


Insert drill into chamfering attachment.

Next, temporarily attach the chamfering insert A.

Turn the adjusting screw (1) with the hexagon wrench (4) to set the drilling depth T.

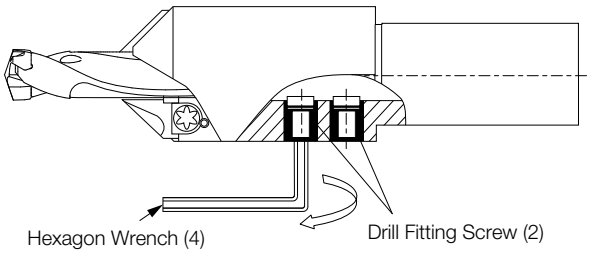
2. Drill Location Check



Rotate the drill so that the lower end of the chamfering insert A is aligned with the body clearance B of the drill.

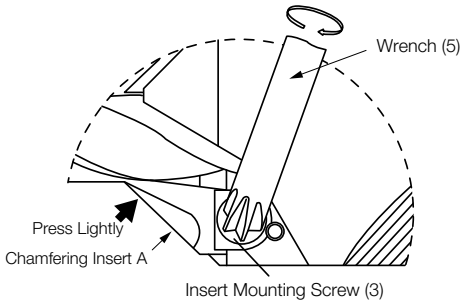
Set it so that slot C and the drill fitting screws (2) are lined up as shown in the figure above.

3. Fix the Drill



Tighten the drill fitting screws (2) with the hexagon wrench (4).
(In the case of using a torque wrench, then please refer to the table below.)

4. Installation of the Chamfering Insert



Press the chamfering insert A lightly into the drill and tighten the insert mounting screw (3) with wrench (5).

Chamfering Attachment	Torque [Nm]	Adjusting Screw	Drill Fitting Screw	Insert Mounting Screw	Hexagon Wrench	Wrench
S20-CH10	10	AJ-6X38	FS-10	MT-3	LW-3	DT-9
S32-CH12	15	AJ-8X44-9.5	FS-12	MT-4		DT-15
S32-CH14	20	AJ-10X46	FS-14		LW-4	
S32-CH16	30		FS-16			
S32-CH18	45		FS-18		LW-5	

Inserts are sold in 10 piece boxes

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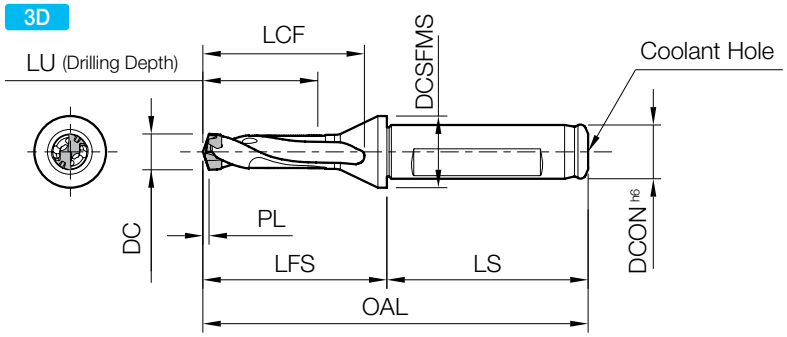
SF-DRC (Drilling Depth: 3xD)

Flange Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 3DC (Metric Size)

Part Number		Stock	Dimensions (mm)								Spare Parts	Applicable Insert See Page K24~K26
			DC min.	DC max.	DCON (h6)	OAL	LFS	LCF	LU	LS	DCSFMS	Wrench K35	
SF12-	DRC080M-3	●	7.94	8.49	12	86	41	35	26	45	16	WDRC8 (WDRC17)	DC0794M-SC ~ DC0840M-SC
	DRC085M-3	●	8.50	8.99		88	43	37	27				DC0850M-SC ~ DC0890M-SC
	DRC090M-3	●	9.00	9.49		90	45	39	29				DC0900M-SC ~ DC0940M-SC
	DRC095M-3	●	9.50	9.99		92	47	41	30				DC0950M-SC ~ DC0990M-SC
SF16-	DRC100M-3	●	10.00	10.49	16	97	49	43	32	48	20	WDRC10 (WDRC17)	DC1000M-SC ~ DC1040M-SC
	DRC105M-3	●	10.50	10.99		99	51	45	33				DC1050M-SC ~ DC1090M-SC
	DRC110M-3	●	11.00	11.49		101	53	47	35				DC1100M-SC ~ DC1140M-SC
	DRC115M-3	●	11.50	11.99		103	55	49	36				DC1150M-SC ~ DC1190M-SC
	DRC120M-3	●	12.00	12.49		106	58	52	38			WDRC12 (WDRC17)	DC1200M-SC ~ DC1240M-SC
	DRC125M-3	●	12.50	12.99		108	60	54	39				DC1250M-SC ~ DC1290M-SC
	DRC130M-3	●	13.00	13.49		110	62	56	41				DC1300M-SC ~ DC1340M-SC
	DRC135M-3	●	13.50	13.99		112	64	58	42				DC1350M-SC ~ DC1390M-SC
	DRC140M-3	●	14.00	14.49		114	66	60	44			WDRC14 (WDRC17)	DC1400M-SC ~ DC1440M-SC
	DRC145M-3	●	14.50	14.99		116	68	62	45				DC1450M-SC ~ DC1490M-SC
SF20-	DRC150M-3	●	15.00	15.99	20	122	72	66	48	50	25		DC1500M-SC ~ DC1580M-SC
	DRC160M-3	●	16.00	16.99		126	76	70	51				DC1600M-SC ~ DC1690M-SC
	DRC170M-3	●	17.00	17.99		131	81	75	54			WDRC17	DC1700M-SC ~ DC1790M-SC
SF25-	DRC180M-3	●	18.00	18.99	25	141	85	79	57	56	32		DC1800M-SC ~ DC1890M-SC
	DRC190M-3	●	19.00	19.99		145	89	83	60				DC1900M-SC ~ DC1990M-SC
	DRC200M-3	●	20.00	20.99		149	93	87	63				DC2000M-SC ~ DC2099M-SC
	DRC210M-3	●	21.00	21.99		153	97	91	66				DC2100M-SC ~ DC2150M-SC
	DRC220M-3	●	22.00	22.99		158	102	96	69				DC2200M-SC ~ DC2250M-SC
	DRC230M-3	●	23.00	23.99		162	106	100	72				DC2300M-SC ~ DC2350M-SC
	DRC240M-3	●	24.00	24.99		166	110	104	75				DC2400M-SC ~ DC2450M-SC
	DRC250M-3	●	25.00	25.50		170	114	108	78				DC2500M-SC ~ DC2550M-SC

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K24~K26 for actual cutting diameters (DC).

Recommended Cutting Conditions K36

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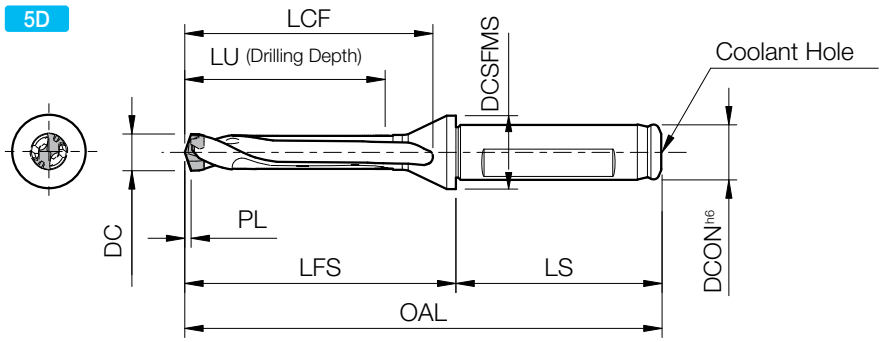
SF-DRC (Drilling Depth: 5xDC)

Flange Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 5DC (Metric Size)

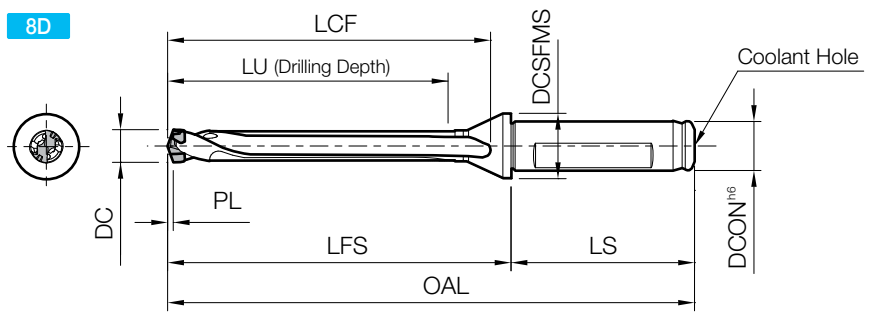
Part Number		Stock	Dimensions (mm)								Spare Parts	Applicable Insert See Page ➡ K24~K26
			DC		DCON (h6)	OAL	LFS	LCF	LU	LS	DCSFMS	Wrench ➡ K35	
			min.	max.									
SF12-	DRC080M-5	●	7.94	8.49	12	104	59	53	43	45	16	WDRC8 (WDRC17)	DC0794M-SC ~ DC0840M-SC
	DRC085M-5	●	8.50	8.99		107	62	56	45				DC0850M-SC ~ DC0890M-SC
	DRC090M-5	●	9.00	9.49		110	65	59	48				DC0900M-SC ~ DC0940M-SC
	DRC095M-5	●	9.50	9.99		114	69	63	50				DC0950M-SC ~ DC0990M-SC
SF16-	DRC100M-5	●	10.00	10.49	16	120	72	66	53	48	20	WDRC10 (WDRC17)	DC1000M-SC ~ DC1040M-SC
	DRC105M-5	●	10.50	10.99		123	75	69	55				DC1050M-SC ~ DC1090M-SC
	DRC110M-5	●	11.00	11.49		126	78	72	58				DC1100M-SC ~ DC1140M-SC
	DRC115M-5	●	11.50	11.99		129	81	75	60				DC1150M-SC ~ DC1190M-SC
	DRC120M-5	●	12.00	12.49		132	84	78	63			WDRC12 (WDRC17)	DC1200M-SC ~ DC1240M-SC
	DRC125M-5	●	12.50	12.99		135	87	81	65				DC1250M-SC ~ DC1290M-SC
	DRC130M-5	●	13.00	13.49		138	90	84	68				DC1300M-SC ~ DC1340M-SC
	DRC135M-5	●	13.50	13.99		142	94	88	70				DC1350M-SC ~ DC1390M-SC
	DRC140M-5	●	14.00	14.49		145	97	91	73			WDRC14 (WDRC17)	DC1400M-SC ~ DC1440M-SC
	DRC145M-5	●	14.50	14.99		148	100	94	75				DC1450M-SC ~ DC1490M-SC
SF20-	DRC150M-5	●	15.00	15.99	20	156	106	100	80	50	25		DC1500M-SC ~ DC1580M-SC
	DRC160M-5	●	16.00	16.99		162	112	106	85				DC1600M-SC ~ DC1690M-SC
	DRC170M-5	●	17.00	17.99		169	119	113	90				DC1700M-SC ~ DC1790M-SC
SF25-	DRC180M-5	●	18.00	18.99	25	181	125	119	95	56	32	WDRC17	DC1800M-SC ~ DC1890M-SC
	DRC190M-5	●	19.00	19.99		187	131	125	100				DC1900M-SC ~ DC1990M-SC
	DRC200M-5	●	20.00	20.99		193	137	131	105				DC2000M-SC ~ DC2099M-SC
	DRC210M-5	●	21.00	21.99		200	144	138	110				DC2100M-SC ~ DC2150M-SC
	DRC220M-5	●	22.00	22.99		206	150	144	115				DC2200M-SC ~ DC2250M-SC
	DRC230M-5	●	23.00	23.99		212	156	150	120				DC2300M-SC ~ DC2350M-SC
	DRC240M-5	●	24.00	24.99		218	162	156	125				DC2400M-SC ~ DC2450M-SC
	DRC250M-5	●	25.00	25.50		225	169	163	130				DC2500M-SC ~ DC2550M-SC

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page ➡ K24~K26 for actual cutting diameters (DC).

Recommended Cutting Conditions ➡ K36

SF-DRC (Drilling Depth: 8xDC)

Flange Shank



For PL dimension, reference insert dimension table.

Toolholder Dimensions - 8DC (Metric Size)

Part Number		Stock	Dimensions (mm)								Spare Parts	Applicable Insert See Page K24~K26
			DC min.	DC max.	DCON (h6)	OAL	LFS	LCF	LU	LS	DCSFMS	Wrench K35	
SF12-	DRC080M-8	●	7.94	8.49	12	129	84	79	68	45	16	WDRC8 (WDRC17)	DC0794M-SC ~ DC0840M-SC
	DRC085M-8	●	8.50	8.99		134	89	83	72				DC0850M-SC ~ DC0890M-SC
	DRC090M-8	●	9.00	9.49		138	93	88	76				DC0900M-SC ~ DC0940M-SC
	DRC095M-8	●	9.50	9.99		144	99	93	80				DC0950M-SC ~ DC0990M-SC
SF16-	DRC100M-8	●	10.00	10.49	16	151	103	97	84	48	20	WDRC10 (WDRC17)	DC1000M-SC ~ DC1040M-SC
	DRC105M-8	●	10.50	10.99		156	108	102	88				DC1050M-SC ~ DC1090M-SC
	DRC110M-8	●	11.00	11.49		160	112	107	92				DC1100M-SC ~ DC1140M-SC
	DRC115M-8	●	11.50	11.99		165	117	111	96				DC1150M-SC ~ DC1190M-SC
	DRC120M-8	●	12.00	12.49		169	121	116	100			WDRC12 (WDRC17)	DC1200M-SC ~ DC1240M-SC
	DRC125M-8	●	12.50	12.99		174	126	120	104				DC1250M-SC ~ DC1290M-SC
	DRC130M-8	●	13.00	13.49		178	130	124	108				DC1300M-SC ~ DC1340M-SC
	DRC135M-8	●	13.50	13.99		184	136	130	112				DC1350M-SC ~ DC1390M-SC
	DRC140M-8	●	14.00	14.49		188	140	134	116			WDRC14 (WDRC17)	DC1400M-SC ~ DC1440M-SC
	DRC145M-8	●	14.50	14.99		193	145	139	120				DC1450M-SC ~ DC1490M-SC
SF20-	DRC150M-8	●	15.00	15.99	20	204	154	148	128	50	25		DC1500M-SC ~ DC1580M-SC
	DRC160M-8	●	16.00	16.99		213	163	157	136				DC1600M-SC ~ DC1690M-SC
	DRC170M-8	●	17.00	17.99		223	173	167	144			WDRC17	DC1700M-SC ~ DC1790M-SC
SF25-	DRC180M-8	●	18.00	18.99	25	238	182	176	152	56	32		DC1800M-SC ~ DC1890M-SC
	DRC190M-8	●	19.00	19.99		247	191	185	160				DC1900M-SC ~ DC1990M-SC
	DRC200M-8	●	20.00	20.99		256	200	194	168				DC2000M-SC ~ DC2099M-SC
	DRC210M-8	●	21.00	21.99		266	210	204	176				DC2100M-SC ~ DC2150M-SC
	DRC220M-8	●	22.00	22.99		275	219	213	184				DC2200M-SC ~ DC2250M-SC
	DRC230M-8	●	23.00	23.99		284	228	222	192				DC2300M-SC ~ DC2350M-SC
	DRC240M-8	●	24.00	24.99		293	237	231	200				DC2400M-SC ~ DC2450M-SC
	DRC250M-8	●	25.00	25.50		303	247	241	208				DC2500M-SC ~ DC2550M-SC

*DC min. & max. show the cutting diameter range of inserts that will fit into the toolholder.
See applicable insert tables on Page K24~K26 for actual cutting diameters (DC).

Recommended Cutting Conditions K36

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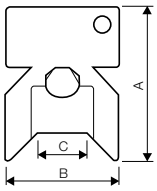
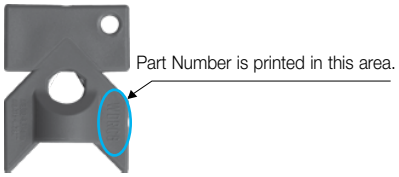
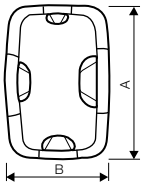
Changing DRC Magic Drill Inserts

Shape		Part Number	Dimensions (in) A	B	C	Notes
		**WDRC8**	1.69	1.30	Ø0.402	 Part Number is printed in this area.
		WDRC10			Ø0.480	
		WDRC12			Ø0.559	
		WDRC14			Ø0.677	
		**WDRC17**	3.03	2.05	-	• WDRC17 (Multiple type wrench) has four insert entry points. If using an insert ranging from DC06692-SC to DC08264-SC, use the entry point printed as Ø0.6692"~Ø0.8264". • WDRC17 can be used instead of WDRC8~14 wrench.

Changing DRC Magic Drill Inserts

How to Attach Inserts

1) Fix drill holder on arbor. For insert exchange, fix arbor on the machine or set on tool presetter.
2) Remove dust using air blower.

3) Install insert onto holder.
(Use gloves to protect your hand from any danger.)

4) Turn lightly in a clockwise direction.
(Use gloves to protect your hand from any danger.)

5) Align the wrench properly with the insert.

6) Make sure the wrench is aligned with the wrench slots on the insert.

(Improper alignment shown)

Slot for wrench

7) Turn the wrench in a slow clockwise direction.
8) Completed.

How to Detach Inserts

1) Remove dust from insert using air blower.
2) Align the wrench properly with the insert.

3) Make sure the wrench is aligned with the wrench slots on the insert.

4) Turn the wrench in a counterclockwise direction.

5) Once lock is released, insert can be turned by fingers.
(Use gloves to protect your hand from any danger.)

6) Remove insert.
(Use gloves to protect your hand from any danger.)

DC Insert - Recommended Cutting Conditions

Workpiece Material	Hardness (HB)	Cutting Conditions: Cutting Speed Vc (sfm)	Cutting Conditions: Spindle Revolution (rpm) / Feed Rate (ipr)	Cutting Dia. DC: Ø8mm Ø0.315"	Ø10mm Ø0.394"	Ø12mm Ø0.472"	Ø14mm Ø0.551"	Ø16mm Ø0.630"	Ø18mm Ø0.709"	Ø20mm Ø0.787"	Ø25mm Ø0.984"
Low Carbon Steel	125	400 - 600	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	1,530 - 2,290
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.012 - 0.020
Carbon Steel	190	330 - 500	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	1,270 - 1,910
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.013 - 0.024
	250	260 - 400	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	1,020 - 1,530
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.015 - 0.025
	300	170 - 250	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	640 - 960
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.013 - 0.018
Alloy Steel	180	230 - 310	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	890 - 1,210
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.014 - 0.024
	275	230 - 310	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	890 - 1,210
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.013 - 0.023
	300	200 - 300	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	760 - 1,150
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.012 - 0.020
	350	170 - 250	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	640 - 960
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.011 - 0.020
Stainless Steel	220	200 - 260	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	760 - 1,020
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.011 - 0.017
	300	170 - 230	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	640 - 890
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.010 - 0.016
Gray Cast Iron	180	400 - 560	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	1,530 - 2,170
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.016 - 0.029
	260	300 - 400	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	1,150 - 1,530
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.014 - 0.028
Nodular Cast Iron	160	200 - 300	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	760 - 1,150
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.013 - 0.026
	250	130 - 210	Spindle Revolution (rpm)	4,780 - 7,170	3,820 - 5,730	3,180 - 4,780	2,730 - 4,090	2,390 - 3,580	2,120 - 3,180	1,910 - 2,870	510 - 830
			Feed Rate (ipr)	0.0043 - 0.0079	0.0051 - 0.0094	0.0055 - 0.0110	0.0067 - 0.0125	0.0075 - 0.0138	0.0091 - 0.0150	0.0098 - 0.0161	0.012 - 0.024

- As drilling depth increases (**3D → 5D → 8D**), feed rates should be reduced.

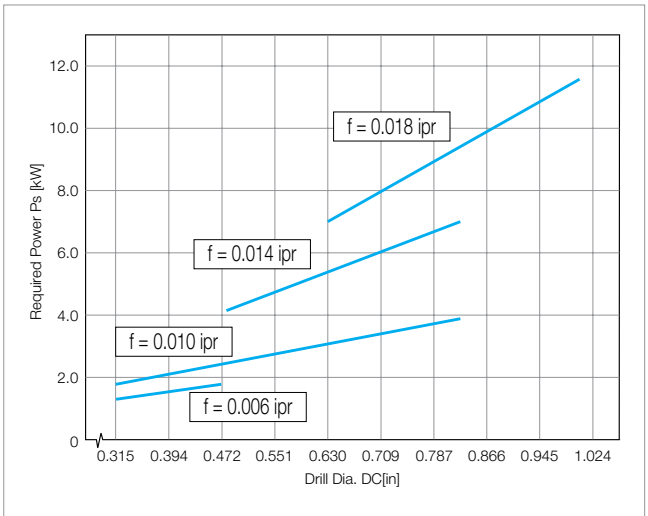
★ : 1st Recommendation ☆ : 2nd Recommendation

Reference Charts

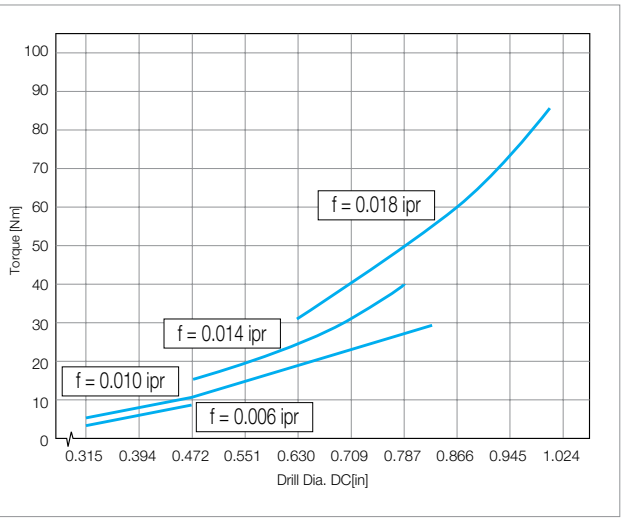
Cutting Conditions

Heat Treated Steel (Hardness 240 HB) Vc = 260 sfm, Wet

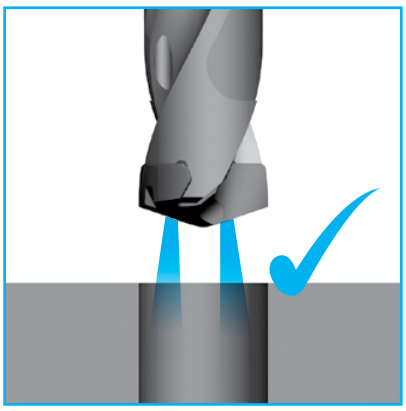
Required Power



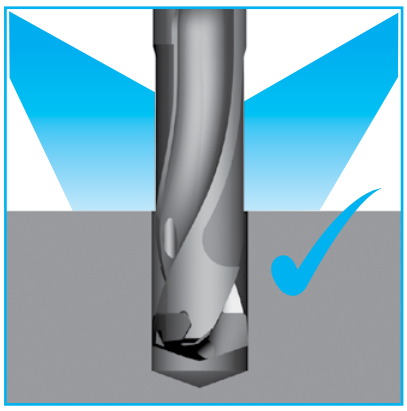
Torque



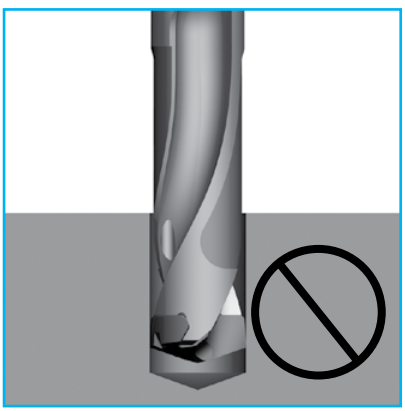
Coolant



1) Internal coolant is recommended.

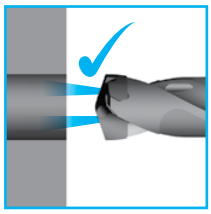


2) In case of external coolant
Cutting depth must be 3xD or less.



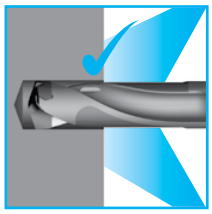
3) Dry cutting is not recommended.

In case of horizontal M/C

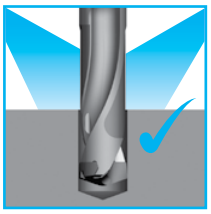


Internal coolant is recommended for horizontal machining center because external coolant may not sufficiently be applied to inside because the tool is revolving.

Lathe: 3D or less



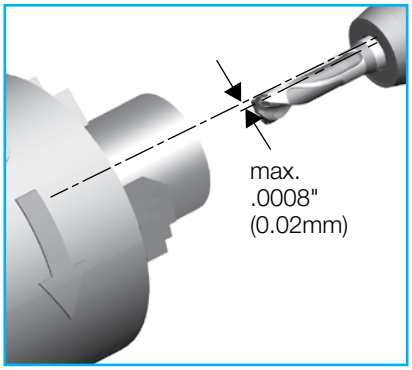
Vertical M/C: 1.5D or less



Precautions for Use

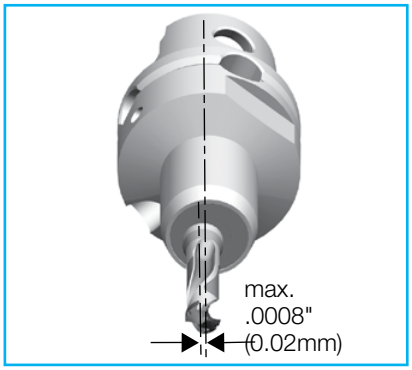
- **Core Deviation**

1) If Drill is Stationary



The max runout between the drill and spindle should not exceed 0.0008.

2) If Drill is Rotating



The max runout allowable on the drill is 0.0008

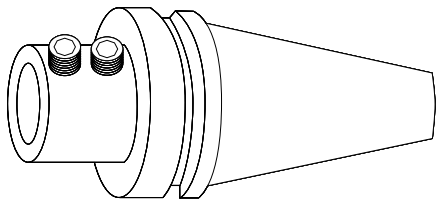
Cautions for Installing on Machining Center

For installation of MagicDrill DRC,
1st Choice...Hydro Chuck, Power Chuck, Collet Chuck, etc.
2nd Choice...Side lock arbor

Hydro Chuck
Power Chuck
Collet Chuck

Install DRC into Above Chuck

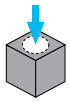
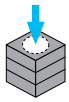
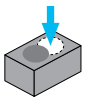
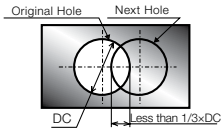
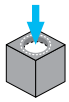
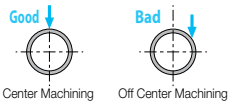
1st Recommendation



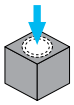
Example of Side Lock Arbor

2nd Recommendation

Applicable Workpieces

Application	Workpiece Shape	Machining Caution
Plain Surface		1. When machining stainless steel, for hole depths of up to 0.5D, keep feed rate at less than 0.006 ipr. 2. Thru coolant is recommended for smooth chip removal. For stainless steel, the combination of thru and external coolant is recommended.
Stacked Plates		1. Fix stacked plates securely to ensure they do not slip while machining.
Hole Expansion		1. if the overlap amount is less than 1/3 x D, machining is possible 
Concave Surface		1. When machining concave holes, set the feed rate at less than half of recommended feed for continuous hole machining. 2. Utilize a pecking cycle if chips are not broken short at the inlet.
Tubing		1. Hole machining on the centerline of the tubing is possible. 2. Do not machine on curved surface areas. 

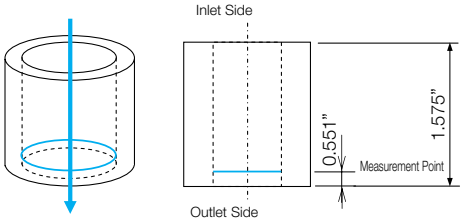
NOT Recommended Workpieces

Application	Workpiece Shape
Angled Surface	
Half Cylindrical	
Existing Hole	

Machining Precision Comparison

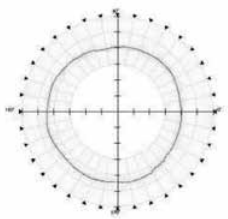
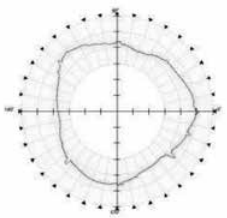
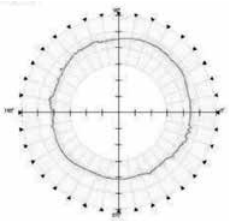
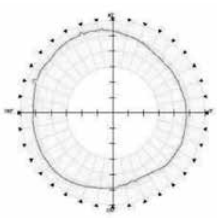
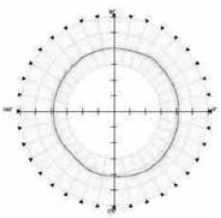
Cutting Condition and Measurement Point

Workpiece Material	1045
Vc (sfm)	330
f (mm/rev)	0.008 ipr , 0.012 ipr
Drilling Depth H (mm)	Through Hole 1.575"
Coolant	Wet (Internal Coolant)
Tool	Ø0.551" x 3D type
Machine	M/C

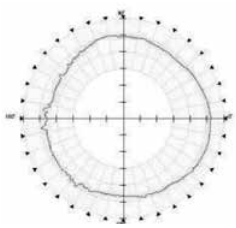
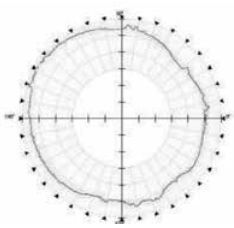
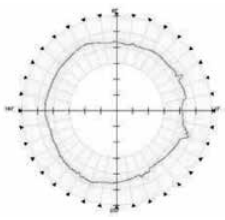
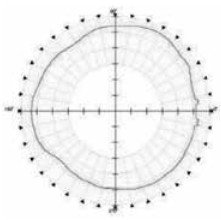
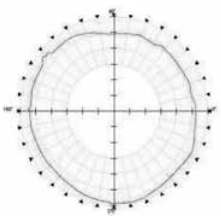


Roundness

1) Roundness (f = 0.008 ipr)

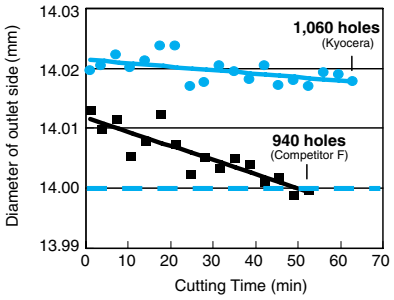
Indexable Drill		Carbide Solid Drill		
Kyocera	Competitor F	Competitor B	Competitor C	Competitor N
				
Roundness: 5.5 µm	Roundness: 22.5 µm	Roundness: 6.4 µm	Roundness: 9.8 µm	Roundness: 5.2 µm

2) Roundness (f = 0.012 ipr)

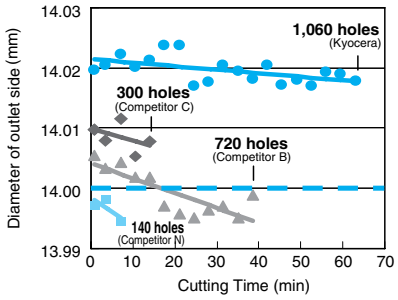
Indexable Drill		Carbide Solid Drill		
Kyocera	Competitor F	Competitor B	Competitor C	Competitor N
				
Roundness: 10.7 µm	Roundness: 22.5 µm	Roundness: 6.4 µm	Roundness: 9.8 µm	Roundness: 5.2 µm

Hole Diameter Comparison (f = 0.012 ipr)

1) Indexable Drill Comparison



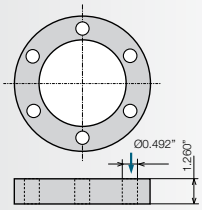
2) Carbide Solide Drill Comparison



Case Studies

1049

- Flange
- Vc = 320 sfm (n = 2,490 RPM)
- H = 1.260"
- f = 0.012 ipr (Vf = 2.283 ipm)
- Wet (Internal Coolant)
- DC1250M-SC (PR0315)



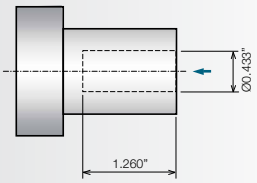
SS14-RC120M-3	3,000holes/insert
Competitor A	1,800holes/drill

Compared to competitor's drill A, MagicDrill DRC type has reduced burr and reduced more than 10% of the power required . Tool life has also improved greatly.

Customer Evaluation

4140

- Housing
- Vc = 270 sfm (n = 2,400 RPM)
- H = 1.260"
- f = 0.012 ipr (Vf = 22.677 ipm)
- Wet (Internal Coolant)
- DC1100M-SC (PR0315)



SS12-RC110M-3	more than 2,400holes/insert
Competitor B	2,000holes/drill

Compared to competitor's solid drill B, MagicDrill DRC type has greatly reduced preparation time with its easy insert replacement feature. Also, the costs of spare tools for re-grinding has been reduced, and tool life has improved.

Customer Evaluation

Q&A

Q-1 Is re-grinding available?

A-1 We don't recommend it. Grinding of edge nose chisel is not possible.

Q-2 How large would the cutting hole be to the insert diameter (ØDc)?

A-2 When drilling 4137, the hole diameter will be about 0.020 to 0.040 larger than the insert diameter.

DRV Magic Drill

Economical Inserts with 4 Cutting Edges

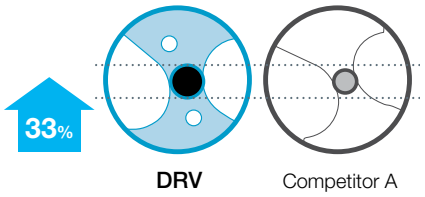
Excellent Chip Evacuation with 6D Maximum Deep-Hole Drilling

High Speed and Highly Efficient Machining with the Combination of CVD (Outer Edge) and PVD (Inner Edge) Inserts

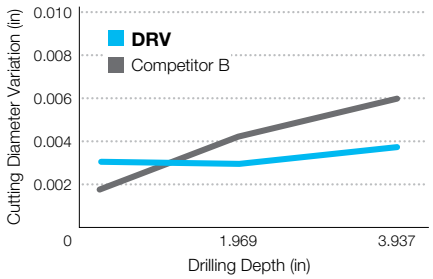
1 Excellent Drilling Precision with Less Vibration in Cutting Diameter

Optimal Web Thickness and a Low Cutting Force Design Reduces Chattering

Web Thickness Comparison
(Internal Evaluation)

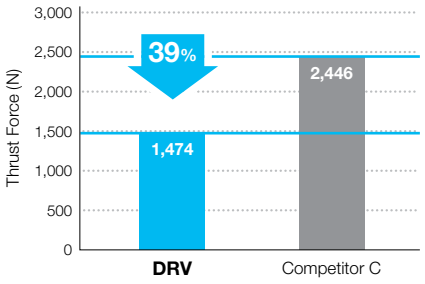


Cutting Diameter Variation Comparison
(Internal Evaluation)



Cutting Conditions : Vc = 490 sfm, f = 0.0024 ipr
Cutting Dia. Ø0.812" (5D), Wet, Workpiece : 1049

Cutting Force Comparison
(Internal Evaluation)



Cutting Conditions : Vc = 660 sfm, f = 0.0047 ipr
Cutting Dia. Ø0.812" (3D), Wet, Workpiece : 1049

2 Unique Insert Design to Control Chip Flow

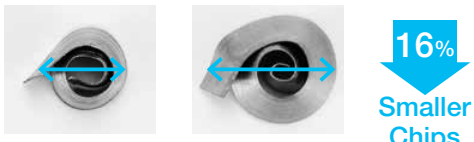
Outer Edge Insert

Unique Insert Pattern to Differentiate between Outside and Inside Inserts

Inner Edge Insert

Smooth Chip Evacuation with Compact Chips

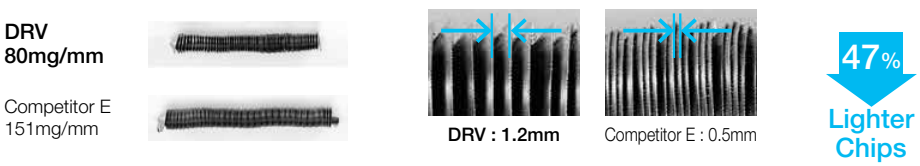
Chip Shape Comparison of Outer Insert Cutting Edge
(Internal Evaluation)



Cutting Conditions : Vc = 490 sfm, f = 0.0024 ipr, Cutting Dia. Ø0.812" (3D), Wet
Workpiece : 1049

Excellent Chip Evacuation with 6xD Maximum Deep-Hole Drilling

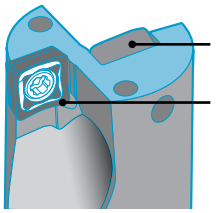
Weight per Unit of Length for Chips Generated by the Inner Insert
(Internal Evaluation)



Cutting Conditions : Vc = 820 sfm, f = 0.0031 ipr, Cutting Dia. Ø0.812" (5D), Wet, Workpiece : 304

800.823.7284
Visit us online at KyoceraPrecisionTools.com

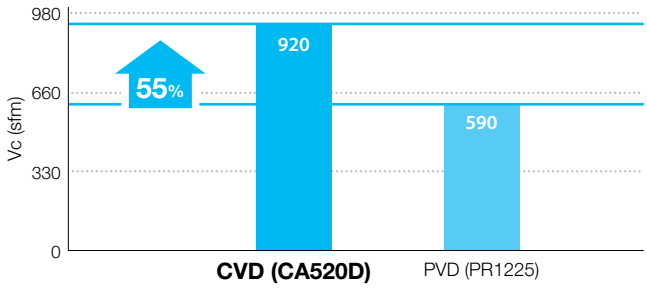
3 New Insert Grades Developed for Drilling



New Grades Developed for Drilling

High Speed and Highly Efficient Machining with the Combination of CVD (Outer Edge) and PVD (Inner Edge) Inserts

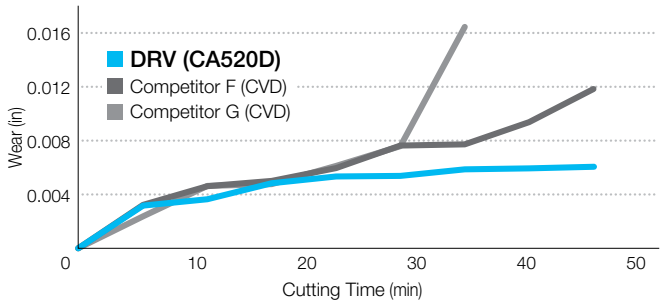
Recommended Cutting Conditions (Maximum Values)



Cutting Dia. Ø0.812" (3D) Workpiece : 1049

See Page K59 for Insert Grade Selection Guide

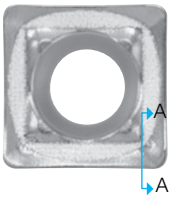
Wear Resistance Comparison (Internal Evaluation)



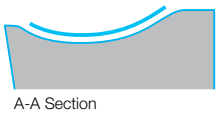
Cutting Conditions : Vc = 660 sfm, f = 0.0047 ipr, Cutting Dia. Ø0.812" (3D) , Wet
Workpiece : 4140H

4 Economical 4-Edge Inserts 4 Types of Chipbreakers for Various Machining Applications

GM Chipbreaker - General Purpose



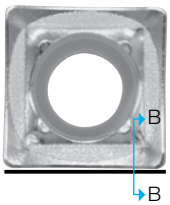
Chipbreaker for Steel Machining
Stable Deep-hole Machining with Low Cutting Force



A-A Section

Edge shape optimized for various machining applications

GH Chipbreaker - Tough Edge

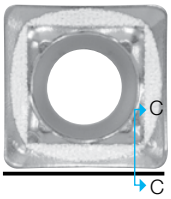


1st Recommendation for Machining Cast Iron
Good for Continuous Steel Machining
Reduced Defects Common in Through-hole Machining

B-B Section

Negative land with strong edge

SM Chipbreaker - For Stainless Steel Machining

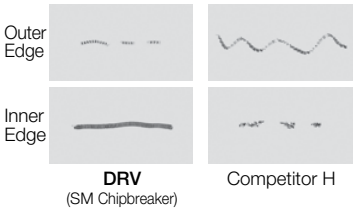


Stable Chip Control when Machining Gummy Stainless Steel
Reduces Chip Clogging in the Holder Body

C-C Section

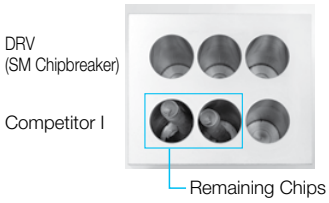
Sharp cutting and large rake angle

Chip Control Comparison
(Internal Evaluation)



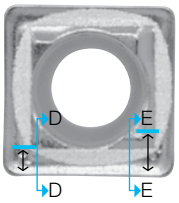
Cutting Conditions : Vc = 330 sfm, f = 0.0039 ipr
Cutting Dia. Ø0.812" (3D), Drilling Depth 2.436"
Wet, Workpiece : 304

Comparison of Remaining Chips
(Internal Evaluation)

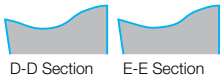


Cutting Conditions : Vc = 490 sfm, f = 0.0031 ipr
Cutting Dia. Ø0.984" (5D), Drilling Depth 3.858"
Wet, Workpiece : 304

XM Chipbreaker - For Machining Soft Steel and SS Material



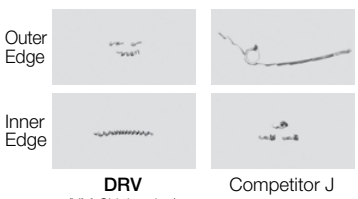
Stable Chip Control of Outer Cutting Edge



D-D Section E-E Section

Excellent chip control with the changing width of the chipbreaker

Chip Control Comparison
(Internal Evaluation)



Cutting Conditions : Vc = 660 sfm, f = 0.0047 ipr
Cutting Dia. Ø0.625" (3D), Drilling Depth 1.875"
Wet, Workpiece : A36

Chipbreaker Selection Chart ➡ K41

Applicable DRV Outside Inserts

Usage Classification						
★ : 1st Recommendation (High Speed and Highly Efficient Machining) ☆ : 2nd Recommendation (Stable Machining Oriented)	P	Carbon Steel / Alloy Steel	☆	★		★
		Tool Steel	☆	★		★
	M	Stainless Steel	☆	★		★
	K	Cast Iron	☆		★	★

Insert	Insert Pocket	Part Number	Dimensions (in)				Angle	MEGACOAT	CVD Coated Carbide		MEGACOAT NANO
			IC W1/INSL	S	D1	RE	AN	PR1225	CA520D	CA415D	PR1535
LCMT SCMT General Purpose	Outer Edge	LCMT 030203-GM-E	0.173/0.218	0.079	0.091	0.012	7°	●	●	●	
		SCMT 040205-GM-E	0.189	0.087	0.094	0.020		●	●	●	
		050205-GM-E	0.207	0.102	0.094	0.020		●	●	●	
		060205-GM-E	0.252	0.110	0.114	0.020		●	●	●	
		070305-GM-E	0.301	0.126	0.138	0.020		●	●	●	
		090405-GM-E	0.358	0.161	0.157	0.020		●	●	●	
		110406-GM-E	0.433	0.177	0.181	0.024		●	●	●	
		140508-GM-E	0.543	0.197	0.224	0.031		●	●	●	
		170608-GM-E	0.661	0.259	0.272	0.031		●	●	●	
LCMT SCMT Tough Edge		LCMT 030203-GH-E	0.173/0.218	0.079	0.091	0.012	7°	●	●	●	
		SCMT 040205-GH-E	0.189	0.087	0.094	0.020		●	●	●	
		050205-GH-E	0.207	0.102	0.094	0.020		●	●	●	
		060205-GH-E	0.252	0.110	0.114	0.020		●	●	●	
		070305-GH-E	0.301	0.126	0.138	0.020		●	●	●	
		090405-GH-E	0.358	0.161	0.157	0.020		●	●	●	
		110406-GH-E	0.433	0.177	0.181	0.024		●	●	●	
Soft Steel		SCMT 040205-XM-E	0.189	0.087	0.094	0.020	7°	●	●		
		050205-XM-E	0.207	0.102	0.094	0.020		●	●		
		060205-XM-E	0.252	0.110	0.114	0.020		●	●		
		070305-XM-E	0.301	0.126	0.138	0.020		●	●		
		090405-XM-E	0.358	0.161	0.157	0.020		●	●		
		110406-XM-E	0.433	0.177	0.181	0.024		●	●		
LCMT SCMT Stainless Steel		LCMT 030203-SM-E	0.173/0.218	0.079	0.091	0.012	7°	●	●		
		SCMT 040205-SM-E	0.189	0.087	0.094	0.020		●	●		
		050205-SM-E	0.207	0.102	0.094	0.020		●	●		
		060205-SM-E	0.252	0.110	0.114	0.020		●	●		
		070305-SM-E	0.301	0.126	0.138	0.020		●	●		
		090405-SM-E	0.358	0.161	0.157	0.020		●	●		
		110406-SM-E	0.433	0.177	0.181	0.024		●	●		
		140508-SM-E	0.543	0.197	0.224	0.031		●	●		
		170608-SM-E	0.661	0.259	0.272	0.031		●	●		

-E : Outer Edge Insert
-I : Inner Edge Insert
***LCMT03... is a 2-edge Insert**

Recommended Cutting Conditions ➡ **K62~K65**

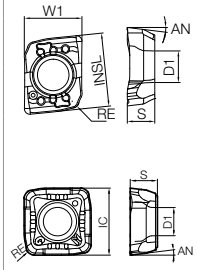
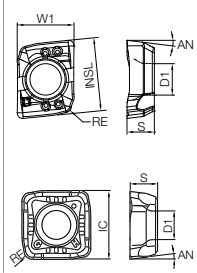
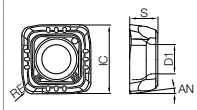
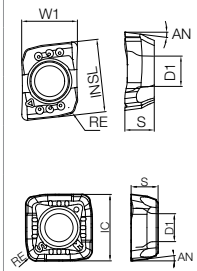
Inserts are sold in 10 piece boxes

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Applicable DRV Inside Inserts

Usage Classification							
★ : 1st Recommendation (High Speed and Highly Efficient Machining) ☆ : 2nd Recommendation (Stable Machining Oriented)	P	Carbon Steel / Alloy Steel	☆	★		★
		Tool Steel	☆	★		★
	M	Stainless Steel	☆	★		★
	K	Cast Iron	☆		★	★

Insert		Insert Pocket	Part Number	Dimensions (in)				Angle	MEGACOAT	CVD Coated Carbide		MEGACOAT NANO
				IC W1/INSL	S	D1	RE	AN	PR1225	CA520D	CA415D	PR1535
LCMT SCMT General Purpose		Inner Edge	LCMT 030205-GM-I	0.164/0.211	0.079	0.091	0.020	7°				●
			SCMT 040209-GM-I	0.197	0.087	0.094	0.035					●
			050210-GM-I	0.224	0.102	0.094	0.039					●
			060210-GM-I	0.272	0.110	0.114	0.039					●
			070310-GM-I	0.323	0.126	0.138	0.039					●
			090410-GM-I	0.386	0.161	0.157	0.039					●
			110410-GM-I	0.469	0.177	0.181	0.039					●
			140510-GM-I	0.587	0.197	0.224	0.039					●
			170610-GM-I	0.705	0.259	0.272	0.039					●
LCMT SCMT Tough Edge			LCMT 030205-GH-I	0.164/0.211	0.079	0.091	0.020					●
			SCMT 040209-GH-I	0.197	0.087	0.094	0.035					●
			050210-GH-I	0.224	0.102	0.094	0.039					●
			060210-GH-I	0.272	0.110	0.114	0.039	7°				●
			070310-GH-I	0.323	0.126	0.138	0.039					●
			090410-GH-I	0.386	0.161	0.157	0.039					●
			110410-GH-I	0.469	0.177	0.181	0.039					●
Soft Steel			SCMT 040209-XM-I	0.197	0.087	0.094	0.035					●
			050210-XM-I	0.224	0.102	0.094	0.039					●
			060210-XM-I	0.272	0.110	0.114	0.039					●
			070310-XM-I	0.323	0.126	0.138	0.039	7°				●
			090410-XM-I	0.386	0.161	0.157	0.039					●
			110410-XM-I	0.469	0.177	0.181	0.039					●
LCMT SCMT Stainless Steel			LCMT 030205-SM-I	0.164/0.211	0.079	0.091	0.020					●
			SCMT 040209-SM-I	0.197	0.087	0.094	0.035					●
			050210-SM-I	0.224	0.102	0.094	0.039					●
			060210-SM-I	0.272	0.110	0.114	0.039					●
			070310-SM-I	0.323	0.126	0.138	0.039	7°				●
			090410-SM-I	0.386	0.161	0.157	0.039					●
			110410-SM-I	0.469	0.177	0.181	0.039					●
			140510-SM-I	0.587	0.197	0.224	0.039					●
			170610-SM-I	0.705	0.259	0.272	0.039					●

-E : Outer Edge Insert
-I : Inner Edge Insert
***LCMT03... is a 2-edge Insert**

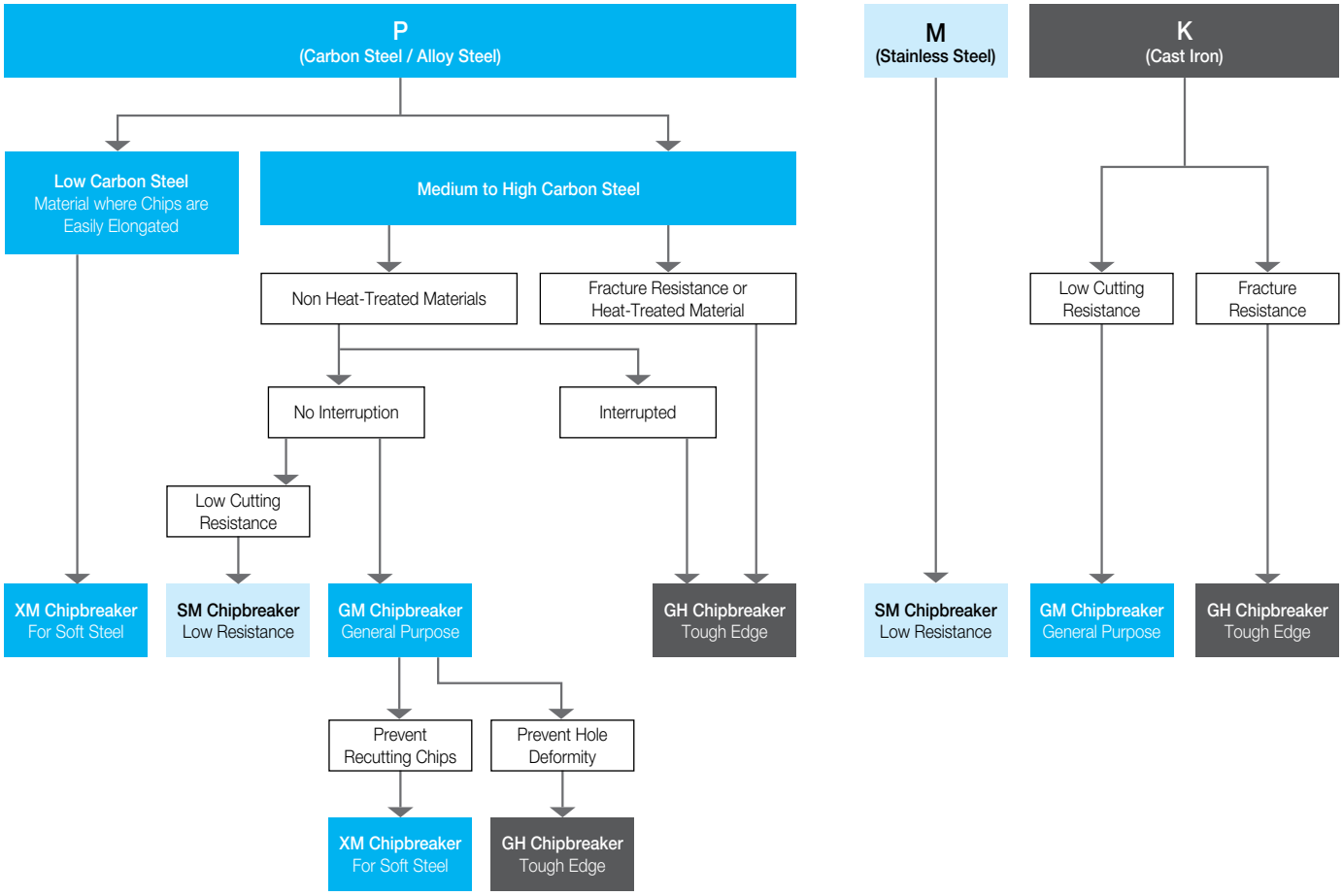
Recommended Cutting Conditions ➡ **K62~K65**

Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

Chipbreaker Selection Chart

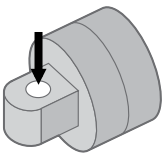


Case Studies

Case Studies

Housing - Structural Steel

Vc = 410 sfm (n = 1,660 rpm)
f = 0.003 ipr (Vf = 5.236 ipm)
Drilling Depth 1.772"
Wet (External Coolant)
S100-DRV0938-4-07
SCMT070310GM-I PR1535
SCMT070305GM-E PR1225



Cutting Time

DRV (Ø0.938" 4xD) — 16 sec

Competitor K (Ø0.938" 4xD) — 35 sec

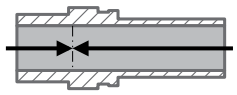
50% or More Cutting Time

Chattering and recutting chips occurred in low rigidity workpiece of Competitor K. Speed was reduced to Vc = 200 sfm. DRV provided good chip control for stable machining at Vc = 410 sfm.

(User Evaluation)

Nipple - Stainless Steel

Vc = 760 sfm (n = 3,330 rpm)
f = 0.005 ipr (Vf = 17.047 ipm)
Drilling Depth 2.362" (4xD)
1.181" (2xD)
Wet (Internal Coolant)
S100-DRV0875-4-06 (4xD)
S100-DRV0875-2-06 (2xD)
SCMT060210-GM-I PR1535
SCMT060205-GM-E PR1225



Process 2 Drilling Depth 1.181" (2D)

Process 1 Drilling Depth 2.362" (4D)

Cutting Time

DRV (Ø0.875" 4xD/2xD) — 12 sec

Competitor L (Ø0.875" 4xD/2xD) — 20 sec

40% Cutting Time

Chattering and deflection occurred with Competitor L. DRV showed stable machining and a shorter cutting time even when the cutting conditions were increased by 1.6 times or more.

(User Evaluation)

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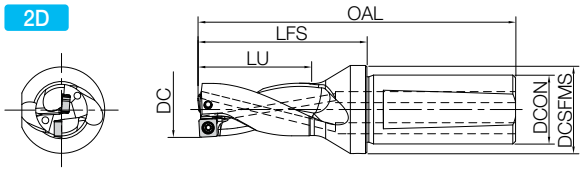
DRV (Drilling Depth: 2 x DC)



Toolholder Dimensions - 2D (Inch Size)

Part Number	Stock	No. of Inserts	Dimension (in)						Max. Radial Offset (in)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S075- DRV0500-2-03	●	2	0.500	3.299	1.606	1.000	0.750	1.063	+0.006	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
S075- DRV0562-2-04	●	2	0.563	3.661	1.969	1.125	0.750	1.063	+0.014	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
S075- DRV0625-2-05	●	2	0.625	3.866	2.173	1.250	0.750	1.063	+0.016	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV0656-2-05	●		0.656	3.929	2.236	1.313			+0.012			
S100- DRV0688-2-05	●		0.688	4.425	2.299	1.375	1.000	1.260	+0.010			
S100- DRV0750-2-06	●	2	0.750	4.469	2.343	1.500	1.000	1.260	+0.024	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV0812-2-06	●		0.813	4.594	2.469	1.625			+0.018			
DRV0875-2-06	●		0.875	4.720	2.594	1.750			+0.010			
S100- DRV0938-2-07	●	2	0.938	4.827	2.701	1.875	1.000	1.260	+0.028	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV0984-2-07	●		0.984	4.917	2.791	1.969			+0.024			
DRV1000-2-07	●		1.000	4.949	2.823	2.000			+0.020			
S125- DRV1062-2-09	●	2	1.063	5.341	3.018	2.125	1.250	1.614	+0.041	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV1125-2-09	●		1.125	5.467	3.144	2.250			+0.033			
DRV1188-2-09	●		1.188	5.593	3.270	2.375			+0.026			
S150- DRV1250-2-09	●		1.250	6.256	3.539	2.500	1.500	1.929	+0.020			
S150- DRV1312-2-11	●	2	1.313	6.380	3.663	2.625	1.500	1.929	+0.045	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV1375-2-11	●		1.375	6.506	3.789	2.750			+0.039			
DRV1438-2-11	●		1.438	6.632	3.915	2.875			+0.031			
DRV1500-2-11	●		1.500	6.756	4.039	3.000			+0.022			
S150- DRV1562-2-14	●	2	1.562	7.116	4.400	3.124	1.500	1.929	+0.070	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
DRV1625-2-14	●		1.625	7.242	4.526	3.250			+0.063			
DRV1688-2-14	●		1.688	7.368	4.652	3.376			+0.056			
NEW DRV1750-2-14	●		1.750	7.492	4.776	3.500			+0.049			
DRV1812-2-14	●		1.812	7.616	4.900	3.624		2.126	+0.041			
DRV1875-2-14	●		1.875	7.742	5.026	3.750			+0.034			
NEW DRV1938-2-14	●		1.938	7.868	5.152	3.876			+0.027			
S150- DRV2000-2-17	●		2.000	7.854	5.138	4.000		2.323	+0.079	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I

- When offset drilling, reduce feed rate to 0.0031 ipr or less

Estimated Cutting Tolerance (2D)

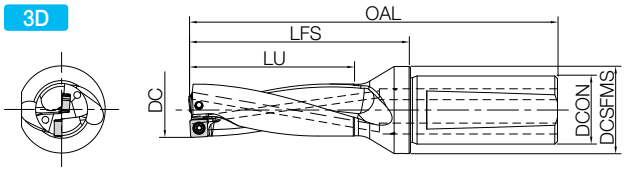
DC	Estimated Cutting Tolerance (in)
Ø0.500" - Ø2.000"	+0.012 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K62
Adjustable Sleeve ASL K96
Troubleshooting K95

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 3 x DC)



Toolholder Dimensions - 3D (Inch Size)

Part Number	Stock	No. of Inserts	Dimension (in)						Max. Radial Offset (in)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S075- DRV0500-3-03	●	2	0.500	3.799	2.106	1.500	0.750	1.063	+0.006	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
S075- DRV0562-3-04	●	2	0.563	4.224	2.531	1.688	0.750	1.063	+0.014	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
S075- DRV0625-3-05	●	2	0.625	4.492	2.799	1.875	0.750	1.063	+0.016	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV0656-3-05	●		0.656	4.587	2.894	1.969			+0.012			
S100- DRV0688-3-05	●		0.688	5.114	2.988	2.063	1.000	1.260	+0.010			
S100- DRV0750-3-06	●	2	0.750	5.220	3.094	2.250	1.000	1.260	+0.024	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV0812-3-06	●		0.813	5.406	3.280	2.438			+0.018			
DRV0875-3-06	●		0.875	5.594	3.469	2.625			+0.010			
S100- DRV0938-3-07	●	2	0.938	5.764	3.638	2.813	1.000	1.260	+0.028	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV0984-3-07	●		0.984	5.902	3.776	2.953			+0.024			
DRV1000-3-07	●		1.000	5.949	3.823	3.000			+0.020			
S125- DRV1062-3-09	●	2	1.063	6.402	4.080	3.188	1.250	1.614	+0.041	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV1125-3-09	●		1.125	6.592	4.269	3.375			+0.033			
DRV1188-3-09	●		1.188	6.781	4.458	3.563			+0.026			
S150- DRV1250-3-09	●		1.250	7.508	4.791	3.750	1.500	1.929	+0.020			
S150- DRV1312-3-11	●	2	1.313	7.692	4.976	3.938	1.500	1.929	+0.045	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV1375-3-11	●		1.375	7.881	5.165	4.125			+0.039			
DRV1438-3-11	●		1.438	8.070	5.354	4.313			+0.031			
DRV1500-3-11	●		1.500	8.256	5.539	4.500			+0.022			
S150- DRV1562-3-14	●	2	1.562	8.678	5.962	4.686	1.500	1.929	+0.070	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
DRV1625-3-14	●		1.625	8.867	6.151	4.875			+0.063			
DRV1688-3-14	●		1.688	9.056	6.340	5.064			+0.056			
NEW DRV1750-3-14	●		1.750	9.242	6.526	5.250			+0.049			
DRV1812-3-14	●		1.812	9.428	6.712	5.436		2.126	+0.041			
DRV1875-3-14	●		1.875	9.617	6.901	5.625			+0.034			
NEW DRV1938-3-14	●		1.938	9.806	7.090	5.814			+0.027			
S150- DRV2000-3-17	●		2.000	9.854	7.138	6.000		2.323	+0.079	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I

- When offset drilling, reduce feed rate to 0.0031 ipr or less

Estimated Cutting Tolerance (3D)

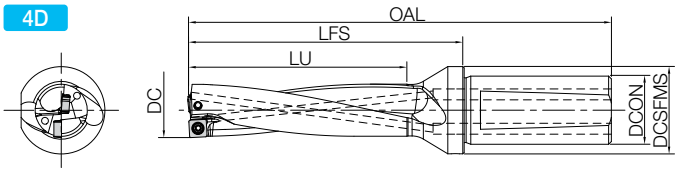
DC	Estimated Cutting Tolerance (in)
Ø0.500" - Ø2.000"	+0.012 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K62
Adjustable Sleeve ASL K96
Troubleshooting K95

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 4 x DC)



Toolholder Dimensions - 4D (Inch Size)

Part Number	Stock	No. of Inserts	Dimension (in)						Max. Radial Offset (in)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S075- DRV0500-4-03	●	2	0.500	4.299	2.606	2.000	0.750	1.063	+0.006	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
S075- DRV0562-4-04	●	2	0.563	4.787	3.094	2.250	0.750	1.063	+0.014	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
S075- DRV0625-4-05	●	2	0.625	5.118	3.425	2.500	0.750	1.063	+0.016	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV0656-4-05	●		0.656	5.240	3.551	2.625			+0.012			
S100- DRV0688-4-05	●		0.688	5.803	3.677	2.750	1.000	1.260	+0.010			
S100- DRV0750-4-06	●	2	0.750	5.969	3.843	3.000	1.000	1.260	+0.024	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV0812-4-06	●		0.813	6.217	4.091	3.250			+0.018			
DRV0875-4-06	●		0.875	6.469	4.343	3.500			+0.010			
S100- DRV0938-4-07	●	2	0.938	6.701	4.575	3.750	1.000	1.260	+0.028	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV0984-4-07	●		0.984	6.886	4.760	3.938			+0.024			
DRV1000-4-07	●		1.000	6.949	4.823	4.000			+0.020			
S125- DRV1062-4-09	●	2	1.063	7.465	5.142	4.250	1.250	1.614	+0.041	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV1125-4-09	●		1.125	7.717	5.394	4.500			+0.033			
DRV1188-4-09	●		1.188	7.969	5.646	4.750			+0.026			
S150- DRV1250-4-09	●		1.250	8.756	6.039	5.000	1.500	1.929	+0.020			
S150- DRV1312-4-11	●	2	1.313	9.004	6.287	5.250	1.500	1.929	+0.045	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV1375-4-11	●		1.375	9.256	6.539	5.500			+0.039			
DRV1438-4-11	●		1.438	9.508	6.791	5.750			+0.031			
DRV1500-4-11	●		1.500	9.756	7.039	6.000			+0.022			
S150- DRV1562-4-14	●	2	1.562	10.240	7.524	6.248	1.500	1.929	+0.070	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
DRV1625-4-14	●		1.625	10.492	7.776	6.500			+0.063			
NEW DRV1688-4-14	●		1.688	10.744	8.028	6.752			+0.056			
DRV1750-4-14	●		1.750	10.992	8.276	7.000			+0.049			
DRV1812-4-14	●		1.812	11.240	8.524	7.248		2.126	+0.041			
S200- DRV1875-4-14	●		1.875	11.492	8.776	7.500	2.000	2.520	+0.034			
NEW DRV1938-4-14	●		1.938	11.744	9.028	7.752			+0.027			
DRV2000-4-17	●		2.000	11.854	9.138	8.000			+0.079	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I

- When offset drilling, reduce feed rate to 0.0024 ipr or less

Estimated Cutting Tolerance (4D)

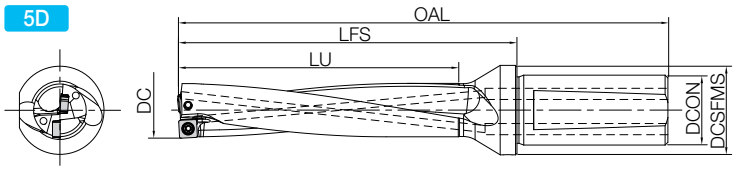
DC	Estimated Cutting Tolerance (in)	DC	Estimated Cutting Tolerance (in)
Ø0.500" - Ø1.500"	+0.014 0	Ø1.562" - Ø2.000"	+0.016 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K63
Adjustable Sleeve ASL K96
Troubleshooting K95

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 5 x DC)



Toolholder Dimensions - 5D (Inch Size)

Part Number	Stock	No. of Inserts	Dimension (in)						Max. Radial Offset (in)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S075- DRV0500-5-03	●	2	0.500	4.799	3.106	2.500	0.750	1.063	+0.006	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
S075- DRV0562-5-04	●	2	0.563	5.346	3.654	2.813	0.750	1.063	+0.014	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
S075- DRV0625-5-05	●	2	0.625	5.744	4.051	3.125	0.750	1.063	+0.016	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV0656-5-05	●		0.656	5.898	4.205	3.281			+0.012			
S100- DRV0688-5-05	●		0.688	6.492	4.366	3.438	1.000	1.260	+0.010			
S100- DRV0750-5-06	●	2	0.750	6.720	4.594	3.750	1.000	1.260	+0.024	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV0812-5-06	●		0.813	7.028	4.902	4.063			+0.018			
DRV0875-5-06	●		0.875	7.343	5.217	4.375			+0.010			
S100- DRV0938-5-07	●	2	0.938	7.638	5.512	4.688	1.000	1.260	+0.028	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV0984-5-07	●		0.984	7.870	5.744	4.922			+0.024			
DRV1000-5-07	●		1.000	7.949	5.823	5.000			+0.020			
S125- DRV1062-5-09	●	2	1.063	8.526	6.204	5.313	1.250	1.614	+0.041	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV1125-5-09	●		1.125	8.842	6.519	5.625			+0.033			
DRV1188-5-09	●		1.188	9.157	6.834	5.938			+0.026			
S150- DRV1250-5-09	●		1.250	10.008	7.291	6.250	1.500	1.929	+0.020			
S150- DRV1312-5-11	●	2	1.313	10.316	7.600	6.563	1.500	1.929	+0.045	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV1375-5-11	●		1.375	10.631	7.915	6.875			+0.039			
DRV1438-5-11	●		1.438	10.946	8.230	7.188			+0.031			
DRV1500-5-11	●		1.500	11.256	8.539	7.500			+0.022			
S150- DRV1562-5-14	●	2	1.562	11.802	9.086	7.810	1.500	1.929	+0.070	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
DRV1625-5-14	●		1.625	12.117	9.401	8.125			+0.063			
NEW DRV1688-5-14	●		1.688	12.432	9.716	8.440			+0.056			
DRV1750-5-14	●		1.750	12.742	10.026	8.750			+0.049			
DRV1812-5-14	●		1.812	13.052	10.336	9.060		2.126	+0.041			
S200- DRV1875-5-14	●		1.875	13.367	10.651	9.375	2.000	2.520	+0.034			
NEW DRV1938-5-14	●		1.938	13.682	10.966	9.690			+0.027			
DRV2000-5-17	●		2.000	13.854	11.138	10.000			+0.079	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I

- When offset drilling, reduce feed rate to 0.0020 ipr or less

Estimated Cutting Tolerance (5D)

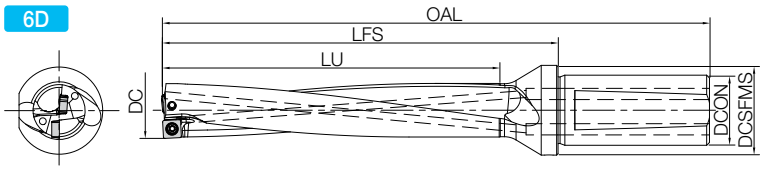
DC	Estimated Cutting Tolerance (in)	DC	Estimated Cutting Tolerance (in)
Ø0.500" - Ø1.500"	+0.014 0	Ø1.562" - Ø2.000"	+0.016 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K64
Adjustable Sleeve ASL K96
Troubleshooting K95

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 6 x DC)



Toolholder Dimensions - 6D (Inch Size)

Part Number	Stock	No. of Inserts	Dimension (in)						Max. Radial Offset (in)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S075- DRV0500-6-03	●	2	0.500	5.299	3.606	3.000	0.750	1.063	+0.006	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
S075- DRV0562-6-04	●	2	0.563	5.909	4.217	3.375	0.750	1.063	+0.014	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
S075- DRV0625-6-05	●	2	0.625	6.370	4.677	3.750	0.750	1.063	+0.016	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV0656-6-05	●		0.656	6.555	4.862	3.938			+0.012			
S100- DRV0688-6-05	●		0.688	7.181	5.055	4.125	1.000	1.260	+0.010			
S100- DRV0750-6-06	●	2	0.750	7.469	5.343	4.500	1.000	1.260	+0.024	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV0812-6-06	●		0.813	7.843	5.717	4.875			+0.018			
DRV0875-6-06	●		0.875	8.220	6.094	5.250			+0.010			
S100- DRV0938-6-07	●	2	0.938	8.579	6.453	5.625	1.000	1.260	+0.028	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV0984-6-07	●		0.984	8.854	6.728	5.906			+0.024			
DRV1000-6-07	●		1.000	8.949	6.823	6.000			+0.020			
S125- DRV1062-6-09	●	2	1.063	9.589	7.266	6.375	1.250	1.614	+0.041	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV1125-6-09	●		1.125	9.967	7.644	6.750			+0.033			
DRV1188-6-09	●		1.188	10.344	8.022	7.125			+0.026			
S150- DRV1250-6-09	●		1.250	11.256	8.539	7.500	1.500	1.929	+0.020			
S150- DRV1312-6-11	●	2	1.313	11.628	8.911	7.875	1.500	1.929	+0.045	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV1375-6-11	●		1.375	12.006	9.289	8.250			+0.039			
DRV1438-6-11	●		1.438	12.384	9.667	8.625			+0.031			
DRV1500-6-11	●		1.500	12.756	10.039	9.000			+0.022			
S150- DRV1562-6-14	●	2	1.562	13.364	10.648	9.372	1.500	1.929	+0.070	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
DRV1625-6-14	●		1.625	13.742	11.026	9.750			+0.063			
NEW DRV1688-6-14	●		1.688	14.120	11.404	10.128			+0.056			
DRV1750-6-14	●		1.750	14.492	11.776	10.500			+0.049			
DRV1812-6-14	●		1.812	14.864	12.148	10.872		2.126	+0.041			
S200- DRV1875-6-14	●		1.875	15.242	12.526	11.250	2.000	2.520	+0.034			
NEW DRV1938-6-14	●		1.938	15.620	12.904	11.628			+0.027			
DRV2000-6-17	●		2.000	15.854	13.138	12.000			+0.079	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I

- When offset drilling, reduce feed rate to 0.0016 ipr or less

Estimated Cutting Tolerance (6D)

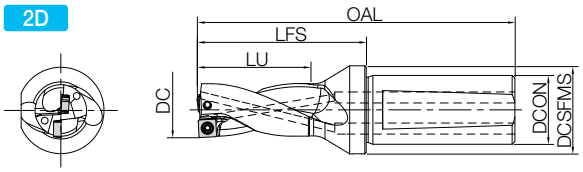
DC	Estimated Cutting Tolerance (in)	DC	Estimated Cutting Tolerance (in)
Ø0.500" - Ø1.500"	+0.018 0	Ø1.562" - Ø2.000"	+0.020 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K65
Adjustable Sleeve ASL K96
Troubleshooting K95

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 2 x DC)



Toolholder Dimensions - 2D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm)						Max. Radial Offset (mm)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S20- DRV120M-2-03	●	2	12	82	39	24	20	27	+0.25	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030204-□□-I
DRV125M-2-03	●		12.5	83	40	25			+0.20			
DRV130M-2-03	●		13	84	41	26			+0.15			
DRV135M-2-03	●		13.5	85	42	27			+0.10			
S20- DRV140M-2-04	●	2	14	92	49	28	20	27	+0.40	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
DRV145M-2-04	●		14.5	93	50	29			+0.35			
DRV150M-2-04	●		15	94	51	30			+0.30			
DRV155M-2-04	●		15.5	95	52	31			+0.25			
S25- DRV160M-2-05	●	2	16	110	56	32	25	32	+0.40	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV165M-2-05	●		16.5	111	57	33			+0.35			
DRV170M-2-05	●		17	112	58	34			+0.30			
DRV175M-2-05	●		17.5	113	59	35			+0.25			
DRV180M-2-05	●		18	114	60	36			+0.20			
DRV185M-2-05	●		18.5	115	61	37			+0.15			
S25- DRV190M-2-06	●	2	19	113	59	38	25	32	+0.65	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV195M-2-06	●		19.5	114	60	39			+0.60			
DRV200M-2-06	●		20	115	61	40			+0.55			
DRV205M-2-06	●		20.5	116	62	41			+0.50			
DRV210M-2-06	●		21	117	63	42			+0.45			
DRV215M-2-06	●		21.5	118	64	43			+0.35			
DRV220M-2-06	●		22	119	65	44			+0.30			
S25- DRV225M-2-07	●	2	22.5	120	66	45	25	32	+0.90	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV230M-2-07	●		23	121	67	46			+0.80			
DRV235M-2-07	●		23.5	122	68	47			+0.75			
DRV240M-2-07	●		24	123	69	48			+0.70			
DRV245M-2-07	●		24.5	124	70	49			+0.65			
DRV250M-2-07	●		25	125	71	50			+0.60			
DRV255M-2-07	●		25.5	126	72	51			+0.50			
DRV260M-2-07	●		26	127	73	52			+0.45			
S32- DRV270M-2-09	●	2	27	136	77	54	32	41	+1.05	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV280M-2-09	●		28	138	79	56			+0.95			
DRV290M-2-09	●		29	140	81	58			+0.85			
DRV300M-2-09	●		30	142	83	60			+0.75			
DRV310M-2-09	●		31	144	85	62			+0.60			
DRV320M-2-09	●		32	146	87	64			+0.50			

- When offset drilling, reduce feed rate to 0.0031 ipr or less

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Toolholder Dimensions - 2D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm)						Max. Radial Offset (mm)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S40- DRV330M-2-11	●	2	33	161	92	66	40	49	+1.25	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV340M-2-11	●		34	163	94	68			+1.15			
DRV350M-2-11	●		35	165	96	70			+1.00			
DRV360M-2-11	●		36	167	98	72			+0.90			
DRV370M-2-11	●		37	169	100	74			+0.80			
DRV380M-2-11	●		38	171	102	76			+0.65			
DRV390M-2-11	●		39	173	104	78			+0.55			
S40- DRV400M-2-14	●	2	40	181	112	80	40	49	+1.75	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
NEW DRV410M-2-14	●		41	183	114	82			+1.60			
NEW DRV420M-2-14	●		42	185	116	84			+1.50			
DRV430M-2-14	●		43	187	118	86			+1.40			
DRV440M-2-14	●		44	189	120	88			+1.30			
DRV450M-2-14	●		45	191	122	90			+1.15			
DRV460M-2-14	●		46	193	124	92		54	+1.05			
DRV470M-2-14	●		47	195	126	94			+0.95			
DRV480M-2-14	●		48	197	128	96			+0.80			
DRV490M-2-14	●		49	199	130	98			+0.70			
S40- DRV500M-2-17	●	2	50	198	129	100	40	59	+2.10	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I
NEW DRV510M-2-17	●		51	200	131	102			+1.95			
NEW DRV520M-2-17	●		52	202	133	104			+1.85			
DRV530M-2-17	●		53	204	135	106			+1.75			
DRV540M-2-17	●		54	206	137	108			+1.65			
DRV550M-2-17	●		55	208	139	110			+1.50			
DRV560M-2-17	●		56	210	141	112			+1.40			
DRV570M-2-17	●		57	212	143	114		64	+1.30			
DRV580M-2-17	●		58	214	145	116			+1.15			
DRV590M-2-17	●		59	216	147	118			+1.05			
DRV600M-2-17	●		60	218	149	120			+0.95			

- When offset drilling, reduce feed rate to 0.0031 ipr or less

Estimated Cutting Tolerance (2D)

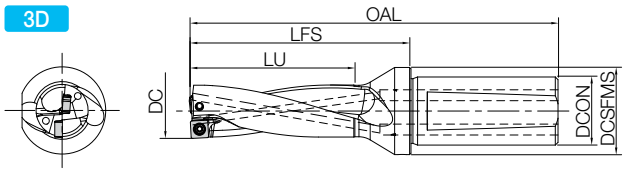
DC	Estimated Cutting Tolerance (mm)
Ø12mm - Ø60mm	+0.30 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K62
Adjustable Sleeve SHE K96
Troubleshooting K95

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 3 x DC)



Toolholder Dimensions - 3D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts Insert Screw	Wrench	Applicable Insert See Page K42~K43
S20- DRV120M-3-03	●	2	12	94	51	36	20	27	+0.25	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
DRV125M-3-03	●		12.5	96	53	37.5			+0.20			
DRV130M-3-03	●		13	97	54	39			+0.15			
DRV135M-3-03	●		13.5	99	56	40.5			+0.10			
S20- DRV140M-3-04	●	2	14	106	63	42	20	27	+0.40	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
DRV145M-3-04	●		14.5	108	65	43.5			+0.35			
DRV150M-3-04	●		15	109	66	45			+0.30			
DRV155M-3-04	●		15.5	111	68	46.5			+0.25			
S25- DRV160M-3-05	●	2	16	126	72	48	25	32	+0.40	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV165M-3-05	●		16.5	127	73	49.5			+0.35			
DRV170M-3-05	●		17	129	75	51			+0.30			
DRV175M-3-05	●		17.5	130	76	52.5			+0.25			
DRV180M-3-05	●		18	132	78	54			+0.20			
DRV185M-3-05	●		18.5	133	79	55.5			+0.15			
S25- DRV190M-3-06	●	2	19	132	78	57	25	32	+0.65	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV195M-3-06	●		19.5	134	80	58.5			+0.60			
DRV200M-3-06	●		20	135	81	60			+0.55			
DRV205M-3-06	●		20.5	137	83	61.5			+0.50			
DRV210M-3-06	●		21	138	84	63			+0.45			
DRV215M-3-06	●		21.5	140	86	64.5			+0.35			
DRV220M-3-06	●		22	141	87	66			+0.30			
S25- DRV225M-3-07	●	2	22.5	142	88	67.5	25	32	+0.90	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV230M-3-07	●		23	144	90	69			+0.80			
DRV235M-3-07	●		23.5	145	91	70.5			+0.75			
DRV240M-3-07	●		24	147	93	72			+0.70			
DRV245M-3-07	●		24.5	148	94	73.5			+0.65			
DRV250M-3-07	●		25	150	96	75			+0.60			
DRV255M-3-07	●		25.5	151	97	76.5			+0.50			
DRV260M-3-07	●		26	153	99	78			+0.45			
S32- DRV265M-3-09	●	2	26.5	161	102	79.5	32	41	+1.15	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV270M-3-09	●		27	163	104	81			+1.05			
DRV275M-3-09	●		27.5	164	105	82.5			+1.00			
DRV280M-3-09	●		28	166	107	84			+0.95			
DRV285M-3-09	●		28.5	167	108	85.5			+0.90			
DRV290M-3-09	●		29	169	110	87			+0.85			
DRV295M-3-09	●		29.5	170	111	88.5			+0.80			
DRV300M-3-09	●		30	172	113	90			+0.75			
DRV305M-3-09	●		30.5	173	114	91.5			+0.65			
DRV310M-3-09	●		31	175	116	93			+0.60			
DRV315M-3-09	●		31.5	176	117	94.5			+0.55			
DRV320M-3-09	●		32	178	119	96			+0.50			

- When offset drilling, reduce feed rate to 0.0031 ipr or less

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Toolholder Dimensions - 3D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm)						Max. Radial Offset (mm)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S40- DRV330M-3-11	●	2	33	194	125	99	40	49	+1.25	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV340M-3-11	●		34	197	128	102			+1.15			
DRV350M-3-11	●		35	200	131	105			+1.00			
DRV360M-3-11	●		36	203	134	108			+0.90			
DRV370M-3-11	●		37	206	137	111			+0.80			
DRV380M-3-11	●		38	209	140	114			+0.65			
DRV390M-3-11	●		39	212	143	117			+0.55			
S40- DRV400M-3-14	●	2	40	221	152	120	40	49	+1.75	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
NEW DRV410M-3-14	●		41	224	155	123			+1.60			
NEW DRV420M-3-14	●		42	227	158	126			+1.50			
DRV430M-3-14	●		43	230	161	129			+1.40			
DRV440M-3-14	●		44	233	164	132			+1.30			
DRV450M-3-14	●		45	236	167	135			+1.15			
DRV460M-3-14	●		46	239	170	138		54	+1.05			
DRV470M-3-14	●		47	242	173	141			+0.95			
DRV480M-3-14	●		48	245	176	144			+0.80			
DRV490M-3-14	●		49	248	179	147			+0.70			
S40- DRV500M-3-17	●	2	50	248	179	150	40	59	+2.10	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I
NEW DRV510M-3-17	●		51	251	182	153			+1.95			
NEW DRV520M-3-17	●		52	254	185	156			+1.85			
DRV530M-3-17	●		53	257	188	159			+1.75			
DRV540M-3-17	●		54	260	191	162			+1.65			
DRV550M-3-17	●		55	263	194	165			+1.50			
DRV560M-3-17	●		56	266	197	168			+1.40			
DRV570M-3-17	●		57	269	200	171		64	+1.30			
DRV580M-3-17	●		58	272	203	174			+1.15			
DRV590M-3-17	●		59	275	206	177			+1.05			
DRV600M-3-17	●		60	278	209	180			+0.95			

- When offset drilling, reduce feed rate to 0.0031 ipr or less

Estimated Cutting Tolerance (3D)

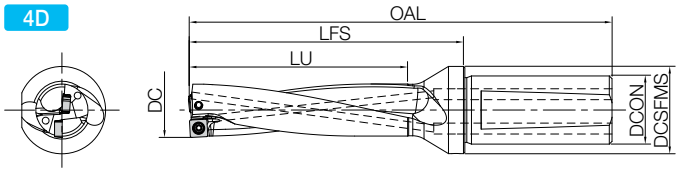
DC	Estimated Cutting Tolerance (mm)
Ø12mm - Ø60mm	+0.30 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K62
Adjustable Sleeve SHE K96
Troubleshooting K95

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 4 x DC)



Toolholder Dimensions - 4D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm)						Max. Radial Offset (mm)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S20- DRV120M-4-03	●	2	12	106	63	48	20	27	+0.25	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030204-□□-I
DRV125M-4-03	●		12.5	108	65	50			+0.20			
DRV130M-4-03	●		13	110	67	52			+0.15			
DRV135M-4-03	●		13.5	112	69	54			+0.10			
S20- DRV140M-4-04	●	2	14	120	77	56	20	27	+0.40	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
DRV145M-4-04	●		14.5	122	79	58			+0.35			
DRV150M-4-04	●		15	124	81	60			+0.30			
DRV155M-4-04	●		15.5	126	83	62			+0.25			
S25- DRV160M-4-05	●	2	16	142	88	64	25	32	+0.40	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV165M-4-05	●		16.5	144	90	66			+0.35			
DRV170M-4-05	●		17	146	92	68			+0.30			
DRV175M-4-05	●		17.5	148	94	70			+0.25			
DRV180M-4-05	●		18	150	96	72			+0.20			
DRV185M-4-05	●		18.5	152	98	74			+0.15			
S25- DRV190M-4-06	●	2	19	151	97	76	25	32	+0.65	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV195M-4-06	●		19.5	153	99	78			+0.60			
DRV200M-4-06	●		20	155	101	80			+0.55			
DRV205M-4-06	●		20.5	157	103	82			+0.50			
DRV210M-4-06	●		21	159	105	84			+0.45			
DRV215M-4-06	●		21.5	161	107	86			+0.35			
DRV220M-4-06	●		22	163	109	88			+0.30			
S25- DRV225M-4-07	●	2	22.5	165	111	90	25	32	+0.90	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV230M-4-07	●		23	167	113	92			+0.80			
DRV235M-4-07	●		23.5	169	115	94			+0.75			
DRV240M-4-07	●		24	171	117	96			+0.70			
DRV245M-4-07	●		24.5	173	119	98			+0.65			
DRV250M-4-07	●		25	175	121	100			+0.60			
DRV255M-4-07	●		25.5	177	123	102			+0.50			
DRV260M-4-07	●		26	179	125	104			+0.45			
S32- DRV270M-4-09	●	2	27	190	131	108	32	41	+1.05	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV280M-4-09	●		28	194	135	112			+0.95			
DRV290M-4-09	●		29	198	139	116			+0.85			
DRV300M-4-09	●		30	202	143	120			+0.75			
DRV310M-4-09	●		31	206	147	124			+0.60			
DRV320M-4-09	●		32	210	151	128			+0.50			

- When offset drilling, reduce feed rate to 0.0024 ipr or less

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Toolholder Dimensions - 4D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm)						Max. Radial Offset (mm)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S40- DRV330M-4-11	●	2	33	227	158	132	40	49	+1.25	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV340M-4-11	●		34	231	162	136			+1.15			
DRV350M-4-11	●		35	235	166	140			+1.00			
DRV360M-4-11	●		36	239	170	144			+0.90			
DRV370M-4-11	●		37	243	174	148			+0.80			
DRV380M-4-11	●		38	247	178	152			+0.65			
DRV390M-4-11	●		39	251	182	156			+0.55			
S40- DRV400M-4-14	●	2	40	261	192	160	40	49	+1.75	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
NEW DRV410M-4-14	●		41	265	196	164			+1.60			
NEW DRV420M-4-14	●		42	269	200	168			+1.50			
DRV430M-4-14	●		43	273	204	172			+1.40			
DRV440M-4-14	●		44	277	208	176			+1.30			
DRV450M-4-14	●		45	281	212	180			+1.15			
DRV460M-4-14	●		46	285	216	184		54	+1.05			
DRV470M-4-14	●		47	289	220	188			+0.95			
S50- DRV480M-4-14	●		48	293	224	192	50	59	+0.80			
DRV490M-4-14	●		49	297	228	196			+0.70			
S50- DRV500M-4-17	●	2	50	298	229	200	50	59	+2.10	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I
NEW DRV510M-4-17	●		51	302	233	204			+1.95			
NEW DRV520M-4-17	●		52	306	237	208			+1.85			
DRV530M-4-17	●		53	310	241	212			+1.75			
DRV540M-4-17	●		54	314	245	216			+1.65			
DRV550M-4-17	●		55	318	249	220			+1.50			
DRV560M-4-17	●		56	322	253	224			+1.40			
DRV570M-4-17	●		57	326	257	228		64	+1.30			
DRV580M-4-17	●		58	330	261	232			+1.15			
DRV590M-4-17	●		59	334	265	236			+1.05			
DRV600M-4-17	●		60	338	269	240			+0.95			

- When offset drilling, reduce feed rate to 0.0024 ipr or less

Estimated Cutting Tolerance (4D)

DC	Estimated Cutting Tolerance (mm)	DC	Estimated Cutting Tolerance (mm)
Ø12mm - Ø39mm	+0.35 0	Ø40mm - Ø60mm	+0.40 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K63
Adjustable Sleeve SHE K96
Troubleshooting K95

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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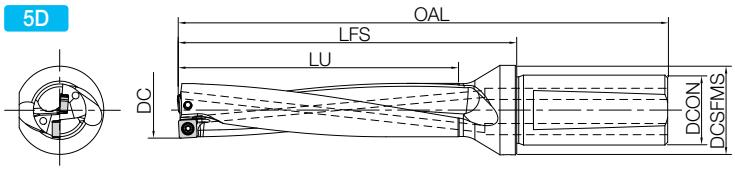
DRV (Drilling Depth: 5 x DC)



Toolholder Dimensions - 5D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm)						Max.Radial Offset (mm)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S20- DRV120M-5-03	●	2	12	118	75	60	20	27	+0.25	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
DRV130M-5-03	●		13	123	80	65			+0.15			
S20- DRV140M-5-04	●	2	14	134	91	70	20	27	+0.40	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
DRV150M-5-04	●		15	139	96	75			+0.30			
S25- DRV160M-5-05	●	2	16	158	104	80	25	32	+0.40	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV170M-5-05	●		17	163	109	85			+0.30			
DRV180M-5-05	●		18	168	114	90			+0.20			
S25- DRV190M-5-06	●	2	19	170	116	95	25	32	+0.65	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV200M-5-06	●		20	175	121	100			+0.55			
DRV210M-5-06	●		21	180	126	105			+0.45			
DRV220M-5-06	●		22	185	131	110			+0.30			
S25- DRV230M-5-07	●	2	23	190	136	115	25	32	+0.80	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV240M-5-07	●		24	195	141	120			+0.70			
DRV250M-5-07	●		25	200	146	125			+0.60			
DRV260M-5-07	●		26	205	151	130			+0.45			
S32- DRV270M-5-09	●	2	27	217	158	135	32	41	+1.05	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV280M-5-09	●		28	222	163	140			+0.95			
DRV290M-5-09	●		29	227	168	145			+0.85			
DRV300M-5-09	●		30	232	173	150			+0.75			
DRV310M-5-09	●		31	237	178	155			+0.60			
DRV320M-5-09	●		32	242	183	160			+0.50			

- When offset drilling, reduce feed rate to 0.0020 ipr or less

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Toolholder Dimensions - 5D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm)						Max.Radial Offset (mm)	Spare Parts		Applicable Insert See Page K42~K43
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S40- DRV330M-5-11	●	2	33	260	191	165	40	49	+1.25	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV340M-5-11	●		34	265	196	170			+1.15			
DRV350M-5-11	●		35	270	201	175			+1.00			
DRV360M-5-11	●		36	275	206	180			+0.90			
DRV370M-5-11	●		37	280	211	185			+0.80			
DRV380M-5-11	●		38	285	216	190			+0.65			
DRV390M-5-11	●		39	290	221	195			+0.55			
S40- DRV400M-5-14	●	2	40	301	232	200	40	49	+1.75	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
NEW DRV410M-5-14	●		41	306	237	205			+1.60			
NEW DRV420M-5-14	●		42	311	242	210			+1.50			
DRV430M-5-14	●		43	316	247	215			+1.40			
DRV440M-5-14	●		44	321	252	220			+1.30			
DRV450M-5-14	●		45	326	257	225			+1.15			
DRV460M-5-14	●		46	331	262	230		54	+1.05			
DRV470M-5-14	●		47	336	267	235			+0.95			
S50- DRV480M-5-14	●		48	341	272	240	50	59	+0.80			
DRV490M-5-14	●		49	346	277	245			+0.70			
S50- DRV500M-5-17	●	2	50	348	279	250	50	59	+2.10	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I
NEW DRV510M-5-17	●		51	353	284	255			+1.95			
NEW DRV520M-5-17	●		52	358	289	260			+1.85			
DRV530M-5-17	●		53	363	294	265			+1.75			
DRV540M-5-17	●		54	368	299	270			+1.65			
DRV550M-5-17	●		55	373	304	275			+1.50			
DRV560M-5-17	●		56	378	309	280			+1.40			
DRV570M-5-17	●		57	383	314	285		64	+1.30			
DRV580M-5-17	●		58	388	319	290			+1.15			
DRV590M-5-17	●		59	393	324	295			+1.05			
DRV600M-5-17	●		60	398	329	300			+0.95			

- When offset drilling, reduce feed rate to 0.0020 ipr or less

Estimated Cutting Tolerance (5D)

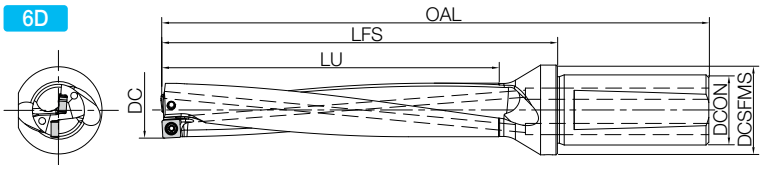
DC	Estimated Cutting Tolerance (mm)	DC	Estimated Cutting Tolerance (mm)
Ø12mm - Ø39mm	+0.35 0	Ø40mm - Ø60mm	+0.40 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K64
Adjustable Sleeve SHE K96
Troubleshooting K95

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRV (Drilling Depth: 6 x DC)



Toolholder Dimensions - 6D (Metric Size)

Part Number	Stock	No. of Inserts	Dimension (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max.Radial Offset (mm)	Spare Parts Insert Screw	Wrench	Applicable Insert See Page K42~K43
S20- DRV120M-6-03	●	2	12	130	87	72	20	27	+0.25	SB-2037TRP	FTP-6	Outer Edge LCMT030203-□□-E Inner Edge LCMT030205-□□-I
DRV130M-6-03	●		13	136	93	78			+0.15			
S20- DRV140M-6-04	●	2	14	148	105	84	20	27	+0.40	SB-2037TRP	FTP-6	Outer Edge SCMT040205-□□-E Inner Edge SCMT040209-□□-I
DRV150M-6-04	●		15	154	111	90			+0.30			
S25- DRV160M-6-05	●	2	16	174	120	96	25	32	+0.40	SB-2041TRP	FTP-6	Outer Edge SCMT050205-□□-E Inner Edge SCMT050210-□□-I
DRV170M-6-05	●		17	180	126	102			+0.30			
DRV180M-6-05	●		18	186	132	108			+0.20			
S25- DRV190M-6-06	●	2	19	189	135	114	25	32	+0.65	SB-2555TRP	DTPM-8	Outer Edge SCMT060205-□□-E Inner Edge SCMT060210-□□-I
DRV200M-6-06	●		20	195	141	120			+0.55			
DRV210M-6-06	●		21	201	147	126			+0.45			
DRV220M-6-06	●		22	207	153	132			+0.30			
S25- DRV230M-6-07	●	2	23	213	159	138	25	32	+0.80	SB-3060TRP	DTPM-10	Outer Edge SCMT070305-□□-E Inner Edge SCMT070310-□□-I
DRV240M-6-07	●		24	219	165	144			+0.70			
DRV250M-6-07	●		25	225	171	150			+0.60			
DRV260M-6-07	●		26	231	177	156			+0.45			
S32- DRV270M-6-09	●	2	27	244	185	162	32	41	+1.05	SB-3573TRP	DTPM-10	Outer Edge SCMT090405-□□-E Inner Edge SCMT090410-□□-I
DRV280M-6-09	●		28	250	191	168			+0.95			
DRV290M-6-09	●		29	256	197	174			+0.85			
DRV300M-6-09	●		30	262	203	180			+0.75			
DRV310M-6-09	●		31	268	209	186			+0.60			
DRV320M-6-09	●		32	274	215	192			+0.50			
S40- DRV330M-6-11	●	2	33	293	224	198	40	49	+1.25	SB-4086TRP	DTPM-15	Outer Edge SCMT110406-□□-E Inner Edge SCMT110410-□□-I
DRV340M-6-11	●		34	299	230	204			+1.15			
DRV350M-6-11	●		35	305	236	210			+1.00			
DRV360M-6-11	●		36	311	242	216			+0.90			
DRV370M-6-11	●		37	317	248	222			+0.80			
DRV380M-6-11	●		38	323	254	228			+0.65			
DRV390M-6-11	●		39	329	260	234			+0.55			
S40- DRV400M-6-14	●	2	40	341	272	240	40	49	+1.75	SB-50120TRPH	TTP-20	Outer Edge SCMT140508-□□-E Inner Edge SCMT140510-□□-I
NEW DRV410M-6-14	●		41	347	278	246			+1.60			
DRV420M-6-14	●		42	353	284	252			+1.50			
DRV430M-6-14	●		43	359	290	258			+1.40			
DRV440M-6-14	●		44	365	296	264			+1.30			
DRV450M-6-14	●		45	371	302	270			+1.15			
S50- DRV500M-6-17	●	2	50	398	329	300	50	59	+2.10	SB-60130TRP	TTP-20	Outer Edge SCMT170608-□□-E Inner Edge SCMT170610-□□-I
NEW DRV550M-6-17	●		55	428	359	330			+1.50			
DRV600M-6-17	●		60	458	389	360		64	+0.95			

- When offset drilling, reduce feed rate to 0.0016 ipr or less

Estimated Cutting Tolerance (6D)

DC	Estimated Cutting Tolerance (mm)	DC	Estimated Cutting Tolerance (mm)
Ø12mm - Ø39mm	+0.45 0	Ø40mm - Ø60mm	+0.50 0

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K65
Adjustable Sleeve SHE K96
Troubleshooting K95

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Insert Grade Selection Guide

Select CVD for the outer edge when performing high speed and high efficiency drilling and for abrasion resistance and long tool life.

Select PVD MEGACOAT for the outer edge for stable drilling and a better surface finish.

PVD MEGACOAT is recommended for the outer edge if chattering occurs, machining with lathe, or if cutting conditions cannot be increased to the recommended speed for CVD.

1st Recommendation
(High Speed and High Efficiency Drilling)

Outer Edge : CVD (CA520D / CA415D)

Inner Edge : PVD (PR1535)

Stable Machining Oriented
(1st Recommendation for Lathe Machining)

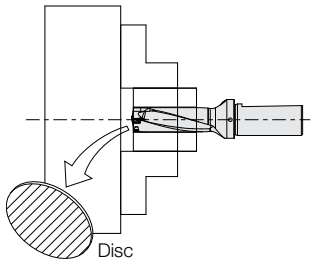
Outer Edge : PVD (PR1225)

Inner Edge : PVD (PR1535)

Machining Caution

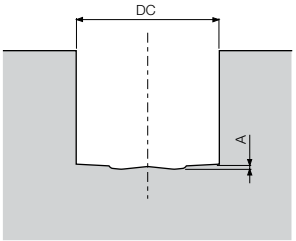
In case of through-hole machining, a disc may be generated and ejected outward when exiting the hole.

Be sure to install guards to protect against dangers if using a machine without the covers (including general-purpose lathes, etc.).



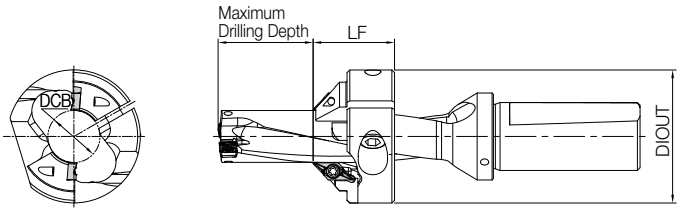
DRV Hole Bottom Shape

DRV Inch Diameters (in)			DRV Metric Diameters (mm)											
Insert Size	DC	A	Insert Size	DC	A	Insert Size	DC	A	Insert Size	DC	A	Insert Size	DC	A
03	0.500	0.028	03	12.0	0.7	06	19.0	1.2	09	26.5	1.2	14	40.0	1.9
04	0.562	0.039		12.5			19.5			27.0			41.0	
05	0.625	0.043		13.0			20.0			27.5	1.3		42.0	2.0
	0.656			13.5			20.5	1.3		28.0			43.0	
	0.688		04	14.0	1.0		21.0			28.5			44.0	
06	0.750	0.047		14.5			21.5			29.0			45.0	2.1
	0.812	0.051		15.0			22.0			29.5	1.4		46.0	
	0.875			15.5		07	22.5	1.2		30.0			47.0	
07	0.938	0.047	05	16.0	1.1		23.0			30.5			48.0	2.2
	0.984	0.051		16.5			23.5			31.0			49.0	
	1.000			17.0			24.0			31.5	1.5	17	50.0	2.0
09	1.062	0.047		17.5			24.5	1.3		32.0			51.0	2.1
	1.125	0.051		18.0	1.2		25.0		11	33.0	1.5		52.0	
	1.188	0.055		18.5			25.5			34.0			53.0	
	1.250	0.059					26.0			35.0			54.0	
11	1.312	0.059								36.0	1.6		55.0	2.2
	1.375									37.0			56.0	
	1.438	0.063								38.0			57.0	2.3
	1.500									39.0	1.7		58.0	
14	1.562	0.075											59.0	2.4
	1.625												60.0	
	1.688	0.079												
	1.750													
	1.812	0.083												
	1.875	0.087												
	1.938													
17	2.000	0.083												



Common for 2D, 3D, 4D, 5D, 6D Drills
*Above is estimated values. (varies within ±0.1mm (±0.004") depending on workpiece material and cutting conditions)

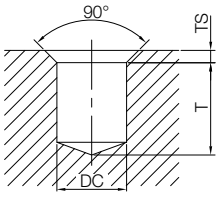
DRV Chamfering Attachment



Chamfer Attachment Dimensions

Part Number	Stock	Applicable Drill Bodies		Dimensions (mm)			Applicable Inserts	Spare Parts			
		Inch Size Bodies	Metric Size Bodies	DIOUT	DCB	LF		Insert Screw	Wrench	Clamp Screw	Wrench
DRV-CH17	●	**S075-DRV0656-...-05**	**S25-DRV165M-...-05 S25-DRV170M-...-05**	47	16.2	30	CH0503-45	SB-3080TR	FT-10	HH6X18	LW-5
DRV-CH18	●	**S100-DRV0688-...-05**	**S25-DRV175M-...-05 S25-DRV180M-...-05**	47	17.2	30					
DRV-CH19	●	-	**S25-DRV185M-...-05 S25-DRV190M-...-06**	49	18.2	30					
DRV-CH20	●	**S100-DRV0766-...-06**	**S25-DRV195M-...-06 S25-DRV200M-...-06**	49	19.2	30					
DRV-CH21	●	**S100-DRV0812-...-06**	**S25-DRV205M-...-06 S25-DRV210M-...-06**	49	20.2	30					
DRV-CH22	●	-	**S25-DRV215M-...-06 S25-DRV220M-...-06**	49	21.2	30					
DRV-CH23	●	-	**S25-DRV225M-...-07 S25-DRV230M-...-07**	51	22.2	30					
DRV-CH24	●	**S100-DRV0938-...-07**	**S25-DRV235M-...-07 S25-DRV240M-...-07**	51	23.2	30					
DRV-CH25	●	**S100-DRV0984-...-07**	**S25-DRV245M-...-07 S25-DRV250M-...-07**	53	24.2	30					
DRV-CH26	●	-	**S25-DRV255M-...-07 S25-DRV260M-...-07**	53	25.2	30					
DRV-CH27	●	**S125-DRV1062-...-09**	**S25-DRV265M-...-09 S32-DRV270M-...-09**	64	26	35				HH8X20	LW-6

Maximum Drilling Depth / Chamfering Depths



Drilling Diameter (mm)	Maximum Drilling Depth T (mm)					Max Chamfering Depth	Applicable Chamfering Attachment
DC	2D Drill	3D Drill	4D Drill	5D Drill	6D Drill	Ts (mm)	
Ø16.5	0.5	17	33.5	–	–	2.5	**DRV-CH17**
Ø17.0	1.5	18.5	35.5	52.5	69.5		
Ø17.5	2.5	20	37.5	–	–		**DRV-CH18**
Ø18.0	3.5	21.5	39.5	57.5	75.5		
Ø18.5	4.5	23	41.5	–	–		**DRV-CH19**
Ø19.0	5.5	24.5	43.5	62.5	81.5		
Ø19.5	6.5	26	45.5	–	–		**DRV-CH20**
Ø20.0	7.5	27.5	47.5	67.5	87.5		
Ø20.5	8.5	29	49.5	–	–		**DRV-CH21**
Ø21.0	9.5	30.5	51.5	72.5	93.5		
Ø21.5	10.5	32	53.5	–	–		**DRV-CH22**
Ø22.0	11.5	33.5	55.5	77.5	99.5		
Ø22.5	12.5	35	57.5	–	–		**DRV-CH23**
Ø23.0	13.5	36.5	59.5	82.5	105.5		
Ø23.5	14.5	38	61.5	–	–		**DRV-CH24**
Ø24.0	15.5	39.5	63.5	87.5	111.5		
Ø24.5	16.5	41	65.5	–	–		**DRV-CH25**
Ø25.0	17.5	42.5	67.5	92.5	117.5		
Ø25.5	18.5	44	69.5	–	–		**DRV-CH26**
Ø26.0	19.5	45.5	71.5	97.5	123.5		
Ø26.5	–	47	–	–	–		**DRV-CH27**
Ø27.0	16.5	43.5	75.5	97.5	124.5		

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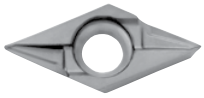
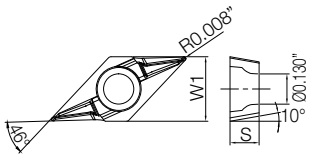
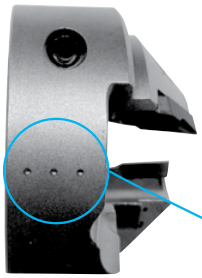
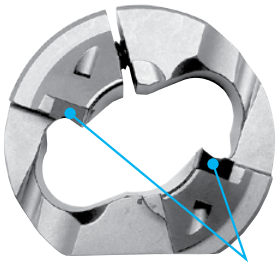
Applicable Chamfering Inserts

Shape		Part Number	Dimensions (mm)		MEGACOAT NANO	Applicable Chamfering Attachment
			W1	S	PR1535	
		CH0503-45	7.05	3.18	●	DRV-CH○○

How to Install Chamfering Attachment

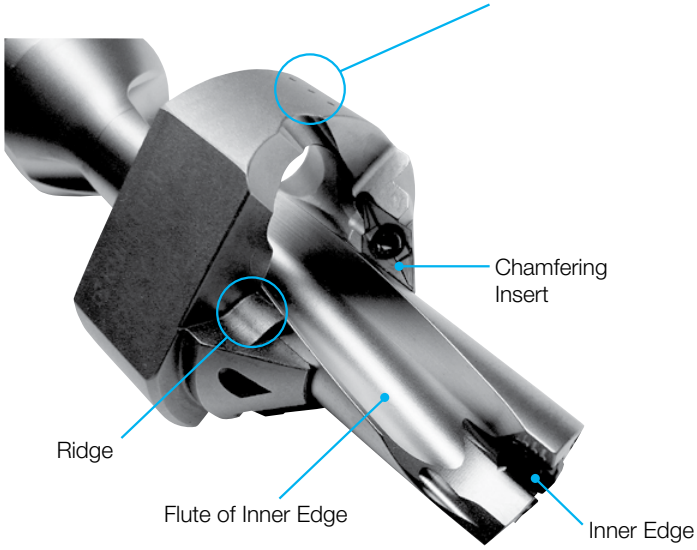




Chamfering Insert

Clamping Screw for Chamfering Attachment

Identification on Inner Edge



Chamfering Insert

Ridge

Flute of Inner Edge

Inner Edge

Instructions

1) Install the attachment over the DRV body so that "• • •" mark on the side of the attachment aligns with the inside flute edge (see image).

2) Adjust the position to avoid interference between the chamfering inserts, chamfering attachment ridges, and drill body flutes. Then fasten the clamp screw with the recommended torque below.

Recommended Torque

Chamfering Attachment Part Number	Torque (Nm)	Clamping Screw	Wrench
DRV-CH17 ~ DRV-CH26	10	HH6X18	LW-5
DRV-CH27	14	HH8X20	LW-6

DRV 2D/3D - Recommended Cutting Conditions (with Coolant)

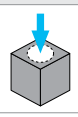
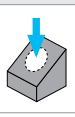
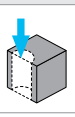
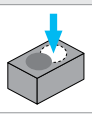
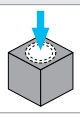
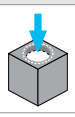
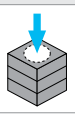
Drilling Depth: 2D / 3D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)			
	PVD Coated Carbide				CVD Coated Carbide								2D~3D			
	PR1225				CA520D				CA415D							
	GM	GH	XM	SM	GM	GH	XM	SM	GM	GH			GM	GH	XM	SM
Low Carbon Steel	-	-	★ 390-660	☆ 390-660	-	-	★ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	–	–	–	0.0016 ~ 0.0024
											0.562 - 0.578	14.0 - 15.5	–	–	0.0016 ~ 0.0035	0.0016 ~ 0.0028
											0.625 - 0.688	16.0 - 18.5	–	–	0.0016 ~ 0.0039	0.0016 ~ 0.0031
											0.750 - 0.875	19.0 - 22.0	–	–	0.0016 ~ 0.0047	0.0016 ~ 0.0031
											0.922 - 1.000	22.5 - 26.0	–	–	0.0016 ~ 0.0055	0.0024 ~ 0.0039
											1.062 - 1.250	26.5 - 32.0	–	–	0.0024 ~ 0.0055	0.0024 ~ 0.0039
											1.312 - 1.500	33.0 - 39.0	–	–	0.0031 ~ 0.0055	0.0024 ~ 0.0039
											1.562 - 2.000	40.0 - 60.0	–	–	–	0.0031 ~ 0.0047
Carbon Steel	★ 330-590	☆ 330-590	☆ 330-590	☆ 330-590	★ 490-920	☆ 490-920	☆ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0055	0.0016 ~ 0.0055	–	0.0016 ~ 0.0039
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0055	0.0016 ~ 0.0055	0.0016 ~ 0.0039	0.0016 ~ 0.0039
											0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0063	0.0024 ~ 0.0063	0.0024 ~ 0.0047	0.0024 ~ 0.0047
											0.750 - 1.000	19.0 - 26.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	0.0024 ~ 0.0055	0.0024 ~ 0.0055
											1.062 - 1.250	26.5 - 32.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	0.0024 ~ 0.0055	0.0024 ~ 0.0055
											1.312 - 1.500	33.0 - 39.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	0.0028 ~ 0.0063	0.0024 ~ 0.0055
											1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0079	–	–	0.0024 ~ 0.0055
Alloy Steel	★ 330-525	☆ 330-525	☆ 330-525	-	★ 460-720	☆ 460-720	☆ 460-720	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0047	0.0016 ~ 0.0047	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0055	0.0016 ~ 0.0055	–	–
											0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0063	0.0024 ~ 0.0063	–	–
											0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	–	–
											1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0079	–	–	–
Tool Steel	☆ 260-490	★ 260-490	-	-	☆ 425-690	★ 425-690	-	-	-	-	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	–
											0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											0.750 - 1.250	19.0 - 32.0	0.0031 ~ 0.0059	0.0031 ~ 0.0059	–	–
											1.312 - 1.500	33.0 - 39.0	0.0031 ~ 0.0059	0.0031 ~ 0.0059	–	–
											1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0059	–	–	–
Stainless Steel (Austenitic)	-	-	-	★ 230-460	-	-	-	★ 460-660	-	-	0.500 - 0.578	12.0 - 15.5	–	–	–	0.0016 ~ 0.0039
											0.625 - 0.688	16.0 - 18.5	–	–	–	0.0024 ~ 0.0047
											0.750 - 2.000	19.0 - 60.0	–	–	–	0.0024 ~ 0.0055
Gray Cast Iron	☆ 330-490	★ 330-490	-	-	-	-	-	-	☆ 490-720	★ 490-720	0.500	12.0 - 13.5	0.0031 ~ 0.0055	0.0031 ~ 0.0055	–	–
											0.562 - 0.578	14.0 - 15.5	0.0031 ~ 0.0055	0.0031 ~ 0.0055	–	–
											0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0071	0.0031 ~ 0.0071	–	–
											0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0079	0.0031 ~ 0.0079	–	–
											1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0079	–	–	–
Nodular Cast Iron	☆ 260-390	★ 260-390	-	-	-	-	-	-	☆ 390-590	★ 390-590	0.500 - 0.578	12.0 - 15.5	0.0031 ~ 0.0047	0.0031 ~ 0.0047	–	–
											0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0063	0.0031 ~ 0.0063	–	–
											0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0071	0.0031 ~ 0.0071	–	–
											1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0071	–	–	–

• Internal Coolant is Recommended

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)					Not Recommended
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.	Not Available
Internal Coolant	Yes						Not Recommended

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DRV 4D - Recommended Cutting Conditions (with Coolant)

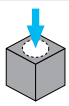
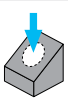
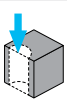
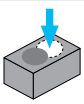
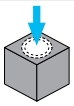
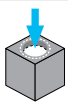
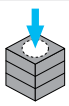
Drilling Depth: 4D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)			
	PVD Coated Carbide				CVD Coated Carbide								4D			
	PR1225				CA520D				CA415D							
	GM	GH	XM	SM	GM	GH	XM	SM	GM	GH			GM	GH	XM	SM
Low Carbon Steel	-	-	★ 390-660	☆ 390-660	-	-	★ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	–	–	–	0.0016 ~ 0.0024
											0.562 - 0.578	14.0 - 15.5	–	–	0.0016 ~ 0.0031	0.0016 ~ 0.0028
											0.625 - 0.688	16.0 - 18.5	–	–	0.0016 ~ 0.0031	0.0016 ~ 0.0031
											0.750 - 0.875	19.0 - 22.0	–	–	0.0016 ~ 0.0039	0.0016 ~ 0.0031
											0.922 - 1.000	22.5 - 26.0	–	–	0.0016 ~ 0.0047	0.0020 ~ 0.0039
											1.062 - 1.250	26.5 - 32.0	–	–	0.0016 ~ 0.0047	0.0020 ~ 0.0039
											1.312 - 1.500	33.0 - 39.0	–	–	0.0024 ~ 0.0047	0.0020 ~ 0.0039
											1.562 - 2.000	40.0 - 60.0	–	–	–	0.0020 ~ 0.0039
Carbon Steel	★ 330-590	☆ 330-590	☆ 330-590	☆ 330-590	★ 490-920	☆ 490-920	☆ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	–	0.0016 ~ 0.0031
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	0.0016 ~ 0.0031	0.0016 ~ 0.0031
											0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0047	0.0020 ~ 0.0047	0.0016 ~ 0.0039	0.0020 ~ 0.0039
											0.750 - 1.000	19.0 - 26.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	0.0016 ~ 0.0047	0.0020 ~ 0.0047
											1.062 - 1.250	26.5 - 32.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	0.0016 ~ 0.0047	0.0020 ~ 0.0047
											1.312 - 1.500	33.0 - 39.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	0.0024 ~ 0.0055	0.0020 ~ 0.0047
											1.562 - 2.000	40.0 - 60.0	0.0028 ~ 0.0063	–	–	0.0020 ~ 0.0047
Alloy Steel	★ 330-525	☆ 330-525	☆ 330-525	-	★ 460-720	☆ 460-720	☆ 460-720	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	–	–
											0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0047	0.0020 ~ 0.0047	–	–
											0.750 - 1.500	19.0 - 39.0	0.0028 ~ 0.0063	0.0028 ~ 0.0063	–	–
											1.562 - 2.000	40.0 - 60.0	0.0028 ~ 0.0063	–	–	–
Tool Steel	☆ 260-490	★ 260-490	-	-	☆ 425-690	★ 425-690	-	-	-	-	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0028	0.0016 ~ 0.0028	–	–
											0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0039	0.0020 ~ 0.0039	–	–
											0.750 - 1.250	19.0 - 32.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											1.312 - 1.500	33.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	–	–	–
Stainless Steel (Austenitic)	-	-	-	★ 230-460	-	-	-	★ 460-660	-	-	0.500 - 0.578	12.0 - 15.5	–	–	–	0.0016 ~ 0.0031
											0.625 - 0.688	16.0 - 18.5	–	–	–	0.0020 ~ 0.0043
											0.750 - 2.000	19.0 - 60.0	–	–	–	0.0024 ~ 0.0047
Gray Cast Iron	☆ 330-490	★ 330-490	-	-	-	-	-	-	☆ 490-720	★ 490-720	0.500	12.0 - 13.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	–	–
											0.562 - 0.578	14.0 - 15.5	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0063	0.0031 ~ 0.0063	–	–
											0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0071	0.0031 ~ 0.0071	–	–
											1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0071	–	–	–
Nodular Cast Iron	☆ 260-390	★ 260-390	-	-	-	-	-	-	☆ 390-590	★ 390-590	0.500 - 0.578	12.0 - 15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	–	–
											0.625 - 0.688	16.0 - 18.5	0.0031 ~ 0.0055	0.0031 ~ 0.0055	–	–
											0.750 - 1.500	19.0 - 39.0	0.0031 ~ 0.0063	0.0031 ~ 0.0063	–	–
											1.562 - 2.000	40.0 - 60.0	0.0031 ~ 0.0063	–	–	–

• Internal Coolant is Recommended

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)					Not Recommended
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.	Not Available
Internal Coolant	Yes						Not Recommended

DRV 5D - Recommended Cutting Conditions (with Coolant)

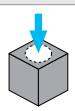
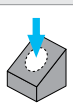
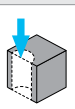
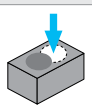
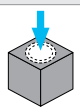
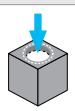
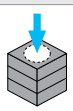
Drilling Depth: 5D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)			
	PVD Coated Carbide				CVD Coated Carbide								5D			
	PR1225				CA520D				CA415D							
	GM	GH	XM	SM	GM	GH	XM	SM	GM	GH			GM	GH	XM	SM
Low Carbon Steel	-	-	★ 390-660	☆ 390-660	-	-	★ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	–	–	–	0.0012 ~ 0.0020
											0.562 - 0.578	14.0 - 15.5	–	–	0.0016 ~ 0.0028	0.0016 ~ 0.0024
											0.625 - 0.688	16.0 - 18.5	–	–	0.0016 ~ 0.0031	0.0016 ~ 0.0024
											0.750 - 0.875	19.0 - 22.0	–	–	0.0016 ~ 0.0039	0.0016 ~ 0.0028
											0.922 - 1.000	22.5 - 26.0	–	–	0.0016 ~ 0.0047	0.0016 ~ 0.0031
											1.062 - 1.250	26.5 - 32.0	–	–	0.0016 ~ 0.0047	0.0016 ~ 0.0031
											1.312 - 1.500	33.0 - 39.0	–	–	0.0020 ~ 0.0047	0.0016 ~ 0.0039
											1.562 - 2.000	40.0 - 60.0	–	–	–	0.0016 ~ 0.0039
Carbon Steel	★ 330-590	☆ 330-590	☆ 330-590	☆ 330-590	★ 490-920	☆ 490-920	☆ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	0.0016 ~ 0.0028
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	0.0016 ~ 0.0028	0.0016 ~ 0.0028
											0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0039	0.0020 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031
											0.750 - 1.000	19.0 - 26.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0020 ~ 0.0039	0.0020 ~ 0.0039
											1.062 - 1.250	26.5 - 32.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0020 ~ 0.0047	0.0020 ~ 0.0039
											1.312 - 1.500	33.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0020 ~ 0.0047	0.0020 ~ 0.0039
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	–	–	0.0020 ~ 0.0039
Alloy Steel	★ 330-525	☆ 330-525	☆ 330-525	-	★ 460-720	☆ 460-720	☆ 460-720	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	–
											0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0039	0.0020 ~ 0.0039	–	–
											0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	–	–	–
Tool Steel	☆ 260-490	★ 260-490	-	-	☆ 425-690	★ 425-690	-	-	-	-	0.500	12.0 - 13.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	–	–
											0.625 - 0.688	16.0 - 18.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	–
											0.750 - 1.500	19.0 - 39.0	0.0020 ~ 0.0039	0.0020 ~ 0.0039	–	–
											1.562 - 2.000	40.0 - 60.0	0.0020 ~ 0.0039	–	–	–
Stainless Steel (Austenitic)	-	-	-	★ 230-460	-	-	-	★ 460-660	-	-	0.500	12.0 - 13.5	–	–	–	0.0016 ~ 0.0031
											0.562 - 0.578	14.0 - 15.5	–	–	–	0.0016 ~ 0.0031
											0.625 - 0.688	16.0 - 18.5	–	–	–	0.0016 ~ 0.0039
											0.750 - 2.000	19.0 - 60.0	–	–	–	0.0024 ~ 0.0047
Gray Cast Iron	☆ 330-490	★ 330-490	-	-	-	-	-	-	☆ 490-720	★ 490-720	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0039	0.0016 ~ 0.0039	–	–
											0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0055	0.0024 ~ 0.0055	–	–
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0055	–	–	–
Nodular Cast Iron	☆ 260-390	★ 260-390	-	-	-	-	-	-	☆ 390-590	★ 390-590	0.500	12.0 - 13.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	–
											0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	–	–
											0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	–	–	–

• Internal Coolant is Recommended

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)					Not Recommended
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.	Not Available
Internal Coolant	Yes						Not Recommended

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DRV 6D - Recommended Cutting Conditions (with Coolant)

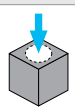
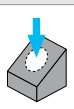
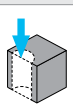
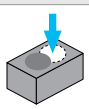
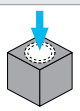
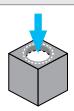
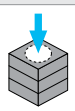
Drilling Depth: 6D

Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)										Inch Drill Dia. DC (in)	Metric Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)			
	PVD Coated Carbide				CVD Coated Carbide								6D			
	PR1225				CA520D				CA415D							
	GM	GH	XM	SM	GM	GH	XM	SM	GM	GH			GM	GH	XM	SM
Low Carbon Steel	-	-	★ 390-660	☆ 390-660	-	-	★ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	–	–	–	0.0012 ~ 0.0020
											0.562 - 0.578	14.0 - 15.5	–	–	0.0016 ~ 0.0024	0.0016 ~ 0.0024
											0.625 - 0.688	16.0 - 18.5	–	–	0.0016 ~ 0.0024	0.0016 ~ 0.0024
											0.750 - 0.875	19.0 - 22.0	–	–	0.0016 ~ 0.0028	0.0016 ~ 0.0028
											0.922 - 1.000	22.5 - 26.0	–	–	0.0016 ~ 0.0031	0.0016 ~ 0.0028
											1.062 - 1.250	26.5 - 32.0	–	–	0.0016 ~ 0.0031	0.0016 ~ 0.0028
											1.312 - 1.500	33.0 - 39.0	–	–	0.0016 ~ 0.0035	0.0016 ~ 0.0031
											1.562 - 2.000	40.0 - 60.0	–	–	–	0.0016 ~ 0.0031
Carbon Steel	★ 330-590	☆ 330-590	☆ 330-590	☆ 330-590	★ 490-920	☆ 490-920	☆ 490-920	☆ 490-920	-	-	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	–	0.0012 ~ 0.0020
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	0.0016 ~ 0.0024	0.0016 ~ 0.0024
											0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0031	0.0020 ~ 0.0031	0.0020 ~ 0.0028	0.0020 ~ 0.0028
											0.750 - 1.000	19.0 - 26.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031
											1.062 - 1.250	26.5 - 32.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031
											1.312 - 1.500	33.0 - 39.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0020 ~ 0.0031	0.0020 ~ 0.0031
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0039	–	–	0.0020 ~ 0.0031
Alloy Steel	★ 330-525	☆ 330-525	☆ 330-525	-	★ 460-720	☆ 460-720	☆ 460-720	-	-	-	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	–	–
											0.625 - 0.688	16.0 - 18.5	0.0020 ~ 0.0031	0.0020 ~ 0.0031	–	–
											0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	–	–
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0039	–	–	–
Tool Steel	☆ 260-490	★ 260-490	-	-	☆ 425-690	★ 425-690	-	-	-	-	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0020	0.0016 ~ 0.0020	–	–
											0.625 - 0.688	16.0 - 18.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	–	–
											0.750 - 1.500	19.0 - 39.0	0.0020 ~ 0.0031	0.0020 ~ 0.0031	–	–
											1.562 - 2.000	40.0 - 60.0	0.0020 ~ 0.0031	–	–	–
Stainless Steel (Austenitic)	-	-	-	★ 230-460	-	-	-	★ 460-660	-	-	0.500	12.0 - 13.5	–	–	–	0.0012 ~ 0.0020
											0.562 - 0.578	14.0 - 15.5	–	–	–	0.0016 ~ 0.0024
											0.625 - 0.688	16.0 - 18.5	–	–	–	0.0016 ~ 0.0035
											0.750 - 2.000	19.0 - 60.0	–	–	–	0.0024 ~ 0.0039
Gray Cast Iron	☆ 330-490	★ 330-490	-	-	-	-	-	-	☆ 490-720	★ 490-720	0.500 - 0.578	12.0 - 15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	–	–
											0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	–	–
											0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0047	0.0024 ~ 0.0047	–	–
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0047	–	–	–
Nodular Cast Iron	☆ 260-390	★ 260-390	-	-	-	-	-	-	☆ 390-590	★ 390-590	0.500	12.0 - 13.5	0.0012 ~ 0.0020	0.0012 ~ 0.0020	–	–
											0.562 - 0.578	14.0 - 15.5	0.0016 ~ 0.0024	0.0016 ~ 0.0024	–	–
											0.625 - 0.688	16.0 - 18.5	0.0024 ~ 0.0031	0.0024 ~ 0.0031	–	–
											0.750 - 1.500	19.0 - 39.0	0.0024 ~ 0.0039	0.0024 ~ 0.0039	–	–
											1.562 - 2.000	40.0 - 60.0	0.0024 ~ 0.0039	–	–	–

• Internal Coolant is Recommended

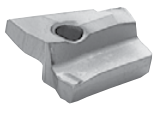
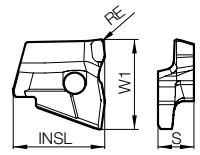
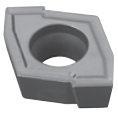
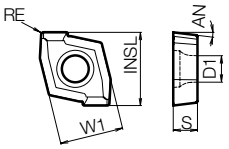
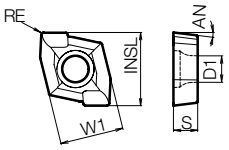
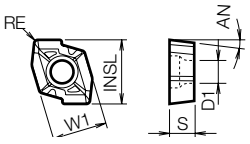
★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Existing Hole	Concave Surface	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	See recommended cutting conditions above	390 (PVD insert is recommended for outer edge)					Not Recommended
f (ipr)	See recommended cutting conditions above	50% of above recommendation				50% of above recommendation initially. See recommendations above once drill is fully engaged.	Not Available
Internal Coolant	Yes						Not Recommended

Applicable DRS & DRZ Inserts

Usage Classification						
★ : 1st Recommendation ☆ : 2nd Recommendation (Steel; Non Heat Treated)	P	Carbon Steel / Alloy Steel	★	☆		
		Tool Steel	★			
	M	Stainless Steel	☆	★		
	K	Cast Iron			★	
	N	Non-ferrous Metals				☆

Insert		Part Number		Dimensions (in)					Angle	MEGACOAT			Carbide
				INSL	S	D1	W1	RE	AN	PR1230	PR1225	PR1210	KW10
		DS	100	0.346	0.138		0.354			●		●	
			105	0.366	0.146		0.382	0.008		●		●	
			110	0.386	0.154	-	0.394		-	●		●	
			115	0.402	0.161		0.406			●		●	
			120	0.425	0.169		0.429	0.010		●		●	
		ZCMT	050203	0.232	0.094	0.091	0.197	0.012		●	●	●	●
			06T204	0.276	0.110	0.098	0.236			●	●	●	●
			080304	0.382	0.125	0.114	0.323	0.016		●	●	●	●
			10T304	0.472	0.156	0.173	0.409		7°	●	●	●	●
			12T306	0.563	0.156	0.220	0.504	0.024		●	●	●	●
			150408	0.701	0.187	0.220	0.622	0.031		●	●	●	●
			200608	0.898	0.250	0.256	0.799			●			●
 Low Cutting Force / Deep Drilling		ZCMT	050203SP	0.232	0.094	0.091	0.197	0.012		●	●		●
			06T204SP	0.276	0.110	0.098	0.236			●	●		●
			080304SP	0.382	0.125	0.114	0.323	0.016		●	●		●
			10T304SP	0.472	0.156	0.173	0.409		7°	●	●		●
			12T304SP	0.563	0.156	0.220	0.504			●	●		●
			150406SP	0.701	0.187	0.220	0.622	0.024		●	●		●
 For Stainless Steel		ZCMT	050203SU	0.232	0.094	0.091	0.197	0.012	7°	●	●		
			06T204SU	0.276	0.110	0.098	0.236	0.016		●	●		

Recommended Cutting Conditions ➔ K67

Chipbreaker Selection Guide (ZCMT)

★ : 1st Recommendation ☆ : 2nd Recommendation

Workpiece Material	Insert Size	ZCMT05									ZCMT06									ZCMT08					
	Chipbreaker	Standard			SP			SU			Standard			SP			SU			Standard			SP		
	Cutting Depth	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D	2D	3D	4D
Low Carbon Steel		☆	☆	-	★	★	★	-	-	-	☆	☆	-	★	★	★	☆	☆	☆	☆	☆	-	★	★	★
Carbon Steel		★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★
Alloy Steel		★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★
Tool Steel		★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★	-	-	-	★	★	☆	☆	☆	★
Stainless Steel		☆	☆	-	★	★	★	☆	☆	-	-	-	-	☆	☆	☆	★	★	★	☆	☆	-	★	★	★
Cast Iron		★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆
Aluminum Alloy		☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★
Brass		★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆	-	-	-	★	★	★	☆	☆	☆
Titanium Alloy		☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★	-	-	-	☆	☆	☆	★	★	★

Workpiece Material	Insert Size	ZCMT10								ZCMT12								ZCMT15								ZCMT20		
	Chipbreaker	Standard				SP				Standard				SP				Standard				SP				Standard		
	Cutting Depth	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D
Low Carbon Steel		☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	★	★	★
Carbon Steel		★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★
Alloy Steel		★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★
Tool Steel		★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★
Stainless Steel		☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	☆	☆	-	-	★	★	★	★	★	★	★
Cast Iron		★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★
Aluminum Alloy		☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★
Brass		★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★
Titanium Alloy		☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	☆	☆	☆	☆	★	★	★	★	★	★	★

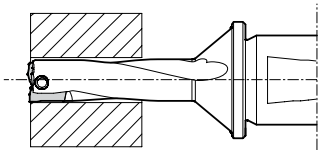
- Standard chipbreakers (without symbol) may function better with interrupted cutting.
- When machining aluminum, chips become long and difficult to discharge at depths over 2D.

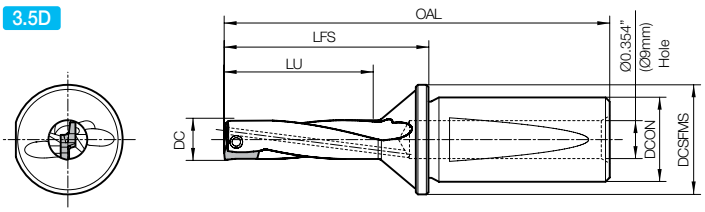
Inserts are sold in 10 piece boxes

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRS (Drilling Depth: 3.5 x DC)





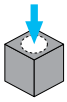
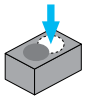
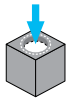
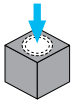
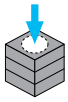
Toolholder Dimensions - 3.5D (Metric Size / Inch Shank Size)

Part Number		Stock	No. of Inserts	Unit	Dimensions DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Wrench		Applicable Insert See Page K66
S75	-DRS10035	●	1	inch	0.394 (10.0mm)	3.602	1.909	1.378	0.75	1.023	+0.008	SB-2080TR	FT-6	-	DS100
	-DRS10537	●			0.413 (10.5mm)	3.657	1.964	1.457	0.75	1.023	+0.008				DS105
	-DRS11038	●			0.433 (11.0mm)	3.759	2.066	1.516	0.75	1.023	+0.008	SB-2290TR			DS110
	-DRS11540	●			0.453 (11.5mm)	3.828	2.135	1.594	0.75	1.023	+0.008				DS115
	-DRS12042	●			0.472 (12.0mm)	3.898	2.205	1.654	0.75	1.023	+0.016	SB-25100TR	-	DT-7	DS120
	-DRS12544	●			0.492 (12.5mm)	3.967	2.274	1.732	0.75	1.023	+0.008				
S20	-DRS10035	△	1	mm	10.0	92	49	35.0	20	26	+0.2	SB-2080TR	FT-6	-	DS100
	-DRS10336	△			10.3	92	49	36.0			+0.1				
	-DRS10537	△			10.5	93	50	37.0			+0.2				DS105
	-DRS11038	△			11.0	96	53	38.5			+0.2	SB-2290TR			DS110
	-DRS11540	△			11.5	97	54	40.5			+0.2				DS115
	-DRS12042	△			12.0	99	56	42.0			+0.4	SB-25100TR	-	DT-7	DS120
	-DRS12544	△			12.5	101	58	44.0			+0.2				

Adjustable Sleeve SHEM K97 Troubleshooting K95

Cutting Conditions by Application

(Workpiece Material: 1049)

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Concave Surface	Existing Hole	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	260	260	Not Recommended	Not Recommended	260	Not Recommended	Not Available
f (ipr)	0.0031	0.0016	Not Recommended	Not Recommended	Concave Surface: 0.0016 Once drill is fully engaged: 0.0031	Not Recommended	Not Available
Internal Coolant	Yes	Yes	-	-	Yes	-	-

DRS - Recommended Cutting Conditions (with Coolant)

Workpiece Material	Recommended Grade (sfm) MEGACOAT PR1230	PR1210	Feed Rate (ipr)
Low Carbon Steel	★ 270~330	-	0.0024
Carbon Steel	★ 270~330	-	0.003~0.004
Alloy Steel	★ 270	-	0.0016~0.0024
Mold Steel	★ 270	-	0.0016~0.0024
Stainless Steel (Austenitic)	★ 230~270	-	0.002~0.0024
Gray Cast Iron	-	★ 80~100	0.003~0.004

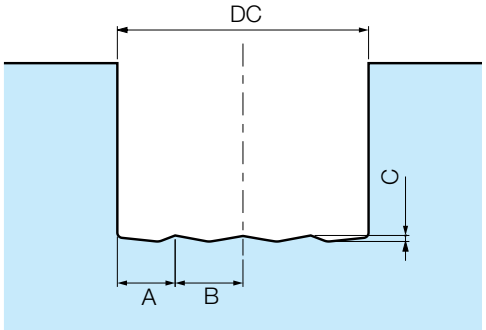
★ : 1st Recommendation ☆ : 2nd Recommendation

1. Apply a sufficient amount of coolant.
2. If cutting speed is decreased too much from above condition, chip evacuation will deteriorate.
   If the feed rate is increased too much from above condition,inner edge chip evacuation will deteriorate.
   If the feed rate is decreased too much from above condition, outer edge chip evacuation will deteriorate.
3. If chips become long and are entangled with the tool when low carbon steel cutting, increase the cutting speed to 400-500 SFM.
   If this doesn't solve the problem, try peck feeding.
   [How to peck feed]
   (1) Cut .04-.08 in (2) Return .004 in (3) Repeat (1) and (2)

DRS - Hole Bottom Shape

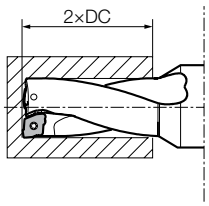
(inch)

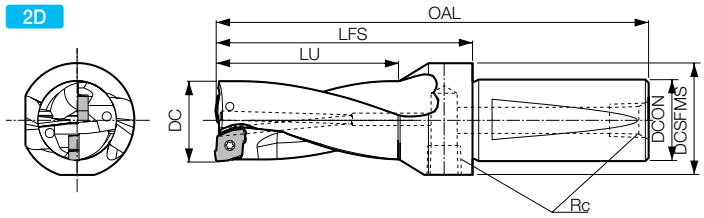
DC	A	B	C
0.394	0.087	0.110	0.008
0.402	0.087	0.114	0.008
0.406	0.091	0.114	0.008
0.413	0.091	0.118	0.008
0.433	0.094	0.122	0.008
0.453	0.098	0.126	0.008
0.472	0.110	0.126	0.012
0.492	0.114	0.130	0.016



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRZ (Drilling Depth: 2 x DC)





Toolholder Dimensions - 2D (Inch Diameter / Inch Shank)

Part Number		Stock	No. of Inserts	Dimensions (in) DC	OAL	LFS	LU	DCON	DCSFMS	Rc	Max. Radial Offset (in)	Spare Parts: Insert Screw	Wrench	Plug	Applicable Insert See Page K66
S75	-DRZ5621125-05G	●	2	0.562	3.87	2.18	1.125	0.75	1.06	1/8 NPT	+0.020	SB-2045TR	FT-6	GP-1N	ZCMT050203 ZCMT050203SP ZCMT050203SU
S100	-DRZ6251250-06G	●		0.625	4.52	2.39	1.250				+0.043				
	-DRZ6561312-06G	●		0.656	4.52	2.39	1.312				+0.034				
	-DRZ6881375-06G	●	2	0.688	4.56	2.43	1.375		1.26	1/8 NPT	+0.027	SB-2260TR	DT-7	GP-1N	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	-DRZ7501500-06G	●		0.750	4.73	2.61	1.500				+0.020				
	-DRZ8121625-06G	●		0.812	4.93	2.81	1.625				+0.014				
	-DRZ8751750-08G	●		0.875	5.02	2.90	1.750		1.30		+0.055				
	-DRZ9381875-08G	●	2	0.938	5.17	3.05	1.875	1.00	1.30	1/8 NPT	+0.043	SB-2570TR	DT-8	GP-1N	ZCMT080304 ZCMT080304SP
	-DRZ10002000-08G	●		1.000	5.24	3.11	2.000		1.38		+0.028				
	-DRZ10622125-10G	●		1.062	5.67	3.54	2.125		1.65		+0.098				
	-DRZ11252250-10G	●	2	1.125	5.74	3.62	2.250		1.65	1/4 NPT	+0.073	SB-4085TR	DT-15	GP-2N	ZCMT10T304 ZCMT10T304SP
	-DRZ11882375-10G	●		1.188	5.86	3.74	2.375		1.77		+0.067				
	-DRZ12502500-10G	●		1.250	5.92	3.79	2.500		1.77		+0.047				
S125	-DRZ13122625-12G	●		1.312	6.82	4.10	2.625				+0.110				
	-DRZ13752750-12G	●		1.375	6.98	4.27	2.750				+0.094				
	-DRZ14382875-12G	●	2	1.438	7.07	4.35	2.875		2.17	1/4 NPT	+0.078	SB-5085TR	DT-20	GP-2N	ZCMT12T306 ZCMT12T304SP
	-DRZ15003000-12G	●		1.500	7.19	4.47	3.000				+0.067				
	-DRZ15623125-12G	●		1.562	7.29	4.57	3.125				+0.047				
	-DRZ16253250-15G	●		1.625	7.34	4.62	3.250	1.25			+0.150				
	-DRZ16883375-15G	●		1.688	7.49	4.78	3.375		2.17		+0.138				
	-DRZ17503500-15G	●		1.750	7.57	4.85	3.500				+0.122				
	-DRZ18123625-15G	●	2	1.812	7.78	5.06	3.625			1/4 NPT	+0.106	SB-5085TR	DT-20	GP-2N	ZCMT150408 ZCMT150406SP
	-DRZ18753750-15G	●		1.875	7.97	5.26	3.750		2.36		+0.087				
	-DRZ19383875-15G	●		1.938	8.05	5.34	3.875				+0.070				
	-DRZ20004000-15G	●		2.000	8.05	5.34	4.000				+0.055				

- When offset machining, reduce feed rate to 0.0031 ipr or less

Hole Diameter Tolerance (2D)

DC	Hole Diameter Tolerance (in)
Ø0.562" - Ø1.000"	+0.008 / -0.004
Ø1.062" - Ø1.562"	+0.010 / -0.006
Ø1.625 - Ø2.000"	+0.012 / -0.008

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve ASL K96
Troubleshooting K95

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(Technical Support) 800.823.7284 - Option 2
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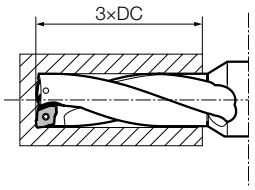
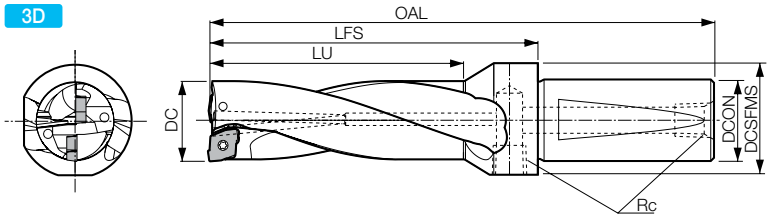
DRZ (Drilling Depth: 3 x DC)





Toolholder Dimensions - 3D (Inch Diameter / Inch Shank)

Part Number		Stock	No. of Inserts	Dimensions (in)							Max. Radial Offset (in)	Spare Parts			Applicable Insert See Page K66
				DC	OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
S75	-DRZ5621687-05G	●	2	0.562	4.42	2.72	1.687	0.75	1.06	1/8 NPT	+0.020	SB-2045TR	FT-6	GP-1N	ZCMT050203 ZCMT050203SP ZCMT050203SU
S100	-DRZ6251875-06G	●		0.625	5.15	3.02	1.875				+0.043				
	-DRZ6561969-06G	●		0.656	5.15	3.02	1.969				+0.034				
	-DRZ6882062-06G	●	2	0.688	5.23	3.10	2.062		1.26	1/8 NPT	+0.027	SB-2260TR	DT-7	GP-1N	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	-DRZ7502250-06G	●		0.750	5.48	3.35	2.250				+0.020				
	-DRZ8122438-06G	●		0.812	5.76	3.64	2.438				+0.014				
	-DRZ8752625-08G	●		0.875	5.77	3.65	2.625		1.30		+0.055				
	-DRZ9382814-08G	●	2	0.938	5.89	3.76	2.814	1.00	1.30	1/8 NPT	+0.043	SB-2570TR	DT-8	GP-1N	ZCMT080304 ZCMT080304SP
	-DRZ10003000-08G	●		1.000	6.11	3.98	3.000		1.38		+0.028				
	-DRZ10623187-10G	●		1.062	6.81	4.49	3.187		1.65		+0.098				
	-DRZ11253375-10G	●	2	1.125	6.92	4.60	3.375		1.65	1/4 NPT	+0.073	SB-4085TR	DT-15	GP-2N	ZCMT10T304 ZCMT10T304SP
	-DRZ11883562-10G	●		1.188	7.12	4.80	3.562		1.77		+0.067				
	-DRZ12503750-10G	●		1.250	7.22	4.89	3.750		1.77		+0.047				
S125	-DRZ13123938-12G	●		1.312	8.00	5.28	3.938				+0.110				
	-DRZ13754125-12G	●		1.375	8.24	5.53	4.125				+0.094				
	-DRZ14384312-12G	●	2	1.438	8.37	5.65	4.312		2.17	1/4 NPT	+0.078	SB-5085TR	DT-20	GP-2N	ZCMT12T306 ZCMT12T304SP
	-DRZ15004500-12G	●		1.500	8.57	5.85	4.500				+0.067				
	-DRZ15624688-12G	●		1.562	8.69	5.97	4.688				+0.047				
	-DRZ16254875-15G	●		1.625	8.83	6.11	4.875	1.25			+0.150				
	-DRZ16885062-15G	●		1.688	8.93	6.21	5.062		2.17		+0.138				
	-DRZ17505250-15G	●		1.750	9.18	6.47	5.250				+0.122				
	-DRZ18125438-15G	●	2	1.812	9.47	6.75	5.438			1/4 NPT	+0.106	SB-5085TR	DT-20	GP-2N	ZCMT150408 ZCMT150406SP
	-DRZ18755625-15G	●		1.875	9.65	6.93	5.625		2.36		+0.087				
	-DRZ19385812-15G	●		1.938	9.86	7.15	5.812				+0.070				
	-DRZ20006000-15G	●		2.000	9.88	7.17	6.000				+0.055				

- When offset machining, reduce feed rate to 0.0031 ipr or less

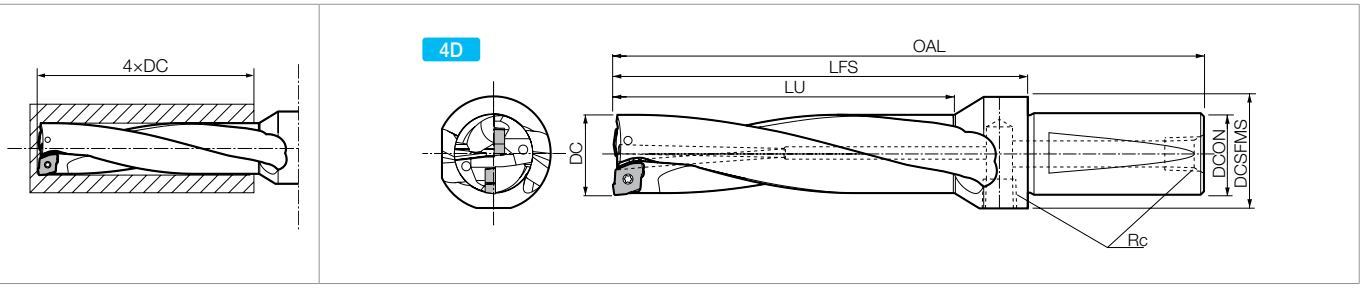
Hole Diameter Tolerance (3D)

DC	Hole Diameter Tolerance (in)
Ø0.562" - Ø1.000"	+0.008 / -0.004
Ø1.062" - Ø1.562"	+0.010 / -0.006
Ø1.625 - Ø2.000"	+0.012 / -0.008

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve ASL K96
Troubleshooting K95

DRZ (Drilling Depth: 4 x DC)



Toolholder Dimensions - 4D (Inch Diameter / Inch Shank)

Part Number	Stock	No. of Inserts	Dimensions (in)							Max. Radial Offset (in)	Spare Parts			Applicable Insert See Page K66
			DC	OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
S75 -DRZ5622250-05G	●	2	0.562	5.77	3.27	2.25	0.75	1.06	1/8 NPT	+0.020	SB-2045TR	FT-6	GP-1N	ZCMT050203 ZCMT050203SP ZCMT050203SU
S100 -DRZ6252500-06G	●	2	0.625	6.65	3.65	2.50	1.00	1.26	1/8 NPT	+0.043	SB-2260TR	DT-7	GP-1N	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
-DRZ6882750-06G	●		0.688	6.74	3.74	2.75				+0.027				
-DRZ7503000-06G	●		0.750	7.07	4.07	3.00				+0.020				
-DRZ8123250-06G	●		0.812	7.39	4.39	3.25				+0.014				
-DRZ8753500-08G	●	2	0.875	7.56	4.56	3.50		1.30	1/8 NPT	+0.055	SB-2570TR	DT-8	GP-1N	ZCMT080304 ZCMT080304SP
-DRZ9383750-08G	●		0.938	7.77	4.77	3.75		1.38		+0.043				
-DRZ10004000-08G	●		1.000	8.06	5.06	4.00		1.38		+0.028				
S125 -DRZ10624250-10G	●	2	1.062	8.55	5.55	4.25	1.25	1.65	1/4 NPT	+0.098	SB-4085TR	DT-15	GP-2N	ZCMT10T304 ZCMT10T304SP
-DRZ11254500-10G	●		1.125	8.84	5.84	4.50		1.65		+0.073				
-DRZ11884750-10G	●		1.188	8.98	5.98	4.75		1.77		+0.067				
-DRZ12505000-10G	●		1.250	9.30	6.30	5.00		1.77		+0.047				
S125 -DRZ13125250-12G	●	2	1.312	9.58	6.58	5.25	1.25	2.17	1/4 NPT	+0.110	SB-5085TR	DT-20	GP-2N	ZCMT12T306 ZCMT12T304SP
-DRZ13755500-12G	●		1.375	9.91	6.91	5.50				+0.094				
-DRZ14385750-12G	●		1.438	10.07	7.07	5.75				+0.078				
-DRZ15006000-12G	●		1.500	10.35	7.35	6.00				+0.067				
-DRZ15626250-12G	●		1.562	10.50	7.50	6.25				+0.047				
S125 -DRZ16256500-15G	●	2	1.625	10.73	7.73	6.50	1.25	2.17	1/4 NPT	+0.150	SB-5085TR	DT-20	GP-2N	ZCMT150408 ZCMT150406SP
S150 -DRZ16886750-15G	●	2	1.688	11.37	7.87	6.75	1.50	2.17	1/4 NPT	+0.138	SB-5085TR	DT-20	GP-2N	ZCMT150408 ZCMT150406SP
-DRZ17507000-15G	●		1.750	11.70	8.20	7.00		2.17		+0.122				
-DRZ18127250-15G	●		1.812	12.06	8.56	7.25		2.36		+0.106				
-DRZ18757500-15G	●		1.875	12.28	8.78	7.50		2.36		+0.087				
-DRZ19387750-15G	●		1.938	12.58	9.08	7.75		2.36		+0.070				
-DRZ20008000-15G	●		2.000	12.63	9.13	8.00		2.36		+0.055				

- When offset machining, reduce feed rate to 0.0024 ipr or less

Hole Diameter Tolerance (4D)

DC	Hole Diameter Tolerance (in)
Ø0.562" - Ø1.000"	+0.010 / -0.004
Ø1.062" - Ø1.562"	+0.012 / -0.006
Ø1.625 - Ø2.000"	+0.014 / -0.008

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

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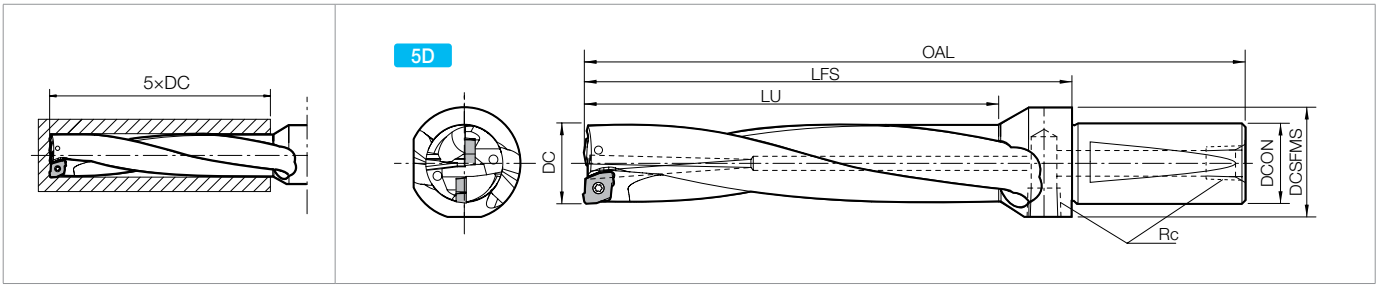
DRZ (Drilling Depth: 5 x DC)



Toolholder Dimensions - 5D (Inch Diameter / Inch Shank)

Part Number		Stock	No. of Inserts	Dimensions (in)							Max. Radial Offset (in)	Spare Parts			Applicable Insert See Page K66
				DC	OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
S125	-DRZ10625310-10G	●	2	1.062	9.61	6.61	5.31	1.25	1.65	1/4 NPT	+0.098	SB-4085TR	DT-15	GP-2N	ZCMT10T304 ZCMT10T304SP
	-DRZ11255625-10G	●		1.125	9.97	6.97	5.63				+0.073				
	-DRZ11885940-10G	●		1.188	10.17	7.17	5.94		1.77		+0.067				
	-DRZ12506250-10G	●		1.250	10.55	7.55	6.25				+0.047				
	-DRZ13126560-12G	●		1.312	10.89	7.89	6.56	1.25	2.17	1/4 NPT	+0.110	SB-5085TR	DT-20	GP-2N	ZCMT12T306 ZCMT12T304SP
	-DRZ13756875-12G	●		1.375	11.28	8.28	6.88				+0.094				
	-DRZ14387190-12G	●		1.438	11.51	8.51	7.19				+0.078				
	-DRZ15007500-12G	●		1.500	11.85	8.85	7.50				+0.067				
	-DRZ15627810-12G	●		1.562	12.07	9.07	7.81				+0.047				
	-DRZ16258125-15G	●		1.625	12.35	9.35	8.13	1.25	2.17	1/4 NPT	+0.150	SB-5085TR	DT-20	GP-2N	ZCMT150408 ZCMT150406SP
S150	-DRZ16888440-15G	●	2	1.688	13.05	9.55	8.44	1.50	2.17	1/4 NPT	+0.138	SB-5085TR	DT-20	GP-2N	ZCMT150408 ZCMT150406SP
	-DRZ17508750-15G	●		1.750	13.45	9.95	8.75				+0.122				
	-DRZ18129060-15G	●		1.812	13.87	10.37	9.06		2.36		+0.106				
	-DRZ18759375-15G	●		1.875	14.15	10.65	9.38				+0.087				
	-DRZ19389690-15G	●		1.938	14.51	11.01	9.69				+0.070				
	-DRZ200010000-15G	●		2.000	14.63	11.13	10.00				+0.055				

- When offset machining, reduce feed rate to 0.0020 ipr or less

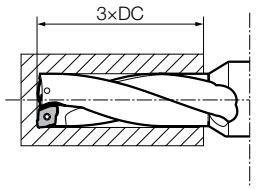
Hole Diameter Tolerance (5D)

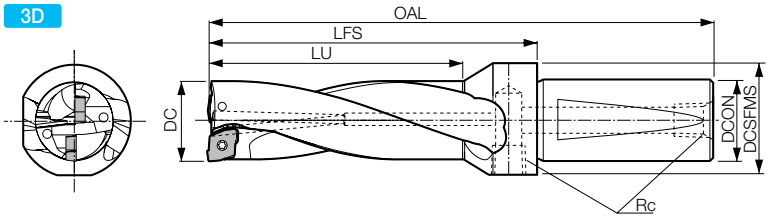
DC	Hole Diameter Tolerance (in)
Ø1.062" - Ø1.562"	+0.014 / -0.006
Ø1.625 - Ø2.000"	+0.016 / -0.008

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve ASL K96
Troubleshooting K95

DRZ (Drilling Depth: 3xDC)





Toolholder Dimensions - 3D (Metric Diameter / Inch Shank)

Part Number		Stock	No. of Inserts	Dimensions (in)								Max. Radial Offset (in)	Spare Parts			Applicable Insert See Page K66
				DC		OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
				inch	mm									FT / DT		
S75	-DRZ1339-05G	●	2	0.512	13.0	4.27	2.58	1.54	0.75	1.06	1/8 NPT	+0.020	SB-2045TR	FT-6	GP-1N	ZCMT050203 ZCMT050203SP ZCMT050203SU
	-DRZ135405-05G	●		0.531	13.5	4.27	2.58	1.59				+0.020				
	-DRZ1442-05G	●		0.551	14.0	4.42	2.72	1.65				+0.020				
	-DRZ145435-05G	●		0.571	14.5	4.42	2.72	1.71				+0.020				
	-DRZ1545-05G	●		0.591	15.0	4.52	2.83	1.77				+0.020				
	-DRZ155465-05G	●		0.610	15.5	4.52	2.83	1.83				+0.020				
S100	-DRZ1648-06G	●	2	0.630	16.0	5.15	3.02	1.89	1.00	1.26	1/8 NPT	+0.043	SB-2260TR	DT-7	GP-1N	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	-DRZ165495-06G	●		0.650	16.5	5.15	3.02	1.95				+0.035				
	-DRZ1751-06G	●		0.669	17.0	5.23	3.10	2.01				+0.031				
	-DRZ1854-06G	●		0.709	18.0	5.36	3.23	2.13				+0.024				
	-DRZ185555-06G	●		0.728	18.5	5.36	3.23	2.19				+0.024				
	-DRZ1957-06G	●		0.748	19.0	5.48	3.35	2.24				+0.020				
	-DRZ195585-06G	●		0.768	19.5	5.48	3.35	2.30				+0.020				
	-DRZ2060-06G	●		0.787	20.0	5.61	3.49	2.36				+0.020				
	-DRZ2163-06G	●		0.827	21.0	5.76	3.64	2.48				+0.008				
	-DRZ215645-08G	●	2	0.846	21.5	5.77	3.65	2.54	1.00	1.30	1/8 NPT	+0.071	SB-2570TR	DT-8	GP-1N	ZCMT080304 ZCMT080304SP
	-DRZ2266-08G	●		0.866	22.0	5.77	3.65	2.60				+0.063				
	-DRZ225675-08G	●		0.886	22.5	5.77	3.65	2.66				+0.055				
	-DRZ2369-08G	●		0.906	23.0	5.89	3.76	2.72				+0.051				
	-DRZ2472-08G	●		0.945	24.0	6.00	3.87	2.84		1.38		+0.043				
	-DRZ2575-08G	●		0.984	25.0	6.11	3.98	2.95				+0.031				
	-DRZ2678-08G	●		1.024	26.0	6.23	4.10	3.07				+0.024				

- When offset machining, reduce feed rate to 0.0031 ipr or less

Hole Diameter Tolerance (3D)

DC	Hole Diameter Tolerance (in)
Ø13mm - Ø26.0mm (Ø0.512" - Ø1.024")	+0.008 / -0.004

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve ASL K96
Troubleshooting K95

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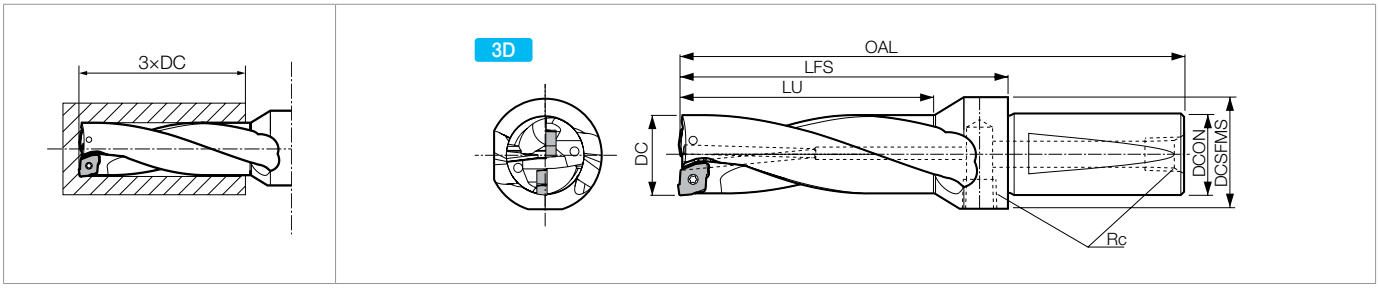
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRZ (Drilling Depth: 3xDC)

Continued...



Toolholder Dimensions - 3D (Metric Diameter / Inch Shank)

Part Number		Stock	No. of Inserts	Dimensions (in)								Max. Radial Offset (in)	Spare Parts			Applicable Insert See Page K66
				DC		OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
				inch	mm											
S100	-DRZ2781-10G	●	2	1.063	27.0	6.81	4.49	3.19	1.00	1.65	1/4 NPT	+0.098	SB-4085TR	DT-15	GP-1N	ZCMT10T304 ZCMT10T304SP
	-DRZ2884-10G	●		1.102	28.0	6.92	4.60	3.31				+0.087				
	-DRZ2987-10G	●		1.142	29.0	7.04	4.72	3.43				+0.079				
	-DRZ3090-10G	●		1.181	30.0	7.12	4.80	3.54		1.77		+0.067				
	-DRZ3193-10G	●		1.220	31.0	7.22	4.89	3.66				+0.059				
	-DRZ3296-10G	●		1.260	32.0	7.36	5.04	3.78				+0.047				
S125	-DRZ3399-12G	●	2	1.299	33.0	8.00	5.28	3.90	1.25	2.17	1/4 NPT	+0.114	SB-5085TR	DT-20	GP-2N	ZCMT12T306 ZCMT12T304SP
	-DRZ34102-12G	●		1.338	34.0	8.15	5.44	4.02				+0.106				
	-DRZ35105-12G	●		1.378	35.0	8.24	5.53	4.13				+0.094				
	-DRZ36108-12G	●		1.418	36.0	8.37	5.65	4.25				+0.087				
	-DRZ37111-12G	●		1.457	37.0	8.46	5.74	4.37				+0.075				
	-DRZ38114-12G	●		1.496	38.0	8.57	5.85	4.49				+0.067				
	-DRZ39117-12G	●		1.535	39.0	8.69	5.97	4.61				+0.055				
	-DRZ40120-12G	●		1.575	40.0	8.74	6.03	4.72				+0.047				
	-DRZ41123-15G	●	2	1.614	41.0	8.83	6.11	4.84	1.25	2.17	1/4 NPT	+0.157	SB-5085TR	DT-20	GP-2N	ZCMT150408 ZCMT150406SP
	-DRZ42126-15G	●		1.654	42.0	8.93	6.21	4.96				+0.146				
	-DRZ43129-15G	●		1.693	43.0	9.07	6.35	5.08				+0.138				
	-DRZ44132-15G	●		1.732	44.0	9.18	6.47	5.20				+0.126				
	-DRZ45135-15G	●		1.772	45.0	9.22	6.51	5.32				+0.118				
	-DRZ46138-15G	●		1.811	46.0	9.47	6.75	5.43		2.36		+0.106				
	-DRZ47141-15G	●		1.850	47.0	9.65	6.93	5.55				+0.098				
	-DRZ48144-15G	●		1.890	48.0	9.74	7.03	5.67				+0.087				
	-DRZ49147-15G	●		1.929	49.0	9.86	7.15	5.79				+0.079				

- When offset machining, reduce feed rate to 0.0031 ipr or less

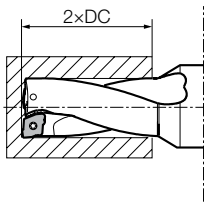
Hole Diameter Tolerance (3D)

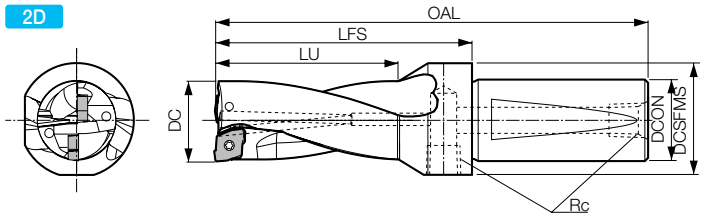
DC	Hole Diameter Tolerance (in)
Ø27mm - Ø40mm (Ø0.1.063" - Ø1.575")	+0.010 / -0.006
Ø41mm - Ø50mm (Ø1.614" - Ø1.968")	+0.012 / -0.008

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve ASL K96
Troubleshooting K95

DRZ (Drilling Depth: 2 x DC)





Toolholder Dimensions - 2D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Rc	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Wrench	Plug	Applicable Insert See Page K66
S20	-DRZ1326-05	●	2	13	95	52	26	20	27	Rc1/8	+0.5	SB-2045TR	FT-6	GP-1	ZCMT050203 ZCMT050203SP ZCMT050203SU
	-DRZ135270-05	●		13.5	95	52	27				+0.5				
	-DRZ1428-05	●		14	98	55	28				+0.5				
	-DRZ145290-05	●		14.5	98	55	29				+0.5				
	-DRZ1530-05	●		15	100	57	30				+0.5				
	-DRZ155310-05	●		15.5	100	57	31				+0.5				
S25	-DRZ1632-06	●	2	16	115	61	32	25	32	Rc1/8	+1.1	SB-2260TR	DT-7	GP-1	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	-DRZ165330-06	●		16.5	115	61	33				+0.9				
	-DRZ1734-06	●		17	116	62	34				+0.8				
	-DRZ175350-06	●		17.5	116	62	35				+0.7				
	-DRZ1836-06	●		18	118	64	36				+0.6				
	-DRZ185370-06	●		18.5	118	64	37				+0.6				
	-DRZ1938-06	●		19	120	66	38				+0.5				
	-DRZ195390-06	●		19.5	120	66	39				+0.5				
	-DRZ2040-06	●		20	123	69	40				+0.5				
	-DRZ205410-06	●		20.5	125	71	41				+0.3				
	-DRZ2142-06	●		21	125	71	42				+0.2				
	-DRZ215430-08	●	2	21.5	128	74	43	25	33	Rc1/8	+1.8	SB-2570TR	DT-8	GP-1	ZCMT080304 ZCMT080304SP
	-DRZ2244-08	●		22	128	74	44				+1.6				
	-DRZ225450-08	●		22.5	128	74	45				+1.4				
	-DRZ2346-08	●		23	130	76	46				+1.3				
	-DRZ235470-08	●		23.5	130	76	47				+1.2				
	-DRZ2448-08	●		24	131	77	48		35		+1.1				
	-DRZ245490-08	●		24.5	131	77	49				+0.9				
	-DRZ2550-08	●		25	133	79	50				+0.8				
	-DRZ255510-08	●		25.5	133	79	51				+0.7				
	-DRZ2652-08	●		26	135	81	52				+0.6				
	-DRZ265530-08	●		26.5	135	81	53				+0.5				
S32	-DRZ2754-10	●	2	27	149	90	54	32	42	Rc1/4	+2.5	SB-4085TR	DT-15	GP-2	ZCMT10T304 ZCMT10T304SP
	-DRZ275550-10	●		27.5	149	90	55				+2.3				
	-DRZ2856-10	●		28	151	92	56				+2.2				
	-DRZ285570-10	●		28.5	151	92	57				+2.1				
	-DRZ2958-10	●		29	153	94	58				+2.0				
	-DRZ295590-10	●		29.5	153	94	59				+1.8				
	-DRZ3060-10	●		30	154	95	60		45		+1.7				
	-DRZ305610-10	●		30.5	154	95	61				+1.5				
	-DRZ3162-10	●		31	155	96	62				+1.5				
	-DRZ315630-10	●		31.5	155	96	63				+1.3				
	-DRZ3264-10	●		32	158	99	64				+1.2				
	-DRZ325650-10	●		32.5	158	99	65				+1.0				

- When offset machining, reduce feed rate to 0.0031 ipr or less

Hole Diameter Tolerance (2D)

DC	Hole Diameter Tolerance (mm)
Ø13mm - Ø26.5mm	+0.20 / -0.10
Ø27mm - Ø40mm	+0.25 / -0.15
Ø41mm - Ø59mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve SHE K96
Troubleshooting K95

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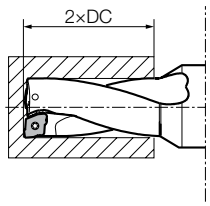
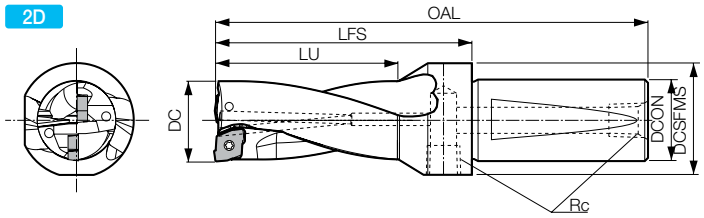
DRZ (Drilling Depth: 2 x DC) Continued...





Toolholder Dimensions - 2D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm)							Max. Radial Offset (mm)	Spare Parts			Applicable Insert See Page K66
				DC	OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
S40	-DRZ3366-12	●	2	33	173	104	66	40	55	Rc1/4	+2.9	SB-5085TR	DT-20	GP-2	ZCMT12T306 ZCMT12T304SP
	-DRZ3468-12	●		34	176	107	68				+2.7				
	-DRZ3570-12	●		35	177	108	70				+2.4				
	-DRZ3672-12	●		36	180	111	72				+2.2				
	-DRZ3774-12	●		37	181	112	74				+1.9				
	-DRZ3876-12	●		38	183	114	76				+1.7				
	-DRZ3978-12	●		39	185	116	78				+1.4				
	-DRZ4080-12	●		40	185	116	80				+1.2				
	-DRZ4182-15	●	2	41	186	117	82	40	55	Rc1/4	+4.0	SB-5085TR	DT-20	GP-2	ZCMT150408 ZCMT150406SP
	-DRZ4284-15	●		42	188	119	84				+3.7				
	-DRZ4386-15	●		43	190	121	86				+3.5				
	-DRZ4488-15	●		44	192	123	88				+3.2				
	-DRZ4590-15	●		45	192	123	90				+3.0				
	-DRZ4692-15	●		46	198	129	92		60		+2.7				
	-DRZ4794-15	●		47	201	132	94				+2.5				
	-DRZ4896-15	●		48	203	134	96				+2.2				
	-DRZ4998-15	●		49	204	135	98				+2.0				
	-DRZ50100-15	●		50	204	135	100				+1.7				
	-DRZ51102-15	●		51	205	136	102				+1.2				
	-DRZ52104-15	●		52	205	136	104				+1.0				
	-DRZ53106-15	●		53	208	139	106				+0.7				
	-DRZ54108-20	●	2	54	214	145	108	40	65	Rc1/4	+5.0	SB-60120TR	DT-25	GP-2	ZCMT200608
	-DRZ55110-20	●		55	215	146	110				+4.7				
	-DRZ56112-20	●		56	217	148	112				+4.4				
	-DRZ57114-20	●		57	219	150	114				+4.1				
	-DRZ58116-20	●		58	221	152	116				+3.8				
	-DRZ59118-20	●		59	223	154	118				+3.5				

- When offset machining, reduce feed rate to 0.0031 ipr or less

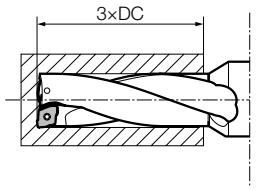
Hole Diameter Tolerance (2D)

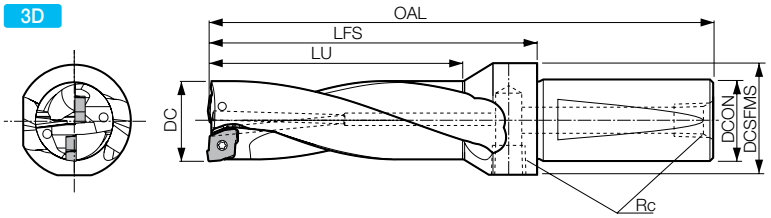
DC	Hole Diameter Tolerance (mm)
Ø13mm - Ø26.5mm	+0.20 / -0.10
Ø27mm - Ø40mm	+0.25 / -0.15
Ø41mm - Ø59mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve SHE K96
Troubleshooting K95

DRZ (Drilling Depth: 3 x DC)





Toolholder Dimensions - 3D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Rc	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Wrench	Plug	Applicable Insert See Page K66
S20	-DRZ1339-05	●	2	13	108	65	39	20	27	Rc1/8	+0.5	SB-2045TR	FT-6	GP-1	ZCMT050203 ZCMT050203SP ZCMT050203SU
	-DRZ135405-05	●		13.5	108	65	40.5				+0.5				
	-DRZ1442-05	●		14	112	69	42				+0.5				
	-DRZ145435-05	●		14.5	112	69	43.5				+0.5				
	-DRZ1545-05	●		15	115	72	45				+0.5				
	-DRZ155465-05	●		15.5	115	72	46.5				+0.5				
S25	-DRZ1648-06	●	2	16	131	77	48	25	32	Rc1/8	+1.1	SB-2260TR	DT-7	GP-1	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	-DRZ165495-06	●		16.5	131	77	49.5				+0.9				
	-DRZ1751-06	●		17	133	79	51				+0.8				
	-DRZ175525-06	●		17.5	133	79	52.5				+0.7				
	-DRZ1854-06	●		18	136	82	54				+0.6				
	-DRZ185555-06	●		18.5	136	82	55.5				+0.6				
	-DRZ1957-06	●		19	139	85	57				+0.5				
	-DRZ195585-06	●		19.5	139	85	58.5				+0.5				
	-DRZ2060-06	●		20	143	89	60				+0.5				
	-DRZ205615-06	●		20.5	146	92	61.5				+0.3				
	-DRZ2163-06	●		21	146	92	63				+0.2				
	-DRZ215645-08	●	2	21.5	147	93	64.5	25	33	Rc1/8	+1.8	SB-2570TR	DT-8	GP-1	ZCMT080304 ZCMT080304SP
	-DRZ2266-08	●		22	147	93	66				+1.6				
	-DRZ225675-08	●		22.5	147	93	67.5				+1.4				
	-DRZ2369-08	●		23	150	96	69				+1.3				
	-DRZ235705-08	●		23.5	150	96	70.5				+1.2				
	-DRZ2472-08	●		24	152	98	72		35		+1.1				
	-DRZ245735-08	●		24.5	152	98	73.5				+0.9				
	-DRZ2575-08	●		25	155	101	75				+0.8				
	-DRZ255765-08	●		25.5	155	101	76.5				+0.7				
	-DRZ2678-08	●		26	158	104	78				+0.6				
	-DRZ265795-08	●		26.5	158	104	79.5				+0.5				

- When offset machining, reduce feed rate to 0.0031 ipr or less

Hole Diameter Tolerance (3D)

DC	Hole Diameter Tolerance (mm)
Ø13mm - Ø26.5mm	+0.20 / -0.10
Ø27mm - Ø40mm	+0.25 / -0.15
Ø41mm - Ø59mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve SHE K96
Troubleshooting K95

(Customer Service) 800.823.7284 - Option 1
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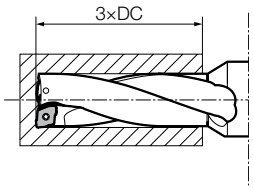
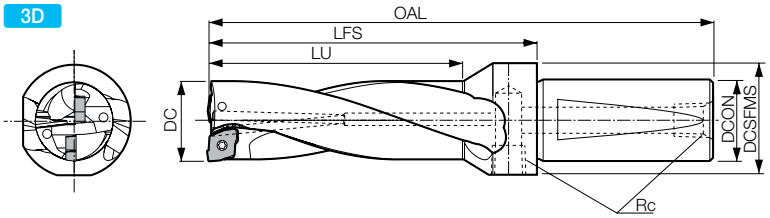
DRZ (Drilling Depth: 3 x DC) Continued...





Toolholder Dimensions - 3D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Rc	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Wrench	Plug	Applicable Insert See Page K66
S32	-DRZ2781-10	●	2	27	173	114	81	32	42	Rc1/4	+2.5	SB-4085TR	DT-15	GP-2	ZCMT10T304 ZCMT10T304SP
	-DRZ275825-10	●		27.5	173	114	82.5				+2.3				
	-DRZ2884-10	●		28	176	117	84				+2.2				
	-DRZ285855-10	●		28.5	176	117	85.5				+2.1				
	-DRZ2987-10	●		29	179	120	87				+2.0				
	-DRZ295885-10	●		29.5	179	120	88.5				+1.8				
	-DRZ3090-10	●		30	181	122	90		45		+1.7				
	-DRZ305915-10	●		30.5	181	122	91.5				+1.5				
	-DRZ3193-10	●		31	183	124	93				+1.5				
	-DRZ315945-10	●		31.5	183	124	94.5				+1.3				
	-DRZ3296-10	●		32	187	128	96				+1.2				
	-DRZ325975-10	●		32.5	187	128	97.5				+1.0				
	-DRZ3399-12	●	2	33	193	134	99	32	55	Rc1/4	+2.9	SB-5085TR	DT-20	GP-2	ZCMT12T306 ZCMT12T304SP
	-DRZ34102-12	●		34	197	138	102				+2.7				
	-DRZ35105-12	●		35	199	140	105				+2.4				
	-DRZ36108-12	●		36	203	144	108				+2.2				
	-DRZ37111-12	●		37	205	146	111				+1.9				
	-DRZ38114-12	●		38	208	149	114				+1.7				
	-DRZ39117-12	●		39	211	152	117				+1.4				
	-DRZ40120-12	●		40	212	153	120				+1.2				
S40	-DRZ3399-12	●	2	33	203	134	99	40	55	Rc1/4	+2.9	SB-5085TR	DT-20	GP-2	
	-DRZ34102-12	●		34	207	138	102				+2.7				
	-DRZ35105-12	●		35	209	140	105				+2.4				
	-DRZ36108-12	●		36	213	144	108				+2.2				
	-DRZ37111-12	●		37	215	146	111				+1.9				
	-DRZ38114-12	●		38	218	149	114				+1.7				
	-DRZ39117-12	●		39	221	152	117				+1.4				
	-DRZ40120-12	●		40	222	153	120				+1.2				
	-DRZ41123-15	●	2	41	224	155	123	40	55	Rc1/4	+4.0	SB-5085TR	DT-20	GP-2	ZCMT150408 ZCMT150406SP
	-DRZ42126-15	●		42	227	158	126				+3.7				
	-DRZ43129-15	●		43	230	161	129				+3.5				
	-DRZ44132-15	●		44	233	164	132				+3.2				
	-DRZ45135-15	●		45	234	165	135				+3.0				
	-DRZ46138-15	●		46	241	172	138		60		+2.7				
	-DRZ47141-15	●		47	245	176	141				+2.5				
	-DRZ48144-15	●		48	248	179	144				+2.2				
	-DRZ49147-15	●		49	250	181	147				+2.0				
	-DRZ50150-15	●		50	251	182	150				+1.7				
	-DRZ51153-15	●		51	254	185	153				+1.2				
	-DRZ52156-15	●		52	257	188	156				+1.0				
	-DRZ53159-15	●		53	260	191	159				+0.7				
	-DRZ54162-20	●	2	54	266	197	162	40	65	Rc1/4	+5.0	SB-60120TR	DT-25	GP-2	ZCMT200608
	-DRZ55165-20	●		55	269	200	165				+4.7				
	-DRZ56168-20	●		56	272	203	168				+4.4				
	-DRZ57171-20	●		57	275	206	171				+4.1				
	-DRZ58174-20	●		58	278	209	174				+3.8				
	-DRZ59177-20	●		59	281	212	177				+3.5				

- When offset machining, reduce feed rate to 0.0031 ipr or less

Hole Diameter Tolerance (3D)

DC	Hole Diameter Tolerance (mm)
Ø13mm - Ø26.5mm	+0.20 / -0.10
Ø27mm - Ø40mm	+0.25 / -0.15
Ø41mm - Ø59mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve SHE K96
Troubleshooting K95

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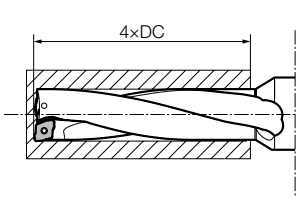
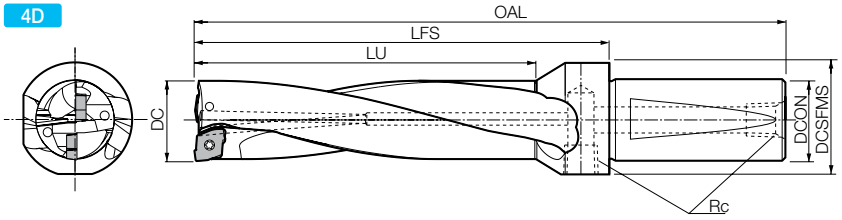
DRZ (Drilling Depth: 4 x DC)





Toolholder Dimensions - 4D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Rc	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Wrench	Plug	Applicable Insert See Page K66
S20	-DRZ1352-05	●	2	13	121	78	52	20	27	Rc1/8	+0.5	SB-2045TR	FT-6	GP-1	ZCMT050203 ZCMT050203SP ZCMT050203SU
	-DRZ135540-05	●		13.5	121	78	54				+0.5				
	-DRZ1456-05	●		14	126	83	56				+0.5				
	-DRZ145580-05	●		14.5	126	83	58				+0.5				
	-DRZ1560-05	●		15	130	87	60				+0.5				
	-DRZ155620-05	●		15.5	130	87	62				+0.5				
S25	-DRZ1664-06	●	2	16	147	93	64	25	32	Rc1/8	+1.1	SB-2260TR	DT-7	GP-1	ZCMT06T204 ZCMT06T204SP ZCMT06T204SU
	-DRZ165660-06	●		16.5	147	93	66				+0.9				
	-DRZ1768-06	●		17	149	95	68				+0.8				
	-DRZ175700-06	●		17.5	149	95	70				+0.7				
	-DRZ1872-06	●		18	153	99	72				+0.6				
	-DRZ185740-06	●		18.5	153	99	74				+0.6				
	-DRZ1976-06	●		19	157	103	76				+0.5				
	-DRZ195780-06	●		19.5	157	103	78				+0.5				
	-DRZ2080-06	●		20	156	102	80				+0.5				
	-DRZ205820-06	●		20.5	161	107	82				+0.3				
	-DRZ2184-06	●		21	161	107	84				+0.2				
	-DRZ215860-08	●	2	21.5	169	115	86	25	33	Rc1/8	+1.8	SB-2570TR	DT-8	GP-1	ZCMT080304 ZCMT080304SP
	-DRZ2288-08	●		22	169	115	88				+1.6				
	-DRZ225900-08	●		22.5	169	115	90				+1.4				
	-DRZ2392-08	●		23	173	119	92				+1.3				
	-DRZ235940-08	●		23.5	173	119	94				+1.2				
	-DRZ2496-08	●		24	176	122	96		35		+1.1				
	-DRZ245980-08	●		24.5	176	122	98				+0.9				
	-DRZ25100-08	●		25	180	126	100				+0.8				
	-DRZ2551020-08	●		25.5	180	126	102				+0.7				
	-DRZ26104-08	●		26	184	130	104				+0.6				
	-DRZ2651060-08	●		26.5	184	130	106				+0.5				

- When offset machining, reduce feed rate to 0.0024 ipr or less

● Hole Diameter Tolerance (4D)

DC	Hole Diameter Tolerance (mm)
Ø13mm - Ø26.5mm	+0.25 / -0.10
Ø27mm - Ø40mm	+0.30 / -0.15
Ø41mm - Ø50mm	+0.35 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
Adjustable Sleeve SHE K96
Troubleshooting K95

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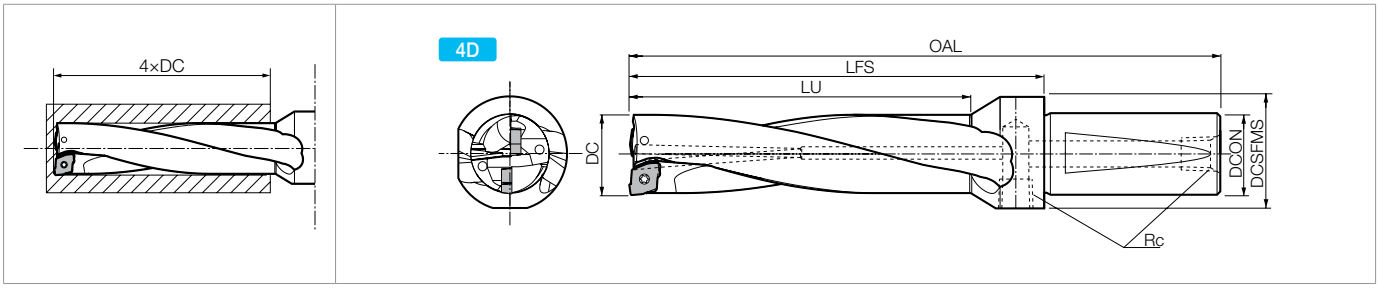
DRZ (Drilling Depth: 4 x DC) Continued...



Toolholder Dimensions - 4D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm)							Max. Radial Offset (mm)	Spare Parts			Applicable Insert See Page K66
				DC	OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
S32	-DRZ27108-10	●	2	27	200	141	108	32	42	Rc1/4	+2.5	SB-4085TR	DT-15	GP-2	ZCMT10T304 ZCMT10T304SP
	-DRZ2751100-10	●		27.5	200	141	110				+2.3				
	-DRZ28112-10	●		28	204	145	112				+2.2				
	-DRZ2851140-10	●		28.5	204	145	114				+2.1				
	-DRZ29116-10	●		29	208	149	116				+2.0				
	-DRZ2951180-10	●		29.5	208	149	118				+1.8				
	-DRZ30120-10	●		30	211	152	120		45		+1.7				
	-DRZ3051220-10	●		30.5	211	152	122				+1.5				
	-DRZ31124-10	●		31	214	155	124				+1.5				
	-DRZ3151260-10	●		31.5	214	155	126				+1.3				
	-DRZ32128-10	●		32	219	160	128				+1.2				
	-DRZ3251300-10	●		32.5	219	160	130				+1.0				
	-DRZ33132-12	●	2	33	226	167	132	32	55	Rc1/4	+2.9	SB-5085TR	DT-20	GP-2	ZCMT12T306 ZCMT12T304SP
	-DRZ34136-12	●		34	231	172	136				+2.7				
	-DRZ35140-12	●		35	234	175	140				+2.4				
	-DRZ36144-12	●		36	239	180	144				+2.2				
	-DRZ37148-12	●		37	242	183	148				+1.9				
	-DRZ38152-12	●		38	246	187	152				+1.7				
	-DRZ39156-12	●		39	250	191	156				+1.4				
	-DRZ40160-12	●		40	252	193	160				+1.2				
S40	-DRZ33132-12	●	2	33	236	167	132	40	55	Rc1/4	+2.9	SB-5085TR	DT-20	GP-2	
	-DRZ34136-12	●		34	241	172	136				+2.7				
	-DRZ35140-12	●		35	244	175	140				+2.4				
	-DRZ36144-12	●		36	249	180	144				+2.2				
	-DRZ37148-12	●		37	252	183	148				+1.9				
	-DRZ38152-12	●		38	256	187	152				+1.7				
	-DRZ39156-12	●		39	260	191	156				+1.4				
	-DRZ40160-12	●		40	262	193	160				+1.2				
	-DRZ41164-15	●	2	41	265	196	164	40	55	Rc1/4	+4.0	SB-5085TR	DT-20	GP-2	ZCMT150408 ZCMT150406SP
	-DRZ42168-15	●		42	269	200	168				+3.7				
	-DRZ43172-15	●		43	273	204	172				+3.5				
	-DRZ44176-15	●		44	277	208	176				+3.2				
	-DRZ45180-15	●		45	279	210	180				+3.0				
	-DRZ46184-15	●		46	287	218	184		60		+2.7				
	-DRZ47188-15	●		47	292	223	188				+2.5				
	-DRZ48192-15	●		48	296	227	192				+2.2				
	-DRZ49196-15	●		49	300	231	196				+2.0				
	-DRZ50200-15	●		50	301	232	200				+1.7				

- When offset machining, reduce feed rate to 0.0024 ipr or less

Hole Diameter Tolerance (4D)

DC	Hole Diameter Tolerance (mm)
Ø13mm - Ø26.5mm	+0.25 / -0.10
Ø27mm - Ø40mm	+0.30 / -0.15
Ø41mm - Ø50mm	+0.35 / -0.20

The above values are estimates.
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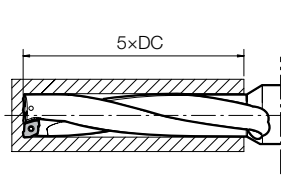
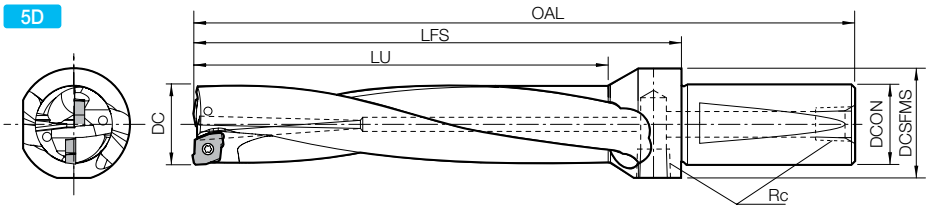
Recommended Cutting Conditions K82
Adjustable Sleeve SHE K96
Troubleshooting K95

DRZ (Drilling Depth: 5 x DC)





Toolholder Dimensions - 5D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm)							Max. Radial Offset (mm)	Spare Parts			Applicable Insert See Page K66
				DC	OAL	LFS	LU	DCON	DCSFMS	Rc		Insert Screw	Wrench	Plug	
S32	-DRZ27135-10	●	2	27	227	168	135	32	42	Rc1/4	+2.5	SB-4085TR	DT-15	GP-2	ZCMT10T304 ZCMT10T304SP
	-DRZ28140-10	●		28	232	173	140				+2.2				
	-DRZ29145-10	●		29	237	178	145				+2.0				
	-DRZ30150-10	●		30	241	182	150		45		+1.7				
	-DRZ31155-10	●		31	245	186	155				+1.5				
	-DRZ32160-10	●		32	251	192	160				+1.2				
S40	-DRZ33165-12	●	2	33	269	200	165	40	55	Rc1/4	+2.9	SB-5085TR	DT-20	GP-2	ZCMT12T306 ZCMT12T304SP
	-DRZ34170-12	●		34	275	206	170				+2.7				
	-DRZ35175-12	●		35	279	210	175				+2.4				
	-DRZ36180-12	●		36	285	216	180				+2.2				
	-DRZ37185-12	●		37	289	220	185				+1.9				
	-DRZ38190-12	●		38	294	225	190				+1.7				
	-DRZ39195-12	●		39	299	230	195				+1.4				
	-DRZ40200-12	●		40	302	233	200				+1.2				
	-DRZ41205-15	●	2	41	306	237	205	40	55	Rc1/4	+4.0	SB-5085TR	DT-20	GP-2	ZCMT150408 ZCMT150406SP
	-DRZ42210-15	●		42	311	242	210				+3.7				
	-DRZ43215-15	●		43	316	247	215				+3.5				
	-DRZ44220-15	□		44	321	252	220				+3.2				
	-DRZ45225-15	●		45	324	255	225				+3.0				
	-DRZ46230-15	●		46	333	264	230		60		+2.7				
	-DRZ47235-15	●		47	339	270	235				+2.5				
	-DRZ48240-15	●		48	344	275	240				+2.2				
	-DRZ49245-15	●		49	349	280	245				+2.0				
	-DRZ50250-15	●		50	351	282	250				+1.7				

- When offset machining, reduce feed rate to 0.0020 ipr or less

Hole Diameter Tolerance (5D)

DC	Hole Diameter Tolerance (mm)
Ø27mm - Ø40mm	+0.35 / -0.15
Ø41mm - Ø50mm	+0.40 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K82
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Troubleshooting K95

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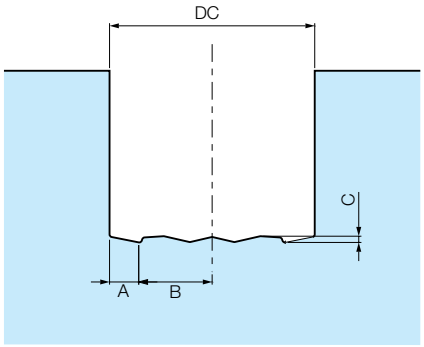
DRZ Hole Bottom Shape (Common for 2D, 3D, 4D, and 5D Lengths)

DRZ Inch Diameters (in)				DRZ Metric Diameters (mm)							
DC	A	B	C	DC	A	B	C	DC	A	B	C
0.562	0.083	0.198	0.016	13.0	2.1	4.4	0.4	27.0	4.0	9.5	0.7
0.625	0.106	0.207	0.024	13.5		4.7		27.5		9.8	
0.656		0.222		14.0		4.9		28.0		10.0	
0.688		0.238		14.5		5.2		28.5		10.3	
0.750		0.269	0.028	15.0		5.4	0.5	29.0		10.5	
0.812		0.300		15.5		5.7		29.5		10.8	
0.875	0.122	0.316	0.024	16.0	2.7	5.3	0.6	30.0		11.0	
0.938		0.347	0.028	16.5		5.6		30.5		11.3	
1.000		0.378		17.0		5.8		31.0		11.5	0.8
1.062	0.157	0.374		17.5		6.1		31.5		11.8	
1.125		0.406		18.0		6.3		32.0		12.0	
1.188		0.437		18.5		6.6	0.7	32.5		12.3	
1.250		0.468	0.031	19.0		6.8		33.0	5.7	10.8	0.8
1.312	0.224	0.432		19.5		7.1		34.0		11.3	
1.375		0.464		20.0		7.3		35.0		11.8	
1.438		0.495		20.5		7.6		36.0		12.3	
1.500		0.526	0.035	21.0		7.8	0.8	37.0		12.8	
1.562		0.557		21.5	3.1	7.7	0.6	38.0		13.3	0.9
1.625	0.256	0.557	0.039	22.0		7.9		39.0		13.8	
1.688		0.588		22.5		8.2		40.0		14.3	
1.750		0.619		23.0		8.4		41.0	6.5	14.0	1.0
1.812		0.650		23.5		8.7		42.0		14.5	
1.875		0.682	0.043	24.0		8.9	0.7	43.0		15.0	
1.938		0.713		24.5		9.2		44.0		15.5	
2.000		0.744		25.0		9.4		45.0		16.0	
				25.5		9.7		46.0		16.5	
				26.0		9.9		47.0		17.0	
				26.5		10.2		48.0		17.5	1.1
								49.0		18.0	
								50.0		18.5	
								51.0		19.0	
								52.0		19.5	
								53.0		20.0	
								54.0	8.5	18.5	1.2
								55.0		19.0	
								56.0		19.5	
								57.0		20.0	
								58.0		20.5	
								59.0		21.0	



- Figures in chart are nominal sizes.
- (Varies from -0.004" (-0.1mm) to +0.004" (+0.1mm) depending on work material and cutting conditions)

DRZ - Recommended Cutting Conditions (with Coolant)

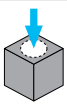
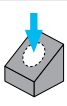
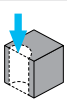
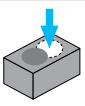
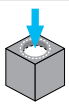
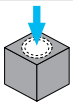
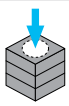
Workpiece Material	Recommended Insert Grade / Cutting Speed (sfm)						Drill Dia. DC (in)	Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)			
	MEGACOAT			PVD Coated Carbide		Carbide						
	PR1230	PR1225	PR1210	PR660	PR830	KW10			2D	3D	4D	5D
	Standard, SP, SU	Standard, SP, SU	Standard	Standard, SP, SU	Standard, SP	Standard, SP						
Low Carbon Steel	★ 390 ~ 720	☆ 390 ~ 720	-	☆ 390 ~ 720	☆ 390 ~ 790	-	0.512~0.610	13~15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
							0.630~1.043	16~26.5	0.0031 ~ 0.0059	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
							1.063~1.969	27~50	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0020 ~ 0.0035
							1.969~	50~	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
Carbon Steel	★ 330 ~ 520	☆ 330 ~ 520	-	☆ 330 ~ 520	☆ 390 ~ 590	-	0.512~0.610	13~15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
							0.630~1.043	16~26.5	0.0031 ~ 0.0059	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
							1.063~1.969	27~50	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0020 ~ 0.0035
							1.969~	50~	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
Alloy Steel	★ 260 ~ 460	☆ 260 ~ 460	-	☆ 260 ~ 460	☆ 330 ~ 520	-	0.512~0.610	13~15.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
							0.630~1.043	16~26.5	0.0031 ~ 0.0059	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
							1.063~1.969	27~50	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0020 ~ 0.0035
							1.969~	50~	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0047	-
Tool Steel	★ 230 ~ 430	☆ 230 ~ 430	-	☆ 230 ~ 430	☆ 260 ~ 490	-	0.512~0.610	13~15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	0.0012 ~ 0.0028	-
							0.630~1.043	16~26.5	0.0031 ~ 0.0047	0.0024 ~ 0.0039	0.0024 ~ 0.0031	-
							1.063~1.969	27~50	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0024 ~ 0.0039	0.0016 ~ 0.0028
							1.969~	50~	0.0031 ~ 0.0059	0.0024 ~ 0.0047	0.0024 ~ 0.0039	-
Stainless Steel (Austenitic)	☆ 200 ~ 390	★ 200 ~ 390	-	☆ 200 ~ 390	☆ 230 ~ 460	-	0.512~0.610	13~15.5	0.0016 ~ 0.0031	0.0016 ~ 0.0031	0.0012 ~ 0.0024	-
							0.630~1.043	16~26.5	0.0024 ~ 0.0039	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
							1.063~1.969	27~50	0.0024 ~ 0.0039	0.0024 ~ 0.0047	0.0016 ~ 0.0039	0.0016 ~ 0.0028
							1.969~	50~	0.0024 ~ 0.0047	0.0024 ~ 0.0047	0.0016 ~ 0.0039	-
Gray Cast Iron	-	-	★ 330 ~ 490	-	-	☆ 330 ~ 390	0.512~0.610	13~15.5	0.0031 ~ 0.0047	0.0031 ~ 0.0039	0.0024 ~ 0.0031	-
							0.630~1.043	16~26.5	0.0039 ~ 0.0071	0.0039 ~ 0.0059	0.0031 ~ 0.0047	-
							1.063~1.969	27~50	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0039
							1.969~	50~	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	-
Nodular Cast Iron	-	-	★ 260 ~ 390	-	-	☆ 260 ~ 330	0.512~0.610	13~15.5	0.0031 ~ 0.0047	0.0031 ~ 0.0039	0.0024 ~ 0.0031	-
							0.630~1.043	16~26.5	0.0039 ~ 0.0071	0.0039 ~ 0.0059	0.0031 ~ 0.0047	-
							1.063~1.969	27~50	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0039
							1.969~	50~	0.0039 ~ 0.0079	0.0039 ~ 0.0071	0.0031 ~ 0.0059	-
Non-ferrous Metals	-	-	-	-	-	★ 660 ~ 1970	0.512~0.610	13~15.5	0.0024 ~ 0.0047	0.0024 ~ 0.0039	0.0016 ~ 0.0031	-
							0.630~1.043	16~26.5	0.0031 ~ 0.0071	0.0031 ~ 0.0059	0.0024 ~ 0.0059	-
							1.063~1.969	27~50	0.0031 ~ 0.0079	0.0031 ~ 0.0071	0.0024 ~ 0.0059	0.0020 ~ 0.0039
							1.969~	50~	0.0031 ~ 0.0079	0.0031 ~ 0.0071	0.0024 ~ 0.0059	-
Titanium Alloys	-	-	-	-	-	★ 130 ~ 230	0.512~0.610	13~15.5	0.0020 ~ 0.0024	0.0020 ~ 0.0024	0.0020 ~ 0.0024	-
							0.630~1.043	16~26.5	0.0020 ~ 0.0028	0.0020 ~ 0.0028	0.0020 ~ 0.0028	-
							1.063~1.969	27~50	0.0024 ~ 0.0031	0.0024 ~ 0.0031	0.0024 ~ 0.0031	0.0016 ~ 0.0020
							1.969~	50~	0.0024 ~ 0.0031	0.0024 ~ 0.0031	0.0024 ~ 0.0031	-

• Apply a sufficient amount of coolant

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

(Workpiece Material: 1049)

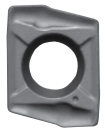
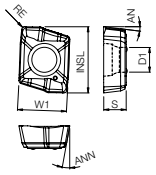
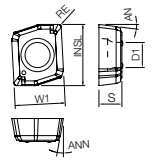
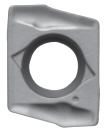
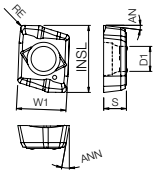
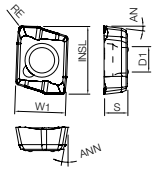
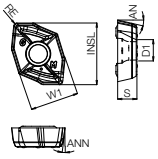
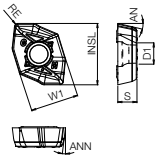
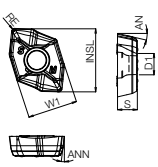
Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Concave Surface	Existing Hole	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	390	390	390	390	390	390	Not Available
f (ipr)	0.004	0.002	0.002	0.002	Concave Surface: 0.002 Once drill is fully engaged: 0.004	*0.002	Not Available
Internal Coolant	Yes	Yes	Yes	Yes	Yes	Yes	Not Available

Max. Depth for Drilling with External Coolant

In case of using external coolant system, chip evacuation will be bad.
Therefore D.O.C. should be measured within 1.5 times (1.5 x DC) of drill diameter (DC).

Applicable DRX Inserts

Usage Classification						
★ : 1st Recommendation ☆ : 2nd Recommendation (Steel; Non Heat Treated)	P	Carbon Steel / Alloy Steel	★	☆		
		Tool Steel	★			
	M	Stainless Steel	☆	★		
	K	Cast Iron			★	
	N	Non-ferrous Metals				★

Insert		Part Number	Dimensions (in)					Angle		MEGACOAT			Carbide
			INSL	S	D1	W1	RE	AN	ANN	PR1230	PR1225	PR1210	GW15
 For Outer Edge / General Purpose		**ZXMT 030203GM-E**	0.252	0.091	0.094	0.189	0.012	7°	10°	●		●	
For Inner Edge / General Purpose		**ZXMT 030203GM-I**	0.232	0.091	0.094	0.189	0.012	7°	10°	●	●	●	●
 For Outer Edge / Tough Edge		**ZXMT 030203GH-E**	0.252	0.091	0.094	0.189	0.012	7°	10°	●			
For Outer Edge / Low Cutting Force		**ZXMT 030203SM-E**	0.252	0.091	0.094	0.189	0.012	7°	10°		●		●
General Purpose		**ZXMT 040203GM**	0.244	0.102	0.094	0.201	0.012	13°	10°	●		●	
		05T203GM	0.287	0.109	0.098	0.217	0.012		7°	●		●	
		06T204GM	0.339	0.114	0.110	0.252	0.016			●		●	
		070305GM	0.402	0.128	0.118	0.315	0.020			●		●	
		09T306GM	0.480	0.159	0.142	0.378	0.024			●		●	
		11T306GM	0.571	0.160	0.181	0.457	0.024			●		●	
		140408GM	0.709	0.192	0.224	0.567	0.031			●		●	
		170608GM	0.870	0.259	0.268	0.697	0.031			●		●	
Tough Edge		**ZXMT 040203GH**	0.244	0.102	0.094	0.201	0.012	13°	10°	●			
		05T203GH	0.287	0.109	0.098	0.217	0.012		7°	●			
		06T204GH	0.339	0.114	0.110	0.252	0.016			●			
		070305GH	0.402	0.128	0.118	0.315	0.020			●			
		09T306GH	0.480	0.159	0.142	0.378	0.024			●			
		11T306GH	0.571	0.160	0.181	0.457	0.024			●			
		140408GH	0.709	0.192	0.224	0.567	0.031			●			
		170608GH	0.870	0.259	0.268	0.697	0.031			●			
Low Cutting Force / for Deep Drilling		**ZXMT 040203SM**	0.244	0.102	0.094	0.201	0.012	13°	10°		●		●
		05T203SM	0.287	0.109	0.098	0.217	0.012		7°		●		●
		06T204SM	0.339	0.114	0.110	0.252	0.016				●		●
		070305SM	0.402	0.128	0.118	0.315	0.020				●		●
		09T306SM	0.480	0.159	0.142	0.378	0.024				●		●
		11T306SM	0.571	0.160	0.181	0.457	0.024				●		●
		140408SM	0.709	0.192	0.224	0.567	0.031				●		●
		170608SM	0.870	0.259	0.268	0.697	0.031				●		●

Recommended Cutting Conditions ➡ K94

Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

Chipbreaker Selection Guide (ZXMT)

Workpiece Material	Insert Type	ZXMT											
	Chipbreaker	GM				GH				SM			
	Cutting Depth	2D	3D	4D	5D	2D	3D	4D	5D	2D	3D	4D	5D
Low Carbon Steel		☆	☆	☆	☆					★	★	★	★
Carbon Steel		★	★	★	☆	☆	☆	☆	☆	☆	☆	☆	★
Alloy Steel		★	★	★	☆	☆	☆	☆	☆	☆	☆	☆	★
Tool Steel		☆	☆	☆	☆	★	★	★	★				
Stainless Steel										★	★	★	★
Cast Iron		★	★	★	★								
Aluminum Alloy										★	★	★	★
Brass										★	★	★	★
Titanium Alloy										★	★	★	★

★ : 1st Recommendation ☆ : 2nd Recommendation

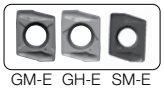
How to Select ZXMT03

ZXMT03 type (Cutting Dia.: Ø12mm~Ø13mm)

1) For outer edge, please select "-E" insert from three different chipbreakers for each application.
2) For inner edge, please select "-I" insert (GM chipbreaker only).

· Outer edge

ZXMT030203○○-E



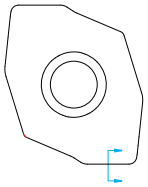
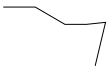
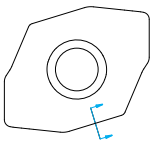
GM-E GH-E SM-E

· Inner Edge

ZXMT030203GM-I

GM-I

Chipbreaker Advantages

Chipbreaker			GM	GH	SM
Insert					
Advantages			1st. recommendation for carbon steel and alloy steel, 1st. recommendation for cast iron.	1st. recommendation for interrupted machining and hard materials. Cutting edge strength oriented design.	Suitable for sticky materials such as stainless steel and low carbon steel.
			Good balance of sharp cutting and cutting edge strength.	Middle to high feed rates of steel machining, GM Chipbreaker alternative.	Sharp cutting, prevents chattering. For low to medium feed rates of steel.
Outer Edge	 Wide Chipbreaker	Chipbreaker Cross-section			
		Chips from Outer Edge			
Inner Edge	 Flat Chipbreaker	Chipbreaker Cross-section			
		Chips from Inner Edge			
Workpiece Material			1049	1049	304

Identifying Magic Drill Tool Life

How to Judge Tool Life	Tool Life Indications
Tool Condition and Insert Wear	· When an insert is new, the holder is slightly bent to the side during cutting. (Therefore, the cutting diameter is slightly bigger during cutting). Once cutting is finished, the holder will return back to normal size. No tool marks will appear on the finished surface. (Although this depends on workpiece and cutting condition: during external machining slight tool mark might appear.)
	· When an insert is at the end of its tool life, Gradually the external corner part gets worn out, the holder does not bend slightly outwards - it starts to bend inwards. After the cutting is finished, the holder returns to the normal position. When taking off a holder under this condition the cutting edge of the insert creates external tool marks on the finished surface of the workpiece.
Checking Cutting Diameter	When cutting diameter is measured, suddenly it shows small diameter. In this case, a worn out insert can be the cause.
Checking the Surface on the Exit Side	If insert wear progresses, the burrs of penetrated hole entrance become bigger. This is a clear indication that the tool must be exchanged.
Variation of Cutting Noise	Light cutting noise at the beginning turns to vibration noise.
Variation of Vibration	As the end of tool life is getting closer, there is more vibration and the cutting noise changes. However, when machining smaller diameters these factors are difficult to detect.

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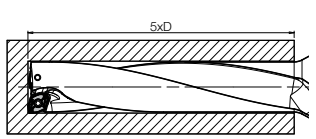
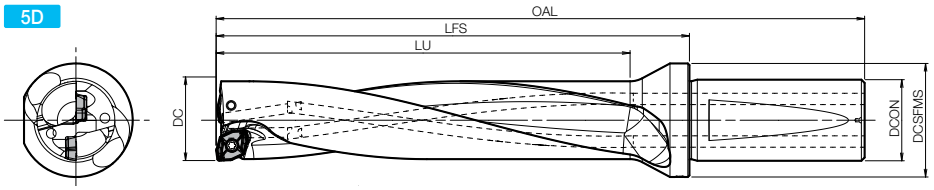
DRX (Drilling Depth: 5 x DC





Toolholder Dimensions - 5D (Inch Diameter / Inch Shank)

Part Number	Stock	No. of Inserts	Dimensions (in)						Max. Radial Offset (mm)	Spare Parts		Applicable Insert See Page K83
			DC	OAL	LFS	LU	DCON	DCSFMS		Insert Screw	Wrench	
S075 -DRX0562-5-04	●	2	0.562	5.34	3.65	2.81	0.75	1.06	+0.012	SB-2042TRG	DTM-6	ZXMT040203□□
S100 -DRX0625-5-05	●		0.625	6.18	4.05	3.13			+0.028			
-DRX0656-5-05	●	2	0.656	6.33	4.20	3.28	1.00	1.26	+0.020	SB-2045TR	DTM-6	ZXMT05T203□□
-DRX0688-5-05	●		0.688	6.49	4.37	3.44			+0.012			
-DRX0750-5-06	●		0.750	6.72	4.59	3.75			+0.031			
-DRX0812-5-06	●	2	0.812	7.03	4.90	4.06	1.00	1.26	+0.016	SB-2250TR	DTM-7	ZXMT06T204□□
-DRX0875-5-07	●		0.875	7.32	5.20	4.38			+0.043			
-DRX0906-5-07	●		0.906	7.48	5.36	4.53			+0.035			
-DRX0938-5-07	●	2	0.938	7.64	5.51	4.69	1.00	1.38	+0.028	SB-2570TR	DTM-8	ZXMT070305□□
-DRX0984-5-07	●		0.984	7.87	5.74	4.92			+0.016			
-DRX1000-5-07	●		1.000	7.95	5.82	5.00			+0.012			

- When offset machining, reduce feed rate to 0.0020 ipr or less

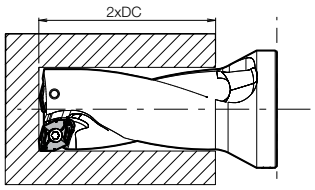
Hole Diameter Tolerance (5D)

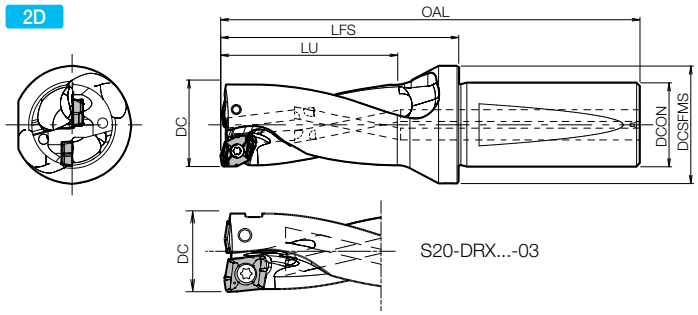
DC	Hole Diameter Tolerance (in)
Ø0.562" - Ø1.000"	+0.012" / -0.004"

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K94
Adjustable Sleeve ASL K96
Troubleshooting K95

DRX (Drilling Depth: 2 x DC)





Toolholder Dimensions - 2D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K83
S20	-DRX120M-2-03	△		12	88	45	24			+0.5			
	-DRX125M-2-03	△	2	12.5	89	46	25	20	27	+0.4	SB-2042TRG	DTM-6	Outer Edge ZXMT030203□□-E Inner Edge ZXMT030203GM-I
	-DRX130M-2-03	△		13	90	47	26			+0.3			
	-DRX135M-2-04	△		13.5	91	48	27			+0.5			
	-DRX140M-2-04	△		14	92	49	28			+0.4			
	-DRX145M-2-04	△	2	14.5	93	50	29	20	27	+0.3	SB-2042TRG	DTM-6	ZXMT040203□□
	-DRX150M-2-04	△		15	94	51	30			+0.2			
S25	-DRX155M-2-05	△		15.5	109	55	31			+0.8			
	-DRX160M-2-05	△		16	110	56	32			+0.7			
	-DRX165M-2-05	△	2	16.5	111	57	33	25	32	+0.5	SB-2045TR	DTM-6	ZXMT05T203□□
	-DRX170M-2-05	△		17	112	58	34			+0.4			
	-DRX175M-2-05	△		17.5	113	59	35			+0.3			
	-DRX185M-2-06	△		18.5	112	58	37			+0.9			
	-DRX190M-2-06	△		19	113	59	38			+0.8			
	-DRX195M-2-06	△		19.5	114	60	39			+0.7			
	-DRX200M-2-06	△	2	20	115	61	40	25	32	+0.5	SB-2250TR	DTM-7	ZXMT06T204□□
	-DRX205M-2-06	△		20.5	116	62	41			+0.4			
	-DRX210M-2-06	△		21	117	63	42			+0.3			
	-DRX215M-2-06	△		21.5	118	64	43			+0.2			
	-DRX220M-2-07	△		22	119	65	44			+1.2			
	-DRX225M-2-07	△		22.5	120	66	45			+1.0			
	-DRX230M-2-07	△		23	121	67	46			+0.9			
	-DRX235M-2-07	△	2	23.5	122	68	47	25	33	+0.8	SB-2570TR	DTM-8	ZXMT070305□□
	-DRX240M-2-07	△		24	123	69	48			+0.7			
	-DRX250M-2-07	△		25	125	71	50			+0.4			
	-DRX255M-2-07	△		25.5	126	72	51			+0.3			
S32	-DRX270M-2-09	△		27	136	77	54			+1.6			
	-DRX280M-2-09	△		28	138	79	56		41	+1.3			
	-DRX290M-2-09	△	2	29	140	81	58	32		+1.1	SB-3080TR	DTM-10	ZXMT09T306□□
	-DRX300M-2-09	△		30	142	83	60		43	+0.8			
	-DRX310M-2-09	△		31	144	85	62			+0.6			

- When offset machining, reduce feed rate to 0.0031 ipr or less

Hole Diameter Tolerance (2D)

DC	Hole Diameter Tolerance (mm)
Ø12mm - Ø26mm	+0.20 / -0.10
Ø27mm - Ø38mm	+0.25 / -0.15
Ø39mm - Ø60mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K94
Adjustable Sleeve SHE K96
Troubleshooting K95

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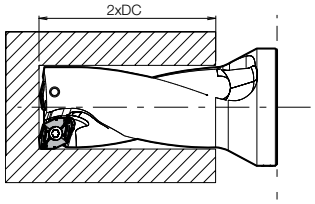
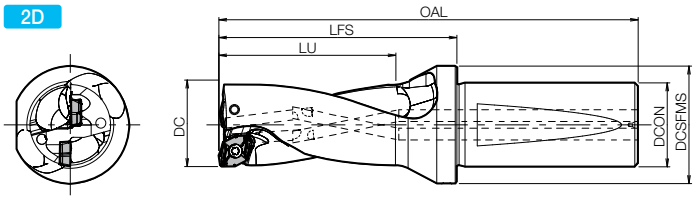
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRX (Drilling Depth: 2 x DC) Continued...





Toolholder Dimensions - 2D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K83
S40	-DRX320M-2-11	△		32	169	100	64			+2.2			
	-DRX330M-2-11	△		33	171	102	66			+1.9			
	-DRX340M-2-11	△		34	173	104	68			+1.7			
	-DRX350M-2-11	△	2	35	175	106	70	40	54	+1.4	SB-4085TR	DTM-15	ZXMT11T306□□
	-DRX360M-2-11	△		36	177	108	72			+1.2			
	-DRX370M-2-11	△		37	179	110	74			+0.9			
	-DRX380M-2-11	△		38	181	112	76			+0.7			
	-DRX390M-2-14	△		39	179	110	78			+2.8			
	-DRX400M-2-14	△		40	181	112	80		54	+2.5			
	-DRX410M-2-14	△		41	183	114	82			+2.3			
	-DRX420M-2-14	△	2	42	185	116	84	40		+2.0	SB-5090TR	DT-20	ZXMT140408□□
	-DRX450M-2-14	△		45	191	122	90			+1.3			
	-DRX460M-2-14	△		46	193	124	92		59	+1.0			
	-DRX470M-2-14	△		47	195	126	94			+0.8			
	-DRX480M-2-17	△		48	194	125	96			+3.8			
	-DRX490M-2-17	△		49	196	127	98			+3.5			
	-DRX500M-2-17	△		50	198	129	100		59	+3.3			
	-DRX510M-2-17	△		51	200	131	102			+3.0			
	-DRX520M-2-17	△		52	202	133	104			+2.8			
	-DRX530M-2-17	△		53	204	135	106			+2.5			
	-DRX540M-2-17	△	2	54	206	137	108	40		+2.3	SB-60120TR	DT-25	ZXMT170608□□
	-DRX550M-2-17	△		55	208	139	110			+2.0			
	-DRX560M-2-17	△		56	210	141	112			+1.8			
	-DRX570M-2-17	△		57	212	143	114		64	+1.5			
	-DRX580M-2-17	△		58	214	145	116			+1.3			
	-DRX590M-2-17	△		59	216	147	118			+1.0			
	-DRX600M-2-17	△		60	218	149	120			+0.8			

- When offset machining, reduce feed rate to 0.0031 ipr or less

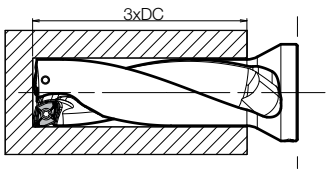
Hole Diameter Tolerance (2D)

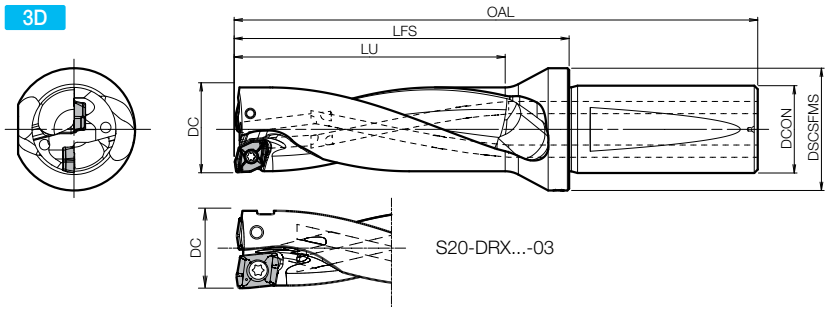
DC	Hole Diameter Tolerance (mm)
Ø12mm - Ø26mm	+0.20 / -0.10
Ø27mm - Ø38mm	+0.25 / -0.15
Ø39mm - Ø60mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K94
Adjustable Sleeve SHE K96
Troubleshooting K95

DRX (Drilling Depth: 3 x DC)





Toolholder Dimensions - 3D (Metric Diameter / Metric Shank)

Part Number	Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K83
S20 -DRX120M-3-03	△		12	100	57	36			+0.5			
-DRX125M-3-03	△	2	12.5	102	59	37.5	20	27	+0.4	SB-2042TRG	DTM-6	Outer Edge ZXMT030203□□-E Inner Edge ZXMT030203GM-I
-DRX130M-3-03	△		13	103	60	39			+0.3			
-DRX135M-3-04	△		13.5	105	62	40.5			+0.5			
-DRX145M-3-04	△	2	14.5	108	65	43.5	20	27	+0.3	SB-2042TRG	DTM-6	ZXMT040203□□
-DRX150M-3-04	△		15	109	66	45			+0.2			
S25 -DRX155M-3-05	△		15.5	124	70	46.5			+0.8			
-DRX160M-3-05	△		16	126	72	48			+0.7			
-DRX165M-3-05	△		16.5	127	73	49.5			+0.5			
-DRX170M-3-05	△	2	17	129	75	51	25	32	+0.4	SB-2045TR	DTM-6	ZXMT05T203□□
-DRX175M-3-05	△		17.5	130	76	52.5			+0.3			
-DRX180M-3-05	△		18	132	78	54			+0.2			
-DRX185M-3-06	△		18.5	131	77	55.5			+0.9			
-DRX195M-3-06	△		19.5	134	80	58.5			+0.7			
-DRX200M-3-06	△		20	135	81	60			+0.5			
-DRX205M-3-06	△	2	20.5	137	83	61.5	25	32	+0.4	SB-2250TR	DTM-7	ZXMT06T204□□
-DRX210M-3-06	△		21	138	84	63			+0.3			
-DRX215M-3-06	△		21.5	140	86	64.5			+0.2			
-DRX225M-3-07	△		22.5	142	88	67.5			+1.0			
-DRX230M-3-07	△		23	144	90	69			+0.9			
-DRX235M-3-07	△		23.5	145	91	70.5			+0.8			
-DRX240M-3-07	△		24	147	93	72			+0.7			
-DRX245M-3-07	△		24.5	148	94	73.5	25	33	+0.5	SB-2570TR	DTM-8	ZXMT070305□□
-DRX250M-3-07	△		25	150	96	75			+0.4			
-DRX255M-3-07	△		25.5	151	97	76.5			+0.3			
-DRX260M-3-07	△		26	153	99	78			+0.2			
S32 -DRX265M-3-09	△		26.5	161	102	79.5			+1.7			
-DRX270M-3-09	△		27	163	104	81			+1.6			
-DRX275M-3-09	△		27.5	164	105	82.5		41	+1.5			
-DRX280M-3-09	△		28	166	107	84			+1.3			
-DRX285M-3-09	△		28.5	167	108	85.5			+1.2			
-DRX290M-3-09	△	2	29	169	110	87	32		+1.1	SB-3080TR	DTM-10	ZXMT09T306□□
-DRX295M-3-09	△		29.5	170	111	88.5			+1.1			
-DRX300M-3-09	△		30	172	113	90		43	+0.8			
-DRX305M-3-09	△		30.5	173	114	91.5			+0.7			
-DRX315M-3-09	△		31.5	176	117	94.5			+0.5			

- When offset machining, reduce feed rate to 0.0031 ipr or less

Hole Diameter Tolerance (3D)

DC	Hole Diameter Tolerance (mm)
Ø12mm - Ø26mm	+0.20 / -0.10
Ø26.5mm - Ø38mm	+0.25 / -0.15
Ø39mm - Ø60mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K94
Adjustable Sleeve SHE K96
Troubleshooting K95

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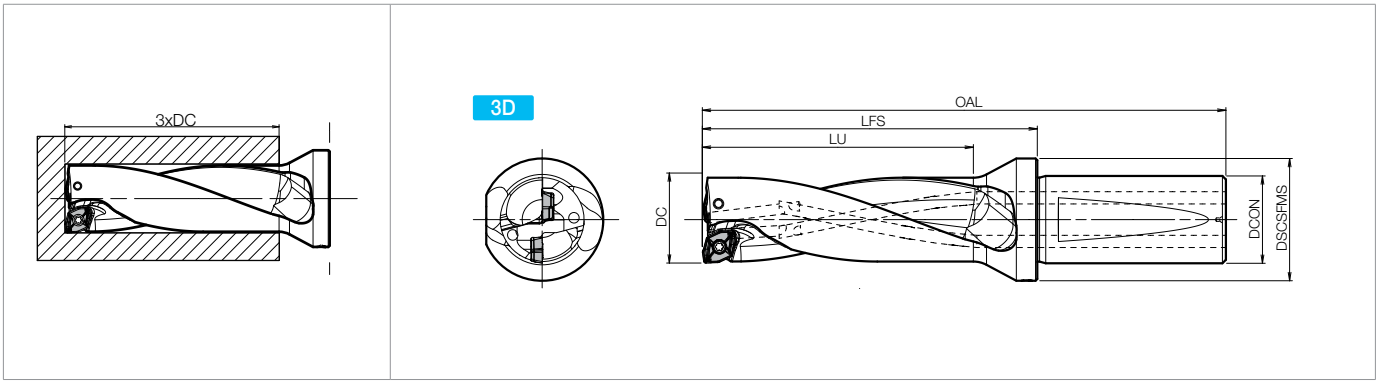
DRX (Drilling Depth: 3 x DC) Continued...



Toolholder Dimensions - 3D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K83
S40	-DRX320M-3-11	△	2	32	201	132	96	40	54	+2.2	SB-4085TR	DTM-15	ZXMT11T306□□
	-DRX330M-3-11	△		33	204	135	99			+1.9			
	-DRX340M-3-11	△		34	207	138	102			+1.7			
	-DRX350M-3-11	△		35	210	141	105			+1.4			
	-DRX360M-3-11	△		36	213	144	108			+1.2			
	-DRX380M-3-11	△		38	219	150	114			+0.7			
	-DRX390M-3-14	△	2	39	218	149	117	40	54	+2.8	SB-5090TR	DT-20	ZXMT140408□□
	-DRX400M-3-14	△		40	221	152	120			+2.5			
	-DRX410M-3-14	△		41	224	155	123			+2.3			
	-DRX430M-3-14	△		43	230	161	129		59	+1.8			
	-DRX450M-3-14	△		45	236	167	135			+1.3			
	-DRX460M-3-14	△		46	239	170	138			+1.0			
	-DRX470M-3-14	△		47	242	173	141			+0.8			
	-DRX480M-3-17	△	2	48	242	173	144	40	59	+3.8	SB-60120TR	DT-25	ZXMT170608□□
	-DRX490M-3-17	△		49	245	176	147			+3.5			
	-DRX510M-3-17	△		51	251	182	153			+3.0			
	-DRX520M-3-17	△		52	254	185	156			+2.8			
	-DRX530M-3-17	△		53	257	188	159			+2.5			
	-DRX540M-3-17	△		54	260	191	162		64	+2.3			
	-DRX550M-3-17	△		55	263	194	165			+2.0			
	-DRX560M-3-17	△		56	266	197	168			+1.8			
	-DRX570M-3-17	△		57	269	200	171			+1.5			
	-DRX580M-3-17	△		58	272	203	174			+1.3			
	-DRX590M-3-17	△		59	275	206	177			+1.0			
	-DRX600M-3-17	△		60	278	209	180			+0.8			

- When offset machining, reduce feed rate to 0.0031 ipr or less

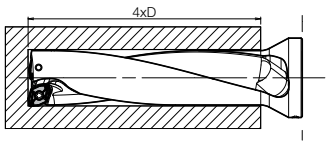
Hole Diameter Tolerance (3D)

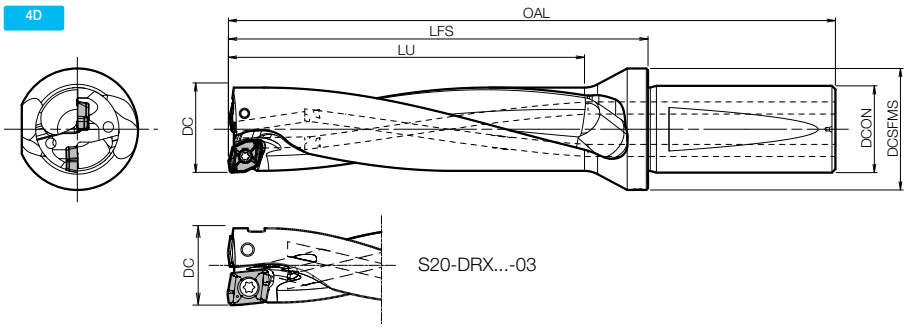
DC	Hole Diameter Tolerance (mm)
Ø12mm - Ø26mm	+0.20 / -0.10
Ø26.5mm - Ø38mm	+0.25 / -0.15
Ø39mm - Ø60mm	+0.30 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K94
Adjustable Sleeve SHE K96
Troubleshooting K95

DRX (Drilling Depth: 4 x DC)





Toolholder Dimensions - 4D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K83
S20	-DRX120M-4-03	△	2	12	112	69	48	20	27	+0.5	SB-2042TRG	DTM-6	Outer Edge ZXMT030203□□-E Inner Edge ZXMT030203GM-I
	-DRX125M-4-03	△		12.5	114	71	50			+0.4			
	-DRX130M-4-03	△		13	116	73	52			+0.3			
	-DRX135M-4-04	△	2	13.5	118	75	54	20	27	+0.5	SB-2042TRG	DTM-6	ZXMT040203□□
	-DRX145M-4-04	△		14.5	122	79	58			+0.3			
	-DRX150M-4-04	△		15	124	81	60			+0.2			
S25	-DRX155M-4-05	△	2	15.5	140	86	62	25	32	+0.8	SB-2045TR	DTM-6	ZXMT05T203□□
	-DRX160M-4-05	△		16	142	88	64			+0.7			
	-DRX165M-4-05	△		16.5	144	90	66			+0.5			
	-DRX170M-4-05	△		17	146	92	68			+0.4			
	-DRX175M-4-05	△		17.5	148	94	70			+0.3			
	-DRX180M-4-05	△		18	150	96	72			+0.2			
	-DRX185M-4-06	△	2	18.5	149	95	74	25	32	+0.9	SB-2250TR	DTM-7	ZXMT06T204□□
	-DRX190M-4-06	△		19	151	97	76			+0.8			
	-DRX195M-4-06	△		19.5	153	99	78			+0.7			
	-DRX200M-4-06	△		20	155	101	80			+0.5			
	-DRX205M-4-06	△		20.5	157	103	82			+0.4			
	-DRX210M-4-06	△		21	159	105	84			+0.3			
	-DRX215M-4-06	△		21.5	161	107	86			+0.2			
	-DRX220M-4-07	△	2	22	163	109	88	25	33	+1.2	SB-2570TR	DTM-8	ZXMT070305□□
	-DRX225M-4-07	△		22.5	165	111	90			+1.0			
	-DRX230M-4-07	△		23	167	113	92			+0.9			
	-DRX235M-4-07	△		23.5	169	115	94			+0.8			
	-DRX240M-4-07	△		24	171	117	96			+0.7			
	-DRX245M-4-07	△		24.5	173	119	98			+0.5			
	-DRX255M-4-07	△		25.5	177	123	102			+0.3			
S32	-DRX270M-4-09	△	2	27	190	131	108	32	41	+1.6	SB-3080TR	DTM-10	ZXMT09T306□□
	-DRX280M-4-09	△		28	194	135	112			+1.3			
	-DRX290M-4-09	△		29	198	139	116			+1.1			
	-DRX300M-4-09	△		30	202	143	120		43	+0.8			

- When offset machining, reduce feed rate to 0.0024 ipr or less

Hole Diameter Tolerance (4D)

DC	Hole Diameter Tolerance (mm)
Ø12mm - Ø26mm	+0.25 / -0.10
Ø27mm - Ø38mm	+0.30 / -0.15
Ø39mm - Ø60mm	+0.35 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K94
Adjustable Sleeve SHE K96
Troubleshooting K95

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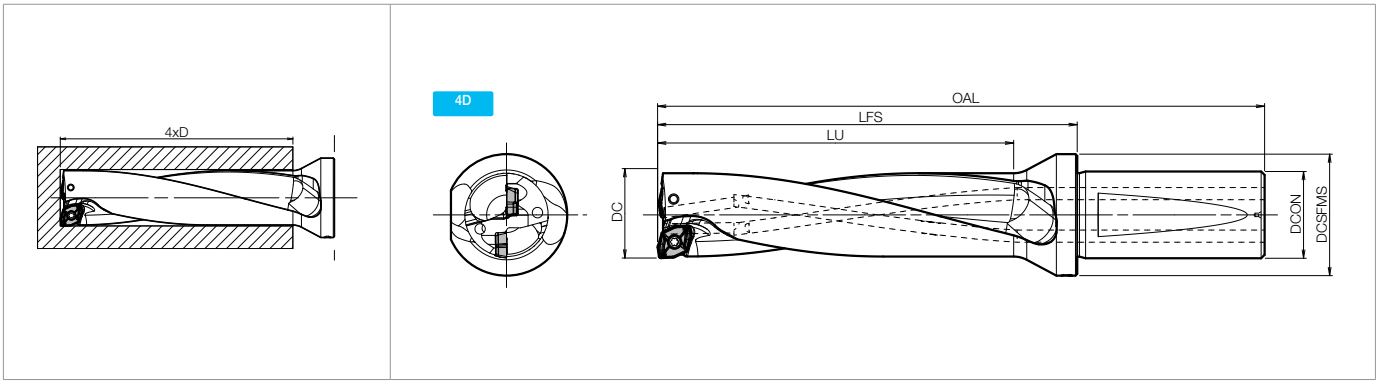
Contact your local Kyocera sales engineer to upgrade old products to new technology

DRX (Drilling Depth: 4 x DC) Continued...



Toolholder Dimensions - 4D (Metric Diameter / Metric Shank)

Part Number		Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K83
S40	-DRX330M-4-11	△	2	33	227	158	132	40	49	+1.9	SB-4085TR	DTM-15	ZXMT11T306□□
	-DRX340M-4-11	△		34	231	162	136			+1.7			
	-DRX350M-4-11	△		35	235	166	140			+1.4			
	-DRX360M-4-11	△		36	239	170	144			+1.2			
	-DRX370M-4-11	△		37	243	174	148			+0.9			
	-DRX380M-4-11	△		38	247	178	152			+0.7			
	-DRX390M-4-14	△	2	39	257	188	156	40	54	+2.8	SB-5090TR	DT-20	ZXMT140408□□
	-DRX400M-4-14	△		40	261	192	160			+2.5			
	-DRX410M-4-14	△		41	265	196	164			+2.3			
	-DRX420M-4-14	△		42	269	200	168			+2.0			
	-DRX430M-4-14	△		43	273	204	172		59	+1.8			
	-DRX440M-4-14	△		44	277	208	176			+1.5			
	-DRX450M-4-14	△		45	281	212	180			+1.3			
	-DRX460M-4-14	△		46	285	216	184			+1.0			
S50	-DRX480M-4-17	△	2	48	290	221	192	50	59	+3.8	SB-60120TR	DT-25	ZXMT170608□□
	-DRX490M-4-17	△		49	294	225	196			+3.5			
	-DRX500M-4-17	△		50	298	229	200			+3.3			
	-DRX510M-4-17	△		51	302	233	204			+3.0			
	-DRX520M-4-17	△		52	306	237	208			+2.8			
	-DRX530M-4-17	△		53	310	241	212			+2.5			
	-DRX540M-4-17	△		54	314	245	216		64	+2.3			
	-DRX550M-4-17	△		55	318	249	220			+2.0			
	-DRX560M-4-17	△		56	322	253	224			+1.8			
	-DRX570M-4-17	△		57	326	257	228			+1.5			
	-DRX580M-4-17	△		58	330	261	232			+1.3			
	-DRX600M-4-17	△		60	338	269	240			+0.8			

- When offset machining, reduce feed rate to 0.0024 ipr or less

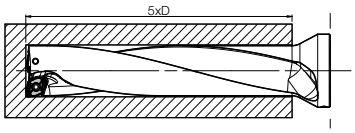
Hole Diameter Tolerance (4D)

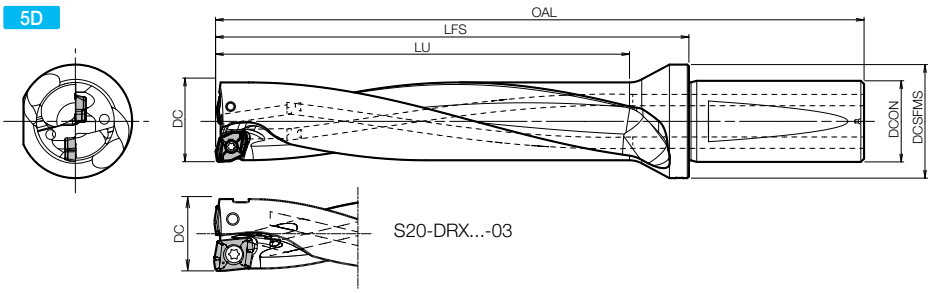
DC	Hole Diameter Tolerance (mm)
Ø12mm - Ø26mm	+0.25 / -0.10
Ø27mm - Ø38mm	+0.30 / -0.15
Ø39mm - Ø60mm	+0.35 / -0.20

The above values are estimates.
These values may change due to machine, workpiece, clamping power, and cutting conditions

Recommended Cutting Conditions K94
Adjustable Sleeve SHE K96
Troubleshooting K95

DRX (Drilling Depth: 5 x DC)





Toolholder Dimensions - 5D (Metric Diameter / Metric Shank)

Part Number	Stock	No. of Inserts	Dimensions (mm) DC	OAL	LFS	LU	DCON	DCSFMS	Max. Radial Offset (mm)	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K83
S20 -DRX120M-5-03	△	2	12	120	77	60	20	27	+0.5	SB-2042TRG	DTM-6	Outer Edge ZXMT030203□□-E Inner Edge ZXMT030203GM-I
-DRX130M-5-03	△		13	125	82	65			+0.3			
-DRX140M-5-04	△	2	14	134	91	70	20	27	+0.4	SB-2042TRG	DTM-6	ZXMT040203□□
-DRX150M-5-04	△		15	139	96	75			+0.2			
S25 -DRX160M-5-05	△		16	158	104	80	25	32	+0.7	SB-2045TR	DTM-6	ZXMT05T203□□
-DRX170M-5-05	△	2	17	163	109	85			+0.4			
-DRX180M-5-05	△		18	168	114	90			+0.2			
-DRX200M-5-06	△	2	20	175	121	100	25	32	+0.5	SB-2250TR	DTM-7	ZXMT06T204□□
-DRX210M-5-06	△		21	180	126	105			+0.3			
-DRX230M-5-07	△		23	190	136	115	25	33	+0.9	SB-2570TR	DTM-8	ZXMT070305□□
-DRX240M-5-07	△	2	24	195	141	120			+0.7			
-DRX250M-5-07	△		25	200	146	125			+0.4			
S32 -DRX280M-5-09	△		28	222	163	140		41	+1.3	SB-3080TR	DTM-10	ZXMT09T306□□
-DRX290M-5-09	△	2	29	227	168	145	32		+1.1			
-DRX300M-5-09	△		30	232	173	150		43	+0.8			
-DRX310M-5-09	△		31	237	178	155			+0.6			
S40 -DRX320M-5-11	△		32	255	186	160	40	49	+2.2	SB-4085TR	DTM-15	ZXMT11T306□□
-DRX330M-5-11	△		33	260	191	165			+1.9			
-DRX340M-5-11	△		34	265	196	170			+1.7			
-DRX350M-5-11	△	2	35	270	201	175			+1.4			
-DRX360M-5-11	△		36	275	206	180			+1.2			
-DRX370M-5-11	△		37	280	211	185			+0.9			
-DRX380M-5-11	△		38	285	216	190			+0.7			
-DRX390M-5-14	△		39	296	227	195		54	+2.8	SB-5090TR	DT-20	ZXMT140408□□
-DRX400M-5-14	△		40	301	232	200			+2.5			
-DRX410M-5-14	△		41	306	237	205			+2.3			
-DRX430M-5-14	△	2	43	316	247	215		59	+1.8			
-DRX440M-5-14	△		44	321	252	220			+1.5			
-DRX450M-5-14	△		45	326	257	225			+1.3			
-DRX470M-5-14	△		47	336	267	235			+0.8			
S50 -DRX480M-5-17	△		48	338	269	240	50	59	+3.8	SB-60120TR	DT-25	ZXMT170608□□
-DRX490M-5-17	△		49	343	274	245			+3.5			
-DRX500M-5-17	△		50	348	279	250			+3.3			
-DRX510M-5-17	△		51	353	284	255			+3.0			
-DRX520M-5-17	△		52	358	289	260			+2.8			
-DRX530M-5-17	△		53	363	294	265			+2.5			
-DRX540M-5-17	△	2	54	368	299	270		64	+2.3			
-DRX550M-5-17	△		55	373	304	275			+2.0			
-DRX560M-5-17	△		56	378	309	280			+1.8			
-DRX570M-5-17	△		57	383	314	285			+1.5			
-DRX580M-5-17	△		58	388	319	290			+1.3			
-DRX590M-5-17	△		59	393	324	295			+1.0			
-DRX600M-5-17	△		60	398	329	300			+0.8			

- When offset machining, reduce feed rate to 0.0020 ipr or less

Hole Diameter Tolerance (5D)

DC	Hole Diameter Tolerance (mm)
Ø12mm - Ø26mm	+0.30 / -0.10
Ø27mm - Ø38mm	+0.35 / -0.15
Ø39mm - Ø60mm	+0.40 / -0.20

The values are estimates. These values may change due to machine, workpiece, clamping power, and cutting conditions

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Troubleshooting K95

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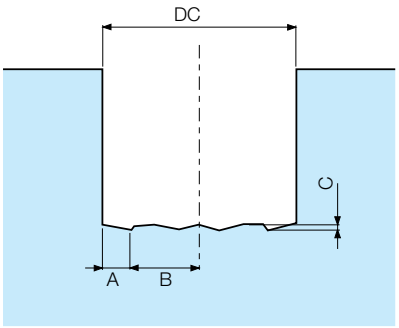
DRX Hole Bottom Shape (Common for 2D, 3D, 4D, and 5D Lengths)

DRZ Inch Diameters (in)				DRZ Metric Diameters (mm)							
DC	A	B	C	DC	A	B	C	DC	A	B	C
0.562	0.079	0.202	0.020	12.0	1.8	4.2	0.5	26.5	3.9	9.4	1.0
0.625		0.234	0.024	12.5		4.5		27.0		9.6	
0.656		0.249		13.0		4.7		27.5		9.9	
0.688		0.265		13.5	2	4.8	0.5	28.0		10.1	
0.750	0.094	0.281	0.028	14.0		5.0		28.5		10.4	
0.812		0.312		14.5		5.3		29.0		10.6	
0.875	0.126	0.312	0.031	15.0		5.5		29.5		10.9	
0.906		0.327		15.5		5.8	0.6	30.0		11.1	1.1
0.938		0.343		16.0		6.0		30.5		11.4	
0.984		0.366	0.035	16.5		6.3		31.0		11.6	
1.000		0.374		17.0		6.5		31.5		11.9	1.2
				17.5		6.8		32.0	4.7	11.3	1.1
				18.0		7.0	0.7	33.0		11.8	
				18.5	2.4	6.9	0.7	34.0		12.3	
				19.0		7.1		35.0		12.8	
				19.5		7.4		36.0		13.3	1.2
				20.0		7.6		37.0		13.8	1.3
				20.5		7.9		38.0		14.3	
				21.0		8.1	0.8	39.0	5.8	13.7	1.5
				21.5		8.4		40.0		14.2	
				22.0	3.2	7.8	0.8	41.0		14.7	
				22.5		8.1		42.0		15.2	
				23.0		8.3		43.0		15.7	
				23.5		8.6		44.0		16.2	
				24.0		8.8		45.0		16.7	
				24.5	3.2	9.1	0.8	46.0		17.2	
				25.0		9.3	0.9	47.0		17.7	1.6
				25.5		9.6		48.0	7.1	16.9	1.7
				26.0		9.8		49.0		17.4	
								50.0		17.9	
								51.0		18.4	
								52.0		18.9	
								53.0		19.4	
								54.0		19.9	
								55.0		20.4	1.8
								56.0		20.9	
								57.0		21.4	1.9
								58.0		21.9	2.0
								59.0		22.4	
								60.0		22.9	2.1



- Figures in chart are nominal sizes.
- (Varies from -0.004" (-0.1mm) to +0.004" (+0.1mm) depending on work material and cutting conditions)

DRX - Recommended Cutting Conditions (with Coolant)

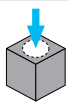
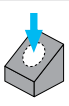
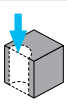
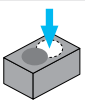
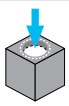
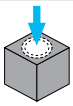
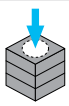
Workpiece Material	Recommended Insert Grade Cutting Speed (sfm)				Drill Dia. DC (in)	Drill Dia. DC (mm)	Drill Depth / Feed Rate (ipr)								
	MEGACOAT			Carbide			2D / 3D			4D			5D		
	PR1230	PR1225	PR1210	GW10			GM	GH	SM	GM	GH	SM	GM	GH	SM
	GM, GH	SM	GM	SM											
Low Carbon Steel	☆ 400~800	★ 400~800	-	-	0.432-0.591	12-15	0.0024~0.0039	0.0024~0.0039	0.0016~0.0039	0.0020~0.0031	0.0020~0.0031	0.0016~0.0031	0.0016~0.0028	0.0016~0.0028	0.0016~0.0031
					0.630-0.709	15.5-18	0.0024~0.0047	0.0024~0.0047	0.0024~0.0047	0.0020~0.0039	0.0020~0.0039	0.0020~0.0039	0.0020~0.0031	0.0020~0.0031	0.0016~0.0035
					0.748-1.024	18.5-26	0.0031~0.0055	0.0031~0.0055	0.0024~0.0055	0.0024~0.0047	0.0031~0.0047	0.0020~0.0047	0.0024~0.0039	0.0024~0.0039	0.0016~0.0039
					1.063-2.362	26.5-60	0.0031~0.0055	0.0031~0.0055	0.0024~0.0055	0.0024~0.0047	0.0031~0.0047	0.0020~0.0047	0.0024~0.0039	0.0024~0.0039	0.0016~0.0039
Carbon Steel	★ 330~600	☆ 330~600	-	-	0.432-0.591	12-15	0.0016~0.0055	0.0016~0.0055	0.0016~0.0039	0.0016~0.0039	0.0016~0.0039	0.0016~0.0031	0.0016~0.0031	0.0016~0.0031	0.0016~0.0028
					0.630-0.709	15.5-18	0.0024~0.0063	0.0024~0.0063	0.0024~0.0047	0.0020~0.0047	0.0020~0.0047	0.0020~0.0039	0.0020~0.0039	0.0020~0.0039	0.0020~0.0031
					0.748-1.024	18.5-26	0.0031~0.0079	0.0031~0.0079	0.0024~0.0055	0.0028~0.0063	0.0028~0.0063	0.0020~0.0047	0.0024~0.0047	0.0024~0.0047	0.0020~0.0039
					1.063-2.362	26.5-60	0.0031~0.0079	0.0031~0.0079	0.0024~0.0055	0.0028~0.0063	0.0028~0.0063	0.0020~0.0047	0.0024~0.0047	0.0024~0.0047	0.0020~0.0039
Alloy Steel	★ 330~530	☆ 330~530	-	-	0.432-0.591	12-15	0.0016~0.0055	0.0016~0.0055	0.0016~0.0039	0.0016~0.0039	0.0016~0.0039	0.0016~0.0031	0.0016~0.0031	0.0016~0.0031	0.0016~0.0028
					0.630-0.709	15.5-18	0.0024~0.0063	0.0024~0.0063	0.0024~0.0047	0.0020~0.0047	0.0020~0.0047	0.0020~0.0039	0.0020~0.0039	0.0020~0.0039	0.0020~0.0031
					0.748-1.024	18.5-26	0.0031~0.0079	0.0031~0.0079	0.0024~0.0055	0.0028~0.0063	0.0028~0.0063	0.0020~0.0047	0.0024~0.0047	0.0024~0.0047	0.0020~0.0039
					1.063-2.362	26.5-60	0.0031~0.0079	0.0031~0.0079	0.0024~0.0055	0.0028~0.0063	0.0028~0.0063	0.0020~0.0047	0.0024~0.0047	0.0024~0.0047	0.0020~0.0039
Tool Steel	★ 270~500	☆ 270~500	-	-	0.432-0.591	12-15	0.0016~0.0031	0.0016~0.0031	0.0016~0.0031	0.0016~0.0028	0.0016~0.0028	0.0016~0.0028	0.0016~0.0024	0.0016~0.0024	0.0016~0.0024
					0.630-0.709	15.5-18	0.0024~0.0047	0.0024~0.0047	0.0024~0.0039	0.0020~0.0039	0.0020~0.0039	0.0020~0.0031	0.0016~0.0031	0.0016~0.0031	0.0016~0.0028
					0.748-1.024	18.5-26	0.0031~0.0059	0.0031~0.0059	0.0024~0.0047	0.0024~0.0047	0.0024~0.0047	0.0024~0.0039	0.0020~0.0039	0.0020~0.0039	0.0020~0.0031
					1.063-2.362	26.5-60	0.0031~0.0059	0.0031~0.0059	0.0024~0.0047	0.0024~0.0047	0.0024~0.0047	0.0024~0.0039	0.0020~0.0039	0.0020~0.0039	0.0020~0.0031
Stainless Steel (Austenitic)	☆ 240~470	★ 240~470	-	-	0.432-0.591	12-15	0.0024~0.0039	0.0024~0.0039	0.0016~0.0039	0.0020~0.0031	0.0020~0.0031	0.0016~0.0031	0.0016~0.0028	0.0016~0.0031	0.0016~0.0031
					0.630-0.709	15.5-18	0.0024~0.0039	0.0024~0.0039	0.0024~0.0047	0.0020~0.0031	0.0020~0.0031	0.0020~0.0043	0.0016~0.0028	0.0016~0.0028	0.0016~0.0039
					0.748-1.024	18.5-26	0.0031~0.0047	0.0031~0.0047	0.0024~0.0055	0.0028~0.0039	0.0028~0.0039	0.0024~0.0047	0.0028~0.0039	0.0028~0.0039	0.0024~0.0047
					1.063-2.362	26.5-60	0.0031~0.0047	0.0031~0.0047	0.0024~0.0055	0.0028~0.0039	0.0028~0.0039	0.0024~0.0047	0.0028~0.0039	0.0028~0.0039	0.0024~0.0047
Gray Cast Iron	-	-	★ 330~500	-	0.432-0.591	12-15	0.0031~0.0055	-	-	0.0024~0.0047	-	-	0.0016~0.0039	-	-
					0.630-0.709	15.5-18	0.0031~0.0071	-	-	0.0031~0.0063	-	-	0.0024~0.0047	-	-
					0.748-1.024	18.5-26	0.0031~0.0079	-	-	0.0031~0.0071	-	-	0.0024~0.0055	-	-
					1.063-2.362	26.5-60	0.0031~0.0079	-	-	0.0031~0.0071	-	-	0.0024~0.0055	-	-
Nodular Cast Iron	-	-	★ 270~400	-	0.432-0.591	12-15	0.0031~0.0047	-	-	0.0024~0.0039	-	-	0.0016~0.0031	-	-
					0.630-0.709	15.5-18	0.0031~0.0063	-	-	0.0031~0.0055	-	-	0.0024~0.0039	-	-
					0.748-1.024	18.5-26	0.0031~0.0071	-	-	0.0031~0.0063	-	-	0.0024~0.0047	-	-
					1.063-2.362	26.5-60	0.0031~0.0071	-	-	0.0031~0.0063	-	-	0.0024~0.0047	-	-
Non-ferrous Metals	-	-	-	★ 660~1980	0.432-0.591	12-15	-	-	0.0024~0.0047	-	-	0.0020~0.0039	-	-	0.0016~0.0031
					0.630-0.709	15.5-18	-	-	0.0031~0.0055	-	-	0.0024~0.0047	-	-	0.0020~0.0039
					0.748-1.024	18.5-26	-	-	0.0031~0.0063	-	-	0.0024~0.0055	-	-	0.0020~0.0047
					1.063-2.362	26.5-60	-	-	0.0031~0.0079	-	-	0.0031~0.0063	-	-	0.0028~0.0055
Titanium Alloys	-	-	-	★ 140~240	0.432-0.591	12-15	-	-	0.0020~0.0031	-	-	0.0016~0.0028	-	-	0.0016~0.0024
					0.630-0.709	15.5-18	-	-	0.0020~0.0031	-	-	0.0016~0.0028	-	-	0.0016~0.0024
					0.748-1.024	18.5-26	-	-	0.0024~0.0039	-	-	0.0024~0.0031	-	-	0.0020~0.0028
					1.063-2.362	26.5-60	-	-	0.0024~0.0039	-	-	0.0024~0.0031	-	-	0.0020~0.0028

- Apply a sufficient amount of coolant

★ : 1st Recommendation ☆ : 2nd Recommendation

Cutting Conditions by Application

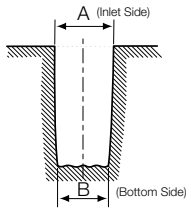
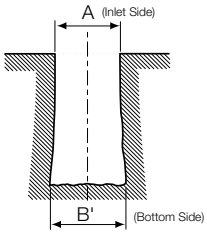
(Workpiece Material: 1049)

Applications	Plain Surface	Angled Surface	Half Cylindrical	Hole Expansion	Concave Surface	Existing Hole	Stacked Plates
Workpiece Shape							
Cutting Speed Vc (sfm)	390	390	390	390	390	390	Not Available
f (ipr)	0.004	0.002	0.002	0.002	Concave Surface: 0.002 Once drill is fully engaged: 0.004	*0.002	Not Available
Internal Coolant	Yes	Yes	Yes	Yes	Yes	Yes	Not Available

Max. Depth for Drilling with External Coolant

In case of using external coolant system, chip evacuation will be bad.
Therefore, D.O.C. should be measured within 1.5 times (1.5 x DC) of drill diameter (DC).

Troubleshooting (DRV / DRZ / DRX / DRS)

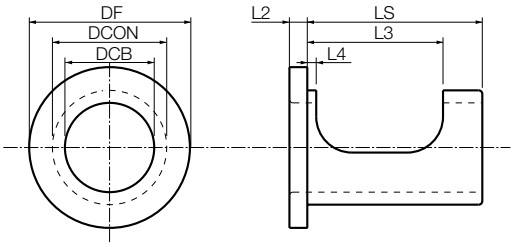
Problems	Conditions		Cause	Countermeasures
Hole Diameter is Smaller at the Bottom of the Hole		There is no problem for inlet, however gradually hole diameter is getting smaller at the bottom. A>B	Chip jam (External or Internal edge chip stuck)	Change the cutting conditions · Increase the cutting speed · Lower the feed rate See ➡ **K62~K65, K82, K94** for "Recommended Cutting Conditions".
Hole Diameter is Larger at the Bottom of the Hole		There is no problem for inlet, however gradually hole diameter is getting larger at the bottom. A<B	Internal edge chip jam.	Change the cutting conditions · Increase the cutting speed · Lower the feed rate See ➡ **K62~K65, K82, K94** for "Recommended Cutting Conditions". · Check the core height ➡ **K98~K99** (DRV) ➡ **K100~K101** (DRZ / DRX)
Hole Diameter is Small at the Hole Inlet			Incorrect adjustment of hole diameter.	In case of using lathe machine, use X-axis and adjustment hole diameter. ➡ **K98** (DRV) ➡ **K100** (DRZ / DRX)
			No core at internal edge. (No core remains)	Adjust the center height. ➡ **K98~K99** (DRV) ➡ **K100~K101** (DRZ / DRX)

Identifying Tool Life of Magic Drill (DRV / DRZ / DRX / DRS)

How to Judge Tool Life	Tool Life Indications
Tool Condition and Insert Wear	· When an insert is new, the holder is slightly bent to the side during cutting. (Therefore, the cutting diameter is slightly bigger during cutting). Once cutting is finished, the holder will return back to normal size. No tool marks will appear on the finished surface. (Although this depends on workpiece and cutting condition: during external machining slight tool mark might appear.)
	· When an insert is at the end of its tool life, Gradually the external corner part gets worn out, the holder does not bend slightly outwards - it starts to bend inwards. After the cutting is finished, the holder returns to the normal position. When taking off a holder under this condition the cutting edge of the insert creates external tool marks on the finished surface of the workpiece.
Checking Cutting Diameter	When cutting diameter is measured, suddenly it shows small diameter. In this case, a worn out insert can be the cause.
Checking the Surface on the Exit Side	If insert wear progresses, the burrs of penetrated hole entrance become bigger. This is a clear indication that the tool must be exchanged.
Variation of Cutting Noise	DRV / DRZ / DRX → Light drilling noise at the beginning turns to dull noise with vibration. DRS → Light drilling noise at the beginning turns to a whir-like noise. Although, it is difficult to recognize DRV / DRZ / DRX type's smaller drill diameters or DRS type's variation of drilling noise because of main motor noise or coolant discharge.
Variation of Vibration	As the end of tool life is getting closer, there is more vibration and the cutting noise changes. However, when machining smaller diameters these factors are difficult to detect.

ASL / SHE for **DRV**, **DRZ**, and **DRX** Magic Drills

Diameter Adjustment / Center Height Adjustment



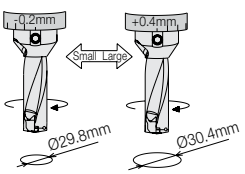
Sleeve Dimensions (Use ASL for inch size drills and SHE for metric size drills)

Part Number		Stock	Unit	Dimensions							Dia. Adjustment Range	Center Height Adjustment Range
				DCB	DCON	DF	LS	L2	L3	L4		
ASL	**75100-175**	●	inch	0.750	1.000	1.614	1.750	0.157	1.417	0.118	+0.016 ~ -0.008	+0.008 ~ -0.006
	100125-212	●		1.000	1.250	1.929	2.125	0.236	1.496	0.098	+0.016 ~ -0.008	+0.008 ~ -0.006
	125150-238	●		1.250	1.500	2.283	2.375	0.236	1.693	0.098	+0.016 ~ -0.008	+0.008 ~ -0.006
SHE	**2025-43**	●	mm	20	25	41	43	4	36	3.0	+0.4 ~ -0.2	+0.2 ~ -0.15
	2532-48	●		25	32	49	48	6	38	2.5	+0.4 ~ -0.2	+0.2 ~ -0.15
	3240-53	●		32	40	58	53	6	43	2.5	+0.4 ~ -0.2	+0.2 ~ -0.15
	4050-63	●		40	50	74	63	6	49	3.0	+0.4 ~ -0.2	+0.3 ~ -0.2

- Diameter adjustment range refers to the cutting diameter.
- ASL and SHE should only be used with the **DRV**, **DRX**, or **DRZ** Magic Drills. They are NOT recommended for the small diameter **DRS** Magic Drill because the adjustment range is too large.

1. Diameter Adjustment (for Machining Center)

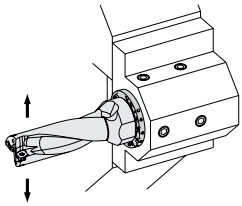
e.g.) Ø30mm Drill



● Diameter Adjustment

ASL (in)		**SHE** (mm)	
Shank Dia.	Adjustment Range	Shank Dia.	Adjustment Range
Ø0.750"	+0.016 ~ -0.008	Ø20	+0.4 ~ -0.2
Ø1.000"		Ø25	
Ø1.250"		Ø32	
-		Ø40	+0.6 ~ -0.2

2. Center Height Adjustment (for Lathe Operations)



● Center Height Adjustment

ASL (in)		**SHE** (mm)	
Shank Dia.	Adjustment Range	Shank Dia.	Adjustment Range
Ø0.750"	+0.008 ~ -0.006	Ø20	+0.2 ~ -0.15
Ø1.000"		Ø25	
Ø1.250"		Ø32	
-		Ø40	+0.3 ~ -0.2

How to Use the Adjustable Sleeve

1. Hole Diameter Adjustment when Drilling

(1) Adjust the scale at the flange periphery of the sleeve to the center of the drill coolant plug. (Fig.1)
(2) When making the hole diameter larger, rotate the sleeve in (+) direction and to make it smaller, rotate the sleeve in (-) direction.
(3) When rotating the sleeve, insert the wrench supplied with the drill into the hole on the flange periphery to rotate the sleeve.
(4) Using the bottom screw of the side-lock arbor, firmly tighten on the drill directly through the sleeve's window.
The upper screw should be tightened slightly so that the sleeve will not be damaged.

Caution:
· Not applicable with
Collet Chuck type Arbor.
· Scale on the sleeve is the reference value.
Check the actual hole diameter after adjusting.

DRV (DRX)

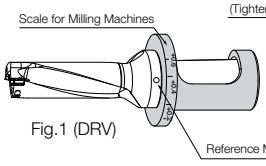


Fig.1 (DRV)

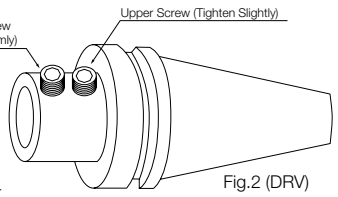


Fig.2 (DRV)

DRZ

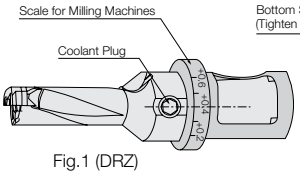


Fig.1 (DRZ)

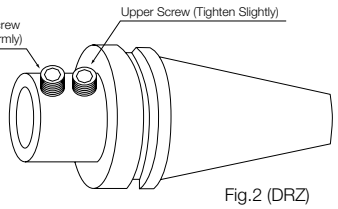


Fig.2 (DRZ)

(Example of Adjusting the Hole Dia. +0.4mm)

2. Center-Height Adjustment for Lathes

Most Lathe problems occur due to Center Height Deviation.
The Center Height is appropriate if a core approximately 0.5mm diameter remains at the center of the end face. (Fig.3)
Center-height adjustment is necessary if:

◆ No core remains or ◆ Core diameter is more than 1mm

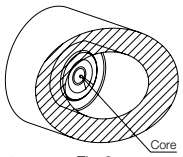


Fig.3

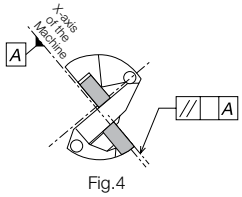


Fig.4

(1) Align the drill with the outer insert face parallel to the X-axis of the tool turret. (Fig.4)
(2) Align the scale (for the lathe) on the flange face of the sleeve to the center of the drill coolant plug.
(3) When no core remains, rotate the sleeve to (+) direction to make the core larger, and when the core diameter is more than 1mm, rotate the sleeve to (-) direction to make the core smaller.
(4) When rotating the sleeve, insert the wrench supplied with the drill into the hole on the flange periphery to rotate the sleeve.
(5) After Completing the adjustment, firmly tighten on the drill directly through the sleeve's window.
Note: Depending on amount of the center height adjustment, the hole diameter may change. It is recommended that the hole diameter is checked after the center height adjustment.

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(Technical Support) **800.823.7284 - Option 2**
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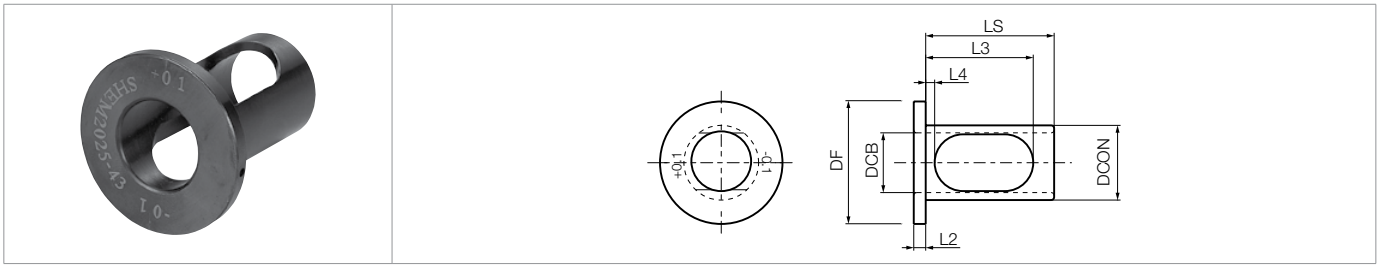
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

SHEM for **DRS** Mini Magic Drills

Diameter Adjustment



Sleeve Dimensions

Part Number		Stock	Unit	Dimensions							Dia. Adjustment Range
				DCB	DCON	DF	LS	L2	L3	L4	
SHEM	**2025-43**	●	mm	20	25	41	43	4	36	3.0	+ 0.1 ~ - 0.1
	2032-43	●			32	49		6		2.5	+ 0.1 ~ - 0.1

- Diameter adjustment range refers to the cutting diameter.

How to Use the Adjustable Sleeve

· SHEM is designed for only MagicDrill Mini (DRS type)
· SHEM is for drill diameter adjustment only. (up to +0.1mm or -0.1mm)
SHEM is not for center height adjustment like conventional adjustable sleeve (SHE type)
· Apply SHEM when adjusting the hole diameter for pre-drilling before threading.

(1) Set the outer edge horizontally with 90° to making line on the sleeve. (Fig.1)
(2) When making the hole diameter larger, align the +0.1 mark on the sleeve with the flat on the drill shank.
To adjust to smaller diameter, align the -0.1 mark on the sleeve with the flat on the drill shank. (Fig.1)
(3) Using the bottom screw of the side-lock arbor, firmly tighten on the drill directly through the sleeve's window.
The upper screw should be tightened slightly so that the sleeve will not be damage. (Fig.2.)

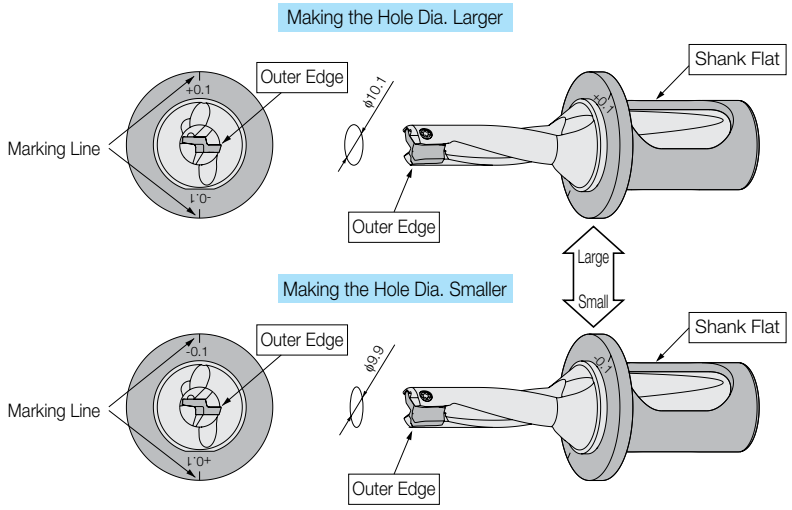


Fig.1 Diameter Adjustment Method (e.g.) Ø10mm Drill

Caution: Not applicable for Collet Chuck type Arbor.

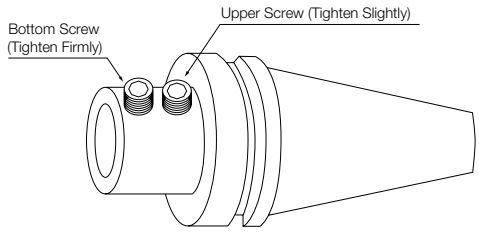


Fig.2

Magic Drill Setup for Lathes

● Installation

1. The top face of the outer insert should be parallel to the X-axis to allow for offset cutting.
   (Cutting diameter can be changed by moving in the X-axis.)
2. It is recommended to set the outer insert as shown in Fig.1 with the outer insert facing the operator. (Fig.1)
   (It is also possible to use it by setting it in 180° reverse position)
   If the lathe has two turrets, when installing the drill into the lower turret, the outer insert should be set to face the operator.
   (It is also possible to use it by setting at 180° reverse position)

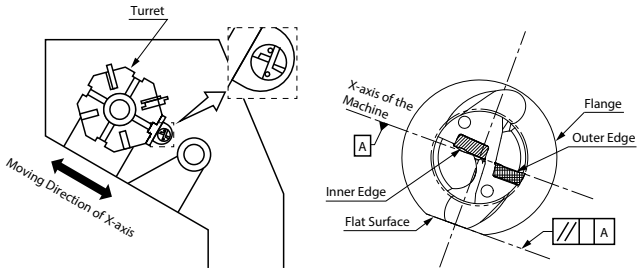


Fig.1 Installed into the Lathe

● Cutting Diameter Adjustment

1 Cutting Diameter Adjustment

1. Cutting diameter is adjusted by moving X-axis.
   The moving direction of the X-axis depends on the position of the toolholder.
2. For making the hole diameter larger, slide the tool along the X-axis toward the outer insert side. (Fig.2, Fig.3)
   For making the hole diameter smaller, slide the tool along the X-axis in the opposite direction.
   (This movement of the axis is called an "Offset")
   Be sure not to make the hole diameter smaller than the drill diameter by more than 0.2mm (0.008"). Otherwise, the toolholder will interfere with the drilled hole. (Fig.4)

Ex.) When using Ø20mm drill, the hole diameter must not be smaller than 19.8m (0.780")

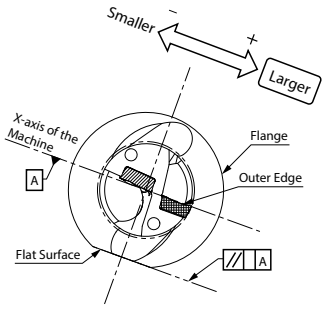


Fig.2 Outer Insert Facing Up

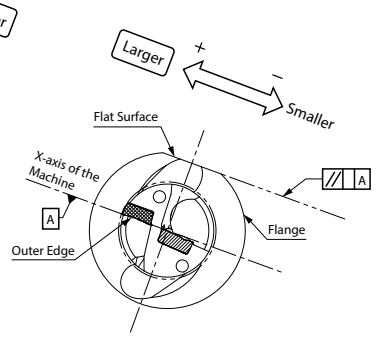


Fig.3 Outer Insert Facing Down

2 Offset Limit of the Cutting Diameter

For the maximum limit of the cutting diameter, refer to "Max. Offset (Radial)" in the Toolholder Dimensions table.
(The figure in the Toolholder Dimensions table shows how much it is possible to offset the drill in the radial direction.)

Ex.) When using Ø20mm (Ø0.787") drill, for example, it is possible to make a hole up to Ø21.1mm (0.831") since "Max. Offset (Radial)" is +0.55mm (+0.022").

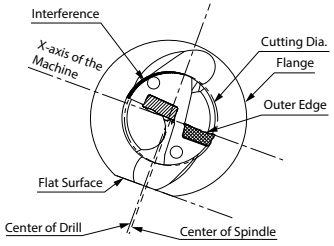


Fig.4 Excessive Offset (For Smaller Hole Diameter)

● Center Height Adjustment

1 Center Height of the Inner Insert

When installing inner insert as shown in Fig.1, it will be set around 0.05mm (0.002") below the Center of Spindle. (Fig.5)
This is the normal position of the center height.
However, in case that the turret of the lathe is out of alignment with the Center of Spindle, sometimes the inner insert may be above or below center.
For stable machining, it is essential to check the Center Height of the inner insert carefully

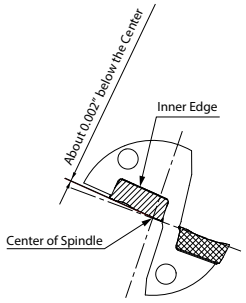


Fig.5 Front View of the Drill

2 How to Check the Center Height

For checking the center height of the inner insert, see the core which remains at the center of the bottom of the drilled hole.
If the center height is in the normal position, a core of about 0.5mm (0.020") in diameter, will remain after machining. (Fig.6)
Adjustment of center height is required if no core is present or a large core diameter of 1mm (0.039") or more remains.

* The drilled hole for verification purposes needs to be machined at approximately 10mm (0.375") in depth and at a feed rate of 0.004 ipr or lower.

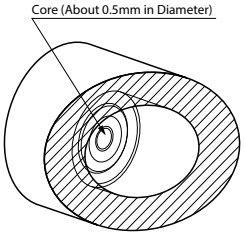


Fig.6 Center Core

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3 Center Height Adjustment

1. When there is no remaining core and the inner insert is chipping

This occurs when the inner insert is set above center. (Fig.7)

How to Adjust

A.Install the drill rotated by 180˚
Most problems will be solved by this method (Fig.8)

B.If the core diameter becomes too large after the above adjustment, install the drill by rotating 90° counter-clockwise as shown in Fig.9 (outer edge is positioned lower) and adjust the center height by moving the tool in the X-axis direction.
(However, this will make it impossible to adjust the cutting diameter)
Caution: When installing the drill in the opposite direction
(outer insert is positioned above), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole.
The best solution is to readjust the center position of the turret itself.

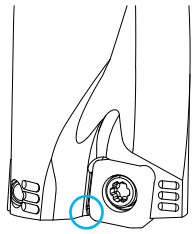

Fig.7 Insert breakage near the center of the drill

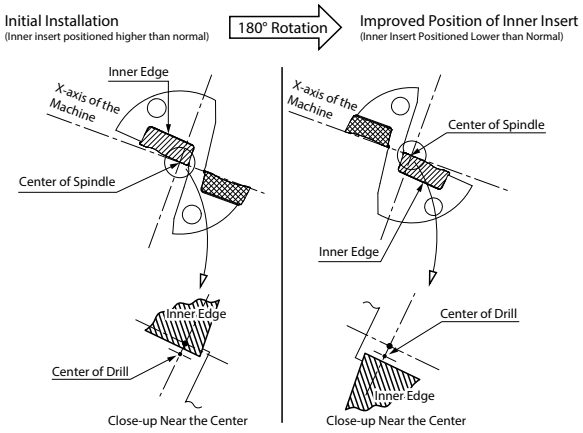

Fig.8

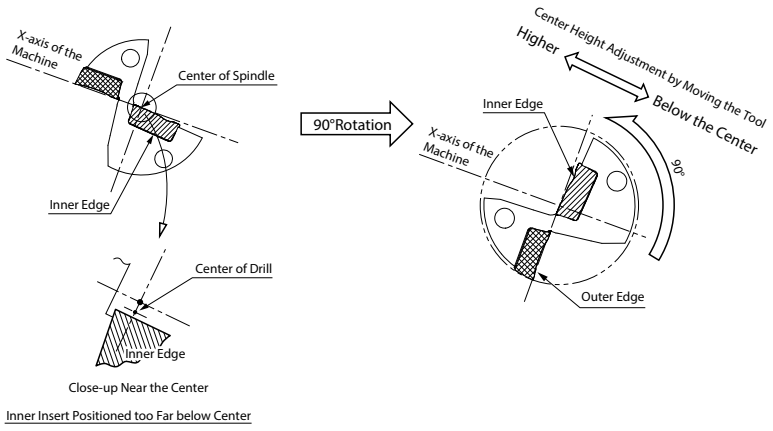

Fig.9

2. Core with Excessively Large Diameter More than 1mm (0.039")

This occurs when the inner insert is below center
This condition causes poor chip evacuation and an adjustment is required.

How to Adjust

Install the drill rotated 90˚ as shown in Fig.10. (outer insert is positioned on the upper side) and adjust the center height by moving tool in the X-axis direction.
(However, this will make it impossible to adjust the cutting diameter)
Caution: When installing the drill in the opposite direction
(outer insert is positioned lower), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole.
The best solution is to readjust the center position of the turret itself.

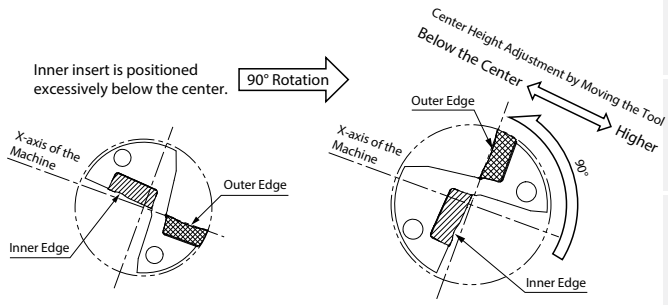

Fig.10

Magic Drill Setup for Lathes

● Installation

① The top face of the outer insert should be parallel to the X-axis to allow for offset cutting. (Cutting diameter can be changed by moving in the X-axis.)
② It is recommended to set the outer insert as shown in Fig.1 with the outer insert facing the operator.
(It is also possible to use it by setting 180° reverse position.)
In case of the lathe with two turrets, when installing the drill to the lower turret, the outer insert should be set so as to face the operator.
(It is also possible to use it by setting at 180° reverse position)

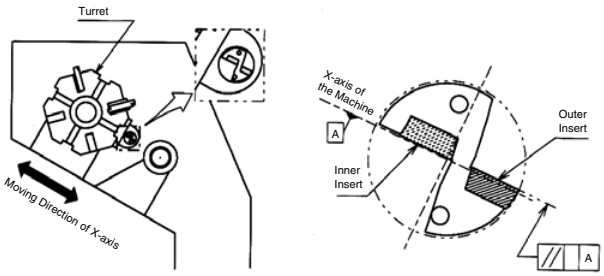

Fig.1 Installation to the Turning Lathe

● Cutting Diameter Adjustment

1. Cutting Diameter Adjustment

① Cutting diameter is adjusted by moving the tool in the X-axis direction.
The moving direction of the X-axis movement depends on the position of the toolholder.
② For making the hole diameter larger, slide the tool along the X-axis toward the outer insert side. (Fig. 2, Fig. 3)
For making the hole diameter smaller, slide the tool along the X-axis in the opposite direction.
(This movement of the axis is called an "Offset")
However, be sure not to make the hole diameter smaller than the drill diameter by more than 0.2mm (.008").
Otherwise, the toolholder will interfere with the drilled hole. (Fig. 4)
e.g.) when using Ø20 (Ø.787") drill, the hole diameter must not be smaller than 19.8mm (.780") .

2. Offset Limit of the Cutting Diameter

For the maximum limit of the cutting diameter, refer to "Max. Offset (Radial)" in the Toolholder Dimension table.
(The figure in the table shows how much it is possible the offset the drill in the radial direction.)
e.g.) In case of using Ø20 (Ø.787") drill, it is possible to make a hole up to Ø2 (Ø.827") 1 since "Max. Offset (Radial)" is +0.5mm (.02") .

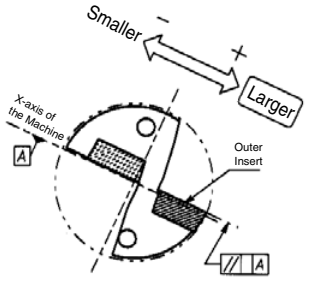

Fig. 2 Outer Insert Facing Up

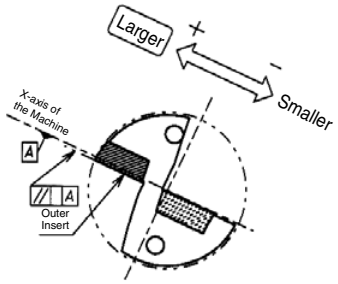

Fig. 3 Outer Insert Facing Down

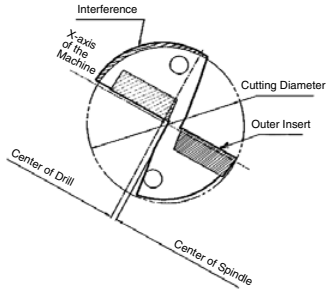

Fig. 4 Excessive Offset (For Smaller Hole Diameter)

● Center Height Adjustment

1. Center Height of the Inner Insert

When installing inner insert as shown in Fig. 1, it will be set around 0.2mm (.008") below the Center line of the Spindle. (Fig. 5)
This is the normal position of the center height and the inner insert is designed to be set at this position.
However, in case that the turret of the lathe is out of alignment with the center of spindle, sometimes the inner insert may be above or below center.
For stable machining, it is essential to check the center height of the inner insert carefully.

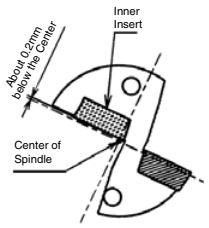

Fig. 5 Front View of the Drill

2. How to Check the Center Height of Inner Insert

For checking the center height of the inner insert, see the core which remains at the center of the drilled hole. (Fig. 6)
If the center height is in the normal condition, a core of about 0.5mm (.020") in diameter will remain after machining.

In the following case, it is necessary to adjust the center height.
- No core remains
- Core diameter is more than 1mm (.039")

The drilled hole for verification purposes needs to be machined at approximately 10mm (0.375") in depth and at a feed rate of 0.004 ipr or lower.

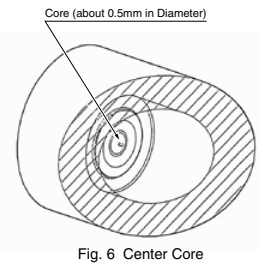

Fig. 6 Center Core

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3. Center Height Adjustment

a) No Core or Cores with Small Diameter

This occurs when the inner insert is set above center.
In this case, adjustment is necessary since insert breakage is likely at the center of the drill. (Fig. 7)

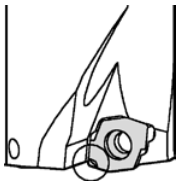


Fig. 7 Insert Breakage near the Center of Drill

Adjustments

① Install the drill rotated at the 180°. Most problems will be solved by this method.

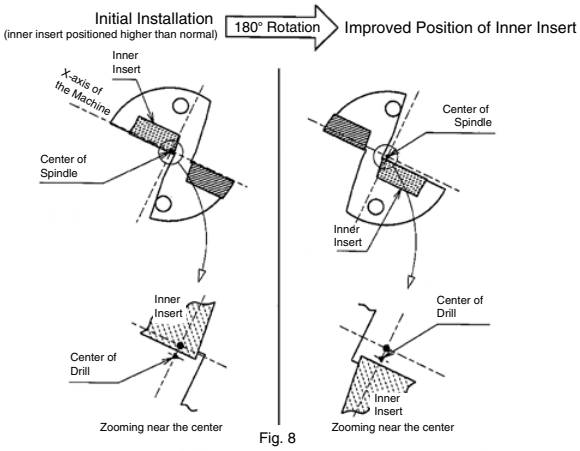


Fig. 8

② If the core diameter becomes too large after the above adjustment, install the drill rotated 90° counter-clockwise as shown in Fig.9 (outer insert is positioned lower) and adjust the center height by moving the tool in the X-axis direction. (However, this makes it impossible to adjust the cutting diameter.)

Caution: In case of installing the drill in the opposite direction (outer insert is positioned upper), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole.
The fundamental solution is to readjust the center position of the turret itself.

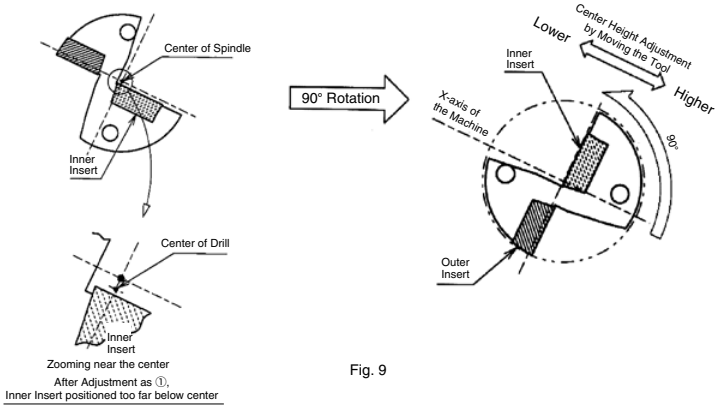


Fig. 9

b) Core with Excessively Large Diameter (More than 1mm/.04")

This occurs when the inner insert is below center.
This condition causes poor chip evacuation and on adjustment is required.

Adjustments

Install the drill rotated 90° counter-clockwise as shown in Fig.10 (outer insert is positioned upper), and adjust the center height by moving the tool in the X-axis direction.
(However, this makes it impossible to adjust the cutting diameter.)
Caution: When installing the drill in the opposite direction (outer insert is positioned lower), the cutting diameter will become smaller, which may cause the drill body to interfere with the drilled hole.
The fundamental solution is to readjust the center position of the turret itself.

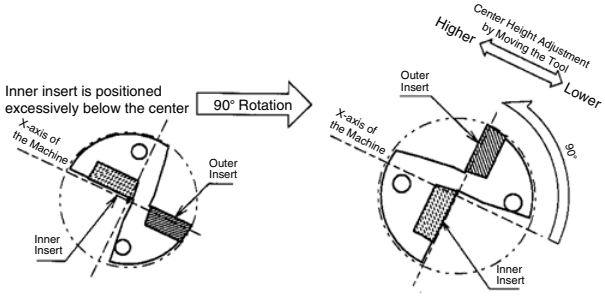


Fig. 10

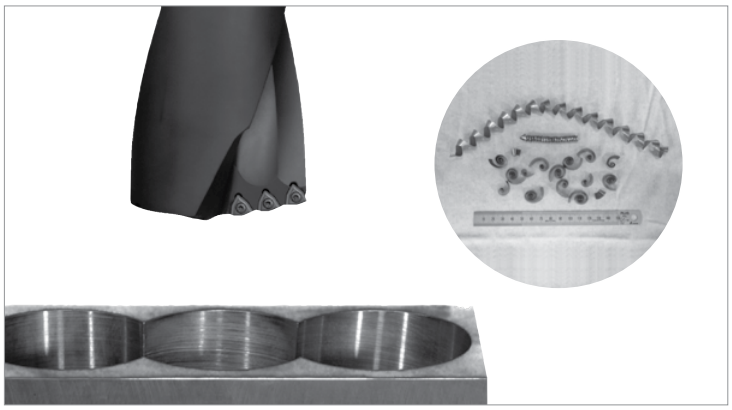
HOLESHOT™ Drill

Sharp Cutting with Enhanced Chip Evacuation

Superior Fracture Resistance and Long Tool Life with MEGACOAT NANO Coating Technology

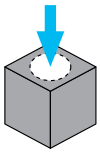
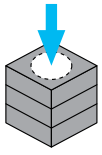
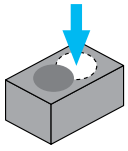
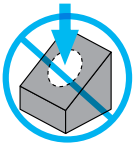
1. Drill Diameters from 0.688" to 4.000"
2. Flute Designs Optimized for Maximum Rigidity and Good Chip Evacuation
3. WCMX Inserts Available in MEGACOAT Grade PR1230

Patented Swept Back Design



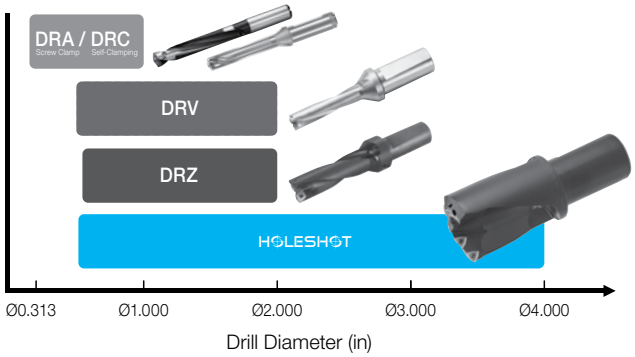
- Enables Drilling of Stacked Plates and Welded Assemblies
- Reduces Slug Formation
- Provides Excellent Chip Control

Applicable Workpieces

Plain Surface	Stacked Plates	Hole Expansion	Angled Surface
			

- Hole Expansion: Overlap amount of through hole must be 1/5DC (0.2 x DC) or less. Expansion of blind holes is not possible because chips are built up in the next hole and will cause chip recutting issues

● HOLESHOT™ Drill Diameter Range



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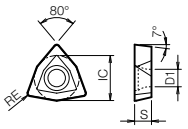
Applicable HOLESHOT™ Inserts

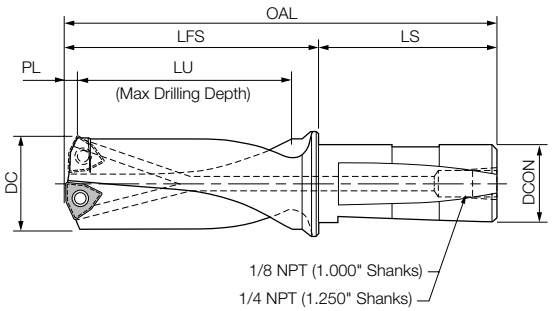
Usage Classification											
★ : 1st Recommendation ☆ : 2nd Recommendation	P	Carbon Steel / Alloy Steel	★				☆		★	
		Tool Steel	★	☆	☆		☆		★	
	M	Stainless Steel	★	☆	☆		☆	★		
	K	Cast Iron				★		★	☆	
	N	Non-ferrous Metals								★
	S	Heat-resistant Alloy	★					★		

Insert		Part Number		Dimensions (in)				MEGA COAT	PVD Coated Carbide					CVD Carbide	Carbide
				IC	S	D1	RE	PR1230	PR660	PR830	PR905	PR915	SP51	SC42	KW10
		WCMX	S30204-M1A	3/16	0.094	0.084	1/64						●		
			040204-M1A	1/4				●		●	●	●	●		●
			050308-M1	5/16	1/8	0.125	1/32	●	●	●	●	●			●
			050308-M1A					●		●	●		●		●
			06T308-M1	3/8	5/32	0.146	1/32	●	●	●	●	●			●
			06T308-M1A					●		●	●	●	●		●

WCMX…**M1** : General purpose drilling insert; First choice for Med-High Carbon Steel, Tool Steels, and Cast Iron; also available for general purpose drilling in Stainless Steel. Tougher edge than M1A chipbreaker.
WCMX…**M1A**: First choice for Low-carbon Steel, Aluminum, and other "sticky" materials. Freer cutting than M1 chipbreaker.

HOLESHOT™ Drills (DR)

Inserts are sold in 10 piece boxes



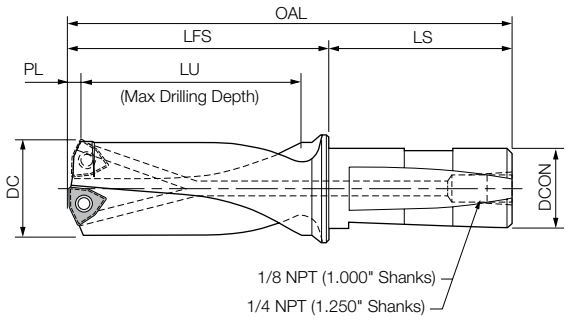
Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (in)							Spare Parts		Applicable Insert See Page K103
			DC	DCON	LU	OAL	LFS	LS	PL	Insert Screw	Wrench	
DR -0515-X3N	●	2	0.515	0.750	1.54	4.23	2.20	2.03	0.070	SCR-07	T6	WCMX S30204-M1A
-0531-X3N	●		0.531	0.750	1.59	4.29	2.26	2.03	0.072			
-0563-X3N	●		0.563	0.750	1.70	4.36	2.33	2.03	0.079			
-0594-X3N	●		0.594	0.750	1.78	4.49	2.46	2.03	0.083			
-0625-X3N	●		0.625	0.750	1.87	4.62	2.59	2.03	0.087			
-0630-X3N	●		0.630 (16mm)	0.750	1.89	4.68	2.65	2.03	0.088			
-0656-X3N	●		0.656	0.750	1.96	4.75	2.72	2.03	0.091			
DR -0688-X3N	●	2	0.688	0.750	2.06	4.87	2.84	2.03	0.090	SCR-01	T7	WCMX 040204-M1A
-0709-X3N	●		0.709 (18mm)	0.750	2.13	5.04	3.01	2.03	0.092			
-0719-X3N	●		0.719	0.750	2.15	5.00	2.97	2.03	0.093			
-0750-X3N	●		0.750	0.750	2.25	5.13	3.10	2.03	0.102			
-0781-X3N	●		0.781	0.750	2.34	5.26	3.23	2.03	0.106			
-0787-X3N	●		0.787 (20mm)	0.750	2.36	5.29	3.26	2.03	0.106			
-0813-X3N	●		0.813	0.750	2.44	5.39	3.36	2.03	0.110			
-0827-X3N	●		0.827 (21mm)	0.750	2.48	5.41	3.38	2.03	0.112			
-0844-X3N	●		0.844	0.750	2.53	5.52	3.49	2.03	0.114			
DR -0866	●	2	0.866 (22mm)	1.000	1.75	4.78	2.50	2.28	0.130	SCR-03	T9	WCMX 050308-M1 WCMX 050308-M1A
-0866-X3N	●				2.60	5.80	3.52					
-0875	●		0.875	1.000	1.75	4.78	2.50	2.28	0.131			
-0875-X3N	●				2.63	5.79	3.51					
-0906	●		0.906 (23mm)	1.000	1.75	4.78	2.50	2.28	0.135			
-0906-X3N	●				2.71	5.88	3.60					
-0937	●		0.937	1.000	1.75	4.78	2.50	2.28	0.139			
-0937-X3N	●				2.81	5.98	3.70					
-0945	●		0.945 (24mm)	1.000	1.75	4.78	2.50	2.28	0.140			
-0945-X3N	●				2.83	6.04	3.76					
-0969	●		0.969	1.000	1.75	4.78	2.50	2.28	0.143			
-0969-X3N	●				2.91	6.08	3.80					
-0984	●		0.984 (25mm)	1.000	1.75	4.78	2.50	2.28	0.145			
-0984-X3N	●				2.95	6.17	3.89					

Recommended Cutting Conditions K108

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

HOLESHOT™ Drills (DR)



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (in) DC	DCON	LU	OAL	LFS	LS	PL	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K103
DR -1000	●	2	1.000	1.000	1.75	4.78	2.50	2.28	0.147	SCR-03	T9	WCMX 050308-M1 WCMX 050308-M1A
-1000-X3N	●				3.00	6.18	3.90					
-1024	●		1.024 (26mm)	1.000	1.75	4.78	2.50	2.28	0.150			
-1024-X3N	●				3.07	6.29	4.01					
-1031	●		1.031	1.000	2.13	5.16	2.88	2.28	0.151			
-1031-X3N	●				3.09	6.27	3.99					
-1062	●		1.062 (27mm)	1.000	2.13	5.16	2.88	2.28	0.155			
-1062-X3N	●				3.18	6.37	4.09					
-1094	●		1.094	1.000	2.13	5.16	2.88	2.28	0.159			
-1094-X3N	●				3.28	6.47	4.19					
-1102	●		1.102 (28mm)	1.000	2.13	5.16	2.88	2.28	0.160			
-1102-X3N	●				3.31	6.53	4.25					
-1125	●		1.125	1.000	2.13	5.16	2.88	2.28	0.163			
-1125-X3N	●				3.37	6.56	4.28					
-1142	●		1.142 (29mm)	1.000	2.13	5.16	2.88	2.28	0.165			
-1142-X3N	●				3.43	6.66	4.38					
-1156	●		1.156	1.000	2.13	5.16	2.88	2.28	0.167			
-1156-X3N	●				3.47	6.67	4.39					
DR -1181	●	2	1.181 (30mm)	1.000	2.13	5.16	2.88	2.28	0.169	SCR-30	T10	WCMX 06T308-M1 WCMX 06T308-M1A
-1181-X3N	●			1.000	3.54	6.78	4.50					
-1187	●		1.187	1.000	2.13	5.16	2.88	2.28	0.169			
-1187-X3N	●			1.250	3.56	6.76	4.48					
-1219	●		1.219	1.000	2.50	5.53	3.25	2.28	0.173			
-1219-X3N	●			1.250	3.66	6.86	4.58					
-1250	●		1.250	1.000	2.50	5.53	3.25	2.28	0.177			
-1250-X3N	●			1.250	3.75	6.96	4.68					
-1260	●		1.260 (32mm)	1.000	2.50	5.53	3.25	2.28	0.179			
-1260-X3N	●			1.250	3.78	7.03	4.75					
-1281	●		1.281	1.000	2.50	5.53	3.25	2.28	0.181			
-1281-X3N	●			1.250	3.84	7.05	4.77					
-1299	●		1.299 (33mm)	1.000	2.50	5.53	3.25	2.28	0.184			
-1299-X3N	●			1.250	3.90	7.15	4.87					
-1312	●		1.312	1.000	2.50	5.53	3.25	2.28	0.185			
-1312-X3N	●			1.250	3.94	7.16	4.88					
-1339	●		1.339 (34mm)	1.000	2.50	5.53	3.25	2.28	0.189			
-1339-X3N	●			1.250	4.02	7.27	4.99					
-1344	●		1.344	1.000	2.50	5.53	3.25	2.28	0.190			
-1344-X3N	●			1.250	4.03	7.25	4.97					
-1375	●		1.375	1.000	2.50	5.53	3.25	2.28	0.193			
-1375-X3N	●			1.250	4.12	7.34	5.06					
-1406	●		1.406	1.000	2.75	5.78	3.50	2.28	0.197			
-1406-X3N	●			1.250	4.22	7.45	5.17					
-1417	●		1.417 (36mm)	1.000	2.75	5.78	3.50	2.28	0.199			
-1417-X3N	●			1.250	4.25	7.52	5.24					
-1437	●		1.437	1.000	2.75	5.78	3.50	2.28	0.196			
-1437-X3N	●			1.250	4.31	7.54	5.26					
-1457	●		1.457 (37mm)	1.000	2.75	5.78	3.50	2.28	0.199			
-1457-X3N	●			1.250	4.37	7.64	5.36					
-1469	●		1.469	1.000	2.75	5.78	3.50	2.28	0.200			
-1469-X3N	●			1.250	4.40	7.63	5.35					
-1496	●		1.496 (38mm)	1.000	2.75	5.78	3.50	2.28	0.204			
-1496-X3N	●			1.250	4.49	7.76	5.48	2.28				

Recommended Cutting Conditions → **K108**

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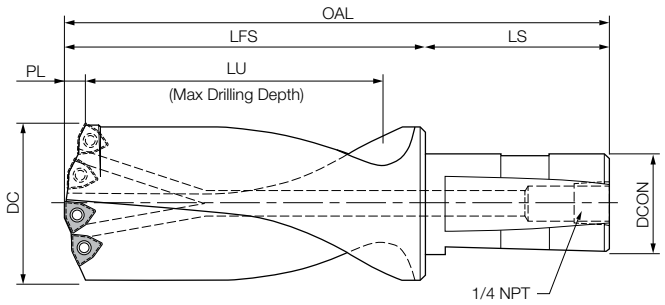
HOLESHOT™ Drills (DR)



Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in) DC	DCON	LU	OAL	LFS	LS	PL	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K103
DR	-1500	●	2	1.500	1.000	2.75	5.78	3.50	2.28	0.204	SCR-30	T10	WCMX 06T308-M1 WCMX 06T308-M1A
	-1500-X3N	●			1.250	4.50	7.73	5.45	2.28				
	-1531	●		1.531	1.250	2.88	6.16	3.88	2.28	0.208			
	-1531-X3N	●			1.250	4.59	8.08	5.80	2.28				
	-1535-X3N	●		1.535 (39mm)	1.250	4.61	8.08	5.80	2.28	0.209			
	-1562	●		1.562	1.250	2.88	6.16	3.88	2.28	0.212			
	-1562-X3N	●			1.250	4.68	8.17	5.89	2.28				
DR	-1575	●	3	1.575 (40mm)	1.250	2.88	6.16	3.88	2.28	0.208	SCR-03	T9	WCMX 050308-M1 WCMX 050308-M1A
	-1575-X3N	●			1.500	4.72	8.61	5.92	2.69				
	-1594	●		1.594	1.250	2.88	6.16	3.88	2.28	0.210			
	-1594-X3N	●			1.500	4.78	8.68	5.99	2.69				
	-1614	●		1.614 (41mm)	1.250	2.88	6.16	3.88	2.28	0.212			
	-1614-X3N	●			1.500	4.84	8.73	6.04	2.69				
	-1625	●		1.625	1.250	2.88	6.16	3.88	2.28	0.214			
	-1625-X3N	●			1.500	4.87	8.77	6.08	2.69				
	-1656	●		1.656	1.250	2.88	6.16	3.88	2.28	0.218			
	-1656-X3N	●			1.500	4.96	8.87	6.18	2.69				
	-1687	●		1.687	1.250	2.88	6.16	3.88	2.28	0.221			
	-1687-X3N	●			1.500	5.06	8.97	6.28	2.69				
	-1693	●		1.693 (43mm)	1.250	2.88	6.16	3.88	2.28	0.222			
	-1693-X3N	●			1.500	5.08	8.97	6.28	2.69				
	-1719	●		1.719	1.250	3.00	6.41	4.13	2.28	0.225			
	-1719-X3N	●			1.500	5.15	9.20	6.51	2.69				
DR	-1732	●	4	1.732 (44mm)	1.250	3.00	6.41	4.13	2.28	0.224			
	-1732-X3N	●			1.500	5.20	9.29	6.60	2.69				
	-1750	●		1.750	1.250	3.00	6.41	4.13	2.28	0.225			
	-1750-X3N	●			1.500	5.25	9.30	6.61	2.69				
	-1772	●		1.772 (45mm)	1.250	3.00	6.41	4.13	2.28	0.231			
	-1772-X3N	●			1.500	5.31	9.42	6.73	2.69				
	-1781	●		1.781	1.250	3.00	6.41	4.13	2.28	0.223			
	-1781-X3N	●			1.500	5.34	9.38	6.69	2.69				
	-1812	●		1.812	1.250	3.00	6.41	4.13	2.28	0.230			
	-1812-X3N	●			1.500	5.43	9.48	6.79	2.69				
	-1844	●		1.844	1.250	3.38	6.78	4.50	2.28	0.233			
	-1844-X3N	●			1.500	5.53	9.58	6.89	2.69				
	-1850	●		1.850 (47mm)	1.250	3.38	6.78	4.50	2.28	0.233			
	-1850-X3N	●			1.500	5.55	9.66	6.97	2.69				
	-1875	●		1.875	1.250	3.38	6.78	4.50	2.28	0.240			
	-1875-X3N	●			1.500	5.62	9.68	6.99	2.69				
	-1890-X3N	●		1.890 (48mm)	1.500	5.67	9.79	7.10	2.69	0.246			
	-1906	●		1.906	1.250	3.38	6.78	4.50	2.28	0.254			
	-1906-X3N	●			1.500	5.72	9.79	7.10	2.69				
	-1929	●		1.929 (49mm)	1.250	3.38	6.78	4.50	2.28	0.259			
	-1929-X3N	●			1.500	5.79	9.92	7.23	2.69				
	-1937	●		1.937	1.250	3.38	6.78	4.50	2.28	0.259			
	-1937-X3N	●			1.500	5.81	9.89	7.20	2.69				
	-1969	●		1.969 (50mm)	1.250	3.38	6.78	4.50	2.28	0.260			
	-1969-X3N	●			1.500	5.91	9.99	7.30	2.69				

Recommended Cutting Conditions K108

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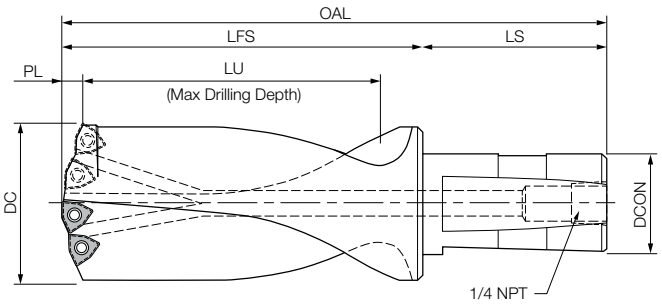
HOLESHOT™ Drills (DR)



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (in) DC	DCON	LU	OAL	LFS	LS	PL	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K103
DR -2000	●	4	2.000	1.250	3.38	6.78	4.50	2.28	0.267	SCR-03	T9	WCMX 050308-M1 WCMX 050308-M1A
-2000-X1	●			1.250	2.13	6.06	3.38	2.28				
-2000-X3N	●			1.500	6.00	10.09	7.40	2.69				
-2008	●		2.008 (51mm)	1.250	3.38	6.78	4.50	2.28	0.267			
-2008-X3N	●			1.500	6.02	10.16	7.47	2.69				
-2031	●		2.031	1.500	3.50	7.44	4.75	2.69	0.268			
-2031-X1	●			1.500	2.13	6.06	3.38	2.69				
-2031-X3N	●			1.500	6.09	10.30	7.61	2.69				
DR -2047	●	4	2.047 (52mm)	1.500	3.50	7.44	4.75	2.69	0.259	SCR-30	T10	WCMX 06T308-M1 WCMX 06T308-M1A
-2047-X3N	●			2.000	6.14	10.91	7.66	3.25				
-2062	●		2.062	1.500	3.50	7.44	4.75	2.69	0.260			
-2062-X1	●			1.500	2.13	6.06	3.38	2.69				
-2062-X3N	●			2.000	6.18	10.94	7.69	3.25				
-2094	●		2.094	1.500	3.50	7.44	4.75	2.69	0.267			
-2094-X1	●			1.500	2.13	6.06	3.38	2.69				
-2094-X3N	●			2.000	6.28	11.05	7.80	3.25				
-2125	●		2.125 (54mm)	1.500	3.50	7.44	4.75	2.69	0.266			
-2125-X1	●			1.500	2.13	6.06	3.38	2.69				
-2125-X3N	●			2.000	6.37	11.14	7.89	3.25				
-2156	●		2.156	1.500	3.88	7.81	5.13	2.69	0.270			
-2156-X1	●			1.500	2.31	6.25	3.56	2.69				
-2156-X3N	●			2.000	6.47	11.24	7.99	3.25				
-2187	●		2.187	1.500	3.88	7.81	5.13	2.69	0.273			
-2187-X1	●			1.500	2.31	6.25	3.56	2.69				
-2187-X3N	●			2.000	6.56	11.33	8.08	3.25				
-2205	●		2.205 (56mm)	1.500	3.88	7.81	5.13	2.69	0.283			
-2205-X3N	●			2.000	6.61	11.41	8.16	3.25				
-2219	●		2.219	1.500	3.88	7.81	5.13	2.69	0.277			
-2219-X1	●			1.500	2.31	6.25	3.56	2.69				
-2219-X3N	●			2.000	6.66	11.44	8.19	3.25				
-2244	●		2.244 (57mm)	1.500	3.88	7.81	5.13	2.69	0.281			
-2244-X3N	●			2.000	6.73	11.52	8.27	3.25				
-2250	●		2.250	1.500	3.88	7.81	5.13	2.69	0.281			
-2250-X1	●			1.500	2.31	6.25	3.56	2.69				
-2250-X3N	●			2.000	6.75	11.53	8.28	3.25				
-2281	●		2.281	1.500	3.88	7.81	5.13	2.69	0.283			
-2281-X1	●			1.500	2.31	6.25	3.56	2.69				
-2281-X3N	●			2.000	6.84	11.62	8.37	3.25				
-2312	●		2.312	1.500	3.88	7.81	5.13	2.69	0.287			
-2312-X1	●			1.500	2.31	6.25	3.56	2.69				
-2312-X3N	●			2.000	6.93	11.72	8.47	3.25				
-2323	●		2.323 (59mm)	1.500	3.88	7.81	5.13	2.69	0.290			
-2344	●		2.344	1.500	4.13	8.19	5.50	2.69	0.289			
-2344-X1	●			1.500	2.50	6.56	3.88	2.69				
-2344-X3N	●			2.000	7.03	11.95	8.70	3.25				

Recommended Cutting Conditions K108

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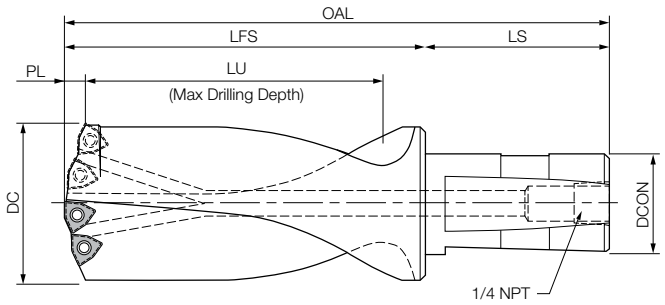
HOLESHOT™ Drills (DR)



Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in) DC	DCON	LU	OAL	LFS	LS	PL	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K103
DR	-2362	●	4	2.362 (60mm)	1.500	4.13	8.19	5.50	2.69	0.301	SCR-30	T10	WCMX 06T308-M1 WCMX 06T308-M1A
	-2362-X3N	●			2.000	7.09	12.02	8.77	3.25				
	-2375	●		2.375	1.500	4.13	8.19	5.50	2.69	0.298			
	-2375-X1	●			1.500	2.50	6.56	3.88	2.69				
	-2375-X3N	●			2.000	7.12	12.05	8.80	3.25				
	-2406	●		2.406	1.500	4.13	8.19	5.50	2.69	0.304			
	-2406-X1	●			1.500	2.50	6.56	3.88	2.69				
	-2406-X3N	●			2.000	7.22	12.15	8.90	3.25				
	-2437	●		2.437	1.500	4.13	8.19	5.50	2.69	0.309			
	-2437-X1	●			1.500	2.50	6.56	3.88	2.69				
	-2437-X3N	●			2.000	7.31	12.25	9.00	3.25				
	-2441	●		2.441 (62mm)	1.500	4.13	8.19	5.50	2.69	0.309			
	-2441-X3N	●			2.000	7.32	12.26	9.01	3.25				
	-2469	●		2.469	1.500	4.13	8.19	5.50	2.69	0.319			
	-2469-X1	●			1.500	2.50	6.56	3.88	2.69				
	-2469-X3N	●			2.000	7.41	12.36	9.11	3.25				
	-2480	●		2.480 (63mm)	1.500	4.13	8.19	5.50	2.69	0.310			
	-2480-X3N	●			2.000	7.44	12.38	9.13	3.25				
	-2500	●		2.500	1.500	4.13	8.19	5.50	2.69	0.329			
	-2500-X1	●			1.500	2.50	6.56	3.88	2.69				
	-2500-X3N	●			2.000	7.50	12.46	9.21	3.25				
	-2625	●		2.625	2.000	6.50	11.25	8.00	3.25	0.326			
	-2625-X1	●			2.000	2.75	7.50	4.25	3.25				
	-2750	●		2.750	2.000	6.50	11.25	8.00	3.25	0.340			
	-2750-X1	●			2.000	2.75	7.50	4.25	3.25				
	-2875	●		2.875	2.000	6.50	11.25	8.00	3.25	0.357			
	-2875-X1	●			2.000	3.00	7.75	4.50	3.25				
	-3000-X1	●	6	3.000	2.000	3.00	7.75	4.50	3.25	0.369			
	-3000	●			2.000	6.50	11.25	8.00	3.25				
	-3125	●		3.125	2.000	7.63	12.50	9.25	3.25	0.393			
	-3125-X1	●			2.000	3.25	8.13	4.88	3.25				
	-3250	●		3.250	2.000	7.63	12.50	9.25	3.25	0.387			
	-3250-X1	●			2.000	3.25	8.13	4.88	3.25				
	-3375	●		3.375	2.000	7.63	12.50	9.25	3.25	0.393			
	-3375-X1	●			2.000	3.50	8.38	5.13	3.25				
	-3500	●		3.500	2.000	7.63	12.50	9.25	3.25	0.440			
	-3500-X1	●			2.000	3.50	8.38	5.13	3.25				
	-3625	●		3.625	2.000	7.94	12.67	9.42	3.25	0.441			
	-3625-X1	●			2.000	3.75	8.75	5.50	3.25				
	-3750	●		3.750	2.000	8.00	13.00	9.75	3.25	0.459			
	-3750-X1	●			2.000	3.75	8.75	5.50	3.25				
	-3875	●		3.875	2.000	8.44	13.44	10.19	3.25	0.470			
	-3875-X1	●			2.000	4.00	9.38	6.13	3.25				
	-4000	●		4.000	2.000	8.56	13.88	10.63	3.25	0.482			
	-4000-X1	●			2.000	4.00	9.38	6.13	3.25				

Recommended Cutting Conditions K108

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HOLESHOT™ - Recommended Cutting Conditions (with Coolant)

Workpiece Material	Feed Rate (ipr)	Recommended Insert Grade / Cutting Speed (sfm)								Notes
		MEGA COAT	PVD Coated Carbide					CVD Carbide	Carbide	
		PR1230	PR660	PR830	PR905	PR915	SP51	SC42	KW10	
Low Carbon Steel	0.0015~0.0035	★ 800~900	☆ 800~900	☆ 800~900	-	-	☆ 800~900	☆ 800~1,000	-	Coolant
Carbon Steel	0.005~0.009	★ 400~800	☆ 400~800	☆ 400~800	-	-	☆ 400~800	☆ 400~800	-	
Alloy Steel	0.004~0.010	★ 250~750	☆ 250~750	☆ 250~750	-	-	☆ 250~750	☆ 250~750	-	
Tool Steel	0.004~0.010	★ 250~750	☆ 250~750	☆ 250~750	-	-	☆ 250~750	☆ 250~750	-	
Stainless Steel (Austenitic)	0.0025~0.006	★ 200~600	☆ 200~600	☆ 200~600	-	-	☆ 200~600	☆ 200~600	-	
Gray Cast Iron	0.005~0.011	-	-	-	★ 400~800	-	-	-	☆ 400~800	
Nodular Cast Iron	0.004~0.010	-	-	-	★ 300~500	-	-	-	☆ 300~500	
Non-ferrous Metals	0.008~0.010	-	-	-	-	-	-	-	★ 1,800~2,000	
Heat-resistant Alloy	0.0010~0.0015	★ 75~150	-	☆ 75~150	-	☆ 100~150	☆ 75~150	-	-	
Titanium Alloys	0.0025~0.0030	-	-	-	★ 100~210	★ 100~210	-	-	☆ 150~250	

- Apply a sufficient amount of coolant

★ : 1st Recommendation ☆ : 2nd Recommendation

HOLESHOT™ Applications

DRILL APPLICATION HOLESHOT INDEXABLE DRILL

Stationary

For stationary (lathe) applications the drill should be mounted in a toolholder that is concentric within 0.003 TIR and parallel to the machine centerline. Flats on the shank should be precisely aligned so that the cutting edges are parallel to the x-axis, which will help chip flow.

A disc is normally produced as the drill breaks through the hole. Although the disc is usually minimal with holeshot, adequate guarding should be provided for and in place.

holeshot drills can be used to back bore an existing hole to a desired size. The drill can be offset by up to 0.015" for back boring.

Rotating

Make certain the spindle is rigid with minimal runout. Since both machine and fixture rigidity are key factors, make sure the workpiece is fixed rigidly and secured. Mount drill for the least possible overhang and make sure the drill flange is flush against the face of the adapter.

Coolant - Chip removal and tool life are enhanced by feeding coolant through the drill. 30 P.S.I. minimum coolant pressure is recommended for horizontal applications. Vertical position requires a higher coolant pressure (40 to 60 P.S.I.) to flush chips properly.

Through the tool coolant is preferred for holeshot drilling, but due to the unique flute design, coolant deficiencies can be overcome. Especially in smaller, lower horsepower machine tools, strong flood coolant can be utilized with excellent results. When flooding the cut, direct coolant directly into the drilling area.

Coremaster Coredrill

Fast and Effective way to Expand Pre-Existing Holes

Superior Fracture Resistance and Long Tool Life with MEGACOAT Coating Technology

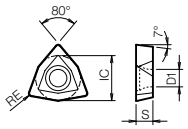
1. Two Effective Flutes Allow High Feed Rates for Improved Productivity
2. WCMX Inserts Available in MEGACOAT Grade PR1230
3. Deeper Drilling Depths Available in XL Series

Coremaster Coredrill available in both **Fixed Pocket** and **Adjustable Cartridge**
Adjustable cartridges can be adjusted 0.075" per side, providing 0.150" adjustment capability on diameter

Applicable Coremaster Coredrill Inserts

Usage Classification												
★ : 1st Recommendation ☆ : 2nd Recommendation	P	Carbon Steel / Alloy Steel		☆	★				☆	
		Tool Steel	☆	☆	★	☆	☆		☆	
	M	Stainless Steel	☆	☆	★	☆	☆		☆	
	K	Cast Iron						★		☆
	N	Non-ferrous Metals								★
	S	Heat-resistant Alloy			★		☆		☆	

Insert	Part Number	Dimensions (in)				Cermet	PVD Cermet	MEGA COAT	PVD Coated Carbide				Carbide
		IC	S	D1	RE	TN60	PV90	PR1230	PR660	PR830	PR905	PR915	KW10
	WCMX 050308-M1	5/16	1/8	0.125	1/32	●		●	●	●	●	●	●
	050308-M1A						●	●		●	●		●
	06T308-M1	3/8	5/32	0.146		●	●	●	●	●	●	●	●
	06T308-M1A						●	●		●	●	●	●



WCMX…**M1** : General purpose drilling insert; First choice for Med-High Carbon Steel, Tool Steels, and Cast Iron; also available for general purpose drilling in Stainless Steel. Tougher edge than M1A chipbreaker.
WCMX…**M1A**: First choice for Low-carbon Steel, Aluminum, and other "sticky" materials. Freer cutting than M1 chipbreaker.

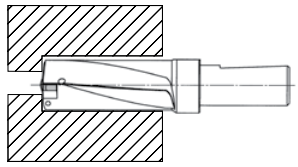
Applicable Toolholders ➔ **K110~K111**

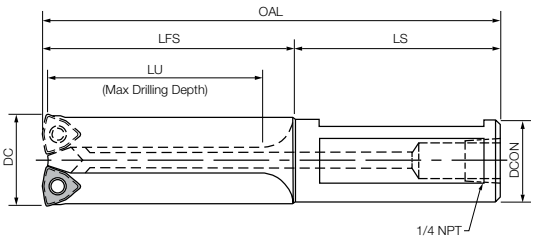
Inserts are sold in 10 piece boxes

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Coremaster Coredrills (CD)

Fixed Pocket





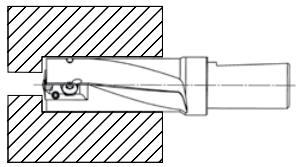
Toolholder Dimensions

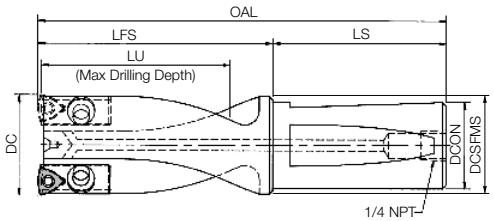
Part Number		Stock	No. of Inserts	Dimensions (in) DC	DCON	LU	OAL	LFS	LS	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K109
CD	-0825	●	2	0.825	1.000	1.750	4.750	2.250	2.500	SCR03	T9	WCMX 050308-M1 WCMX 050308-M1A
	-0865	●		0.865								
	-0938	●		0.938								
	-0990	●		0.990		2.000	5.000	2.500				
	-1052	●		1.052								
	-1115	●	2	1.115	1.000	2.500	5.500	3.000	2.500	SCR30	T10	WCMX 06T308-M1 WCMX 06T308-M1A
	-1178	●		1.178								
	-1240	●		1.240								
	-1303	●		1.303								

- Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

Coremaster Coredrills (CD)

Adjustable Cartridge





Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in) DC	DCON	DCSFMS	LU	OAL	LFS	LS	Spare Parts: Insert Screw	Spare Parts: Wrench	Spare Parts: Cartridge	Spare Parts: Cartridge Screw	Applicable Insert See Page K109
CD	-1360-C	●	2	1.36-1.46	1.250	1.27	2.750	6.250	3.500	2.750	SCR30	T10	02-03	01-01	WCMX 06T308-M1 WCMX 06T308-M1A
	-1460-C	●		1.46-1.56		1.37									
	-1560-C	●		1.56-1.66		1.47									
	-1660-C	●		1.66-1.76		1.57								01-02	
	-1760-C	●		1.76-1.86	1.500	1.67	3.125	7.000	4.000	3.000					
	-1860-C	●		1.86-1.96		1.77									
	-1960-C	●		1.96-2.06		1.87									
	-2060-C	●		2.06-2.16		1.97									
	-2160-C	●		2.16-2.26		2.07									
	-2260-C	●		2.26-2.36		2.17									
	-2360-C	●		2.36-2.46		2.27									
	-2460-C	●		2.46-2.56		2.37									
	-2560-C	●		2.56-2.66		-									
	-2660-C	●		2.66-2.76											
	-2760-C	●		2.76-2.86											
	-2860-C	●		2.86-2.96											
	-2960-C	●		2.96-3.06											

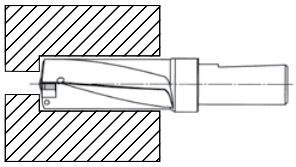
- Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

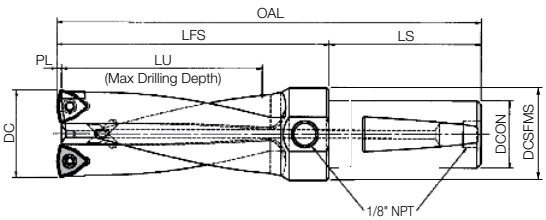
Recommended Cutting Conditions K112

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Coremaster Coredrills (CD-XL)

Extended Length - Fixed Pocket





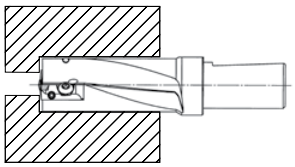
Toolholder Dimensions

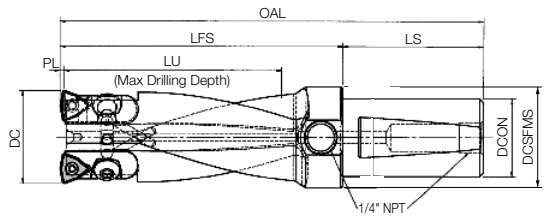
Part Number	Stock	No. of Inserts	Dimensions (in)							Spare Parts		Applicable Insert See Page K109
			DC	DCON	DCSFMS	LU	OAL	LFS	LS	Insert Screw	Wrench	
CD -0825-XL	●	2	0.825	1.000	1.375	2.250	5.530	3.250	2.280	SCR03	T9	WCMX 050308-M1 WCMX 050308-M1A
-0865-XL	●		0.865	1.000	1.375	2.250	5.530	3.250	2.280			
-0938-XL	●		0.938	1.000	1.375	2.500	5.780	3.500	2.280			
-0990-XL	●		0.990	1.000	1.375	2.500	5.780	3.500	2.280			
-1052-XL	●		1.052	1.000	1.375	2.500	5.780	3.500	2.280			
-1115-XL	●		1.115	1.000	1.375	3.000	6.280	4.000	2.280	SCR30	T10	WCMX 06T308-M1 WCMX 06T308-M1A
-1178-XL	●		1.178	1.000	1.375	3.000	6.280	4.000	2.280			
-1240-XL	●		1.240	1.000	1.375	3.000	6.280	4.000	2.280			
-1303-XL	●		1.303	1.000	1.375	3.000	6.280	4.000	2.280			

- Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

Coremaster Coredrills (CD-LC)

Extended Length - Adjustable Cartridge





Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (in)							Spare Parts				Applicable Insert See Page K109
			DC	DCON	DCSFMS	LU	OAL	LFS	LS	Insert Screw	Wrench	Cartridge	Cartridge Screw	
CD -1350-LC	●	2	1.35-1.50	1.250	1.63	3.500	6.780	4.500	2.280	SCR30	T10	02-03	01-01	WCMX 06T308-M1 WCMX 06T308-M1A
-1500-LC	●		1.50-1.65											
-1650-LC	●		1.65-1.80	1.500	1.88	4.500	8.190	5.500	2.690				01-02	
-1800-LC	●		1.80-1.95											
-1950-LC	●		1.95-2.10	1.500	-	4.500	8.190	5.500	2.690					
-2100-LC	●		2.10-2.25											
-2250-LC	●		2.25-2.40	2.000	2.38	5.500	9.750	6.500	3.250					
-2400-LC	●		2.40-2.55	2.000	-	5.500	9.750	6.500	3.250					
-2550-LC	●		2.55-2.70											
-2700-LC	●		2.70-2.85	2.000	-	6.000	10.250	7.000	3.250					
-2850-LC	●		2.85-3.00											
-3000-LC	●		3.00-3.15											

- Maximum material removal: WCMX 050308 – 5/16" per side, WCMX 06T308 – 3/8" per side.

Recommended Cutting Conditions K112

Coremaster Coredrills (CD) - Recommended Cutting Conditions

Workpiece Material	Feed Rate (ipr)	Recommended Insert Grade / Cutting Speed (sfm)							Notes
		Cermet	MEGACOAT	PVD Coated Carbide				Carbide	
		TN60	**PR1230**	**PR660**	**PR830**	**PR905**	**PR915**	**KW10**	
Low Carbon Steel	0.003~0.007	-	★ 800~900	☆ 800~900	☆ 800~900	-	-	-	Coolant
Carbon Steel	0.010~0.018	-	★ 400~800	☆ 400~800	☆ 400~800	-	-	-	
Alloy Steel	0.008~0.020	-	★ 250~750	☆ 250~750	☆ 250~750	-	-	-	
Tool Steel	0.008~0.020	-	★ 250~750	☆ 250~750	☆ 250~750	-	-	-	
Stainless Steel (Austenitic)	0.005~0.012	-	★ 200~600	☆ 200~600	☆ 200~600	-	-	-	
Gray Cast Iron	0.010~0.022	-	-	-	-	★ 400~800	-	☆ 400~800	
Nodular Cast Iron	0.008~0.020	-	-	-	-	★ 300~500	-	☆ 300~500	
Non-ferrous Metals	0.016~0.020	☆ 1,800~2,000	-	-	-	-	-	★ 1,800~2,000	
Heat-resistant Alloy	0.002~0.005	-	★ 75~150	-	☆ 75~150	-	☆ 100~150	-	
Titanium Alloys	0.005~0.006	-	-	-	-	★ 100~210	★ 100~210	☆ 150~250	

★ : 1st Recommendation ☆ : 2nd Recommendation

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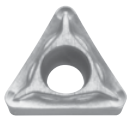
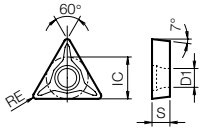
Stinger Drills

1. Economic Alternative to the Magic Drill
2. Perfect for Job Shop or Small Quantity Production
3. Ideal for Low Horsepower Machines
4. Cermet and Coated Carbide Inserts Available

Applicable Stinger Drill Inserts

Usage Classification								
★ : 1st Recommendation ☆ : 2nd Recommendation	P	Carbon Steel / Alloy Steel	☆	☆		★	
		Tool Steel	☆	☆		★	
	M	Stainless Steel			★	★	
	K	Cast Iron				★	★
	N	Non-ferrous Metals	☆	☆			★
	S	Heat-resistant Alloy			★	☆	☆

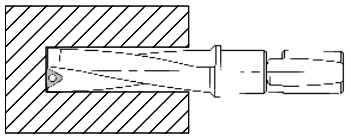
Insert		Part Number	Dimensions (in)				Cermet	PVD Cermet	CVD Coated Carbide	PVD Coated Carbide	Carbide
			IC	S	D1	RE	TN60	PV90	CA6535	PR830	KW10
		**TCMT 12122HP**	5/32	0.078	0.087	1/32	●	●	●	●	●
		18152HP	7/32	3/32	0.094	1/32	●	●	●	●	●

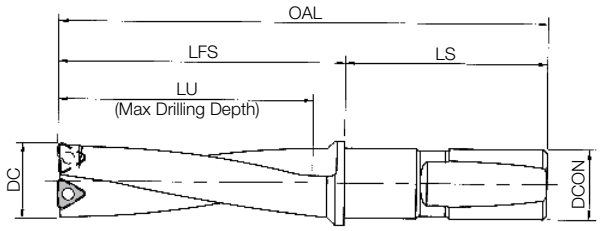
*Unless noted, use the same grade insert in all pockets

Applicable Toolholders ➔ **K114**

Inserts are sold in 10 piece boxes

Stinger Drills (SDR)





Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (in) DC	DCON	LU	OAL	LFS	LS	Spare Parts: Insert Screw	Spare Parts: Wrench	Applicable Insert See Page K113
SDR -0484	●	2	0.484	0.500	1.45	3.45	1.95	1.50	SCR07	T6	TCMT 12122HP
-0492	●		0.492 (12.5mm)								
-0500	●		0.500								
-0512	●		0.512 (13mm)								
-0516	●		0.516								
-0531	●		0.531								
-0547	●		0.547								
-0551	●		0.551 (14mm)								
-0563	●		0.563								
-0578	●		0.578	0.500	1.63	3.63	2.13	1.50			
-0591	●		0.591 (15mm)								
-0594	●		0.594								
-0609	●		0.609								
-0625	●		0.625								
-0630	●		0.630 (16mm)								
SDR -0641	●	2	0.641	0.500	1.80	3.80	2.30	1.50	SCR07	T6	
-0656	●		0.656								
-0669	●		0.669 (17mm)								
-0672	●		0.672								
-0688	●		0.688	0.500	1.97	3.97	2.47	1.50			
-0703	●		0.703								
-0709	●		0.709 (18mm)								
SDR -0719	●	2	0.719	0.625	2.16	4.41	2.66	1.75	SCR-05	T7	TCMT 18152HP
-0734	●		0.734								
-0748	□		0.748 (19mm)								
-0750	●		0.750								
-0766	●		0.766	0.625	2.25	4.63	2.75	1.88			
-0781	●		0.781								
-0787	●		0.787 (20mm)								
-0797	●		0.797	0.750	2.50	5.03	3.00	2.03			
-0813	●		0.813								
-0828	●		0.828	0.750	2.66	5.19	3.16	2.03			
-0844	●		0.844								

*Unless noted, use the same grade insert in all pockets

Recommended Cutting Conditions K115

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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Stinger Drills (SDR) - Recommended Cutting Conditions

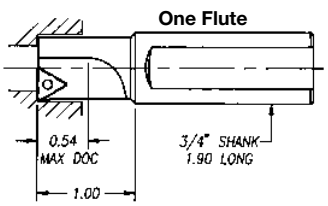
Workpiece Material	Feed Rate (ipr)	Recommended Insert Grade / Cutting Speed (sfm)					Notes
		Cermet	PVD Cermet	CVD Coated Carbide	PVD Coated Carbide	Carbide	
		TN60	**PV90**	**CA6535**	**PR830**	**KW10**	
Low Carbon Steel	0.001~0.002	☆ 300~900	☆ 250~900	-	★ 250~700	-	Coolant
Carbon Steel	0.001~0.003	☆ 450~700	☆ 400~700	-	★ 400~600	-	
Alloy Steel	0.001~0.003	☆ 450~700	☆ 400~700	-	★ 400~600	-	
Tool Steel	0.001~0.002	☆ 300~450	☆ 250~450	-	★ 200~400	-	
Stainless Steel (Austenitic)	0.001~0.002	-	-	★ 350~600	★ 300~550	-	
Gray Cast Iron	0.001~0.003	☆ 500~900	-	-	★ 300~500	★ 250~450	
Nodular Cast Iron	0.001~0.003	☆ 400~700	-	-	★ 300~450	★ 250~400	
Non-ferrous Metals	0.001~0.006	☆ 500~1,200	-	-	-	★ 400~1,100	
Heat-resistant Alloy	0.0005~0.0015	-	-	★ 75~200	☆ 75~125	-	
Titanium Alloys	0.0008~0.0015	-	-	-	-	☆ 50~125	

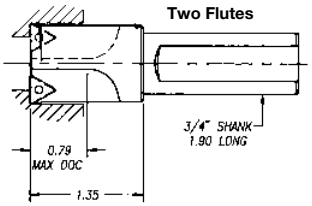
*Unless noted, use the same grade insert in all pockets

★ : 1st Recommendation ☆ : 2nd Recommendation

Counterbores

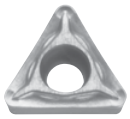
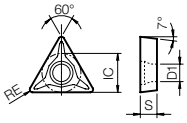
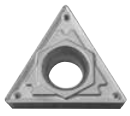
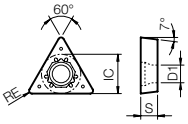
For Socket Head Cap Screw Sizes 1/4"~3/4" and 6mm~16mm





Applicable Counterbore Inserts

Usage Classification										
★ : 1st Recommendation ☆ : 2nd Recommendation	P	Carbon Steel / Alloy Steel	☆	☆	☆	☆		★	☆	
		Tool Steel	☆	☆	☆	☆		★	☆	
	M	Stainless Steel					★		☆	
	K	Cast Iron		☆				☆		☆
	N	Non-ferrous Metals	☆							★
	S	Heat-resistant Alloy					★		☆	

Insert		Part Number	Dimensions (in)				Cermet	PVD Cermet			CVD Carbide		PVD Carbide	Carbide
			IC	S	D1	RE	TN60	PV7010	PV7025	PV90	CA6535	CA525	PR830	KW10
		**TCMT 18151HP**	7/32	3/32	0.094	1/64	●			●	●		●	●
		**TCMT 18151HQ**	7/32	3/32	0.098	1/64	●	△	△			●		

Counterbores (SHCS-CB)

Inserts are sold in 10 piece boxes

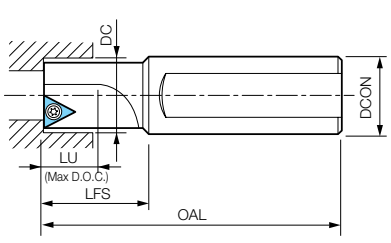


Fig.1

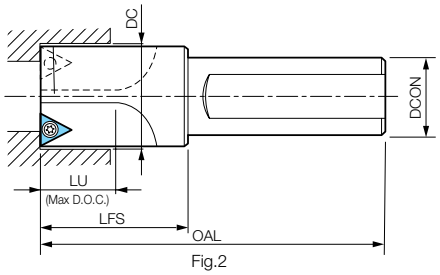


Fig.2

Toolholder Dimensions (Inch & Metric Sizes)

Part Number	Stock	Unit	No. of Inserts	Dimensions						Drawing	Spare Parts		Applicable Insert See Table Above
				SHCS Size	DC	DCON	LU	OAL	LFS		Insert Screw	Wrench	
1/4-SHCS-CB	●	inch	1	1/4	0.422	0.750	0.54	2.90	1.00	Fig.1	SCR-05	FT-7	**TCMT 18151HP** **TCMT 18151HQ**
5/16-SHCS-CB	●			5/16	0.515								
3/8-SHCS-CB	●			3/8	0.609								
7/16-SHCS-CB	●			7/16	0.703								
1/2-SHCS-CB	●		2	1/2	0.797		0.79	3.25	1.35	Fig.2			
5/8-SHCS-CB	●			5/8	1.000								
3/4-SHCS-CB	●			3/4	1.187								
M6-SHCS-CB	●	mm	1	M6	0.440	0.750	0.54	2.90	1.00	Fig.1	SCR-05	FT-7	**TCMT 18151HP** **TCMT 18151HQ**
M8-SHCS-CB	●			M8	0.558								
M10-SHCS-CB	●			M10	0.676								
M12-SHCS-CB	●		2	M12	0.755		0.79	3.25	1.35	Fig.1			
M16-SHCS-CB	●			M16	1.00								

• Maximum material removal per side is 1/4"

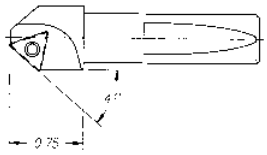
(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

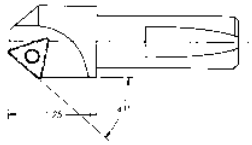
Countersinks

For Flat Head Cap Screw Sizes #10 ~ 3/4"

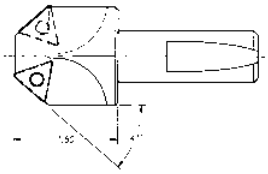
CS-82-177



CS-82-362

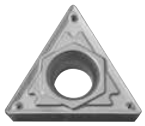
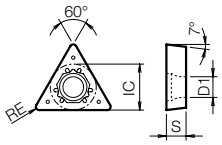


CS-82-612



Applicable Countersink Inserts

Usage Classification										
★ : 1st Recommendation ☆ : 2nd Recommendation	P	Carbon Steel / Alloy Steel	☆	☆	☆	★	★	☆	
		Tool Steel	☆	☆	☆	★	★	☆	
	M	Stainless Steel					★	☆	
	K	Cast Iron		☆		☆			☆
	N	Non-ferrous Metals	☆						☆
	S	Heat-resistant Alloy					☆		

Insert		Part Number	Dimensions (in)				Cermet	PVD Cermet		CVD Carbide	PVD Coated Carbide		Carbide
			IC	S	D1	RE	TN60	PV7010	PV720	CA525	PR830	PR930	KW10
		**TCMT 2151HQ**	1/4	3/32	0.110	1/64	●	△	●	●	●	●	●
		3252HQ	3/8	5/32	0.173	1/32	●		●	●	●		

Countersinks (CS)

Inserts are sold in 10 piece boxes

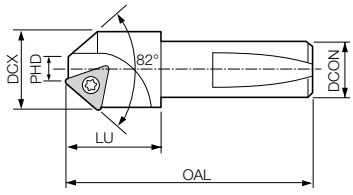


Fig.1

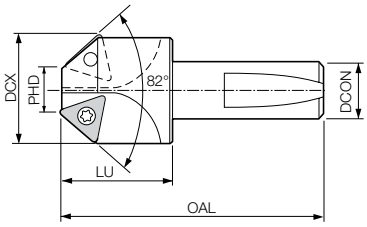


Fig.2

Toolholder Dimensions (Inch Sizes)

Part Number		Stock	No. of Inserts	Dimensions (in)					Rake Angle		Drawing	FHCS Size	Spare Parts		Applicable Insert See Table Above
				DCX	PHD	DCON	OAL	LU	A.R.	R.R.			Insert Screw	Wrench	
CS	**82-177**	●	1	0.673	0.177	0.500	2.530	0.750	0°	0°	Fig.1	#10, 1/4", 5/16"	SCR-01	FT-7	**TCMT2151**
	82-362	●	1	1.073	0.362	0.750	3.280	1.250				3/8", 7/16", 1/2"	SCR-02	FT-15	**TCMT3252**
	82-612	●	2	1.464	0.612	0.750	3.530	1.500			Fig.2	5/8", 3/4"			

• CS82-612 is one flute effective with staggered inserts.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Custom Drills

Several customization options available for your specific drilling applications

Add Multiple Counterbores, Countersinks, or Chamfer Inserts

Custom Shanks Available

CAT
ABS
BT
HSK
Metric
Special Diameters & Lengths

Custom Diameters and Lengths Available

Customized Drill Ordering Procedure

To request a quote for a custom drill, please follow the steps below:

1. Photocopy and fill out the Special Tool Design Worksheet on adjacent page.
2. Fax the completed form along with any necessary prints and drawings to the Kyocera Quotations Department at 828-692-1344.
3. Contact the Kyocera Quotations Department at 800-823-7284 with any questions regarding the custom drill quotation procedure.

Kyocera Precision Tools, Inc.
Ph: 800-823-7284
Fax: 828-692-1344
Email: kyoceracuttingtools@kyocera.com
www.kyoceraprecisiontools.com

SPECIAL TOOL DESIGN WORKSHEET

DATE: _____

CUSTOMER INFORMATION

Company Name: _____ Phone: _____
Contact: _____ Fax: _____
Address: _____ Email: _____
City, State, Zip: _____
Kyocera Distributor Name: _____

PART INFORMATION

Part Number or Description: _____
Material: _____ Hardness (Rc): _____
Current problem or objective: _____

MACHINE INFORMATION

Machine being tooled: _____ Machine condition, age: _____
Spindle Hp: _____ Max RPM: _____ Max IPM: _____
Circle one of each: Horizontal or vertical spindle? Stationary or rotating tooling?

TOOL INFORMATION

Describe the tool (drill, mill, combo tool?) _____
Quantity to quote: _____ Shank size/description: _____
Right or left hand cutting: _____ Thru coolant? (and inlet type/location): _____
Size or weight restrictions (if applicable): _____

<u>Prints and Drawings</u>
Finished part
Raw stock or casting
Fixturing
Special inserts, hardware, etc.
Process sheet
Existing tooling

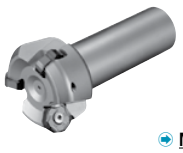
<u>Supplied information should include:</u>
Tolerance requirements, raw stock tolerances
Surface finish requirements (witness lines ok?)
Depth(s) of cut
Fillets, inside corner radii (insert nose radii)
Allowable overtravel on thru cuts
Amount of finish stock to leave

MILLING

M1 - M256

MILLING SERIES		M2 - M10
PRODUCT LINEUP		M2
MILLING INSERTS		M12 - M30
45° / 66° / 70° LEAD ANGLE		M31 - M44
MFPN45		M31
MFPN66		M36
MFLN45 / MFLN70		M40
MFK	for Cast Iron Machining	M46
MOF45		M52
75° LEAD ANGLE		M53 - M57
MSRS15		M53
90° / 88° LEAD ANGLE		M58 - M161
MEW	M-FOUR	M58
MEC / MECX		M68
MEV	M-THREE	M84
MEWH / MECH / MECHT	Helical End Mills	M92
MFWN	M-SIX	M106
MFSN88		M118
MFLN90		M122
MSRS90		M124
MSR / MSR-BT50		M130
MTP90		M137
DMC / DMC-SX / DMC-H		M138
MFAH	for Aluminum Machining	M142
MEAS	for Aluminum Machining	M150
EM / EM-LE / FM-90		M156
FM-AL / EM-AL	for Aluminum Machining	M159
MAP / CEM		M160
HIGH FEED MILLING		M162 - M187
MFH	MFH-RAPTOR	M164
MFH	MFH-RAPTOR Mini	M175
MFH	MFH-RAPTOR Micro	M182
FINISH MILLING		M188 - M193
MFF		M188
MULTI-FUNCTION END MILLS (MEY / MEZ-G)		M194 - M197
SLOT MILLS (MSTA / MSTB / MSTC)		M198 - M223
BALL-NOSE / RADIUS CUTTERS		M224 - M243
MRF / MRFW		M224
MRW	RAD-8	M226
MRX	RAD-6	M234
OTHER APPLICATIONS		M244 - M256
API	Ring Groover	M244
CM / CM-AL	Chamfering End Mill	M247
MCSE	Chamfering End Mill	M248
MEF	Bolt Countersink End Mill	M250
METS	T-Slot Mill	M252
MGI	Grooving End Mills for M/C	M254
MVG	Ring Grooving End Mills for M/C	M256

45° / 66° / 70° / 75° Lead Angles

Lead Angle	Shape / Applications	Facing	Chamfering
45°	**MFPN45** M31	• 10-edge pentagonal inserts • Double-sided pentagonal insert Economical with 10-edge insert • Low cutting force due to helical cutting-edge design • Frac tures suppressed with double-edge position	
45°	**MFPN45**  M33	• 10-edge pentagonal inserts • Double-sided pentagonal insert Economical with 10-edge insert • Low cutting force due to helical cutting-edge design • Fractures suppressed with double-edge position • With weldon or cylindrical shank	

Lead Angle	Shape / Applications	Facing	Chamfering
45°	**MFLN45** NEW M42	• Heavy milling • Tangentially mounted inserts for high stability • Large D.O.C. and high feed rates • Maximum D.O.C. = 12mm	
45°	**MOF45** M52	• Octagonal insert with 8 cutting edges • Insert sizes are available in 05 and 07 • Silver coated	

Lead Angle	Shape / Applications	Facing
66°	**MFPN66** M37	• Double-sided 10-edge insert • Cutting edge angle of 66° • Reduces chattering with a low cutting force design
66°	**MFPN66** M38	• Double-sided 10-edge insert • Cutting edge angle of 66° • Reduces chattering with a low cutting force design • With Ø32mm and Ø40mm cylindrical shanks
75°	**MSRS15** M54	• For heavy cutting • Max D.O.C. 0.472" • Metal removal rate is increased drastically

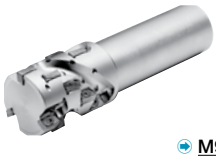
Lead Angle	Shape / Applications	Facing
70°	**MFLN70** NEW M43	• Heavy milling • Tangentially mounted inserts for high stability • Large D.O.C. and high feed rates • Maximum D.O.C. = 17mm
70°	**MFK** M48	• High efficiency multi-edge cutter for cast iron • Economical double-sided 10-edge inserts • Low cutting forces due to helical cutting-edge design • Improved surface finish, minimizing chattering and prevents burr formation • Dual cutting edge design (high toughness)
70°	**MFK-SF** M50	• Cutter for cast iron with adjustable cutting edge height • High speed and high precision machining of cast iron by combining ceramic and CBN wiper inserts

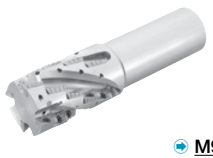
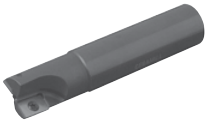
NEW ITEMS!

90° / 88° Lead Angles (Double-sided Insert)

Lead Angle	Applications / Shape	Facing	Shouldering	Slotting
90°	**MEW End Mill** M60	• Economical 4-edge Insert • Obtuse edge increases cutting edge toughness • Smooth surface wall due to low cutting forces • Good anti-chatter performance		
	MEW Face Mill M62			
	MEW Modular M64			
90°	**MFWN Face Mill** M108	• Economical 6-edge Insert • Superior fracture resistance due to thick edge design • Dynamic slant design reduces shock when cutting edge enters the workpiece • Low cutting forces • End mills have weldon or cylindrical shanks		
	MFWN End Mill M111			
	MFWN-Mini Face Mill NEW M114	• Small diameter for 5mm D.O.C. or less • Economical 6-edge insert • Superior fracture resistance due to thick edge design • Dynamic slant design reduces shock when cutting edge enters the workpiece • Low cutting forces and chatter resistance		
	MFWN-Mini End Mill NEW M115			
88°	**MFSN88 Face Mill** M119	• Economical double-sided 8-edge insert • Reduces chattering with a low cutting force design • Lower machining costs for shoulder roughing • End mills have Ø32mm and Ø40mm cylindrical shank		
	MFSN88 End Mill M120			

90° Lead Angles (Heavy Milling)

Lead Angle	Shape / Applications	Facing	Shouldering	Slotting
0° (Long Cutting Edge)	**MEWH**  M93	• Low cutting force and sharp cutting performance • Excellent surface finish quality • Economical double-sided 4-edge inserts • High quality and stable machining during heavy milling applications		
	MEWH Shell Mill M94	• MEWH shell mill		
	MSR M131	• Low cutting force and resistance to chattering with notched insert • Chipbreaker design with specialized notches improves chip evacuation • Chipbreaker achieves stabilized cutting for heavy roughing applications		
	MSR-BT50 M133	• Highly rigid, BT50 Arbor		
	NEW **MFLN90** M122	• Heavy milling • Tangentially mounted inserts for high stability • Large D.O.C. and high feed rates • Maximum D.O.C. = 20mm		
	MSRS90 M126	• Notched insert reduces cutting forces • Stable cutting without chatter • Neutral insert allows the possibility of various custom-ordered cutters		

Lead Angle	Shape / Applications	Facing	Shouldering	Slotting
0° (Long Cutting Edge)	**MECH**  M96	• Notched insert promotes higher productivity • Large depth of cut provides high efficiency cutting • MECH is the best solution for problems with heavy milling		
	MECH Shell Mill M97	• MECH shell mill		
	MECH-BT50 **MECH-BT50SA** M97~M99	• Highly rigid, integral BT50 arbor • Head exchangeable type is available (MECH-BT50SA)		
	NEW **MECHT** M105	• Designed for stable machining in titanium alloy with exceptional chatter resistance and chip control • Helical end mill type available with Ø32mm shank		
	MAP M160	• Cutting dia. 1.000" • Low cutting force, good chip evacuation • High-efficiency machining		
	CEM  M161	• Cutting dia. 0.375" to 1.500" • For small milling machines		

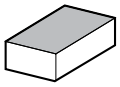
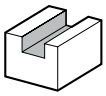
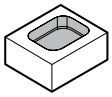
NEW ITEMS!

90° Lead Angles

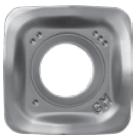
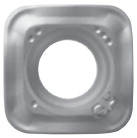
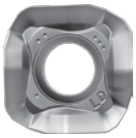
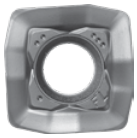
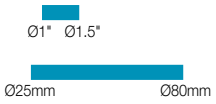
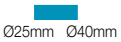
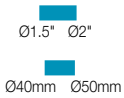
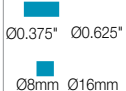
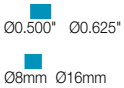
Lead Angle	Shape \ Applications	Facing	Shouldering	Slotting
90°	**MEC End Mill** M68	• Great 90 degree shoulders • Low cutting force • The silver coating prevents chip wear on the tool body • With air hole (Over Ø16)		
	MEC Face Mill M71	• The twisted cutting edge improves cutting performance • Smooth surface of shoulder Wall • True 90° Corners • The silver coating prevents chip wear on the tool body • Available with coolant holes		
	MEC Modular M73	• Great 90 degree shoulders • Low cutting force • The silver coating prevents chip wear on the tool body • With air hole (Over Ø16)		
	MECX End Mill M80	• Great 90 degree shoulders • Small size Insert with multi-edge specification • Low cutting force • The silver coating prevents chip wear on the tool body • With air hole		
	MECX Face Mill M81	• Efficient machining due to small diameter cutter that holds multiple inserts • Recommended for small machines: low cutting force and high strength design • The silver coating prevents chip wear on the tool body • Available with coolant holes		
	MTP90 M137	• Medium to roughing of steel / cast iron • For small machines and M/C		
	EM M156	• Extended length end mills		
	EM-LE M157	• Long edge end mill		
	FM-90 M158	• Fixed pocket face mills		
	FM-AL M159	• Aluminum cutting face mills • Fixed pocket		
	EM-AL M159			

Lead Angle	Shape \ Applications	Facing	Shouldering	Slotting
90°	NEW **MEV End Mill** M86	• New vertically mounted triangle insert design achieves low cutting forces and high rigidity • Economical 3-edge inserts • Mult-functional milling for various machining applications		
	NEW **MEV Face Mill** M87			
	NEW **MEV Modular** M88			
	DMC M138	• For small milling machine, M/C		
	DMC-H M140	• High rake type • For small milling machine, M/C		
	DMC-SX M139	• For small milling machine, M/C		

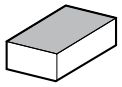
Aluminum Milling Cutters

Lead Angle	Shape \ Applications	Facing	Shouldering	Slotting	Pocketing
					
90°	**MFAH** M144	• High efficiency milling cutter for finishing aluminum • Light-weight hybrid body with internal coolant available • Adjustable blade runout • 3 different cutting edges			
	MEAS End Mill NEW M152	• High efficiency, high-speed end mills for aluminum machining • Reliable scatter prevention • Great for multiple machining applications			
	MEAS Face Mill NEW M152	• High efficiency, high-speed face mills for aluminum machining • Reliable scatter prevention • Great for multiple machining applications			

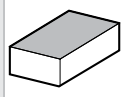
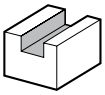
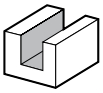
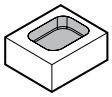
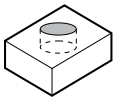
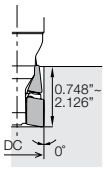
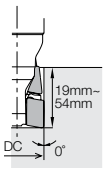
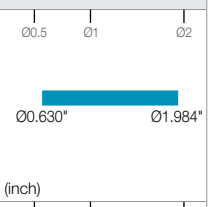
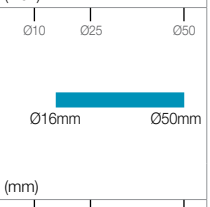
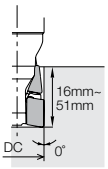
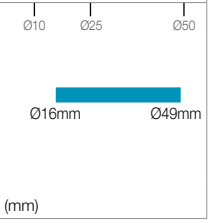
High Feed Cutters

Lead Angle	Shape \ Applications	Facing	Shouldering	Slotting	Pocketing	Cutting Dia. DCX
90°	**MFH Face Mill** M164	• Various applications with 4 insert types  GM (General Milling)  GH (Tough Edge)  LD (Large D.O.C.) MAX D.O.C. = 0.197" Available for Scale Removal  FL (Wiper Edge) Available for both Roughing and Finishing • Convex cutting edge reduces chatter and chip biting • Multi-functional cutter for ramping, helical milling, plunging etc. (GM/GH type)			
	MFH End Mill M167					
	MFH Modular M170					
	MFH-Mini End Mill M176	• Economical double-sided 4-edge insert GM (General Milling) GH (Tough Edge) • High efficiency and high feed small diameter machining			
	MFH-Mini Face Mill M178					
	MFH-Mini Modular M179					
	MFH Micro M184	• Smallest diameters in the MFH high feed milling series GM (General Milling)				
	MFH Micro Modular M185					

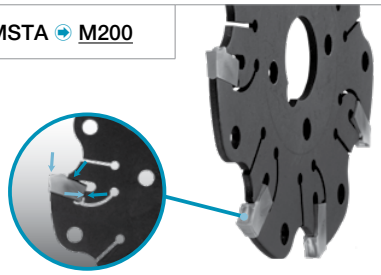
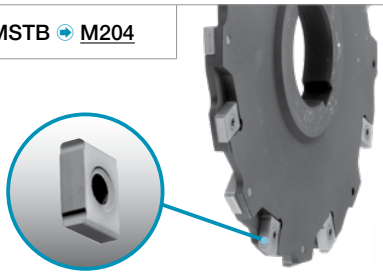
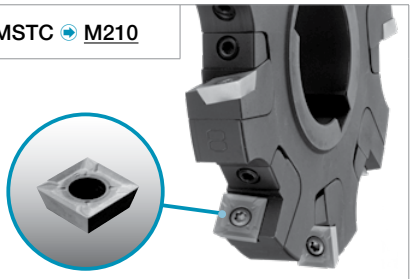
Finishing Milling Cutters

Lead Angle	Applications / Shape	Facing
		
90°	**MFF** NEW M192	• Unique cutter design for finishing solutions • Features wiper edge for high-feed finishing and excellent surface finish • Easily adjustable cutting edge height

Multi-Function End Mills

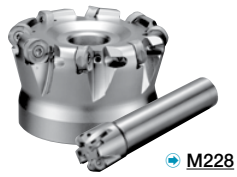
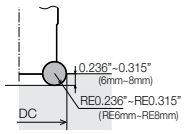
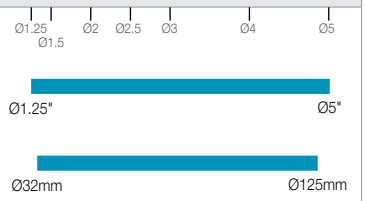
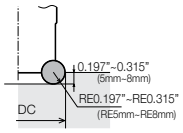
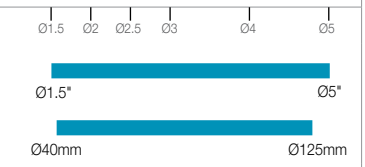
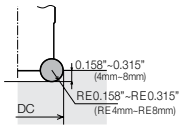
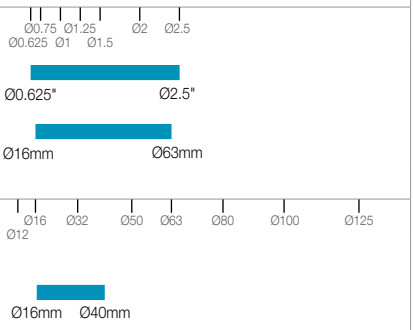
Shape / Applications	Facing	Shouldering	Slotting	Deep Slotting	Pocketing	Drilling	Lead Angle and MAX D.O.C.	Cutting Dia. DC
								
MEY M194	• Ultra drill mill • Multi-function cutting (drilling / ramping / shouldering / grooving) • High-efficiency mold cutting • Low cutting force, good chip evacuation		• Full 2-Flute structure and high stability • Good chip control when ramping		• Cutting diameters that are larger than the shank diameters enables wall shouldering • The silver coating prevents chip wear on the tool body		 (inch)  (mm)	 (inch)  (mm)
MEZ-G M196	• Silver drill mill • Multi-function cutting • High-efficiency mold cutting • Low cutting force, Good chip evacuation		• The silver coating prevents chip wear on the tool body • The clearance groove prevents chip welding				 (mm)	 (mm)

MST Slot Mills

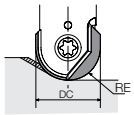
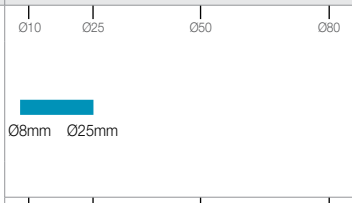
MSTA M200	MSTB M204	MSTC M210
		
• Self-clamping system • Remove insert with appropriate wrench	• Easy screw on tangential clamped insert	• Adjustable slotting width due to unique cam adjustment structure

M MILLING

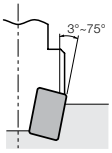
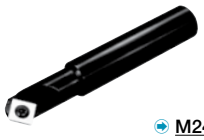
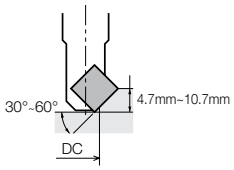
Radius Cutters

Shape \ Applications	Facing	Shouldering	Pocketing	Lead Angle and MAX D.O.C.	Cutting Dia. DC
MRW (RAD-8)  M228	• High efficiency radius cutter with multiple-edge inserts • Combines sharpness and cutting edge strength (A.R. Max. +12°) • Prevents insert rotation during machining with flat lock structure • Wide application range from steel to heat-resistant alloys				
MRX (RAD-6) Face Mill M235	• Low cutting force and high performance radius cutter • Low cutting force due to helical cutting-edge design (A.R. Max. +10°) • Prevents insert rotation during machining with flat lock structure • Wide application range including facing, grooving, pocketing and plunging • Wide application range from steel to heat-resistant alloys				
MRX (RAD-6) End Mill M237					
MRX (RAD-6) Modular M239					

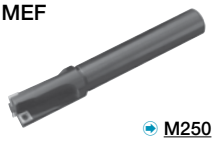
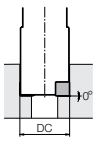
Ball-Nose End Mills

Shape \ Applications	Contouring / Profiling	Pocketing	Lead Angle and MAX D.O.C.	Cutting Dia. DC
MRF M224	• For high quality mold finishing • High R-accuracy (insert's R-accuracy: under ±0.01mm) • The bushing ensures insert installation accuracy			
MRFW M224	• Carbide • For high quality mold finishing • High R-accuracy (Insert's R-accuracy: Under ±0.01mm) • The bushing ensures insert installation accuracy • Anti-vibration, and stable cutting is possible with long overhang length without chattering			

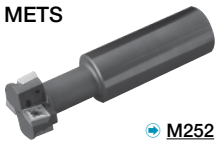
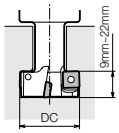
Chamfering

Shape \ Applications	Chamfering	Countersinking	Back Chamfering	V Shape Slotting	Lead Angle and MAX D.O.C.
CM / CM-AL M247	• Chamfering angles 3°-75° • CM-AL for aluminum cutting				
MCSE  M248	• Chamfering angles for 30°, 45°, 60° • Economical 4-sided insert • Available for back chamfering				

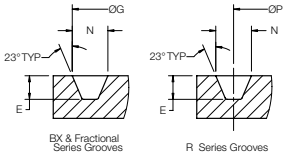
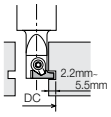
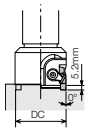
Counterboring

Shape \ Applications	Bolt Counterboring	Facing	Shouldering	Lead Angle and MAX D.O.C.
MEF  M250	• Counterboring for hexagon socket bolt (M6~M30) • Economical S-type insert (4-Edge)			

T-Slotting

Shape \ Applications	T-Slotting	Back Side Milling	Lead Angle and MAX D.O.C.
METS  M252	• T-Slotting • Recommended for high feed cutting with 2 flute design • Economical square insert (4 cutting edges)		

Grooving

Shape \ Applications	Internal Grooving	Ring Grooving	API Ring Grooving	Lead Angle and MAX D.O.C.
API M244			• The most economical and reliable tool to produce API ring grooves for the oil, gas, and petrochemical industries	
MGI M254	• Edge Width 1.0~4.0mm • Grooving for machining centers			
MVG M256		• Cutting dia.Ø30~Ø75mm • Edge width: 4.0~4.9mm • O-Ring grooving (G Series)		

M MILLING

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MILLING INSERT IDENTIFICATION SYSTEM

Symbol	Shape
H	Hexagon
O	Octagon
P	Pentagon
S	Square
T	Triangle
C	80° Diamond
D	55° Diamond
E	75° Diamond
F	50° Diamond
M	86° Diamond
V	35° Diamond
W	Trigon
L	Rectangle
A	85° Parallelogram
B	82° Parallelogram
K	55° Parallelogram
R	Round

Shown angle stands for acute angle for rhombic and parallelogram inserts.

① Shape

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Other Angles

② Relief Angle

Symbol (Class)	Tolerance					
	Corner Height		Thickness		I.C. Size	
	ANSI (±inch)	ISO (±mm)	ANSI (±inch)	ISO (±mm)	ANSI (±inch)	ISO (±mm)
A	0.0002	0.005	0.0010	0.025	0.0010	0.025
F					0.0005	0.013
C	0.0005	0.013			0.0010	0.025
H					0.0005	0.013
E	0.0010	0.025	0.0010	0.025	0.0010	0.025
G			0.0050	0.130		
J	0.0002	0.005	0.0010	0.025	0.002~0.006	0.05~0.15
K*	0.0005	0.013				
L*	0.0010	0.025				
M*	0.003~0.007	0.080~0.180	0.0050	0.130		
N*			0.0010	0.025		
U*	0.005~0.015	0.130~0.380	0.0050	0.130	0.003~0.009	0.08~0.25
R	Blank with grind stock on all surfaces					
S	Blank with grind stock on top and bottom surface only					

Insert's periphery is as fired.
* Tolerance difference depends on size and shape of insert

③ Tolerance

I.C. Size (inch)	Symbol
5/32	1.2
3/16	1.5
7/32	1.8
1/4	2
5/16	2.5
3/8	3
7/16	3.5
1/2	4
9/16	4.5
5/8	5
11/16	5.5
3/4	6
7/8	7
1	8
1-1/4	10

⑤ I.C. Size (ANSI)

Inserts with Radius			
0	Sharp Corner	4	1/16" Radius
1	1/64" Radius	6	3/32" Radius
2	1/32" Radius	8	1/8" Radius
3	3/64" Radius		
Insert with Wiper Flats			
A	Square Insert 45° Chamfer		
D	Square Insert 30° Chamfer		
E	Square Insert 15° Chamfer		
F	Square Insert 3° Chamfer		
K	Square Insert 30° Double Chamfer		
L	Square Insert 15° Double Chamfer		
M	Square Insert 3° Double Chamfer		
N	Truncated Triangle Insert		
P	Flatted Corner Triangle		
X	Triangle Insert 15° Double Chamfer		

⑦ Cutting Point

Symbol	Insert
F	Sharp Edge
E	R-honed
T	Chamfered
S	Chamfered + R-honed

⑨ Edge Preparation

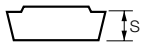
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
ANSI (inch)	S	E	K	N	4	2	A	F	T	N	
ISO (metric)	S	E	K	N	12	03	A	F	T	N	

④ Hole / Chipbreaker	
Symbol	Insert
W	No Chipbreaker with Hole
T	Single-sided Chipbreaker with Hole
F	Double-sided Chipbreaker without Hole
N	No Chipbreaker without Hole
R	Single-sided Chipbreaker without Hole
M	Single-sided Chipbreaker with Hole
A	No Chipbreaker with Hole

⑤ Edge Length Symbol (ISO)

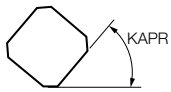
S, T, R, A,N, O, P, W

⑥ Thickness			
ISO		ANSI	
Thickness (mm)	Symbol	Thickness (inch)	Symbol
1.59	01	1/16	1
1.98	T1	5/64	1.2
2.38	02	3/32	1.5
2.78	T2	-	-
3.18	03	1/8	2
3.97	T3	5/32	2.5
4.76	04	3/16	3
5.56	05	7/32	3.5
6.35	06	1/4	4
7.94	07	5/16	5
9.525	09	3/8	6

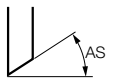


Thickness displayed as the distance between bottom surface and highest point on cutting edge.

⑦ Cutting Edge Angle	
Symbol	Cutting Edge Angle
A	45°
D	60°
E	75°
F	85°
H	87°
P	90°
X	65°



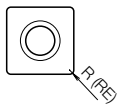
⑧ Relief Angle	
Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
R	10°
S	14°
T	22°
U	23°



⑩ Tool Hand	
R	Right-hand
L	Left-hand
N	Neutral

⑪ Manufacturer's Option
Chipbreaker, etc.

⑦⑧ Corner-R(RE)			
ISO		ANSI	
Symbol	Corner-R (RE) (mm)	Symbol	Corner-R (RE) (inch)
04	0.40	1	1/64
08	0.80	2	1/32
12	1.20	3	3/64
16	1.60	4	1/16
20	2.00	5	5/64



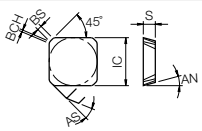
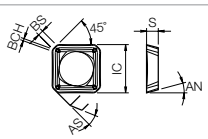
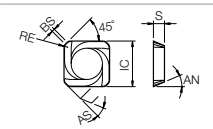
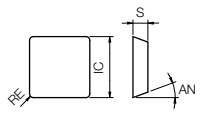
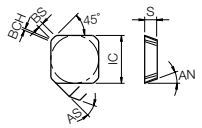
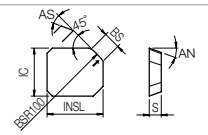
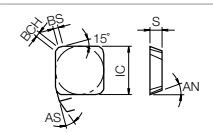
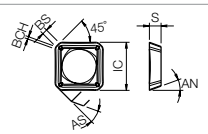
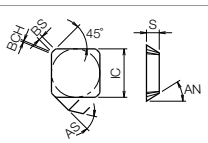
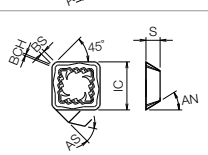
Milling Inserts

without Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		TN610	TN60	TN100M	CA6535	CA420M	PR1535	PR1225	PR1210	KW10
P	Free-Cutting Steel	■		■				★		
	Carbon/Alloy Steel	■		■				★		
M	Stainless Steel							★		
K	Gray Cast Iron								★	☆
	Nodular Cast Iron								★	
N	Non-ferrous Metals									★
S	Heat-Resistant Alloys							★		
	Titanium Alloy								★	☆
H	Hard Materials							■		

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	Dimensions (in) IC	S	BCH RE	BS	INSL	Angle (°) AN	AS	TN610	TN60	TN100M	CA6535	CA420M	PR1535	PR1225	PR1210	KW10	Toolholder Page
	SDKN 42AUTN	SDKN 1203AUTN	0.500	0.125	0.020	0.047	-	15°	23°			●				●	●		-
	42AUFN	1203AUFN																●	
	(Use ISO Part Number)	SDKN 1504AUTN	0.625	0.187												●			
	SDKR 42AUEN-S	SDKR 1203AUEN-S	0.500	0.125	0.020	0.067	-	15°	23°			●				●			-
	SDMR 42AUER-H	SDMR 1203AUER-H	0.500	0.125	0.039	0.031	-	15°	23°							●			
	SEC 422	SEC 120308	0.500	0.125	0.031	-	-	20°	-	●									-
	424	120316			0.063					●									
	SEEN 42AFTN	SEEN 1203AFTN	0.500	0.125	0.020	0.055	-	20°	25°			●							-
	SEKN 42AFTN	SEKN 1203AFTN										●				●	●		
	42AFFN	1203AFFN																●	
	SEKN 43AFTN	SEKN 1204AFTN		0.187												●			
	SEKN 53AFTN	SEKN 1504AFTN	0.625									●				●			
1-Edge with Wiper 	SEEN 42AFTR-W	SEEN 1203AFTR-W	0.500	0.125	-	0.138	0.573	20°	25°			●							-
	42AFFR-W	1203AFFR-W																●	
	SEKN 42EFTR	SEKN 1203EFTR	0.500	0.125	0.047	0.055	-	20°	25°			●							-
	SEKR 42AFEN-S	SEKR 1203AFEN-S	0.500	0.125	0.020	0.067	-	20°	25°			●				●			-
	(Use ISO Part Number)	SOKN 13T3AXTN	0.531	0.156	0.020	0.043	-	27°	32°			●				●	●		-
		13T3AXFN																●	
	(Use ISO Part Number)	SOKR 13T3AXEN-J	0.531	0.156	0.020	0.043	-	27°	32°			●				●		●	-

SEEN-W inserts sold in 5 piece boxes.

Other inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

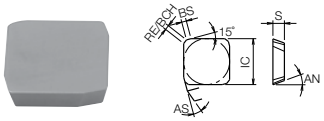
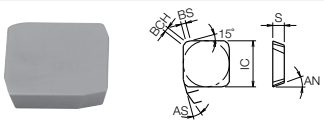
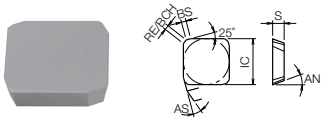
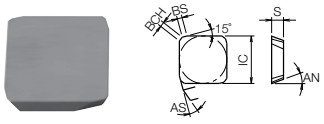
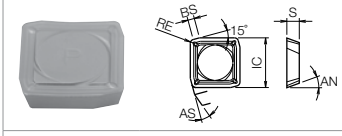
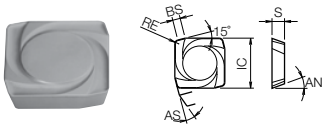
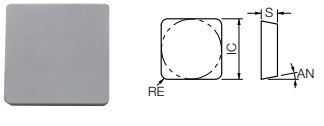
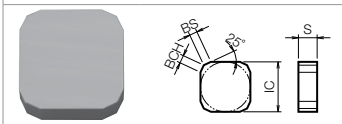
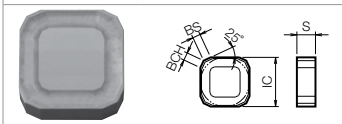
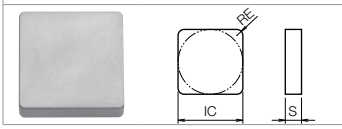
Milling Inserts

without Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		TN60	TN100M	CA6535	CA420M	PR1535	PR1225	PR1210	KW10
P	Free-Cutting Steel		■				★		
P	Carbon/Alloy Steel		■				★		
M	Stainless Steel						★		
K	Gray Cast Iron				★			☆	☆
K	Nodular Cast Iron				★			☆	
N	Non-ferrous Metals								★
S	Heat-Resistant Alloys						★		
S	Titanium Alloy							★	☆
H	Hard Materials						■		

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	IC	S	BCH	BS	RE	AN	AS	TN60	TN100M	CA6535	CA420M	PR1535	PR1225	PR1210	KW10	Toolholder Page
	SPCN 42EDTR	SPCN 1203EDTR	0.500	0.125	RE=0.039	0.079	-	11°	15°		●							-
	SPKN 42EDTR	SPKN 1203EDTR			0.039						●				●			
	42EDTL	1203EDTL			RE=0.039											●		
	42EDER	1203EDER									●							
	42EDFR	1203EDFR			0.039	0.063											●	
	SPKN 53EDTR	SPKN 1504EDTR	0.625	0.187							●				●	●		
	53EDFR	1504EDFR				0.087											●	
	SPEN 42EEER	SPEN 1203EEER	0.500	0.125	0.039	0.055	-	11°	20°				●					-
	42EESR	1203EESR														●		
	SPCN 42XPTR	SPCN 1203XPTR	0.500	0.125	RE=0.039	0.079	-	11°	11°		●							-
	SPKN 42XPTR	SPKN 1203XPTR									●							
	42XPFR	1203XPFR			0.039												●	
	SPKN 53XETR	SPKN 1504XETR	0.625	0.187					20°		●							
	SPCN 63EETR1	SPCN 1904EETR1	0.750	0.187	0.028	0.047	-	11°	20°		●							-
	SPKR 42EDER-S	SPKR 1203EDER-S	0.500	0.125	RE=0.039	0.079	-	11°	15°		●				●			-
	SPMR 42EDER-H	SPMR 1203EDER-H	0.500	0.125	RE=0.039	0.079	-	11°	15°						●			
	SPM 422	SPMN 120308	0.500	0.125	-	-	0.031	11°	-	●	●						●	-
	423	120312					0.047			●	●							
	SPM 432	SPMN 120408		0.187			0.031						●			●		
	433	120412					0.047						●					
	SPG 321	SPGN 090304	0.375	0.125			0.016										●	
	322	090308					0.031										●	
	SPG 421	SPGN 120304	0.500				0.016										●	
	422	120308					0.031			●				●			●	
	SNCN 43XNTN	SNCN 1204XNTN	0.500	0.187	0.079	0.079	-	-	-		●							-
	SNKN 43XNTN	SNKN 1204XNTN									●							
	SNMF 43XNTN	SNMF 1204XNTN	0.500	0.187	0.079	0.079	-	-	-		●							-
	SNM 432	SNMN 120408	0.500	0.187	-	-	0.031	-	-							●		-
	433	120412					0.047						●			●		
	436	120424					0.094						●					

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

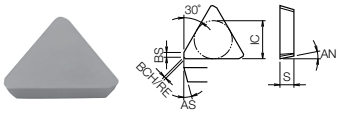
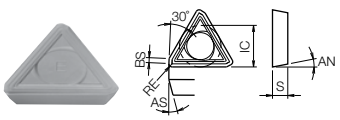
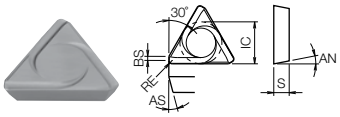
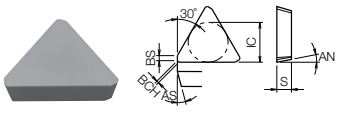
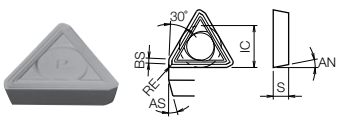
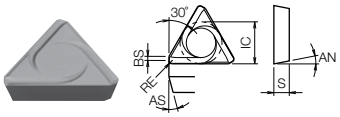
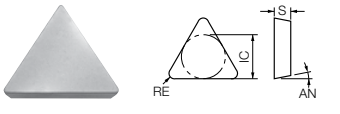
Milling Inserts

without Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		TN610	TN60	TN100M	CA6535	CA420M	PR1535	PR1225	PR1210	KW10
P	Free-Cutting Steel	■		■				★		
	Carbon/Alloy Steel	■		■				★		
M	Stainless Steel							★		
K	Gray Cast Iron								★	☆
	Nodular Cast Iron								★	
N	Non-ferrous Metals									★
S	Heat-Resistant Alloys							★		
	Titanium Alloy								★	☆
H	Hard Materials							■		

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	IC	S	BCH	BS	RE	AN	AS	TN610	TN60	TN100M	CA6535	CA420M	PR1535	PR1225	PR1210	KW10	Toolholder Page
	TEKN 32PTTR	TEKN 1603PTTR	0.375	0.125	R0.031	0.039	-	20°	22°			●				●			
					0.028	0.055											●		
	32PTFR	1603PTFR	0.375	0.125	0.028	0.055	-	20°	22°									●	
	TEEN 43PTTR	TEEN 2204PTTR	0.500	0.187	R0.039							●							-
	TEKN 43PTTR	TEKN 2204PTTR	0.500	0.187	R0.039	0.055	-	20°	22°			●				●			
					0.028												●		
	43PTFR	2204PTFR	0.500	0.187	0.028	0.055	-	20°	22°									●	
	TEKR 43PTER-S	TEKR 2204PTER-S	0.500	0.187	R0.039	0.055	-	20°	22°			●				●			-
	TEMR 32PTER-H	TEMR 1603PTER-H	0.375	0.125	R0.031	0.047	-	20°	22°							●			-
	TEMR 43PTER-H	TEMR 2204PTER-H	0.500	0.187	R0.039	0.055										●			
	TPC 32P4R	TPC 1603P4R	0.375	0.125	0.026	0.063	-	11°	15°	●									-
	TPK 32PDTR	TPKN 1603PDTR	0.375	0.125	0.028	0.047	-					●				●	●		
	32PDFR	1603PDFR																●	
	TPK 43PDTR	TPKN 2204PDTR	0.500	0.187	0.028	0.063						●				●	●		
	43PDFR	2204PDFR																●	
	TPKR 43PDER-S	TPKR 2204PDER-S	0.500	0.187	R0.039	0.055	-	11°	15°			●				●			M137
	TPMR 32PDER-H	TPMR 1603PDER-H	0.375	0.125	R0.031	0.047	-	11°	15°							●			-
	TPMR 43PDER-H	TPMR 2204PDER-H	0.500	0.187	R0.039	0.055										●			M137
	TPM 221	TPMN 110304	0.250	0.125	-	-	0.016	11°	-									●	-
	222	110308					0.031											●	
	321	160304	0.375				0.016					●						●	
	322	160308					0.031					●						●	
	323	160312					0.047					●							
	432	220408	0.500	0.187			0.031					●							
	TPG 181505	TPGN 090202	0.219	0.094			0.008											●	
	18151	090204					0.016				●							●	
	18152	090208					0.031				●								
	2205	110302	0.250	0.125			0.008				●							●	
	221	110304					0.016				●							●	
	222	110308					0.031				●							●	
	321	160304	0.375				0.016				●				●			●	
	322	160308					0.031				●	●			●			●	

Cutting Range	Chipbreaker		Features
Finishing-Roughing	S		S chipbreaker for general-purpose machining. Low cutting resistance due to 13° chipbreaker rake angle. Recommended for various depths of cut with 3-step chipbreaker design. Ground wiper edge enables good surface finishes.
Medium-Finishing	H		H chipbreaker for general-purpose machining. Smooth chip evacuation due to the chipbreaker's smooth rake face. 20% less cutting force than flat-top inserts due to a 25° rake angle chipbreaker.

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Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

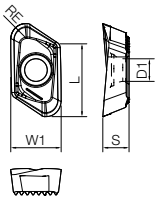
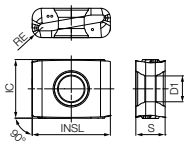
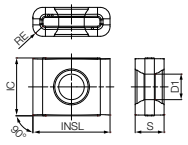
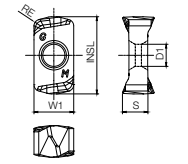
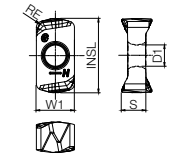
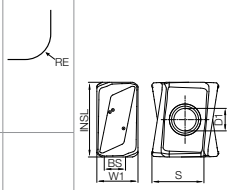
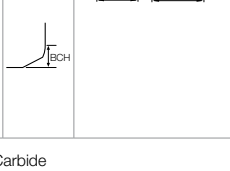
Milling Inserts

with Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■			☆	★							
	Carbon/Alloy Steel	■			☆	★							
M	Austenitic Stainless Steel				★	☆							
	Martensitic Stainless Steel		★		☆								
	Precipitation Hardened Stainless Steel				★								
K	Gray Cast Iron						★						
	Nodular Cast Iron						★						
N	Non-ferrous Metals										★	☆	
S	Heat-Resistant Alloys		★		☆								
	Titanium Alloy				★								
H	Hard Materials									★			

Insert (Right-hand Shown)	Part Number	Dimensions (in)							MN* Cermet	CVD Carbide		MEGACOAT (PVD Coated Carbide)						DLC*	Carbide	Toolholder Page
		W1 IC	S	BCH	D1	L INSL	BS	RE	PV60M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	PR015S	PDL025	GW25	
NEW Aluminum Alloy (2-Edge)		KCGT 130504FR-AL	0.390	0.201	-	0.173	0.555	-	1/64									●		M152
		130508FR-AL					0.547		1/32									●		
		130512FR-AL					0.543		3/64									●		
		130516FR-AL					0.524		1/16									●		
		130520FR-AL							5/64									●		
		130524FR-AL							3/32									●		
		130530FR-AL							0.118									●		
		130532FR-AL							1/8									●		
		130540FR-AL					0.504		0.157									●		
		130550FR-AL							0.197									●		
NEW Steel & Stainless (Low Cutting Force)		LNGX 120916R-TT	0.375	0.250	-	0.165	0.500	-	0.063	●			●							M192
NEW Cast Iron		LNGX 120916	0.375	0.250	-	0.165	0.500	-	0.063	●			●							
General Purpose		LOGU 030310ER-GM	0.244	0.156	-	0.136	0.469	-	0.039		●		●	●	●					M176 M177 M178 M179
NEW Tough Edge		LOGU 030310ER-GH	0.244	0.156	-	0.136	0.469	-	0.039				●	●	●			●		
NEW Corner-R		LOGU 221616ER-GM	0.492	0.654	-	0.268	0.898	0.248	0.063				●	●						M42 M43 M122
NEW Corner Chamfer		LOGU 2216PAER-GM	0.492	0.665	0.059	0.268	0.898	0.189	-				●	●						M122

*DLC: DLC Coated Carbide
*MN: MEGACOAT NANO

Inserts sold in 10 piece boxes.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

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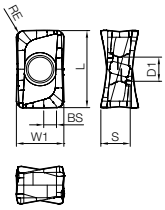
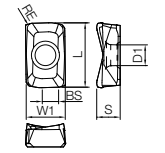
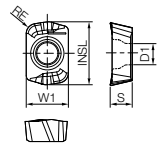
Milling Inserts
with Hole

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		TN100M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	PR015S	PDL025	GW25
P	Free-Cutting Steel				☆	★						
	Carbon/Alloy Steel				☆	★						
M	Austenitic Stainless Steel				★	☆						
	Martensitic Stainless Steel		★		☆							
	Precipitation Hardened Stainless Steel				★							
K	Gray Cast Iron						★					
	Nodular Cast Iron						★					
N	Non-ferrous Metals										★	☆
S	Heat-Resistant Alloys		★		☆							
	Titanium Alloy				★							
H	Hard Materials					■				★		

Insert (Right-hand Shown)		Part Number	Dimensions (in) W1	S	D1	L INSL	BS	RE	TN100M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	PR015S	PDL025	GW25	Toolholder Page
General Purpose		LOMU 100404ER-GM	0.260	0.157	0.134	0.429	0.083	0.016		●		●	●	●						M60 M61 M62 M63 M64 M93 M94
		LOMU 100408ER-GM					0.067	0.031		●		●	●	●						
		LOMU 100412ER-GM					0.051	0.047		●		●	●	●						
		LOMU 100416ER-GM					0.039	0.063		●		●	●	●						
		LOMU 100420ER-GM					0.039	0.079		●		●	●	●						
		LOMU 150504ER-GM	0.362	0.220	0.189	0.618	0.087	0.016		●		●	●	●						
		LOMU 150508ER-GM					0.071	0.031		●		●	●	●						
		LOMU 150510ER-GM					0.063	0.039					●							
		LOMU 150512ER-GM					0.055	0.047		●		●	●	●						
		LOMU 150516ER-GM					0.039	0.063		●		●	●	●						
		LOMU 150520ER-GM					0.024	0.079		●		●	●	●						
Low Cutting Force		LOMU 100408ER-SM	0.260	0.157	0.134	0.429	0.067	0.031		●		●	●	●						
		LOMU 150508ER-SM	0.362	0.220	0.189	0.618	0.071	0.031		●		●	●	●						
Tough Edge (Heavy Milling)		LOMU 100408ER-GH	0.260	0.157	0.134	0.429	0.067	0.031		●		●	●	●			●			
		LOMU 150508ER-GH	0.362	0.220	0.189	0.618	0.071	0.031		●		●	●	●			●			
Non-Ferrous (2-Edge)		LOGT 100408FR-AM	0.268	0.157	0.142	0.437	0.110	0.031										●	●	
		150508FR-AM	0.350	0.220	0.193	0.626	0.110	0.031										●	●	
General Purpose		LPGT 010210ER-GM	0.165	0.086	0.083	0.247	-	0.039		●		●	●							M184 M185

*DLC: DLC Coated Carbide

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

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Inserts sold in 10 piece boxes.

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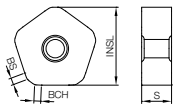
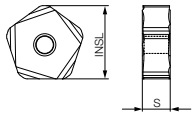
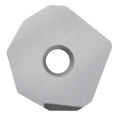
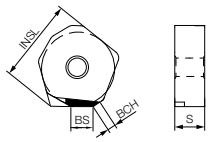
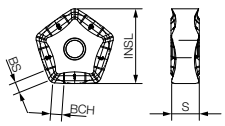
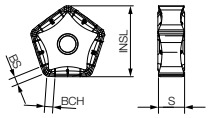
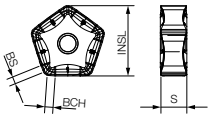
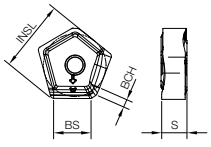
Milling Inserts

with Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel												
	Carbon/Alloy Steel												
M	Austenitic Stainless Steel												
	Martensitic Stainless Steel												
	Precipitation Hardened Stainless Steel												
K	Gray Cast Iron			★		■	☆			★	☆		
	Nodular Cast Iron			★		■	☆			☆	★		
N	Non-ferrous Metals												
S	Heat-Resistant Alloys												
	Titanium Alloy												
H	Hard Materials												

Insert (Right-hand Shown)		Part Number	Dimensions (in)					Cermet	CVD Coated Carbide		MEGACOAT (PVD Coated Carbide)					SNC*	CVD SNC*	CBN	Toolholder Page
			INSL	S	D1	BCH	BS	TN100M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	KS6050	CS7050	KBN475	
High Speed		**PNEA 1106XNTN-T01020**	0.667	0.256	-	0.059	0.059									●	●		
High Speed (with Chipbreaker)		**PNEG 1106XNTR-T00515**	0.672	0.250	-	-	-									●	●		
 Wiper Insert (2-edge)		**PNEG 1106XNTR-T01015W**	0.711	0.256	-	0.067	0.189											●	
Surface Finish Oriented		**PNEG 1106XNEN-GL**	0.676	0.250	-	0.102	0.102			●		●	●						M48 M49 M50
General Purpose		**PNMG1106XNEN-GM**	0.678	0.250	-	0.079	0.079			●		●	●						
Tough Edge		**PNMG1106XNEN-GH**								●		●	●						
Wiper Insert (2-edge)		**PNEG 1106XNER-W**	0.709	0.250	-	0.079	0.394			●		●	●						

*SNC: Silicon Nitride Ceramic
*CVD SNC: CVD Coated Silicon Nitride Ceramic

PNEG1106XNER-W inserts sold in 5 piece boxes. *PNEG1106XNTR-T01015W inserts sold in 1 piece boxes.* *Other inserts sold in 10 piece boxes.*

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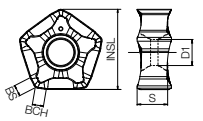
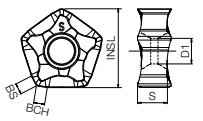
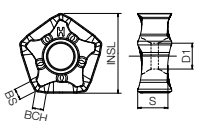
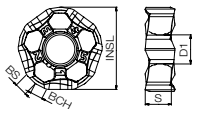
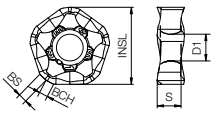
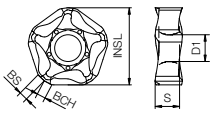
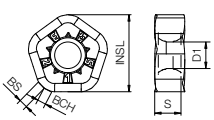
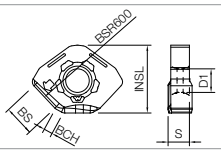
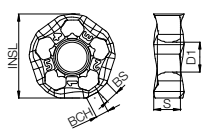
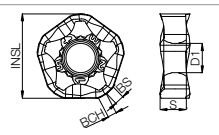
Milling Inserts
with Hole

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■				☆	★		☆			
	Carbon/Alloy Steel	■				☆	★		☆			
M	Austenitic Stainless Steel					★	☆		☆			
	Martensitic Stainless Steel			★		☆						
	Precipitation Hardened Stainless Steel					★						
K	Gray Cast Iron							★		☆		
	Nodular Cast Iron							★		☆		
N	Non-ferrous Metals											
S	Heat-Resistant Alloys			★		☆			☆			
	Titanium Alloy					★				☆		
H	Hard Materials						■				★	

Insert (Right-hand Shown)		Part Number	Dimensions (in)					Cermet		CVD Coated Carbide		MEGACOAT (PVD Coated Carbide)						Toolholder Page
			INSL	S	D1	BCH	BS	TN620M	TN100M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	PR015S	
General Purpose		PNMU 0905XNER-GM	0.575	0.219	0.185	0.079	0.079	●				●	●	●				M37 M38
Low Cutting Force		PNMU 0905XNER-SM										●	●	●				
Tough Edge (Heavy Milling)		PNMU 0905XNER-GH										●	●	●			●	
Ground Edge High Precision (Finishing)		PNEU 1205ANER-GL	0.689	0.219	0.244	0.106	0.106	●		●		●	●	●	●	●		M31 M32 M33
General Purpose		PNMU 1205ANER-GM	0.704	0.219	0.244	0.079	0.079	●		●		●	●	●	●	●		
Low Cutting Force		PNMU 1205ANER-SM								●		●	●	●	●	●		
Tough Edge (Heavy Milling)		PNMU 1205ANER-GH	0.708	0.243	0.244	0.079	0.079			●		●	●	●	●	●	●	
Wiper Insert (2-edge)		PNEU 1205ANER-W	0.703	0.219	0.244	0.091	0.319	●	●	●		●	●	●				
Ground Edge High Precision (Finishing)		PNEU 1205ANEL-GL	0.689	0.219	0.244	0.106	0.106	●		●		●	●	●				M32
General Purpose		PNMU 1205ANEL-GM	0.704	0.219	0.244	0.079	0.079	●		●		●	●	●				

PNEU-W inserts sold in 5 piece boxes.

Other inserts sold in 10 piece boxes.

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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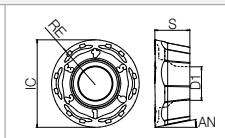
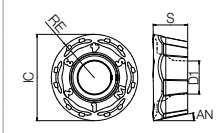
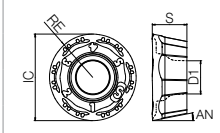
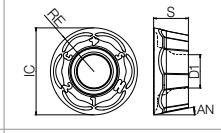
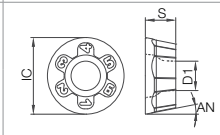
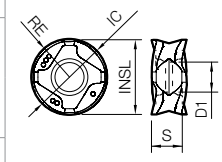
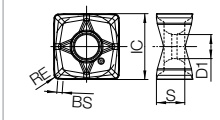
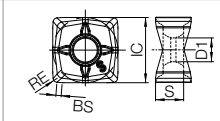
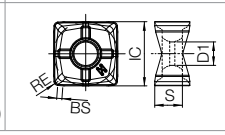
Milling Inserts

with Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■				☆	★					
	Carbon/Alloy Steel	■				☆	★					
M	Austenitic Stainless Steel					★	☆					
	Martensitic Stainless Steel			★		☆						
	Precipitation Hardened Stainless Steel					★						
K	Gray Cast Iron							★				
	Nodular Cast Iron							★				
N	Non-ferrous Metals											
S	Heat-Resistant Alloys			★		☆						
	Titanium Alloy					★						
H	Hard Materials						■					★

Insert (Right-hand Shown)		Part Number	Dimensions (in)						Angle (°)	Cermet		CVD Coated Carbide		MEGACOAT (PVD Coated Carbide)						Toolholder Page
			IC	S	D1	INSL	BS	RE	AN	TN620M	TN100M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	PR015S	
General Purpose (G-Class)		RDGT 0803M0ER-GM	0.315	0.125	0.118	-	-	0.157	15°			●		●	●	●				M237 ~ M239
		RPGT 10T3M0ER-GM	0.394	0.156	0.138			0.197				●		●	●	●				M235 ~ M239
		1204M0ER-GM	0.472	0.187	0.181			0.236	11°			●		●	●	●				
		1605M0ER-GM	0.630	0.219	0.228			0.315				●		●	●	●				
General Purpose (M-Class)		RDMT 0803M0ER-GM	0.315	0.125	0.118	-	-	0.157	15°			●		●	●	●				M237 ~ M239
		RPMT 10T3M0ER-GM	0.394	0.156	0.138			0.197				●		●	●	●				M235 ~ M239
		1204M0ER-GM	0.472	0.187	0.181			0.236	11°			●		●	●	●				
		1605M0ER-GM	0.630	0.219	0.228			0.315				●		●	●	●				
For Stainless Steel / Low Cutting Force		RDGT 0803M0ER-SM	0.315	0.125	0.118	-	-	0.157	15°			●		●	●					M237 ~ M239
		RPGT 10T3M0ER-SM	0.394	0.156	0.138			0.197				●		●	●					M235 ~ M239
		1204M0ER-SM	0.472	0.187	0.181			0.236	11°			●		●	●					
		1605M0ER-SM	0.630	0.219	0.228			0.315				●		●	●					
Tough Edge (Heavy Milling)		RDMT 0803M0EN-GH	0.315	0.125	0.118	-	-	0.157	15°			●		●	●	●				M237 ~ M239
		RPMT 10T3M0EN-GH	0.394	0.156	0.138			0.197				●		●	●	●				M235 ~ M239
		1204M0EN-GH	0.472	0.187	0.181			0.236	11°			●		●	●	●				
		1605M0EN-GH	0.630	0.219	0.228			0.315				●		●	●	●				
Flat Top (Heavy Milling)		RPMW 1204M0TN	0.472	0.187	0.181	-	-	0.236	11°					●	●					M235 ~ M239
		1605M0TN	0.630	0.219	0.228			0.315						●	●					
General Purpose		ROMU 1204M0ER-GM	0.472	0.187	0.181	0.465	-	0.236	-			●		●	●	●				M228 M229 M230 M231
		1605M0ER-GM	0.630	0.216	0.244	0.622		0.315				●		●	●	●				
Low Cutting Force		ROMU 1204M0ER-SM	0.472	0.187	0.181	0.465		0.236				●		●	●					
		1605M0ER-SM	0.630	0.216	0.244	0.622		0.315				●		●	●					
Tough Edge (Heavy Milling)		ROMU 1204M0ER-GH	0.472	0.187	0.181	0.465		0.236				●		●	●	●				
		1605M0ER-GH	0.630	0.216	0.244	0.622		0.315				●		●	●	●				
General Purpose		SNMU 130508EN-GM	0.512	0.217	0.185	-	0.039	1/32	-	●				●	●	●				M119 M120
Low Cutting Force		SNMU 130508EN-SM												●	●	●				
Tough Edge (Heavy Milling)		SNMU 130508EN-GH												●	●	●			●	

Inserts sold in 10 piece boxes.

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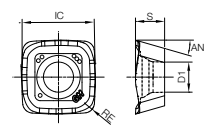
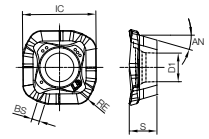
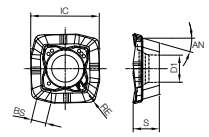
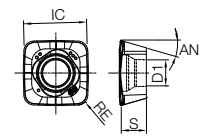
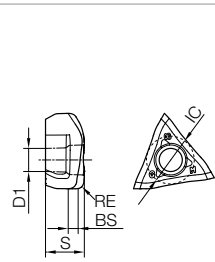
Milling Inserts
with Hole

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■				☆	★							
	Carbon/Alloy Steel	■				☆	★							
M	Austenitic Stainless Steel					★	☆							
	Martensitic Stainless Steel			★		☆								
	Precipitation Hardened Stainless Steel					★								
K	Gray Cast Iron							★						
	Nodular Cast Iron							★						
N	Non-ferrous Metals											★	☆	
S	Heat-Resistant Alloys			★		☆								
	Titanium Alloy					★								
H	Hard Materials						■				★			

Insert (Right-hand Shown)		Part Number	Dimensions (in)					Angle (°)	Cermet		CVD Coated Carbide		MEGACOAT (PVD Coated Carbide)						DLC*	Carbide	Toolholder Page
			IC	S	D1	BS	RE	AN	TN620M	TN100M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	PR015S	PDL025	GW25	
General Purpose		SOMT 100420ER-GM	0.406	0.180	0.181	-	0.079	16°			●		●	●	●						M164 M165 M167 M168 M169 M170
		140520ER-GM	0.557	0.219	0.228						●		●	●	●						
Large D.O.C.		SOMT 100420ER-LD	0.411	0.180	0.181	0.035	0.079	16°			●		●	●	●						
		140520ER-LD	0.581	0.219	0.228	0.063					●		●	●	●						
Wiper Edge		SOMT 100420ER-FL	0.411	0.180	0.181	0.055	0.079	16°			●		●	●	●						
		140514ER-FL	0.574	0.219	0.228	0.122	0.055				●		●	●	●						
Tough Edge		SOMT 100420ER-GH	0.411	0.180	0.179	-	0.079	16°					●	●	●			●			
		140520ER-GH	0.558	0.219	0.228								●	●	●			●			
General Purpose		TOMT 060504ER-GM	0.283	0.224	0.134	0.075	1/64	-			●		●	●	●						M86 M87 M88
		060508ER-GM				0.059	1/32	-			●		●	●	●						
Low Cutting Force		TOMT 060508ER-SM	0.283	0.224	0.134	0.059	1/32	-			●		●	●							

*DLC: DLC Coated Carbide

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

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Inserts sold in 10 piece boxes.
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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NEW ITEMS!

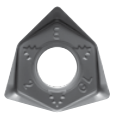
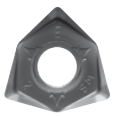
Milling Inserts

with Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■				☆	★						
	Carbon/Alloy Steel	■				☆	★						
M	Austenitic Stainless Steel					★	☆						
	Martensitic Stainless Steel			★		☆							
	Precipitation Hardened Stainless Steel					★							
K	Gray Cast Iron							★					
	Nodular Cast Iron							★					
N	Non-ferrous Metals											★	☆
S	Heat-Resistant Alloys			★		☆							
	Titanium Alloy					★							
H	Hard Materials						■				★		

Insert (Right-hand Shown)	Part Number	Dimensions (in)					Angle (°)	Cermet		CVD Coated Carbide		MEGACOAT (PVD Coated Carbide)						DLC*	Carbide	Toolholder Page
		IC	S	D1	BS	RE	AN	TN620M	TN100M	CA6535	CA420M	PR1535	PR1525	PR1510	PR1225	PR1210	PR015S	PDL025	GW25	
NEW General Purpose	WNMU 050408EN-GM	0.346	0.165	0.134	0.028	0.031						●	●	●						M114 M115
NEW Low Cutting Force	WNMU 050408EN-SM	0.346	0.165	0.134	0.028	0.031	-					●	●	●						
NEW Tough Edge (Heavy Milling)	WNMU 050408EN-GH	0.346	0.165	0.134	0.028	0.031						●	●	●			●			
 Surface Finish Oriented (Ground Tolerance)	WNEU 080608EN-GL	0.552	0.262	0.244	0.059	0.031		●		●		●	●	●						M108 M109 M111
General Purpose	WNMU 080604EN-GM	0.552	0.262	0.244	0.067	0.016		●		●		●	●	●						
	080608EN-GM	0.552	0.262	0.244	0.051	0.031		●		●		●	●	●						
 Low Cutting Force	WNMU 080608EN-SM	0.552	0.262	0.244	0.051	0.031	-			●		●	●	●						
Tough Edge (Heavy Milling)	WNMU 080608EN-GH	0.552	0.262	0.244	0.051	0.031				●		●	●	●			●			
Aluminum / Non-Ferous Metals (3-Edge)	WNGT 080608FN-AM	0.552	0.262	0.244	0.059	0.031												●	●	

*DLC: DLC Coated Carbide

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Inserts sold in 10 piece boxes.

Milling Inserts

with Hole

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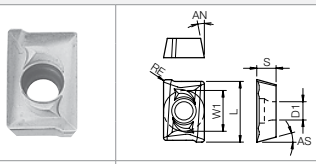
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		TN100M	CA6535	PR1535	PR1225	PR1230	PR1210	PR830	PDL025	GW25
		Cermet	CVD*	MN*	MEGACOAT			PVD*	DLC*	Carbide
P	Free-Cutting Steel	■		☆	★	★		☆		
P	Carbon/Alloy Steel	■		☆	★	★		☆		
M	Austenitic Stainless Steel			★	☆	☆		☆		
M	Martensitic Stainless Steel		★	☆						
M	Precipitation Hardened Stainless Steel			★						
K	Gray Cast Iron						★			
K	Nodular Cast Iron						★			
N	Non-ferrous Metals								★	☆
S	Heat-Resistant Alloys		★	☆	★	★				
S	Titanium Alloy			★			★			☆
H	Hard Materials				■			□		

Insert (Right-hand Shown)	Part Number	W1	S	D1	L	RE	AS	AN	TN100M	CA6535	PR1535	PR1225	PR1230	PR1210	PR830	PDL025	GW25	Toolholder Page
	APKT 1003PDER-V	0.265	0.125	0.110	0.413	0.016	11°	15°	●			●		●	●			M160
	100308PDER-V					0.031						●		●				
	APKT 1604PDER-V	0.375	0.187	0.177	0.669	0.031			●			●		●	●			
	160416PDER-V					0.063			●									
3-Notch	APMT 250608ER-NB3	0.625	0.250	0.256	0.984	0.031	15°	11°					●	●				M131 M132 M133
	250616ER-NB3					0.063							●	●				
	250640ER-NB3					0.157							●					
	APMT 250616EL-NB3					0.063							●					-
4-Notch	APMT 250608ER-NB4	0.625	0.250	0.256	0.984	0.031	15°	11°					●	●				M131 M132 M133
	250616ER-NB4					0.063							●	●	△			
	250640ER-NB4					0.157							●					
	APMT 250616EL-NB4					0.063							●					-
3-Notch / Low Cutting Force	APMT 250616ER-NB3P	0.625	0.250	0.256	0.984	0.063	15°	11°					●	●				M131 M132 M133
4-Notch / Low Cutting Force	APMT 250616ER-NB4P	0.625	0.250	0.256	0.984	0.063	15°	11°					●	●				
	BDMT 070302ER-JS	0.181	0.102	0.091	0.264	0.008	16°	15°		●	●	●			△			M80 M81
	070304ER-JS					0.016				●	●	●			△			
	070308ER-JS					0.031				●	●	●			△			
	BDMT 070302ER-JT	0.181	0.102	0.091	0.264	0.008	16°	15°		●	●	●		●	△			
	070304ER-JT					0.016				●	●	●		●	△			
	070308ER-JT					0.031				●	●	●		●				
Non-ferrous Metals	BDGT 11T302FR-JA	0.264	0.150	0.110	0.433	0.008	18°	13°								●	●	M68 ~ M73
	11T304FR-JA					0.016										●	●	
	11T308FR-JA					0.031										●	●	
	BDGT 170404FR-JA	0.378	0.193	0.173	0.669	0.016	18°	13°								●	●	
	170408FR-JA					0.031										●	●	
	170420FR-JA					0.079										●	●	
	170431FR-JA					0.122										●	●	
Staniless Steel / Low Cutting Force	BDMT 110302ER-JS	0.248	0.118	0.110	0.433	0.008	18°	15°		●	●	●			△			M68 ~ M73 M105
	110304ER-JS					0.016				●	●	●			△			
	110308ER-JS					0.031				●	●	●			△			
	BDMT 11T302ER-JS	0.264	0.150	0.110	0.433	0.008	18°	13°		●	●	●			△			
	11T304ER-JS					0.016				●	●	●			△			
	11T308ER-JS					0.031				●	●	●			△			
	BDMT 170404ER-JS	0.378	0.193	0.173	0.669	0.016	18°	13°		●	●	●			△			
	170408ER-JS					0.031				●	●	●			△			

*CVD: CVD Coated Carbide
*MN: MEGACOAT NANO
*PVD: PVD Coated Carbide
*DLC: DLC Coated Carbide

Inserts sold in 10 piece boxes.

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Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

KYOCERA
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Milling Inserts

with Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■			★	★				
	Carbon/Alloy Steel	■			★	★				
M	Austenitic Stainless Steel			★	☆	☆				
	Martensitic Stainless Steel		★	☆						
	Precipitation Hardened Stainless Steel			★						
K	Gray Cast Iron						★			
	Nodular Cast Iron						★			
N	Non-ferrous Metals									
S	Heat-Resistant Alloys		★	☆	★	★				
	Titanium Alloy			★			★			
H	Hard Materials				■					

Insert (Right-hand Shown)	Part Number	Dimensions (in) W1	S	D1	L	RE	Angle (°) AS	AN	Cermet TN100M	CVD* CA6535	MN* PR1535	MEGACOAT PR1225	PR1230	PR1210	PVD* PR830	Carbide GW25	Toolholder Page
	BDMT 110302ER-JT	0.248	0.118	0.110	0.433	0.008	18°	15°		●	●	●		●	△		M68 ~ M73
	BDMT 110304ER-JT					0.016				●	●	●		●	△		
	BDMT 110308ER-JT					0.031				●	●	●		●	△		
	BDMT 11T302ER-JT	0.264	0.150	0.110	0.433	0.008	18°	13°		△	●	●		●	△		
	BDMT 11T304ER-JT					0.016			●	●	●	●		●	△		
	BDMT 11T308ER-JT					0.031			●	●	●	●		●	△		
	BDMT 11T312ER-JT					0.047				●	●	●		●	△		
	BDMT 11T316ER-JT					0.063				●	●	●		●	△		
	BDMT 11T320ER-JT					0.079				●	●	●		●	△		
	BDMT 11T324ER-JT					0.094				●	●	●		●	△		
	BDMT 11T331ER-JT					0.122				●	●	●		●	△		
	BDMT 170404ER-JT	0.378	0.193	0.173	0.669	0.016	18°	13°		●	●	●		●	△		
	BDMT 170408ER-JT					0.031			●	●	●	●		●	△		
	BDMT 170412ER-JT					0.047				●	●	●		●	△		
	BDMT 170416ER-JT					0.063				●	●	●		●	△		
	BDMT 170420ER-JT					0.079				●	●	●		●	△		
	BDMT 170424ER-JT					0.094				●	●	●		●	△		
	BDMT 170431ER-JT					0.122				●	●	●		●	△		
	BDMT 170440ER-JT					0.157				△	●	●		●	△		
2-Notch	BDMT 11T308ER-N2	0.264	0.150	0.110	0.433	0.031	18°	13°			●	●	●	●	△		M96 ~ M99
3-Notch	BDMT 11T308ER-N3	0.264	0.150	0.110	0.433	0.031	18°	13°			●	●	●	●	△		
3-Notch	BDMT 170408ER-N3	0.378	0.193	0.173	0.669	0.031	18°	13°			●	●	●	●	△		
4-Notch	BDMT 170408ER-N4	0.378	0.193	0.173	0.669	0.031	18°	13°			●	●	●	●	△		
	GOMT 08T208ER-D	0.205	0.109	0.091	0.343	0.031	13°	17°				●		●	△		M194
	GOMT 100308ER-D	0.258	0.130	0.110	0.421							●		●	△		
	GOMT 13T308ER-D	0.329	0.152	0.134	0.520							●		●	△		
	GOMT 160408ER-D	0.395	0.187	0.173	0.657							●		●	△		
	JOMT 08T208ER-D	0.202	0.109	0.091	0.335	0.031	17°	13°				●		●	△		
	JOMT 100308ER-D	0.252	0.125	0.110	0.402							●		●	△		
	JOMT 13T308ER-D	0.318	0.146	0.134	0.520							●		●	△		
	JOMT 160408ER-D	0.383	0.177	0.173	0.657							●		●	△		

*CVD: CVD Coated Carbide *PVD: PVD Coated Carbide
*MN: MEGACOAT NANO

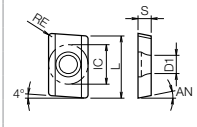
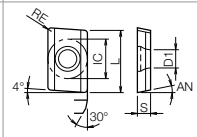
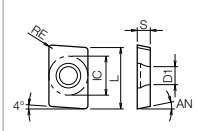
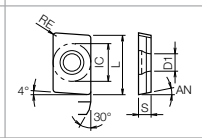
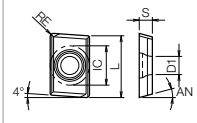
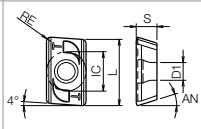
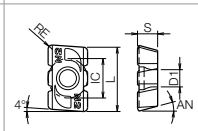
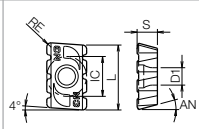
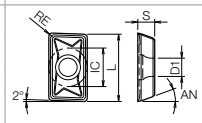
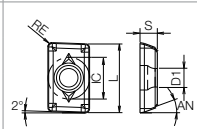
Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Milling Inserts
with Hole

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		TN100M	TC60	CA6535	PR1535	PR1225	PR1230	PR1210	PR830	KW10
P	Free-Cutting Steel	■				★			☆	
	Carbon/Alloy Steel	■				★			☆	
M	Stainless Steel					★				
K	Gray Cast Iron							★		☆
	Nodular Cast Iron							★		
N	Non-ferrous Metals									★
S	Heat-Resistant Alloys					★				
	Titanium Alloy							★		☆
H	Hard Materials					■			□	

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	IC	S	D1	L	RE	AN	TN100M	TC60	CA6535	PR1535	PR1225	PR1230	PR1210	PR830	KW10	Toolholder Page
	NDCT 831R-B	NDCT 090204R-B	0.250	0.094	0.110	0.374	0.016	15°	●	△								M161
	831TR	090204TR							●									M138
	831FR	090204FR															●	M161
	832R-B	090208R-B					0.031		●	△								M161
	NDCT 032TR	NDCT 120208TR	0.313	0.094	0.134	0.500	0.031	15°	●									M138
	032FR	120208FR															●	M161
	NDCT 322FR-B	NDCT 150308FR-B	0.375	0.125	0.177	0.591	0.031	15°									●	M161
	322FR	150308FR															●	M139 M161
	NDCT 322TRX	NDCT 150308TRX	0.375	0.125	0.173	0.591	0.031	15°	●									M139 M140
	NDCW 032TR	NDCW 120208TR	0.313	0.094	0.134	0.500	0.031	15°		△								M161
	NDCW 3205TR	NDCW 150302TR	0.375	0.125	0.177	0.591	0.008	15°	●									M139
	321TR	150304TR					0.016		●									
	322TR	150308TR					0.031		●									
	325TR	150320TR					0.079		●									
	3275TR	150330TR					0.118		●									
	3210TR	150340TR					0.157		●									
	NDCW 322TRX	NDCW 150308TRX	0.375	0.125	0.173	0.591	0.031	15°	●									M139 M140
	322FRX	150308FRX															●	M161
	NDMM 831ER-SP	NDMM 090204ER-SP	0.250	0.094	0.110	0.374	0.016	15°	△	△								M138
	NDMM 031ER-SP	NDMM 120204ER-SP	0.313	0.094	0.134	0.500	0.016		△									M161
	032ER-SP	120208ER-SP					0.031		△									
	NDMM 321ER-SP	NDMM 150304ER-SP	0.375	0.125	0.173	0.591	0.016		△									M139
	322ER-SP	150308ER-SP					0.031		△									M140 M161
	(Use ISO Part Number)	NDMM 12T308ER-T	0.298	0.156	0.134	0.500	0.031	15°	△							△	△	-
2-Notch 	(Use ISO Part Number)	NDMM 12T308ER-N2	0.307	0.156	0.134	0.500	0.031	15°	△								△	
3-Notch 	(Use ISO Part Number)	NDMM 12T308ER-N3	0.307	0.156	0.134	0.500	0.031	15°	△								△	
	(Use ISO Part Number)	NDMT 080208ER-D	0.200	0.094	0.087	0.335	0.031	15°	●				●		●		●	
		10T208ER-D	0.247	0.109	0.110	0.402			●				●		●		●	
		NEMT 120308ER-D	0.302	0.125	0.134	0.500	0.031	20°	●				●		●		●	
		16T308ER-D	0.364	0.156	0.173	0.638			●				●		●		●	
Tough Edge 	(Use ISO Part Number)	NDMT 080208ER-DH	0.200	0.094	0.087	0.335	0.031	15°	●				●		●			M196
		10T208ER-DH	0.247	0.109	0.110	0.402			●				●		●		●	
		NEMT 120308ER-DH	0.302	0.125	0.134	0.500	0.031	20°	●				●		●		●	
		16T308ER-DH	0.364	0.156	0.173	0.638			●				●		●		●	

*CVD: CVD Coated Carbide *PVD: PVD Coated Carbide
*MN: MEGACOAT NANO

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

KYOCERA
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Milling Inserts
with Hole

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		TN100M	CA6535	PR1535	PR1225	PR1230	PR1210	PR830	PR915	KW10
P	Free-Cutting Steel	■			★	★				
	Carbon/Alloy Steel	■			★	★				
M	Stainless Steel				★	★				
K	Gray Cast Iron						★			☆
	Nodular Cast Iron						★			
N	Non-ferrous Metals									★
S	Heat-Resistant Alloys				★	★				
	Titanium Alloy						★			☆
H	Hard Materials				■	■				

Insert (Right-hand Shown)	Part Number	IC L	S	D1	BS W1	RE	AN	AS	TN100M	CA6535	PR1535	PR1225	PR1230	PR1210	PR830	PR915	KW10	Toolholder Page
	OFMR 070405EN-SH	0.708	0.194	-	-	0.047	26°	26°				●		△				-
	OFMR 070408EN-GT	0.703	0.202	-	-	0.043						●		●				
	OFMT 050405EN-GT	0.526	0.190	0.181	0.020	0.055	26°	26°				●		●	△			M52
	070408EN-GT	0.703	0.202	0.232	0.031	0.047						●		●	△			
	OFMT 050405ER-SH	0.530	0.187	0.173	0.020	0.067	26°	22°				●		●	△			
	070405EN-SH	0.708	0.192	0.228		-		26°				●		●	△			
	RDFG 08FR	0.260	0.083	0.122	0.315	0.157	15°	-								●		M224
	10FR	0.315	0.106	0.142	0.394	0.197										●		
	12FR	0.370	0.126	0.161	0.472	0.236										●		
	16FR	0.445	0.165	0.201	0.630	0.315	10°	-								●		
	20FR	0.555	0.205	0.240	0.787	0.394										●		
	25FR	0.610	0.244	0.240	0.984	0.492										●		
	RDHX 0702M0T	0.276	0.094	0.110	-	-	15°	-					●					-
	1003M0T	0.394	0.125	0.150									●					
	12T3M0T	0.472	0.156										●					
Tough Edge	RDMT 08T2M0-H	0.315	0.109	0.134	-	-	15°	-					●	●			●	-
Low Cutting Force	RPMT 10T3M0	0.394	0.156	0.134	-	-	11°	-						●			●	-
	1204M0	0.472	0.187	0.173									●	●			●	
Tough Edge	RPMT 1204M0-H	0.472	0.187	0.173	-	-	11°	-	●				●	●			●	
	1606M0-H	0.630	0.250	0.217					●				●	●			●	
	2006M0-H	0.787	0.250	0.256									●	●			●	

*CVD: CVD Coated Carbide
*MN: MEGACOAT NANO

Inserts sold in 10 piece boxes. *RDFG inserts sold in 2 piece boxes.*

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
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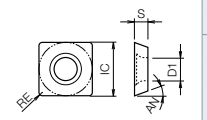
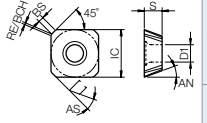
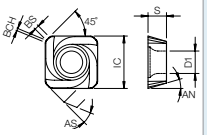
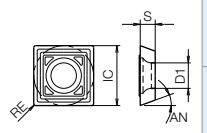
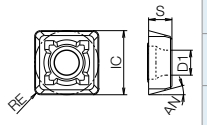
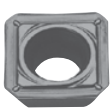
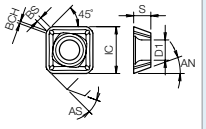
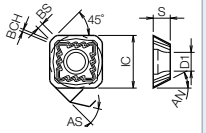
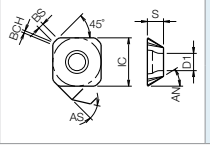
Milling Inserts
with Hole

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		Cermet	CVD*	MN*	MEGACOAT			Carbide	
		TN100M	CA6535	PR1535	PR1225	PR1230	PR1210	KW10	
P	Free-Cutting Steel	■			★	★			
P	Carbon/Alloy Steel	■			★	★			
M	Stainless Steel				★	★			
K	Gray Cast Iron						★	☆	
K	Nodular Cast Iron						★		
N	Non-ferrous Metals							★	
S	Heat-Resistant Alloys				★	★			
S	Titanium Alloy						★	☆	
H	Hard Materials				■	■			

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	Dimensions (in) IC	S	D1	RE BCH	BS	Angle (°) AN	AS	Cermet TN100M	CVD* CA6535	MN* PR1535	MEGACOAT PR1225	PR1230	PR1210	Carbide KW10	Toolholder Page
	(Use ISO Part Number)	SDKW 09T204TN	0.375	0.109	0.134	-	0.016	15°	-	●			●				
		09T204FN														●	
	SEKW 421TN	SEKW 120304TN	0.500	0.125	0.217	-	0.016	20°	-	●			●				M248
	421FN	120304FN														●	
	422TN	120308TN					0.031			●			●				
	422FN	120308FN														●	
	(Use ISO Part Number)	SDKW 1204AESN	0.500	0.187	0.217	RE= 0.039	0.059	15°	20°				●				-
		1204AETN													●		
	SEKW 43AFTN	SEKW 1204AFTN				BCH= 0.020	0.067	20°	25°	●			●		●		-
	(Use ISO Part Number)	SDMT 1204AESR-H	0.500	0.187	0.217	R0.039	0.031	15°	20°				●				-
Low Cutting Force 	SDMT 31.81C	SDMT 09T204C	0.375	0.109	0.134	-	0.016	15°	-	●			●			●	M248
	SEMT 421C	SEMT 120304C	0.500	0.125	0.217	-	0.016	20°	-				●			●	
	SDMT 221E-K	SDMT 060304E-K	0.250	0.125	0.110	-	0.016	15°	-					●	●	●	M252
	(Use ISO Part Number)	SDMT 080308E-K	0.315		0.134		0.031							●	●	●	
	SDMT 432E-K	SDMT 120408E-K	0.500	0.187	0.173									●	●	●	
 	SEKT 43AFEN-S	SEKT 1204AFEN-S	0.500	0.187	0.217	0.020	0.067	20°	25°	●			●				-
	(Use ISO Part Number)	SOMT 0903AXEN-J	0.375	0.125	0.134	0.020	0.043	27°	32°	●						●	-
	(Use ISO Part Number)	SOMW 0903AXTN	0.375	0.125	0.134	0.020	0.043	27°	32°	●							
		0903AXFN														●	

*CVD: CVD Coated Carbide
*MN: MEGACOAT NANO

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

(Customer Service) 800.823.7284 - Option 1
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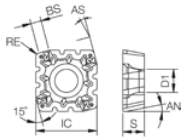
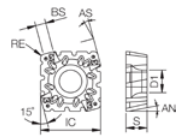
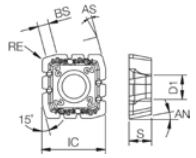
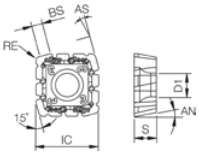
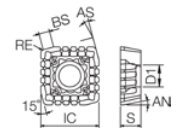
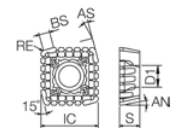
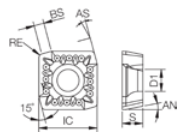
Inserts sold in 10 piece boxes.
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Milling Inserts
with Hole

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel				★	★			
	Carbon/Alloy Steel				★	★			
M	Stainless Steel				★	★			
K	Gray Cast Iron						★		
	Nodular Cast Iron						★		
N	Non-ferrous Metals								
S	Heat-Resistant Alloys				★	★			
	Titanium Alloy						★		
H	Hard Materials				■	■			

Insert (Right-hand Shown)		Part Number	Dimensions (in)					Angle (°)		Cermet	CVD*	MN*	MEGACOAT			Carbide	Toolholder Page
			IC	S	D1	RE	BS	AN	AS	TN100M	CA6535	PR1535	PR1225	PR1230	PR1210	KW10	
2-Notch / General Purpose		**SPMT 1806EDER-NB2**	0.709	0.250	0.268	R0.047	0.122	11°	15°				●	●	●		M54 M55
3-Notch / General Purpose		**SPMT 1806EDER-NB3**	0.709	0.250	0.268	R0.047	0.122	11°	15°				●	●	●		
2-Notch / Tough Edge		**SPMT 1806EDSR-NB2T**	0.709	0.250	0.268	R0.047	0.122	11°	15°					●	●		M54 M55
		SPMT 1806EDSL-NB2T												△			-
3-Notch / Tough Edge		**SPMT 1806EDSR-NB3T**	0.709	0.250	0.268	R0.047	0.122	11°	15°					●	●		M54 M55
		SPMT 1806EDSL-NB3T												△			-
4-Notch / Low Cutting Force		**SPMT 1806EDER-NB2P**	0.709	0.250	0.268	R0.047	0.122	11°	15°				●	●	●		
5-Notch / Low Cutting Force		**SPMT 1806EDER-NB3P**	0.709	0.250	0.268	R0.047	0.122	11°	15°				●	●	●		M54 M55
Without Notches		**SPMT 1806EDER-V**	0.709	0.250	0.268	R0.047	0.122	11°	15°				●	●	●		

*CVD: CVD Coated Carbide
*MN: MEGACOAT NANO

Inserts sold in 10 piece boxes.

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Contact your local Kyocera sales engineer to upgrade old products to new technology

Milling Inserts

with Hole

Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel			☆	★		★	★		
	Carbon/Alloy Steel			☆	★		★	★		
M	Austenitic Stainless Steel			★	☆		★	★		
	Martensitic Stainless Steel		★	☆			★	★		
	Precipitation Hardened Stainless Steel			★			★	★		
K	Gray Cast Iron				☆	★			★	☆
	Nodular Cast Iron				☆	★			★	
N	Non-ferrous Metals									★
S	Heat-Resistant Alloys		★	☆			★	★		
	Titanium Alloy			★					★	☆
H	Hard Materials				■		■	■		

Insert (Right-hand Shown)		Part Number	Dimensions (in)						Angle (°)	Cermet	CVD*	MEGACOAT NANO			MEGACOAT			Carbide	Toolholder Page
			IC	S	D1	BS	L	RE	AN	TN100M	CA6535	PR1535	PR1525	PR1510	PR1225	PR1230	PR1210	KW10	
3-Notch		**SPMT 180616EN-NB3**	0.709	0.250	0.268	-	-	0.063	11°							●	●		M126 M127
4-Notch		**SPMT 180616EN-NB4**	0.709	0.250	0.268	-	-	0.063	11°							●	●		
3-Notch / Low Cutting Force		**SPMT 180616EN-NB3P**	0.709	0.250	0.268	-	-	0.063	11°							●	●		
4-Notch / Low Cutting Force		**SPMT 180616EN-NB4P**	0.709	0.250	0.268	-	-	0.063	11°							●	●		
Without Notch		**SPMT 180616EN-V**	0.709	0.250	0.268	-	-	0.063	11°							●	●		
		SPMT 060204E-Z	0.250	0.094	0.098	-	-	0.016	11°						●		●	●	M250
		060208E-Z						0.031							●		●	●	
		SPMT 090304E-Z	0.375	0.125	0.134	-	-	0.016	11°						●		●	●	
		090308E-Z						0.031							●		●	●	
		TEMT 250624-AQ	0.625	0.250	0.217	-	0.906	0.094	20°									●	-

*CVD: CVD Coated Carbide

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Inserts sold in 10 piece boxes.

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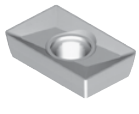
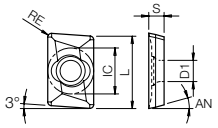
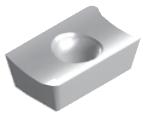
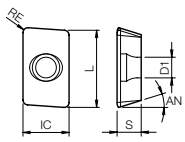
Milling Inserts
with Hole

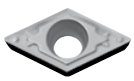
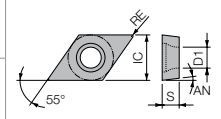
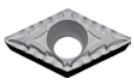
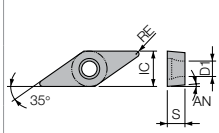
Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■	□					
	Carbon/Alloy Steel	■	□					
M	Austenitic Stainless Steel				★			
	Martensitic Stainless Steel			★	☆			
	Precipitation Hardened Stainless Steel				★			
K	Gray Cast Iron							
	Nodular Cast Iron							
N	Non-ferrous Metals							★
S	Heat-Resistant Alloys			★	☆	☆		
	Titanium Alloy				★			
H	Hard Materials							

Insert (Right-hand Shown)		Part Number	Dimensions (in)					Angle (°)	Cermet		CVD*	MEGACOAT NANO		Carbide	Toolholder Page
			IC	S	D1	L	RE	AN	TN100M	TC60	CA6535	PR1535	PR1525	KW10	
		**XPMT 090208**	1/4	0.094	0.110	0.375	0.031	15°	●		●	●	●		M156 M247
		XPMT 15T304	3/8	0.156	0.157	0.607	0.016	15°	●	△	●	●		●	M156 M157 M158 M247
		15T308					0.031		●		●	●			
		15T316					0.063			△	●	●			
		15T324					0.094				●	●			
		15T331					0.122			△	●	●			
		15T364					0.250				●	●			
		**APET 1604PDFR**	3/8	0.188	0.157	0.630	0.039	11°						●	M159 M247
		160416					0.062							●	
		160431					0.125							●	

*CVD: CVD Coated Carbide

API Ring Groover Inserts
with Hole

Insert (Right-hand Shown)		Part Number (ANSI)	Part Number (ISO)	Dimensions (in)				Angle (°)	CVD Coated Carbide			MEGACOAT Coated Carbide		PVD Coated Carbide	Toolholder Page
				IC	S	D1	RE	AN	CA525	CA5525	CA6525	PR1225	PR1425	PR660	
		**DCMT 3252HQ**	**DCMT 11T308HQ**	3/8	5/32	0.173	1/32	7°	●	●	●		△	△	M245
		**DCMT 3253CQ**	**DCMT 11T312CQ**	3/8	5/32	0.173	3/64	7°		●	●			●	
		**VCMT 222HQ**	**VCMT 110308HQ**	1/4	1/8	0.110	1/32	7°				●			
		VCMT 332HQ	**VCMT 160408HQ**	3/8	3/16	0.173	1/32	7°	●	●	●			●	
		333HQ	**160412HQ**	3/8	3/16	0.173	3/64	7°				●			

Inserts sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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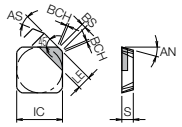
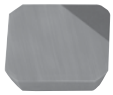
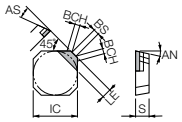
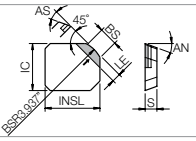
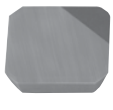
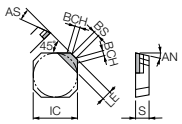
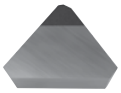
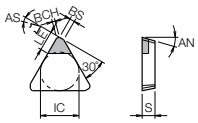
Milling Inserts

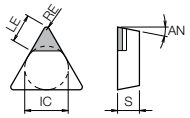
P C D

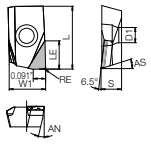
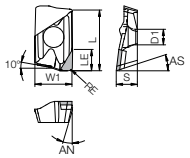
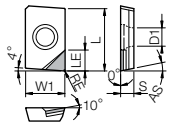
Usage Classification

★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel			
	Carbon/Alloy Steel			
M	Stainless Steel			
K	Gray Cast Iron			
	Nodular Cast Iron			
N	Non-ferrous Metals	□		■
S	Heat-Resistant Alloys			
	Titanium Alloy	□		■
H	Hard Materials			

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	Dimensions (in) IC	S	BCH	BS	LE	INSL	Angle (°) AN	AS	PCD KPD001	KPD010	KPD230	Toolholder Page
	**SDKN 42AUFN**	**SDKN 1203AUFN**	0.500	0.125	0.020	0.047	0.142	-	15°	23°	●	●		-
 	**SEEN 42AFFN**	**SEEN 1203AFFN**	0.500	0.125	0.020	0.055	0.138	-	20°	25°	●	●		-
With Wiper Edge 	**SEEN 42AFFR-W**	**SEEN 1203AFFR-W**	0.492	0.125	-	0.138	0.067	0.573	20°	25°	●			-
 	(Use ISO Part Number)	**SOKN 13T3AXFN-NE**	0.531	0.156	0.016	0.043	0.118	-	27°	32°			●	-
 	**TEEN 32PTFR-NE**	**TEEN 1603PTFR-NE**	0.375	0.125	0.024	0.055	0.161	-	20°	22°			●	-
	32PTFR	**1603PTFR**					0.185				●	●		
	TEKN 43PTFR-NE	**TEKN 2204PTFR-NE**	0.500	0.187	0.028	0.071	0.165	-	20°	22°			●	
	43PTFR	**2204PTFR**					0.189				●	●		

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	Dimensions (in) IC	S	RE	LE	-	-	Angle (°) AN	-	PCD KPD001	KPD010	KPD230	Toolholder Page
	**TPG 2205**	**TPGN 110302**	0.250	0.125	0.008	0.154	-	-	11°	-	●	●		-
	221	**110304**			0.016	0.146					●	●		
	222	**110308**			0.031	0.134						●		

Insert (Right-hand Shown)	Part Number (ANSI)	Part Number (ISO)	Dimensions (in) W1	S	D1	L	RE	LE	Angle (°) AS	AN	PCD KPD001	KPD010	KPD230	Toolholder Page
	(Use ISO Part Number)	**BDGT 11T302FR**	0.264	0.150	0.110	0.453	0.008	0.150	18°	13°	●		●	M68 ~ M73
		11T304FR					1/64				●		●	
		11T308FR					1/32				●		●	
	(Use ISO Part Number)	**BDGT 11T302FR-LE**					0.008	0.205			●		●	
		11T304FR-LE					1/64				●		●	
		11T308FR-LE					1/32				●		●	
	(Use ISO Part Number)	**BDMT 11T302FR**	0.264	0.150	0.110	0.433	0.008	0.142	18°	13°	●		●	
		11T304FR					1/64				●		●	
	(Use ISO Part Number)	**BDMT 170402FR**	0.378	0.193	0.173	0.669	0.008	0.173	18°	13°	●		●	
		170404FR					1/64				●		●	
	**NDCW 3205FRX-NE**	**NDCW 150302FRX-NE**	0.375	0.125	0.173	0.591	0.008	0.201	15°	-			●	M140
	3205FRX	**150302FRX**						0.224			●	●		

PCD inserts sold in 1 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

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Facing | Chamfering

MFPN45 Face Mill (Inch Size)

Rake Angles (°)	A.R.	R.P.	
	Max +10°	DC = 2.50-3.00 : -10°	DC = 4.00-10.00 : -6°

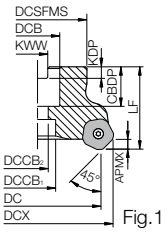

Fig.1

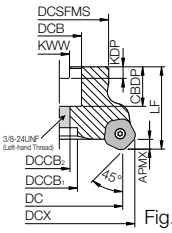

Fig.2

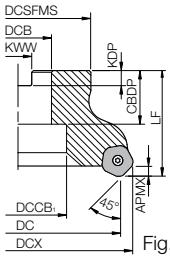

Fig.3

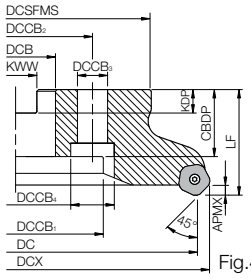

Fig.4

Toolholder Dimensions

		Part Number	Stock	No. of Inserts	Dimensions (in) DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	DCCB3	DCCB4	Drawing	Weight (kg)	Shim
Inch Bore Dia.	Coarse Pitch	MFPN 452500R-4T	●	4	2.500	2.815	1.890	0.750	0.669	0.433	1.575	0.750	0.187	0.313	-	-	Fig.1	0.5	
		453000R-5T	●	5	3.000	3.315	2.283	1.000	0.866	0.551	1.969	1.063	0.236	0.375	-	-	Fig.1	1.1	
		454000R-6T	●	6	4.000	4.315	2.756	1.500	2.047	-	1.969	1.142	0.394	0.625	-	-	Fig.3	1.4	
		455000R-7T	●	7	5.000	5.315	3.425	1.500	2.283	-	2.480	1.417	0.394	0.625	-	-	Fig.3	2.6	Yes
		456000R-8T	●	8	6.000	6.315	4.016	2.000	2.835	-	2.480	1.496	0.433	0.750	-	-	Fig.3	3.8	
		458000R-10T	●	10	8.000	8.315	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.000	0.709	1.024	Fig.4	6.6	
		4510000R-12T	●	12	10.000	10.315	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.000	0.709	1.024	Fig.4	9.3	
	Fine Pitch	MFPN 452000R-4T	●	4	2.000	2.315	1.750	0.750	-	3/8-24UNF	1.969	0.830	0.187	0.313	-	-	Fig.2	0.3	
		452500R-5T	●	5	2.500	2.815	1.890	0.750	0.669	0.433	1.575	0.750	0.187	0.313	-	-	Fig.1	0.5	
		453000R-6T	●	6	3.000	3.315	2.283	1.000	0.866	0.551	1.969	1.063	0.236	0.375	-	-	Fig.1	1.1	
		454000R-8T	●	8	4.000	4.315	2.756	1.500	2.047	-	1.969	1.142	0.394	0.625	-	-	Fig.3	1.3	
		455000R-10T	●	10	5.000	5.315	3.425	1.500	2.283	-	2.480	1.417	0.394	0.625	-	-	Fig.3	2.6	
		456000R-12T	●	12	6.000	6.315	4.016	2.000	2.835	-	2.480	1.496	0.433	0.750	-	-	Fig.3	3.9	
		458000R-14T	●	14	8.000	8.315	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.000	0.709	1.024	Fig.4	6.6	
		4510000R-16T	●	16	10.000	10.315	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.000	0.709	1.024	Fig.4	9.3	No
	Extra Fine Pitch	MFPN 452500R-6T	●	6	2.500	2.815	1.890	0.750	0.669	0.433	1.575	0.750	0.187	0.313	-	-	Fig.1	0.5	
		453000R-8T	●	8	3.000	3.315	2.283	1.000	0.866	0.551	1.969	1.063	0.236	0.375	-	-	Fig.1	1.1	
		454000R-10T	●	10	4.000	4.315	2.756	1.500	2.047	-	1.969	1.142	0.394	0.625	-	-	Fig.3	1.3	
		455000R-13T	●	13	5.000	5.315	3.425	1.500	2.283	-	2.480	1.417	0.394	0.625	-	-	Fig.3	2.6	
		456000R-16T	●	16	6.000	6.315	4.016	2.000	2.835	-	2.480	1.496	0.433	0.750	-	-	Fig.3	3.9	
		458000R-18T	●	18	8.000	8.315	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.000	0.709	1.024	Fig.4	6.6	
		4510000R-20T	●	20	10.000	10.315	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.000	0.709	1.024	Fig.4	9.3	

*Dimension APMX is 0.236" for GM/SM/GH chipbreaker and 0.197" for GL chipbreaker

Spare Parts (Inch / Inch Bore)

		Part Number	Spare Parts: Clamp Screw	Wrench: TTW	Wrench: DTM	Shim	Shim Screw	Wrench	Anti-seize Compound	Arbor Bolt	Mounting Screw
Coarse Pitch		MFPN 452500R-4T	SB-50140TR	TTW-15	-	MFPN-45	SPW-7050	LW-5	P-37	HH3/8-1.25	-
		453000R-5T								HH1/2-1.25	-
		454000R-6T ~ 4510000R-12T	Recommended Torque for Insert Screw 4.2N · m			Recommended Torque for Shim Screw 6.0N · m				-	-
Fine Pitch		MFPN 452000R-4T	SB-50140TR	TTW-15	-	-	-	-	P-37	-	XNS610*2
		452500R-5T								HH3/8-1.25	-
		453000R-6T								HH1/2-1.25	-
		454000R-8T ~ 4510000R-16T	Recommended Torque for Insert Screw 4.2N · m							-	-
Extra Fine Pitch		MFPN 452500R-6T	SB-40140TRN	-	DTM-15	-	-	-	P-37	HH3/8-1.25	-
		453000R-8T								HH1/2-1.25	-
		454000R-10T ~ 4510000R-20T	Recommended Torque for Insert Screw 3.5N · m							-	-

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

*2 Differential screw (3/8-24UNF)

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

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Recommended Cutting Conditions ➔ M34
Applicable Inserts ➔ M33

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Facing | Chamfering

MFPN45 Face Mill (Metric Size)

Rake Angles (°)	A.R.	R.R.	
	Max +10°	DC = 63 : -10°	DC = 100-315 : -6°
		DC = 80 : -8°	

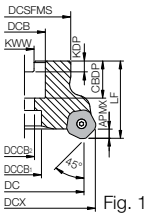

Fig. 1

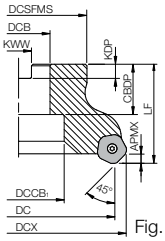

Fig. 2

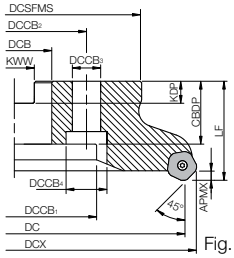

Fig. 3

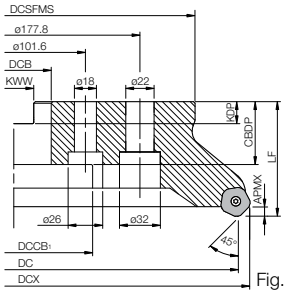

Fig. 4

Toolholder Dimensions

		Part Number		Stock R	Stock L	No. of Inserts	Dimensions (mm) DC	DCX	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	$DCCB_3$	$DCCB_4$	Drawing	Weight (kg)	Shim
Inch Bore Dia.	Coarse Pitch	MFPN	45080R/L-5T	●	●	5	80	93	60	1.000"	22	13.0	50	1.063"	0.236"	0.375"			Fig.1	1.1	Yes
			45100R/L-6T	●	●	6	100	113	70	1.250"	48	-		1.260"	0.315"	0.500"	-	-	Fig.2	1.4	
			45125R/L-7T	●	●	7	125	138	87	1.500"	58		63	1.417"	0.394"	0.625"				2.6	
			45160R/L-8T	●	●	8	160	173	102	2.000"	72			1.496"	0.433"	0.750"				4.0	
			45200R-10T	●		10	200	213	142	1.875"	110	4.000"		1.575"	0.551"	1.000"	18	26	Fig.3	6.7	
			45250R-12T	●		12	250	263												9.4	
	Fine Pitch	MFPN	45080R-6T	●		6	80	93	60	1.000"	22	13.0	50	1.063"	0.236"	0.375"			Fig.1	1.1	No
			45100R-8T	●		8	100	113	70	1.250"	48	-		1.260"	0.315"	0.500"	-	-	Fig.2	1.4	
			45125R-10T	●		10	125	138	87	1.500"	58		63	1.417"	0.394"	0.625"				2.7	
			45160R-12T	●		12	160	173	102	2.000"	72			1.496"	0.433"	0.750"				4.0	
			45200R-14T	●		14	200	213	142	1.875"	110	4.000"		1.575"	0.551"	1.000"	18	26	Fig.3	6.9	
			45250R-16T	●		16	250	263												9.6	
	Extra Fine Pitch	MFPN	45080R-8T	●		8	80	93	60	1.000"	22	13.0	50	1.063"	0.236"	0.375"			Fig.1	1.1	No
			45100R-10T	●		10	100	113	70	1.250"	48	-		1.260"	0.315"	0.500"	-	-	Fig.2	1.3	
			45125R-13T	●		13	125	138	87	1.500"	58		63	1.417"	0.394"	0.625"				2.7	
			45160R-16T	●		16	160	173	102	2.000"	72			1.496"	0.433"	0.750"				4.0	
			45200R-18T	●		18	200	213	142	1.875"	110	4.000"	63	1.575"	0.551"	1.000"	18	26	Fig.3	6.9	
			45250R-20T	●		20	250	263												9.6	
Metric Bore Dia.	Coarse Pitch	MFPN	45063R-4T-M	●		4	63	76	47	22	19	11.0	40	21	6.3	10.4			Fig.1	0.5	Yes
			45080R-5T-M	●		5	80	93	60	27	22	13.0	50	24	7.0	12.4	-	-		1.1	
			45100R-6T-M	●		6	100	113	70	32	48	-	50	30	8.0	14.4			Fig.2	1.4	
			45125R-7T-M	●		7	125	138	87	40	58		63	32	9.0	16.4				2.6	
			45160R-8T-M	●		8	160	173	102		68	66.7					14	20	Fig.3	3.8	
			45200R-10T-M	●		10	200	213	142	60	110	101.6		40	14.0	25.7	18	26		6.4	
			45250R-12T-M	●		12	250	263												9.1	
			45315R-14T-M	□		14	315	328	220			-	80				-	-	Fig.4	21.3	
	Fine Pitch	MFPN	45063R-5T-M	●		5	63	76	47	22	19	11.0	40	21	6.3	10.4			Fig.1	0.5	No
			45080R-6T-M	●		6	80	93	60	27	22	13.0	50	24	7.0	12.4	-	-		1.0	
			45100R-8T-M	●		8	100	113	70	32	48	-		30	8.0	14.4			Fig.2	1.4	
			45125R-10T-M	●		10	125	138	87	40	58		63	32	9.0	16.4				2.5	
			45160R-12T-M	●		12	160	173	102		68	66.7					14	20	Fig.3	3.8	
			45200R-14T-M	●		14	200	213	142	60	110	101.6		40	14.0	25.7	18	26		6.5	
			45250R-16T-M	●		16	250	263												9.1	
	Extra Fine Pitch	MFPN	45063R-6T-M	●		6	63	76	47	22	19	11.0	40	21	6.3	10.4			Fig.1	0.5	No
			45080R-8T-M	●		8	80	93	60	27	22	13.0	50	24	7.0	12.4	-	-		1.1	
			45100R-10T-M	●		10	100	113	70	32	48	-		30	8.0	14.4			Fig.2	1.3	
			45125R-13T-M	●		13	125	138	87	40	58		63	32	9.0	16.4				2.6	
			45160R-16T-M	●		16	160	173	102		68	66.7					14	20	Fig.3	3.9	
			45200R-18T-M	●		18	200	213	142	60	110	101.6		40	14.0	25.7	18	26		6.6	
			45250R-20T-M	●		20	250	263												9.3	

*Dimension APMX is 6mm for GM, SM, GH Chipbreakers, 5mm for GL Chipbreaker and, 3mm for W Chipbreaker: PR15 series

Recommended Cutting Conditions ➔ M34
Spare Parts & Applicable Inserts ➔ M33

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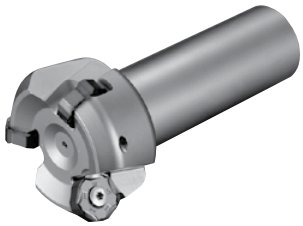
Contact your local Kyocera sales engineer to upgrade old products to new technology

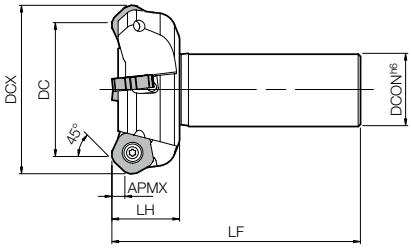
Spare Parts (Metric Size / Inch Bore & Metric Size / Metric Bore)

Part Number		Spare Parts							
		Clamp Screw	Wrench		Shim	Shim Screw	Wrench	Anti-seize Compound	Arbor Bolt
			TTW	DTM					
Coarse Pitch	MFPN 45063R-4T-M	SB-50140TR	TTW-15	-	MFPN-45	SPW-7050	LW-5	P-37	HH10x30
	45080R-5T(-M)	Recommended Torque for Insert Screw 4.2N · m			Recommended Torque for Shim Screw 6.0N · m				HH12x35
	45100R-6T(-M) ~ 45315R-14T(-M)								-
Fine Pitch	MFPN 45063R-5T-M	SB-50140TR	TTW-15	-	-	-	-	P-37	HH10x30
	45080R-6T(-M)	Recommended Torque for Insert Screw 4.2N · m							HH12x35
	45100R-8T(-M) ~ 45315R-18T(-M)								-
Extra Fine Pitch	MFPN 45063R-6T-M	SB-40140TRN	-	DTM-15	-	-	-	P-37	HH10x30
	45080R-8T(-M)	Recommended Torque for Insert Screw 3.5N · m							HH12x35
	45100R-10T(-M) ~ 45250R-20T(-M)								-

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed.

MFPN45 End Mill





Toolholder Dimensions

Part Number		Stock	No. of Inserts	Unit	Dimensions						Rake Angles		Shank Type	Spare Parts		
					DC	DCX	DCON	LF	LH	APMX	A.R. (Max)	R.R.		Clamp Screw	Wrench	Anti-seize Compound
Weldon Shank	MFPN 452000R-W125-3T	●	3	Inch	2.00	2.31	1.25	3.60	1.18	0.23 *(0.19)	+10°	-12°	Weldon	SB-50140TR	TTW-15	P-37
	452500R-W125-4T	●	4		2.50	2.81	1.25	3.60	1.18		+10°	-10°		Recommended Tightening Torque 4.2N · m		
	453000R-W125-5T	●	5		3.00	3.31	1.25	3.60	1.18		+10°	-8°				
Cylindrical Shank	MFPN 45050R-S32-3T	●	3	mm	50	63	32	110	30	6 (5)	+10°	- 12°	Cylindrical	SB-50140TR	TTW-15	P-37
	45063R-S32-4T	●	4		63	76	32	110	30		+10°	- 10°		Recommended Tightening Torque 4.2N · m		
	45080R-S32-5T	●	5		80	93	32	110	30		+10°	- 8°				

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed.

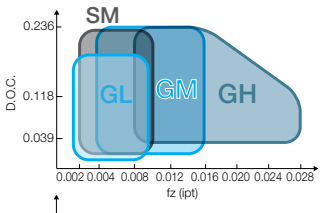
*Dimension APMX is 0.236" for GM, SM, GH Chipbreakers, 0.197" for GL Chipbreaker and, 0.118" for W Chipbreaker: PR15 series

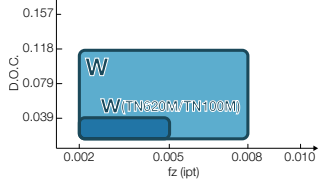
Applicable Inserts (Face Mill and End Mill)

Part Number	Applicable Inserts ➡ M18						
MFPN 45...R-...	PNMU 1205ANER-GM	PNMU 1205ANER-SM	PNMU 1205ANER-GH	PNEU 1205ANER-GL	PNEU 1205ANER-W	-	-
MFPN 45...L-...	-	-	-	-	-	PNMU 1205ANEL-GM	PNEU 1205ANEL-GL

Recommended Cutting Conditions ➡ M34

Applicable Chipbreaker Range





● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Cutter Type and Chipbreaker Selection

Milling Purpose	Cutter Type			Chipbreaker				
	Coarse Pitch	Fine Pitch	Extra Fine Pitch	GM	SM	GH	GL	W
General milling for steel and alloy steel		●		●				
Steel and alloy steel (to prevent chattering due to low rigidity machine or poor clamping power)	●				●			
Productivity oriented (high metal removal rate) (D.O.C. ≥ 0.1575", fz ≥ 0.0138 ipt)	●					●		
Focusing on finishing quality	●	●					●	
General milling of stainless steel		●			●			
Stainless steel (to prevent chattering due to low rigidity machine or poor clamping power)	●				●			
Cast iron (for high feed rates and high efficiency)			●	●				
Cast iron (D.O.C. ≥ 0.1575", fz ≥ 0.0138 ipt)	●					●		
Improved surface finish in high-efficiency milling		●	●					●

How to Use Wiper Insert

1) Please use one wiper insert per cutter.
(If you use more than 2 inserts on one cutter, the workpiece surface may have galling.)

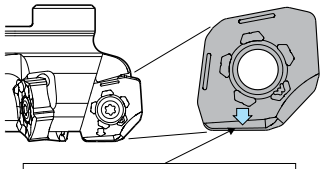
2) Combination of Wiper Insert with other Chipbreakers

GM	SM	W
Yes	-	Yes
-	Yes	Yes

GH+W and GL+W insert chipbreaker combinations are not recommended.

3) For checking the protrusion amount of the wiper insert, use tool presetter. (Appropriate protrusion: 0.0039")

How to Attach Wiper Inserts on MFPN Cutter



The down arrow symbol (↓) indicates wiper cutting edge.
When attaching inserts, make sure that the arrow symbol points downward.

Recommended Cutting Conditions

Chipbreaker	Workpiece Material	fz (ipt) *Feeds in ( ) are for Grade TN620M*	Recommended Insert Grades (Cutting Speed Vc : sfm)					
			Cermet	MEGACOAT NANO (MEGACOAT)			MEGACOAT HARD	CVD Coated Carbide
			TN620M	**PR1535**	**PR1525 (PR1225)**	**PR1510 (PR1210)**	**PR015S**	**CA6535**
GM	Carbon Steel	0.004~0.008~0.016 (0.002~0.005~0.008)	★ 660~820~980	☆ 390~590~820	★ 390~590~820	-	-	-
	Alloy Steel	0.004~0.008~0.016 (0.002~0.005~0.008)	★ 590~720~820	☆ 330~520~720	★ 330~520~720	-	-	-
	Mold Steel	0.004~0.008~0.014 (0.002~0.003~0.006)	★ 490~590~720	☆ 260~460~590	★ 260~460~590	-	-	-
	Austinitic Stainless Steel	0.004~0.008~0.016	-	☆ 330~520~660	☆ 330~520~660	-	-	-
	Martensitic Stainless Steel	0.004~0.008~0.016	-	☆ 490~660~820	-	-	-	☆ 590~790~980
	Precipitation Hardened Stainless Steel	0.004~0.008~0.012	-	★ 300~390~490	-	-	-	-
	Gray Cast Iron	0.004~0.008~0.016	-	-	-	★ 390~590~820	-	-
	Nodular Cast Iron	0.004~0.008~0.014	-	-	-	★ 330~490~660	-	-
	Ni-base Heat Resistant Alloys	0.004~0.005~0.008	-	☆ 70~100~160	-	-	-	★ 70~100~160
SM *1(GL)	Carbon Steel	0.002~0.005~0.010 (0.002~0.004~0.006)	★ 660~820~980	☆ 390~590~820	☆ 390~590~820	-	-	-
	Alloy Steel	0.002~0.005~0.010 (0.002~0.004~0.006)	★ 590~720~820	☆ 330~520~720	☆ 330~520~720	-	-	-
	Mold Steel	0.002~0.004~0.008 (0.002~0.003~0.005)	★ 490~590~720	☆ 260~460~590	☆ 260~460~590	-	-	-
	Austinitic Stainless Steel	0.002~0.005~0.010		★ 330~520~660	☆ 330~520~660	-	-	-
	Martensitic Stainless Steel	0.002~0.005~0.010		☆ 490~660~820	-	-	-	★ 590~790~980
	Precipitation Hardened Stainless Steel	0.002~0.005~0.010		☆ 300~390~490	-	-	-	-
	Gray Cast Iron	0.002~0.005~0.010		-	-	☆ 390~590~820	-	-
	Nodular Cast Iron	0.002~0.004~0.008		-	-	☆ 330~490~660	-	-
	Ni-base Heat Resistant Alloys	0.002~0.004~0.006		☆ 70~100~160	-	-	-	☆ 70~100~160
	Titanium Alloys	0.002~0.003~0.006		★ 130~200~260	-	-	-	-
***2GH**	Carbon Steel	0.008~0.016~0.028		☆ 390~590~820	☆ 390~590~820	-	-	-
	Alloy Steel	0.008~0.016~0.024		☆ 330~520~720	☆ 330~520~720	-	-	-
	Mold Steel	0.008~0.014~0.020		☆ 260~460~590	☆ 260~460~590	-	-	-
	Austinitic Stainless Steel	0.008~0.012~0.016		☆ 330~520~660	☆ 330~520~660	-	-	-
	Martensitic Stainless Steel	0.008~0.012~0.016		☆ 490~660~820	-	-	-	☆ 590~790~980
	Precipitation Hardened Stainless Steel	0.008~0.012~0.016		☆ 300~390~490	-	-	-	-
	Gray Cast Iron	0.008~0.016~0.028		-	-	☆ 390~590~820	-	-
	Nodular Cast Iron	0.008~0.014~0.020		-	-	☆ 330~490~660	-	-
	Ni-base Heat Resistant Alloys	0.008~0.012~0.016		☆ 70~100~160	-	-	-	☆ 70~100~160
	Hard Materials	0.004~0.010~0.014		-	-	-	★ 260~330~390	-

★: 1st Recommendation ☆: 2nd Recommendation

- Values in bold indicate starting value of recommended condition.
  Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
- Machining with coolant is recommended for Ni-base heat-resistant alloys and Titanium alloys.

*1. GL Chipbreaker is recommended for surface finish oriented milling.
2. GH Chipbreaker : Fine Pitch ➡ fz ≤ 0.0157 ipt
Extra Fine Pitch ➡ Not Recommended

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● Applicable Chipbreaker

Cutter Type	Chipbreaker		
	GM	SM (GL)	GH
Coarse Pitch (with shim)	✓	✓	✓
Fine Pitch (without shim)	✓	✓	✓ (Feed rate is recommended under fz = 0.0157 ipt)
Extra Fine Pitch (without shim)	✓	✓	Not recommended

■ Usage Precautions (How to mount an insert)

1. Be sure to remove dust and chips from the insert mounting pocket.
2. After applying anti-seize compound on portion of taper and thread, while pressing the insert against the constraint surfaces, put the screw into the hole of the insert and tighten the screw with appropriate torque. Ref. to Fig. 1 and Fig.2.
   Recommended tightening torque ➡ The torque for coarse pitch (using M5 screw) is 4.2 N·m
   The torque for extra fine pitch (using M4 screw) is 3.5 N·m.
3. After tightening the screw, make sure that there is no clearance between the insert seat surface and the bearing surface of the toolholder and between the insert side surfaces and the pocket wall of the toolholder.
4. **To change the cutting edge of the insert, turn the insert counterclockwise** (ref. to Fig. 3).
   Insert corner identification number is stamped on the top surface of insert (Fig. 4). To protect the wiper edge, use the corners of insert in the sequence of corner numbers.

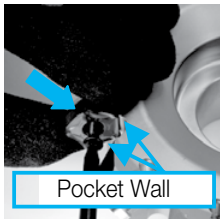


Fig.1

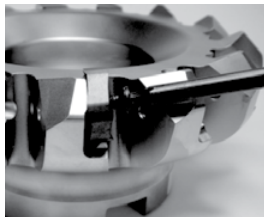


Fig.2

Fig.3

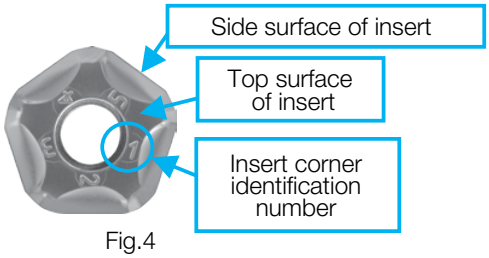


Fig.4

■ How to Replace the Shim (Coarse Pitch)

1. Be sure to remove dust and chips from the insert mounting pocket.
2. The shim must be mounted in the proper direction. While aligning the surface of the shim with the mark on it to the corresponding pocket wall (ref. to Fig. 5) and lightly pressing the shim toward the constraint surface, insert the screw into the hole of the shim and tighten it (ref. to Fig. 6).
   When tightening the screw, make sure that the screw is vertical to the bearing surface. Recommended tightening torque is 6.0N·m.
3. After tightening the screw, make sure that there is no clearance between the shim seat surface and the bearing surface. If there is any clearance, remove the insert and mount it again according to the above steps.

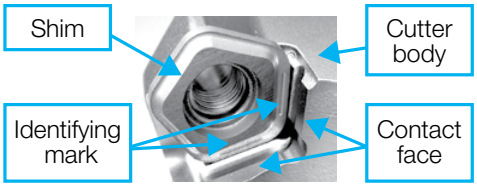


Fig.5

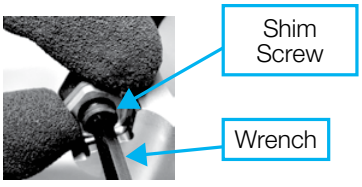


Fig.6

MFPN66

High Efficiency Milling with a 24° Lead Angle

Economical Double-sided 10-edge Insert
Reduces Chattering with a Low Cutting Force Design
Reduces Cutting Costs when Machining Auto Parts and Other General Purpose Machining Applications

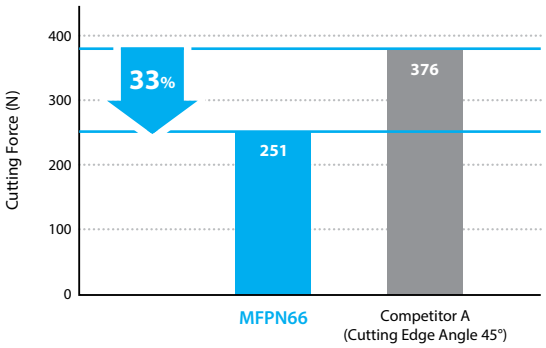
1 Economical Double-sided 10-edge Insert Large Lineup of Sizes from Ø32mm for Various Machining Applications

Cost reduction in various applications from general parts to automotive parts machining

2 Reduces Chattering with a Low Cutting Force Design Available for Small to Medium D.O.C.

Suppresses vibration for excellent surface finish with a 24° lead angle

Low Cutting Force Comparison (Internal Evaluation)



Thrust Force is Cutting Resistance

Cutting Conditions : Vc = 660 sfm, f = 0.006 ipt, D.O.C. = 0.118"
Cutter Diameter Ø63mm, Workpiece : 1049 Steel

Surface Finish (Machining with Workpiece Overhang Length of 80mm)

Excellent Surface Finish with Low Workpiece Clamping Rigidity

Cutting Conditions : Vc = 660 sfm, f = 0.008 ipt, D.O.C. = 0.020"
Cutter Diameter Ø63mm, Workpiece : 1049 Steel

3 Extended Tool Life with MEGACOAT NANO Coating Technology Insert Lineup Also Includes a Cermet Grade for Better Surface Finish

GM Chipbreaker
1st Recommendation (General Purpose)

GH Chipbreaker
Tough Edge

SM Chipbreaker
for Stainless Steel

Facing

MFPN66 Face Mill (Metric Size)

Rake Angles (°)	A.R.	R.R.	
	Max +12°	DC = 50 : -9°	DC = 80 : -7°
		DC = 63 : -8°	DC = 100-160 : -6°

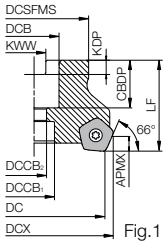


Fig.1

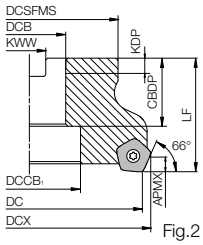


Fig.2

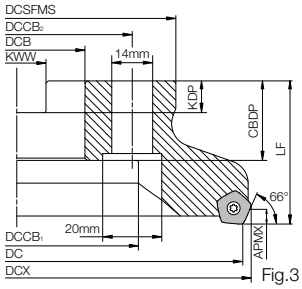


Fig.3

Toolholder Dimensions

		Part Number	Stock	No. of Inserts	Dimensions (mm)										Drawing	Weight (kg)	Shim
					DC	DCX	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW			
Inch Bore Dia.	Fine Pitch	MFPN 66080R-6T-G	●	6	80	88	70	1.000"	20	13	50	1.063"	0.236"	0.375"	Fig.1	1.2	No
		66100R-7T-G	●	7	100	107	78	1.250"	45	-		1.339"	0.315"	0.500"	Fig.2	1.7	
		66125R-9T-G	●	9	125	132	89	1.500"	55		63	1.496"	0.394"	0.626"		2.9	
		66160R-11T-G	●	11	160	167	110	2.000"	72				0.433"	0.750"		4.5	
	Extra Fine Pitch	MFPN 66080R-9T-G	●	9	80	88	70	1.000"	20	13	50	1.063"	0.236"	0.375"	Fig.1	1.2	No
		66100R-11T-G	●	11	100	107	78	1.250"	45	-		1.339"	0.315"	0.500	Fig.2	1.7	
		66125R-13T-G	●	13	125	132	89	1.500"	55		63	1.496"	0.394"	0.625"		3	
		66160R-15T-G	●	15	160	167	110	2.000"	72				0.433"	0.750"		4.8	
Metric Bore Dia.	Fine Pitch	MFPN 66050R-4T-M-G	●	4	50	58	48	22	18	11	40	21	6.3	10.4	Fig.1	0.3	No
		66063R-5T-M-G	●	5	63	71										0.5	
		66080R-6T-M-G	●	6	80	88	70	27	20	13	50	24	7	12.4		1.2	
		66100R-7T-M-G	●	7	100	107	78	32	45	-		30	8	14.4	Fig.2	1.6	
		66125R-9T-M-G	●	9	125	132	89	40	55		63	33	9	16.4		2.8	
		66160R-11T-M-G	●	11	160	167									Fig.3	3.8	
	Extra Fine Pitch	MFPN 66050R-5T-M-G	●	5	50	58	48	22	18	11	40	21	6.3	10.4	Fig.1	0.4	No
		66063R-7T-M-G	●	7	63	71										0.5	
		66080R-9T-M-G	●	9	80	88	70	27	20	13	50	24	7	12.4		1.2	
		66100R-11T-M-G	●	11	100	107	78	32	45	-		30	8	14.4	Fig.2	1.6	
		66125R-13T-M-G	●	13	125	132	89	40	55		63	33	9	16.4		3	
		66160R-15T-M-G	●	15	160	167									Fig.3	4	

Recommended Cutting Conditions ➡ M39
Applicable Inserts ➡ M38

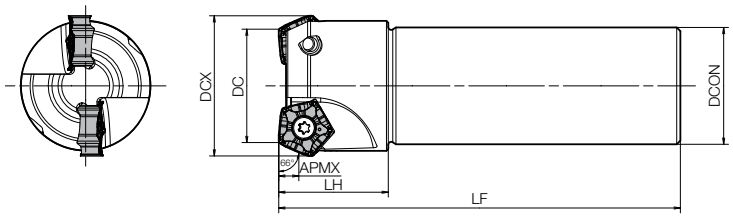
Spare Parts (Both Metric & Inch Size Bore Dia.)

	Part Number	Spare Parts			
		Insert Screw	Wrench	Anti-seize Compound	Arbor Bolt
Fine Pitch	MFPN 66050R-4T-M-G	SB-4090TRP	DTPM-15	P-37	HH10X30
	66063R-5T-M-G				HH10X30
	66080R-6T(-M)-G				HH12X35
	66100R-7T(-M)-G	Recommended Torque for Insert Screw 3.5 Nm			-
	66125R-9T(-M)-G				
	66160R-11T(-M)-G				
Extra Fine Pitch	MFPN 66050R-5T-M-G	SB-4090TRP	DTPM-15	P-37	HH10X30
	66063R-7T-M-G				HH10X30
	66080R-9T(-M)-G				HH12X35
	66100R-11T(-M)-G	Recommended Torque for Insert Screw 3.5 Nm			-
	66125R-13T(-M)-G				
	66160R-15T(-M)-G				

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed.

Facing

MFPN66 End Mill (Metric Size)



Toolholder Dimensions

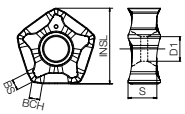
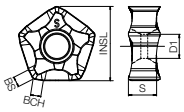
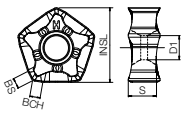
Part Number		Stock	No. of Inserts	Dimensions (mm)						Rake Angles		Spare Parts		
				DC	DCX	DCON	LF	LH	APMX	A.R. (Max)	R.R.	Insert Screw	Wrench	Anti-seize Compound
MFPN	66032R-S32-2T-G	●	2	32	39.5	32	110	30	5	12°	-14°	SB-4090TRP	DTPM-15	P-37
	66040R-S32-3T-G	●	3	40	47.5						-12°	Recommended Tightening Torque 3.5 Nm		

Recommended Cutting Conditions ➔ M39

Applicable Inserts

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

		Cermet	MEGACOAT NANO			MEGA COAT HARD
		TN620M	PR1535	PR1525	PR1510	PR015S
P	Free-Cutting Steel	■	☆	★		
	Carbon/Alloy Steel	■	☆	★		
M	Austenitic Stainless Steel		★	☆		
	Martensitic Stainless Steel		★			
	Precipitation Hardened Stainless Steel		★			
K	Gray Cast Iron				★	
	Nodular Cast Iron				★	
N	Non-ferrous Metals					
S	Heat-Resistant Alloys		★			
	Titanium Alloy		★			
H	Hard Materials					★

Insert (Right-hand Shown)		Part Number	Dimensions (in)					Cermet	MEGACOAT NANO			MEGA COAT HARD
			INSL	S	D1	BCH	BS	TN620M	PR1535	PR1525	PR1510	PR015S
General Purpose		PNMU 0905XNER-GM	0.575	0.219	0.185	0.079	0.079	●	●	●	●	
Low Cutting Force		PNMU 0905XNER-SM							●	●	●	
Tough Edge (Heavy Milling)		PNMU 0905XNER-GH							●	●	●	●

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

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Recommended Cutting Conditions (Coated Carbide)

Coated Carbide

Chipbreaker	Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc : sfm)			
			MEGACOAT NANO			MEGACOAT HARD
			PR1535	**PR1525**	**PR1510**	**PR015S**
GM	Carbon Steel	0.004~0.008~0.012	☆ 390~590~820	★ 390~590~820	-	-
	Alloy Steel	0.004~0.008~0.012	☆ 330~520~720	★ 330~520~720	-	-
	Mold Steel	0.004~0.007~0.010	★ 260~460~590	★ 260~460~590	-	-
	Austinitic Stainless Steel	0.004~0.007~0.010	☆ 330~490~660	☆ 330~490~660	-	-
	Martensitic Stainless Steel	0.004~0.007~0.010	☆ 330~490~660	-	-	-
	Precipitation Hardened Stainless Steel	0.004~0.007~0.010	★ 300~390~490	-	-	-
	Gray Cast Iron	0.004~0.008~0.012	-	-	★ 390~590~820	-
	Nodular Cast Iron	0.004~0.007~0.010	-	-	★ 330~490~660	-
	Ni-base Heat Resistant Alloys	0.004~0.005~0.008	☆ 70~100~160	-	-	-
SM	Carbon Steel	0.002~0.005~0.008	-	☆ 390~590~820	-	-
	Alloy Steel	0.002~0.005~0.008	-	☆ 330~520~720	-	-
	Mold Steel	0.002~0.004~0.006	-	☆ 260~460~590	-	-
	Austinitic Stainless Steel	0.002~0.005~0.008	★ 330~490~660	☆ 330~490~660	-	-
	Martensitic Stainless Steel	0.002~0.005~0.008	★ 330~490~660	-	-	-
	Precipitation Hardened Stainless Steel	0.002~0.005~0.008	☆ 300~390~490	-	-	-
	Gray Cast Iron	0.002~0.005~0.008	-	-	☆ 390~590~820	-
	Nodular Cast Iron	0.002~0.004~0.006	-	-	☆ 330~490~660	-
	Ni-base Heat Resistant Alloys	0.002~0.003~0.006	★ 70~100~160	-	-	-
	Titanium Alloys	0.002~0.003~0.006	★ 130~200~260	-	-	-
GH	Carbon Steel	0.006~0.010~0.014	-	☆ 390~590~820	-	-
	Alloy Steel	0.006~0.010~0.014	-	☆ 330~520~720	-	-
	Mold Steel	0.004~0.008~0.012	-	☆ 260~460~590	-	-
	Gray Cast Iron	0.006~0.010~0.014	-	-	☆ 390~590~820	-
	Nodular Cast Iron	0.004~0.008~0.012	-	-	☆ 330~490~660	-
	Hard Materials	0.004~0.008~0.012	-	-	-	★ 260~330~390

• Center value in the table indicate the most recommended value. Adjust cutting speed and feed rate according to the actual machining conditions
• Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys

★: 1st Recommendation ☆: 2nd Recommendation

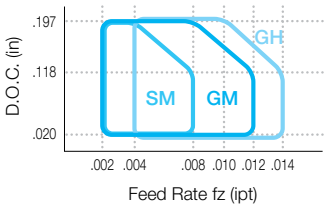
Cermet

Chipbreaker	Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade (Cutting Speed Vc : sfm)
			Cermet
			TN620M
GM	Carbon Steel	0.002~0.005~0.006	★ 660~820~980
	Alloy Steel	0.002~0.005~0.006	★ 590~720~820
	Mold Steel	0.002~0.004~0.005	★ 490~590~720

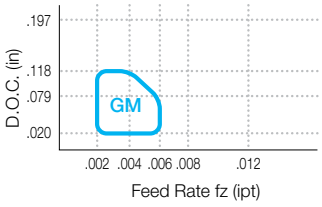
★: 1st Recommendation

Applicable Chipbreaker Range

Coated Carbide



Cermet



Applicable Chipbreakers

Cutter Type	Chipbreaker		
	GM	SM	GH
Fine Pitch	✓	✓	✓
Extra Fine Pitch	✓	✓	✓ (Feed rate is recommended under fz = 0.008 ipt)

MFLN

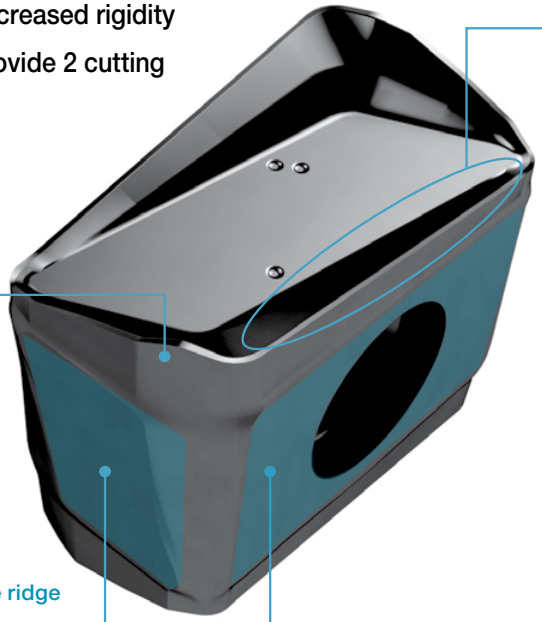
4-Edge Face Mills with Tangential Inserts for Heavy Milling

Tough 4-edge tangential inserts for reliable heavy milling at large D.O.C. and high feed rates
Three lead angle options for optimized machining in various applications

1 Tough and Reliable Inserts for Stable Heavy Milling

Inserts up to 20mm long offer increased rigidity

Tangentially mounted inserts provide 2 cutting edges on each side

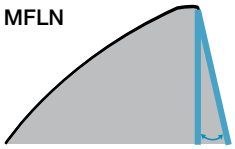


Obtuse Edge Design

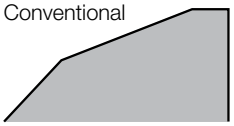
Increases the cutting edge angle only at the tip to maintain both strength and sharpness

Cross-section view of cutting edge

MFLN



Conventional

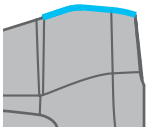


Corner Chamfer

(only available on MFLN90)

Both general corner-R type and chamfered corner type available

Prevents chattering and insert fracturing



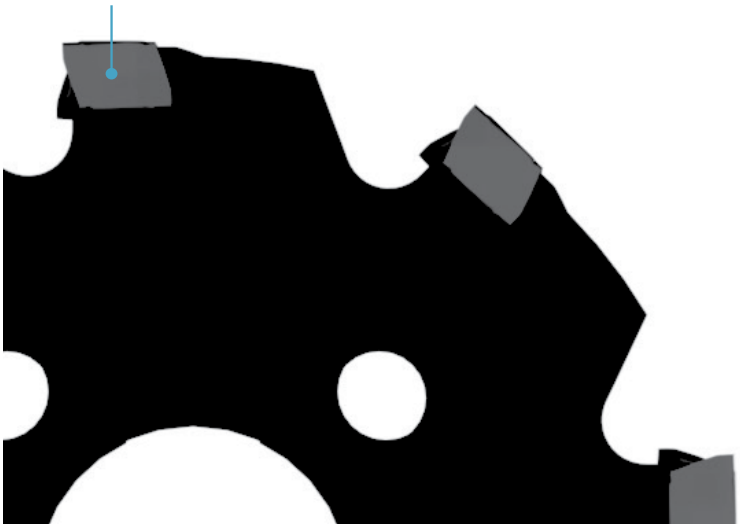
Convex cutting edge ridge

Reduced impact forces when entering the workpiece

Wide Flat Mounting Surface

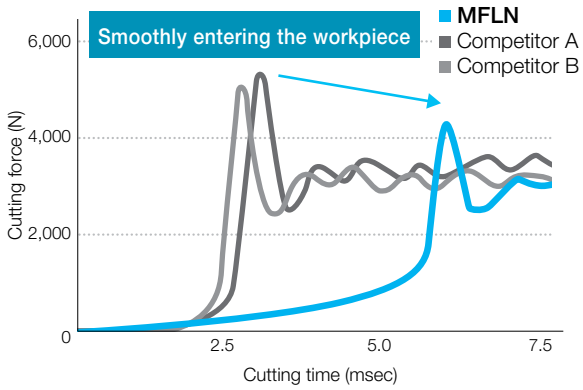
Holds insert firmly in heavy milling applications

Tangentially mounted inserts increase rigidity

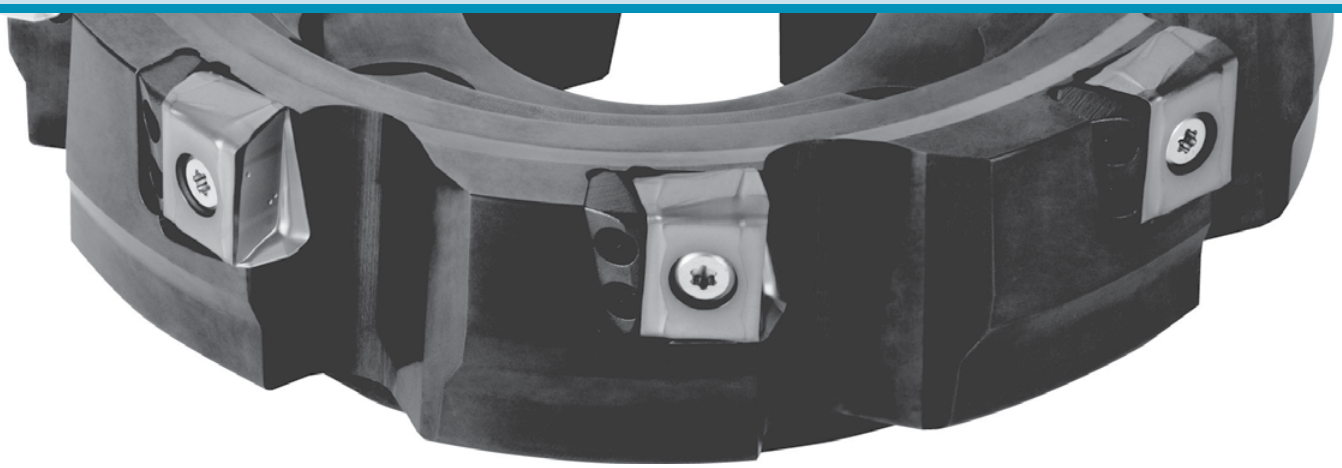


Cutting Forces when Entering the Workpiece (Internal evaluation)

MFLN90 (Insert : Chamfered corner type)



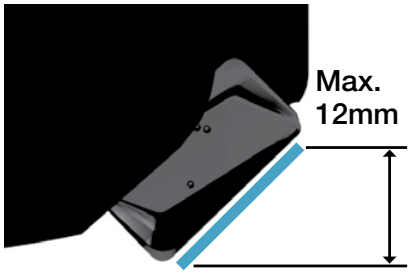
Cutting conditions : Vc = 490 sfm, D.O.C. × ae = 0.197" × 2.95", fz = 0.012 ipt
ø125 (1 insert), Dry Workpiece : 1049



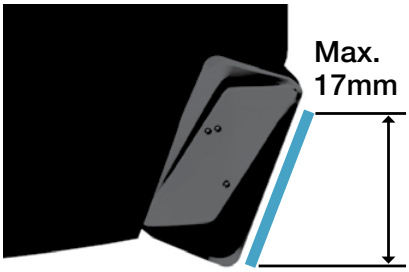
2 Large D.O.C. and High Feed Rates with 90°, 70°, and 45° Cutting Edge Angles

3 Cutter styles cover a wide variety of machining applications

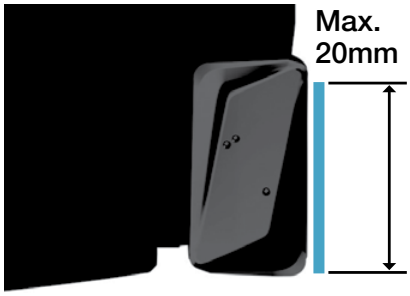
MFLN45
(Cutting edge angle 45°)



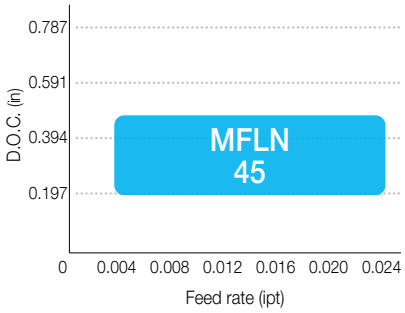
MFLN70
(Cutting edge angle 70°)

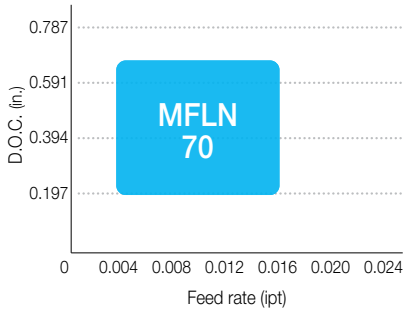


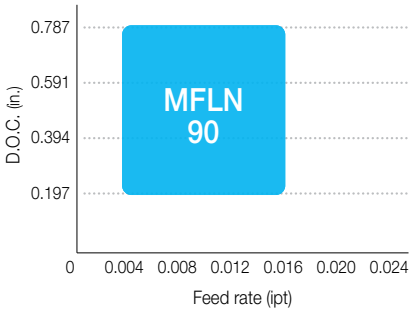
MFLN90
(Cutting edge angle 90°)



Application Range





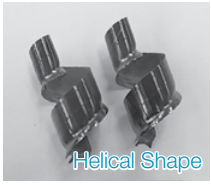


Chip Comparison (Internal evaluation)

Helix-shaped chips prevent chip recutting and provide stable machining at high feed rates.

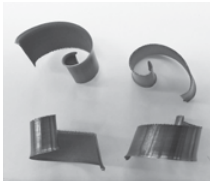
MFLN90 Stable

fz = 0.012 ipt



fz = 0.016 ipt

Competitor A Unstable



fz = 0.012 ipt

fz = 0.016" ipt

Competitor B Unstable

fz = 0.012 ipt

fz = 0.016 ipt

Cutting conditions : Vc = 490 sfm, ap × ae = 0.394" × 3.937", fz = 0.012, 0.016 ipt, ø125mm (1 insert), Dry Workpiece : 1049

MFLN45 Face Mill

For MFLN90, see page M122

Rake Angles (°)	A.R.	R.R.
	Max. +3.0°	-16.5° ~ 13.5°

Fig.1

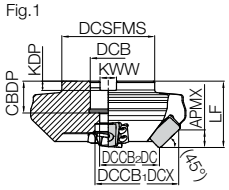


Fig.2

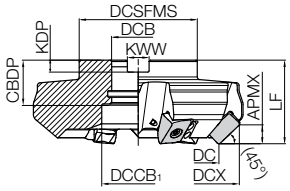


Fig.3

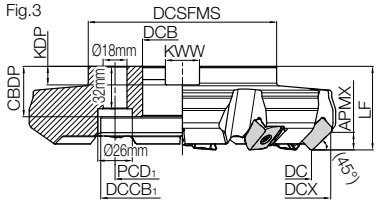
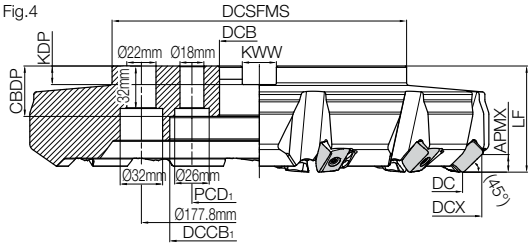


Fig.4



Toolholder Dimensions (Metric)

Part Number			Stock	No. of Inserts	Dimensions (mm)												Coolant Hole	Drawing	Weight (kg)
					DC	DCX	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	PCD_1			
Inch Bore Dia.	MFLN	45080R-4T	●	4	80	104	70	1.000"	20	13	50	1.063"	0.236"	0.375"	12	-	Yes	Fig.1	2.0
		45100R-4T	●		100	124	78	1.250"	45	-		1.339"	0.315"	0.500"				Fig.2	2.7
		45125R-6T	●	6	125	149	89	1.500"	55		63	1.496"	0.394"	0.625"					4.6
		45160R-7T	●	7	160	184	110	2.000"	90				0.433"	0.750"			No		6.8
		45200R-8T	●	8	200	224	142	1.875"	124				0.551"	1.000"		101.6		Fig.3	10.0
		45250R-10T	●	10	250	274	222		160										17.1
		45315R-12T	●	12	315	339			215		80							Fig.4	25.3
Metric Bore Dia.	MFLN	45080R-4T-M	●	4	80	104	70	27	20	13	50	24	7	12.4	12	-	Yes	Fig.1	2.0
		45100R-4T-M	●		100	124	78	32	45	-		30	8	14.4				Fig.2	2.7
		45125R-6T-M	●	6	125	149	89	40	55		63	33	9	16.4		66.7			4.6
		45160R-7T-M	●	7	160	184	110		90								No	Fig.3	6.7
		45200R-8T-M	●	8	200	224	142	60	124			38	14	25.7		101.6			9.7
		45250R-10T-M	●	10	250	274	222		160										16.9
		45315R-12T-M	●	12	315	339			215		80							Fig.4	25.1

Spare Parts

Part Number	Spare Parts						
	Insert Screw	Wrench	Shim	Shim Screw	Wrench	Anti-seize Compound	Arbor Bolt
MFPN ...080R-4T(-M)	SB-60200TRP	TTP-20	MAP-2216	SB-40140TR	DTM-15	P-37	HH12X35
...100R-4T(-M) ~ ...315R-12T(-M)	Recommended Torque for Insert Screw 6.0Nm		Recommended Torque for Shim Screw 3.5Nm				-

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Recommended Cutting Conditions M45
Applicable Inserts M44

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NEW ITEMS!

MFLN70 Face Mill

For MFLN90, see page M122

Rake Angles (°)	A.R.	R.R.
	Max. +1.0°	-16.5° ~ 13.5°

Fig.1

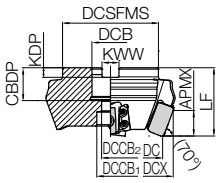


Fig.2

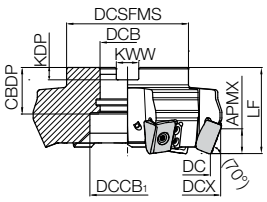


Fig.3

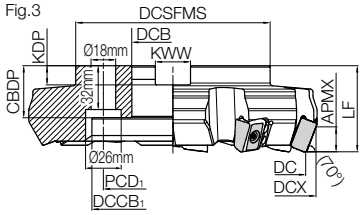
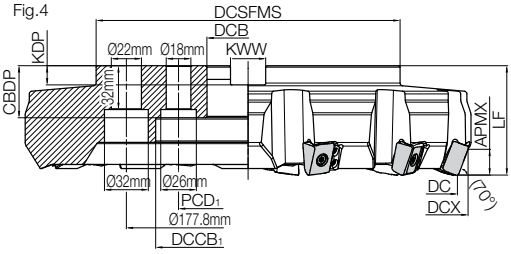


Fig.4



Toolholder Dimensions (Metric)

	Part Number		Stock	No. of Inserts	Dimensions (mm)												Coolant Hole	Drawing	Weight (kg)
					DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	PCD1			
Inch Bore Dia.	MFLN	70080R-4T	●	4	80	93	70	1.000"	20	13	50	1.063"	0.239"	0.375"	17	-	Yes	Fig.1	1.4
		70100R-4T	●		100	113	78	1.250"	45	-		1.339"	0.315"	0.500"				Fig.2	2.0
		70125R-6T	●	6	125	138	89	1.500"	55		63	1.496"	0.394"	0.625"					3.5
		70160R-7T	●	7	160	173	110	2.000"	70				0.433"	0.750"			No		5.8
		70200R-8T	●	8	200	213	142	1.875"	120				0.551"	1.000"		101.6		Fig.3	8.5
		70250R-10T	●	10	250	263	222		160										15.1
		70315R-12T	●	12	315	328			215		80							Fig.4	22.2
Metric Bore Dia.	MFLN	70080R-4T-M	●	4	80	93	70	27	20	13	50	24	7	12.4	17	-	Yes	Fig.1	1.4
		70100R-4T-M	●		100	113	78	32	45	-		30	8	14.4				Fig.2	1.9
		70125R-6T-M	●	6	125	138	89	40	55		63	33	9	16.4					3.4
		70160R-7T-M	●	7	160	173	110		90							66.7	No		5.3
		70200R-8T-M	●	8	200	213	142	60	120			38	14	25.7		101.6		Fig.3	8.2
		70250R-10T-M	●	10	250	263	222		160										14.8
		70315R-12T-M	●	12	315	328			215		80							Fig.4	21.9

Spare Parts

Part Number	Spare Parts						
	Insert Screw	Wrench	Shim	Shim Screw	Wrench	Anti-seize Compound	Arbor Bolt
MFPN ...080R-4T(-M)	SB-60200TRP	TTP-20	MAP-2216	SB-40140TR	DTM-15	P-37	HH12X35
...100R-4T(-M) ~ ...315R-12T(-M)	Recommended Torque for Insert Screw 6.0Nm		Recommended Torque for Shim Screw 3.5Nm				-

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Recommended Cutting Conditions M45
Applicable Inserts M44

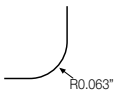
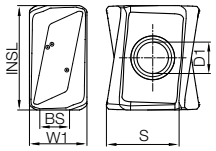
PR1525 : 1st recommendation for wear resistance. Great for scale removal and cast iron machining

PR1535 : Defect resistant, tough substrate for stable machining

Applicable Inserts

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice

P	Free-Cutting Steel	☆	★
	Carbon/Alloy Steel	☆	★
K	Gray Cast Iron	☆	★
	Nodular Cast Iron	☆	★

Insert (Right-hand Shown)			Part Number	Dimensions (in)					MEGACOAT NANO	
				W1	S	D1	INSL	BS	**PR1535**	**PR1525**
Corner-R	 R0.063"	 INSL BS W1 S D1	**LOGU 221616ER-GM**	0.492	0.654	0.268	0.898	0.248	●	●

How to Mount Inserts

1. Completely eliminate chips and dust from the insert mounting side.
2. After mounting a clamp screw on the top edge of wrench, tighten the screw while keeping the insert pushed against the shim seat surface and holder surface (Fig.1,2)
3. Make sure that the identification on the top of the insert is the same in each pocket. (Fig.3)
4. Tighten the wrench (20IP) in while holding parallel to the clamp screw.
5. Tighten the insert clamp screw at an appropriate torque. (Recommended torque: 6.0 Nm)
6. After tightening, check that there is no gap between the insert and the surface of the shim, or between the side surface of insert and the holder surface. If there is a gap, remount the insert using the directions above.

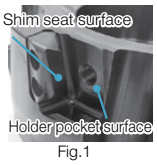


Fig.1

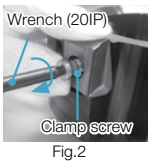


Fig.2

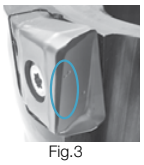


Fig.3

Applicable Insert Selection

	LOGU221616ER-GM (Corner-R)	LOGU2216PAER-GM (Corner Chamfer)
MFLN45	✓	Not Applicable
MFLN70	✓	Not Applicable
MFLN90	✓	✓

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Recommended Cutting Conditions (MFLN45 / MFLN70)

MFLN45

★: 1st Recommendation ☆: 2nd Recommendation

Workpiece Material	D.O.C. (in)		Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc : sfm)	
	Width of Cut (≤0.5xDC)	Width of Cut (>0.5xDC)		MEGACOAT NANO	
				PR1535	PR1525
Carbon Steel	~0.394	~0.315	0.004 ~ **0.012** ~ 0.024	☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Alloy Steel				☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Mold Steel				☆ 230 ~ **330** ~ 390	★ 260 ~ **390** ~ 490
Gray Cast Iron	~0.474	~0.394	0.004 ~ **0.012** ~ 0.024	☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Nodular Cast Iron				☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590

• The number in bold font is recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
• Dry machining is recommended.

MFLN70

★: 1st Recommendation ☆: 2nd Recommendation

Workpiece Material	D.O.C. (in)		Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc : sfm)	
	Width of Cut (≤0.5xDC)	Width of Cut (>0.5xDC)		MEGACOAT NANO	
				PR1535	PR1525
Carbon Steel	~0.591	~0.472	0.004 ~ **0.008** ~ 0.016	☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Alloy Steel				☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Mold Steel				☆ 230 ~ **330** ~ 390	★ 260 ~ **390** ~ 490
Gray Cast Iron	~0.669	~0.591	0.004 ~ **0.008** ~ 0.016	☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Nodular Cast Iron				☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590

• The number in bold font is recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
• Dry machining is recommended.

How to Replace the Insert Shim Seat

1. Completely eliminate chips and dust from the shim mounting side.
2. Coat medium strength screw locking adhesive on the screws.
3. Tighten the screw keeping the shim pushed against the pocket surface of toolholder.
4. After tightening both screws temporarily, tighten them with appropriate torque. (Recommended torque:3.5 N·m)
5. Please check that there is no gap between the shim and the pocket surfaces of toolholder.

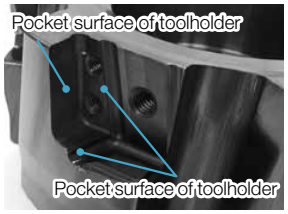


Fig.1

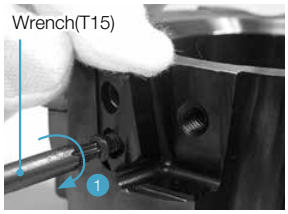


Fig.2

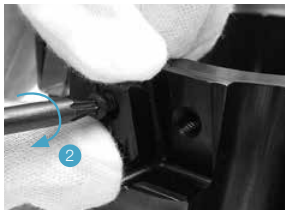


Fig.3

Fig.4

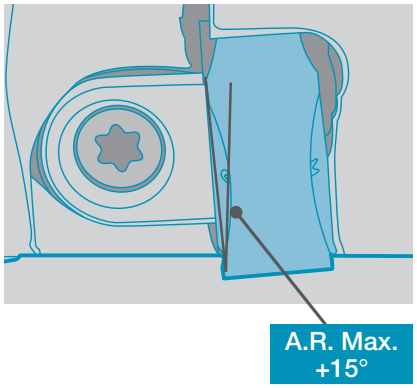
MFK

Milling Cutter for Cast Iron

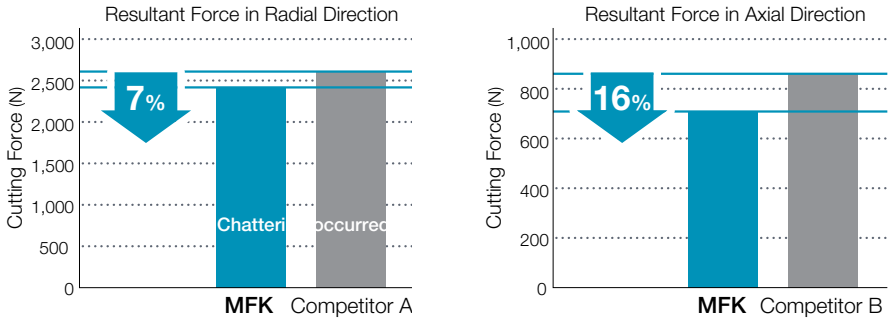
Tough edge with low cutting forces enable stable machining.
Uses 10-edge inserts for economical machining.

1 Low Cutting Forces Prevent Chattering

Low Cutting Forces with Helical Cutting Edge Design



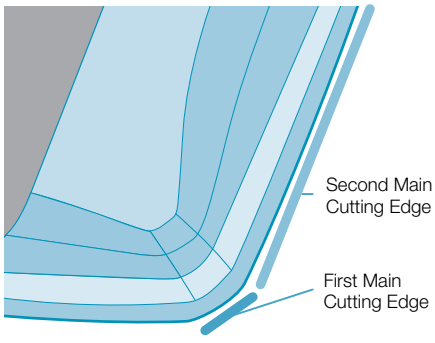
Cutting Force Comparison (Internal Evaluation)



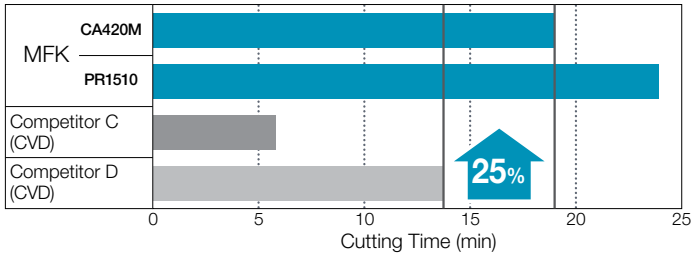
Cutting Conditions: Vc = 590 sfm, fz = 0.012 ipt, D.O.C. × ae = 0.118" × 2.441", Dry Workpiece: Nodular Cast Iron (80-60-03), Ø5.000"

2 Tough and Reliable Insert Construction Prevents Fracturing

Tough and Reliable Dual Angle Edge Design

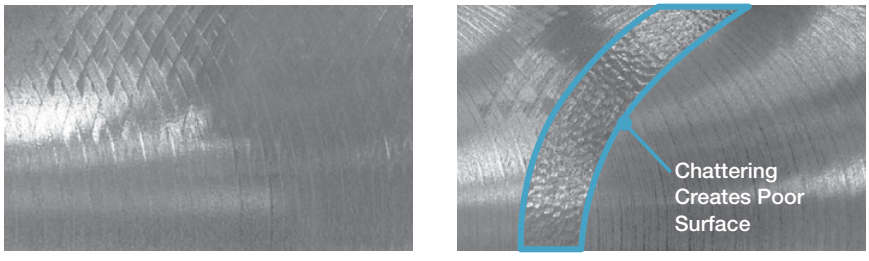


Fracture Resistance Comparison (Internal Evaluation)



Cutting Conditions: Vc = 980 sfm, fz = 0.020 ipt, D.O.C. = 0.079", Wet Workpiece: Nodular Cast Iron (65-45-12) with 4 Bores

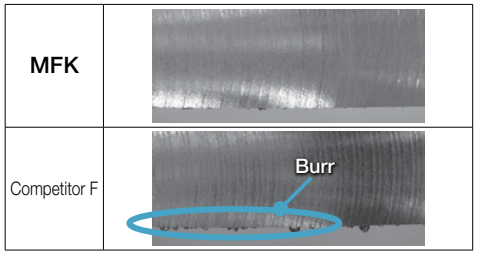
Surface Finish Comparison (Internal Evaluation)



MFK Competitor E

Burr Comparison

Sharp Cutting Prevents Burr Formation



Cutting Conditions: Vc = 590 sfm, fz = 0.012 ipt, D.O.C. × ae = 0.118" × 3.071", Dry Workpiece: Nodular Cast Iron (80-60-03)

3 Large Toolholder and Insert Lineup for Various Applications

Fine and Extra Fine Pitch Types Available.

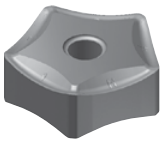
Fine Pitch
(Example: 5000R-11-12T = 12 Inserts)

- Recommended for Unstable Setups
- General Purpose for Wide Application Ranges

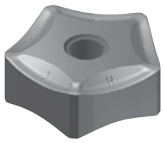
Extra Fine Pitch
(Example: 5000R-11-18T = 18 Inserts)

- Recommended for Rigid Setups
- Finer Pitch for Higher Efficiency

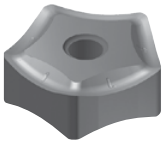
Wide Range of Chipbreakers for Various Machining Applications



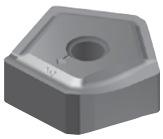
General Purpose:
GM Chipbreaker



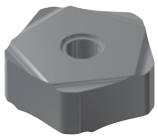
Heavy Duty:
GH Chipbreaker



Finishing:
GL Ground Chipbreaker

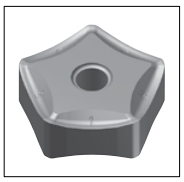


Wiper Edge:
W Ground Wiper Edge

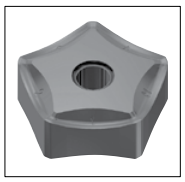


High Speed Machining:
Ceramic with Chipbreaker

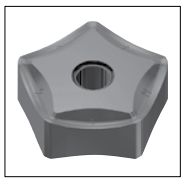
Insert Grade Lineup



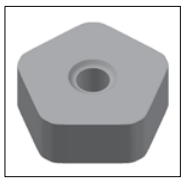
CA420M
Long Tool Life
(CVD)
(1st Recommendation)



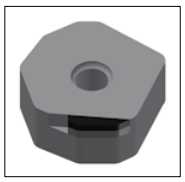
PR1510
Stable Machining
(PVD)



PR1525
Fracture Resistance
(PVD)



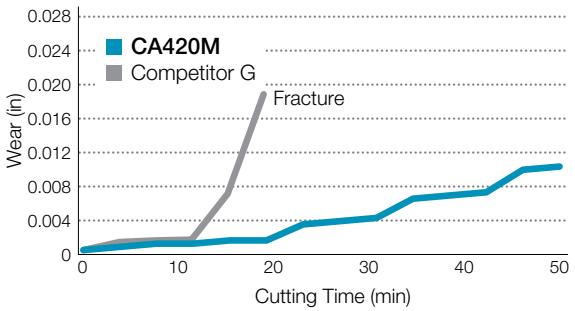
KS6050 / CS7050
High Speed Machining
(Ceramic)



KBN475
High Speed &
Precision Machining
(CBN Wiper Insert)

Use CBN wiper inserts together with ceramic KS6050/CS7050 inserts

Wear Resistance Comparison (Internal Evaluation)



Cutting Conditions: Vc = 670 sfm, fz = 0.012 ipt, D.O.C. × ae = 0.079" × 3.150", Dry
Workpiece: Nodular Cast Iron (65-45-12)

MFK Face Mill (Inch Size)

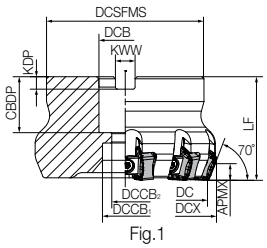


Fig.1

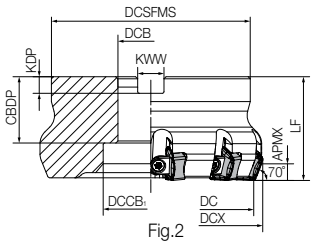


Fig.2

Rake Angle (°)		
Part Number	A.R.	R.R.
MFK3000R...	(MAX.) +15°	-7°
MFK4000R...		-6°
MFK5000R...		-5°
MFK6000R...		

Toolholder Dimensions

Part Number			Stock	No. of Inserts	Dimensions (in)											Drawing	Weight (kg)
					DC	DCX	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX		
Inch Bore Dia.	Fine Pitch	MFK 3000R-11-8T	●	8	3.000	3.340	2.750	1.000	0.866	0.551	2.480	1.063	0.240	0.375	0.236	Fig.1	1.610
		4000R-11-10T	●	10	4.000	4.340	3.750	1.500	1.299	0.866		1.181	0.390	0.625			2.860
		5000R-11-12T	●	12	5.000	5.340			2.047	-		1.496				Fig.2	3.670
		6000R-11-16T	●	16	6.000	6.340	4.880	2.000	2.835				0.430	0.750			4.940
	Extra Fine Pitch	MFK 3000R-11-10T	●	10	3.000	3.340	2.750	1.000	0.866	0.551	2.480	1.063	0.240	0.375	0.236	Fig.1	1.550
		4000R-11-14T	●	14	4.000	4.340	3.750	1.500	1.299	0.866		1.181	0.390	0.625			2.740
		5000R-11-18T	●	18	5.000	5.340			2.047	-		1.496				Fig.2	3.480
		6000R-11-22T	●	22	6.000	6.340	4.880	2.000	2.835				0.430	0.750			4.760

Spare Parts and Applicable Inserts

Part Number	Spare Parts				Applicable Inserts ➔ M17
	Wedge	Wedge Screw	Wrench	Arbor Bolt	
MFK 3000R-11-8T	C09N	W6X18N	TT-15	HH1/2-1.25	PNMG1106XNEN-GM PNMG1106XNEN-GH PNEG1106XNEN-GL PNEG1106XNER-W PNEA1106XNTN-T01020 PNEG1106XNTR-T00515 PNEG1106XNTR-T01015W
4000R-11-10T	C09N	W6X18N	TT-15	HH3/4-2.3	
5000R-11-12T	C09N	W6X18N	TT-15	-	
6000R-11-16T					
MFK 3000R-11-10T	C09N	W6X18N	TT-15	HH1/2-1.25	PNMG1106XNEN-GM PNMG1106XNEN-GH PNEG1106XNEN-GL PNEG1106XNER-W PNEA1106XNTN-T01020 PNEG1106XNTR-T00515 PNEG1106XNTR-T01015W
4000R-11-14T	C09N	W6X18N	TT-15	HH3/4-2.3	
5000R-11-18T	C09N	W6X18N	TT-15	-	
6000R-11-22T					

Recommended Cutting Conditions ➔ M50~M51

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(Technical Support) 800.823.7284 - Option 2
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFK Face Mill (Metric Size)

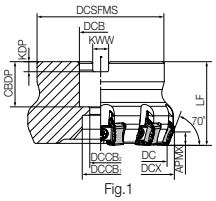


Fig.1

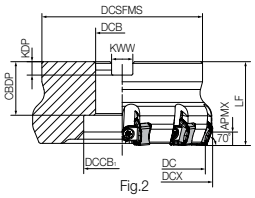


Fig.2

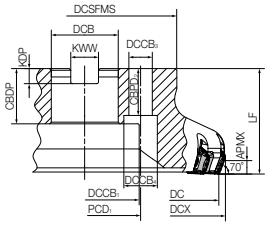


Fig.3

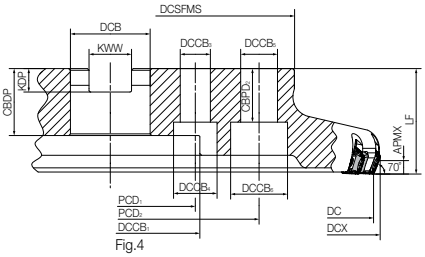


Fig.4

Rake Angle (°)		
Part Number	A.R.	R.R.
MFK080R-OO	(MAX.) +15°	-7°
MFK100R-OO		-6°
MFK125R-OO … MFK315R-OO		-5°

Toolholder Dimensions

		Part Number	Stock	No. of Inserts	Dimensions (mm)																			Drawing	Weight (kg)
					DC	DCX	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	$DCCB_3$	$DCCB_4$	$DCCB_5$	$DCCB_6$	PCD_1	PCD_2	$CBDP_2$		
Inch Bore Dia.	Fine Pitch	MFK 080R-11-8T	●	8	80	89	76	1.250"	26	17	63	1.260"	0.315"	0.500"	6.0	-	-	-	-	-	-	-	Fig.1	1.76
		100R-11-10T	●	10	100	109	96	1.250"	26	17	63	1.260"	0.315"	0.500"	6.0	-	-	-	-	-	-	-	Fig.1	2.98
		125R-11-12T	●	12	125	134	100	1.500"	55	-	63	1.496"	0.394"	0.625"	6.0	-	-	-	-	-	-	-	Fig.2	3.65
		160R-11-16T	●	16	160	169	100	2.000"	70	-	63	1.496"	0.433"	0.750"	6.0	-	-	-	-	-	-	-	Fig.2	4.62
		200R-11-20T	●	20	200	209	142	1.875"	110	-	63	1.575"	0.551"	1.000"	6.0	18	26	-	-	101.6	-	32	Fig.3	7.65
		250R-11-24T	●	24	250	259	142	1.875"	110	-	63	1.575"	0.551"	1.000"	6.0	18	26	-	-	101.6	-	32	Fig.3	10.73
		315R-11-28T	●	28	315	324	220	1.875"	110	-	63	1.575"	0.551"	1.000"	6.0	18	26	22	32	101.6	177.8	32	Fig.4	19.71
	Extra fine Pitch	MFK 080R-11-10T	●	10	80	89	76	1.250"	26	17	63	1.260"	0.315"	0.500"	6.0	-	-	-	-	-	-	-	Fig.1	1.70
		100R-11-14T	●	14	100	109	96	1.250"	26	17	63	1.260"	0.315"	0.500"	6.0	-	-	-	-	-	-	-	Fig.1	2.85
		125R-11-18T	●	18	125	134	100	1.500"	55	-	63	1.496"	0.394"	0.625"	6.0	-	-	-	-	-	-	-	Fig.2	3.44
		160R-11-22T	●	22	160	169	100	2.000"	70	-	63	1.496"	0.433"	0.750"	6.0	-	-	-	-	-	-	-	Fig.2	4.44
		200R-11-28T	●	28	200	209	142	1.875"	110	-	63	1.575"	0.551"	1.000"	6.0	18	26	-	-	101.6	-	32	Fig.3	7.40
		250R-11-36T	●	36	250	259	142	1.875"	110	-	63	1.575"	0.551"	1.000"	6.0	18	26	-	-	101.6	-	32	Fig.3	10.36
		315R-11-44T	●	44	315	324	220	1.875"	110	-	63	1.575"	0.551"	1.000"	6.0	18	26	22	32	101.6	177.8	32	Fig.4	19.21
Metric Bore Dia.	Fine Pitch	MFK 080R-11-8T-M	●	8	80	89	76	27	20	13	63	24	7	12.4	6.0	-	-	-	-	-	-	-	Fig.1	1.87
		100R-11-10T-M	●	10	100	109	96	32	26	17	63	28	8	14.4	6.0	-	-	-	-	-	-	-	Fig.1	2.99
		125R-11-12T-M	●	12	125	134	100	40	55	-	63	33	9	16.4	6.0	-	-	-	-	-	-	-	Fig.2	3.56
		160R-11-16T-M	●	16	160	169	100	40	70	-	63	33	9	16.4	6.0	14	20	-	-	66.7	-	28	Fig.3	4.51
		200R-11-20T-M	●	20	200	209	142	60	110	-	63	40	14	25.7	6.0	18	26	-	-	101.6	-	32	Fig.3	7.35
		250R-11-24T-M	●	24	250	259	142	60	110	-	63	40	14	25.7	6.0	18	26	-	-	101.6	-	32	Fig.3	10.43
		315R-11-28T-M	●	28	315	324	220	60	110	-	63	40	14	25.7	6.0	18	26	22	32	101.6	177.8	32	Fig.4	19.41
	Extra fine Pitch	MFK 080R-11-10T-M	●	10	80	89	76	27	20	13	63	24	7	12.4	6.0	-	-	-	-	-	-	-	Fig.1	1.81
		100R-11-14T-M	●	14	100	109	96	32	26	17	63	28	8	14.4	6.0	-	-	-	-	-	-	-	Fig.1	2.86
		125R-11-18T-M	●	18	125	134	100	40	55	-	63	33	9	16.4	6.0	-	-	-	-	-	-	-	Fig.2	3.38
		160R-11-22T-M	●	22	160	169	100	40	70	-	63	33	9	16.4	6.0	14	20	-	-	66.7	-	28	Fig.3	4.32
		200R-11-28T-M	●	28	200	209	142	60	110	-	63	40	14	25.7	6.0	18	26	-	-	101.6	-	32	Fig.3	7.10
		250R-11-36T-M	●	36	250	259	142	60	110	-	63	40	14	25.7	6.0	18	26	-	-	101.6	-	32	Fig.3	10.07
		315R-11-44T-M	●	44	315	324	220	60	110	-	63	40	14	25.7	6.0	18	26	22	32	101.6	177.8	32	Fig.4	18.92

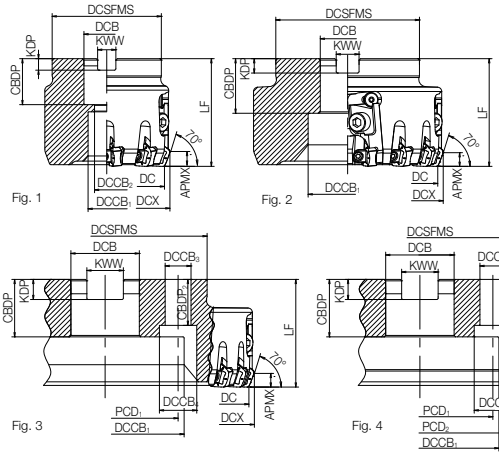
Spare Parts and Applicable Inserts

Part Number	Spare Parts				Applicable Inserts
	Wedge	Wedge Screw	Wrench	Arbor Bolt	
					➔ M17
MFK 080R-11-8T-M	C09N	W6X18N	TT-15	HH12X35	PNMG1106XNEN-GM PNMG1106XNEN-GH PNEG1106XNEN-GL PNEG1106XNER-W PNEA1106XNTN-T01020 PNEG1106XNTR-T00515 PNEG1106XNTR-T01015W
080R-11-8T	C09N	W6X18N	TT-15	HH16X40	
100R-11-10T(-M)					
125R-11-12T(-M)	C09N	W6X18N	TT-15	-	
160R-11-16T(-M)					
200R-11-20T(-M)					
250R-11-24T(-M)					
315R-11-28T(-M)					
MFK 080R-11-10T-M	C09N	W6X18N	TT-15	HH12X35	PNMG1106XNEN-GM PNMG1106XNEN-GH PNEG1106XNEN-GL PNEG1106XNER-W PNEA1106XNTN-T01020 PNEG1106XNTR-T00515 PNEG1106XNTR-T01015W
080R-11-10	C09N	W6X18N	TT-15	HH16X40	
100R-11-14T(-M)					
125R-11-18T(-M)	C09N	W6X18N	TT-15	-	
160R-11-22T(-M)					
200R-11-28T(-M)					
250R-11-36T(-M)					
315R-11-44T(-M)					

Recommended Cutting Conditions ➔ M50~M51

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFK-SF Face Mill (Metric Size)



Rake Angle (°)		
Part Number	A.R.	R.R.
MFK080R...	(MAX.) +15°	-7°
MFK100R...		-6°
MFK125R... ~ MFK315R...		-5°

Toolholder Dimensions

	Part Number	Stock	No. of Inserts	Dimensions (mm) DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	DCCB3	DCCB4	DCCB5	DCCB6	PCD1	PCD2	CBDP2	Drawing	Weight (kg)	Max RPM
Inch Bore Dia.	MFK 080R-11-9T-SF	●	9 (3)	80	89	76	1.250"	26	17	75	1.260"	0.315"	0.500"	6.0	-	-	-	-	-	-	-	Fig.1	2.08	8,000
	100R-11-12T-SF	●	12 (4)	100	109	96																	3.49	7,000
	125R-11-15T-SF	●	15 (5)	125	134	100	1.500"	55	-		1.496"	0.394"	0.625"		-	-	-	-	-	-	-	Fig.2	4.54	6,100
	160R-11-18T-SF	●	18 (6)	160	169		2.000"	70				0.433"	0.750"										6.82	5,300
	200R-11-24T-SF	●	24 (8)	200	209	142	1.875"	110			1.575"	0.551"	1.000"		18	26			4.000"		32	Fig.3	10.39	4,700
	250R-11-30T-SF	●	30 (10)	250	259																		16.85	4,200
	315R-11-39T-SF	●	39 (13)	315	324	220											22	32		7.000"		Fig.4	28.65	3,700
Metric Bore Dia.	MFK 080R-11-9T-M-SF	●	9 (3)	80	89	76	27	20	13	75	24	7	12.4	6.0	-	-	-	-	-	-	-	Fig.1	2.21	8,000
	100R-11-12T-M-SF	●	12 (4)	100	109	96	32	26	17		28	8	14.4										3.49	7,000
	125R-11-15T-M-SF	●	15 (5)	125	134	100	40	55	-		33	9	16.4		14	20	-	-	66.7	-	28	Fig.2	4.47	6,100
	160R-11-18T-M-SF	●	18 (6)	160	169																		6.99	5,300
	200R-11-24T-M-SF	●	24 (8)	200	209	142	60	110			35	14	25.7		18	26			101.6		32	Fig.3	9.89	4,700
	250R-11-30T-M-SF	●	30 (10)	250	259																		16.35	4,200
	315R-11-39T-M-SF	●	39 (13)	315	324	220											22	32		177.8		Fig.4	28.14	3,700

* Numbers in parenthese ( ) are number of adjustable cutting edge pockets. Install wiper inserts into the adjustable cutting edge pockets

Spare Parts and Applicable Inserts

Part Number	Spare Parts: Wedge	Wedge Screw	Wrench	Cartridge	Cartridge Screw	Wrench	Adjustment Screw	Arbor Bolt	Applicable Inserts ➡ M17
MFK 080R-11-9T-SF 100R-11-12T-SF 125R-11-15T-SF ~ 315R-11-39T-SF	C09N	W6X18N	TT-15	CR-MFK70R	HH8X25	LW-6	AJ-519TR	HH12X35 HH16X40 -	PNMG1106XNEN-GM PNMG1106XNEN-GH PNEG1106XNEN-GL PNEG1106XNER-W PNEA1106XNTN-T01020 PNEG1106XNTR-T00515 PNEG1106XNTR-T01015W
MFK 080R-11-9T-M-SF 100R-11-12T-M-SF 125R-11-15T-M-SF ~ 315R-11-39T-M-SF	C09N	W6X18N	TT-15	CR-MFK70R	HH8X25	LW-6	AJ-519TR	HH16X40 -	

Applicable Inserts

Recommended Cutting Conditions ➡ M50~M51

Part Number	Applicable Inserts ➡ M17						
	General Purpose	Tough Edge	Surface-Finish Oriented	Wiper Insert (2-edge)	High Speed Machining	High Speed Machining (with Chipbreaker)	Wiper Insert (2-edge)
MFK...-11-...	PNMG1106XNEN-GM	PNMG1106XNEN-GH	PNEG1106XNEN-GL	PNEG1106XNER-W	PNEA1106XNTN-T01020	PNEG1106XNTR-T00515	PNEG1106XNTR-T01015W

Recommended Cutting Conditions (Coated Carbide)

★: 1st Recommendation ☆: 2nd Recommendation

Workpiece Material	Insert Grades	Cutting Speed Vc (sfm)	Chipbreaker	Feed Rate fz (ipt) 0.0024 / 0.0039 / 0.0079 / 0.0118 / 0.0157
Cast Iron	CA420M	560~750~980	★ GM	● 0.0098
	PR1510	390~590~820	☆ GH	● 0.0118
	PR1525		GL	● 0.0047
Nodular Cast Iron	CA420M	490~660~820	★ GM	● 0.0079
	PR1510	330~490~660	☆ GH	● 0.0098
	PR1525		GL	● 0.0039

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Recommended Cutting Conditions (Ceramic)

• Without Chipbreaker

Workpiece Material	Insert Grades	Cutting Speed Vc (sfm)	Edge Prep.	Feed Rate fz (ipt) 0.0020 0.0039 0.0079 0.0118 0.0157
Cast Iron	★ KS6050	1970~2950~3940	0.004 × 20°	● 0.0039
	☆ CS7050			
Nodular Cast Iron	☆ KS6050	1310~1970~2950		
	★ CS7050			

• With Chipbreaker

Workpiece Material	Insert Grades	Cutting Speed Vc (sfm)	Edge Prep.	Feed Rate fz (ipt) 0.0020 0.0039 0.0079 0.0118 0.0157
Cast Iron	★ KS6050	1970~2950~3940	0.002 × 15°	● 0.0039
	☆ CS7050			
Nodular Cast Iron	☆ KS6050	1310~1970~2950		
	★ CS7050			

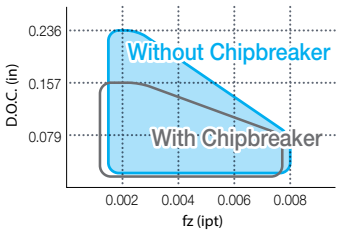
• CBN Wiper Insert

Workpiece Material	Insert Grades	Cutting Speed Vc (sfm)	Edge Prep.	Feed Rate fz (ipt) 0.0020 0.0039 0.0079 0.0118 0.0157
Cast Iron	KBN475	1970~2950~3940	0.004 × 15°	● 0.0039
Nodular Cast Iron		1310~1970~2950		

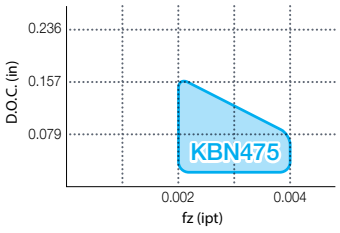
★: 1st Recommendation ☆: 2nd Recommendation

Recommended Application Ranges

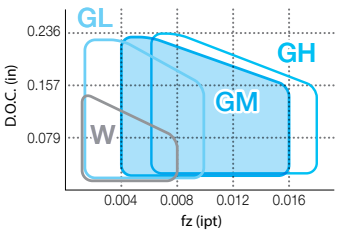
Gray/Nodular Cast Iron (Insert: Ceramic)



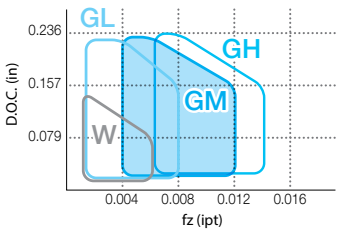
Gray/Nodular Cast Iron (Inserts: CBN)



Gray Cast Iron (Inserts: Coated Carbide)



Nodular Cast Iron (Inserts: Coated Carbide)



• When using W inserts, combine with GM or GH inserts
• If machining over fz = 0.0079", insert corner will be damaged. The main cutting edge of W type insert is receding from that of GM and GH. Therefore, the feed rate for the insert next to W type is double that of the other inserts.

How to Adjust Cutting Edge Height

1. Assemble all related parts into the cutter.

2. Make sure the back end of cartridge makes contact with adjustment screw (Fig 1), and pull them lightly inwards (Fig 2). Tighten the cartridge clamp screw temporary.

3. Install the insert (Fig 3), and tighten the wedge screw temporary. Temporarily tighten the screw with a 40 to 45 degree rotation after the wedge contacts the insert.

4. Loosen the cartridge clamp screw (Fig 4).

5. Adjust the extruding amount with adjustment screw (Fig 5).

6. Tighten the wedge screw and firmly fix the insert. (Recommended tightening torque : 6Nm)

7. Tighten the cartridge clamp screw firmly. (Recommended tightening torque : 10Nm)

Notes :
1. Follow steps 1-7 above for adjustment.
2. To adjust the edge height adjust the wedge screw and loosen the cartridge clamp screw.
   Tightening the adjustment screw with the clamp screw fixed firmly may damage the adjustment screw.
3. The adjusted edge height difference must be within 5μm.

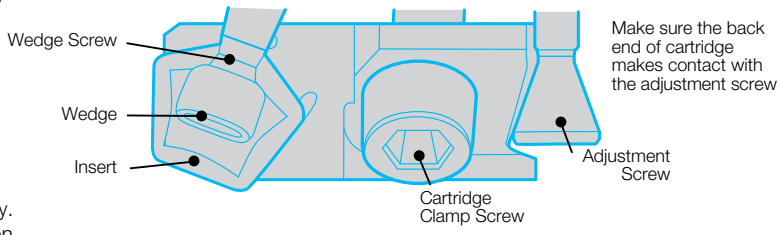


Fig.1

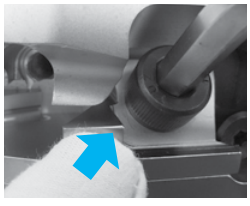


Fig.2

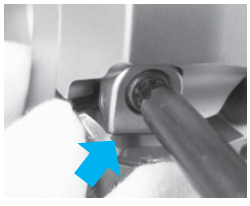


Fig.3

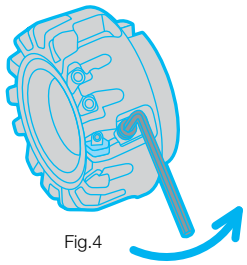


Fig.4

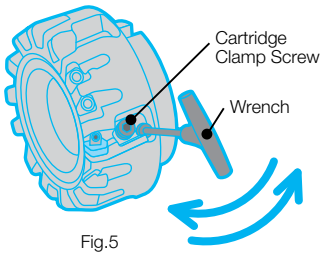


Fig.5

Facing | Chamfering

MOF45 Face Mill (05 type / 07 type)

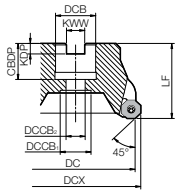


Fig.1

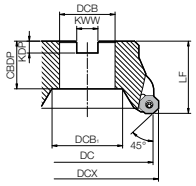


Fig.2

Rake Angle (°)	
A.R.	R.R.
+15°	-5°

Toolholder Dimensions

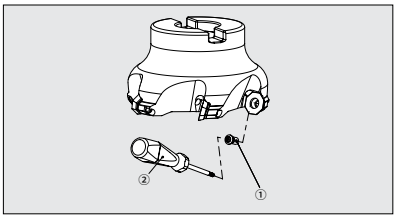
	Part Number	Stock	No. of Inserts	Dimensions (mm)										Drawing	Weight (kg)	Applicable Inserts ➡ M25
				DC	DCX	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX			
Inch Bore Dia.	MOF 45080R-05-6T	△	6	80	89	1.000"	20	13.0	50	1.024"	0.236"	0.375"	-	Fig.1	1.1	OFMT05 Type
	45100R-05-7T	△	7	100	109	1.250"	45	-	50	1.260"	0.315"	0.500"	-	Fig.2	1.8	
Metric Bore Dia.	MOF 45040R-05-3T-M	△	3	40	49	16	13.5	8.5	40	19	5.6	8.4	-	Fig.1	0.3	OFMT05 Type
	45050R-05-4T-M	△	4	50	59	22	17	11.0	40	21	6.3	10.4	-		0.4	
	45063R-05-5T-M	△	5	63	72	22	17	11.0	40	21	6.3	10.4	-		0.6	
	45080R-05-6T-M	△	6	80	89	27	20	13.0	50	24	7.0	12.4	-		1.1	
	MOF 45063R-07-4T-M	△	4	63	75	22	17	11.0	40	21	6.3	10.4	-	Fig.1	0.6	OFMT07 Type
	45080R-07-5T-M	△	5	80	92	27	20	13.0	50	24	7.0	12.4	-		1.2	
	45100R-07-6T-M	△	6	100	112	32	45	-	50	32	8.0	14.4	-	Fig.2	1.9	

Spare Parts

Part Number	Spare Parts		
	① Clamp Screw	② Wrench	Arbor Bolt
MOF 45080R-05-6T	SB-4082TPR	DTP-15	HH12X35M
45100R-05-7T	SB-4082TPR	DTP-15	-
MOF 45040R-05-3T-M	SB-4082TPR	DTP-15	HH8X25
45050R-05-4T-M	SB-4082TPR	DTP-15	HH10X30M
45063R-05-5T-M			
45080R-05-6T-M	SB-4082TPR	DTP-15	HH12X35M
MOF 45063R-07-4T-M	SB-50120TRS	DTP-15	HH10X30S
45080R-07-5T-M	SB-50120TRS	DTP-15	HH12X35M
45100R-07-6T-M	SB-50120TRS	DTP-15	-

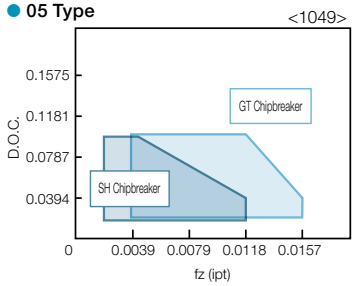
Max. D.O.C. and Usable Edges

Usable Edges	Max. D.O.C.	
	OFMT05 Type	OFMT07 Type
4 Edges (using 2 edges at the same time)	0.28"	0.39"
8 Edges (using only 1 edge at a time)	0.10"	0.16"

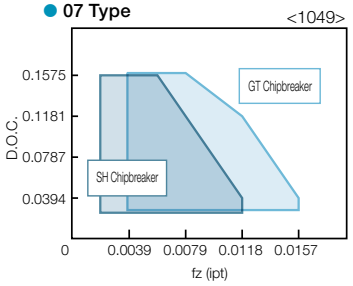


Applicable Chipbreaker Range

● 05 Type



● 07 Type



Recommended Cutting Conditions (MOF)

Workpiece Material	fz (ipt)		Recommended Insert Grades (Cutting Speed Vc : sfm)		
	GT Chipbreaker (Tough Edge type)	SH Chipbreaker (General Purpose)	MEGACOAT		PVD Coated Carbide
			PR1225	PR1210	PR830
Carbon Steel	0.0024~0.0047~0.0098	0.0024~0.0047~0.0098	★ 390~590~820	-	☆ 390~490~660
Alloy Steel	0.0024~0.0047~0.0098	0.0024~0.0047~0.0098	★ 330~520~720	-	☆ 330~490~590
Mold Steel	0.0024~0.0039~0.0079	0.0024~0.0039~0.0079	★ 260~460~590	-	☆ 260~390~490
Stainless Steel	0.0024~0.0047~0.0098	0.0024~0.0047~0.0098	★ 390~520~720	-	-
Gray Cast Iron	0.0024~0.0047~0.0098	0.0024~0.0047~0.0098	-	★ 390~590~820	-
Nodular Cast Iron	0.0024~0.0047~0.0098	0.0024~0.0047~0.0098	-	★ 330~490~660	-

★: 1st Recommendation ☆: 2nd Recommendation

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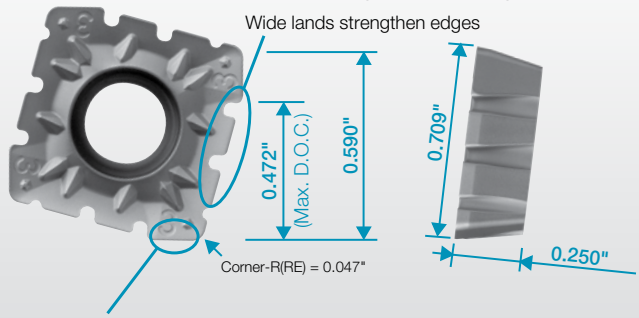
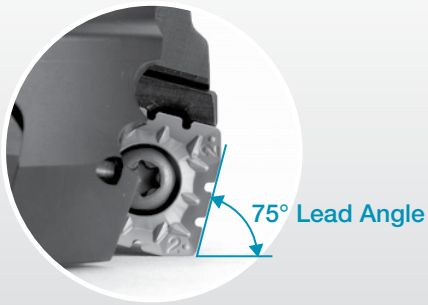
Large depths of cut and high feed rates improve metal removal efficiency

● **Recommended D.O.C. : 5mm~10mm (0.200"~0.400")**



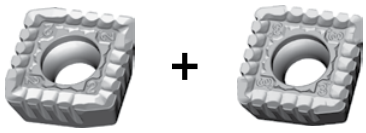
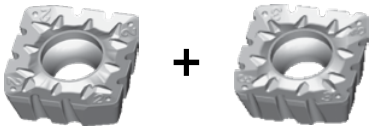
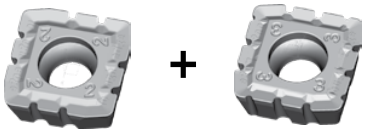
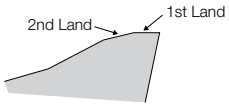
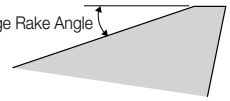
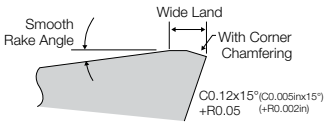
Large wiper edges enable increased feed rates.

Strong inserts due to 6.35mm (0.250") thickness.



A.R. +9°
R.R. –9° (Ø80mm)
–5° (> Ø100mm)

● **Chipbreaker Selection**

	Low Cutting Force Oriented	General Purpose	Edge Strength Oriented
Insert Type	 **NB2P** (4-Notched) **NB3P** (5-Notched)	 **NB2** (2-Notched) **NB3** (3-Notched)	 **NB2T** (2-Notched) **NB3T** (3-Notched)
Applications	Ideal when using extended arbors or for cutting thin plate workpieces	General purpose with good balance of strength and low cutting resistance	Ideal for interrupted cutting Ideal when feed rate is increased or workpiece material is Cast Iron
Edge Preparation	As many as four (or five) Notches help to alleviate the shock when biting into the workpiece 	Strength, cutting resistance, and chip control are all well balanced 	Strength is increased by the edge shape and moderate rake angle of the chamfer edge 

A supplemental chipbreaker may be used when it is necessary to increase strength and bite while focusing on low cutting resistance, as when machining welded areas.

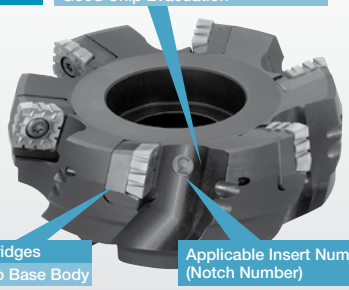
Insert Number - NB2P (4-Notched) and **NB3P** (5-Notched)

In order to match each insert with the corresponding insert pocket of the milling cutter, "**2**" is marked for NB2P insert (4-Notched) and "**3**" is marked on NB3P insert (5-Notched).

Features of Toolholder

Coarse Pitch

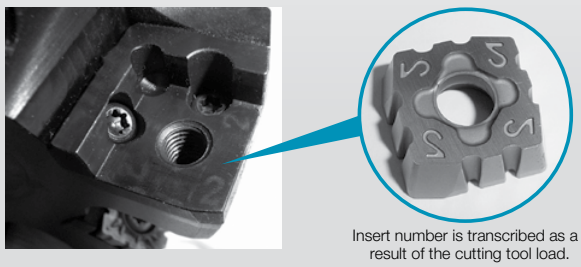
Designed with Large Chip Pockets
Good Chip Evacuation



Fine Pitch

Higher Productivity Due to Close Pitch Design

Insert Replacement Identification



Insert number is transcribed as a result of the cutting tool load.

* Depending on the cutting conditions, marks may not be transcribed.

MSRS15 Face Mill (Inch Bore Dia.)

(Coarse Pitch Shown)

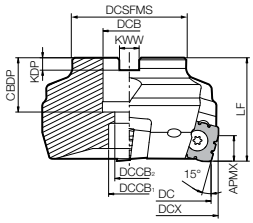


Fig.1

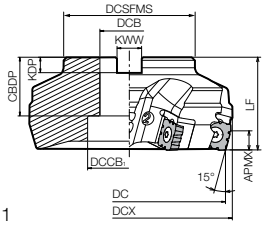


Fig.2

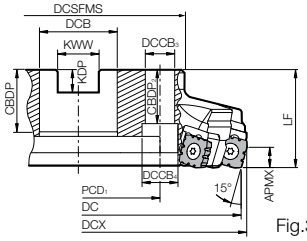


Fig.3

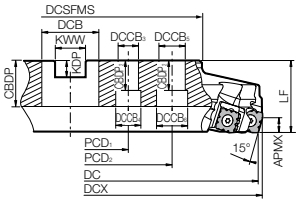


Fig.4

Rake Angle (°)		
Part Number	A.R.	R.R.
MSRS153000R...	+9°	-9°
MSRS154000R... MSRS15~12000R...	+9°	-5°
MSRS15080R...	+9°	-9°
MSRS15100R... MSRS15~315R...	+9°	-5°

Toolholder Dimensions (Bore Dia DC: Inch)

	Part Number	Stock	Unit	No. of Inserts	Dimensions																		Drawing	Weight (kg)
					DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	DCCB3	DCCB4	DCCB5	DCCB6	PCD1	PCD2	CBDP2		
Coarse Pitch	MSRS 153000R-4T	●	inch	4	3.00	3.27	2.25	1.000	0.87	0.551	1.97	0.75	0.31	0.375	0.47	-	-	-	-	-	-	-	Fig.1	1.3
	154000R-4T	●		4	4.00	4.27	3.75	1.250	1.38	-		1.00	0.40	0.500										2.0
	155000R-6T	●		6	5.00	5.27	3.75	1.500	2.13		2.48		0.40	0.625									Fig.2	3.6
	156000R-8T	●		8	6.00	6.27	4.88	2.000	2.68				0.47	0.750										5.0
	158000R-10T	●		10	8.00	8.27	5.12	2.500	-			1.25	0.53	1.000		0.675	1.045	-	-	4	-	1.25	Fig.3	7.7
	1510000R-12T	●		12	10.00	10.27	8.66																	12.0
	1512000R-14T	□		14	12.00	12.27	8.66											0.795	1.25		2.65		Fig.4	17.0
Fine Pitch	MSRS 153000R-6T	●	inch	6	3.00	3.27	2.25	1.000	0.87	0.551	1.97	0.75	0.31	0.375	0.47	-	-	-	-	-	-	-	Fig.1	1.3
	154000R-6T	●		6	4.00	4.27	3.75	1.250	1.38	-		1	0.40	0.500										1.9
	155000R-8T	●		8	5.00	5.27	3.75	1.500	2.13		2.48		0.40	0.625									Fig.2	3.5
	156000R-10T	●		10	6.00	6.27	4.88	2.000	2.68				0.47	0.750										4.9
	158000R-12T	●		12	8.00	8.27	5.12	2.500	-			1.25	0.53	1.000		0.675	1.045	-	-	4	-	1.25	Fig.3	7.6
	1510000R-14T	●		14	10.00	10.27	8.66																	11.9
	1512000R-16T	□		16	12.00	12.27	8.66											0.795	1.25		2.65		Fig.4	17.0
Coarse Pitch	MSRS 15080R-4T	●	mm	4	80	87	70	1.000"	20	13	50	1.024"	0.236"	0.375"	12	-	-	-	-	-	-	-	Fig.1	1.3
	15100R-4T	●		4	100	107	85	1.250"	42	-		1.260"	0.315"	0.500"										2.0
	15125R-6T	●		6	125	132	85	1.500"	54		60	1.496"	0.394"	0.625"									Fig.2	3.6
	15160R-8T	●		8	160	167	110	2.000"	68				0.433"	0.750"										5.0
	15200R-10T	●		10	200	207	140	1.875"	-				0.551"	1.000"		18	26			101.6	32	Fig.3	7.7
	15250R-12T	●		12	250	257	140																	12.0
	15315R-14T	●		14	315	322	230											22	32		177.8	25	Fig.4	17.0
Fine Pitch	MSRS 15080R-6T	●	mm	6	80	87	70	1.000"	20	13	50	1.024"	0.236"	0.375"	12	-	-	-	-	-	-	-	Fig.1	1.3
	15100R-6T	●		6	100	107	85	1.250"	42	-		1.260"	0.315"	0.500"										1.9
	15125R-8T	●		8	125	132	85	1.500"	54		60	1.496"	0.394"	0.625"									Fig.2	3.5
	15160R-10T	●		10	160	167	110	2.000"	68				0.433"	0.750"										4.9
	15200R-12T	●		12	200	207	140	1.875"	-				0.551"	1.000"		18	26			101.6	32	Fig.3	7.6
	15250R-14T	●		14	250	257	140																	11.9
	15315R-16T	□		16	315	322	230											22	32		177.8	25	Fig.4	17.0

- Mounting bolts (HH12X35) are included in MSRS15080R-OT. (HH1/2-1.25) are included with MSRS153000R-OT.
- Cartridge is included in the coarse pitch cutters, but no Cartridge in the fine pitch.

Applicable Inserts ➔ M56

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MSRS15 Face Mill (Metric Bore Dia.)

(Coarse Pitch Shown)

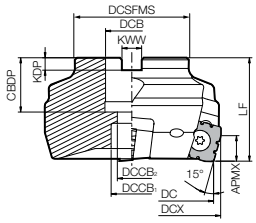


Fig.1

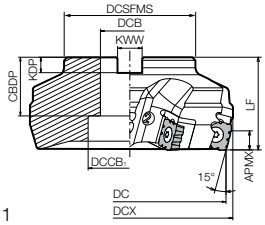


Fig.2

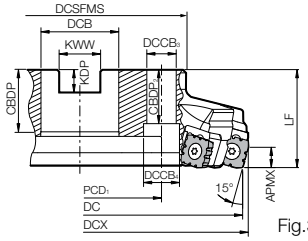


Fig.3

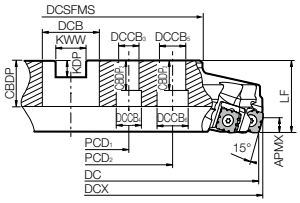


Fig.4

Rake Angle (°)		
Part Number	A.R.	R.R.
MSRS15080R...	+9°	-9°
MSRS15100R... ~ MSRS15315R...	+9°	-5°

Toolholder Dimensions (Bore Dia DC: Metric)

	Part Number	Stock	Unit	No. of Inserts	Dimensions																	Drawing	Weight (kg)
					DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	DCCB3	DCCB4	DCCB5	DCCB6	PCD1	PCD2	CBDP2		
Coarse Pitch	MSRS 15080R-4T-M	●	mm	4	80	87	70	27	20	13	50	24	7	12.4	12	-	-	-	-	-	-	-	Fig.1	1.3
	15100R-4T-M	●		4	100	107	85	32	45	-		29	8	14.4									Fig.2	2.0
	15125R-6T-M	●		6	125	132	85	40	55		60	33	9	16.4										3.6
	15160R-8T-M	●		8	160	167	110		68							14	20	-	-	66.7	-	28	Fig.3	5.0
	15200R-10T-M	●		10	200	207	140	60	-			38	15	25.7		18	26			101.6		32		7.7
	15250R-12T-M	●		12	250	257	140																	12.0
	15315R-14T-M	●		14	315	322	230											22	32		177.8		Fig.4	17.0
Fine Pitch	MSRS 15080R-6T-M	●	mm	6	80	87	70	27	20	13	50	24	7	12.4	12	-	-	-	-	-	-	-	Fig.1	1.3
	15100R-6T-M	●		6	100	107	85	32	45	-		29	8	14.4									Fig.2	1.9
	15125R-8T-M	●		8	125	132	85	40	55		60	33	9	16.4										3.5
	15160R-10T-M	●		10	160	167	110		68							14	20	-	-	66.7	-	28	Fig.3	4.9
	15200R-12T-M	●		12	200	207	140	60	-			38	15	25.7		18	26			101.6		32		7.6
	15250R-14T-M	●		14	250	257	140																	11.9
	15315R-16T-M	□		16	315	322	230											22	32		177.8		Fig.4	17.0

- Mounting bolts (HH12X35) are included in MSRS15080R-□T-M.
- Cartridge is included in the coarse pitch cutters, but no Cartridge in the fine pitch.

Spare Parts

	Part Number	Spare Parts						
		Clamp Screw	Wrench	Cartridge	Clamp Screw	Wrench	Anti-seize Compound	Mounting Bolt
Coarse Pitch	MSRS 153000R-4T	SB-60120TR	TT-25L	MAP-1806	SB-40140TR	DT-15	P-37	HH1/2-1.25
	154000R-4T							HH3/4-2.3
	155000R-6T ~ 1512000R-14T	Recommended Torque for Insert Screw 7.5N · m		Recommended Torque for Shim Clamp 3.5N · m				-
Fine Pitch	MSRS 153000R-6T	SB-60120TR	TT-25L	-	-	-	P-37	HH1/2-1.25
	154000R-6T							HH3/4-2.3
	155000R-8T ~ 1512000R-16T	Recommended Torque for Insert Screw 7.5N · m						-
Coarse Pitch	MSRS 15080R-4T(-M)	SB-60120TR	TT-25L	MAP-1806	SB-40140TR	DT-15	P-37	HH12X35
	15100R-4T(-M) ~ 15315R-14T(-M)	Recommended Torque for Insert Screw 7.5N · m		Recommended Torque for Shim Clamp 3.5N · m				-
Fine Pitch	MSRS 15080R-6T(-M)	SB-60120TR	TT-25L	-	-	-	P-37	HH12X35
	15100R-6T(-M) ~ 15315R-16T(-M)	Recommended Torque for Insert Screw 7.5N · m						-

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Applicable Inserts M56

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Applicable Inserts

Part Number	Applicable Inserts ➡ M27 (Right-hand Shown)			
	2-Notch	3-Notch	2-Notch / Tough Edge	3-Notch / Tough Edge
MSRS... MSRS...M	SPMT 1806EDER-NB2	SPMT 1806EDER-NB3	SPMT 1806EDSR-NB2T	SPMT 1806EDSR-NB3T
For Custom Ordered Left-hand Cutter	-	-	SPMT 1806EDSL-NB2T	SPMT 1806EDSL-NB3T

Part Number	Applicable Inserts ➡ M27		
	4-Notch / Low Cutting Force	5-Notch / Low Cutting Force	Without Notch
MSRS... MSRS...M	SPMT 1806EDER-NB2P	SPMT 1806EDER-NB3P	SPMT 1806EDER-V

Chipbreaker Selection ➡ M53

Recommended Cutting Conditions

Workpiece	Feed Rate fz (ipt)			Recommended Insert Grades (Cutting Speed Vc: sfm)			
				MEGACOAT			PVD Coated Carbide
	NB2P + NB3P	NB2 + NB3	NB2T + NB3T	**PR1225**	**PR1230**	**PR1210**	**PR830**
Carbon Steel	0.006	0.008	0.012	☆ 400 ~ **600** ~ 820	★ 400 ~ **600** ~ 725	-	☆ 400 ~ **575** ~ 725
Alloy Steel	0.006	0.008	0.012	☆ 400 ~ **600** ~ 820	★ 400 ~ **600** ~ 725	-	☆ 400 ~ **575** ~ 725
Mold Steel	0.004	0.006	0.008	☆ 325 ~ **525** ~ 725	★ 325 ~ **525** ~ 675	-	☆ 325 ~ **500** ~ 675
Gray Cast Iron	0.008	0.010	0.014	-	-	★ 400 ~ **600** ~ 820	-
Nodular Cast Iron	0.006	0.008	0.012	-	-	★ 325 ~ **525** ~ 725	-
Stainless Steel	Not Recommended						
Aluminum / Copper	Not Recommended						

★ : 1st Recommendation ☆ : 2nd Recommendation

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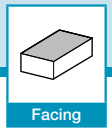
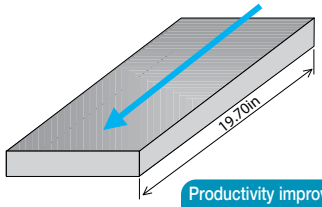


Case Studies

Structural Steel

Plate
- Vc=492 sfm (n = 382 RPM)
- D.O.C. x ae = 0.39"×4.92"
- fz=0.008 ipt (Vf = 18.03 ipm)
- Dry · 6 flutes
- MSRS15125R-6T
- SPMT1806EDER-NB2
- SPMT1806EDER-NB3

(PR830)



Productivity improved by 4.4 times!

MSRS15	Metal Removal Rate 34.91in³/min.
Competitor's Cutter A	7.87in³/min.

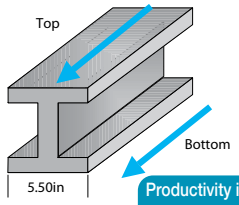
[Competitor's Cutter A]
Ø125mm, 6 flutes
Vc = 492sfm (n=382RPM)
D.O.C. × ae = 0.12" × 4.92"
fz=0.006 ipt (Vf=13.54 ipm)

[User's Comments]
Because conditions can be raised drastically, this cutter was very effective at reducing cycle time.
Productivity improved by 4.4 times.
(Customer Evaluation)

1050 Steel

Rail
- Vc=492 (n = 300 RPM)
- D.O.C. x ae = 0.24" × 5.51"
- fz=0.008 ipt (Vf = 18.90 ipm)
- Dry · 8 flutes
- MSRS15160R-8T
- SPMT1806EDER-NB2
- SPMT1806EDER-NB3

(PR830)



Productivity improved by 4.7 times!

MSRS15	Metal Removal Rate 24.59in³/min.
Competitor's Cutter B	5.21in³/min.

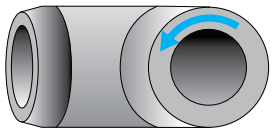
[Competitor's Cutter B]
Machining at 0.08" × 3 passes
Vc = 492 sfm (n = 300RPM)
D.O.C. × ae= 0.08" × 5.51"
fz=0.005 ipt (Vf=11.81 ipm)

[User's Comments]
MSRS can complete cutting with 1 pass what needed to be cut with 3 passes previously. Cutting sound of MSRS was still quiet. Productivity improved by 4.7 times.
(Customer Evaluation)

Cast Steel

Industrial Machine Components
- Vc = 325 sfm (n = 200 RPM)
- D.O.C. x ae = 0.394" × 4.490"
- fz = 0.016 ipt (Vf = 25 ipm)
- Dry · 8 flutes
- MSRS15160R-8T
- SPMT1806EDER-NB2
- SPMT1806EDER-NB3

(PR830)



Productivity improved by 2.5 times!

MSRS15	Metal Removal Rate 44.18in³/min.
Competitor's Cutter C	17.70in³/min.

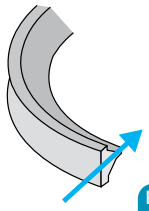
[Competitor's Cutter C]
Ø6", 8 flutes
Vc = 820 sfm (n = 522min⁻¹)
D.O.C. × ae = 0.394" × 4.490"
fz=0.010 ipt (Vf=40.00 ipm)

[User's Comments]
Before MSRS, D.O.C. could not be increased due to high cutting resistance, but MSRS can increase D.O.C. without increasing load on the main spindle. Productivity improved by 2.5 times
(Customer Evaluation)

1045 Steel

Gear
- Vc = 675 sfm (n = 255 RPM)
- D.O.C. x ae = 0.394" × 7.874"
- fz = 0.007 ipt (Vf = 23.62 ipm)
- Dry · 14 flutes
- MSRS15250R-14T
- SPMT1806EDER-NB2
- SPMT1806EDER-NB3

(PR830)



Productivity improved by 2.6 times!

MSRS15	Metal Removal Rate 73.23in³/min.
Competitor's Cutter D	28.00in³/min.

[Competitor's Cutter D]
Ø250mm, 12 flutes
Vc=400 sfm (n=153RPM)
D.O.C. × ae = 0.20" × 7.87"
fz = 0.010 ipt (Vf = 18.07 ipm)

[User's Comments]
Cutting sound is quiet even when cutting width is less than 80% of cutter dia.
Productivity improved by 2.6 times.
(Customer Evaluation)

Q&A

Q-1 What amount of cutting width (ae) is recommended in a radial direction?

A-1 The estimated amount is 70-80% of the diameter of the cutting tool.

Q-2 Why does the MSRS15 have a 75° lead?

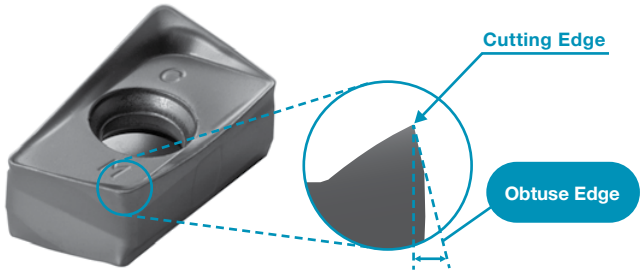
A-2 45° cutting angles can reduce the impact in cutting a workpiece but also increase thrust force. On the other hand, a 90° cutting angle can reduce thrust forces but increases the impact when the insert cuts the workpiece. The 75° cutting angle of the MSRS15 can suppress both thrust force and impact, offering a good balance and enabling smooth machining even in heavy machining applications.

M-FOUR

MEW Milling Cutter

The M-Four double-sided, 4-edge insert with Kyocera's unique mold technology reduces cutting forces for reduced vibrations

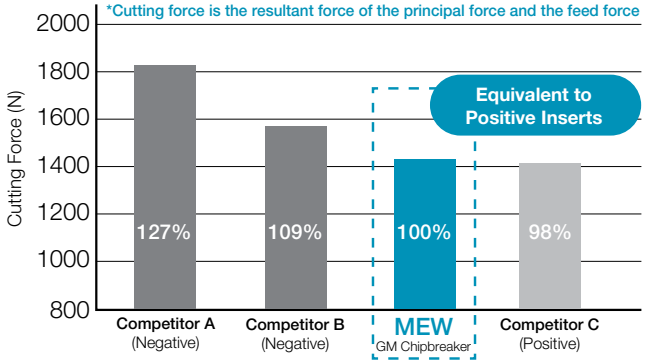
Obtuse Edge for Increased Cutting Edge Toughness



Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

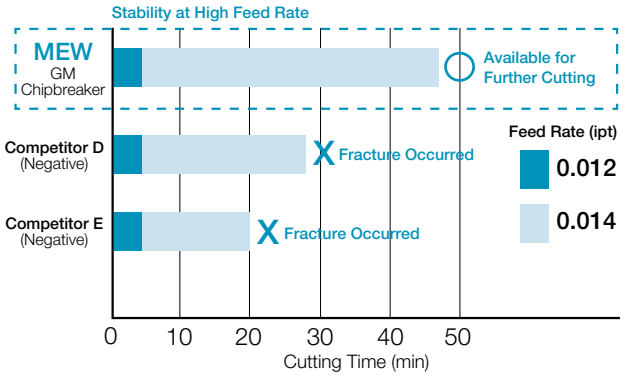
Low Cutting Forces Equivalent to Positive Inserts

• Cutting Force Comparison



1049 Ø20mm Cutter
Vc = 500 sfm D.O.C. × ae = 0.118" × 0.591" fz = 0.006 ipt (Internal Evaluation)

• Fracture Resistance Comparison



4140 (37~39Hs) Ø20mm Cutter
Vc = 400 sfm D.O.C. × ae = 0.118" × 0.394" fz = 0.012~0.014 ipt (Internal Evaluation)

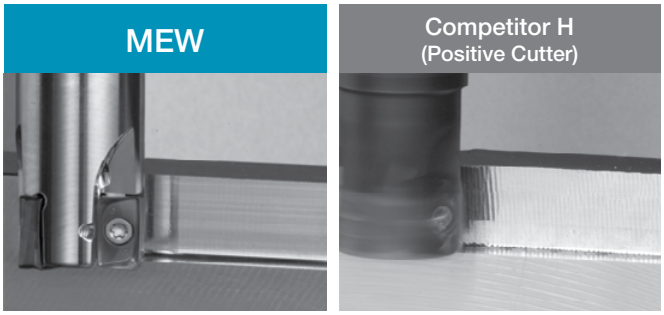
Improved Surface Finish & Minimized Vibration

Sharp cutting and superior resistance to vibration and burrs due to helical cutting edge and optimum axial rake design

Large Rake Angle Reduces Cutting Forces

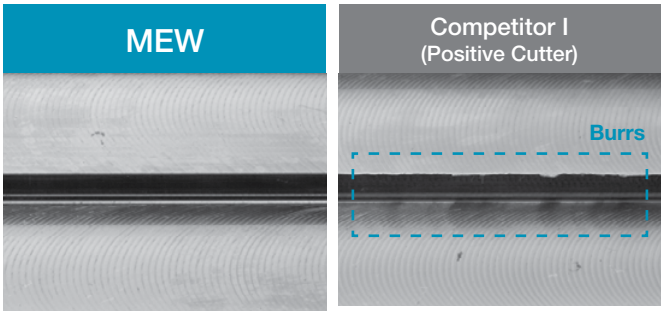
MEW GM Chipbreaker	Competitor F (Negative)	Competitor G (Positive)
+20°	+17°	+17°

Surface of Shoulder Wall



Smooth surface of MEW without chattering

Burr Comparison with Positive Cutters



Fewer burrs than positive cutters due to sharp cutting

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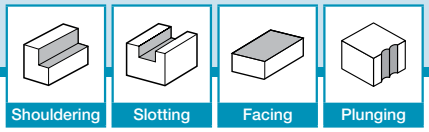
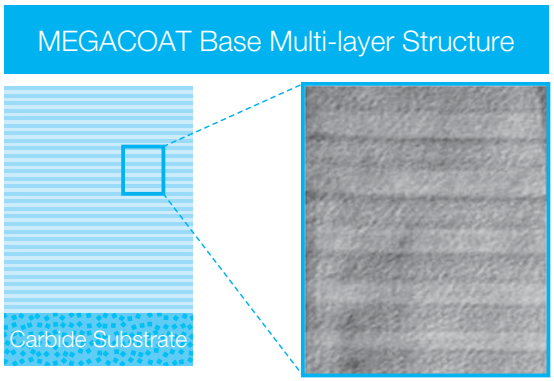
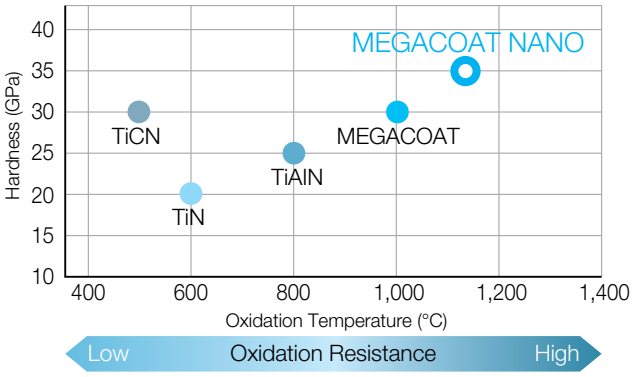


Extended Tool Life with Innovative
MEGACOAT NANO Coating Technology

Special multi-layered coating, "MEGACOAT NANO" enables stable milling and extended tool life

PR1525 for steel and austenitic stainless steel, **PR1510** for cast iron,
PR1535 titanium alloy and precipitation hardened steel
CA1535 (CVD coated carbide) for heat-resistant alloys and martensitic stainless steel



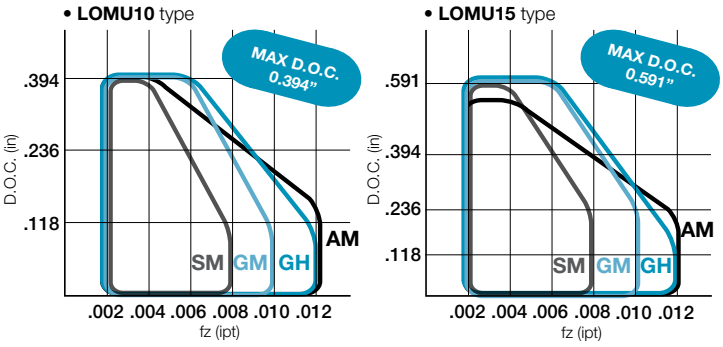


Prevents wear and fracture with high hardness (35GPa) and superior oxidation resistance (oxidation temperature: 1,150°C)

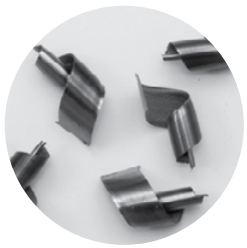
Chipbreaker Lineup

Three innovative chipbreaker designs to cover a wide range of applications

Chipbreaker	Application	Shape
GM	General Purpose	
SM	Low Cutting Force	
GH	Heavy Milling	
AM	Aluminum / Non-ferrous Metals	



<Cutting Conditions> Vc = 500 sfm ae = DC/2 Workpiece Material: 1050 Steel



Chips (Slotting)

Chips (Shouldering)

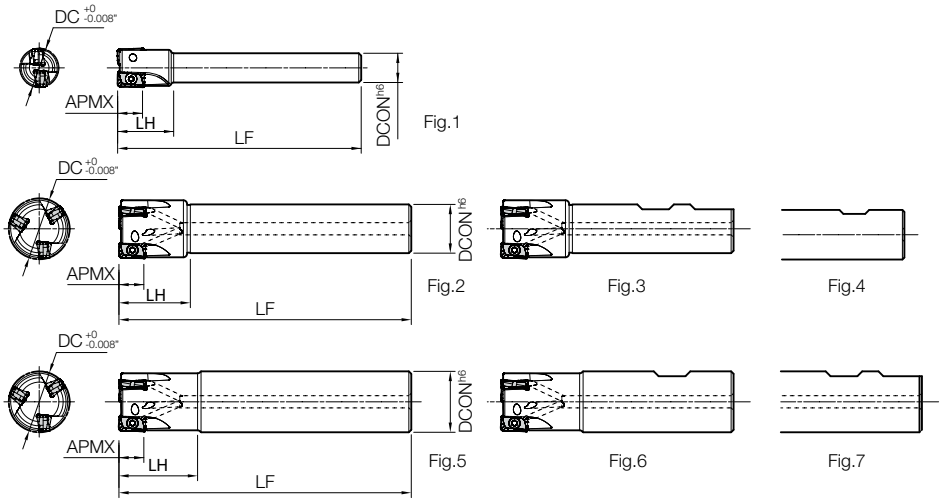
Insert Corner-R(RE) Lineup Expansion

Corner-R(RE) 0.4 ,1.0 ,1.2 ,1.6 and 2.0 added to GM chipbreaker lineup

04 Marking on Insert	08 Not Marked	10 Marking on Insert	12 Marking on Insert	16 Marking on Insert	20 Marking on Insert
LOMU100404ER-GM LOMU150504ER-GM	LOMU100408ER-GM LOMU150508ER-GM	LOMU150510ER-GM	LOMU100412ER-GM LOMU150512ER-GM	LOMU100416ER-GM LOMU150516ER-GM	LOMU100420ER-GM LOMU150520ER-GM

MEW End Mill (Inch)

(Cylindrical Shank)



Toolholder Dimensions (Inch)

Shank		Part Number	Stock	No. of Inserts	Dimensions (in)					Rake Angle (°)		Coolant Hole	Drawing	Max RPM*
					DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.			
Weldon	Standard Shank	MEW 0625-W500-10-2T	●	2	0.625	0.500	2.75	0.969	0.393	+7°	-22°	No	Fig.4	43,900
		0625-W625-10-2T	●	2	0.625	0.625	3.00	1.046			-22°	Yes	Fig.6	43,900
		0750-W625-10-2T	●	2	0.750	0.625	3.25	1.145			-20°		Fig.3	42,000
		0750-W750-10-2T	●	2	0.750	0.750	3.25	1.170			-20°		Fig.6	42,000
		0750-W750-10-3T	●	3	0.750	0.750	3.25	1.170			-20°		Fig.6	42,000
		0750-W750-4-10-3T	●	3	0.750	0.750	4.00	1.921			-20°		Fig.6	42,000
		1000-W750-10-3T	●	3	1.000	0.750	3.25	1.219			-20°		Fig.3	37,200
		1000-W100-10-2T	●	2	1.000	1.000	3.75	1.413			-20°		Fig.7	37,200
		1000-W100-10-3T	●	3	1.000	1.000	3.75	1.413			-20°		Fig.7	37,200
		1000-W100-475-10-3T	●	3	1.000	1.000	4.75	1.413			-20°		Fig.7	37,200
		1250-W100-10-4T	●	4	1.250	1.000	3.75	1.469			-20°		Fig.3	34,000
		1250-W125-10-3T	●	3	1.250	1.250	4.00	1.663			-20°		Fig.7	34,000
		1250-W125-10-4T	●	4	1.250	1.250	4.00	1.663			-20°		Fig.7	34,000
		1500-W125-10-5T	●	5	1.500	1.250	4.125	2.070			-19°		Fig.3	30,700
	Long Overhang	MEW 1000-W100-45-10-3T	●	3	1.000	1.000	4.50	2.163	0.393	+7°	-20°	Yes	Fig.7	37,200
Cylindrical	Long Shank	MEW 0625-S625-6-10-2T	●	2	0.625	0.625	6.00	1.500	0.393	+7°	-22°	Yes	Fig.5	43,900
		0750-S750-7-10-2T	●	2	0.750	0.750	7.00	1.586			-22°		Fig.5	42,000
		1000-S100-7-10-3T	●	3	1.000	1.000	7.00	1.980			-20°		Fig.5	37,200
		1000-S100-8-10-2T	●	2	1.000	1.000	8.00	1.980			-20°		Fig.5	37,200
		1000-S100-8-10-3T	●	3	1.000	1.000	8.00	1.980			-20°		Fig.5	37,200
		1250-S125-8-15-3T	●	3	1.250	1.250	8.00	1.980	0.590	+10°	-22°		Fig.5	30,100
		1500-S125-8-15-4T	●	4	1.500	1.250	8.00	2.069			-21°		Fig.2	25,600
Weldon	Standard Shank	MEW 1000-W750-15-2T	●	2	1.000	0.750	3.25	1.219	0.590	+10°	-22°	Yes	Fig.3	34,700
		1000-W100-15-2T	●	2	1.000	1.000	3.75	1.413			-22°		Fig.7	34,700
		1000-W100-475-15-2T	●	2	1.000	1.000	4.75	1.413			-22°		Fig.7	34,700
		1250-W100-15-2T	●	2	1.250	1.000	3.75	1.469			-22°		Fig.3	30,100
		1250-W125-15-2T	●	2	1.250	1.250	4.00	1.663			-22°		Fig.7	30,100
		1250-W125-15-3T	●	3	1.250	1.250	4.00	1.663			-22°		Fig.7	30,100
		1500-W125-15-3T	●	3	1.500	1.250	4.125	2.069			-21°		Fig.3	25,600
		1500-W125-15-4T	●	4	1.500	1.250	4.125	2.069			-21°		Fig.3	25,600

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Spare Parts & Applicable Inserts ➡ M62

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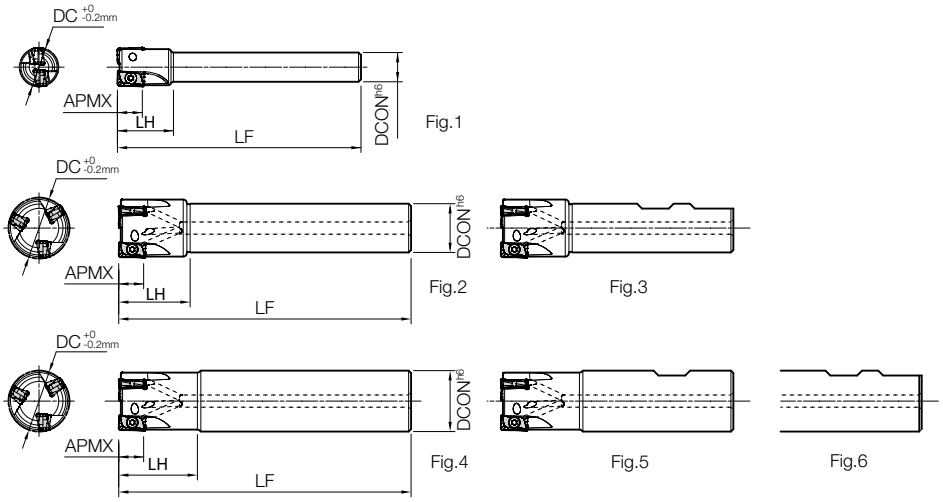
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MEW End Mill (Metric)

(Cylindrical Shank)



Toolholder Dimensions (Metric)

Shank		Part Number	Stock	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Coolant Hole	Drawing	Max RPM*
					DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.			
Cylindrical	Standard Shank	MEW 16-S12-10-2T	●	2	16	12	100	23	10	+7°	-22°	No	Fig.1	43,750
		16-S16-10-2T	●			16		26				Yes	Fig.4	43,750
		18-S16-10-2T	●		18			25			-21°		Fig.2	43,000
		20-S16-10-2T	●		20		110	26			-20°			41,000
		20-S20-10-2T	●			20		30					Fig.4	41,000
		20-S20-10-3T	●	3	20									41,000
		22-S20-10-3T	●		22			26					Fig.2	39,600
		25-S20-10-3T	●		25		120	29						37,500
		25-S25-10-2T	●	2		25		32					Fig.4	37,500
		25-S25-10-3T	●	3										37,500
		28-S25-10-3T	●		28			29					Fig.2	35,800
		30-S25-10-4T	●	4	30		130	32						34,800
		32-S25-10-4T	●		32			32						33,900
		32-S32-10-3T	●	3		32		40					Fig.4	33,900
		32-S32-10-4T	●	4										33,900
		40-S32-10-5T	●	5	40		150	50			-19°		Fig.2	30,000
		50-S32-10-5T	●		50		120	40						22,500
	Long Shank	MEW 20-S20-10-150-2T	●	2	20	20	150	40	10	+7°	-20°	Yes	Fig.4	41,000
		25-S25-10-170-2T	●		25	25	170	50						37,500
	Standard Shank	MEW 25-S20-15-2T	●	2	25	20	120	29	15	+10°	-22°	Yes	Fig.2	35,000
		25-S25-15-2T	●			25		32					Fig.4	35,000
		32-S25-15-2T	●		32	25	130						Fig.2	30,000
		32-S32-15-2T	●			32		40					Fig.4	30,000
		32-S32-15-3T	●	3	32		130							30,000
		40-S32-15-3T	●		40	32	150	50			-21°		Fig.2	25,000
		40-S32-15-4T	●	4										25,000
		50-S32-15-4T	●		50		120	40						17,000
Weldon	Standard Shank	MEW 16-W16-10-2T	□	2	16	16	75	25	10	+7°	-22°	Yes	Fig.5	43,750
		20-W20-10-2T	□		20	20	77				-20°			41,000
		20-W20-10-3T	●	3										41,000
		25-W25-10-2T	□	2	25	25	90	32					Fig.6	37,500
		25-W25-10-3T	●	3										37,500
		32-W32-10-4T	□	4	32	32	102	40						33,900
		40-W32-10-5T	●	5	40		111	50			-19°		Fig.3	30,000
		MEW 25-W25-15-2T	□	2	25	25	90	32	15	+10°	-22°	Yes	Fig.6	35,000
		32-W32-15-3T	□	3	32	32	102	40						30,000
		40-W32-15-4T	□	4	40	32	111	50			-21°	Yes	Fig.3	25,000

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Spare Parts & Applicable Inserts ➔ M62

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
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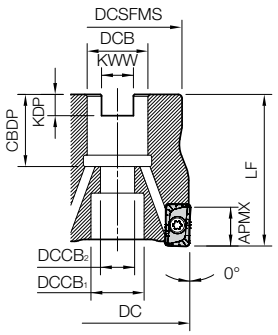
MEW Face Mill (Inch)



Toolholder Dimensions (Inch)

Part Number	Stock	No. of Inserts	Dimensions (in)										Rake Angle (°)		Coolant Hole	Weight (kg)	Max RPM*
			DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	A.R. (Max)	R.R.			
MEW 1500R-10-5T	●	5	1.50	1.457	0.750	0.669	0.433	1.575	0.826	0.188	0.312	0.393	+7°	-19°	Yes	0.2	30,700
2000R-10-5T	●	5	2.00	1.811												0.4	22,300
2500R-10-6T	●	6	2.50	1.969												0.6	20,400
MEW 2000R-15-4T	●	4	2.00	1.811	0.750	0.669	0.433	1.575	0.826	0.188	0.312	0.590	+10°	-21°	Yes	0.4	16,800
2000R-15-5T	●	5														0.4	16,800
2500R-15-5T	●	5	2.50	1.969												0.5	14,400
3000R-15-6T	●	6	3.00	2.362	1.000	0.866	0.551	1.969	1.063	0.236	0.381	0.590	+10°	-20°		1.0	12,250
4000R-15-8T	●	8	4.00	3.504	1.500	2.047	-		1.181	0.393	0.625					1.8	10,400

Max. Revolution*
When running the face mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Spare Parts & Applicable Inserts (Inch)

Part Number	Spare Parts				Applicable Inserts ➡ M16			
	Insert Screw	Wrench	Anti-seize Compound	Arbor Bolt	General Purpose	Low Cutting Force	Tough Edge (Heavy Milling)	Aluminum / Non-ferrous
MEW ...-10-_T	SB-3065TRP	DTPM-8	P-37	-	LOMU1004..ER-GM	LOMU100408ER-SM	LOMU100408ER-GH	LOGT100408FR-AM
MEW 1500R-10-5T	Recommended Torque for Insert Screw 1.2N · m			HH3/8-1.25 (HH3/8-1.25H)				
2000R-10-5T								
2500R-10-6T								
MEW ...-15-_T	SB-4090TRP	DTPM-15	P-37	-	LOMU1505..ER-GM	LOMU150508ER-SM	LOMU150508ER-GH	LOGT150508FR-AM
MEW 2000R-15-4T				HH3/8-1.25 (HH3/8-1.25H)				
2500R-15-5T	Recommended Torque for Insert Screw 3.5N · m							
3000R-15-6T								
4000R-15-8T				-				

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Recommended Cutting Conditions ➡ **M66**

***If through spindle coolant is required please order arbor bolt in ( ) separately.**

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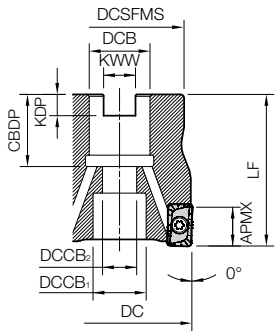
MEW Face Mill (Metric)



Toolholder Dimensions (Metric)

Part Number	Stock	No. of Inserts	Dimensions (mm)										Rake Angle (°)		Coolant Hole	Weight (kg)	Max RPM*
			DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	A.R. (Max)	R.R.			
MEW 032R-10-4T-M	●	4	32	30	16	14	9	35	19	5.6	8.4	10	+7°	-20°	Yes	0.1	33,900
040R-10-5T-M	●	5	40	34				40						-19°		0.2	30,000
050R-10-5T-M	●		50	45	22	18	11		21	6.3	10.4					0.4	22,500
MEW 063R-10-6T-M	●	6	63	47												0.5	20,500
040R-15-4T-M	●	4	40	34	16	14	9	40	19	5.6	8.4	15	+10°	-21°	Yes	0.2	25,000
050R-15-4T-M	●		50	45	22	18	11		21	6.3	10.4					0.3	17,000
063R-15-5T-M	●	5	63	47												0.5	14,500
080R-15-6T-M	●	6	80	60	27	20	13	50	25	7	12.4			-20°		1.0	12,000
080R-15-6T	●				25.4				27	6	9.5					1.0	12,000

Max. Revolution*
When running the face mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Spare Parts & Applicable Inserts (Metric)

Part Number	Spare Parts				Applicable Inserts ➔ M16			
	Insert Screw	Wrench	Anti-seize Compound	Arbor Bolt	General Purpose	Low Cutting Force	Tough Edge (Heavy Milling)	Aluminum / Non-ferrous
MEW ...-10-_T	SB-3065TRP	DTPM-8	P-37	-	LOMU1004..ER-GM	LOMU100408ER-SM	LOMU100408ER-GH	LOGT100408FR-AM
MEW 032R-10...-M				HH8X25 (HH8X25H)				
040R-10...-M	Recommended Torque for Insert Screw 1.2N · m							
050R-10...-M				HH10X30 (HH10X30H)				
063R-10...-M								
MEW ...-15-_T	SB-4090TRP	DTPM-15	P-37	-	LOMU1505..ER-GM	LOMU150508ER-SM	LOMU150508ER-GH	LOGT150508FR-AM
MEW 040R-15...-M				HH8X25 (HH8X25H)				
050R-15...-M	Recommended Torque for Insert Screw 3.5N · m							
063R-15...-M				HH10X30 (HH10X30H)				
080R-15...(-M)								
4000R-15-8T				HH12X35 (HH12X35H)				

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Recommended Cutting Conditions ➔ M66

***If through spindle coolant is required please order arbor bolt in ( ) separately.**

Wrench Specifications

Wrenches and clamp screws are “Torx Plus”.

1) Ref. to Fig. 2 for “Torx Plus” Wrench. (Purple grip)
2) Ref. to Fig. 3 for “Torx” Wrench. (Black grip)

A “Torx Plus” Wrench and a “Torx” Wrench have different top shapes.
Please use a “Torx Plus” Wrench.

* If a “Torx” Wrench is used to tighten, the screw head might become damaged and then the screw cannot be removed.

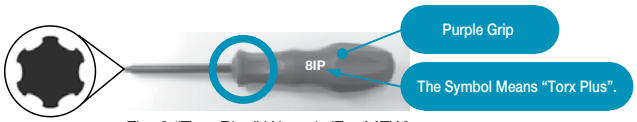


Fig. 2 “Torx Plus” Wrench (For MEW)

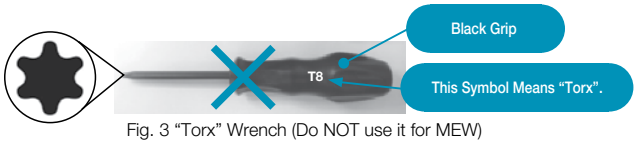
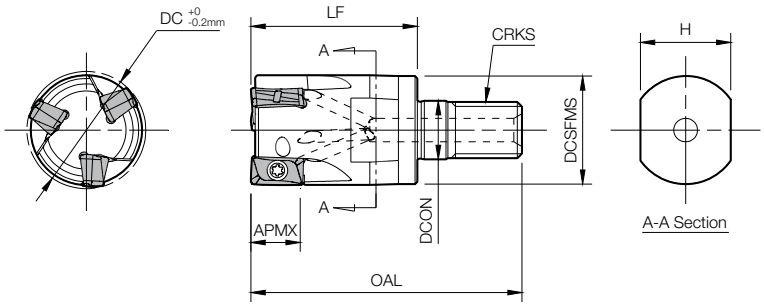


Fig. 3 “Torx” Wrench (Do NOT use it for MEW)

MEW Modular End Mill



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (mm)								Rake Angle (°)		Coolant Hole	Applicable Inserts ➡ M16	Max RPM*
			DC	DCSFMS	DCON	OAL	LF	CRKS	H	APMX	A.R. (Max)	R.R.			
MEW 16-M08-10-2T	●	2	16	14.7	8.5	43	25	M8xP1.25	12	10	+7°	-22°	Yes	LOMU1004... LOGT1004...	43,750
20-M10-10-2T	●	2	20	18.7	10.5	49	30	M10xP1.5	15	10	+7°	-20°	Yes	LOMU1004... LOGT1004...	41,000
20-M10-10-3T	●	3	20	18.7	10.5	49	30	M10xP1.5	15	10	+7°	-20°	Yes	LOMU1004... LOGT1004...	41,000
25-M12-10-3T	●	3	25	23	12.5	57	35	M12xP1.75	19	10	+7°	-20°	Yes	LOMU1004... LOGT1004...	37,500
32-M16-10-4T	●	4	32	30	17	63	40	M16xP2.0	24	10	+7°	-20°	Yes	LOMU1004... LOGT1004...	33,900
MEW 25-M12-15-2T	●	2	25	23	12.5	57	35	M12xP1.75	19	15	+10°	-22°	Yes	LOMU1505... LOGT1505...	35,000
32-M16-15-3T	●	3	32	30	17	63	40	M16xP2.0	24	15	+10°	-22°	Yes	LOMU1505... LOGT1505...	30,000

Max. Revolution*
When running the face mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Spare Parts & Applicable Inserts

Part Number	Spare Parts			Applicable Inserts ➡ M13			
	Insert Screw	Wrench	Anti-seize Compound	General Purpose	Low Cutting Force	Tough Edge (Heavy Milling)	Aluminum / Non-ferrous
MEW 16-M08-10-2T 20-M10-10-2T 20-M10-10-3T 25-M12-10-3T 32-M16-10-4T	SB-3065TRP Recommended Torque for Insert Screw 1.2N · m	DTPM-8	P-37	LOMU1004..ER-GM	LOMU100408ER-SM	LOMU100408ER-GH	LOGT100408FR-AM
MEW 25-M12-15-2T 32-M16-15-3T	SB-4090TRP Recommended Torque for Insert Screw 3.5N · m	DTPM-15	P-37	LOMU1505..ER-GM	LOMU150508ER-SM	LOMU150508ER-GH	LOGT150508FR-AM

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Recommended Cutting Conditions ➡ M66

***If through spindle coolant is required please order arbor bolt in ( ) separately.**

Modular End Mill Identification System

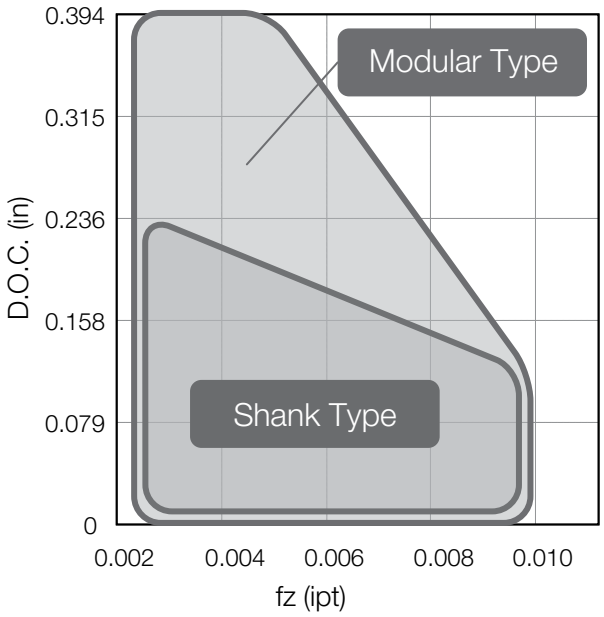
MEW 16 - M08 - 10 - 2T

MEW	16	M08	10	2T
Series	Cutting Dia.	Thread Dia. Tolerance	Insert Size	No. of Inserts

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Modular End Mill Features



<Cutting Conditions>

· Cutting Speed : Vc = 490 sfm (n = 2,390min^{-1})
· Width of Cut : ae = 0.394" (Shouldering)
· Workpiece Material : 1055 Dry
· Machine : BT30 M/C

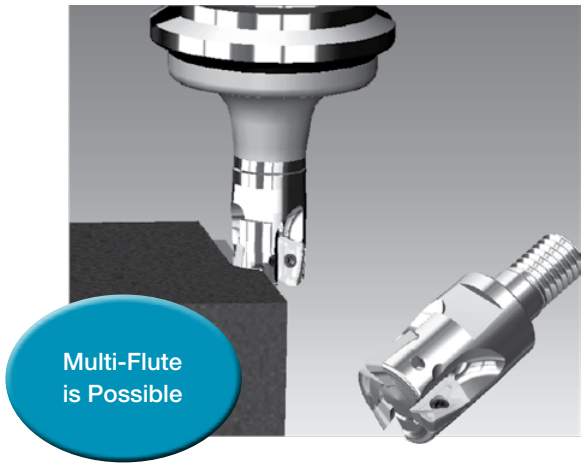
<Cutting Tool>

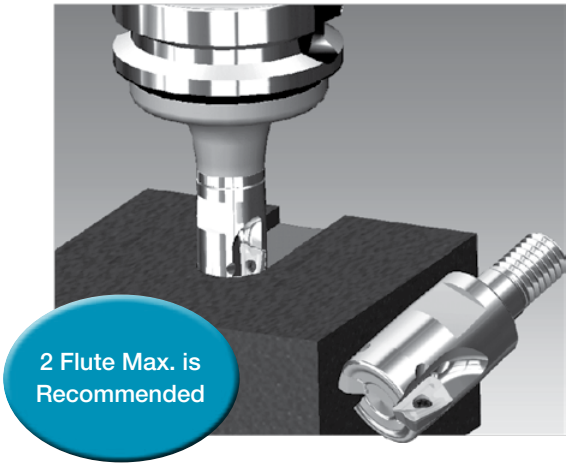
· Modular type
Head : MEW20-M10-10-3T
Arbor : BT30K-M10-45
Insert : LOMU100408ER-GM (PR1525)

· Shank type
Toolholder : MEW20-S20-10-3T
Arbor : BT30 Milling Chuck (Two-face clamping)
Insert : LOMU100408ER-GM (PR1525)

Flute Recommendation for Shouldering and Slotting

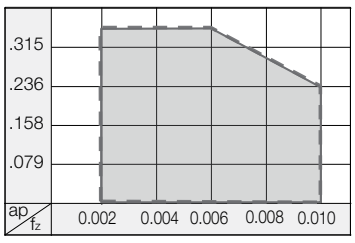
Shouldering (ae = 0.394")	Slotting





Modular End Mill Cutting Conditions by Application

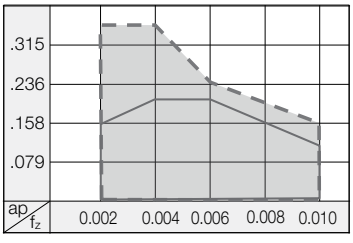
Shouldering



Available Cutting Condition for 2 Flutes

Available Cutting Condition for 3 Flutes

Slotting



For high efficiency shouldering with higher feed rates, 3 or more flutes is possible.
For slotting applications, use 2 flutes maximum to lower cutting forces.

How to Mount Insert

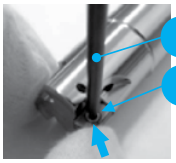


Fig. 1

1. Be sure to remove dust and chips from the insert mounting pocket.
2. Apply anti-seize compound on portion of taper and thread of clamp screw.
   (1) Attach the screw (magnetic head) to the front end of the wrench.
   (2) While lightly pressing the insert against the pocket walls,
   put the screw into the hole of the insert and tighten. (Ref. to Fig. 1.)
   Tighten M3 screws (SB-3065TRP) slightly inclined from the insert.
   (Ref. to Fig. 2.) surface of the insert.
3. When tightening the screw, make sure that the wrench is parallel to the screw. For recommended torque, Ref. to M62-M63
4. After tightening the screw, make sure that there is no clearance between the insert seat surface and the pocket floor of the holder or between the insert side surfaces and the pocket walls of the holder. If there is any clearance, remove the insert and mount it again according to the above steps.

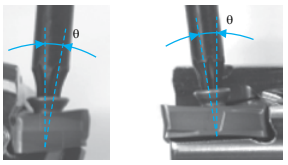


Fig.2

Recommended Cutting Conditions

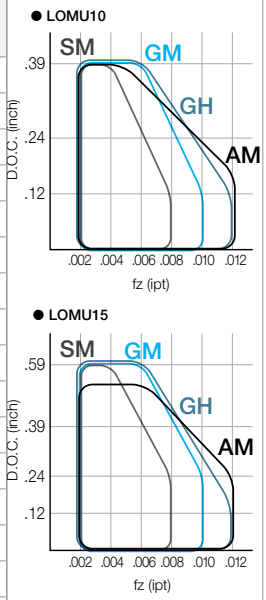
Chipbreaker	Workpiece Material	Feed Rate fz (ipt) Toolholder Description: MEW0625~MEW0750 MEW16~MEW18	Feed Rate fz (ipt) Toolholder Description: MEW1000~MEW1500 MEW1500R~MEW3000R MEW20~MEW50 MEW032R~MEW080R	Recommended Insert Grade Vc (sfm): MEGACOAT NANO PR1535	MEGACOAT NANO PR1525	MEGACOAT NANO PR1510	MEGACOAT HARD PR015S	CVD Coated Carbide CA6535	DLC Coated Carbide PDL025	Carbide GW25
GM	Carbon Steel	0.002~**0.004**~0.008	0.003~**0.006**~0.010	☆ 390~**590**~820	★ 390~**590**~820	-	-	-	-	-
	Alloy Steel	0.002~**0.004**~0.006	0.003~**0.006**~0.008	☆ 330~**520**~720	★ 330~**520**~720	-	-	-	-	-
	Mold Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 260~**460**~590	★ 260~**460**~590	-	-	-	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 330~**520**~660	☆ 330~**520**~660	-	-	-	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 490~**660**~820	-	-	-	★ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	★ 300~**390**~490	-	-	-	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.007	0.003~**0.007**~0.010	-	-	★ 390~**590**~820	-	-	-	-
	Nodular Cast Iron	0.002~**0.003**~0.005	0.003~**0.006**~0.008	-	-	★ 330~**490**~660	-	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 70~**100**~160	-	-	-	★ 70~**100**~160	-	-
	Titanium Alloys	0.002~**0.003**~0.005	0.003~**0.006**~0.008	☆ 130~**200**~260	-	☆ 100~**160**~230	-	-	-	-
SM	Carbon Steel	0.002~**0.004**~0.007	0.003~**0.006**~0.008	☆ 390~**590**~820	★ 390~**590**~820	-	-	-	-	-
	Alloy Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.007	☆ 330~**520**~720	★ 330~**520**~720	-	-	-	-	-
	Mold Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	☆ 260~**460**~590	★ 260~**460**~590	-	-	-	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	★ 330~**520**~660	☆ 330~**520**~660	-	-	-	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	☆ 490~**660**~820	-	-	-	★ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.005	0.003~**0.004**~0.006	☆ 300~**390**~490	-	-	-	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 70~**100**~160	-	-	-	★ 70~**100**~160	-	-
	Titanium Alloys	0.002~**0.003**~0.005	0.003~**0.005**~0.006	★ 130~**200**~260	-	☆ 100~**160**~230	-	-	-	-
GH	Carbon Steel	0.002~**0.004**~0.008	0.003~**0.008**~0.012	☆ 390~**590**~820	★ 390~**590**~820	-	-	-	-	-
	Alloy Steel	0.002~**0.004**~0.006	0.003~**0.008**~0.010	☆ 330~**520**~720	★ 330~**520**~720	-	-	-	-	-
	Mold Steel	0.002~**0.003**~0.005	0.003~**0.006**~0.009	☆ 260~**460**~590	★ 260~**460**~590	-	-	-	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 330~**520**~660	☆ 330~**520**~660	-	-	-	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 490~**660**~820	-	-	-	☆ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.005	0.003~**0.005**~0.008	☆ 300~**390**~490	-	-	-	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.008	0.003~**0.009**~0.012	-	-	☆ 390~**590**~820	-	-	-	-
	Nodular Cast Iron	0.002~**0.003**~0.006	0.003~**0.007**~0.010	-	-	☆ 330~**490**~660	-	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.005	0.003~**0.005**~0.006	☆ 70~**100**~160	-	-	-	☆ 70~**100**~160	-	-
	Titanium Alloys	0.002~**0.003**~0.005	0.003~**0.006**~0.008	☆ 130~**200**~260	-	☆ 100~**160**~230	-	-	-	-
	Hard Materials	0.002~**0.003**~0.005	0.003~**0.006**~0.009	-	-	-	★ 260~**390**~520	-	-	-
AM	Aluminum Alloy	0.002~**0.004**~0.008	0.003~**0.006**~0.010	-	-	-	-	-	★ 660~**1,970**~2,950	☆ 660~**1,640**~2,620

※ Bold numbers in the graph indicate the most recommended value of feed (f) Adjust cutting speed and feed rate according to the actual machining conditions

★ :1st Recommendation
☆ : 2nd Recommendation

※ Coolant is recommended for Ni-base heat resistant alloy and titanium alloy with MEW

Applicable Chipbreaker Range (Shouldering)

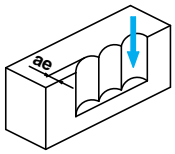


<Cutting Conditions>
Vc = 500 sfm ae = ØD/2
Workpiece Material: 1049

Ramping, Helical Milling and Plunging

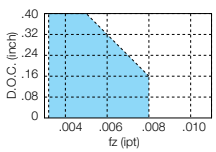
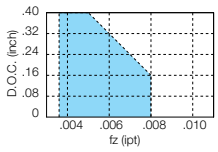
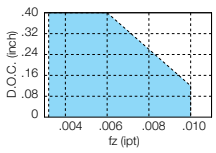
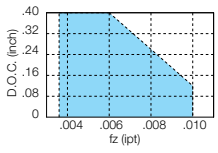
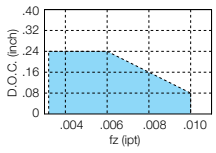
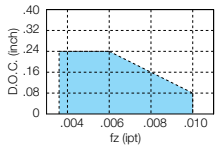
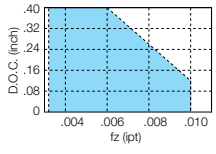
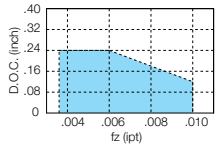
1. Available for vertical milling.
2. NOT available for ramping and helical milling, because interference between workpiece and insert may occur.

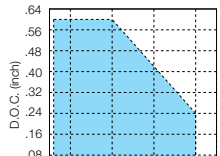
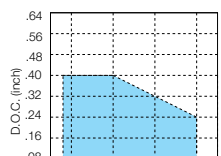
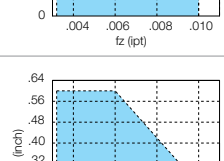
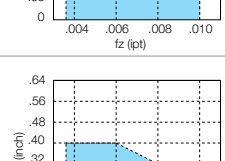
Plunging



Insert Description	Max. Width of Cut (ae)
LOMU10	0.197" (5mm)
LOMU15	0.276" (7mm)

Cutting Performance

Part Number	Shouldering (Cutting Width ae = DC/2)	Slotting
MEW0625...-10 MEW0750...-10 MEW16...-10 MEW18...-10		
MEW1000...-10 ~ MEW1500...-10 MEW20...-10 ~ MEW50...-10		
MEW0750...-2T MEW1000...-2T (Long Shank) MEW20-...-2T MEW25-...-2T (Long Shank)		
MEW1500R...-10 ~ MEW2500R...-10 MEW032R...-10 ~ MEW063R...-10		

Part Number	Shouldering (Cutting Width ae = DC/2)	Slotting
MEW1000...-15 ~ MEW1500...-15 MEW25...-15 ~ MEW50...-15		
MEW2000R...-15 ~ MEW3000R...-15 MEW040R...-15 ~ MEW080R...-15		

<Cutting Conditions>
· Vc = 600 sfm
· GM Chipbreaker
· Workpiece Material: 1049
· Overhang Length
1. End Mill: Same length as LH of the dimension
2. Face Mill: LF of the dimension + minimum overhang length of the arbor

Case Studies

1018

- Construction Equipment Part
- Vc = 820 sfm
- D.O.C. × ae = 0.158" × 0.787"
- fz = 0.006 ipt (Vf = 53 ipm)
- Wet
- MEW32-S32-10-4T (4 Inserts)
- LOMU100408ER-GM (PR1525)

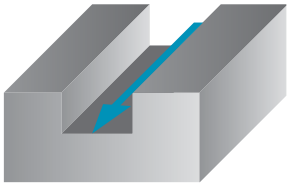
PR1525	Chip Removal Rate = 6.591in³/min
Competitor A (Positive Cutter)	Chip Removal Rate =4.394in³/min

MEW showed stable milling without chattering at higher feed, improving the cutting efficiency by 150%. Burrs are prevented and excellent surface finish is achieved.

Customer Evaluation

1018

- Machine Part
- Vc = 820 sfm
- D.O.C. × ae = 0.128" × 0.787" (Grooving)
- fz = 0.008 ipt (Vf = 94 ipm)
- Dry
- MEW20-S20-10-3T (3 Inserts)
- LOMU100408ER-GM (PR1525)



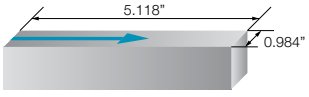
PR1525	Chip Removal Rate = 8.787in³/min (Stable Milling)
Competitor B (Positive Cutter)	Chip Removal Rate = 6.957in³/min (Unstable)

No chattering with MEW, while Competitor B chattered at the same cutting conditions. No burrs with MEW and excellent surface finish is gained.

Customer Evaluation

15-5PH (42HRC)

- Aircraft Part
- Vc = 590 sfm
- D.O.C. × ae = 0.079" × 0.984"
- fz = 0.004 ipt (Vf = 28 ipm)
- Wet
- MEW32-S32-10-4T (4 Inserts)
- LOMU150508ER-GM (PR1525)



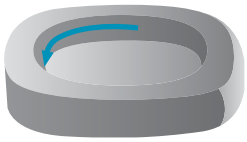
PR1525	Chip Removal Rate = 2.185in³/min (Further Milling Possible)
Competitor C (Positive Cutter)	Chip Removal Rate = 1.635in³/min (Unable to Continue Cutting)

No chattering and more stable milling is possible with MEW.
Dispite the milling difficulty because of the properties of the material, PR1525 kept good cutting edge form, minimizing wear and adhesion.

Customer Evaluation

H13

- Mold Part
- Vc = 330 sfm
- D.O.C. × ae = 0.138" × 1.181"
- fz = 0.004 ipt (Vf = 15 ipm)
- Dry
- MEW32-S32-10-4T (4 Inserts)
- LOMU100408ER-GH (PR1525)



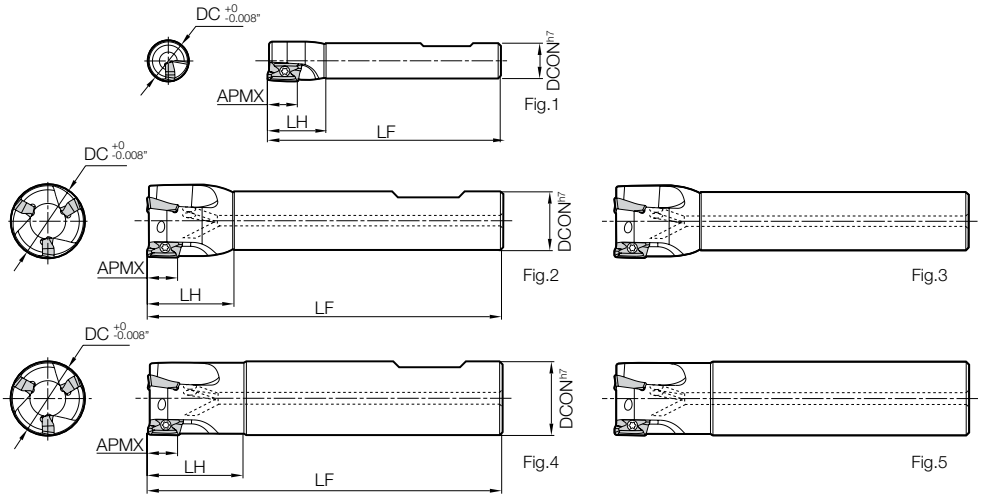
PR1525	Chip Removal Rate = 2.563in³/min (Further Milling Possible)
Competitor D (Positive Cutter)	Chip Removal Rate = 1.282in³/min (Unable to Continue Cutting)

MEW doubled cutting efficiency. Furthermore, MEW inserts have double number of edges (4-edge), which enables a drastic cost reduction.

Customer Evaluation

Shouldering | Slotting | Facing

MEC End Mill (Inch)



Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

Toolholder Dimensions (Inch)

Shank		Part Number	Stock	No. of Inserts	Dimensions (in)					Rake Angle (°)		Coolant Hole	Drawing	Spare Parts		Max RPM*
					DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.			Insert Screw	Wrench	
Weldon	Standard Shank	MEC 0500-S500-11	●	1	0.500	0.500	2.650	0.787	0.400	12°	-21°	No	Fig.1	SB-2545TR	DTM-8	50,800
		MEC 0625-S500-11T	●	2	0.625	0.500	2.750	0.906	0.400	18°	-14°			SB-2555TRG	DTM-8	43,750
		0625-S625-11T	●			0.625	3.000	1.024				Yes	Fig.4			43,750
		0750-S625-11T	●	3	0.750	0.625	3.050			20°	-10°		Fig.2			41,000
		0750-S750-11T	●		0.750	0.750	3.250	1.142					Fig.4			41,000
		1000-S750-11T	●		1.000	0.750				21°	-10°		Fig.2			37,500
		1000-S100-11T	●			1.000	3.750	1.260					Fig.4			37,500
		1250-S100-11T	●	4	1.250	1.000				23°	-9°		Fig.2			33,900
		1250-S125-11T	●			1.250	4.000	1.575					Fig.4			33,900
		1500-S125-11T	●	5	1.500	1.250	4.350	1.969		24°	-8°		Fig.2			30,000
		MEC 1000-S750-17	●	2	1.000	0.750	3.500	1.417	0.618	16°	-11°		Fig.2	SB-4070TRN	DTM-15	35,000
		1000-S100-17	●		1.000	1.000	3.750						Fig.4			35,000
		1250-S100-17	●	3	1.250	1.000	4.000	1.575		17°	-7°		Fig.2			30,000
		1250-S125-17	●			1.250							Fig.4			30,000
		1500-S125-17	●	4	1.500	1.250	4.350	1.969		19°			Fig.2			25,000
Cylindrical	Long Shank	MEC 0750-S750-5.2-11T	●	2	0.750	0.750	5.200	2.362	0.400	20°	-10°		Fig.5	SB-2555TRG	DTM-8	41,000
		1000-S100-6.3-11T	●		1.000	1.000	6.300			21°						37,500
		1250-S125-7.9-11T	●		1.250	1.250	7.870	2.559	0.400	23°	-9°					33,900
		1500-S125-9.5-11T	●		1.500	1.250	9.450				-8°		Fig.3			30,000
		MEC 1000-S100-6.3-17	●	2	1.000	1.000	6.300	2.362	0.618	16°	-11°		Fig.5	SB-4070TRN	DTM-15	35,000
		1250-S125-7.9-17	●		1.250	1.250	7.870	2.559	0.618	17°	-7°		Fig.5			30,000
		1500-S125-9.5-17	●		1.500	1.250	9.450						Fig.3			25,000

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Applicable Inserts ➔ M70

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

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(Technical Support) 800.823.7284 - Option 2
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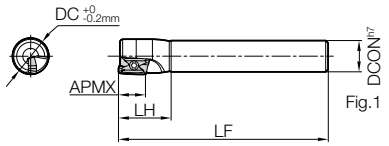
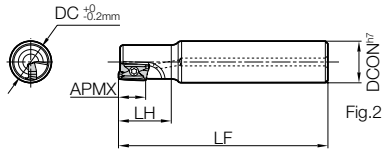
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

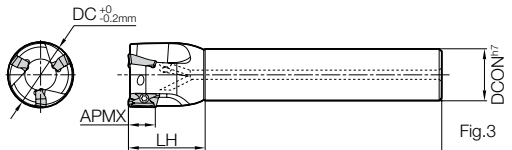
Shouldering | Slotting | Facing

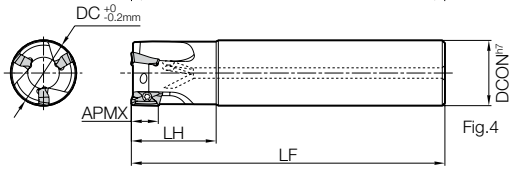
MEC End Mill (Metric)

(Cylindrical Shank)









Toolholder Dimensions for 11mm Inserts (Metric)

Shank		Part Number	Stock	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Coolant Hole	Drawing	Spare Parts		Max RPM*
					DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.			Insert Screw	Wrench	
Cylindrical	Standard Shank	MEC 10-S10-11	●	1	10	10	80	17	10	+10°	-24°	No	Fig.1	SB-2545TR	DTM-8	54,800
		10-S16-11	●			16						Yes	Fig.2			
		12-S10-11	●		12	10		20		+12°	-21°	No	Fig.1			50,800
		12-S12-11	●			12							Fig.1			
		12-S16-11	●			16						Yes	Fig.2			
		13-S12-11	●		13	12					-19°	No	Fig.1			49,200
		14-S12-11	●		14								Fig.1			47,700
		14-S16-11	●			16						Yes	Fig.2			
		MEC 16-S12-11T	●	2	16	12	100	23	10	+18°	-14°	No	Fig.1	SB-2555TRG	DTM-8	43,750
		16-S16-11T	●			16		30				Yes	Fig.4			43,750
		17-S16-11T	●		17	16		23			-13°		Fig.3			43,500
		18-S16-11T	●		18					+19°			Fig.3			43,000
		19-S16-11T	●	3	19	16	110	26	10	+20°	-10°	Yes	Fig.3	SB-2555TRG		42,000
		20-S16-11T	●		20								Fig.3			41,000
		20-S20-11T	●		20	20		30		+20°	-10°		Fig.4			41,000
		21-S20-11T	●		21						-9°	Yes	Fig.3	SB-2555TRG		40,300
		22-S20-11T	●		22					+21°	-10°		Fig.3			39,600
		24-S20-11T	●	3	24	20	120	29	10	+21°	-10°	Yes	Fig.3	SB-2555TRG		38,200
		25-S20-11T	●		25								Fig.3			37,500
		25-S20-11T-4	●	4									Fig.3			
		25-S25-11T	●	3		25		32					Fig.4			37,500
		25-S25-11T-4	●	4									Fig.4			
		28-S25-11T	●	3	28	25				+22°	-9°		Fig.3			35,800
		30-S25-11T	●	4	30		130	32	10	+23°	-9°	Yes	Fig.3	SB-2555TRG	DTM-8	34,800
		32-S25-11T	●		32								Fig.3			33,900
		32-S25-11T-5	●	5									Fig.3			
		32-S32-11T	●	4		32		40					Fig.4			33,900
		32-S32-11T-5	●	5									Fig.4			
		40-S32-11T	●		40	32	150	50	10	+23°	-8°	Yes	Fig.3	SB-2555TRG	DTM-8	30,000
		50-S32-11T	●		50						-7°		Fig.3			22,500
	Long Shank	MEC 20-S18-170-11T	●	2	20	18	170	30	10	+20°	-10°	Yes	Fig.3	SB-2555TRG	DTM-8	41,000
		20-S20-140-11T	●			20	140	60					Fig.4			
		20-S20-170-11T	●				170						Fig.4			
		22-S20-170-11T	●		22			30		+21°			Fig.3			39,600
		25-S23-210-11T	●		25	23	210	32					Fig.3			37,500
		25-S25-160-11T	●			25	160	60					Fig.4			
		25-S25-210-11T	●				210						Fig.4			
		28-S25-210-11T	●		28			32		+22°	-9°		Fig.3			35,800
		32-S30-250-11T	□		32	30	250	40		+23°			Fig.3			33,900
		32-S32-200-11T	●			32	200	65					Fig.4			
		32-S32-250-11T	●				250						Fig.4			
		35-S32-250-11T	●		35			40					Fig.3			32,600
		40-S32-240-11T	●		40		240	65			-8°		Fig.3			30,000
		MEC 20-S20-150-11T-3	●	3	20	20	150	60	10	+20°	-10°	Yes	Fig.4	SB-2555TRG	DTM-8	41,000
		25-S25-170-11T-3	●		25	25	170			+21°			Fig.4			37,500
		25-S25-170-11T-4	●	4									Fig.4			
		30-S25-180-11T-3	●	3	30	25	180	32		+23°	-9°		Fig.3			34,800
		32-S32-200-11T-3	●		32	32	200	65					Fig.4			33,900
		32-S32-200-11T-4	●	4									Fig.4			
		32-S32-200-11T-5	●	5									Fig.4			

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Applicable Inserts ➔ M70

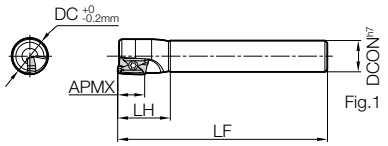
Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

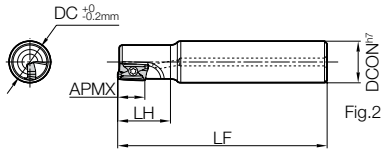
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

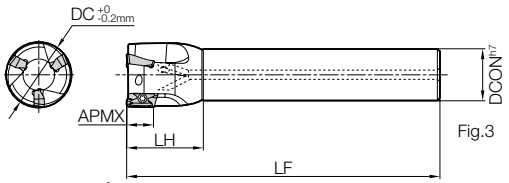
Shouldering | Slotting | Facing

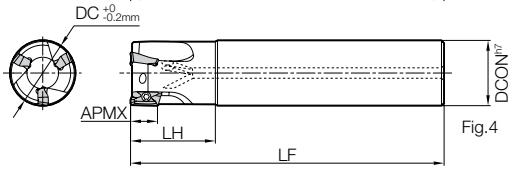
MEC End Mill (Metric)

(Cylindrical Shank)









Toolholder Dimensions for 17mm Inserts (Metric)

Shank		Part Number	Stock	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Coolant Hole	Drawing	Spare Parts		Max RPM*
					DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.			Insert Screw	Wrench	
Cylindrical	Standard Shank	MEC 25-S20-17	●	2	25	20	120	36	15.7	+16°	-11°	Yes	Fig.3	SB-4070TRN	DTM-15	35,000
		25-S25-17	●			25							Fig.4			35,000
		32-S25-17	●	3	32	25	130	40		+17°	-7°		Fig.3			30,000
		32-S32-17	●			32							Fig.4			30,000
		40-S32-17	●	4	40		150	50		+19°			Fig.3			25,000
		50-S32-17	●		50											17,000
	Long Shank	MEC 25-S25-160-17	●	2	25	25	160	60	15.7	+16°	-11°	Yes	Fig.4	SB-4070TRN	DTM-15	35,000
		25-S25-210-17	●				210									
		28-S25-210-17	●		28			36					Fig.3			32,500
		32-S32-200-17	●		32	32	200	65		+17°	-7°		Fig.4			30,000
		32-S32-250-17	●				250									
		35-S32-250-17	●		35			40					Fig.3			27,700
		40-S32-240-17	●		40		240	65		+19°						25,000
		MEC 32-S32-250-17-3	●	3	32	32	250	65	15.7	+17°	-7°	Yes	Fig.4	SB-4070TRN	DTM-15	30,000
		40-S32-250-17-3	●		40								Fig.3			25,000
		40-S32-250-17-4	●	4												
		50-S42-250-17-4	●		50	42		64		+19°	-6°					17,000

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Applicable Inserts

Part Number	Applicable Inserts ➡ M22, M23			Applicable PCD Inserts ➡ M30	
MEC...-11	BDMT 1103○○ER-JT	BDMT 1103○○ER-JS	-	-	-
MEC...-11T	BDMT 11T3○○ER-JT	BDMT 11T3○○ER-JS	BDGT 11T3○○FR-JA	BDGT 11T3○○FR(-LE)	BDMT 11T3○○FR
MEC...-17	BDMT 1704○○ER-JT	BDMT 1704○○ER-JS	BDGT 1704○○FR-JA	-	BDMT 1704○○FR

Recommended Cutting Conditions ➡ M74-M75

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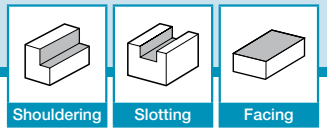


NEW ITEMS!

MEC Face Mill (Inch)

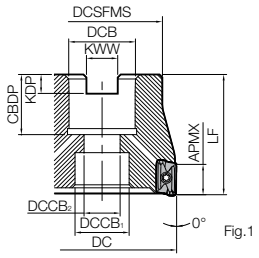


Fig.1

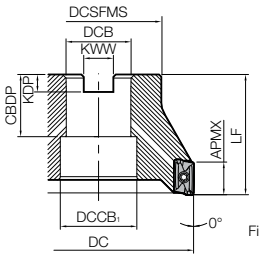
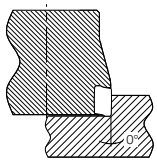


Fig.2

Rake Angle (°)
11 Type A.R. (Max) : +23° R.R. : -7°
17 Type A.R. (Max) : +19° R.R. : -7°



Toolholder Dimensions (Inch)

Part Number	Stock	No. of Inserts	Dimensions (in)										Coolant Hole	Drawing	Weight (kg)	Spare Parts		Max RPM*
			DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				Insert Screw	Wrench	
MEC 1500R-11T-5T	●	5	1.500	1.263		0.63			0.807						0.2			30,700
2000R-11T-5T	●	5	2.000	1.606	0.750	0.646	0.417	1.575	0.819	0.188	0.312				0.3			22,300
2500R-11T-6T	●	6	2.500	1.594		0.63			0.819			0.400	Yes	Fig.1	0.7	SB-2555TRG	DTM-8	20,400
3000R-11T-7T	●	7	3.000	1.917	1.000	0.827	0.555	1.969	0.878	0.223	0.375				1.0			18,500
4000R-11T-9TN	●	9	4.000	2.622	1.500	1.969	-	2.48	1.654	0.375	0.625				1.6			16,800
MEC 2000R-17-4T	●	4	2.000												0.4			16,800
NEW 2000R-17-5T	●	5	2.000	1.606	0.750	0.646	0.417	1.575	0.819	0.188	0.312				0.4			16,800
2500R-17-5T	●	5	2.500	1.634		0.646			0.819			0.618	Yes	Fig.1	0.8	SB-4070TRN	DTM-15	14,400
3000R-17-6T	●	6	3.000	1.969	1.000	0.827	0.555	1.969	0.878	0.223	0.375				1.0			12,250
4000R-17-7TN	●	7	4.000	2.622	1.500	1.969	-	2.48	1.654	0.375	0.625			Fig.2	1.8			10,400

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Applicable Inserts

Part Number	Applicable Inserts ➔ M22, M23			Applicable PCD Inserts ➔ M30	
MEC...R-11	BDMT 1103○○ER-JT	BDMT 1103○○ER-JS	-	-	-
MEC...R-11T	BDMT 11T3○○ER-JT	BDMT 11T3○○ER-JS	BDGT 11T3○○FR-JA	BDGT 11T3○○FR(-LE)	BDMT 11T3○○FR
MEC...R-17	BDMT 1704○○ER-JT	BDMT 1704○○ER-JS	BDGT 1704○○FR-JA	-	BDMT 1704○○FR

Recommended Cutting Conditions ➔ M74-M75

Shouldering | Slotting | Facing

MEC Face Mill (Metric)

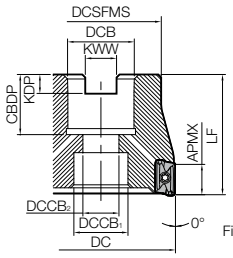


Fig.1

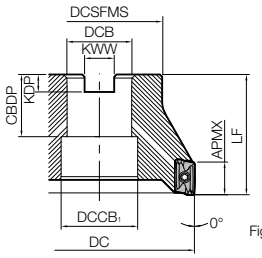
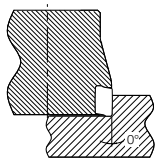


Fig.2

Rake Angle (°)
11 Type A.R. (Max) : +23° R.R. : -7°
17 Type A.R. (Max) : +19° R.R. : -7°



Toolholder Dimensions (Metric)

		Part Number	Stock	No. of Inserts	Dimensions (mm) DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	Coolant Hole	Drawing	Weight (kg)	Spare Parts: Insert Screw	Spare Parts: Wrench	Max RPM*
Inch Bore Dia.	Coarse Pitch	MEC 063R-11-6T	●	6	63	40	1.000"	20	14	50	1.024"	0.236"	0.375"	10	Yes	Fig.1	0.8	SB-2555TRG	DTM-8	20,500
		080R-11-7T	●	7	80	52.5											1.0			18,500
		100R-11-9TN	●	9	100	65	1.250"	26	17.6	63	1.260"	0.315"	0.500"	10	Yes	Fig.1	1.8			17,000
		125R-11-11T	□	11	125	80	1.500"	45	32		1.496"	0.394"	0.625"				3.4			15,000
		160R-11-14T	△	14	160	100	2.000"	70	-		1.850"		0.750"			Fig.2	4.4			13,900
	Fine Pitch	MEC 063R-11-8T	●	8	63	40	1.000"	20	14	50	1.024"	0.236"	0.375"	10	Yes	Fig.1	0.8			20,500
		080R-11-10T	●	10	80	52.5											1.0			18,500
	Coarse Pitch	MEC 063R-17-5T	●	5	63	40	1.000"	20	14	50	1.024"	0.236"	0.375"	15.7	Yes	Fig.1	0.8			14,500
		080R-17-6T	●	6	80	52.5											1.0			12,000
		100R-17-7TN	●	7	100	65	1.250"	26	17.6	63	1.260"	0.315"	0.500"	15.7	Yes	Fig.1	1.8			10,500
		125R-17-9T	●	9	125	80	1.500"	45	32		1.496"	0.394"	0.625"				3.4	SB-4070TRN	DTM-15	8,900
	Fine Pitch	MEC 063R-17-6T	●	6	63	40	1.000"	20	14	50	1.024"	0.236"	0.375"	15.7	Yes	Fig.1	0.8			14,500
		080R-17-8T	●	8	80	52.5											1.0			12,000
		100R-17-9TN	●	9	100	65	1.250"	26	17.6	63	1.260"	0.315"	0.500"	15.7	Yes	Fig.1	1.8			10,500
Metric Bore Dia.	Standard Pitch	MEC 040R-11-5T-M	●	5	40	34	16	14	8.5	40	20	5.5	8.5	10	Yes	Fig.1	0.2	SB-2555TRG	DTM-8	30,000
		050R-11-5T-M	●		50	40	22	18	12		22	6.3	10.4				0.3			22,500
		063R-11-6T-M	●	6	63	40											0.7			20,500
		080R-11-7T-M	●	7	80	52.5	27	20	14	50	26	7	12.4	10	Yes	Fig.1	1.0			18,500
		100R-11-9T-MN	●	9	100	65	32	26	17.6	55		8	14.4				1.6			17,000
		125R-11-11T-M	●	11	125	80	40	45	32	63	33	9.5	16.4	10	Yes	Fig.1	3.1			15,000
		160R-11-14T-M	△	14	160	100		68	-						No	Fig.2	4.5			13,900
	Fine Pitch	MEC 032R-11-5T-M	●	5	32	30	16	11.5	8.5	35	20	5.6	8.4	10	Yes	Fig.1	0.1	SB-2555TRG	DTM-8	33,900
		040R-11-6T-M	●	6	40	34		14		40							0.2			30,000
		050R-11-7T-M	●	7	50	40	40	22	18	12	40	22	6.3	10.4	10	Yes	Fig.1	0.4		22,500
		063R-11-8T-M	●	8	63												0.6			20,500
		080R-11-10T-M	●	10	80	52.5	27	20	14	50	26.5	7	12.4	10	Yes	Fig.1	0.9			18,500
		100R-11-11T-M	●	11	100	65	32	26	17.6	55	34	8	14.4				1.7			17,000
	Standard Pitch	MEC 040R-17-4T-M	●	4	40	34	16	14	8.5	40	20	5.5	8.5	15.7	Yes	Fig.1	0.3	SB-4070TRN	DTM-15	25,000
		050R-17-4T-M	●		50	40	22	18	12		22	6.3	10.4				0.4			17,000
		063R-17-5T-M	●	5	63												0.6			14,500
		080R-17-6T-M	●	6	80	52.5	27	20	14	50	26	7	12.4	15.7	Yes	Fig.1	1.0			12,000
		100R-17-7T-MN	●	7	100	65	32	26	17.6	55	26	8	14.4				1.8			10,500
		125R-17-9T-M	●	9	125	80	40	45	32	63	33	9.5	16.4	15.7	Yes	Fig.1	3.1			8,900
		160R-17-12T-M	△	12	160	100		68	-						No	Fig.2	4.5			7,400
	Fine Pitch	MEC 050R-17-5T-M	●	5	50	40	22	18	12	40	22	6.3	10.4	15.7	Yes	Fig.1	0.4			17,000
		063R-17-6T-M	●	6	63												0.6			14,500

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

When using Center-through Air / Coolant / Mist

If Center Through air (Coolant, Mist) is used, please use appropriate arbor and clamp with arbor bolt. (Table 1)

MEC's surface finish when shouldering with multiple passes

In order to obtain smoothly finished shoulder wall with multiple passes of MEC Milling Cutter, please keep D.O.C. less than 0.217" (5.5mm) for 11T3 type insert and also keep D.O.C. less than 0.354" (9mm) for 1704 type insert.

(Table 1)

Toolholder	Arbor Bolt	Wrench	Toolholder	Arbor Bolt	Wrench
MEC040R·····M	HH8×25H	LW-5 (Double width 5mm)	MEC160R····	HF24×60H	LW-17 (Double width 17mm)
MEC050R·····M MEC063R·····M	HH10×30H	LW-6 (Double width 6mm)	MEC1500···· MEC2500~····	HH3/8-1.25H	
MEC063R···· MEC080R····	HH12×35H	LW-8 (Double width 8mm)	MEC3000····	HH1/2-1.25H	
MEC100R·····(M) N	HH16×52H	LW-12 (Double width 12mm)	MEC4000····	HH3/4-2.30H	
MEC125R·····(M) MEC160R·····M	HF20×53H	LW-14 (Double width 14mm)			

Wrench is not included. Please purchase separately.

Applicable Inserts

Part Number	Applicable Inserts ➡ M22, M23			Applicable PCD Inserts ➡ M30	
MEC...R-11	BDMT 11T3○○ER-JT	BDMT 11T3○○ER-JS	BDGT 11T3○○FR-JA	BDGT 11T3○○FR(-LE)	BDMT 11T3○○FR
MEC...R-17	BDMT 1704○○ER-JT	BDMT 1704○○ER-JS	BDGT 1704○○FR-JA	-	BDMT 1704○○FR

Recommended Cutting Conditions ➡ M74-M75

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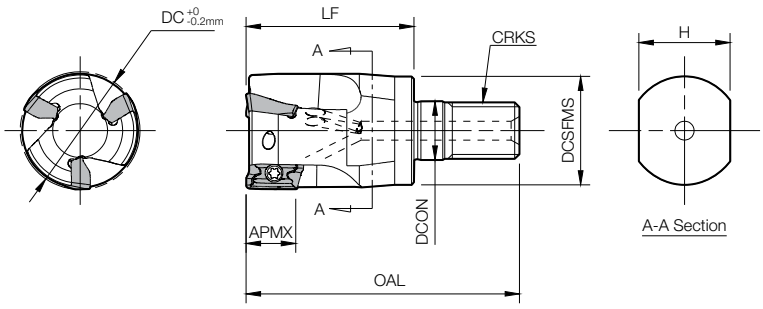
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MEC Modular



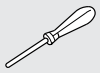
Toolholder Dimensions (Metric)

Part Number	Stock	No. of Inserts	Dimensions (mm)								Rake Angle (°)		Coolant Hole	Applicable Inserts M22, M23 M30	Max RPM*
			DC	DCSFMS	DCON	OAL	LF	CRKS	H	APMX	A.R. (Max)	R.R.			
MEC 16-M08-11T-2T	●	2	16	14.7	8.5	43	25	M8xP1.25	12	10	+18°	-14°	Yes	BDMT11T3 BDGT11T3	43,750
20-M10-11T-2T	●	2	20	18.7	10.5	49	30	M10xP1.5	15		+20°	-10°			41,000
20-M10-11T-3T	●	3	20	18.7	10.5	49	30	M10xP1.5	15		+20°	-10°			41,000
25-M12-11T-3T	●	3	25	23	12.5	57	35	M12xP1.75	19		+21°	-10°			37,500
32-M16-11T-4T	●	4	32	30	17	63	40	M16xP2.0	24		+23°	-9°			33,900
MEC 25-M12-17-2T	●	2	25	23	12.5	57	35	M12xP1.75	19	15.7	+16°	-11°	Yes	BDMT1704 BDGT1704	35,000
32-M16-17-3T	●	3	32	30	17	63	40	M16xP2.0	24		+17°	-7°			30,000

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Recommended Cutting Conditions **M74-M75**

Spare Parts

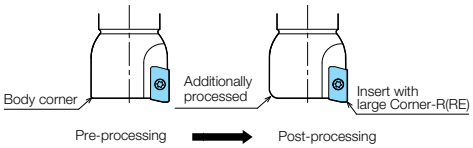
Part Number	Spare Parts		
	Insert Screw	Wrench	Anti-seize Compound
			
MEC 16-M08-11T-2T 20-M10-11T-2T 20-M10-11T-3T 25-M12-11T-3T 32-M16-11T-4T	SB-2555TRG	DTM-8	P-37
	Recommended Torque for Insert Screw 1.2N · m		
MEC 25-M12-17-2T 32-M16-17-3T	SB-4070TRN	DTM-15	P-37
	Recommended Torque for Insert Screw 3.5N · m		

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

■ When using inserts with corner-R (RE)1.6 or larger, additional modifications of the cutter body will be necessary. Ref. to the chart below for the recommended modifications.

Insert Corner-R(RE)	Additional Modifications of the Cutter Body Corner
1.6	R1.0
2.0	
2.4	R1.2
3.1	R1.6
4.0	R2.5

* R shape is recommended for additional processing to the body corner.
When applying chamfer shaped additional processing, do not cut away too much.



◆ Recommended Cutting Conditions

• JT Chipbreaker

Workpiece Material	Feed Rate fz (ipt)		Recommended Insert Grade Vc (sfm)					
	Toolholder Description		Cermet	MEGACOAT NANO	MEGACOAT		PVD Coated Carbide	CVD Coated Carbide
	MEC0500~MEC0750 MEC10~MEC19	MEC1000~MEC1500 MEC20~MEC40 MEC1500R~MEC4000R MEC040R~MEC160R	TN100M	PR1535	PR1225	PR1210	PR830	CA6535
Carbon Steel	0.002~**0.004**~0.006	0.003~**0.006**~0.010	☆ 390~**520**~660	☆ 390~**590**~820	★ 390~**590**~820	-	☆ 390~**520**~660	-
Alloy Steel	0.002~**0.004**~0.005	0.003~**0.006**~0.008	☆ 330~**460**~590	☆ 330~**520**~720	★ 330~**520**~720	-	☆ 330~**460**~590	-
Mold Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	☆ 260~**390**~490	☆ 260~**460**~590	★ 260~**460**~590	-	☆ 260~**390**~490	-
Austenitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.006	-	☆ 330~**520**~660	☆ 330~**520**~660	-	☆ 330~**460**~590	-
Martensitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	-	☆ 490~**660**~820	-	-	-	★ 590~**790**~980
Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.008	-	★ 300~**390**~490	-	-	-	-
Gray Cast Iron	0.002~**0.004**~0.006	0.003~**0.007**~0.010	-	-	-	★ 390~**590**~820	-	-
Nodular Cast Iron	0.002~**0.003**~0.004	0.003~**0.006**~0.008	-	-	-	★ 330~**490**~660	-	-
Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.005**~0.006	-	☆ 70~**100**~160	-	-	-	★ 70~**100**~160
Titanium Alloys	0.002~**0.003**~0.004	0.003~**0.006**~0.008	-	☆ 130~**200**~260	-	☆ 100~**160**~230	-	-

※ Bold numbers in the graph indicate the most recommended value of feed (fz) Adjust cutting speed and feed rate according to the actual machining conditions
※ Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys

★ :1st Recommendation
☆ : 2nd Recommendation

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• JS Chipbreaker

Workpiece Material	Feed Rate fz (ipt)		Recommended Insert Grade Vc (sfm)				
	Toolholder Description		MEGACOAT NANO	MEGACOAT		PVD Coated Carbide	CVD Coated Carbide
	MEC0500~MEC0750 MEC10~MEC19	MEC1000~MEC1500 MEC20~MEC40 MEC1500R~MEC4000R MEC040R~MEC160R	PR1535	PR1225	PR1210	PR830	CA6535
Carbon Steel	0.002~**0.004**~0.005	0.003~**0.006**~0.007	☆ 390~**590**~820	★ 390~**590**~820	-	☆ 390~**520**~660	-
Alloy Steel	0.002~**0.003**~0.004	0.003~**0.005**~0.006	☆ 330~**520**~720	★ 330~**520**~720	-	☆ 330~**460**~590	-
Mold Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 260~**460**~590	★ 260~**460**~590	-	☆ 260~**390**~490	-
Austenitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	★ 330~**520**~660	☆ 330~**520**~660	-	☆ 330~**460**~590	-
Martensitic Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 490~**660**~820	-	-	-	★ 590~**790**~980
Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 300~**390**~490	-	-	-	-
Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	0.003~**0.004**~0.005	☆ 70~**100**~160	-	-	-	★ 70~**100**~160
Titanium Alloys	0.002~**0.003**~0.004	0.003~**0.004**~0.005	★ 130~**200**~260	-	-	-	-

※ Bold numbers in the graph indicate the most recommended value of feed (fz) Adjust cutting speed and feed rate according to the actual machining conditions
※ Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys

★ :1st Recommendation
☆ : 2nd Recommendation

• JA Chipbreaker

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade Vc (sfm)	
		DLC Coated Carbide	Carbide
		PDL025	**GW25**
Aluminum Alloy (Si 13% or Less)	0.002~0.012	660~3280	660~2620
Aluminum Alloy (Si 13% and Over)	0.002~0.008	660~980	660~980

• PCD

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade Vc (sfm)
		PCD
		KPD230 (KPD001)
Aluminum Alloy (Si 13% or Less)	0.002~0.008	1640~4,920
Aluminum Alloy (Si 13% and Over)	0.002~0.006	980~3,280

Warning Please observe below precautions fully.
Failure to observe the precautions may cause serious damage to human body.

Warning about Max. Revolution indicated on main body

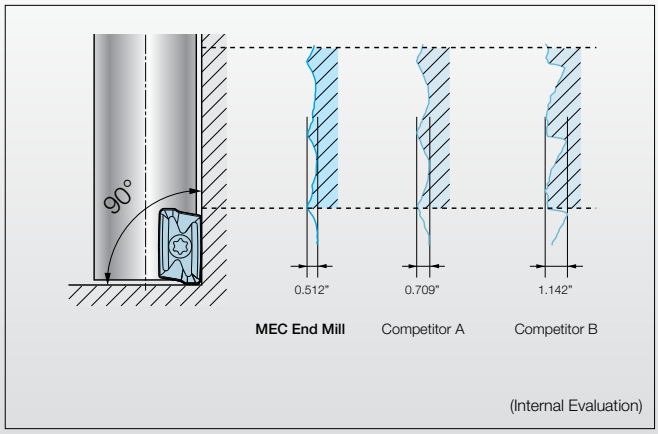
1. When running the end mill and the face mill at revolutions exceeding the maximum revolution limit, the inserts or toolholder may be damaged due to the centrifugal force.
2. For actual practical revolution, please set within recommended cutting condition.
3. When using at a higher revolution (over 10,000min^{-1}), refer to the table to adjust the balance of MEC and suitable arbor.

Max RPM*	Balance quality grade G ISO 1940-1 / 8821 (JIS B0905)
~20,000	G16
~30,000	G6.3
30,000~	G2.5

Features of MEC

Perfect 90° Shoulders

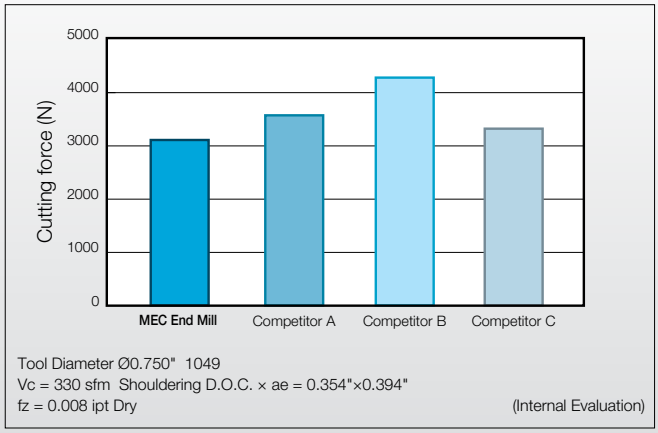
<Cutting Surface Comparison>



(Internal Evaluation)

Low cutting force

<Cutting Force Comparison>

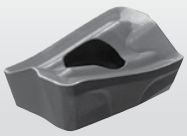


Tool Diameter Ø0.750" 1049
Vc = 330 sfm Shouldering D.O.C. × ae = 0.354"×0.394"
fz = 0.008 ipt Dry

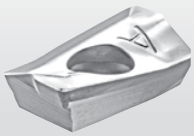
(Internal Evaluation)

Chipbreaker

JT Chipbreaker
(General Purpose)

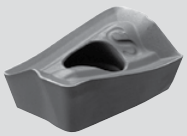


JA Chipbreaker
(for Aluminum)



JS chipbreaker
(Low Cutting Force)

Cutting Force 20% Lower

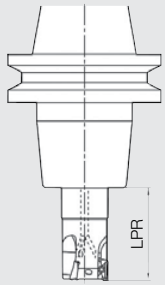


Cutting Performance of MEC End Mill

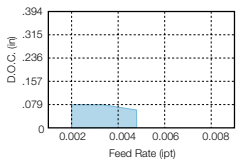
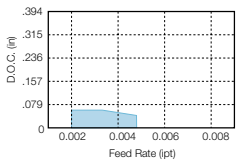
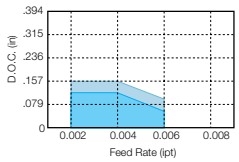
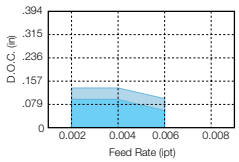
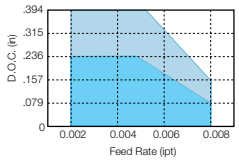
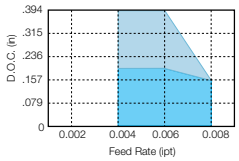
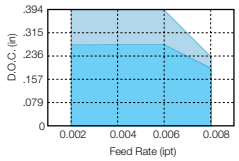
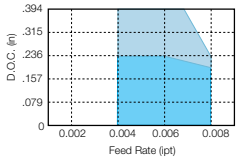
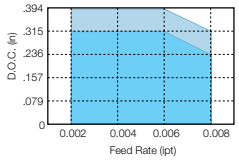
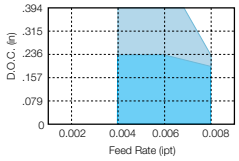
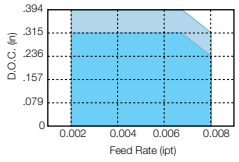
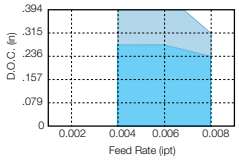
(1) Overhang Length When Using BDMT 11mm-type Insert
(Standard / Straight Shank)

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)	
Ø10mm	MEC10-S10-11	0.670	-
Ø0.500" Ø12mm	**MEC0500...** MEC12-S16-11	0.787	1.180
Ø0.625" Ø16mm	**MEC0625-S625-11T** MEC16-S16-11T	1.180	1.790
Ø0.750" Ø20mm	**MEC0750-S750-11T** MEC20-S20-11T	1.180	1.790
Ø1.000" Ø25mm	**MEC1000-S100-11T** MEC25-S25-11T	1.260	1.890
Ø1.250" Ø32mm	**MEC1250-S125-11T** MEC32-S32-11T	1.580	2.360

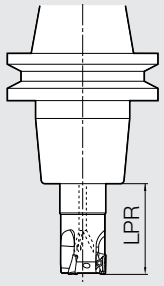
Shape



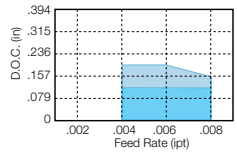
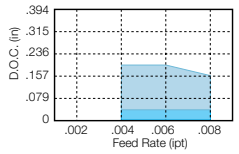
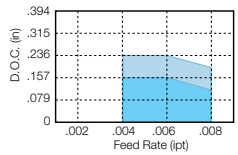
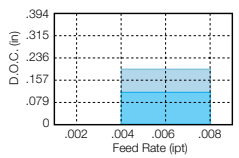
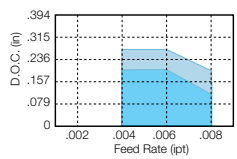
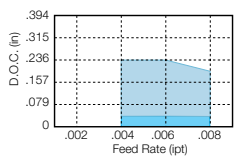
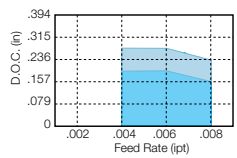
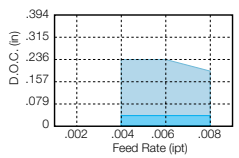
(JT Chipbreaker Vc = 400 sfm Workpiece :1049)

Part Number	■ Shouldering (Cutting Width ae = DC/2)	■ Slotting ■ Ramping and Helical Milling
MEC10-S10-11		
MEC0500... MEC12-S16-11		
MEC0625-S625-11T MEC16-S16-11T		
MEC0750-S750-11T MEC20-S20-11T		
MEC1000-S100-11T MEC25-S25-11T		
MEC1250-S125-11T MEC32-S32-11T		

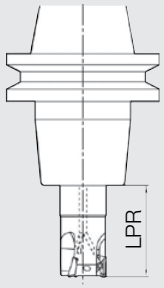
(2) Overhang Length When Using BDMT 11mm-type Insert (Long Shank)

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)		Shape
Ø0.750" Ø20mm Long Shank	**MEC0750-S750-5.2-11T** MEC20-S20-140-11T	2.362	3.543	
Ø1.000" Ø25mm Long Shank	**MEC1000-S100-6.3-11T** MEC25-S25-160-11T	2.362	3.957	
Ø1.250" Ø32mm Long Shank	**MEC1250-S125-7.9-11T** MEC32-S32-200-11T	3.957	5.118	
Ø1.500" Ø40mm Long Shank	**MEC1500-S125-9.5-11T** MEC40-S32-240-11T	3.957	5.119	

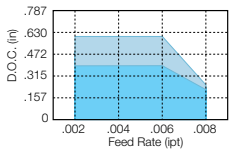
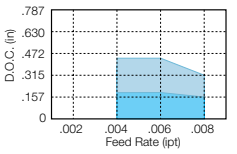
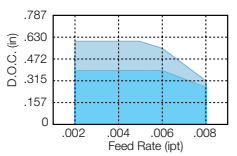
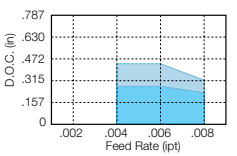
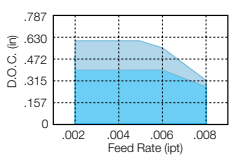
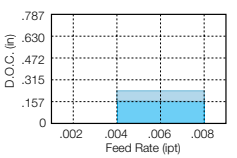
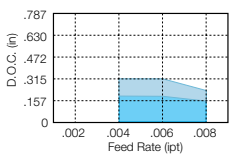
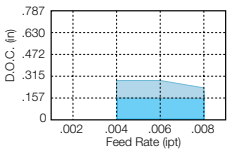
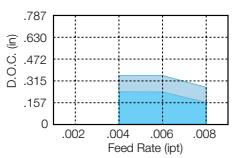
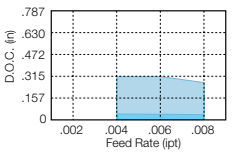
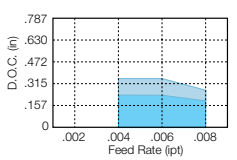
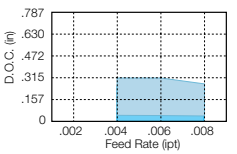
(JT Chipbreaker Vc = 400 sfm Workpiece :1049)

Part Number	■ Shouldering (Cutting Width ae = DC/2)	■ Slotting ■ Ramping and Helical Milling
MEC0750-S750-5.2-11T MEC20-S20-140-11T Long Shank		
MEC1000-S100-6.3-11T MEC25-S25-160-11T Long Shank		
MEC1250-S125-7.9-11T MEC32-S32-200-11T Long Shank		
MEC1500-S125-9.5-11T MEC40-S32-240-11T Long Shank		

(3) Overhang Length When Using BDMT 17mm-type Insert

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)		Shape
Ø1.000" Ø25mm	**MEC1000-S100-17** MEC25-S25-17	1.417	2.126	
Ø1.250" Ø32mm	**MEC1250-S125-17** MEC32-S32-17	1.575	2.362	
Ø1.500" Ø40mm	**MEC1500-S125-17** MEC40-S32-17	1.969	2.953	
Ø1.000" Ø25mm Long Shank	**MEC1000-S100-6.3-17** MEC25-S25-160-17	2.362	3.937	
Ø1.250" Ø32mm Long Shank	**MEC1250-S125-7.9-17** MEC32-S32-200-17	3.937	5.118	
Ø1.500" Ø40mm Long Shank	**MEC1500-S125-9.5-17** MEC40-S32-240-17	3.937	5.118	

(JT Chipbreaker Vc = 400 sfm Workpiece :1049)

Part Number	■ Shouldering (Cutting Width ae = DC/2)	■ Slotting ■ Ramping and Helical Milling
MEC1000-S100-17 MEC250S25-17		
MEC1250-S125-17 MEC32-S32-17		
MEC1500-S125-17 MEC40-S32-17		
MEC1000-S100-6.3-17 MEC25-S25-160-17		
MEC1250-S125-7.9-17 MEC32-S32-200-17		
MEC1500-S125-9.5-17 MEC40-S32-240-17		

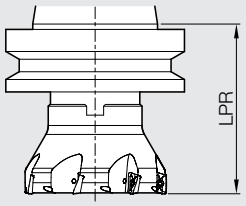
Cutting Performance of MEC Face Mill

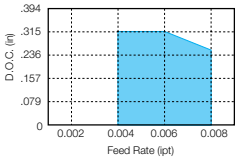
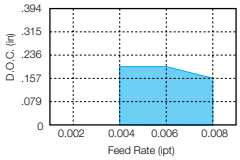
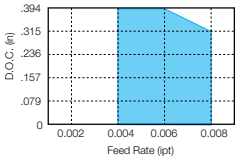
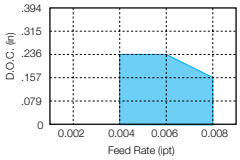
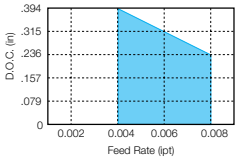
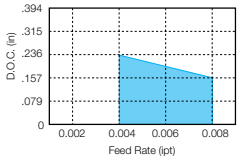
(1) Overhang Length When Using BDMT 11mm-type Insert

(JT Chipbreaker Vc = 400 sfm Workpiece :1049)

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)
Ø1.500" Ø40mm	**MEC1500R-11T-5T** MEC040R-11-5T-M	4.528
Ø2.000" Ø50mm	**MEC2000R-11T-5T** MEC050R-11-○T-M	3.937
Ø2.500" Ø63mm	**MEC2500R-11T-6T** MEC063R-11-○T	3.740
	MEC063R-11-○T-M	
Ø3.000 Ø80mm	**MEC3000R-11T-7T** MEC080R-11-○T	3.740
Ø4.000" Ø100mm	**MEC4000R-11T-9TN** MEC100R-11-9TN	4.252
Ø125mm	MEC125R-11-11T	
Ø160mm	MEC160R-11-14T	

Shape



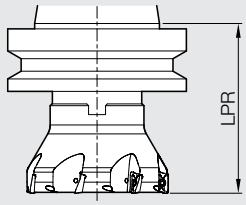
Part Number	■ Shouldering (Cutting Width ae = DC/2)	■ Slotting
MEC1500R-11T-5T MEC040R-11-5T-M		
MEC2000R-○T-○T ≀ **MEC4000R-○T-○T** MEC050R-11-○T-M ≀ MEC100R-11T-9TN MEC100R-11-9T-MN		
MEC125R-11-11T(-M) MEC160R-11-14T(-M)		

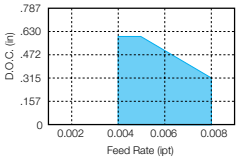
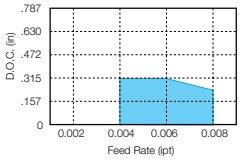
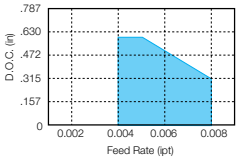
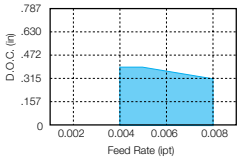
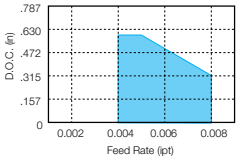
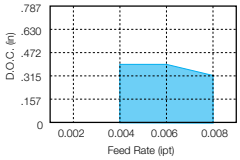
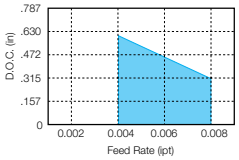
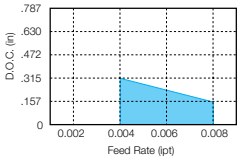
(2) Overhang Length When Using BDMT 17mm-type Insert

(JT Chipbreaker Vc = 400 sfm Workpiece :1049)

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)
Ø40mm	MEC040R-17-4T-M	4.528
Ø2.000" Ø50mm	**MEC2000R-17-○T** MEC050R-17-○T-M	3.937
Ø2.500" Ø63mm	**MEC2500R-17-4T** MEC063R-17-○T	3.740
Ø63mm	MEC063R-17-○T-M	
Ø3.000" Ø80mm	**MEC3000R-17-6T** MEC080R-17-○T	
Ø4.000" Ø100mm	**MEC4000R-17-7T** MEC100R-17-○TN	4.252
Ø125mm	MEC125R-17-9T(-M)	
Ø160mm	MEC160R-17-12T(-M)	

Shape



Part Number	■ Shouldering (Cutting Width ae = DC/2)	■ Slotting
MEC040R-17-4T-M		
MEC2000R-17-○T MEC050R-17-○T-M		
MEC2500R-17-○T ≀ **MEC4000R-17-○TN** MEC063R-17-○T(-M) ≀ MEC100R-17-○TN MEC100R-17-7T-MN		
MEC125R-17-9T(-M) MEC160R-17-12T(-M)		

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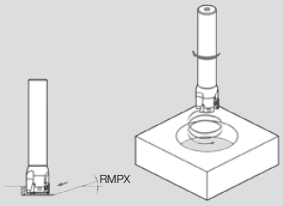
Ramping / Helical Milling / Plunging

Ramping / Helical Milling

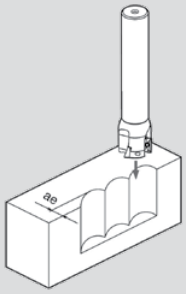
- Ramping angle should be under RMPX.
- For plunge depth per revolution when helical milling, see the cutting performance data of each tool. Use compressed air during machining.



Cutting Dia.	Applicable Inserts	Max. Ramping Angle (RMPX)
Ø0.625", Ø16~Ø18mm	BDMT 11T3 BDGT 11T3	3°
Ø0.750", Ø19~Ø21mm		5°
Ø1.000", Ø22~Ø25mm		2.5°
Ø1.250", Ø28~Ø32mm		1.5°
Ø1.500", Ø40mm		0.7°
Ø50mm~		Not Recommended
Ø1.000", Ø25mm	BDMT 1704	8°
Ø1.250", Ø32mm		5°
Ø1.500", Ø40mm		2.5°
Ø50mm~		Not Recommended

BDMT/BDGT1103.. insert not recommended for ramping or helical milling.

Plunging



Cutting Dia.	Applicable Inserts	Max. Width of Cut (ae)
Ø0.625" Ø16~Ø19mm	BDMT 11T3 BDGT 11T3	0.060" 1.5mm
Ø0.750"~Ø4.000" Ø20~Ø160mm	BDMT 11T3 BDGT 11T3	0.197" 5mm
Ø1.000"~Ø4.000" Ø25~Ø160mm	BDMT 1704 BDGT 1704	0.315" 8mm

BDMT1103.. insert not recommended for plunging.

Minimum Cutting Dia. for Helical Milling

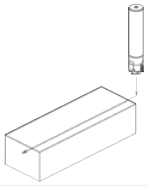
MEC	Cutting Dia.	Ø0.625"	Ø0.750"	Ø1.000"	Ø1.250"	Ø1.500"	Ø16mm	Ø18mm	Ø20mm	Ø22mm	Ø25mm	Ø28mm	Ø30mm	Ø32mm	Ø40mm	Ø50mm
BD_T11T3 Type	Min. Cutting Dia.	Ø0.827"	Ø1.102"	Ø1.575"	Ø2.087"	Ø2.598"	Ø21mm	Ø25mm	Ø29mm	Ø33mm	Ø39mm	Ø45mm	Ø49mm	Ø53mm	Ø69mm	Not recommended for helical milling.
	Min. Cutting Dia. for Flat Bottom	Ø1.102"	Ø1.339"	Ø1.850"	Ø2.362"	Ø2.835"	Ø28mm	Ø32mm	Ø36mm	Ø40mm	Ø46mm	Ø52mm	Ø56mm	Ø60mm	Ø76mm	

MEC	Cutting Dia.	Ø1.000"	Ø1.250"	Ø1.500"	Ø25mm	Ø32mm	Ø40mm	Ø50mm
BD_T1704 Type	Min. Cutting Dia.	Ø1.339"	Ø1.850"	Ø2.362"	Ø34mm	Ø48mm	Ø64mm	Not recommended for helical milling.
	Min. Cutting Dia. for Flat Bottom	Ø1.850"	Ø2.323"	Ø2.835"	Ø46mm	Ø60mm	Ø76mm	

Case Studies

Pre-Hardened Tool Steel

- Test Piece (54~56HRC)
- Vc = 160 sfm (n = 800min^{-1})
- D.O.C. × ae = 0.079" × 0.551"
- fz = 0.005 ipt (Vf = 2.28 ipm)
- Dry
- MEC20-S20-11T (3 Flute)
- BDMT11T308ER-JT (PR830)



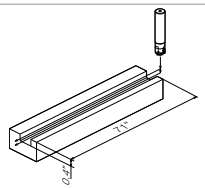
MEC	Chip Removal Amount = 28.1in^3
Competitor's End Mill A	Chip Removal Amount = 1.1in^3 (Chipping Occurred)

Competitor's End Mill A [Ø25 (2 inserts) Vc = 130 sfm fz = 0.003 ipt D.O.C. x ae = 0.079"x0.118"] had chipping occur in 10 minutes and it was noisy. MEC withstood increased feed rates, and the cutting edge remained in extremely good condition and is still available for further machining.

(User Evaluation)

Structural Steel

- Plate
- Vc = 290 sfm (n = 1,400min^{-1})
- D.O.C. = 0.197" x 2 Passes
- fz = 0.005 ipt (Vf = 19.7 ipm)
- Dry
- MEC20-S20-11T (3 Flute)
- BDMT11T308ER-JT (PR830)



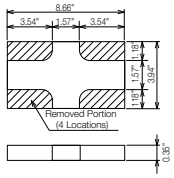
MEC	23 pcs/edge
Competitor's End Mill B	10~11 pcs/edge

MEC doubled Competitor B's tool life under the same conditions.

(User Evaluation)

304

- Plate
- Vc = 410 sfm (n = 1,600min^{-1})
- D.O.C. = 0.354"
- fz = 0.004 ipt (Vf = 12.6 ipm)
- Dry
- MEC25-S25-17 (2 Flute)
- BDMT170408ER-JT (PR830)



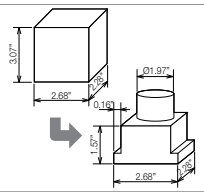
MEC	4 pcs/edge or More
Competitor's End Mill C	1 pcs/edge or Less

Competitor's End mill C (indexable roughing end mill) had high cutting force and insert breakage occurred, but MEC had no breakage and was still usable for further machining, after machining 4 pieces (16 points).

(User Evaluation)

Die Steel

- Mold
- Vc = 430 sfm (n = 1,040min^{-1})
- D.O.C. x ae = ~0.118" x ~0.197"
- fz = 0.007 ipt (Vf = 36.8 ipm)
- Dry (Air Blow)
- MEC40-S32-11T (5 Flute)
- BDMT11T308ER-JT (PR830)



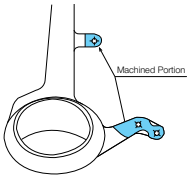
MEC	2 Hours (Small Wear : Extendible)
Competitor's End Mill D	2 Hours (Halted due to Insert Breakage)

MEC had better cutting performance / insert life compared to Competitor's End Mill D, and the insert maintained small wear and was usable for further machining after the same duration as Competitor's End Mill D. Competitor's End Mill D (6 flute) was used with Vf = 3070 sfm (fz = 0.006 ipt).

(User Evaluation)

4118

- Knuckle Steering
- Vc = 490 sfm (n = 1,200min^{-1})
- D.O.C. = 0.020"~0.197" (Shouldering)
- fz = 0.004 ipt (Vf = 18.8 ipm)
- Dry
- MEC40-S32-17 (4 Flute)
- BDMT170408ER-JT (PR830)



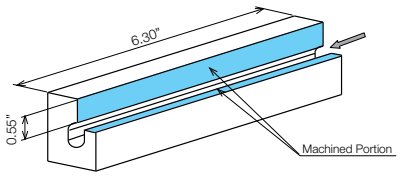
MEC	150 pcs/edge
Competitor's End Mill E	40 pcs/edge

MEC had a better surface finish compared to Competitor's End mill E and also tripled the tool life.

(User Evaluation)

Ni-Base HRSA

- Turbine Parts
- Vc = 50 sfm (n = 120min^{-1})
- D.O.C. = 0.020"
- fz = 0.003 ipt (Vf = 1.5 ipm)
- Wet
- MEC040R-17-4T-M (4 Flute)
- BDMT170408ER-JS (PR1025)



MEC	9 pcs/edge
Competitor's End Mill F	1 pcs/edge or Less

Competitor's End Mill F (Coated Carbide Insert) could not finish machining of 1 workpiece, but MEC could cut 9 pcs/edge and the finished surface was good.

(User Evaluation)

Shouldering | Slotting | Facing

MECX End Mill

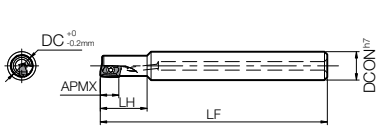


Fig.1

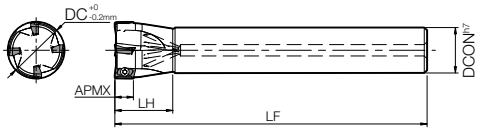


Fig.3

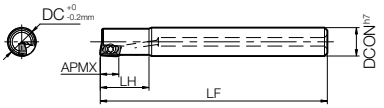


Fig.2

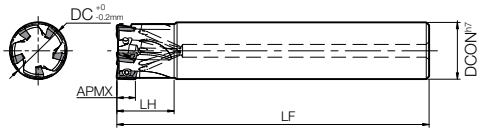


Fig.4

Toolholder Dimensions

Shank		Part Number	Stock	Unit	No. of Inserts	Dimensions DC	DCON	LF	LH	APMX	Rake Angle (°) A.R. (Max)	R.R.	Coolant Hole	Drawing	Spare Parts: Insert Screw	Spare Parts: Wrench	Max RPM*
Standard Shank		MECX 0375-S375-07-1T	●	inch	1	0.375	0.375	3.00	0.669	0.236	12.8°	-19.7°	Yes	Fig.1	SB-2035TRG	DTM-6	47,150
		0500-S500-07-2T	●		2	0.500	0.500	3.27	0.709		14.3°	-12.9°					45,800
		0625-S625-07-3T	●		3	0.625	0.625	3.50	0.787		16.3°	-11.3°		Fig. 2	SB-2042TRG		43,300
		0750-S625-07-4T	●		4	0.750		4.00				-10.9°		Fig. 3			40,900
		0750-S750-07-4T	●		4		0.750							Fig. 2			40,900
		0750-S750-07-5T	●		5												40,900
		1000-S100-07-5T	●		5	1.000	1.000	4.50	0.984			-9.5°		Fig. 2			36,900
		1000-S100-07-7T	●		7												36,900
		1000-S750-07-5T	●		5		0.750							Fig.3			36,900
		1000-S750-07-7T	●		7												36,900
		1250-S125-07-6T	●		6	1.250	1.250	5.00	1.181			-8.9°		Fig.2	SB-2035TRG		33,700
		1250-S125-07-8T	●		8									Fig.4			33,700
Long Shank		MECXL 0625-S625-07-3T	●	inch	3	0.625	0.625	5.10	2.175	0.236	16.3°	-11.3°	Yes	Fig.4	SB-2042TRG	DTM-6	43,300
		0750-S750-07-4T	●		4	0.750	0.750	5.50	2.362			-10.9°					40,900
		1000-S100-07-5T	●		5	1.000	1.000	6.30				-9.5°					36,900
		1250-S125-07-6T	●		6	1.250	1.250	7.90	2.559			-8.9°					33,700
Standard Shank	Standard Pitch	MECX 08-S10-07-1T	●	mm	1	8	10	80	16	6	11.7°	-24.0°	Yes	Fig.1	SB-2035TRG	DTM-6	48,100
		10-S10-07-1T	●			10			17		12.8°	-18.7°		Fig.2			47,100
		12-S12-07-2T	●		2	12	12		18		14.3°	-13.7°		Fig.4			46,200
		14-S12-07-2T	●			14					16.3°	-12.1°		Fig.3			44,800
		16-S16-07-3T	●		3	16	16	100	20		16.3°	-11.3°	Yes	Fig.4	SB-2042TRG	DTM-6	43,200
		17-S16-07-3T	●			17						-11.0°		Fig.3			42,400
		18-S16-07-3T	●			18						-10.9°					41,600
		20-S16-07-4T	●		4	20		110				-10.4°					40,200
		20-S20-07-4T	●			20	20							Fig.4			40,200
		21-S20-07-4T	●			21						-10.1°		Fig.3			39,500
		25-S20-07-5T	●		5	25	20	120	25			-9.7°		Fig.3			37,000
		25-S25-07-5T	●				25							Fig.4			37,000
		26-S25-07-5T	●			26						-9.5°		Fig.3			36,500
		32-S32-07-6T	△		6	32	32	130	30			-8.9°		Fig.4			33,600
		33-S32-07-6T	●			33						-8.8°		Fig.3			33,100
	Fine Pitch	MECX 16-S16-07-4T	●	mm	4	16	16	100	20	6	16.3°	-11.3°	Yes	Fig.4	SB-2042TRG	DTM-6	43,200
		20-S16-07-5T	●		5	20		110				-10.4°		Fig.3			40,200
		20-S20-07-5T	●				20							Fig.4			40,200
		25-S20-07-7T	●		7	25		120	25			-9.7°		Fig.3			37,000
		25-S25-07-7T	●				25							Fig.4			37,000
		32-S32-07-8T	●		8	32	32	130	30			-8.9°					33,600
Long Shank	Standard Pitch	MECX 17-S16-130-07-3T	●	mm	3	17	16	130	20	6	16.3°	-11.0°	Yes	Fig.3	SB-2042TRG	DTM-6	42,400
		21-S20-140-07-4T	●		4	21	20	140				-10.1°					39,500
		26-S25-160-07-5T	●		5	26	25	160	25			-9.5°					36,500

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Applicable Inserts ➔ **M81**
Recommended Cutting Conditions ➔ **M82**

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Shouldering | Slotting | Facing

MECX Face Mill

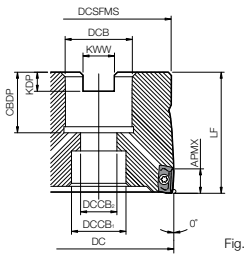


Fig.1

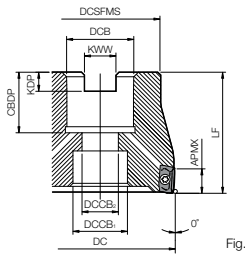
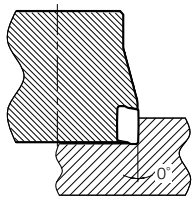


Fig.2



Toolholder Dimensions

Part Number	Stock	Unit	No. of Inserts	Dimensions											Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Spare Parts			Max RPM*
				DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX		A.R. (Max)	R.R.				Insert Screw	Wrench	Arbor Bolt	
MECX 1250R-07-8T	●	inch	8	1.250	1.181	0.75	0.630	0.417	1.575	0.807	0.187	0.313	0.236		+7°	-8.9°	Yes	Fig.1	0.15	SB-2042TRG	DTM-6	HH3/8-1.25H	33,600
1500R-07-10T	●		10	1.500	1.496											-8.4°			0.25				30,500
2000R-07-12T	●		12	2.000	1.575		0.646	0.417	1.575	0.819						-8.3°		Fig.2	0.125				27,700
2500R-07-14T	●		14	2.500			0.630									-7.9°			0.50				24,900
MECX 032R-07-8T-M	●	mm	8	32	30	16	14	8.5	40	20	5.5	8.5	6		+7°	-8.9°	Yes	Fig.1	0.15	SB-2042TRG	DTM-6	HH8x25H	33,600
040R-07-10T-M	●		10	40	38	22	18	12		22	6.3	10.4				-8.4°			0.25			HH10x30H	30,500

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

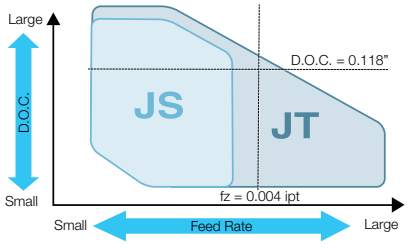
Recommended Cutting Conditions ➔ M82

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.
• To obtain a smooth shoulder wall finish using step milling, set D.O.C. within 0.197" for each cut.

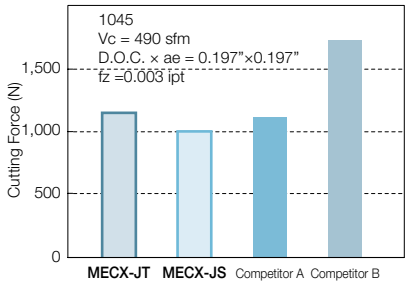
Applicable Inserts

Part Number	Applicable Inserts ➔ M22	
MECX...-07...	BDMT 0703〇〇ER-JT	BDMT 0703〇〇ER-JS

Selecting Chipbreaker



Cutting Force Comparison



Warning Please observe below precautions fully.
Failure to observe the precautions may cause serious damage to human body.

Warning about Max. Revolution indicated on main body

1. When running the end mill and the face mill at revolutions exceeding the maximum revolution limit, the inserts or toolholder may be damaged due to the centrifugal force.
2. For actual practical revolution, please set within recommended cutting condition.
3. When using at a higher revolution (over 10,000min^{-1}), refer to the table to adjust the balance of MECX and suitable arbor.

Max RPM*	Balance quality grade G ISO 1940-1 / 8821 (JIS B0905)
~20,000	G16
~30,000	G6.3
30,000~	G2.5

Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)		Recommended Insert Grade Vc (sfm)				
			MEGACOAT NANO	MEGACOAT		PVD Coated Carbide	CVD Coated Carbide
	JS Chipbreaker	JT Chipbreaker	PR1535	PR1225	PR1210	PR830	CA6535
Carbon Steel	0.0016~**0.0031**~0.0039	0.0024~**0.0039**~0.0047	☆ 390~**590**~820	★ 390~**590**~820	-	☆ 390~**490**~590	-
Alloy Steel	0.0016~**0.0024**~0.0031	0.0024~**0.0031**~0.0039	☆ 330~**520**~720	★ 330~**520**~720	-	☆ 330~**460**~590	-
Mold Steel	0.0016~**0.0024**~0.0031	0.0024~**0.0031**~0.0039	☆ 260~**460**~590	★ 260~**460**~590	-	☆ 260~**390**~490	-
Austenitic Stainless Steel	0.0012~**0.0016**~0.0020	0.0020~**0.0024**~0.0028	★ 330~**520**~660	☆ 330~**520**~660	-	-	-
Martensitic Stainless Steel	0.0012~**0.0016**~0.0020	0.0020~**0.0024**~0.0039	☆ 490~**660**~820	-	-	-	★ 590~**790**~980
Precipitation Hardened Stainless Steel	0.0012~**0.0016**~0.0020	0.0020~**0.0024**~0.0039	★ 300~**390**~490	-	-	-	-
Gray Cast Iron	0.0016~**0.0031**~0.0039	0.0031~**0.0039**~0.0059	-	-	★ 390~**590**~820	-	-
Nodular Cast Iron	0.0016~**0.0024**~0.0031	0.0031~**0.0039**~0.0047	-	-	★ 330~**490**~660	-	-
Ni-base Heat Resistant Alloy	0.0012~**0.0016**~0.0020	0.0020~**0.0024**~0.0028	☆ 70~**100**~160	-	-	-	★ 70~**100**~160
Titanium Alloys	0.0016~**0.0024**~0.0031	0.0031~**0.0039**~0.0047	★ 130~**200**~260	-	☆ 100~**160**~230	-	-

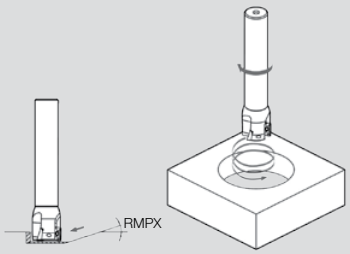
※ Bold numbers in the graph indicate the most recommended value of feed (fz) Adjust cutting speed and feed rate according to the actual machining conditions
※ Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys

★ :1st Recommendation
☆ : 2nd Recommendation

Ramping / Helical Milling

Ramping / Helical Milling

- Ramping angle should be under RMPX.
- For plunge depth per revolution when helical milling, see the cutting performance data of each tool. Use compressed air during machining.



Cutting Dia.	Applicable Inserts	Max. Ramping Angle (RMPX)
Ø0.375", Ø8mm	BDMT 0703	Not Recommended
Ø10mm		1.5°
Ø0.500" Ø12mm, Ø14mm		2°
Ø0.625", Ø16mm		3°
Ø17mm, Ø18mm		1.5°
Ø0.750", Ø20mm		2°
Ø21mm		1.8°
Ø1.000", Ø25mm		1.3°
Ø26mm		1.2°
Ø1.250", Ø32mm		0.8°
Ø33mm		0.5°

Minimum Cutting Dia. for Helical Milling

MECX	Cutting Dia.	Ø0.375"	Ø0.500"	Ø0.625"	Ø0.750"	Ø8mm	Ø10mm	Ø12mm	Ø14mm	Ø16mm	Ø17mm	Ø18mm	Ø20mm
BDMT0703 Type	Min. Cutting Dia.	Ø0.512"	Ø0.748"	Ø0.984"	Ø1.260"	Not recommended for helical milling.	Ø14mm	Ø18mm	Ø22mm	Ø26mm	Ø28mm	Ø30mm	Ø34mm
	Min. Cutting Dia. for Flat Bottom	Ø0.630"	Ø0.866"	Ø1.142"	Ø1.378"		Ø17mm	Ø21mm	Ø25mm	Ø29mm	Ø31mm	Ø33mm	Ø37mm

MECX	Cutting Dia.	Ø1.000"	Ø1.250"	Ø21mm	Ø25mm	Ø26mm	Ø32mm	Ø33mm
BDMT0703 Type	Min. Cutting Dia.	Ø1.732"	Ø2.244"	Ø36mm	Ø44mm	Ø46mm	Ø58mm	Ø60mm
	Min. Cutting Dia. for Flat Bottom	Ø1.890"	Ø2.362"	Ø39mm	Ø47mm	Ø49mm	Ø61mm	Ø63mm

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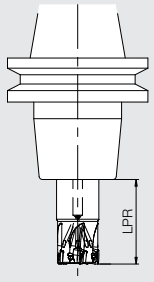
MECX End Mill Cutting Performance

(JT Chipbreaker Vc = 400 sfm Workpiece :1049)

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)	
Ø8mm	MECX08-S10-07-1T	0.630	-
Ø0.375" Ø10mm	**MECX0375-S375-07-1T** MECX10-S10-07-1T	0.670	-
Ø0.500" Ø12mm	**MECX0500-S500-07-2T** MECX12-S12-07-2T	0.709	1.180
Ø0.625" Ø16mm	**MECX0625-S625-07-3T** MECX16-S16-07-3T	0.787	1.570
Ø0.750" Ø20mm	**MECX0750-S750-07-4T** MECX20-S20-07-4T	0.787	1.570
Ø1.000" Ø25mm	**MECX1000-S100-07-5T** MECX25-S25-07-5T	1.000	1.970
Ø1.250" Ø32mm	**MECX1250-S125-07-6T** MECX32-S32-07-6T	1.180	1.970

Shape



- Machining with extended overhang length is not recommended for Ø0.315" and Ø0.394".
- The cutting performance list shows applicable range of JT Chipbreaker (PR830) with Standard flute-number type.

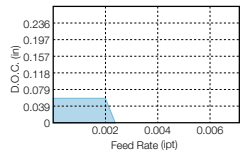
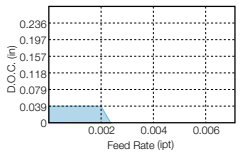
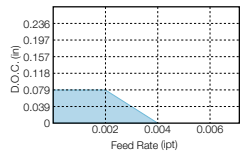
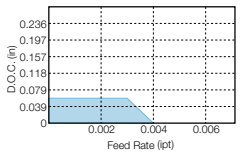
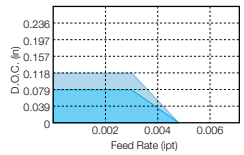
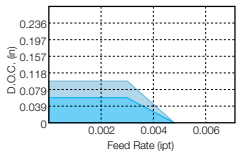
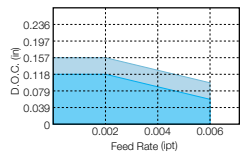
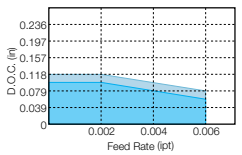
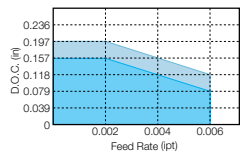
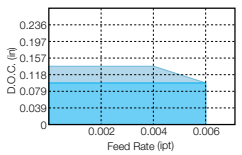
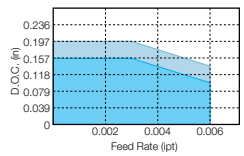
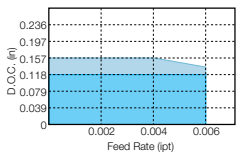
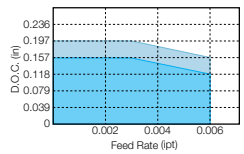
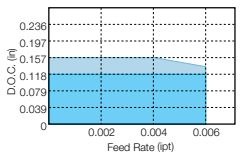
  For Multi-Edge type, use with 70% or less of D.O.C..
- Cutting conditions of JS Chipbreaker

(1) For MECX0375~MECX0500 / MECX08~MECX12

Decrease the feed rate by 25% according to cutting capability list.

(2) For MECX 0625 / MECX16 and over

Decrease the feed rate and D.O.C. by 30% according to cutting capability list.

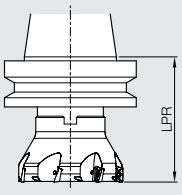
Part Number	■ Shouldering (Cutting Width ae = DC/2)	■ Slotting ■ Ramping and Helical Milling
MECX08-S10-07-1T		
MECX0375-S375-07-1T MECX10-S10-07-1T		
MECX0500-S500-07-2T MECX12-S12-07-2T		
MECX0625-S625-07-3T MECX16-S16-07-3T		
MECX0750-S750-07-4T MECX20-S20-07-4T		
MECX1000-S100-07-5T MECX25-S25-07-5T		
MECX1250-S125-07-6T MECX32-S32-07-6T		

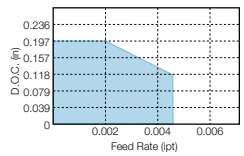
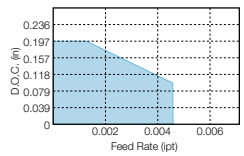
MECX Face Mill Cutting Performance

(JT Chipbreaker Vc = 400 sfm Workpiece :1049)

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)
Ø1.250" Ø32mm	**MECX1250R-07-8T** MECX032R-07-8T-M	3.937
Ø1.500" Ø40mm	**MECX1500R-07-10T** MECX040R-07-10T-M	
Ø2.000" Ø50mm	**MECX2000R-07-12T** MECX050R-07-12T-M	
Ø2.500" Ø63mm	**MECX2500R-07-14T** MECX063R-07-14T-M	

Shape



Part Number	■ Shouldering (Cutting Width ae = DC/2)
MECX1250R-07-8T MECX032R-07-8T-M **MECX1500R-07-10T** MECX040R-07-10T-M	
MECX2000R-07-12T MECX050R-07-12T-M **MECX2500R-07-14T** MECX063R-07-14T-M	

- Not recommended for slotting

M-THREE (MEV)

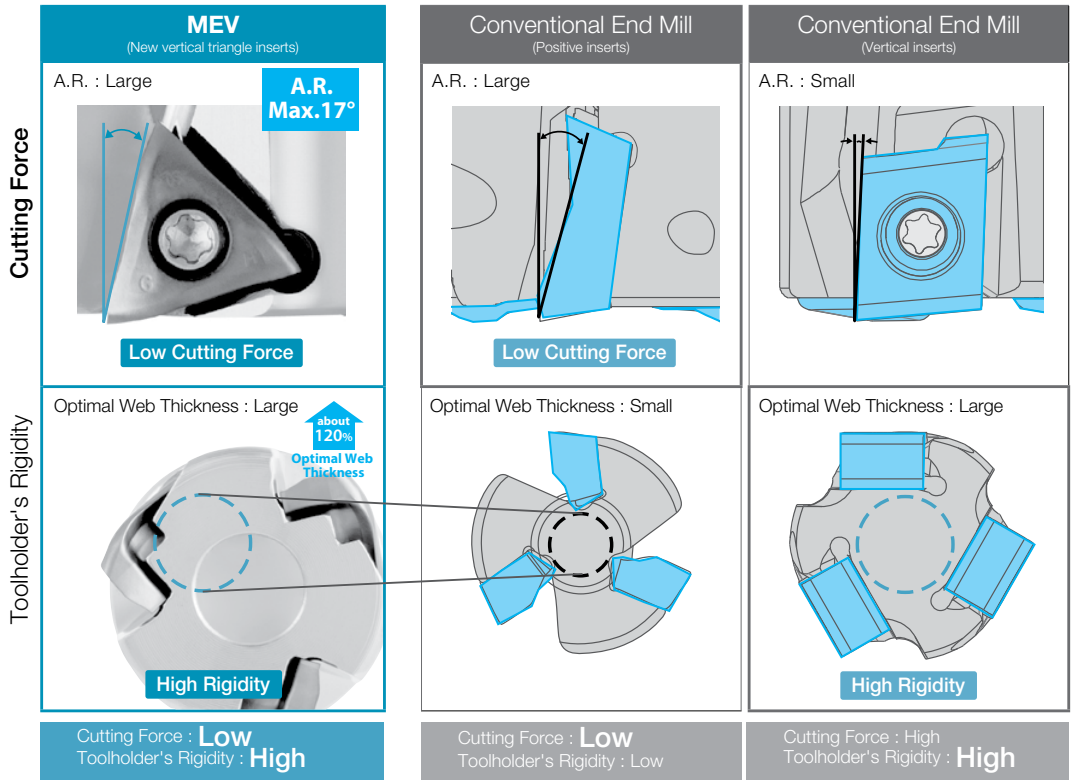
High Performance Milling Series

Newly Developed Triangular Inserts Provide Low Cutting Forces and Increased Rigidity
High Performance, Economical, and Multi-functional Milling Solutions

1 High Performance: Low Cutting Force and High Rigidity

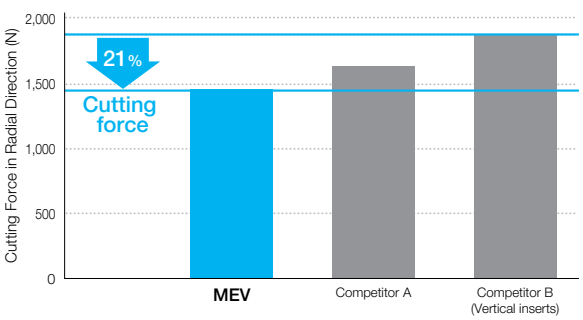
Newly developed vertical triangle inserts with 3 cutting edges for stable machining and reduced chattering

MEV vs Competitor



Keeping the max rake angle at 17°, provides lower cutting forces than the positive insert types of competitors

Cutting Force Comparison (Internal Evaluation)

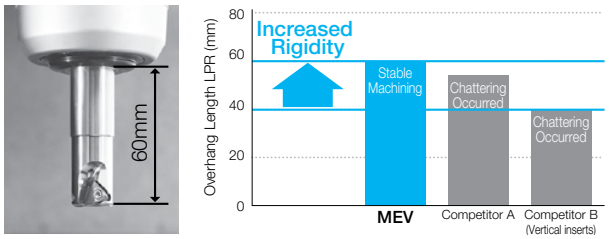


Cutting Conditions: Vc = 655 sfm, D.O.C. × ae = 0.118" × 0.709", fz = 0.004 ipt, Ø0.750" (3 flutes), Dry Workpiece : 4140

Low cutting force and large optimal web thickness provides excellent chattering resistance

Chatter Resistance Comparison (Internal Evaluation)

Shouldering



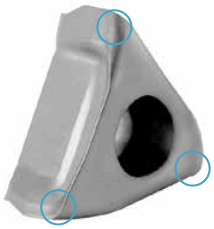
Cutting Conditions: Vc = 655 sfm, D.O.C. × ae = 0.118" × 0.71", fz = 0.004 ipt, Ø0.750" (3 flutes), Dry Workpiece : 4140 Ⓗ

Slotting

Cutting Conditions: Vc = 655 SFM, D.O.C. = 0.118" (Slotting), fz = 0.004 ipt, Ø0.750" (3 flutes), Dry Workpiece : 4140 Ⓗ

2 The Economical Choice: Improved Insert Life with 3 Cutting Edges

Insert

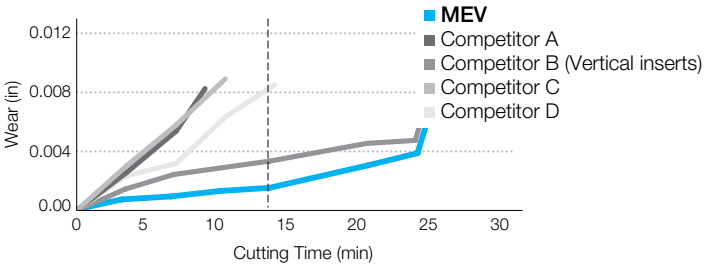


Unique triangle inserts with 3 cutting edges

PR15-series utilizes excellent MEGACOAT NANO coating technology with wear and adhesion resistance

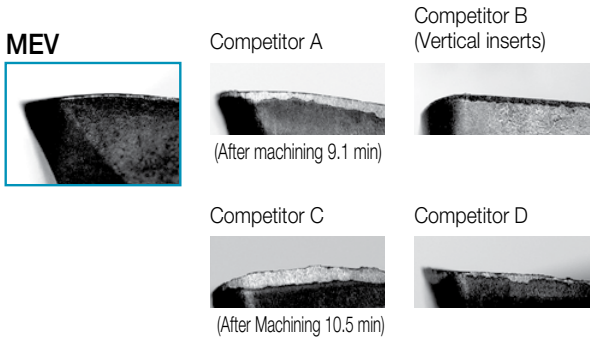
Long Tool Life with Excellent Wear Resistance

Wear Resistance Comparison (Internal Evaluation)



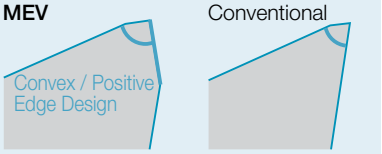
Cutting conditions : Vc = 590 sfm, D.O.C. × ae = 0.118" × 0.394", fz = 0.004 ipt, Ø0.750", Dry
Workpiece : D2 (30~35HS)

Cutting Edge (After Machining 14 min)



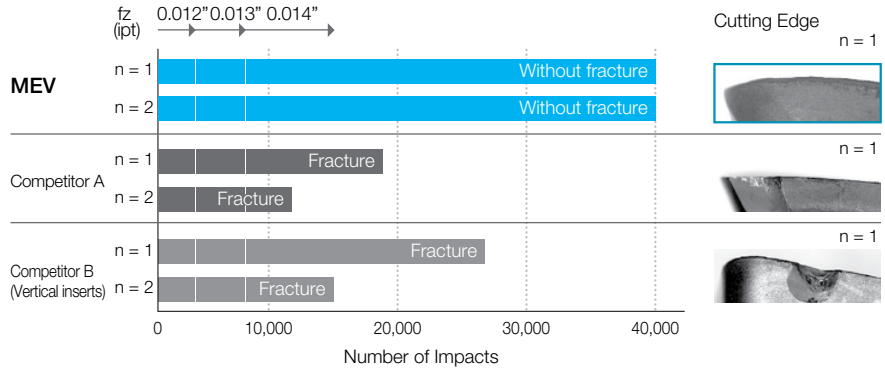
Improved Stability with Superior Fracture Resistance

Cutting Edge Cross-Section



The MEV features a convex cutting edge to increase strength

Fracture Resistance Comparison (Internal Evaluation)



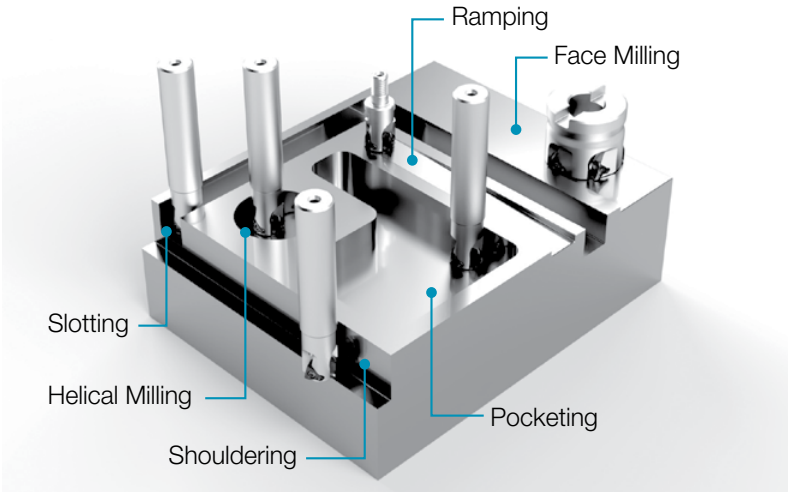
Cutting conditions : Vc = 394 sfm, D.O.C. × ae = 0.079" × 0.393", fz = 0.012" - 0.014" ipt, Ø0.750" (1 Flute), Dry
Workpiece : 4140 Ⓗ

3 Multi-functional: The MEV Can Perform a Wide Variety of Machining Processes

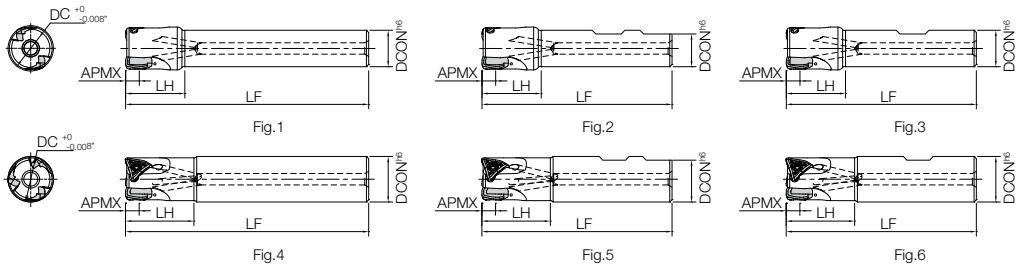
Great performance in shouldering, slotting, and ramping applications (D.O.C. 0.236" or less)

Chip Example (Slotting)

Cutting conditions : Vc = 490 sfm, D.O.C. = 0.236" (Slotting)
fz = 0.008 ipt, Ø0.750" (3 insert), Dry Workpice : SS400



MEV End Mill



Toolholder Dimensions

Shank		Part Number	Stock	Unit	No. of Inserts	Dimensions					Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM*
						DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.				
Weldon	Standard Shank	MEV 0750-W625-06-2T	●	inch	2	0.750	0.625	3.056	1.150	0.236	+17°	-38°	Yes	Fig.3	0.1	32,000
		0750-W750-06-2T	●		2	0.750	0.750	3.229	1.150					Fig.6	0.2	32,000
		1000-W750-06-3T	●		3	1.000	0.750	3.231	1.200			-37°		Fig.3	0.2	25,000
		1000-W100-06-3T	●		3	1.000	1.000	3.737	1.400		+17°			Fig.5	0.3	25,000
		1250-W100-06-4T	●		4	1.250	1.000	3.731	1.450			-35°		Fig.2	0.4	20,000
		1250-W125-06-4T	●		4	1.250	1.250	3.987	1.650					Fig.5	0.5	20,000
		1500-W125-06-5T	●		5	1.500	1.250	4.331	2.050					Fig.2	0.7	16,000
Cylindrical	Long Shank	MEV 0750-S750-6-06-2T	●	inch	2	0.750	0.750	6.000	1.600	0.236	+17°	-38°	Yes	Fig.5	0.3	32,000
		1000-S100-7-06-2T	●		2	1.000	1.000	7.000	2.000			-37°		Fig.5	0.6	25,000
		1000-S100-7-06-3T	●		3	1.000	1.000	7.000	2.000					Fig.5	0.6	25,000
		1250-S125-8-06-4T	●		4	1.250	1.250	8.000	2.600			-35°		Fig.5	1.1	20,000
Cylindrical	Standard Shank	MEV 20-S16-06-2T	●	mm	2	20	16	110	26	6	+17°	-38°	Yes	Fig.1	0.2	32,000
		20-S20-06-2T	●		2	20	20	110	30					Fig.4	0.2	32,000
		20-S20-06-3T	●		3	20	20	110	30					Fig.4	0.2	32,000
		22-S20-06-3T	●		3	22	20	110	26			-37°		Fig.1	0.2	29,000
		25-S20-06-3T	●		3	25	20	120	29					Fig.1	0.3	25,000
		25-S25-06-2T	●		2	25	25	120	32					Fig.4	0.4	25,000
		25-S25-06-3T	●		3	25	25	120	32					Fig.4	0.4	25,000
		28-S25-06-3T	●		3	28	25	120	29			-36°		Fig.1	0.4	23,000
		30-S25-06-4T	●		4	30	25	130	32					Fig.1	0.5	21,500
		32-S25-06-4T	●		4	32	25	130	32					Fig.1	0.5	20,000
		32-S32-06-3T	●		3	32	32	130	40					Fig.4	0.7	20,000
		32-S32-06-4T	●		4	32	32	130	40					Fig.4	0.7	20,000
		40-S32-06-5T	●		5	40	32	150	50					Fig.1	1.0	16,000
		50-S32-06-5T	●		5	50	32	120	40		+16°			Fig.1	0.9	13,000
	Long Shank	MEV 20-S18-06-150-2T	●	mm	2	20	18	150	30	6	+17°	-38°	Yes	Fig.1	0.3	32,000
		20-S20-06-150-2T	●		2	20	20	150	40					Fig.4	0.3	32,000
		25-S25-06-170-2T	●		2	25	25	170	50			-37°		Fig.4	0.6	25,000
		32-S32-06-200-2T	●		2	32	32	200	65			-36°		Fig.4	1.1	20,000

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Recommended Cutting Conditions ➔ **M90**

Spare Parts & Applicable Inserts (End Mills & Face Mills)

Part Number		Spare Parts: Insert Screw	Spare Parts: Wrench	Spare Parts: Anti-seize Compound	Spare Parts: Arbor Bolt	Applicable Inserts ➔ M20: General Purpose	Applicable Inserts ➔ M20: Low Cutting Force
End Mills	MEV ...-06-...T	SB-3076TRP	DTPM-10	P-37	-	TOMT06...-GM	TOMT06...-SM
Face Mills	MEV 1500R-06-5T				HH3/8-1.25		
	2000R-06-6T						
	2500R-06-6T						
	MEV 032R-06-4T-M				HH8X25		
	040R-06-5T-M						
	050R-06-5T-M				HH10X30		
Modular End Mills	MEV 20-M10-06-2T				-		
	20-M10-06-3T				-		
	25-M12-06-3T				-		
	32-M16-06-4T				-		

Recommended Torque for Insert Screw 2.0 Nm

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread prior to installation

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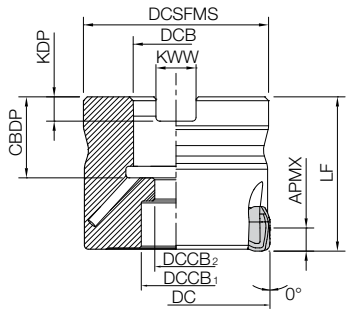
MEV Face Mill



Toolholder Dimensions

Part Number	Stock	Unit	No. of Inserts	Dimensions										Rake Angle (°)		Coolant Hole	Weight (kg)	Max RPM*
				DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	A.R. (Max)	R.R.			
MEV 1500R-06-5T	●	inch	5	1.500	1.457	0.750	0.669	0.433	1.575	0.750	0.187	0.312	0.236	+17°	-35°	Yes	0.2	16,000
2000R-06-6T	●		6	2.000	1.811	0.750	0.669	0.433	1.575	0.750	0.187	0.312		+16°			0.4	12,500
2500R-06-6T	●		6	2.500	1.969	0.750	0.669	0.433	1.575	0.750	0.187	0.312		+16°			0.6	10,000
MEV 032R-06-4T-M	●	mm	4	32	30	16	13.5	9	35	19	5.6	8.4	6	+17°	-36°	Yes	0.1	20,000
040R-06-5T-M	●		5	40	38	16	15	9	40	19	5.6	8.4		+17°			0.2	16,000
050R-06-5T-M	●		5	50	48	22	18	11	40	21	6.3	10.4		+16°			0.4	13,000

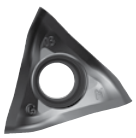
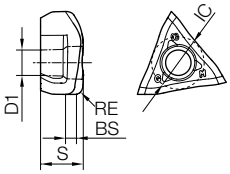
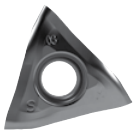
Max. Revolution*
When running the face mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Recommended Cutting Conditions ➔ M90

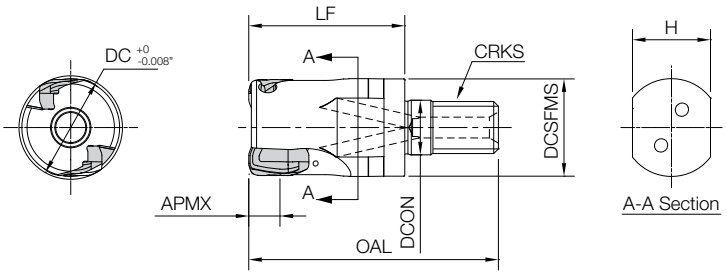
Applicable Inserts

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	☆	★		
	Carbon/Alloy Steel	☆	★		
M	Austenitic Stainless Steel	★	☆		
	Martensitic Stainless Steel	☆			★
	Precipitation Hardened Stainless Steel	★			
K	Gray Cast Iron		☆	★	
	Nodular Cast Iron		☆	★	
N	Non-ferrous Metals				
S	Heat-Resistant Alloys	☆			★
	Titanium Alloy	★		☆	
H	Hard Materials		■		

Insert (Right-hand Shown)		Part Number	Dimensions (in)					MEGACOAT NANO			CVD*
			IC	S	D1	BS	RE	PR1535	PR1525	PR1510	CA6535
 General Purpose		TOMT 060504ER-GM	0.283	0.224	0.134	0.075	1/64	●	●	●	●
		060508ER-GM				0.059	1/32	●	●	●	●
 Low Cutting Force		TOMT 060508ER-SM	0.283	0.224	0.134	0.059	1/32	●	●		●

MEV Modular End Mill



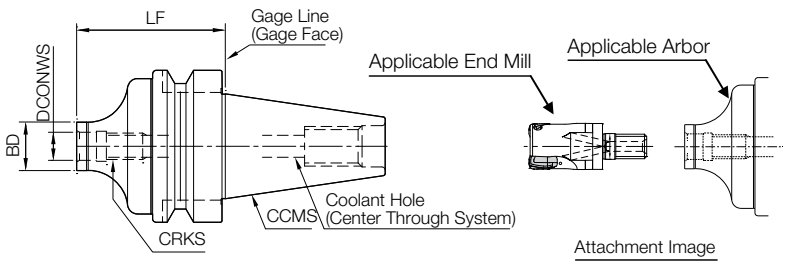
Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (mm)								Rake Angle (°)		Coolant Hole	Max RPM*
				DC	DCSFMS	DCON	OAL	LF	CRKS	H	APMX	A.R. (Max)	R.R.		
MEV	20-M10-06-2T	●	2	20	18.7	10.5	48	30	M10×P1.5	15	6	+17°	-38°	Yes	32,000
	20-M10-06-3T	●	3	20	18.7	10.5	48	30	M10×P1.5	15			-38°		32,000
	25-M12-06-3T	●	3	25	23	12.5	56	35	M12×P1.75	19			-37°		25,000
	32-M16-06-4T	●	4	32	30	17	62	40	M16×P2.0	24			-36°		20,000

Max. Revolution*
When running the face mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Recommended Cutting Conditions ➡ **M90**

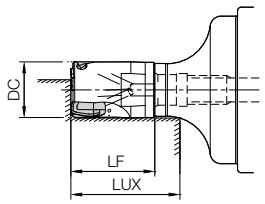
BT Arbor for MEV Modular End Mills



Toolholder Dimensions

Part Number		Stock	Dimensions (mm)				Coolant Hole	Arbor (Double-face Clamping Spindle)	Applicable End Mills
			LF	BD	DCONWS	CRKS		CCMS	
BT30K-	M10-45	●	45	18.7	10.5	M10×P1.5	Yes	BT30	MEV20-M10··
	M12-45	●	45	23	12.5	M12×P1.75			MEV25-M12··
BT40K-	M10-60	●	60	18.7	10.5	M10×P1.5	Yes	BT40	MEV20-M10··
	M12-55	●	55	23	12.5	M12×P1.75			MEV25-M12··
	M16-65	●	65	30	17	M16×P2.0			MEV32-M16··

Actual End Mill Depth



Arbor Part Number		Applicable End Mill			Actual End Mill Depth (mm)
		Part Number	Cutting Dia. DC (mm)	Dimensions LF (mm)	LUX
BT30K-	M10-45	MEV20-M10··	20	30	36.8
	M12-45	MEV25-M12··	25	35	42.8
BT40K-	M10-60	MEV20-M10··	20	30	38.7
	M12-55	MEV25-M12··	25	35	44.6
	M16-65	MEV32-M16··	32	40	51.2

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

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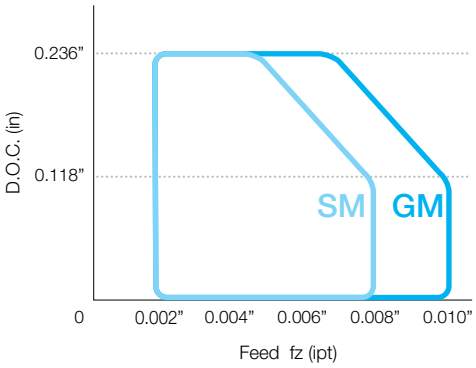
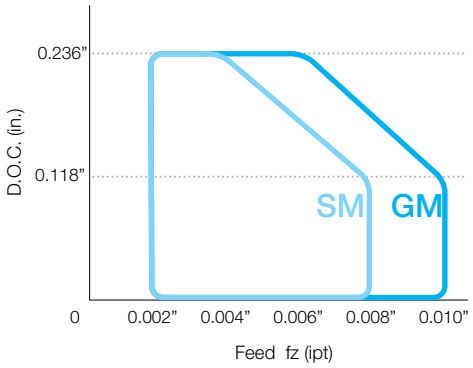
Recommended Chipbreaker Range

Shouldering



Cutting Conditions : Vc = 490 sfm, ae = DC/2, Workpiece : 1049

Slotting

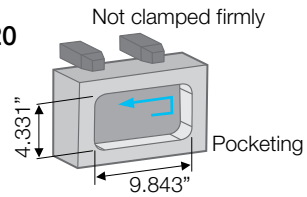


Cutting Conditions : Vc = 490 sfm, ae = DC, Workpiece : 1049

Case Studies

Parts for machinary: 420

Vc = 590 sfm
D.O.C. × ae = 0.040" × ~1.97"
fz = 0.004 ipt Dry
MEV50-S32-06-5T (5 Flutes)
TOMT060508ER-GM PR1535



Cutting time

MEV Vf=22.50 ipm

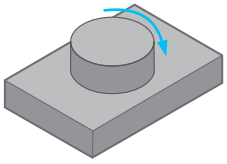
Machining Efficiency x1.6

Competitor E Vf=13.75 ipm

Quiet machining even when cutting speed increased
The MEV shows 1.6 times machining efficiency and good bottom surface finish
(User Evaluation)

Plate: SS400

Vc = 590 sfm
D.O.C. = 0.118"
fz = 0.005 ipt Dry
MEV22-S20-06-3T (Ø22 - 3 Flutes)
TOMT060508ER-GM PR1525



Number of parts produced

MEV 160 pcs/corner

Tool life x2.4

Competitor F 65 pcs/corner

The MEV achieved 2.4 times longer tool life than competitor F.
Quieter machining with excellent surface finish
(User Evaluation)

Recommended Cutting Conditions

Chipbreaker	Workpiece	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm)			
			MEGACOAT NANO			CVD Coated Carbide
			PR1535	PR1525	PR1510	CA6535
GM	Carbon Steel	0.003~**0.006**~0.010	☆ 390~**590**~820	★ 390~**590**~820	-	-
	Alloy Steel	0.003~**0.006**~0.008	☆ 330~**520**~720	★ 330~**520**~720	-	-
	Mold Steel	0.003~**0.005**~0.008	☆ 260~**460**~590	★ 260~**460**~590	-	-
	Austenitic Stainless Steel	0.003~**0.005**~0.006	☆ 330~**520**~660	☆ 330~**520**~660	-	-
	Martensitic Stainless Steel	0.003~**0.005**~0.008	☆ 490~**660**~820	-	-	★ 590~**790**~980
	Precipitation Hardened Stainless Steel	0.003~**0.005**~0.008	★ 300~**390**~490	-	-	-
	Gray Cast Iron	0.003~**0.007**~0.010	-	☆ 390~**590**~820	★ 390~**590**~820	-
	Nodular Cast Iron	0.003~**0.006**~0.008	-	☆ 330~**490**~660	★ 330~**490**~660	-
	Ni-base Heat-Resistant Alloy	0.003~**0.005**~0.006	☆ 70~**100**~160	-	-	★ 70~**100**~160
	Titanium Alloy	0.003~**0.006**~0.008	☆ 130~**200**~260	-	☆ 100~**160**~230	-
SM	Carbon Steel	0.003~**0.006**~0.008	☆ 390~**590**~820	★ 390~**590**~820	-	-
	Alloy Steel	0.003~**0.005**~0.007	☆ 330~**520**~720	★ 330~**520**~720	-	-
	Mold Steel	0.003~**0.004**~0.006	☆ 260~**460**~590	★ 260~**460**~590	-	-
	Austenitic Stainless Steel	0.003~**0.004**~0.006	★ 330~**520**~660	☆ 330~**520**~660	-	-
	Martensitic Stainless Steel	0.003~**0.004**~0.006	☆ 490~**660**~820	-	-	★ 590~**790**~980
	Precipitation Hardened Stainless Steel	0.003~**0.004**~0.006	☆ 300~**390**~490	-	-	-
	Ni-base Heat-Resistant Alloy	0.003~**0.004**~0.005	☆ 70~**100**~160	-	-	★ 70~**100**~160
	Titanium Alloy	0.003~**0.005**~0.006	★ 130~**200**~260	-	-	-

The number in bold font is recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy.
Machining with coolant is recommended for finishing.

★ : 1st Recommendation ☆ : 2nd Recommendation

Ramping Reference Data

Cutting Dia. DC	0.750"	1.000"	1.250"	1.500"	2.000"	2.500"	20mm	22mm	25mm	28mm	30mm	32mm	40mm	50mm
Max. Ramping Angle RMPX	1.00°	0.65°	0.50°	0.40°	0.30°	0.20°	1.00°	0.80°	0.65°	0.60°	0.55°	0.50°	0.40°	0.30°
tan RMPX	0.017	0.011	0.009	0.007	0.005	0.003	0.017	0.014	0.011	0.010	0.010	0.009	0.007	0.005

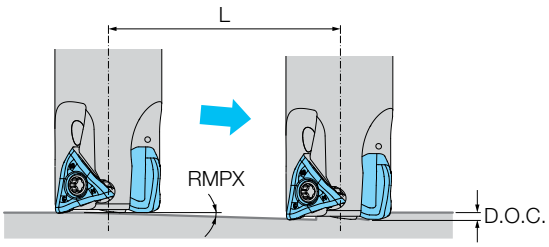
• Reduce ramping angle if chips are too long

Ramping Tips

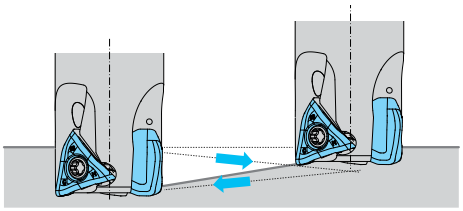
- Ramping angle should not exceed maximum ramping angle RMPX in above conditions
- Reduce recommended feed rate by 70%

Formula for Max. Cutting max Length (L) at Max. Ramping Angle

$$L = \frac{D.O.C.}{\tan RMPX}$$



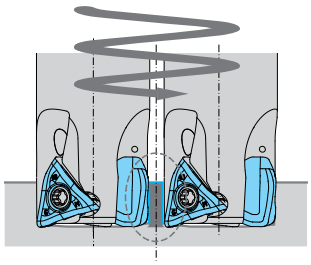
- When multi-directional ramping, set the maximum inclination angle to 50% of RPMX



Helical Milling Tips

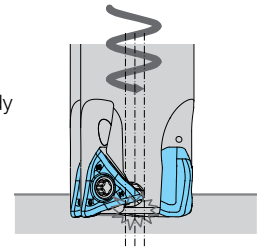
Exceeding Max. Machining Dia.

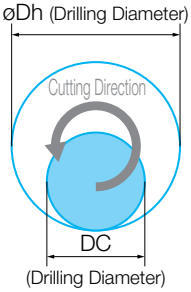
Center Core Remains After Machining



Under Min. Machining Dia.

Center Core Hits Holder Body





Unit: inch

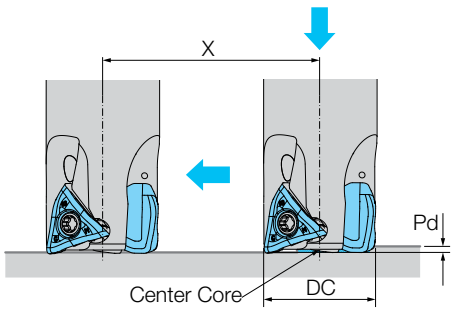
Part Number	Min. Drilling Dia.	Max. Drilling Dia.
MEV...-06-...	2 × DC - 0.197"	2 × DC - 0.079"

For helical milling, stay within the reccommended min. and max. drilling dia.

Keep machine depth (h) per rotation less than max. D.O.C. (APMX) in the cutter dimensions chart

Use caution to eliminate incidences caused by producing long chips

Drilling Tips



Unit: inch

Part Number	Max. Drilling Depth (Pd)	Min. Cutting Length (X) for Flat Bottom Surface
MEV...-06-...	0.010"	DC - 0.118"

Drilling Depth

Please refer to the figure on the left (Pd: Max. Drilling depth)

Traversing after Drilling

1. It is recommended to reduce feed by 25% until the center core is removed
2. Axial feed rate recommendation per revolution is
   f = 0.004 ipr or less

Shouldering | Slotting (2-Flute Only) | Facing

MEWH Helical End Mill

Excellent Surface Finish and Stable Machining due to Innovative Toolholder Design

Economical Double Sided 4-edge Insert

Chip Evacuation

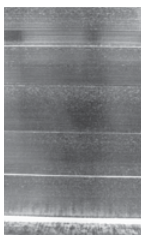
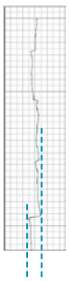
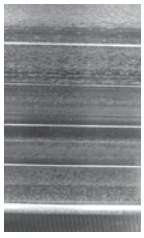
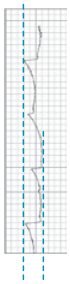
	Chipbreaker	Workpiece Material	fz = 0.006 ipt	fz = 0.008 ipt
	GM	4137		
	GM	SS400		
	SM			

Vc = 390 sfm
D.O.C. × ae = 0.787" × 0.591"
Dry

Chips are constantly evacuated in the opposite direction of the cutter feed without clogging

Surface Finish Comparison

MEWH	Competitor A

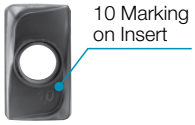
4137
Vc = 390 sfm
D.O.C. × ae = 1.772" × 0.197"
Dry

Better surface quality than competitor A.

Corner-R(RE) 0.4 ,1.0 ,1.2 ,1.6 and 2.0 Added to GM Chipbreaker Lineup

LOMU100404ER-GM
LOMU150504ER-GM

LOMU100408ER-GM
LOMU150508ER-GM



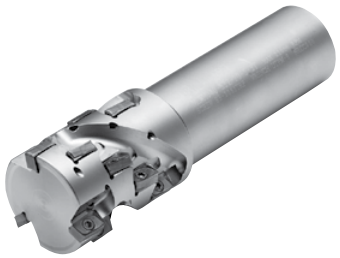
LOMU150510ER-GM

LOMU100412ER-GM
LOMU150512ER-GM

LOMU100416ER-GM
LOMU150516ER-GM

LOMU100420ER-GM
LOMU150520ER-GM

MEWH Helical End Mill (Coolant Hole for Bottom Insert)



Rake Angle (°)	A.R. (Max.)	R.R.
	+13°	-20°

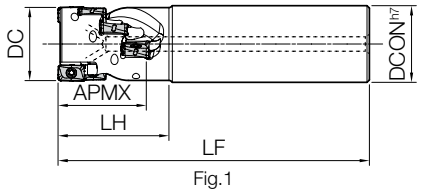


Fig.1

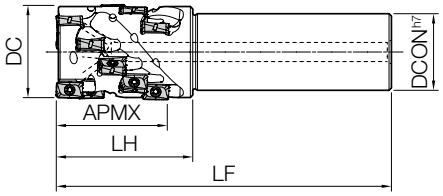


Fig.2

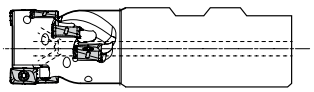


Fig.3

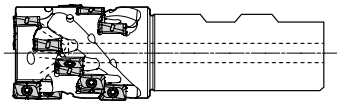


Fig.4

Toolholder Dimensions (Inch)

Shank	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (in) DC	DCON	LF	LH	APMX	Coolant Hole	Drawing	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Applicable Inserts M16
Weldon	MEWH 1000-W100-10-3-2T	●	2	3	6	1.000	1.000	3.806	1.523	1.102	Yes	Fig.3	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	1250-W125-10-4-2T	●	2	4	8	1.250	1.250	4.161	1.878	1.456	Yes	Fig.3	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	1500-W125-10-5-3T	●	3	5	15	1.500	1.250	4.610	2.244	1.811	Yes	Fig.4	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	1500-W150-10-5-3T	●	3	5	15	1.500	1.500	4.957	2.267	1.811	Yes	Fig.3	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	MEWH 1500-W125-15-4-2T	●	2	4	8	1.500	1.250	4.846	2.480	2.086	Yes	Fig.4	SB-4090TRP	DTPM-15	P-37	LOMU1505..
	1500-W150-15-4-2T	□	2	4	8	1.500	1.500	5.193	2.504	2.086	Yes	Fig.3	SB-4090TRP	DTPM-15	P-37	LOMU1505..
	2000-W150-15-4-3T	●	3	4	12	2.000	1.500	5.252	2.480	2.086	Yes	Fig.4	SB-4090TRP	DTPM-15	P-37	LOMU1505..

Recommended Torque for Insert Screw 1.2N · m

Recommended Torque for Insert Screw 3.5N · m

Toolholder Dimensions (Metric)

Shank	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm) DC	DCON	LF	LH	APMX	Coolant Hole	Drawing	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Applicable Inserts M16
Cylindrical	MEWH 025-S25-10-3-2T	●	2	3	6	25	25	120	37	28	Yes	Fig.1	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	032-S32-10-4-2T	●	2	4	8	32	32	130	46	37	Yes	Fig.1	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	040-S32-10-5-2T	●	5	10	40	32	32	140	57	46	Yes	Fig.2	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	040-S32-10-5-3T	●	3	5	15	32	32	140	57	46	Yes	Fig.2	SB-3065TRP	DTPM-8	P-37	LOMU1004..
	MEWH 040-S32-15-4-2T	●	2	4	8	40	32	160	63	53	Yes	Fig.2	SB-4090TRP	DTPM-15	P-37	LOMU1505..
	050-S42-15-4-2T	●	2	4	8	50	42	160	63	53	Yes	Fig.2	SB-4090TRP	DTPM-15	P-37	LOMU1505..
	050-S42-15-4-3T	●	3	4	12	50	42	160	63	53	Yes	Fig.2	SB-4090TRP	DTPM-15	P-37	LOMU1505..

Recommended Torque for Insert Screw 1.2N · m

Recommended Torque for Insert Screw 3.5N · m

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Recommended Cutting Conditions M95

Aluminum machining is not recommended (AM chipbreaker is not available for MEWH)

MEWH Shell Mill (without Coolant Hole)

Rake Angle (°)	A.R. (Max.)	R.R.
	+13°	-20°

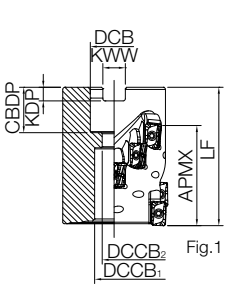


Fig.1

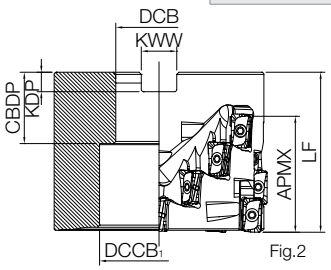


Fig.2

Toolholder Dimensions (Inch)

Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (in) DC	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	Drawing	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Arbor Bolt	Applicable Inserts ➡ M16
MEWH 1500R-10-4-3T	□	3	4	12	1.50	0.75	0.669	0.433	2.087	0.750	0.187	0.312	1.456	Fig.1	SB-3065TRP	DTPM-15	P-37	HH3/8-1.25	LOMU1004..
2000R-10-5-3T	□		5	15	2.00				2.520				1.811		Recommended Torque for Insert Screw 1.2N · m				
MEWH 2000R-15-4-3T	●	3	4	12	2.00	0.75	0.669	0.433	2.756	0.750	0.187	0.312	2.086	Fig.1	SB-4090TRP	DTPM-15	P-37	HH3/8-1.25	LOMU1505..
2500R-15-3-3T	□		3	9	2.50	1.00	0.866	0.551	2.283	1.063	0.236	0.381	1.614		Recommended Torque for Insert Screw 3.5N · m			HH1/2-1.25	
3000R-15-4-4T	□	4	4	16	3.00				2.756				2.086						
4000R-15-4-5T	□	5		20	4.00	1.50	2.047	-	2.913	1.142	0.393	0.625	2.086	Fig.2				-	

Toolholder Dimensions (Metric)

Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm) DC	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	Drawing	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Arbor Bolt	Applicable Inserts ➡ M16
MEWH 040R-10-4-3T-M	●	3	4	12	40	16	15	9	53	19	5.6	8.4	37	Fig.1	SB-3065TRP	DTPM-8	P-37	HH8X25	LOMU1004..
050R-10-5-3T-M	●		5	15	50	22	18	11	64	21	6.3	10.4	46		Recommended Torque for Insert Screw 1.2N · m			HH10X30	
MEWH 050R-15-4-3T-M	●	3	4	12	50	22	18	11	70	21	6.3	10.4	53	Fig.1	SB-4090TRP	DTPM-15	P-37	HH10X30	LOMU1505..
063R-15-3-3T-M	●		3	9	63	27	20	13	58	24	7	12.4	41		Recommended Torque for Insert Screw 3.5N · m			HH12X35	
080R-15-4-4T-M	●	4	4	16	80	32	26	18	70	28	8	14.4	53					HH16X45	
100R-15-4-5T-M	●	5		20	100	40	55	-	74	33	9	16.4		Fig.2				-	

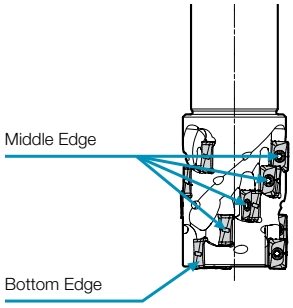
Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Aluminum machining is not recommended (AM chipbreaker is not available for MEWH)

Applicable Inserts

Part Number	Applicable Inserts ➡ M16		
	General Purpose	Low Cutting Force	Tough Edge (Heavy Milling)
MEWH ...-10-...	LOMU1004..ER-GM	LOMU100408ER-SM	LOMU100408ER-GH
MEWH ...-15-...	LOMU1505..ER-GM	LOMU150508ER-SM	LOMU150508ER-GH

Recommended Cutting Conditions ➡ **M95**



Applicable Insert Guide for MEWH

Insert Location	Toolholder Part Number										
	MEWH...-10-...					MEWH...-15-...					
	Corner-R (RE) (mm)					Corner-R (RE) (mm)					
Bottom Edges	0.4	0.8	1.2	1.6	2.0	0.4	0.8	1.0	1.2	1.6	2.0
*Middle Edges	0.4 / 0.8	0.4 / 0.8	0.4 / 0.8	0.4	0.4	0.4~1.6	0.4~1.6	0.4~1.6	0.4~1.6	0.4~1.6	0.4~1.6

*For Middle Edges, it is not recommended to use the insert with larger corner-R(RE) than shown in the table, because it will make finished surface uneven.

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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Contact your local Kyocera sales engineer to upgrade old products to new technology

Recommended Cutting Conditions

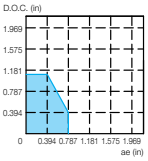
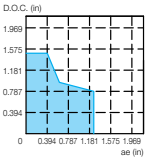
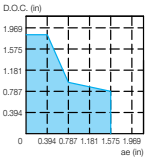
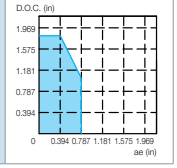
Chipbreaker	Workpiece Material	Feed Rate fz (ipt) Toolholder Part Number: Helical End Mill MEWH1000W~MEWH2000W MEWH025~MEWH050 / Shell Mill MEWH1500R~MEWH4000R MEWH040R~MEWH100R	Recommended Insert Grade Vc (sfm): MEGACOAT NANO PR1535	MEGACOAT NANO PR1525	MEGACOAT NANO PR1510	CVD Carbide CA6535	DLC Carbide PDL025	Carbide GW25
GM	Carbon Steel	0.002~**0.004**~0.008	☆ 390~**590**~820	★ 390~**590**~820	-	-	-	-
	Alloy Steel	0.002~**0.004**~0.006	☆ 330~**520**~720	★ 330~**520**~720	-	-	-	-
	Mold Steel	0.002~**0.003**~0.005	☆ 260~**460**~590	★ 260~**460**~590	-	-	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	☆ 330~**520**~660	☆ 330~**520**~660	-	-	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.004	☆ 490~**660**~820	-	-	★ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	★ 300~**390**~490	-	-	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.007	-	-	★ 390~**590**~820	-	-	-
	Nodular Cast Iron	0.002~**0.003**~0.005	-	-	★ 330~**490**~660	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	☆ 70~**100**~160	-	-	★ 70~**100**~160	-	-
	Titanium Alloys	0.002~**0.003**~0.005	☆ 130~**200**~260	-	☆ 100~**160**~230	-	-	-
SM	Carbon Steel	0.002~**0.004**~0.007	☆ 390~**590**~820	★ 390~**590**~820	-	-	-	-
	Alloy Steel	0.002~**0.003**~0.005	☆ 330~**520**~720	★ 330~**520**~720	-	-	-	-
	Mold Steel	0.002~**0.003**~0.005	☆ 260~**460**~590	★ 260~**460**~590	-	-	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	★ 330~**520**~660	☆ 330~**520**~660	-	-	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.004	☆ 490~**660**~820	-	-	★ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	☆ 300~**390**~490	-	-	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	☆ 70~**100**~160	-	-	★ 70~**100**~160	-	-
	Titanium Alloys	0.002~**0.003**~0.005	★ 130~**200**~260	-	☆ 100~**160**~230	-	-	-
GH	Carbon Steel	0.002~**0.004**~0.008	☆ 390~**590**~820	★ 390~**590**~820	-	-	-	-
	Alloy Steel	0.002~**0.004**~0.006	☆ 330~**520**~720	★ 330~**520**~720	-	-	-	-
	Mold Steel	0.002~**0.003**~0.005	☆ 260~**460**~590	★ 260~**460**~590	-	-	-	-
	Austenitic Stainless Steel	0.002~**0.003**~0.005	☆ 330~**520**~660	☆ 330~**520**~660	-	-	-	-
	Martensitic Stainless Steel	0.002~**0.003**~0.004	☆ 490~**660**~820	-	-	☆ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.002~**0.003**~0.004	☆ 300~**390**~490	-	-	-	-	-
	Gray Cast Iron	0.002~**0.004**~0.008	-	-	☆ 390~**590**~820	-	-	-
	Nodular Cast Iron	0.002~**0.003**~0.006	-	-	☆ 330~**490**~660	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.003**~0.004	☆ 70~**100**~160	-	-	☆ 70~**100**~160	-	-
	Titanium Alloys	0.002~**0.003**~0.005	☆ 130~**200**~260	-	☆ 100~**160**~230	-	-	-

※ Bold numbers in the graph indicate the most recommended value of feed (fz) Adjust cutting speed and feed rate according to the actual machining conditions
※ Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys

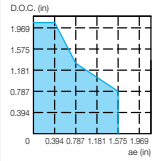
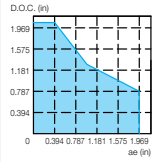
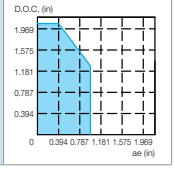
★ :1st Recommendation
☆ : 2nd Recommendation

MEWH Cutting Performance

● LOMU1004 Type

Cutting Dia.	Part Number (2 Flute)	2 Flute D.O.C. x ae	Part Number (3 Flute)	3 Flute D.O.C. x ae
Ø1.000" Ø25mm	**MEWH1000 -W100-10-3-2T** MEWH025 -S25-10-3-2T		-	-
Ø1.250" Ø32mm	**MEWH1250 -W125-10-4-2T** MEWH032 -S32-10-4-2T		-	-
Ø1.500" Ø40mm	**MEWH1500 -W125-10-5-2T** MEWH040 -S32-10-5-2T		**MEWH1500 -W150-10-5-3T** MEWH040 -S32-10-5-3T	

● LOMU1505 Type

Cutting Dia.	Part Number (2 Flute)	2 Flute D.O.C. x ae	Part Number (3 Flute)	3 Flute D.O.C. x ae
Ø1.500" Ø40mm	**MEWH1500 -W125-15-4-2T** MEWH040 S32-15-4-2T		-	-
Ø2.000" Ø50mm	**MEWH2000 -W150-15-4-2T** MEWH050 -S42-15-4-2T		**MEWH2000 -W150-15-4-3T** MEWH050 -S42-15-4-3T	

Vc = 400 sfm
fz = 0.003~0.005 ipt
GM Chipbreaker
Workpiece: 4137
Overhang Length: End mill overhang length is "LH" of the dimension list

Shouldering | Slotting (2-Flute Only) | Facing

MECH Helical End Mill (Coolant Hole for Bottom Insert)

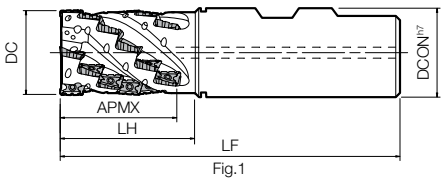


Fig.1

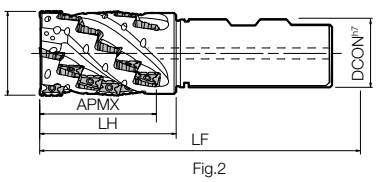


Fig.2

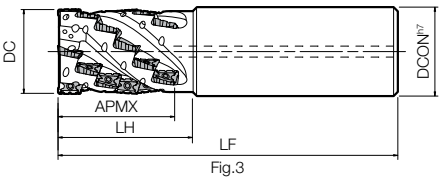


Fig.3

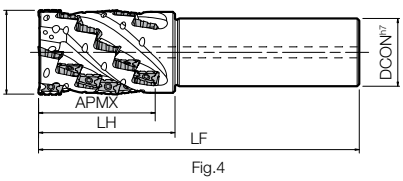


Fig.4

Toolholder Dimensions (Inch)

Shank	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (in) DC	DCON	LF	LH	APMX	Rake Angle (°) A.R. (Max)	R.R.	Drawing	Coolant Hole	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Applicable Inserts M23
Weldon	MECH 1000-W100-11-4-2T	●	2	4	8	1.00	1.00	4.17	1.81	1.46	+21°	-10°	Fig.1	No	SB-2555TRG	DTM-8	P-37	BDMT11T308ER-N2 BDMT11T308ER-N3
	1250-W125-11-5-2T	●		5	10	1.25	1.25	4.52	2.17	1.81	+23°	-9°						
	1250-W125-11-5-4T	●	4		20													
	1500-W125-11-6-4T	●		6	24	1.50		4.90	2.52	2.16		-8°	Fig.2					
	1500-W150-11-6-4T	●						5.28					Fig.1					
	2000-W150-11-7-4T	●		7	28	2.00	1.50	5.73	2.95	2.52		-7°	Fig.2					
	2000-W1500-11-7-6T	●	6		42													
	MECH 1500-W125-17-4-2T	●	2	4	8	1.50	1.25	5.26	2.87	2.32	+19°	-7°	Fig.2	No	SB-4070TRN	DTM-15	P-37	BDMT170408ER-N3 BDMT170408ER-N4
	1500-W150-17-4-2T	●					1.50	5.64					Fig.1					
	2000-W1500-17-5-4T	●	4	5	20	2.00		6.26	3.46	2.91			Fig.2					

Toolholder Dimensions (Metric)

Shank	Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm) DC	DCON	LF	LH	APMX	Rake Angle (°) A.R. (Max)	R.R.	Drawing	Coolant Hole	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Applicable Inserts M23
Cylindrical	MECH 025-S25-11-4-2T	●	2	4	8	25	25	120	46	37	+21°	-10°	Fig.3	Yes	SB-2555TRG	DTM-8	P-37	BDMT11T308ER-N2 BDMT11T308ER-N3
	032-S32-11-5-2T	●		5	10	32	32	140	55	46	+23°	-9°						
	032-S32-11-5-4T	●	4		20													
	040-S32-11-6-4T	●		6	24	40		150	64	55		-8°	Fig.4					
	040-S42-11-6-4T	●					42	160					Fig.3					
	050-S42-11-7-4T	●		7	28	50		172	75	64		-7°	Fig.4					
	050-S42-11-7-6T	●	6		42													
	MECH 040-S32-17-4-2T	●	2	4	8	40	32	160	73	59	+19°	-7°	Fig.4	Yes	SB-4070TRN	DTM-15	P-37	BDMT170408ER-N3 BDMT170408ER-N4
	040-S42-17-4-2T	●					42	170					Fig.3					
	050-S42-17-5-4T	●	4	5	20	50		185	88	74		-6°	Fig.4					

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Applicable Inserts

Part Number	Applicable Inserts M23			
	2-Notch	3-Notch	3-Notch	4-Notch
MECH...-11-...	BDMT 11T308ER-N2	BDMT 11T308ER-N3	-	-
MECH...-17-...	-	-	BDMT 170408ER-N3	BDMT 170408ER-N4

Recommended Cutting Conditions **M101**

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
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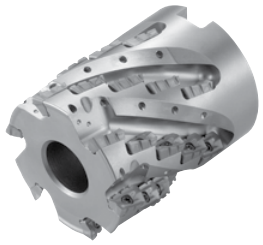
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MECH Shell Mill (without Coolant Hole)



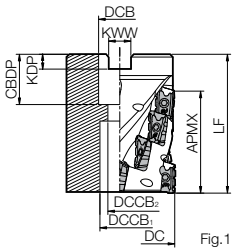


Fig.1

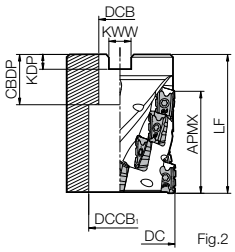


Fig.2

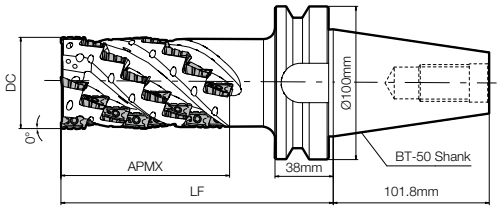
Rake Angle (°)		
Part Number	A.R. (Max)	R.R.
MECH...-11-...	+23°	-8°
MECH...-17-...	+19°	-7°

Toolholder Dimensions

Part Number	Stock	Unit	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (in) DC	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	Drawing	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Arbor Bolt	Applicable Inserts ➔ M23
MECH 2000R-11-5-6T	●	inch	6	5	30	2.00	0.75	0.63	0.417	2.480	0.750	0.197	0.313	1.811	Fig.1	SB-2555TRG	DTM-8	P-37	HH3/8-1.5	BDMT11T308ER-N2 BDMT11T308ER-N3
2000R-17-2-4T	●		4	2	8					2.047				1.181		SB-4070TRN	DTM-15		HH3/8-1.25	BDMT170408ER-N3 BDMT170408ER-N4
2000R-17-4-4T	●		4	4	16					3.070				2.322						
MECH 040R-11-4-4T-M	●	mm	4	4	16	40	16	15	9	50	19	5.6	8.4	37	Fig.1	SB-2555TRG	DTM-8	P-37	HH8X25	BDMT11T308ER-N2 BDMT11T308ER-N3
050R-11-5-6T-M	●		6	5	30	50	22	18	11	63	21	6.3	10.4	46					HH10X30	
MECH 050R-17-2-4T-M	●		4	2	8	50	22	18	11	52	21	6.3	10.4	30	Fig.1	SB-4070TRN	DTM-15	P-37	HH10X30	BDMT170408ER-N3 BDMT170408ER-N4
050R-17-4-4T-M	●			4	16					78				59					HH10X40	
063R-17-3-4T-M	●		4	3	12	63	27	20	14	70	24	7	12.4	45					HH12X35	
080R-17-4-6T-M	●		6	4	24	80	32	26	18	85	28	8	14.4	59					HH16X45	
100R-17-4-6T-M	●					100	40	56	-	85	30	9	16.4	59	Fig.2				-	
MECH 063R-17-3-4T	●		4	3	12	63	25.4	20	14	70	26	6	9.5	45	Fig.1	SB-4070TRN	DTM-15	P-37	HH12X35	
080R-17-4-6T	●		6	4	24	80	31.75	26	18	85	32	8	12.7	59					HH16X45	
100R-17-4-6T	●					100	38.1	56	-	85	38	10	15.9	59	Fig.2				-	

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

MECH-BT50 Integral Arbor (without Coolant Hole)



Rake Angle (°)		
Part Number	A.R. (Max)	R.R.
MECH...-11-...	+23°	-7°
MECH...-17-...	+19°	-7°

Toolholder Dimensions

Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm) DC	LF	APMX	Weight (kg)	Spare Parts: Insert Screw	Wrench	Anti-seize Compound	Applicable Inserts ➔ M23
MECH 050R11-8-4T-BT50	●	4	8	32	50	143	73	4.8	SB-2555TRG	DTM-8	P-37	BDMT11T308ER-N2 BDMT11T308ER-N3
MECH 050R17-7-4T-BT50	●	4	7	28	50	173	104	4.9	SB-4070TRN	DTM-15	P-37	BDMT170408ER-N3 BDMT170408ER-N4
063R17-7-4T-BT50	●				63			5.9				
080R17-7-4T-BT50	●				80			7.8				
100R17-7-6T-BT50	●	6		42	100			10.2				

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Applicable Inserts

Part Number	Applicable Inserts ➔ M23			
	2-Notch	3-Notch	3-Notch	4-Notch
MECH...-11-...	BDMT 11T308ER-N2	BDMT 11T308ER-N3	-	-
MECH...-17-...	-	-	BDMT 170408ER-N3	BDMT 170408ER-N4

Recommended Cutting Conditions ➔ **M101**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MECH-BT50SA Integral Arbor Set (without Coolant Hole)

Base Unit / 1 Front Piece / Arbor Bolt

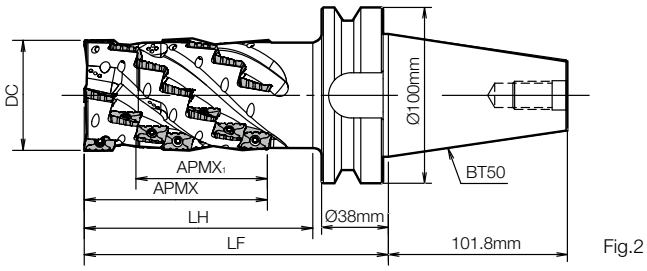
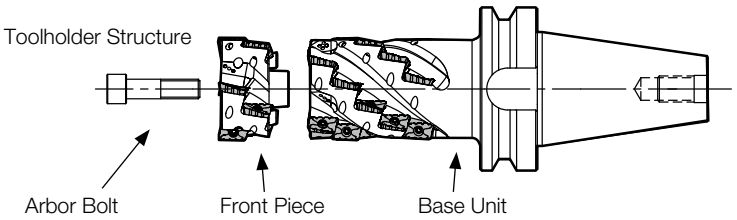


Fig.2



MECH-BT50-A Base Unit (without Coolant Hole)

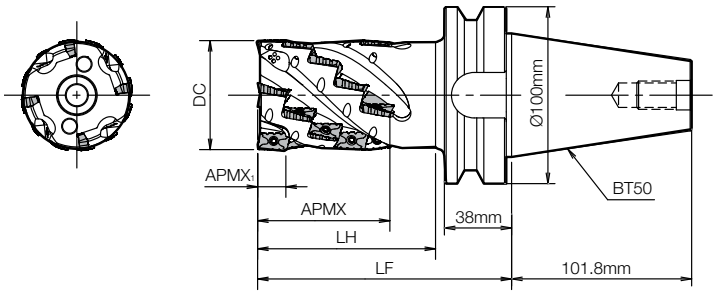


Fig.1

Toolholder Dimensions

Part Number		Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Drawing	Weight (kg)
						DC	LF	LH	APMX	APMX1	A.R.	R.R.		
Integral Arbor (Set)	MECH 050R11-4T-BT50SA	□	4	8	32	50	143	99	73	55	+23°	-7°	Fig.1	4.8
	063R17-4T-BT50SA	□		7	28	63	173	130	104	75	+19°	-7°		5.8
	080R17-4T-BT50SA	□				80								7.6
	100R17-6T-BT50SA	□	6	7	42	100								9.8
Base Unit	MECH 050R11-4T-BT50-A	□	4	6	24	50	125	81	55	10	+23°	-7°	Fig.2	4.6
	063R17-4T-BT50-A	□		5	20	63	143	100	75	16	+19°	-7°		5.4
	080R17-4T-BT50-A	□				80								6.8
	100R17-6T-BT50-A	□	6	5	30	100								8.5

Recommended Cutting Conditions ➔ M101

Toolholder Structure

End Mill (Above)			Base Unit (Above)		Front Piece (1pc) ➔ M99		Arbor Bolt
MECH	050R11-4T-BT50SA	=	MECH050R11-4T-BT50-A	+	MECH050R11-4T-F	+	HH12X35
	063R17-4T-BT50SA		MECH063R17-4T-BT50-A		MECH063R17-4T-F		HH12X40
	080R17-4T-BT50SA		MECH080R17-4T-BT50-A		MECH080R17-4T-F		HH16X40
	100R17-6T-BT50SA		MECH100R17-6T-BT50-A		MECH100R17-6T-F		HH20X40

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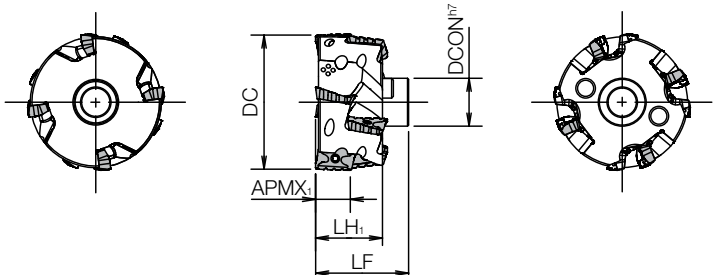
MECH-F Front Piece (without Coolant Hole)



Toolholder Dimensions

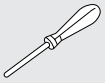
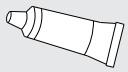
Part Number		Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Weight (kg)
						DC	DCON	LF	LH_1	$APMX_1$	A.R.	R.R.	
MECH	050R11-4T-F	●	4	2	8	50	22	32	18	10	+23°	-7°	0.2
	063R17-4T-F	●				63	22	44	30	16	+19°	-7°	0.4
	080R17-4T-F	●				80	32						0.8
	100R17-6T-F	●	6	2	12	100	45						1.3

Applicable Inserts

End Mill ➡ M98		Base Unit ➡ M98	Front Piece (1pc Above)	Applicable Inserts ➡ M23
MECH	050R11-4T-BT50SA	MECH050R11-4T-BT50-A	MECH050R11-4T-F	BDMT 11T308ER-N2 BDMT 11T308ER-N3
	063R17-4T-BT50SA	MECH063R17-4T-BT50-A	MECH063R17-4T-F	BDMT 170408ER-N3 BDMT 170408ER-N4
	080R17-4T-BT50SA	MECH080R17-4T-BT50-A	MECH080R17-4T-F	
	100R17-6T-BT50SA	MECH100R17-6T-BT50-A	MECH100R17-6T-F	

Recommended Cutting Conditions ➡ M101

Toolholder Dimensions

Part Number			Spare Parts				
			Insert Screw	Wrench (for Insert Screw)	Arbor Bolt	Wrench (for Arbor Bolt)	Anti-seize Compound
							
Integral Arbor (Set)	MECH	050R11-4T-BT50SA	SB-2555TRG	DTM-8	HH12X35	LW-10	P-37
		063R17-4T-BT50SA	SB-4070TRN	DTM-15	HH12X40	LW-10	
		080R17-4T-BT50SA			HH16X40	LW-14	
		100R17-6T-BT50SA			HH20X40	LW-17	
Base Unit	MECH	050R11-4T-BT50-A	SB-2555TRG	DTM-8	HH12X35	LW-10	
		063R17-4T-BT50-A	SB-4070TRN	DTM-15	HH12X40	LW-10	
		080R17-4T-BT50-A			HH16X40	LW-14	
		100R17-6T-BT50-A			HH20X40	LW-17	
Front Piece	MECH	050R11-4T-F	SB-2555TRG	-	-	-	
		063R17-4T-F	SB-4070TRN	-	-	-	
		080R17-4T-F					
		100R17-6T-F					

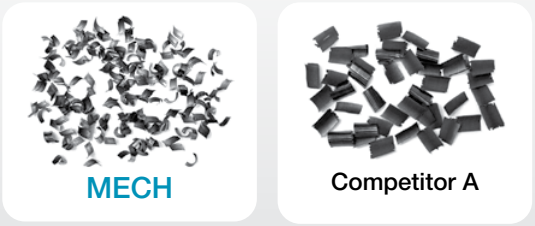
• If you purchased the front piece only, the insert screw wrench, arbor bolt, and arbor bolt wrench are not included.

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

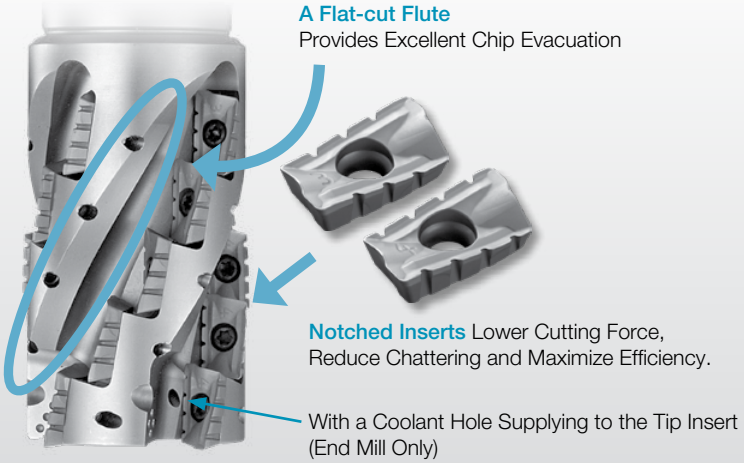
Enhanced Chip Evacuation

● Good Chip Evacuation

Notched Insert Breaks Chips into Small Pieces



Workpiece Material: SS400
Vc = 400 sfm
D.O.C. × ae = 1.575"×0.394"
fz = 0.005 ipt
MECH032-S32-11-5-4T



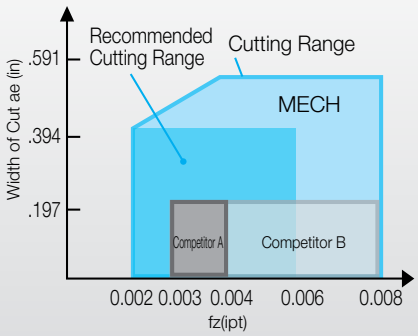
A Flat-cut Flute
Provides Excellent Chip Evacuation

Notched Inserts Lower Cutting Force, Reduce Chattering and Maximize Efficiency.

With a Coolant Hole Supplying to the Tip Insert (End Mill Only)

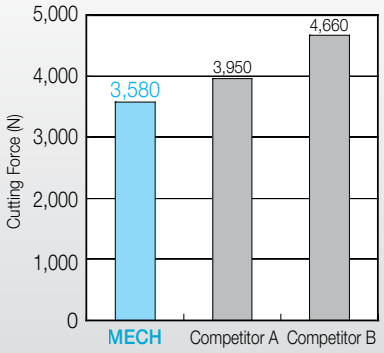
Low Cutting Force

● Low Cutting Force with Notched Inserts



Workpiece Material : 1049
Vc = 390 sfm
D.O.C. × ae = 1.575" × 0.197~0.512"
fz = 0.002~0.008 ipt
MECH032-S32-11-5-4T

Cutting Force (Principal Force)



Workpiece Material : 1049
Vc = 390 sfm
D.O.C. × ae = 1.575" × 0.394"
fz = 0.004 ipt
MECH032-S32-11-5-4T

(Internal Evaluation)

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

● Number of Inserts to Install

MECH Helical End Mill

Part Number	No. of Flutes	No. of Inserts	No. of Inserts: BDMT11T308ER- N2	BDMT11T308ER- N3	BDMT170408ER- N3	BDMT170408ER- N4
MECH 1000-W1000-11-4-2T 025-S25-11-4-2T	2	8	4	4	-	-
1250-W1250-11-5-2T 032-S32-11-5-2T	2	10	5	5	-	-
1250-W1250-11-5-4T 032-S32-11-5-4T	4	20	10	10	-	-
1500-W1250-11-6-2T 040-S32-11-6-4T	4	24	12	12	-	-
1500-W1500-11-6-4T 040-S42-11-6-4T	4	24	12	12	-	-
2000-W1500-11-7-4T 050-S42-11-7-4T	4	28	14	14	-	-
2000-W1500-11-7-6T 050-S42-11-7-6T	6	42	21	21	-	-
MECH 1500-W125-17-4-2T 040-S32-17-4-2T	2	8	-	-	4	4
1500-W150-17-4-2T 040-S42-17-4-2T	2	8	-	-	4	4
2000-W1500-17-5-4T 050-S42-17-5-4T	4	20	-	-	10	10

MECH Shell Mill

Part Number	No. of Flutes	No. of Inserts	No. of Inserts: BDMT11T308ER- N2	BDMT11T308ER- N3	BDMT170408ER- N3	BDMT170408ER- N4
MECH 040R-11-4-4T-M	4	16	8	8	-	-
2000R-11-5-6T 050R-11-5-6T-M	6	30	15	15	-	-
MECH 2000R-17-2-4T 050R-17-2-4T-M	4	8	-	-	4	4
2000R-17-4-4T 050R-17-4-4T-M	4	16	-	-	8	8
063R-17-3-4T-M	4	12	-	-	6	6
080R-17-4-6T-M	6	24	-	-	12	12
100R-17-4-6T-M	6	24	-	-	12	12
MECH 063R-17-3-4T	4	12	-	-	6	6
080R-17-4-6T	6	24	-	-	12	12
100R-17-4-6T	6	24	-	-	12	12

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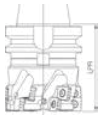
Precautions when Installing Notched Inserts

1. Install notched inserts by matching the insert with the number of marks on the holder body.

Insert Number and Holder Marks

Insert Size	11 Type		17 Type	
Insert No.	2	3	3	4
Marks				

*** Using the cutter with the inserts installed incorrectly will damage the holder.**

2. When installing notched inserts in flute line, ensure that the number on the insert is the same as the insert in first stage. (Ref. to Fig.1, 2 and 3.)

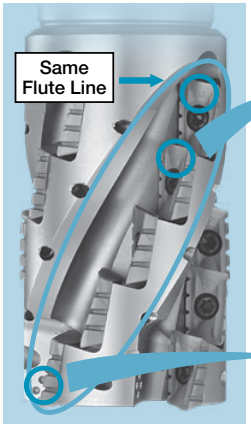


Fig.1 Same Flute Line

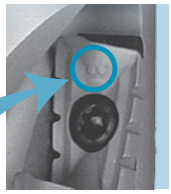


Fig.2 Insert No.

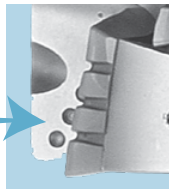


Fig.3 Holder Marks

Recommended Cutting Conditions (when Using a Notched Insert)

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade Vc (sfm)				
		MEGACOAT NANO	MEGACOAT			PVD Coated Carbide
		PR1535	**PR1225**	**PR1230**	**PR1210**	**PR830**
Carbon Steel	0.003~**0.004**~0.006	☆ 390~**590**~820	☆ 390~**590**~820	★ 390~**590**~720	-	☆ 330~**460**~590
Alloy Steel	0.003~**0.004**~0.006	☆ 330~**520**~720	☆ 330~**520**~720	★ 330~**520**~660	-	☆ 330~**460**~590
Mold Steel	0.003~**0.004**~0.006	☆ 260~**460**~590	☆ 260~**460**~590	★ 260~**460**~520	-	☆ 330~**390**~490
Gray Cast Iron	0.003~**0.006**~0.007	-	-		★ 390~**590**~820	-
Nodular Cast Iron	0.003~**0.006**~0.007	-	-		★ 330~**490**~720	-
Titanium Alloys	0.003~**0.004**~0.006	★ 130~**200**~260	-		☆ 100~**160**~230	-

※ Bold numbers in the graph indicate the most recommended value of feed (fz) Adjust cutting speed and feed rate according to the actual machining conditions
※ Machining with coolant is recommended for titanium alloys
• Recommended cutting conditions above are for notched inserts. If using an insert without a notch, the cutting depth (D.O.C.) and width (ae) should be 60% of that of notched inserts.

★ :1st Recommendation
☆ : 2nd Recommendation

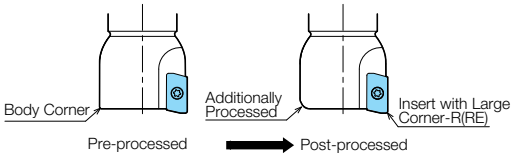
• JA Chipbreaker

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade Vc (sfm)
		Carbide
		GW25
Aluminum Alloy (Si ≤ 13%)	0.003~0.012	660~2620
Aluminum Alloy (Si > 13%)	0.003~0.008	660~980

■ When using inserts with corner-R (RE)1.6mm or larger, additional modifications of the cutter body will be necessary. Ref. to the table below for the recommended modifications. (Additional grind off is not necessary when corner-R (RE) is 1.2mm or less.)

Insert Corner-R(RE)	Additional Processing Dimension to Body Corner
1.6	R1.0
2.0	
2.4	R1.2
3.1	R1.6
4.0	R2.5

* Round-shaped additional processing is recommended.
When applying chamfer shaped additional processing, do not cut away too much.

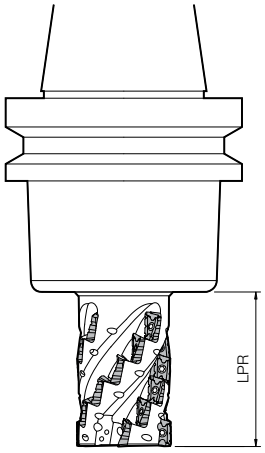


Cutting Performance (Used Machine: Machining Center Equivalent to AC15 / 18.5kW)

MECH Helical End Mill

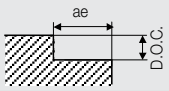
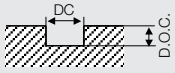
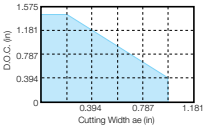
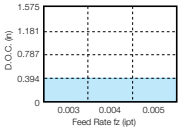
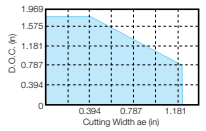
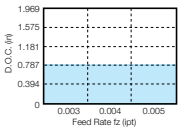
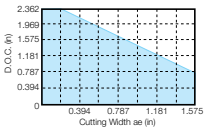
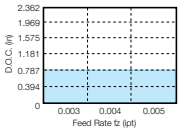
Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)
Ø1.000" Ø25mm	**MECH1000-W1000-11-4-2T** MECH025-S25-11-4-2T	1.89
Ø1.250" Ø32mm	**MECH1250-W1250-11-5-2T** MECH032-S32-11-5-2T	2.24
	MECH1250-W1250-11-5-4T MECH032-S32-11-5-4T	
Ø1.500" Ø40mm	**MECH1500-W1250-11-6-4T** MECH040-S32-11-6-4T	2.56
	MECH1500-W1500-11-6-4T MECH040-S42-11-6-4T	
Ø2.000" Ø50mm	**MECH2000-W1500-11-7-4T** MECH050-S42-11-7-4T	2.99
	MECH2000-W1500-11-7-6T MECH050-S42-11-7-6T	
Ø1.500" Ø40mm	**MECH1500-W1250-17-4-2T** MECH040-S32-17-4-2T	2.91
	MECH1500-W1500-17-4-2T MECH040-S42-17-4-2T	
Ø2.000" Ø50mm	**MECH2000-W1500-17-5-4T** MECH050-S42-17-5-4T	3.50

Shape

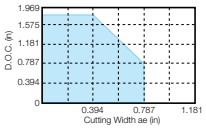
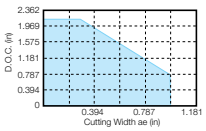
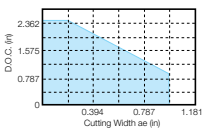
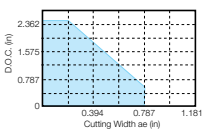
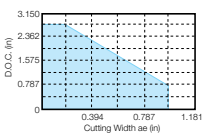


2 Flute Type

(Workpiece :1049)

Part Number	■ Shouldering  Cutting Speed: Vc = 330~590 sfm Feed fz = 0.003~0.006 ipt	■ Slotting  Cutting Speed: Vc = 330~390 sfm Feed fz = 0.003~0.005 ipt
MECH1000-W1000-11-4-2T MECH025-S25-11-4-2T		
MECH1250-W1250-11-5-2T MECH032-S32-11-5-2T		
MECH1500-W1250-17-4-2T **MECH1500-W1500-17-4-2T** MECH040-S32-17-4-2T MECH040-S42-17-4-2T		

4 Flute / 6 Flute Type

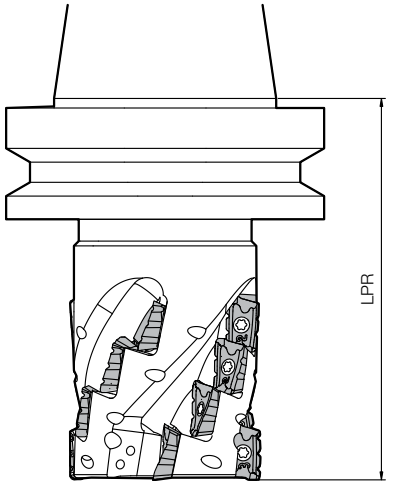
MECH1250-W1250-11-5-4T MECH032-S32-11-5-4T	
MECH1500-W1250-11-6-4T **MECH1500-W1500-11-6-4T** MECH040-S32-11-6-4T MECH040-S42-11-6-4T	
MECH1200-W1500-11-7-4T MECH050-S42-11-7-4T	
MECH1200-W1500-11-7-6T MECH050-S42-11-7-6T	
MECH1200-W150017-5-4T MECH050-S42-17-5-4T	

*4 and 6 flute types are not recommended for slotting

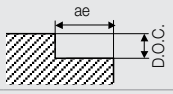
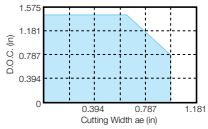
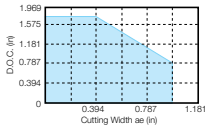
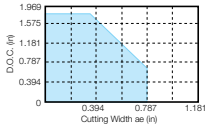
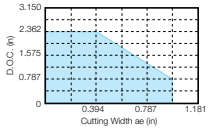
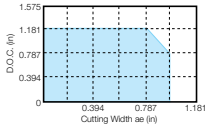
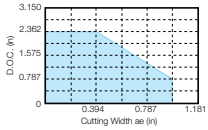
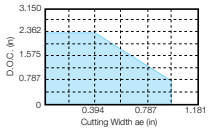
● MECH Shell Mill

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)
Ø40mm	MECH040R-11-4-4T-M	4.92
Ø2.000" Ø50mm	**MECH2000R-11-5-6T** MECH050R-11-5-6T-M	4.84
	MECH2000R-17-2-4T MECH050R-17-2-4T-M	4.41
	MECH2000R-17-4-4T MECH050R-17-4-4T-M	5.43
Ø63mm	MECH063R-17-3-4T-M	4.53
Ø80mm	MECH080R-17-4-6T-M	5.12
Ø100mm	MECH100R-17-4-6T-M	5.12

Shape



(Workpiece :1049)

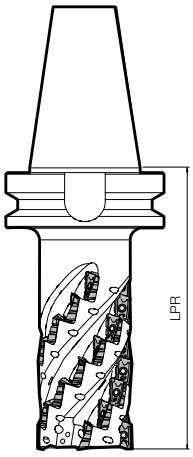
Part Number	■ Shouldering  Cutting Speed: Vc = 330~590 sfm Feed: fz = 0.003~0.006 ipt	
MECH040R-11-4-4T-M		MECH063R-17-3-4T-M 
MECH2000R-11-5-6T MECH050R-11-5-6T-M		MECH080R-17-4-6T-M 
MECH2000R-17-2-4T MECH050R-17-2-4T-M		MECH100R-17-4-6T-M 
MECH2000R-17-4-4T MECH050R-17-4-4T-M		

*Not recommended for slotting

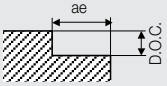
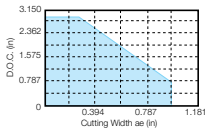
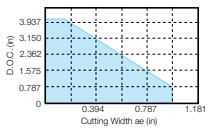
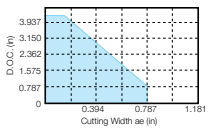
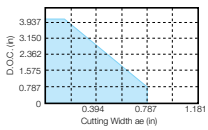
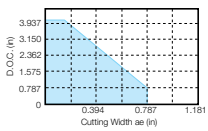
● MECH-BT50 Integral Arbor
● MECH-BT50SA Integral Arbor with Replaceable Front Piece

Cutting Dia.	Part Number **Inch Size** Metric Size	Overhang Length LPR (in)
Ø50mm	MECH050R11-8-4T-BT50 MECH050R11-4T-BT50SA	5.63
	MECH050R17-7-4T-BT50	6.81
Ø63mm	MECH063R17-7-4T-BT50 MECH063R17-4T-BT50SA	
Ø80mm	MECH080R17-7-4T-BT50 MECH080R17-4T-BT50SA	
Ø100mm	MECH100R17-7-6T-BT50 MECH100R17-6T-BT50SA	

Shape

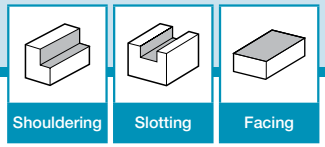


(Workpiece :1049)

Part Number	■ Shouldering  Cutting Speed: Vc = 330~590 sfm Feed: fz = 0.003~0.006 ipt	
MECH050R11-8-4T-BT50 MECH050R11-4T-BT50SA		MECH080R17-7-4T-BT50 MECH080R17-4T-BT50SA 
MECH050R17-7-4T-BT50		MECH100R17-7-6T-BT50 MECH100R17-6T-BT50SA 
MECH063R17-7-4T-BT50 MECH063R17-4T-BT50SA		

*Not recommended for slotting

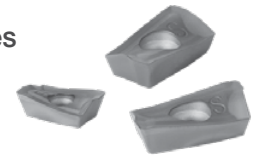
*Not recommended for slotting

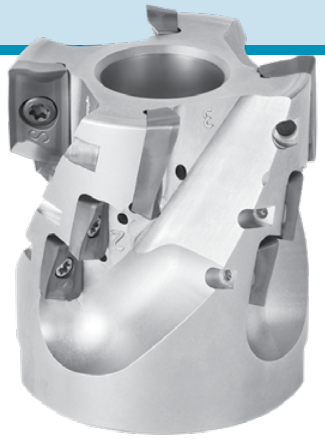


MECHT

Helical End Mill for Titanium Alloy Machining

Insert Size Combination Improves Roughing Capabilities
Maintains Stable Machining and Long Tool Life

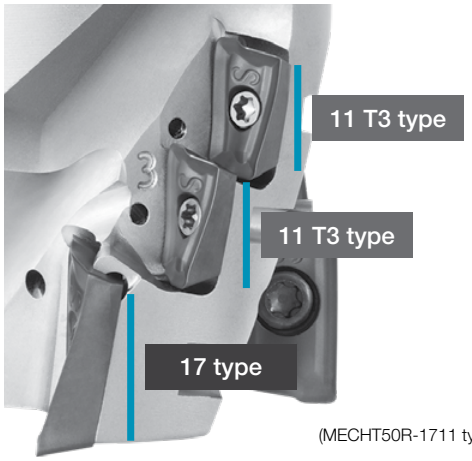




Developed to Reduce Chattering and Chip Recutting Issues

Unique Insert Combination

The larger bottom inserts are positioned to handle larger cutting forces (excluding ø32)
Stable machining with improved fracture resistance

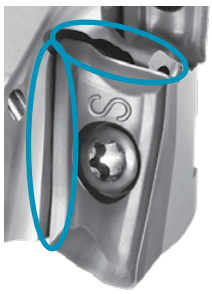


(MECHT50R-1711 type)

New Design for Higher Reliability

Bottom inserts are held in place by double-faced contacts

Holding Surface 1
Wide Holding Surface

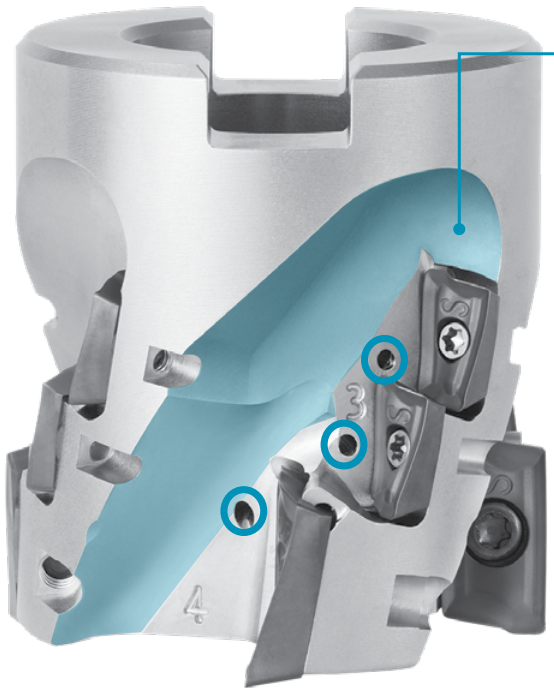


Holding Surface 2
Additional Hold in the Axial Direction

Bore Dia.
Larger bore diameter improves fastening power and reduces chattering
ø 50mm Cutter with a ø 27mm Bore (Conventional Bore : ø 22mm)

Toolholder Hardness Hardened 15% more than conventional holders

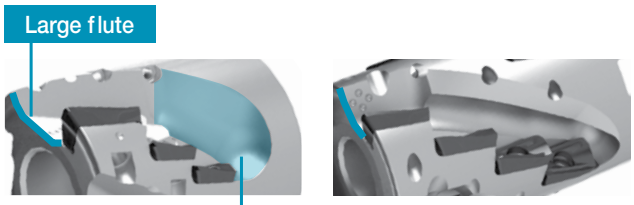
Toolholder Spec Custom ordering available
(Custom number of inserts and stages)



Excellent Chip Evacuation

New flute design
Large, smooth flutes prevent chip clogging

MECHT (ø50-4T 3 Stages) Conventional (ø50-4T 4 Stages)



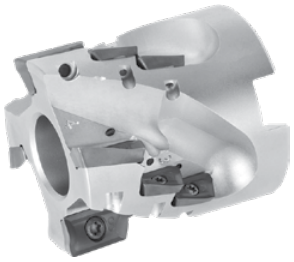
All insert pockets have coolant holes
Optimized hole diameter controls flow amount and pressure

Smooth chip evacuation as well as superior cooling of the cutting edge

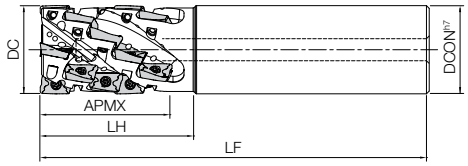
Chips Example

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

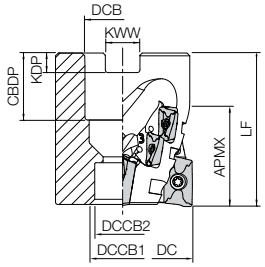
MECHT Helical Mill (with Coolant Holes)



End Mill
Fig.1



Shell Mill
Fig.2



Rake Angle (°)			
Part Number		A.R. (Max)	R.R.
MECHT32...-11-		+23°	-9°
MECHT50...-1711-	1st Stage	+19°	-7°
	2nd Stage and Above	+23°	-6°
MECHT63...-17-		+19°	-7°
MECHT80...-17-			

Helical End Mill Dimensions (Metric)

Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm)					Drawing	Spare Parts		Applicable Inserts M22	
					DC	DCON	LF	LH	APMX		Insert Screw	Wrench	1st Stage	2nd Stage and Above
MECHT 32-S32-11-5-4T	●	4	5	20	32	32	140	55	46	Fig.1	SB-2555TRG	DTM-8	BDMT11T3...	*1 BDMT11T308...

Helical Shell Mill Dimensions (Metric)

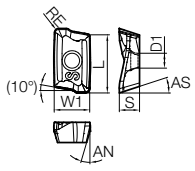
Part Number	Stock	No. of Flutes	No. of Stages	No. of Inserts	Dimensions (mm)									Drawing	Spare Parts			Applicable Inserts M22	
					DC	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX		Insert Screw	Wrench	Arbor Bolt	1st Stage	2nd Stage and Above
MECHT 50R-1711-3-4T-M	●	4	3	12	50	27	20	14	55	24	7	12.4	34	Fig.2	SB-2555TRG	DTM-8	HH12X40	BDMT1704...	*1 BDMT11T308...
50R-1711-4-5T-M	●	5	4	20					65				43		SB-4070TRN	DTM-15	HH12X50		
MECHT 63R-17-4-5T-M	●	5	4	20	63	27	20	14	80	24	7	12.4	60		SB-4070TRN	DTM-15	HH12X65		*1 BDMT170408...
80R-17-4-6T-M	●	6	4	24	80	32	26	17		28	8	14.4					HH16X65		

***1. Use inserts with Corner R (RE) of 0.8mm or less for the 2nd and above stages**

Machining with coolant is recommended (internal coolant pressure 218 psi or more)

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

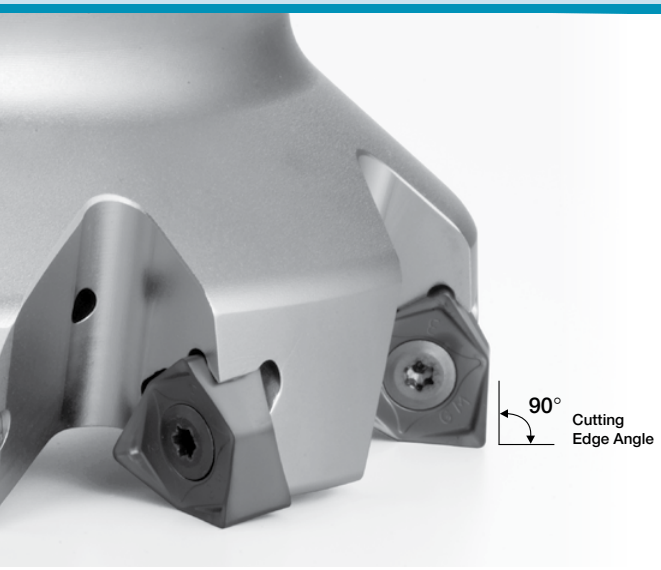
Applicable Inserts M22

Insert		Part Number	Dimensions (mm)					Angle		MEGACOAT NANO
			W1	S	D1	L	RE	AS	AN	PR1535
Low Cutting Force		BDMT 11T302ER-JS	6.7	3.8	2.8	11.0	0.2	18°	13°	●
		11T304ER-JS					0.4			●
		11T308ER-JS					0.8			●
		BDMT 170404ER-JS	9.6	4.9	4.4	17.0	0.4	18°	13°	●
		170408ER-JS					0.8			●

General JT chipbreaker and notched insert (only if holder has an even number of inserts) can also be used.
For more information, please contact your Kyocera sales representative.

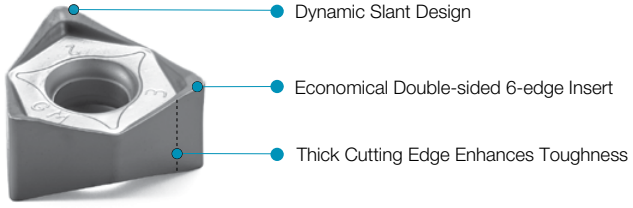
Recommended Cutting Conditions

Workpiece Material	Applications	Depth and Width of Cut (in)		Feed Rate fz (ipt)	Recommended Insert Grade Vc (sfm)
		D.O.C.	W.O.C.		MEGACOAT NANO PR1535
Titanium Alloy	Shouldering	~Length of Cut (APMX)	~0.5DC	0.004~**0.005**~0.006	100~**130**~200
	Slotting	~0.5DC	1DC	0.002~**0.003**~0.004	100~**130**~160



M-SIX (MFWN)

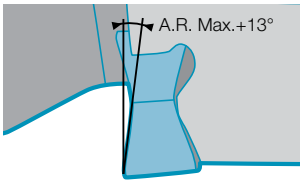
Low Cutting Forces for Reduced Chattering and Superior Fracture Resistance
Wide Application Range and Now Includes PDL025 DLC Coated Inserts for Aluminum



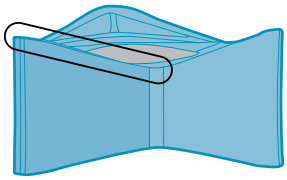
Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

1 Sharp Cutting due to Lower Cutting Forces

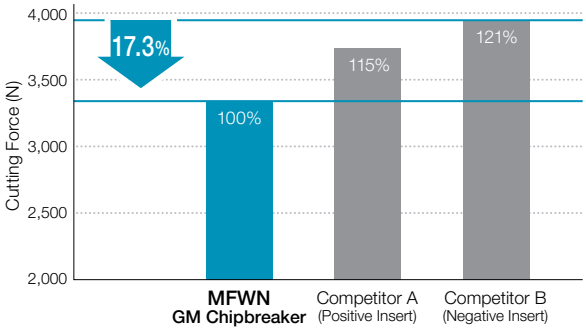
Low Cutting Force due to Steep Rake Angle
Dynamic Slant Design Reduces Initial Impact when Cutting Edge Enters the Workpiece



Dynamic Slant Design



Cutting Force Comparison (In-house Evaluation)



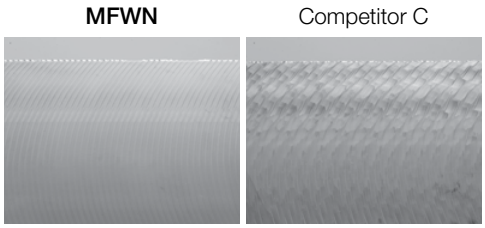
Cutting Force is the Resultant Force of the Principal Force and the Feed Force

Cutting Conditions: Vc = 590 sfm, D.O.C. × ae = 0.275" × 0.400", fz = 0.008 ipt
Workpiece: 1049 Cutter Dia. Ø5.000"

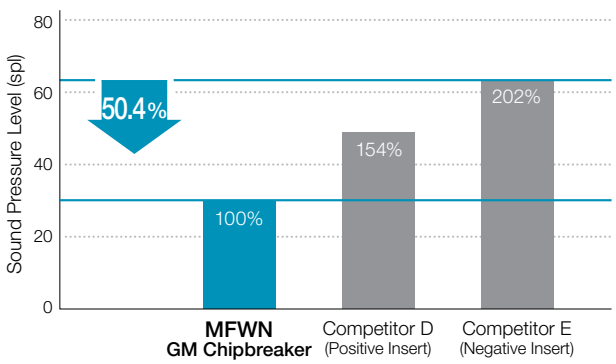
2 Reduced Chattering Even with Extended Milling Adapters

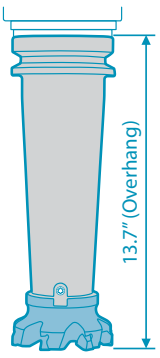
Resistant to Chattering due to Low Cutting Force Design and applicable to long overhang

Surface Roughness Comparison (In-house Evaluation)



Cutting Noise Comparison (In-house Evaluation)





Cutting Conditions: Vc = 660 sfm, D.O.C. × ae = 0.118" × 0.590", fz = 0.004 ipt
Workpiece: 1049 Cutter Dia. Ø3.000" (7 Inserts)

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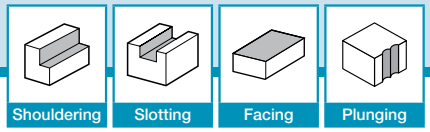
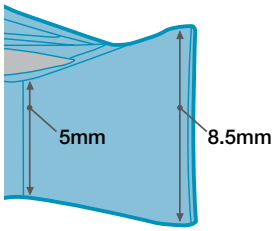
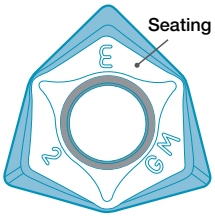


3 Superior Fracture Resistance with Thick Edge Design

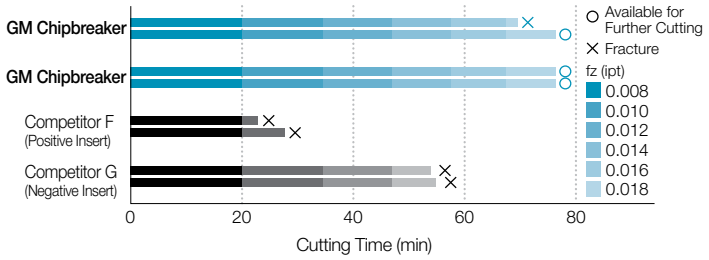
Cutting Edge Thickness: 5 - 8.5mm



Stable Clamping with the Unique Insert Face Design



Fracture Resistance Comparison (In-house Evaluation)



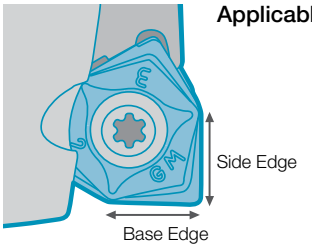
Cutting Conditions: Vc = 330 sfm, D.O.C. × ae = 0.080" × 4.000", fz = 0.004 ~ 0.018 ipt, Dry
Workpiece: 4140H (38 ~ 42HS) Interrupted with a Slot in the Workpiece

4 Neutral Inserts

Available for Shouldering and Facing

Neutral Inserts are Applicable to Left-hand Cutters (Custom Order)

Applicable to a Wide Range of Applications

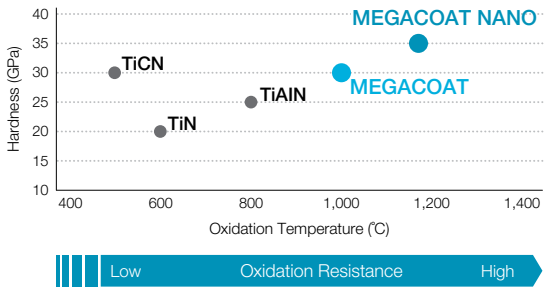


5 MEGACOAT NANO Coated Insert Grade for Long Tool Life

PR1525 for steel, PR1510 for cast iron and PR1535 for Ni-base heat-resistant alloy, titanium alloy and precipitation-hardened stainless steel

Prevents wear and fracturing with high hardness (35GPa) and superior oxidation resistance (oxidation temperature: 1,150℃)

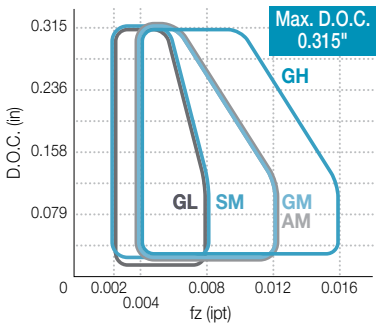
Coating Property



6 Extensive Insert Lineup Covering Various Applications

Chipbreaker	Applications	Shape
GM	General Purpose	
SM	Low Cutting Force	
GH	Heavy Milling	
GL	Surface-Finish Oriented	
AM	Aluminum / Non-ferrous Metals	

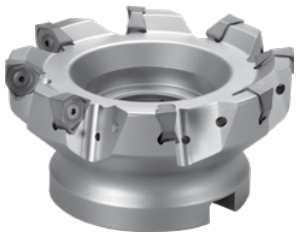
Application Range



Smooth Chip Evacuation

Properly Curled Chips
(The Photo was Taken by a High Speed Camera)

M-SIX (MFWN) Face Mill (Inch)



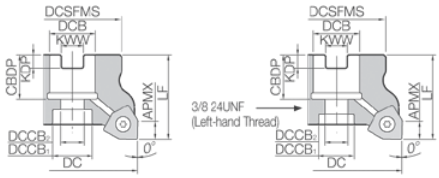


Fig.1 Fig.2

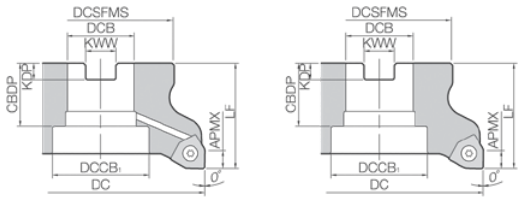


Fig.3 Fig.4

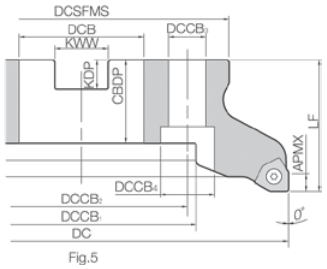


Fig.5

Rake Angle (°)	A.R.	R.R.	
	(MAX) +13°	DC = 2.000" -12°	DC = 4.000" -8°
		DC = 2.500" -10°	DC = 5.000" -7.5°
		DC = 3.000" -9°	DC = 6.000"-10.000" -7°

Toolholder Dimensions (Inch)

	Part Number		Stock	No. of Inserts	Dimensions (in)												Drawing	Weight (kg)	Shim	Coolant Hole
					DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	$DCCB_3$	$DCCB_4$				
Coarse Pitch	MFWN	902500R-3T	●	3	2.500	1.890	0.750	0.669	0.433	1.575	0.750	0.187	0.312				Fig.1	0.4		
		903000R-4T	●	4	3.000	2.283	1.000	0.875	0.551	1.968	1.063	0.236	0.381				Fig.1	0.8		Yes
		904000R-5T	●	5	4.000	2.756	1.500	2.047		1.968	1.142	0.393	0.625		-	-	Fig.3	1.1		
		905000R-6T	●	6	5.000	3.425	1.500	2.175	-	2.480	1.496	0.393	0.625	0.315			Fig.3	2.5	Yes	
		906000R-8T	●	8	6.000	4.016	2.000	2.835		2.480	1.496	0.433	0.752				Fig.4	3.4		
		908000R-10T	●	10	8.000	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.008		0.709	1.024	Fig.5	6.0		No
		9010000R-12T	●	12	10.000	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.008		0.709	1.024	Fig.5	8.2		
Fine Pitch	MFWN	902000R-4T	●	4	2.000	1.752	0.750	0.500	3/8 24UNF	1.968	0.830	0.187	0.312				Fig.2	0.4		
		902500R-4T	●	4	2.500	1.890	0.750	0.669	0.433	1.575	0.750	0.187	0.312				Fig.1	0.5		
		903000R-5T	●	5	3.000	2.283	1.000	0.875	0.551	1.968	1.063	0.236	0.381				Fig.1	0.8		Yes
		904000R-7T	●	7	4.000	2.756	1.500	2.047		1.968	1.142	0.393	0.625		-	-	Fig.3	1.0		
		905000R-8T	●	8	5.000	3.425	1.500	2.175	-	2.480	1.496	0.393	0.625	0.315			Fig.3	2.5	No	
		906000R-10T	●	10	6.000	4.016	2.000	2.835		2.480	1.496	0.433	0.752				Fig.4	3.5		
		908000R-12T	●	12	8.000	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.008		0.709	1.024	Fig.5	6.2		No
		9010000R-14T	●	14	10.000	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.008		0.709	1.024	Fig.5	8.4		
Extra-Fine Pitch	MFWN	902500R-5T	●	5	2.500	1.890	0.750	0.669	0.433	1.575	0.750	0.187	0.312				Fig.1	0.4		
		903000R-7T	●	7	3.000	2.283	1.000	0.875	0.551	1.968	1.063	0.236	0.381				Fig.1	0.8		Yes
		904000R-9T	●	9	4.000	2.756	1.500	2.047		1.968	1.142	0.393	0.625		-	-	Fig.3	1.0		
		905000R-12T	●	12	5.000	3.425	1.500	2.175	-	2.480	1.496	0.393	0.625	0.315			Fig.3	2.4	No	
		906000R-14T	●	14	6.000	4.016	2.000	2.835		2.480	1.496	0.433	0.752				Fig.4	3.4		
		908000R-16T	●	16	8.000	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.008		0.709	1.024	Fig.5	6.1		No
		9010000R-18T	●	18	10.000	5.591	2.500	3.937	4.000	2.480	1.575	0.551	1.008		0.709	1.024	Fig.5	8.4		

Spare Parts ➡ **M110**
Applicable Inserts ➡ **M111**

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(Technical Support) **800.823.7284 - Option 2**
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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

M-SIX (MFWN) Face Mill (Metric)

Rake Angle (°)	A.R.	R.R.	
	(MAX) +13°	DC = 63mm -10° DC = 80mm -9° DC = 100mm -8°	DC = 125mm -7.5° DC = 160mm-250mm -7°

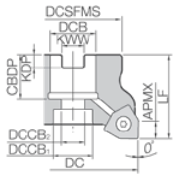


Fig.1

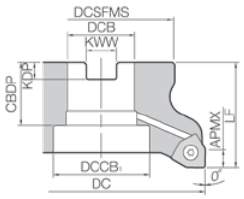


Fig.2

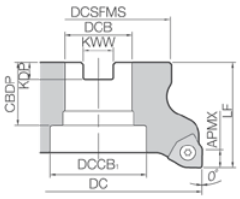


Fig.3

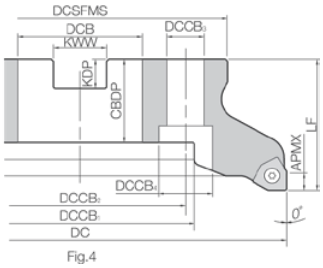


Fig.4

Toolholder Dimensions (Metric)

		Part Number	Stock	No. of Inserts	Dimensions (mm)												Drawing	Weight (kg)	Shim	Coolant Hole
					DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	$DCCB_3$	$DCCB_4$				
Inch Bore Dia.	Coarse Pitch	MFWN 90080R-4T	●	4	80	60	1.000"	20	13	50	1.063"	0.236"	0.375"	8	-	-	Fig.1	1.0	Yes	Yes
		90100R-5T	●	5	100	70	1.250"	46	-	50	1.339"	0.315"	0.500"				Fig.2	1.3		
		90125R-6T	●	6	125	87	1.500"	55		63	1.496"	0.394"	0.625"				Fig.2	2.6		
		90160R-8T	●	8	160	102	2.000"	72		63	1.496"	0.433"	0.750"				Fig.3	3.9		No
		90200R-10T	●	10	200	142	1.875"	110	101.6	63	1.575"	0.551"	1.000"		18	26	Fig.4	6.3		
		90250R-12T	●	12	250	142	1.875"	110	101.6	63	1.575"	0.551"	1.000"		18	26	Fig.4	8.7		
	Fine Pitch	MFWN 90080R-5T	●	5	80	60	1.000"	20	13	50	1.063"	0.236"	0.375"	8	-	-	Fig.1	1.0	No	Yes
		90100R-7T	●	7	100	70	1.250"	46	-	50	1.339"	0.315"	0.500"				Fig.2	1.4		
		90125R-8T	●	8	125	87	1.500"	55		63	1.496"	0.394"	0.625"				Fig.2	2.7		
		90160R-10T	●	10	160	102	2.000"	72		63	1.496"	0.433"	0.750"				Fig.3	4.0		No
		90200R-12T	●	12	200	142	1.875"	110	101.6	63	1.575"	0.551"	1.000"		18	26	Fig.4	6.6		
		90250R-14T	●	14	250	142	1.875"	110	101.6	63	1.575"	0.551"	1.000"		18	26	Fig.4	8.9		
	Extra-Fine Pitch	MFWN 90080R-7T	●	7	80	60	1.000"	20	13	50	1.063"	0.236"	0.375"	8	-	-	Fig.1	1.1	No	Yes
		90100R-9T	●	9	100	70	1.250"	46	-	50	1.339"	0.315"	0.500"				Fig.2	1.3		
		90125R-12T	●	12	125	87	1.500"	55		63	1.496"	0.394"	0.625"				Fig.2	2.7		
		90160R-14T	●	14	160	102	2.000"	72		63	1.496"	0.433"	0.750"				Fig.3	4.1		No
		90200R-16T	●	16	200	142	1.875"	110	101.6	63	1.575"	0.551"	1.000"		18	26	Fig.4	6.7		
		90250R-18T	●	18	250	142	1.875"	110	101.6	63	1.575"	0.551"	1.000"		18	26	Fig.4	9.1		
Metric Bore Dia.	Coarse Pitch	MFWN 90063R-3T-M	●	3	63	47	22	19	11	40	21	6.3	10.4	8	-	-	Fig.1	0.5	Yes	Yes
		90080R-4T-M	●	4	80	60	27	20	13	50	24	7	12.4				Fig.1	1.0		
		90100R-5T-M	●	5	100	70	32	46	-	50	30	8	14.4				Fig.2	1.3		
		90125R-6T-M	●	6	125	87	40	55		63	33	9	16.4				Fig.2	2.5		
		90160R-8T-M	●	8	160	102	40	68	66.7	63	32	9	16.4		14	20	Fig.4	3.8		No
		90200R-10T-M	●	10	200	142	60	110	101.6	63	40	14	25.7		18	26	Fig.4	6.0		
		90250R-12T-M	●	12	250	142	60	110	101.6	63	40	14	25.7		18	26	Fig.4	8.4		
	Fine Pitch	MFWN 90063R-4T-M	●	4	63	47	22	19	11	40	21	6.3	10.4	8	-	-	Fig.1	0.5	No	Yes
		90080R-5T-M	●	5	80	60	27	20	13	50	24	7	12.4				Fig.1	1.0		
		90100R-7T-M	●	7	100	70	32	46	-	50	30	8	14.4				Fig.2	1.3		
		90125R-8T-M	●	8	125	87	40	55		63	33	9	16.4				Fig.2	2.6		
		90160R-10T-M	●	10	160	102	40	68	66.7	63	32	9	16.4		14	20	Fig.4	3.9		×
		90200R-12T-M	●	12	200	142	60	110	101.6	63	40	14	25.7		18	26	Fig.4	6.3		
		90250R-14T-M	●	14	250	142	60	110	101.6	63	40	14	25.7		18	26	Fig.4	8.7		
	Extra-Fine Pitch	MFWN 90063R-5T-M	●	5	63	47	22	19	11	40	21	6.3	10.4	8	-	-	Fig.1	0.5	No	Yes
		90080R-7T-M	●	7	80	60	27	20	13	50	24	7	12.4				Fig.1	1.1		
		90100R-9T-M	●	9	100	70	32	46	-	50	30	8	14.4				Fig.2	1.3		
		90125R-12T-M	●	12	125	87	40	55		63	33	9	16.4				Fig.2	2.6		
		90160R-14T-M	●	14	160	102	40	68	66.7	63	32	9	16.4		14	20	Fig.4	3.9		No
		90200R-16T-M	△	16	200	142	60	110	101.6	63	40	14	25.7		18	26	Fig.4	6.4		
		90250R-18T-M	△	18	250	142	60	110	101.6	63	40	14	25.7		18	26	Fig.4	8.8		

Spare Parts ➔ **M110**
Applicable Inserts ➔ **M111**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Face Mill Spare Parts (Inch)

	Part Number	Spare Parts								
		Insert Screw	Wrench		Shim	Shim Screw	Wrench	Anti-Seize Compound	Arbor Bolt	Mounting Screw
			TT	DTM						
Coarse Pitch	MFWN 902500R-3T	SB-50140TR	TTW-15	-	MFWN-90	SPW-7050	LW-5	P-37	HH3/8-1.25 (HH3/8-1.25H)	-
	903000R-4T	Recommended Torque for Insert Clamp 4.2 N·m			Recommended Torque for Insert Clamp 6.0 N·m				HH1/2-1.25 (HH1/2-1.25H)	-
	904000R-5T ~ 9010000R-12T								-	-
Fine Pitch	MFWN 902000R-4T	SB-50140TR	TTW-15	-	-	-	-	P-37	-	XNS610*1
	902500R-4T	Recommended Torque for Insert Clamp 4.2 N·m							HH3/8-1.25 (HH3/8-1.25H)	-
	903000R-5T								HH1/2-1.25 (HH1/2-1.25H)	-
	904000R-7T ~ 9010000R-14T								-	-
Extra-Fine Pitch	MFWN 902500R-5T	SB-50140TR	TTW-15	-	-	-	-	P-37	HH3/8-1.25 (HH3/8-1.25H)	-
	903000R-7T	SB-40140TRN	-	DTM-15					HH1/2-1.25 (HH1/2-1.25H)	-
	904000R-9T ~ 9010000R-18T	Recommended Torque for Insert Clamp 3.5 N·m							-	-

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation. *1Differential screw (3/8-24UNF) Applicable Inserts ➡ M111

If through spindle coolant is required, please order arbor bolt in ( ) separately.

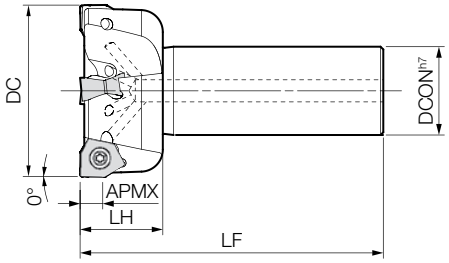
Face Mill Spare Parts (Metric)

	Part Number	Spare Parts							
		Insert Screw	Wrench		Shim	Shim Screw	Wrench	Anti-Seize Compound	Arbor Bolt
			TT	DTM					
Coarse Pitch	MFWN 90063R-3T-M	SB-50140TR	TTW-15	-	MFWN-90	SPW-7050	LW-5	P-37	HH10X30 (HH10X1.25H)
	90080R-4T-(M)	Recommended Torque for Insert Clamp 4.2 N·m			Recommended Torque for Insert Clamp 6.0 N·m				HH12X35 (HH12X35H)
	90100R-5T-(M) ~ 90250R-12T-(M)								-
Fine Pitch	MFWN 90063R-4T-M	SB-50140TR	TTW-15	-	-	-	-	P-37	HH10X30 (HH10X1.25H)
	90080R-5T-(M)	Recommended Torque for Insert Clamp 4.2 N·m							HH12X35 (HH12X35H)
	90100R-7T-(M) ~ 90250R-14T-(M)								-
Extra-Fine Pitch	MFWN 90063R-5T-M	SB-50140TR	TTW-15	-	-	-	-	P-37	HH10X30 (HH10X1.25H)
	90080R-7T-(M)	SB-40140TRN	-	DTM-15					HH12X35 (HH12X35H)
	90100R-9T-(M) ~ 90250R-18T-(M)	Recommended Torque for Insert Clamp 3.5 N·m							-

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation. Applicable Inserts ➡ M111

If through spindle coolant is required, please order arbor bolt in ( ) separately.

M-SIX (MFWN) End Mill (with Coolant Hole)



Toolholder Dimensions

Shank	Part Number	Stock	Unit	No. of Inserts	Dimensions					Rake Angle (°)		Coolant Hole	Spare Parts		
					DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.		Insert Screw	Wrench	Anti-seize Compound
Weldon	MFWN 902000R-W125-3T	●	inch	3	2.000	1.250	3.600	1.180	0.315	+13°	-12°	Yes	SB-50140TR	TTW-15	P-37
	902500R-W125-4T	●		4	2.500						-10°		Recommended Torque for Insert Clamp 4.2 N·m		
	903000R-W125-5T	●		5	3.000						-8°				
Cylindrical	MFWN 90050R-S32-3T	●	mm	3	50	32	110	30	8	+13°	-12°	Yes	SB-50140TR	TTW-15	P-37
	90063R-S32-4T	●		4	63						-10°		Recommended Torque for Insert Clamp 4.2 N·m		
	90080R-S32-5T	●		5	80						-9°				

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Applicable Inserts

Part Number	Applicable Inserts → M21				
	Surface Finish Oriented	General Purpose	Low Cutting Force	Tough Edge (Heavy Milling)	Aluminum / Non-ferrous Metals (3-Edge)
MFWN90...	WNEU 080608EN-GL	WNMU 080608EN-GM	WNMU 080608EN-SM	WNMU 080608EN-GH	WNGT 080608FN-AM

Recommended Cutting Conditions → M112

How to Mount the Insert

1. Be sure to remove dust and chips from the insert mounting pocket
2. After applying anti-seize compound on portion of taper and thread, attach the screw to the front end of the wrench. While lightly pressing the insert against the constraint surfaces, put the screw into the hole of the insert and tighten (See Fig. 1)
3. When tightening the screw, make sure that the wrench is parallel to the screw. Remember that the screw hole of the holder for Extra Fine pitch is angled to the pocket floor (See Fig. 2 and Fig. 3)
4. Be careful not to tighten the screw with excessive torque. Recommended torque is 4.2N·m for M5 screw (SB-50140TR) and 3.5N·m for M4 screw (SB-40140TRN)
5. After tightening the screw, make sure that there is no clearance between the insert seat surface and the pocket floor of the holder or between the insert side surfaces and the constraint surface of the holder. If there is any clearance, remove the insert and mount it again according to the above steps
6. To index the cutting edge of the insert, turn the insert counterclockwise. (See Fig. 4) The insert corner identification number is stamped on the top surface of the insert

Fig.1

Fig.2

Fig.3

Fig.4

How to Replace the Shim

1. Be sure to remove dust and chips from the insert mounting pocket
2. The shim must be mounted in the proper direction. While aligning the surface of the shim with the mark on it to the corresponding constraint surface (see Fig. 1) and lightly pressing the shim toward the constraint surface of the pocket wall (see Fig. 2), insert the screw into the hole of the shim and tighten (See Fig. 3). When tightening screw, make sure that the screw is vertical to the pocket floor (See Fig 3). Recommended torque is 6.0Nm
3. After tightening the screw, make sure that there is no clearance between the shim seat surface and the pocket floor. If there is any clearance, remove the shim and mount it again according to the above steps

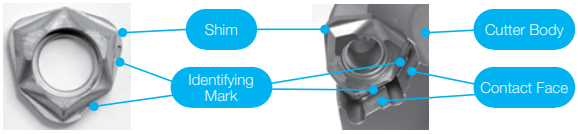


Fig.1

Fig.2

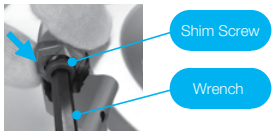


Fig.3

Recommended Cutting Conditions

Chipbreaker	Workpiece Material	Feed Rate fz (ipt) ( ) : TN620M	Recommended Insert Grade (Vc sfm)							
			Cermet	MEGACOAT NANO			MEGACOAT HARD	CVD Coated Carbide	DLC Coated Carbide	Carbide
			TN620M	**PR1535**	**PR1525**	**PR1510**	**PR015S**	**CA6535**	**PDL025**	**GW25**
GM	Carbon Steel	0.004~**0.008**~0.012 (0.002~**0.004**~0.006)	★ 660~**820**~980	☆ 390~**590**~820	★ 390~**590**~820	-	-	-	-	-
	Alloy Steel	0.004~**0.008**~0.012 (0.002~**0.004**~0.006)	★ 590~**720**~820	☆ 330~**520**~720	★ 330~**520**~720	-	-	-	-	-
	Mold Steel	0.004~**0.006**~0.010 (0.002~**0.004**~0.005)	★ 490~**590**~720	☆ 260~**460**~590	★ 260~**460**~590	-	-	-	-	-
	Austenitic Stainless Steel	0.004~**0.006**~0.010	-	☆ 330~**520**~660	☆ 330~**520**~660	-	-	-	-	-
	Martensitic Stainless Steel	0.004~**0.006**~0.010	-	☆ 490~**660**~820	-	-	-	☆ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.004~**0.006**~0.010	-	★ 300~**390**~490	-	-	-	-	-	-
	Gray Cast Iron	0.004~**0.008**~0.012	-	-	-	★ 390~**590**~820	-	-	-	-
	Nodular Cast Iron	0.004~**0.006**~0.010	-	-	-	★ 330~**490**~660	-	-	-	-
	Ni-base Heat Resistant Alloy	0.004~**0.005**~0.008	-	☆ 70~**100**~160	-	-	-	★ 70~**130**~160	-	-
SM (GL)※1	Carbon Steel	0.002~**0.005**~0.008 (0.002~**0.003**~0.005)	★ 660~**820**~980	☆ 390~**590**~820	☆ 390~**590**~820	-	-	-	-	-
	Alloy Steel	0.002~**0.005**~0.008 (0.002~**0.003**~0.005)	★ 590~**720**~820	☆ 330~**520**~720	☆ 330~**520**~720	-	-	-	-	-
	Mold Steel	0.002~**0.003**~0.006 (0.002~**0.003**~0.004)	★ 490~**590**~720	☆ 260~**460**~590	☆ 260~**460**~590	-	-	-	-	-
	Austenitic Stainless Steel	0.002~**0.005**~0.008	-	★ 330~**520**~660	☆ 330~**520**~660	-	-	-	-	-
	Martensitic Stainless Steel	0.002~**0.005**~0.008	-	☆ 490~**660**~820	-	-	-	★ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.002~**0.005**~0.008	-	☆ 300~**390**~490	-	-	-	-	-	-
	Gray Cast Iron	0.002~**0.005**~0.008	-	-	-	☆ 390~**590**~820	-	-	-	-
	Nodular Cast Iron	0.002~**0.003**~0.006	-	-	-	☆ 330~**490**~660	-	-	-	-
	Ni-base Heat Resistant Alloy	0.002~**0.004**~0.006	-	☆ 70~**100**~160	-	-	-	☆ 70~**130**~160	-	-
	Titanium Alloy	0.002~**0.003**~0.006	-	★ 130~**200**~260	-	-	-	-	-	-
GH※2	Carbon Steel	0.008~**0.012**~0.016	-	☆ 390~**590**~820	☆ 390~**590**~820	-	-	-	-	-
	Alloy Steel	0.008~**0.012**~0.016	-	☆ 330~**520**~720	☆ 330~**520**~720	-	-	-	-	-
	Mold Steel	0.006~**0.008**~0.012	-	☆ 260~**460**~590	☆ 260~**460**~590	-	-	-	-	-
	Austenitic Stainless Steel	0.008~**0.010**~0.012	-	☆ 330~**520**~660	☆ 330~**520**~660	-	-	-	-	-
	Martensitic Stainless Steel	0.008~**0.010**~0.012	-	☆ 490~**660**~820	-	-	-	☆ 590~**790**~980	-	-
	Precipitation Hardened Stainless Steel	0.008~**0.010**~0.012	-	☆ 300~**390**~490	-	-	-	-	-	-
	Gray Cast Iron	0.008~**0.012**~0.016	-	-	-	☆ 390~**590**~820	-	-	-	-
	Nodular Cast Iron	0.006~**0.008**~0.012	-	-	-	☆ 330~**490**~660	-	-	-	-
	Ni-base Heat Resistant Alloy	0.006~**0.008**~0.010	-	☆ 70~**100**~160	-	-	-	☆ 70~**130**~160	-	-
	Hard Materials (≤ 60HRc)	0.006~**0.008**~0.010	-	-	-	-	★ 260~**330**~390	-	-	-
AM	Non-ferrous Material	0.004~**0.008**~0.012	-	-	-	-	-	-	★ 660~**1970**~2950	☆ 660~**1640**~2620

- Bold numbers in the graph indicate the most recommended value of feed (fz) Adjust cutting speed and feed rate according to the actual machining conditions
- Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys

★ :1st Recommendation
☆ : 2nd Recommendation

※1 GL Chipbreaker is recommended for surface finish oriented milling
※2 When using GH chipbreaker for fine pitch cutters, recommended feed is fz ≤ 0.012 ipt. GH chipbreaker is not recommended for extra-fine pitch cutter

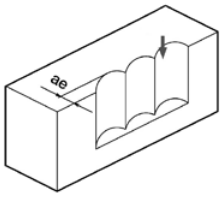
Applicable Chipbreaker

Cutter	Chipbreaker			
	GM	SM (GL)	GH	AM
Coarse Pitch (with Shim)	✓	✓	✓	✓
Fine Pitch (without Shim)	✓	✓	✓ (fz ≤ 0.012 ipt Recommended)	✓
Extra Fine Pitch (without Shim)	✓	✓	Not Recommended	Not Recommended

Cutter Type and Insert Selection Guide

Purpose	Cutter			Chipbreaker				
	Coarse Pitch	Fine Pitch	Extra-Fine Pitch	GM	SM	GH	GL	AM
General Milling for Steel and Alloy Steel		✓		✓				
Steel and Alloy Steel (to prevent chattering due to low rigidity machine or poor clamping power)	✓				✓			
Productivity Oriented (D.O.C. ≥ 0.158" fz ≥ 0.010 ipt)	✓					✓		
Surface Roughness Oriented	✓	✓					✓	
General Milling for Stainless Steel		✓			✓			
Stainless Steel (to prevent chattering due to low rigidity machine or poor clamping power)	✓				✓			
Cast Iron Milling (Improved Efficiency)			✓	✓				
Cast Iron (D.O.C. ≥ 0.158" fz ≥ 0.010 ipt)	✓					✓		
General Milling for Aluminum Alloys		✓						✓
Aluminum Alloys (to prevent chattering due to low rigidity)	✓							✓

Plunging



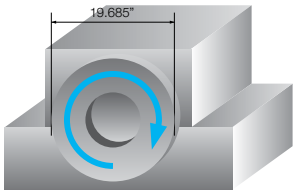
Cutting Dia.	MAX. Width of Cut (ae)
All Items	0.315"

NOT available for ramping or helical milling, due to interference between workpiece and insert.

Case Studies

No.50

- Machine Part
- Vc = 560 sfm
- D.O.C. × ae = 0.098" × 5.118"
- fz = 0.007 ipt (Vf = 19.685 ipm)
- Wet
- MFWN90160R-8T (8 Inserts)
- WNMU080608EN-GM (PR1510)



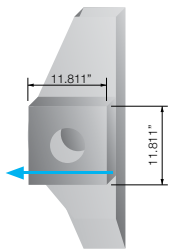
PR1525	163 cc/min
Competitor A (Positive Cutter)	68 cc/min

Competitor A continued to cut under low cutting conditions as the workpiece was slipping due to unstable chucking. With MFWN, stable cutting was possible at higher feed rates.

(User Evaluation)

Manganese Steel

- Construction Equipment Part
- Vc = 490 sfm
- D.O.C. × ae = 0.039" × 3.937"
- fz = 0.008 ipt (Vf = 26.299 ipm)
- Dry
- MFWN90100R-7T (7 Inserts)
- WNMU080608EN-GM (PR1525)



PR1525	2 pcs/edge
Competitor B (Negative Cutter)	1 pcs/edge

Despite instability with the long overhang of the workpiece, MFWN doubled tool life and improved efficiency by 150%.

(User Evaluation)

MFWN-Mini Face Mill (Metric)

Rake Angle (°)	A.R.	R.R.
	(MAX) +11°	DC = 50mm -9° DC = 63mm -8° DC = 80mm~125mm -7°

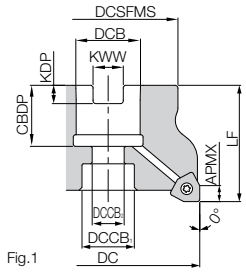


Fig.1

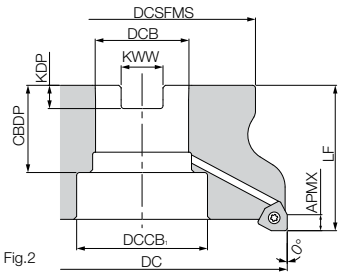


Fig.2

Toolholder Dimensions (Metric)

Part Number			Stock	No. of Inserts	Dimensions (mm)										Coolant Hole	Drawing	Weight (kg)	Max. RPM*
					DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX				
Inch Bore Dia.	Coarse Pitch	MFWN 90080R-05-7T	●	7	80	70	1.000"	20	13	50	1.063"	0.236"	0.375"	5	Yes	Fig.1	1.3	10,900
		90100R-05-8T	●	8	100	78	1.250"	45	-		1.339"	0.315"	0.500"			Fig.2	1.6	9,700
		90125R-05-11T	●	11	125	89	1.500"	55		63	1.496"	0.394"	0.625"				2.9	8,700
	Fine Pitch	MFWN 90080R-05-9T	●	9	80	70	1.000"	20	13	50	1.063"	0.236"	0.375"	5	Yes	Fig.1	1.2	10,900
		90100R-05-11T	●	11	100	78	1.250"	45	-		1.339"	0.315"	0.500			Fig.2	1.6	9,700
		90125R-05-14T	●	14	125	89	1.500"	55		63	1.496"	0.394"	0.625"				2.8	8,700
Metric Bore Dia.	Coarse Pitch	MFWN 90050R-05-5T-M	●	5	50	48	22	17.5	11	40	21	6.3	10.4	5	Yes	Fig.1	0.4	13,800
		90063R-05-6T-M	●	6	63			18									0.5	12,300
		90080R-05-7T-M	●	7	80	70	27	20	13	50	24	7	12.4				1.2	10,900
		90100R-05-8T-M	●	8	100	78	32	45	-		30	8	14.4			Fig.2	1.6	9,700
		90125R-05-11T-M	●	11	125	89	40	55		63	33	9	16.4				2.8	8,700
	Fine Pitch	MFWN 90050R-05-6T-M	●	6	50	48	22	17.5	11	40	21	6.3	10.4	5	Yes	Fig.1	0.4	13,800
		90063R-05-7T-M	●	7	63			18									0.5	12,300
		90080R-05-9T-M	●	9	80	70	27	20	13	50	24	7	12.4				1.2	10,900
		90100R-05-11T-M	●	11	100	78	32	45	-		30	8	14.4			Fig.2	1.5	9,700
		90125R-05-14T-M	●	14	125	89	40	55		63	33	9	16.4				2.7	8,700

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Recommended Cutting Conditions ➡ **M117**
Applicable Inserts ➡ **M116**

Face Mill Spare Parts

Part Number			Spare Parts			
			Insert Screw	Wrench	Anti-Seize Compound	Arbor Bolt
Coarse Pitch	MFWN	90050R-05-5T-M	SB-3065TRP	DTPM-8	P-37	HH10×30
		90063R-05-6T-M				HH10×30
		90080R-05-7T(-M)	Recommended Torque for Insert Clamp 1.2 Nm			HH12×35
		90100R-05-8T(-M)				-
		90125R-05-11T(-M)				
Fine Pitch	MFWN	90050R-05-6T-M	SB-3065TRP	DTPM-8	P-37	HH10×30
		90063R-05-7T-M				HH10×30
		90080R-05-9T(-M)	Recommended Torque for Insert Clamp 1.2 N·m			HH12×35
		90100R-05-11T(-M)				-
		90125R-05-14T(-M)				

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

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NEW ITEMS!

MFWN-Mini End Mill (Metric)

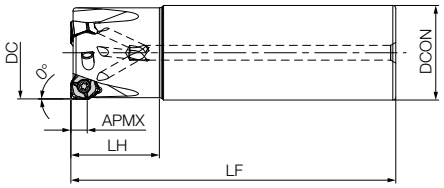


Fig.1

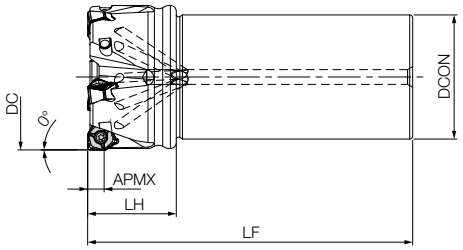


Fig.2

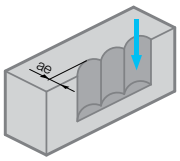
Toolholder Dimensions (Metric)

Shank	Part Number	Stock	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Coolant Hole	Drawing	Max. RPM*	Spare Parts		
				DC	DCON	LF	LH	APMX	A.R. (Max)	R.R.				Insert Screw	Wrench	Anti-seize Compound
Cylindrical	MFWN 90025R-S25-05-2T	●	2	25	25	120	32	5	+11°	-14.5°	Yes	Fig.1	19,500	SB-3065TRP	DTPM-8	P-37
	90032R-S32-05-3T	●	3	32	32	130	40			-12°			17,200			
	90040R-S32-05-4T	●	4	40		150	50			-10°		Fig.2	15,400			
	90050R-S32-05-5T	●	5	50		110	30			-9°			13,800	Recommended Torque for Insert Clamp 1.2 Nm		
	90063R-S32-05-6T	●	6	63						-8°			12,300			
	90080R-S32-05-7T	●	7	80						-7°			10,900			

Max. Revolution*
When running the end mill and cutter at the maximum revolution, the insert or toolholder may be damaged by centrifugal force.

Recommended Cutting Conditions ➔ **M117**
Applicable Inserts ➔ **M116**

Plunging



Available for Plunging

Cutting Dia.	Maximum width of cut (ae)
All Cutters	5 mm

Ramping and helical milling are not recommended due to interference between workpiece and flank face

Applicable Chipbreaker by Cutter Type

Cutter Type	Chipbreaker		
	GM	SM	GH
Coarse Pitch	○	○	○
Fine Pitch	○	○	△ (fz = 0.008ipt or less)

How to Mount Inserts

1. Completely eliminate chips and dust from the insert mounting side
2. Coat anti-seize compound thinly on portion of taper and thread of clamp screw prior to installation.
   After mounting a clamp screw on the top edge of wrench, tighten the screw while keeping the insert pushed against the insert seat surface and holder surface (Fig.1)
3. Tighten the wrench while holding parallel to the clamp screw.
   Recommended tightening torque · · · 1.2 Nm
4. After tightening, check that there is no gap between the contact surface of the insert and the surface of the insert seat, or between the side surface of insert and the holder surface. If there is a gap, remount the insert using the directions above.

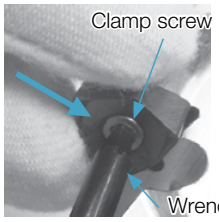
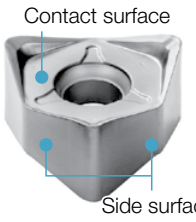
Fig. 1


Fig. 2

Fig. 3


● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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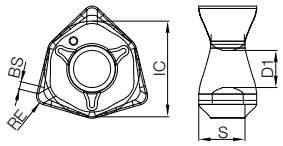
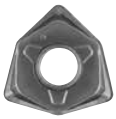
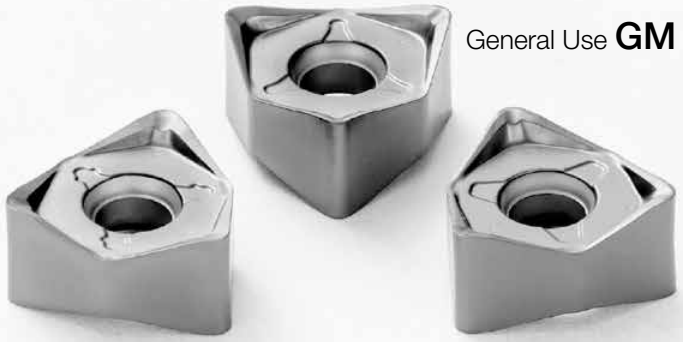
Applicable Inserts

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	☆	★		
	Carbon/Alloy Steel	☆	★		
M	Austenitic Stainless Steel	★	☆		
	Martensitic Stainless Steel	★			
	Precipitation Hardened Stainless Steel	★			
K	Gray Cast Iron			★	
	Nodular Cast Iron			★	
N	Non-ferrous Metals				
S	Heat-Resistant Alloys	★			
	Titanium Alloy	★			
H	Hard Materials				★

Insert (Right-hand Shown)		Part Number	Dimensions (mm)					MEGACOAT NANO			MEGACOAT HARD
			IC	S	D1	BS	RE	PR1535	PR1525	PR1510	PR015S
General Purpose		WNMU 050408EN-GM	8.8	4.2	3.4	0.7	0.8	●	●	●	
Low Cutting Force		WNMU 050408EN-SM	8.8	4.2	3.4	0.7	0.8	●	●	●	
 Tough Edge (Heavy Milling)		WNMU 050408EN-GH	8.8	4.2	3.4	0.7	0.8	●	●	●	●

Three insert chipbreakers and four grades available

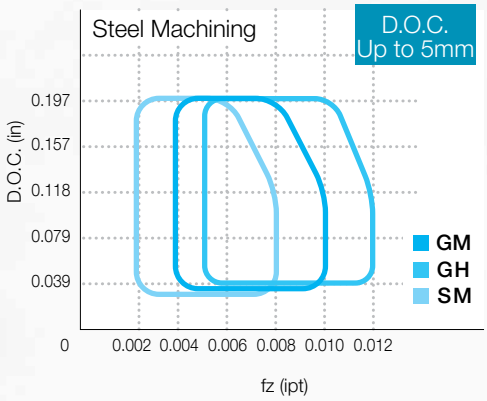


General Use **GM**

Low Cutting Force **SM**

Tough Edge **GH**

Applicable Chipbreaker Range



Steel, Cast Iron, Stainless Steel and Heat-Resistant Alloy Machining
PR1510 / PR1525 / PR1535 MEGACOAT NANO

For hardened materials (60 HRC or less)
PR015S (GH only) MEGACOAT HARD

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Recommended Cutting Conditions

Chipbreaker	Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade (Vc sfm)			
			MEGACOAT NANO			MEGACOAT HARD
			PR1535	**PR1525**	**PR1510**	**PR015S**
GM	Carbon Steel	0.004 ~ **0.008** ~ 0.010	☆ 390 ~ **590** ~ 820	★ 390 ~ 590 ~ 820	-	-
	Alloy Steel	0.004 ~ **0.008** ~ 0.010	☆ 330 ~ **520** ~ 720	★ 330 ~ 520 ~ 720	-	-
	Mold Steel	0.004 ~ **0.006** ~ 0.008	☆ 260 ~ **460** ~ 590	★ 260 ~ 460 ~ 590	-	-
	Austenitic Stainless Steel	0.004 ~ **0.006** ~ 0.008	☆ 330 ~ **520** ~ 660	☆ 330 ~ 520 ~ 660	-	-
	Martensitic Stainless Steel	0.004 ~ **0.006** ~ 0.008	☆ 490 ~ **660** ~ 820	-	-	-
	Precipitation Hardened Stainless Steel	0.004 ~ **0.006** ~ 0.008	★ 300 ~ **390** ~ 490	-	-	-
	Gray Cast Iron	0.004 ~ **0.008** ~ 0.010	-	-	★ 390 ~ **590** ~ 820	-
	Nodular Cast Iron	0.004 ~ **0.006** ~ 0.008	-	-	★ 330 ~ **490** ~ 660	-
	Ni-base Heat Resistant Alloy	0.004 ~ **0.005** ~ 0.006	☆ 70 ~ **100** ~ 160	-	-	-
SM	Carbon Steel	0.002 ~ **0.005** ~ 0.008	☆ 390 ~ **590** ~ 820	☆ 390 ~ **590** ~ 820	-	-
	Alloy Steel	0.002 ~ **0.005** ~ 0.008	☆ 330 ~ **520** ~ 720	☆ 330 ~ **520** ~ 720	-	-
	Mold Steel	0.002 ~ **0.003** ~ 0.006	☆ 260 ~ **460** ~ 590	☆ 260 ~ **460** ~ 590	-	-
	Austenitic Stainless Steel	0.002 ~ **0.005** ~ 0.008	★ 330 ~ **520** ~ 660	☆ 330 ~ **520** ~ 660	-	-
	Martensitic Stainless Steel	0.002 ~ **0.005** ~ 0.008	☆ 490 ~ **660** ~ 820	-	-	-
	Precipitation Hardened Stainless Steel	0.002 ~ **0.005** ~ 0.008	☆ 300 ~ **390** ~ 490	-	-	-
	Gray Cast Iron	0.002 ~ **0.005** ~ 0.008	-	-	☆ 390 ~ **590** ~ 820	-
	Nodular Cast Iron	0.002 ~ **0.003** ~ 0.006	-	-	☆ 330 ~ **490** ~ 660	-
	Ni-base Heat Resistant Alloy	0.002 ~ **0.003** ~ 0.006	★ 70 ~ **100** ~ 160	-	-	-
	Titanium Alloy	0.002 ~ **0.003** ~ 0.006	★ 130 ~ **200** ~ 260	-	☆ 130 ~ **200** ~ 260	-
GH	Carbon Steel	0.006 ~ **0.008** ~ 0.012	☆ 390 ~ **590** ~ 820	☆ 390 ~ **590** ~ 820	-	-
	Alloy Steel	0.006 ~ **0.008** ~ 0.012	☆ 330 ~ **520** ~ 720	☆ 390 ~ **520** ~ 720	-	-
	Mold Steel	0.006 ~ **0.008** ~ 0.010	☆ 260 ~ **460** ~ 590	☆ 260 ~ **460** ~ 590	-	-
	Austenitic Stainless Steel	0.006 ~ **0.008** ~ 0.010	☆ 330 ~ **520** ~ 660	☆ 330 ~ **520** ~ 660	-	-
	Martensitic Stainless Steel	0.006 ~ **0.008** ~ 0.010	☆ 490 ~ **660** ~ 820	-	-	-
	Precipitation Hardened Stainless Steel	0.006 ~ **0.008** ~ 0.010	☆ 300 ~ **390** ~ 490	-	-	-
	Gray Cast Iron	0.006 ~ **0.008** ~ 0.012	-	☆ 390 ~ **590** ~ 820	☆ 390 ~ **590** ~ 820	-
	Nodular Cast Iron	0.006 ~ **0.008** ~ 0.010	-	☆ 330 ~ **490** ~ 660	☆ 330 ~ **490** ~ 660	-
	Ni-base Heat Resistant Alloy	0.004 ~ **0.006** ~ 0.008	☆ 70 ~ **100** ~ 160	-	-	-
	Hard Materials (≤ 60HRc)	0.002 ~ **0.003** ~ 0.006	-	-	-	★ 160 ~ **260** ~ 330

- Bold numbers in the graph indicate the most recommended starting conditions. Adjust cutting speed and feed rate according to the actual machining conditions.
- Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys
- When using GH chipbreaker for fine pitch cutters, recommended feed is fz ≤ 0.008 ipt

★ :1st Recommendation
☆ : 2nd Recommendation

MFSN88

High Efficiency Milling with a 2° Lead Angle

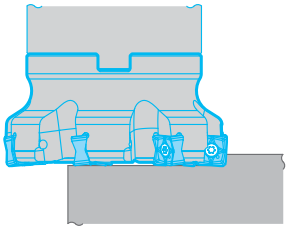
Economical Double-sided 8-edge Insert
Reduces Chattering with a Low Cutting Force Design
Good for Shoulder Roughing and Large Lineup of Sizes from Ø32mm for Various Machining Applications

1 Economical Double-sided 8-edge Insert Good for Shoulder Roughing

Cost reduction with a near 0° lead angle

Shoulder Roughing

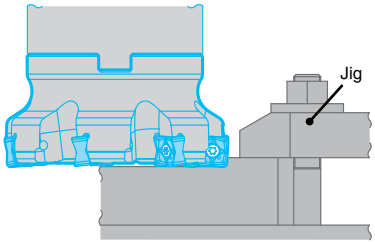
Cost reduction by switching from 0° lead angle cutter with positive inserts



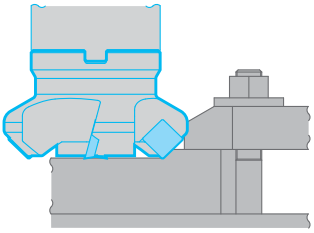
See page M45 for unmachined corner portion

Facing Without Interfering with Fixtures

MFSN88



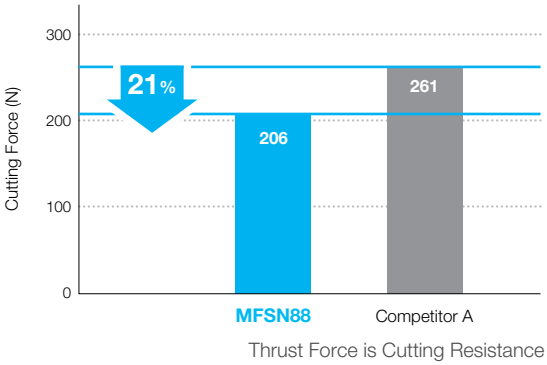
Conventional 45° Cutter



2 Reduces Chattering with a Low Cutting Force Design

Chatter resistant medium to rough machining range

Cutting Force Comparison (Internal Evaluation)



Cutting Conditions : Vc = 660 sfm, f = 0.006 ipt, D.O.C. = 0.118"
Cutter Diameter Ø63mm, Workpiece : 1049 Steel

3 Extended Tool Life with MEGACOAT NANO Technology

Insert grade and chipbreaker lineup for various machining applications

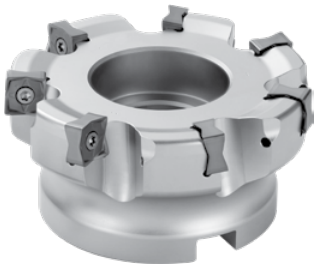
GM Chipbreaker
1st Recommendation
(General Purpose)

GH Chipbreaker
Tough Edge

SM Chipbreaker
for Stainless Steel

Facing

MFSN88 Face Mill (Metric Size)



Rake Angles (°)	A.R.	R.R.	
	Max +10°	DC = 50 : -12°	DC = 100 : -8°
		DC = 63 : -10°	DC = 125 : -7.5°
		DC = 80 : -9°	DC = 160 : -7°

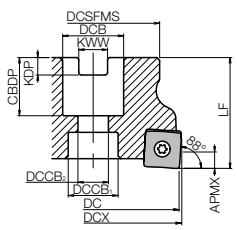


Fig.1

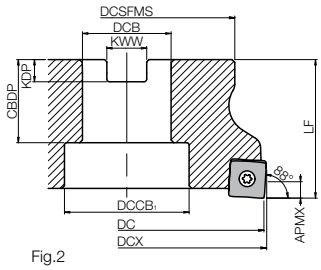


Fig.2

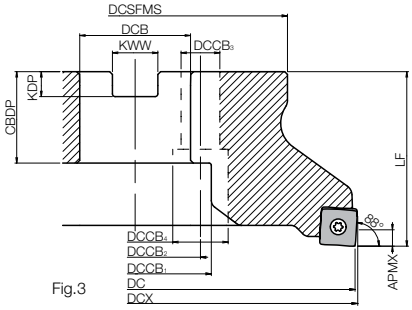


Fig.3

Toolholder Dimensions

		Part Number	Stock	No. of Inserts	Dimensions (mm)												Drawing	Weight (kg)	Shim
					DC	DCX	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	$DCCB_3$	$DCCB_4$			
Inch Bore Dia.	Fine Pitch	MFSN 88080R-6T-G	●	6	80	82	70	1.000"	20	13	50	1.063"	0.236"	0.375"	-	-	Fig.1	1.1	No
		88100R-7T-G	●	7	100	102	78	1.250"	45	-		1.339"	0.315"	0.500			Fig.2	1.5	
		88125R-9T-G	●	9	125	127	89	1.500"	55		63	1.496"	0.394"	0.625"				2.5	
		88160R-11T-G	●	11	160	162	110	2.000"	70				0.433"	0.750"				4.1	
	Extra Fine Pitch	MFSN 88080R-9T-G	●	9	80	82	70	1.000"	20	13	50	1.063"	0.236"	0.375"	-	-	Fig.1	1.1	No
		88100R-11T-G	●	11	100	102	78	1.250"	45	-		1.339"	0.315"	0.500"			Fig.2	1.5	
		88125R-13T-G	●	13	125	127	89	1.500"	55		63	1.496"	0.394"	0.625"				2.6	
		88160R-15T-G	●	15	160	162	110	2.000"	70				0.433"	0.750"				4.3	
Metric Bore Dia.	Fine Pitch	MFSN 88050R-4T-M-G	●	4	50	52	48	22	17.5	11	40	21	6.3	10.4	-	-	Fig.1	0.3	No
		88063R-5T-M-G	●	5	63	65			18									0.4	
		88080R-6T-M-G	●	6	80	82	70	27	20	13	50	24	7	12.4				1.1	
		88100R-7T-M-G	●	7	100	102	78	32	45	-		30	8	14.4			Fig.2	1.4	
		88125R-9T-M-G	●	9	125	127	89	40	55		63	33	9	16.4				2.4	
		88160R-11T-M-G	●	11	160	162	110								14	20	Fig.3	4.2	
	Extra Fine Pitch	MFSN 88050R-5T-M-G	●	5	50	52	48	22	17.5	11	40	21	6.3	10.4	-	-	Fig.1	0.3	No
		88063R-7T-M-G	●	7	63	65			18									0.4	
		88080R-9T-M-G	●	9	80	82	70	27	20	13	50	24	7	12.4				1.1	
		88100R-11T-M-G	●	11	100	102	78	32	45	-		30	8	14.4			Fig.2	1.4	
		88125R-13T-M-G	●	13	125	127	89	40	55		63	33	9	16.4				2.5	
		88160R-15T-M-G	●	15	160	162	110								14	20	Fig.3	4.3	

Recommended Cutting Conditions ➡ **M121**

Applicable Inserts ➡ **M120**

Spare Parts (Both Metric & Inch Size Bore Dia.)

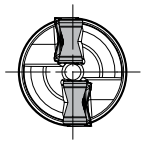
	Part Number	Spare Parts			
		Insert Screw	Wrench	Anti-seize Compound	Arbor Bolt
Fine Pitch	MFSN 88050R-4T-M-G	SB-4090TRP	DTPM-15	P-37	HH10X30
	88063R-5T-M-G				HH10X30
	88080R-6T(-M)-G				HH12X35
	88100R-7T(-M)-G	Recommended Torque for Insert Screw 3.5 Nm			-
	88125R-9T(-M)-G				
	88160R-11T(-M)-G				
Extra Fine Pitch	MFSN 88050R-5T-M-G	SB-4090TRP	DTPM-15	P-37	HH10X30
	88063R-7T-M-G				HH10X30
	88080R-9T(-M)-G				HH12X35
	88100R-11T(-M)-G	Recommended Torque for Insert Screw 3.5 Nm			-
	88125R-13T(-M)-G				
	88160R-15T(-M)-G				

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Facing

MFSN88 End Mill (Metric Size)



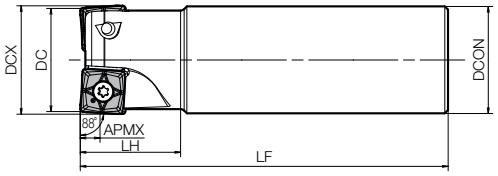
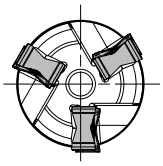


Fig.1



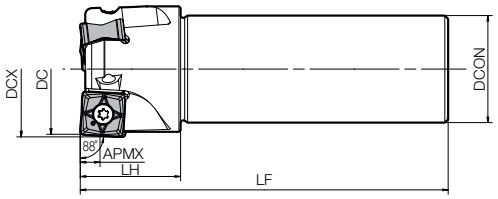


Fig.2

Toolholder Dimensions

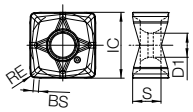
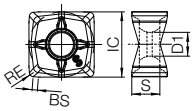
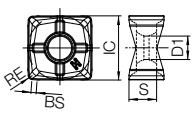
Part Number		Stock	No. of Inserts	Dimensions (mm)						Rake Angles		Spare Parts		
				DC	DCX	DCON	LF	LH	APMX	A.R. (Max)	R.R.	Insert Screw	Wrench	Anti-seize Compound
MFSN	88032R-S32-2T-G	●	2	32	34	32	110	30	5	10°	-15.5°	SB-4090TRP	DTPM-15	P-37
	88040R-S32-3T-G	●	3	40	42						-13°	Recommended Tightening Torque 3.5 Nm		

Recommended Cutting Conditions ➡ M121

Applicable Inserts

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice
■ Finishing / 1st Choice
□ Finishing / 2nd Choice
(Hardness Under 45HRC)

P	Free-Cutting Steel	■	☆	★		
	Carbon/Alloy Steel	■	☆	★		
M	Austenitic Stainless Steel		★	☆		
	Martensitic Stainless Steel		★			
	Precipitation Hardened Stainless Steel		★			
K	Gray Cast Iron				★	
	Nodular Cast Iron				★	
N	Non-ferrous Metals					
S	Heat-Resistant Alloys		★			
	Titanium Alloy		★			
H	Hard Materials			□		★

Insert (Right-hand Shown)		Part Number	Dimensions (in)					Cermet	MEGACOAT NANO			MEGA COAT HARD
			IC	S	D1	BS	RE	TN620M	PR1535	PR1525	PR1510	PR015S
General Purpose		SNMU 130508EN-GM	0.512	0.217	0.185	0.039	1/32	●	●	●	●	
Low Cutting Force		SNMU 130508EN-SM							●	●	●	
Tough Edge (Heavy Milling)		SNMU 130508EN-GH							●	●	●	●

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Recommended Cutting Conditions (Coated Carbide)

Coated Carbide

Chipbreaker	Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc : sfm)			
			MEGACOAT NANO			MEGACOAT HARD
			PR1535	PR1525	PR1510	PR015S
GM	Carbon Steel	0.0039~0.0079~0.0118	☆ 390~590~820	★ 390~590~820	-	-
	Alloy Steel	0.0039~0.0079~0.0118	☆ 330~520~720	★ 330~520~720	-	-
	Mold Steel	0.0039~0.0059~0.0098	★ 260~460~590	★ 260~460~590	-	-
	Austinitic Stainless Steel	0.0039~0.0059~0.0098	☆ 330~490~660	☆ 330~490~660	-	-
	Martensitic Stainless Steel	0.0039~0.0059~0.0098	☆ 330~490~660	-	-	-
	Precipitation Hardened Stainless Steel	0.0039~0.0059~0.0098	★ 300~390~490	-	-	-
	Gray Cast Iron	0.0039~0.0079~0.0118	-	-	★ 390~590~820	-
	Nodular Cast Iron	0.0039~0.0059~0.0098	-	-	★ 330~490~660	-
	Ni-base Heat Resistant Alloys	0.0039~0.0047~0.0079	☆ 70~100~160	-	-	-
SM	Carbon Steel	0.0024~0.0047~0.0079	-	☆ 390~590~820	-	-
	Alloy Steel	0.0024~0.0047~0.0079	-	☆ 330~520~720	-	-
	Mold Steel	0.0024~0.0031~0.0059	-	☆ 260~460~590	-	-
	Austinitic Stainless Steel	0.0024~0.0047~0.0079	★ 330~490~660	☆ 330~490~660	-	-
	Martensitic Stainless Steel	0.0024~0.0047~0.0079	★ 330~490~660	-	-	-
	Precipitation Hardened Stainless Steel	0.0024~0.0047~0.0079	☆ 300~390~490	-	-	-
	Gray Cast Iron	0.0024~0.0047~0.0079	-	-	☆ 390~590~820	-
	Nodular Cast Iron	0.0024~0.0039~0.0059	-	-	☆ 330~490~660	-
	Ni-base Heat Resistant Alloys	0.0024~0.0031~0.0059	★ 70~100~160	-	-	-
	Titanium Alloys	0.0024~0.0031~0.0059	★ 130~200~260	-	-	-
GH	Carbon Steel	0.0059~0.0098~0.0138	-	☆ 390~590~820	-	-
	Alloy Steel	0.0059~0.0098~0.0138	-	☆ 330~520~720	-	-
	Mold Steel	0.0039~0.0079~0.0118	-	☆ 260~460~590	-	-
	Gray Cast Iron	0.0059~0.0098~0.0138	-	-	☆ 390~590~820	-
	Nodular Cast Iron	0.0039~0.0079~0.0118	-	-	☆ 330~490~660	-
	Hard Materials (≤ 60HRc)	0.0039~0.0079~0.0118	-	-	-	★ 260~330~390

• Center value in the table indicate the most recommended value. Adjust cutting speed and feed rate according to the actual machining conditions
• Machining with coolant is recommended for Ni-base heat resistant alloy and titanium alloys

★: 1st Recommendation ☆: 2nd Recommendation

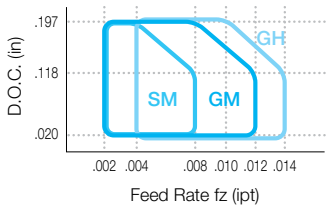
Cermet

Chipbreaker	Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade (Cutting Speed Vc : sfm)
			Cermet
			TN620M
GM	Carbon Steel	0.002~0.005~0.006	★ 660~820~980
	Alloy Steel	0.002~0.005~0.006	★ 590~720~820
	Mold Steel	0.002~0.004~0.005	★ 490~590~720

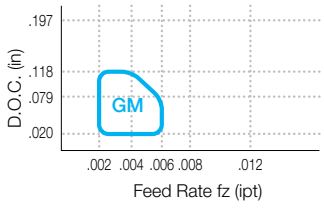
★: 1st Recommendation

Applicable Chipbreaker Range

Coated Carbide



Cermet

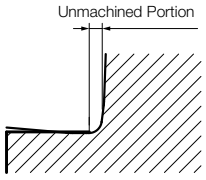


Applicable Chipbreakers

Cutter Type	Chipbreaker		
	GM	SM	GH
Fine Pitch	✓	✓	✓
Extra Fine Pitch	✓	✓	✓ (Feed rate is recommended under fz = 0.008 ipt)

Reference Data for Unmachined Corner Portion

D.O.C.	1mm	2mm	3mm	4mm	5mm
Unmachined Portion	0.82mm	0.93mm	0.97mm	1.00mm	1.04mm



MFLN90 Face Mill

For MFLN45 and MFLN70, see page M42~M43

Rake Angles (°)	A.R.	R.R.
	Max. +4.5°	-16.5° ~ 13.5°

Fig.1

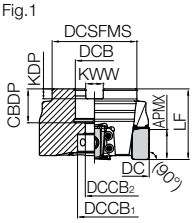


Fig.2

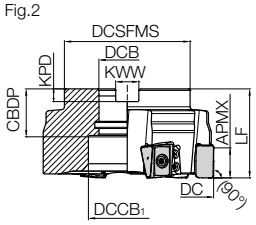


Fig.3

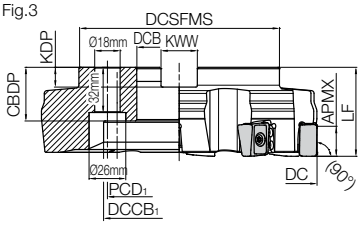
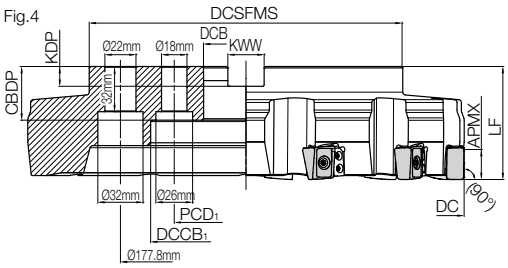


Fig.4



Toolholder Dimensions (Metric)

Part Number			Stock	No. of Inserts	Dimensions (mm)										Coolant Hole	Drawing	Weight (kg)
					DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	PCD1			
Inch Bore Dia.	MFLN	90080R-4T	●	4	80	60	1.000"	24	13	50	1.063"	0.236"	0.375"	20	-	Yes	Fig.1	1.0
		90100R-4T	●		100	70	1.250"	45	-		1.339"	0.315"	0.500"				Fig.2	1.6
		90125R-6T	●	6	125	89	1.500"	55		63	1.496"	0.394"	0.625"					3.0
		90160R-7T	●	7	160	110	2.000"	90				0.433"	0.750"			No		4.6
		90200R-8T	●	8	200	142	1.875"	132				0.551"	1.000"		101.6		Fig.3	7.2
		90250R-10T	●	10	250			172										10.5
		90315R-12T	●	12	315	222		205		80							Fig.4	21.8
Metric Bore Dia.	MFLN	90080R-4T-M	●	4	80	60	27	24	13	50	24	7	12.4	20	-	Yes	Fig.1	1.0
		90100R-4T-M	●		100	70	32	45	-		30	8	14.4				Fig.2	1.5
		90125R-6T-M	●	6	125	89	40	55		63	33	9	16.4		66.7	No		2.9
		90160R-7T-M	●	7	160	110		90									Fig.3	4.5
		90200R-8T-M	●	8	200	142	60	132			38	14	25.7		101.6			6.9
		90250R-10T-M	●	10	250			172										10.3
		90315R-12T-M	●	12	315	222		205		80							Fig.4	20.9

Spare Parts

Part Number	Spare Parts						
	Insert Screw	Wrench	Shim	Shim Screw	Wrench	Anti-seize Compound	Arbor Bolt
MFPN ...080R-4T(-M)	SB-60200TRP	TTP-20	MAP-2216	SB-40140TR	DTM-15	P-37	HH12X35
...100R-4T(-M) ~ ...315R-12T(-M)	Recommended Torque for Insert Screw 6.0Nm		Recommended Torque for Shim Screw 3.5Nm				-

 Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Applicable Insert Selection

	LOGU221616ER-GM (Corner-R)	LOGU2216PAER-GM (Corner Chamfer)
MFLN45	✓	Not Applicable
MFLN70	✓	Not Applicable
MFLN90	✓	✓

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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NEW ITEMS!

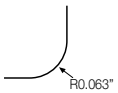
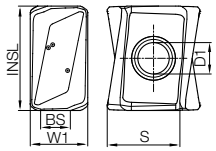
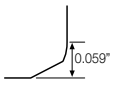
PR1525 : 1st recommendation for wear resistance. Great for scale removal and cast iron machining

PR1535 : Defect resistant, tough substrate for stable machining

Applicable Inserts

Usage Classification
★ Roughing / 1st Choice
☆ Roughing / 2nd Choice

P	Free-Cutting Steel	☆	★
	Carbon/Alloy Steel	☆	★
K	Gray Cast Iron	☆	★
	Nodular Cast Iron	☆	★

Insert (Right-hand Shown)			Part Number	Dimensions (in)					MEGACOAT NANO	
				W1	S	D1	INSL	BS	PR1535	PR1525
Corner-R	 R0.063"		**LOGU 221616ER-GM**	0.492	0.654	0.268	0.898	0.248	●	●
Corner Chamfer	 0.059"		**LOGU 2216PAER-GM**	0.492	0.665	0.268	0.898	0.189	●	●

MFLN90

★: 1st Recommendation ☆: 2nd Recommendation

Workpiece Material	D.O.C. (in)		Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc : sfm)	
	Width of Cut (≤0.5xDC)	Width of Cut (>0.5xDC)		MEGACOAT NANO	
				PR1535	**PR1525**
Carbon Steel	~0.709	~0.591	0.004 ~ **0.008** ~ 0.016	☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Alloy Steel				☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Mold Steel				☆ 230 ~ **330** ~ 390	★ 260 ~ **390** ~ 490
Gray Cast Iron	~0.787	~0.709	0.004 ~ **0.008** ~ 0.016	☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590
Nodular Cast Iron				☆ 260 ~ **390** ~ 490	★ 330 ~ **490** ~ 590

• The number in bold font is recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
• Dry machining is recommended.

How to Replace the Insert Shim Seat

1. Completely eliminate chips and dust from the shim mounting side.
2. Coat medium strength screw locking adhesive on the screws.
3. Tighten the screw keeping the shim pushed against the pocket surface of toolholder.
4. After tightening both screws temporarily, tighten them with appropriate torque. (Recommended torque:3.5 N·m)
5. Please check that there is no gap between the shim and the pocket surfaces of toolholder.

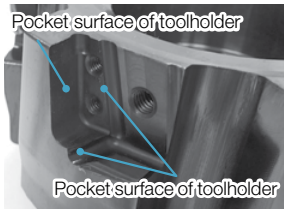


Fig.1

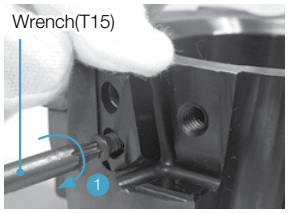


Fig.2

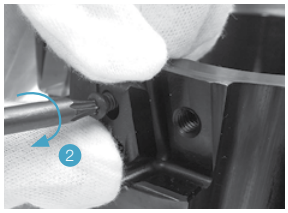


Fig.3

Fig.4

How to Mount Inserts

1. Completely eliminate chips and dust from the insert mounting side.
2. After mounting a clamp screw on the top edge of wrench, tighten the screw while keeping the insert pushed against the shim seat surface and holder surface (Fig.1,2)
3. Make sure that the identification on the top of the insert is the same in each pocket. (Fig.3)
4. Tighten the wrench (20IP) in while holding parallel to the clamp screw.
5. Tighten the insert clamp screw at an appropriate torque. (Recommended torque: 6.0 Nm)
6. After tightening, check that there is no gap between the insert and the surface of the shim, or between the side surface of insert and the holder surface. If there is a gap, remount the insert using the directions above.

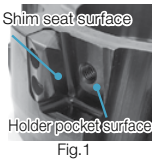


Fig.1

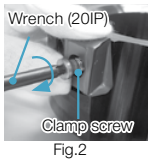


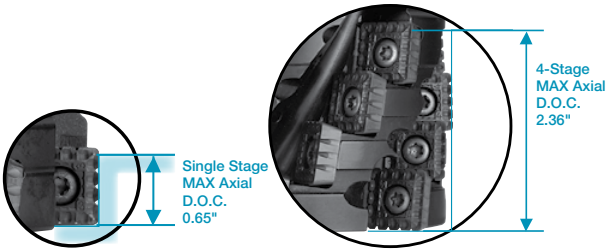
Fig.2

Fig.3

MSRS90 Heavy Milling Cutter

● Multiple Cutting Edge Lengths Available

1, 2, and 4-Stage (ø3.00in, ø80mm, ø100mm)

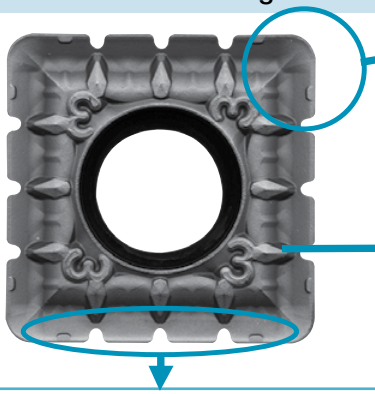


● High Efficiency, Low Cutting Force and Low Vibration Milling Cutter

● Neutral and Corner-R Insert

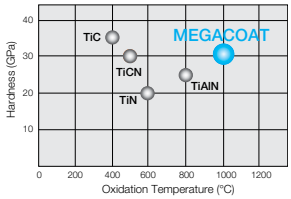
Applicable to Shouldering (Cutting Angle: 90°), High Feed Cutting (Cutting Angle: 30°), Plunging, and Side Cutting.

Custom-ordered Milling Cutter with High Performance Notched Neutral Inserts Offer Expansive Possibilities



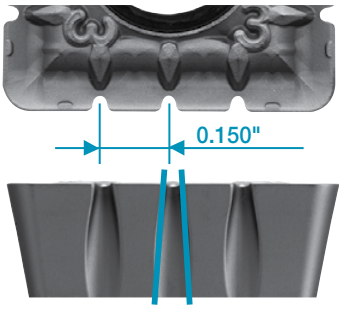
Neutral Insert with Corner-R is Available for a Variety of Applications

Long Tool Life with MEGACOAT



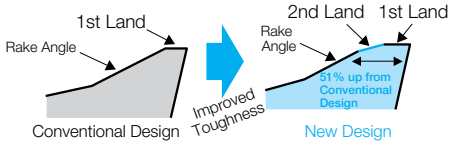
High Hardness and High Oxidation Resistance
Long Tool Life: MEGACOAT

Notched Insert SPMT180616EN type



- Notched inserts break chips into smaller pieces and reduce cutting forces.
- Available for high feed cutting due to lower cutting forces at workpiece entry.
- New, double-land edge prep improves the cutting edge strength, while a small notch helps to reduce cutting forces

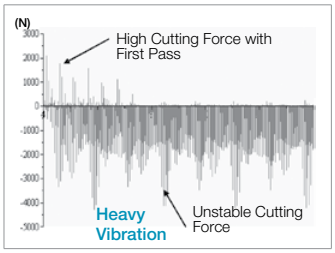
- Neutral Insert
- Available for Various cutting angles
- Cutting edge length 0.709"



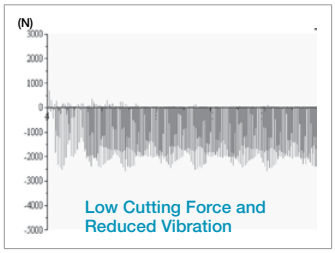
Edge Preparation

● Low Cutting Force (Effect of Notched Insert)

Comparison of Cutting Forces



Competitor A

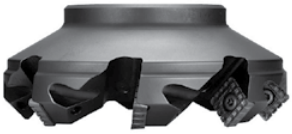


MSRS90

Notched Inserts Provide Lower Cutting Forces and Reduce Vibration

Tapered Cutter

Plunge Cutter



45° Face Mill

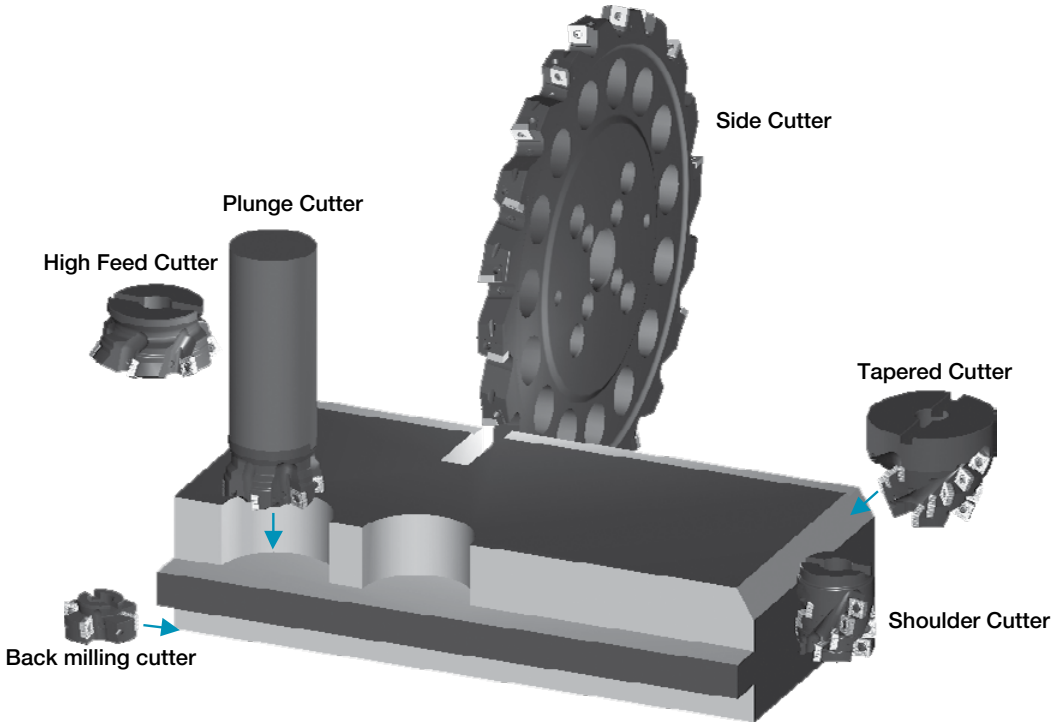
High Feed Cutter

Shoulder Cutter

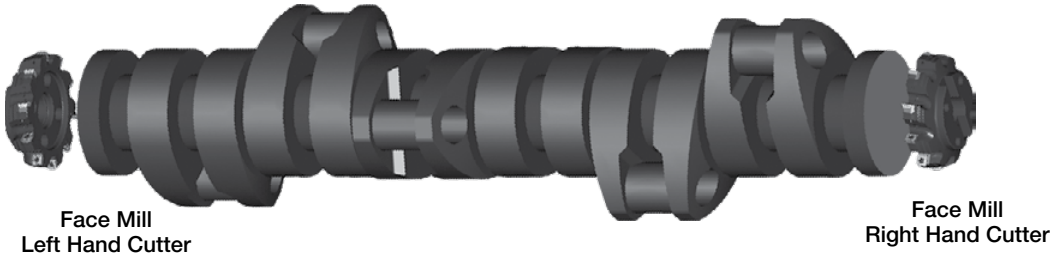
Applicable Inserts: Available for Various Applications

Applications	Chipbreaker Type	3-Notched	4-Notched	Solid Edge
General Purpose (1st Recommendation)	Standard	NB3 +	NB4	
Low Cutting Force	Low Cutting Force	NB3P +	NB4P	
Focusing on Edge Strength	Without Notch (Usable with Notched Inserts)	(NB3 or	NB4) +	

Various Cutting Possibilities with Custom-Design and Standard Cutters



Shaft Length Determination



MSRS90 Heavy Milling (Inch)

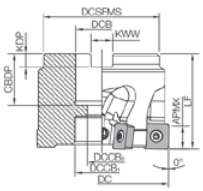


Fig.1

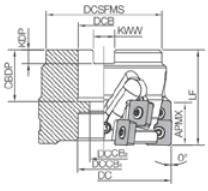


Fig.2

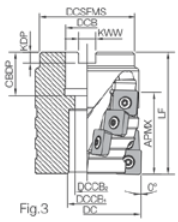


Fig.3

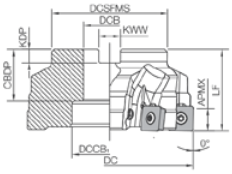


Fig.4

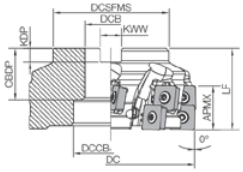


Fig.5

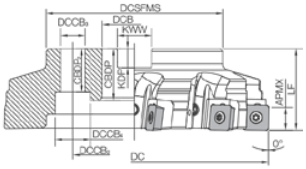


Fig.6

Rake Angle	
A.R.	R.R.
+7°	-10°

Toolholder Dimensions (Inch)

Part Number		Stock	No. of Inserts	No. of Flutes	No. of Stages	Dimensions (in)													Drawing	Weight (kg)
						DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	$DCCB_3$	$DCCB_4$	$CBDP_2$		
MSRS	903000R-1-4T	●	4	4	1	3.00	2.75	1.00	0.87	0.55	2.36	1.06	0.24	0.38	0.65	-	-	-	Fig.1	2.43
	903000R-2-4T	●	8	4	2										1.22				Fig.2	2.21
	903000R-4-4T	●	16	4	4						3.35				2.36				Fig.3	3.50
	904000R-1-6T	●	6	6	1	4.00	3.35	1.50	2.05	-	2.76	1.14	0.39	0.63	0.65				Fig.4	4.41
	904000R-2-6T	●	12	6	2										1.22				Fig.5	3.97
	905000R-1-8T	●	8	8	1	5.00	3.35		2.17		2.36	1.42			0.65				Fig.4	5.73
	906000R-1-8T	●	8	8	1	6.00	3.94	2.00	2.76			1.50	0.43	0.75						7.50
	908000R-1-10T	●	10	10	1	8.00	5.12	2.50	-	4.00		1.58	0.55	1.01		0.71	1.02	1.26	Fig.6	13.23
	9010000R-1-12T	●	12	12	1	10.00														27.49

Applicable Inserts

Part Number	Applicable Inserts ➡ M28				
	3-Notch	4-Notch	3-Notch / Low Cutting Force	4-Notch / Low Cutting Force	Without Notch
MSRS90...	SPMT 180616EN-NB3	SPMT 180616EN-NB4	SPMT 180616EN-NB3P	SPMT 180616EN-NB4P	SPMT 180616EN-V

Spare Parts ➡ **M128**
Recommended Cutting Conditions ➡ **M128~129**

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(Technical Support) **800.823.7284 - Option 2**
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MSRS90 Heavy Milling (Metric)

Rake Angle	
A.R.	R.R.
+7°	-10°

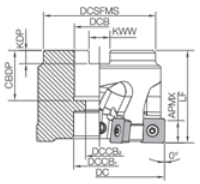
Fig.1

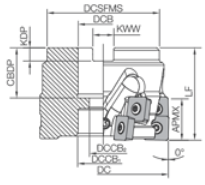
Fig.2

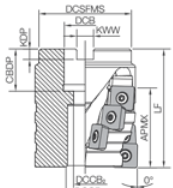
Fig.3

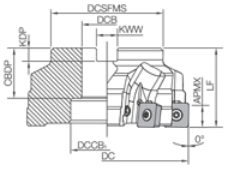
Fig.4

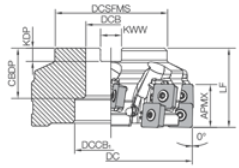
Fig.5

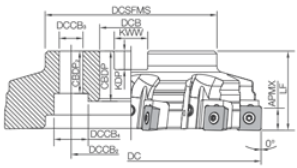
Fig.6

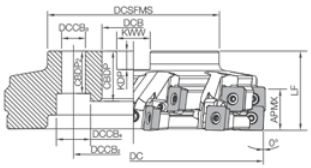
Fig.7

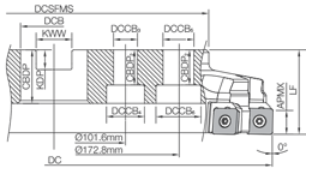
Fig.8

Toolholder Dimensions (Metric)

Part Number		Stock	No. of Inserts	No. of Flutes	No. of Stages	Dimensions (mm)																Drawing	Weight (kg)
						DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	$DCCB_3$	$DCCB_4$	$DCCB_5$	$DCCB_6$	$CBDP_2$		
Inch Bore Dia.	MSRS 90080R-1-4T	●	4	4	1	80	70	1.250"	27	18	60	1.260"	0.315"	0.500"	16.5	-	-	-	-	-	Fig.1	1.4
	90080R-2-4T	●	8		2										31						Fig.2	1.2
	90080R-4-4T	●	16		4						85				60						Fig.3	1.5
	90100R-1-6T	●	6	6	1	100	85	1.500"	39	21	70	1.496"	0.394"	0.625"	16.5						Fig.1	2.3
	90100R-2-6T	●	12		2										31						Fig.2	2.1
	90100R-4-6T	□	24		4						90				60						Fig.3	3.2
	90125R-1-8T	●	8	8	1	125			55	-	60				16.5						Fig.4	2.6
	90125R-2-8T	□	16		2										31						Fig.5	2.4
	90160R-1-8T	●	8	8	1	160	100	2.000"	70				0.433"	0.750"	16.5						Fig.4	4.3
	90160R-2-8T	□	16		2										31						Fig.5	4.1
	90200R-1-10T	●	10	10	1	200	130	1.875"	-	101.6			0.551"	1.000"	16.5	18	26	-	-	32	Fig.6	6.7
	90200R-2-10T	□	20		2										31						Fig.7	6.6
	90250R-1-12T	●	12	12	1	250									16.5						Fig.6	12.6
	90250R-2-12T	□	24		2										31						Fig.7	12.5
	90315R-1-14T	●	14	14	1	315	220			-					16.5	17	27	22	32	25	Fig.8	16.1
	90315R-2-14T	□	28		2																-	16.0
Metric Bore Dia.	MSRS 90080R-1-4T-M	●	4	4	1	80	70	27	20	13	60	24	7	12.4	16.5	-	-	-	-	-	Fig.1	1.3
	90080R-2-4T-M	●	8		2										31						Fig.2	1.1
	90080R-4-4T-M	●	16		4						85				60						Fig.3	1.4
	90100R-1-6T-M	●	6	6	1	100	85	32	45	-	70	30	8	14.4	16.5						Fig.1	2.2
	90100R-2-6T-M	●	12		2										31						Fig.2	2.0
	90100R-4-6T-M	□	24		4						90				60						Fig.3	3.1
	90125R-1-8T-M	●	8	8	1	125		40	55		60	33	9	16.4	16.5						Fig.4	2.6
	90125R-2-8T-M	□	16		2										31						Fig.5	2.4
	90160R-1-8T-M	●	8	8	1	160	110			66.7					16.5	14	20	-	-	28	Fig.6	4.2
	90160R-2-8T-M	□	16		2										31						Fig.7	4.0
	90200R-1-10T-M	●	10	10	1	200	140	60	-	101.6		40	14	25.7	16.5	18	26	-	-	32	Fig.6	6.7
	90200R-2-10T-M	□	20		2										31						Fig.7	6.6
	90250R-1-12T-M	●	12	12	1	250									16.5						Fig.6	12.6
	90250R-2-12T-M	□	24		2										31						Fig.7	12.5
	90315R-1-14T-M	●	14	14	1	315	220			-					16.5	17	27	22	32	25	Fig.8	16.1
	90315R-2-14T-M	□	28		2										31						-	16.0

Applicable Inserts

Part Number	Applicable Inserts ➔ M28				
	3-Notch	4-Notch	3-Notch / Low Cutting Force	4-Notch / Low Cutting Force	Without Notch
MSRS90...	SPMT 180616EN-NB3	SPMT 180616EN-NB4	SPMT 180616EN-NB3P	SPMT 180616EN-NB4P	SPMT 180616EN-V

Spare Parts ➔ **M128**
Recommended Cutting Conditions ➔ **M128~129**

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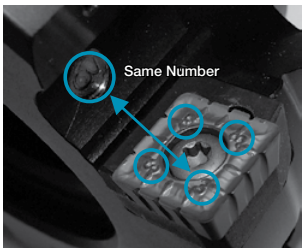
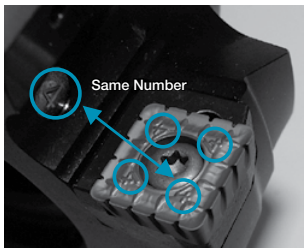
Caution when Installing Notched Inserts

It is important to install the appropriate notched insert into the correct position. Failure to do so may result in damage to the toolholder body. The appropriate insert is marked on the pocket of the cutter body.

Description	No. of Inserts	No. of Flutes	No. of Stages	No. of Inserts	
				Notched	
				NB3(P)	NB4(P)
MSRS 90100R-1-6T	6	6	1	3	3
90100R-2-6T	12		2	6	6
90100R-4-6T	24		4	12	12

When installing the inserts, match the number on the top of insert to the number of the cutter body.





Spare Parts (Inch and Metric Toolholders)

Part Number			Spare Parts							
			Clamp Screw	Wrench	Cartridge		Clamp Screw	Wrench	Anti-Seize Compound	Arbor Bolt
					MAP-1806M	MAP-1806S (Bottom Edge Only)				
Without Cartridge	MSRS	903000R-1-4T	SB-60120TR	TT-25L	-	-	-	-	P-37	HH1/2-1.25
		903000R-2-4T	Recommended Torque for Insert Clamp 7.5 N·m							
		903000R-4-4T								
	MSRS	904000R-1-6T								-
		904000R-2-6T								
	MSRS	905000R-1-8T								
With Cartridge	MSRS	906000R-1-8T			MAP-1806M	-	SB-40140TR	DT-15		
		908000R-1-10T			Recommended Torque for Cartridge Clamp 3.5 N·m					
		9010000R-1-12T								
Without Cartridge	MSRS	90080R-○-4T	SB-60120TR	TT-25L	-	-	-	-	P-37	HH16X45
		90100R-○-6T	Recommended Torque for Insert Clamp 7.5 N·m							HH20X55
		90125R-○-8T								-
With Cartridge	MSRS	90160R-○-8T ~ 90315R-○-14T			MAP-1806M*1	MAP-1806S*2	SB-40140TR	DT-15		
					Recommended Torque for Cartridge Clamp 3.5 N·m					
Without Cartridge	MSRS	90080R-○-4T-M			-	-	-	-		HH12X35
		90100R-○-6T-M								-
		90125R-○-8T-M								
With Cartridge	MSRS	90160R-○-8T-M ~ 90315R-○-14T-M			MAP-1806M*1	MAP-1806S*2	SB-40140TR	DT-15		
					Recommended Torque for Cartridge Clamp 3.5 N·m					

*1: MAP-1806M is only for applicable MSRS90...R-1... cutters

*2: MAP-1806S is only for the bottom edge (1st stage) of MSRS90...R-2... Use it only for the bottom edge (1st stage).

How to Attach the Cartridge : You need to tighten 2 clamp screws to fix the cartridge. Tighten the slant screw first and then tighten the other screw.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)		Recommended Insert Grade (Vc sfm)	
	General Purpose **NB3+NB4**	Low Cutting Force **NB3P+NB4P**	MEGACOAT	
			PR1230	**PR1210**
Soft Steel	0.004~**0.008**~0.010	0.004~**0.008**~0.010	★ 400~**500**~725	☆ 400~**500**~725
Carbon Steel	0.004~**0.008**~0.010	0.004~**0.008**~0.010	★ 325~**500**~650	☆ 325~**500**~650
Alloy Steel	0.004~**0.006**~0.008	0.004~**0.006**~0.008	★ 325~**500**~650	☆ 325~**500**~650
Die Steel	0.004~**0.006**~0.008	0.004~**0.005**~0.006	★ 325~**500**~600	☆ 325~**500**~600
Gray Cast Iron	0.004~**0.008**~0.012	0.004~**0.008**~0.010	☆ 325~**600**~825	★ 325~**600**~825
Nodular Cast Iron	0.004~**0.008**~0.010	0.004~**0.007**~0.008	☆ 325~**600**~725	★ 325~**600**~725
Stainless Steel	Not Recommended			
Non-Ferrous Metals	Not Recommended			

★ :1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Shouldering)

MSRS90100R-1-6T

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in³/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	< 4.72	Vc = 590 sfm	fz = 0.008 ipt	0.59 × 3.15	50.41
	4.72~7.87	Vc = 590 sfm	fz = 0.008 ipt	0.59 × 1.57	25.20
	≥ 7.9	Vc = 425 sfm	fz = 0.004 ipt	0.59 × 1.57	16.05
Carbon Steel	< 4.72	Vc = 490 sfm	fz = 0.008 ipt	0.59 × 3.15	42.05
	4.72~7.87	Vc = 490 sfm	fz = 0.008 ipt	0.59 × 1.57	20.99
	≥ 7.91	Vc = 325 sfm	fz = 0.004 ipt	0.59 × 1.57	13.97

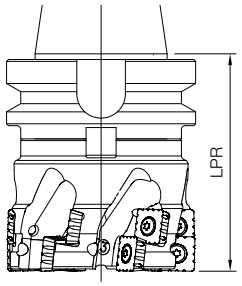
MSRS90100R-2-6T

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in³/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	Less than 4.72in	Vc = 590 sfm	fz = 0.008 ipt	1.18 × 1.97	62.97
	4.72~7.87in	Vc = 590 sfm	fz = 0.008 ipt	1.18 × 1.18	37.77
	7.91in and over	Vc = 425 sfm	fz = 0.004 ipt	1.18 × 0.98	20.08
Carbon Steel	Less than 4.72in	Vc = 490 sfm	fz = 0.008 ipt	1.18 × 1.97	52.54
	4.72~7.87in	Vc = 490 sfm	fz = 0.008 ipt	1.18 × 1.18	31.55
	7.91in and over	Vc = 325 sfm	fz = 0.004 ipt	1.18 × 0.98	17.51

MSRS90100R-4-6T

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in³/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	Less than 5.51in	Vc = 590 sfm	fz = 0.008 ipt	2.36 × 0.79	50.41
	5.51in~7.87in	Vc = 590 sfm	fz = 0.008 ipt	2.36 × 0.39	25.20
	7.91in and over	Vc = 425 sfm	fz = 0.004 ipt	2.36 × 0.39	16.05
Carbon Steel	Less than 5.51in	Vc = 490 sfm	fz = 0.008 ipt	2.36 × 0.79	42.05
	5.51in~7.87in	Vc = 490 sfm	fz = 0.008 ipt	2.36 × 0.39	20.99
	7.91in and over	Vc = 325 sfm	fz = 0.004 ipt	2.36 × 0.39	13.97

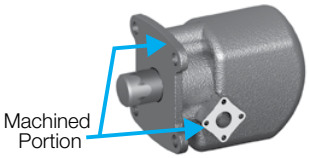
Overhang Length LPR (in)



Case Studies

Ductile Iron, 60-40-8

- Industrial Parts
- Vc = 490 sfm
- D.O.C. × ae = 0.236" × 2.559"
- fz = 0.006 ipt (Vf = 16.93 ipm)
- MSRS90100R-1-6T (6 Flutes)
- SPMT180616EN-NB3/NB4 (PR1210)



MSRS90 (PR1210)	Chip Removal = 15.7 in³/min
Competitor A	6.5 in³/min

MSRS90 doubled the cutting efficiency compared to competitor A. Competitor A required 2 passes (D.O.C.×ae=0.118×2.56"). MSRS90 completed the cut in only 1 pass. Cutting time was reduced.

(User Evaluation)

Chrome-Moly Steel

- Construction Machine Part
- Vc = 660 sfm
- D.O.C. × ae = 0.394" × 1.968"
- fz = 0.004 ipt (Vf = 15.748 ipm)
- MSRS90125R-1-8T (8 Flutes)
- SPMT180616EN-NB3/NB4 (PR1230)

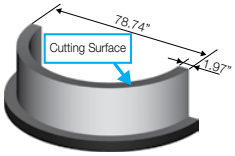
MSRS90 (PR1230)	Chip Removal = 12.2 in³/min
Competitor B	9.3 in³/min

MSRS90 improved the cutting efficiency to 1.3 times that of competitor B. Competitor C machined with D.O.C.×ae=0.20x1.97". Tool cost is reduced to 1/3 although competitor C is expensive using 2-corner inserts. MSRS90 reduced machining cost as well as improved cutting efficiency.

(User Evaluation)

Tool Steel

- Shipbuilding Parts
- Vc = 490 sfm
- D.O.C. × ae = 0.394" × 0.394"~1.968"
- fz = 0.004 ipt (Vf = 9.449 ipm)
- MSRS90160R-1-8T (8 Flutes)
- SPMT180616EN-NB3/NB4 (PR1230)



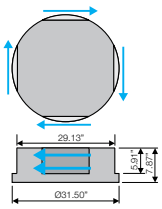
MSRS90 (PR1230)	Chip Removal = 7.32 in³/min
Competitor C	3.66 in³/min

MSRS90 doubled the cutting efficiency compared to competitor C (D.O.C.×ae=0.197×0.394~1.968"). MSRS90 doubled the axial D.O.C. due to lower cutting forces. MSRS90 can increase D.O.C. as the cutting speed (Vc=325 increases to 490). This resulted in total cutting efficiency improvement.

(User Evaluation)

Structural Steel

- Power Generation Parts
- Vc = 530 sfm
- D.O.C. × ae = 0.394" × 0~0.787"
- fz = 0.006 ipt (Vf = 19.69 ipm)
- MSRS90125R-1-8T (8 Flutes)
- SPMT180616EN-NB3/NB4 (PR1230)



MSRS90 (PR1230)	12 faces/edge
Competitor D	8 faces/edge

MSRS90 improved tool life to 1.5 times that of competitor D. Competitor D required 2 passes (D.O.C.×ae=0.472×0~0.394") with a low feed rate (Vf=15.748ipm). Competitor D was very noisy due to large cutting forces. MSRS90 reduces the cutting force and noise level.

(User Evaluation)

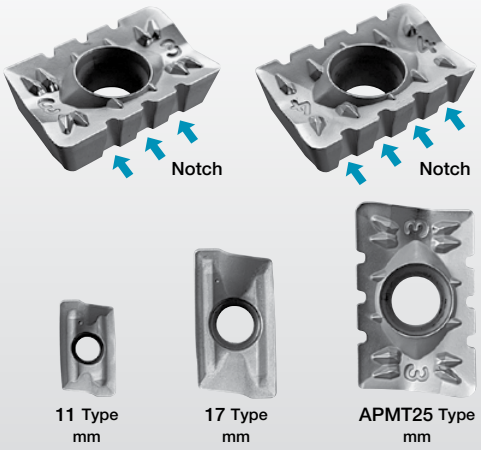
MSR Heavy Milling Cutter

Notched inserts reduce cutting forces, and enable high feed rates by reducing chatter
Improved chip evacuation and low cutting forces due to the special chipbreaker designs
Enables heavy milling and deep cutting, and also drastically improves cutting efficiency (Reduced Cycle Time)

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

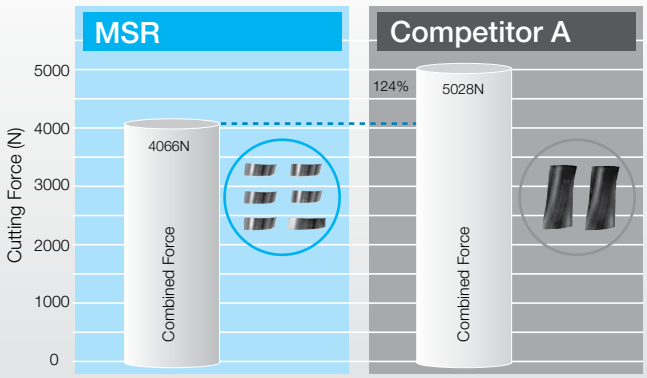
Notched Insert

Size Comparison (Full-Scale)



11 Type mm | 17 Type mm | APMT25 Type mm

Cutting Force Comparison



The exclusive notched chipbreakers provide low cutting resistance and good chip evacuation.

(User Evaluation)

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Shouldering | Slotting | Facing

MSR Heavy Milling (Inch)

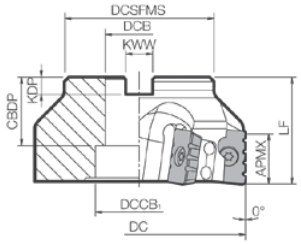


Fig.1

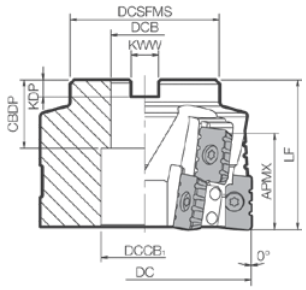
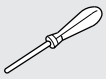


Fig.2

Toolholder Dimensions (Inch)

Part Number	Stock	No. of Inserts	No. of Flutes	No. of Stages	Dimensions (in)										Rake Angle		Drawing	Weight (kg)
					DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	A.R.	R.R.		
MSR 3000R-1	●	4	4	1	3.00	2.25	1.00	0.790	-	1.970	1.020	0.240	0.375	0.925	+9°	-5°	Fig.1	1.1
3000R-2	●	8	4	2						2.760				1.770			Fig.2	1.6
4000R-1-1.5ID	●	6	6	1	4.00	2.75	1.50	1.610		1.970	1.260	0.310	0.500	0.925			Fig.1	1.6
4000R-2-1.5ID	●	12	6	2						2.760				1.770			Fig.2	2.2

Spare Parts

Part Number	Spare Parts					
	Clamp Screw	Wrench	Shim	Clamp Screw	Wrench	Anti-Seize Compound
						
MSR 3000R... MSR 4000R...	SB-60120TR	TT-25L	MAP-2506	SB-40140TR	DT-15	P-37
	For Insert Clamp		For Shim Clamp			

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Applicable Inserts

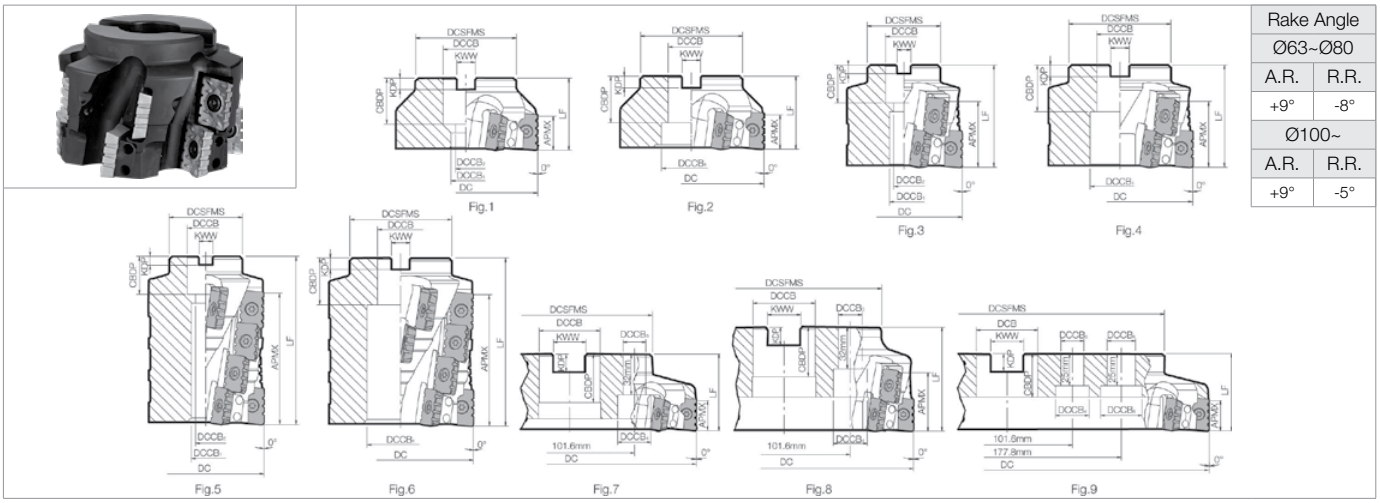
Part Number	Applicable Inserts ➡ M22			
	3-Notch	4-Notch	3-Notch / Low Cutting Force	4-Notch / Low Cutting Force
MSR 3000R... MSR 4000R...	APMT 2506○○ER-NB3	APMT 2506○○ER-NB4	APMT 250616ER-NB3P	APMT 250616ER-NB4P
Custom-Ordered Left-hand Cutter	APMT 250616EL-NB3	APMT 250616EL-NB4	-	-

Recommended Cutting Conditions ➡ M134-M135

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Shouldering | Slotting (1-2 Stage Only) | Facing

MSR Heavy Milling (Metric)



Rake Angle	
Ø63~Ø80	
A.R.	R.R.
+9°	-8°
Ø100~	
A.R.	R.R.
+9°	-5°

Toolholder Dimensions (Inch Bore Dia.)

Part Number	Stock	No. of Inserts	No. of Flutes	No. of Stages	Dimensions (mm) DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	$DCCB_3$	$DCCB_4$	$DCCB_5$	$DCCB_6$	Drawing	Weight (kg)
MSR 063R-1	●	4	4	1	63	50	1.000"	20	14	65	1.024"	0.236"	0.375"	23.5	-	-	-	-	Fig.1	0.8
063R-2	●	8		2						85				45					Fig.3	1.0
080R-1	●	4	4	1	80	55	1.000"	20	14	50	1.024"	0.236"	0.375"	23.5	-	-	-	-	Fig.1	1.1
080R-2	●	8		2						70				45					Fig.3	1.6
080R-2-31.75	●					70	1.250"	27	18		1.260"	0.315"	0.500"							1.7
080R-4	●	16		4		55	1.000"	20	14	115	1.024"	0.236"	0.375"	90					Fig.5	2.6
080R-4-31.75	●					70	1.250"	27	18		1.260"	0.315"	0.500"							2.7
100R-1	●	6	6	1	100	70	1.250"	42	-	50	1.260"	0.315"	0.500"	23.5	-	-	-	-	Fig.2	1.6
100R-2	●	12		2						70				45					Fig.4	2.2
100R-4	●	24		4						115				90					Fig.6	3.6
125R-1	●	6	6	1	125	85	1.500"	54	-	60	1.496"	0.394"	0.625"	23.5	-	-	-	-	Fig.2	3.5
125R-2	●	12		2						70				45					Fig.4	3.8
125R-4	●	24		4						115				90					Fig.6	6.1
160R-1	●	8	8	1	160	100	2.000"	68	-	60	1.496"	0.433"	0.750"	23.5	-	-	-	-	Fig.2	5.8
160R-2	●	16		2						70				45					Fig.4	6.4
160R-4	●	32		4						115				90					Fig.6	10.7
200R-1	●	10	10	1	200	130	1.875"	-	-	60	1.496"	0.551"	1.000"	23.5	18	26	-	-	Fig.7	7.5
200R-2	●	20		2						80				45					Fig.8	10.4
250R-1	●	12	12	1	250	130	1.875"	-	-	60	1.496"	0.551"	1.000"	23.5	18	26	-	-	Fig.7	10.9
250R-2	●	24		2						80				45					Fig.8	14.7
315R-1	□	14	14	1	315	220	1.875"	-	-	60	1.378"	0.551"	1.000"	23.5	17	27	22	32	Fig.9	16.0

· Shim is not available for MSR063R (DC=63).
· Mounting bolt (HH12x40) is included for MSR063R and MSR080R. Mounting bolt (HH16x45) is included for MSR080R-O-31.75.
· It is not recommended using only top edge part (D.O.C.=30mm) for 4 stages type. If D.O.C. is small, use 1 stage or 2 stage type.
· Deep slotting is not recommended with these cutters.

Spare Parts ➔ M131
Applicable Inserts ➔ M131

Toolholder Dimensions (Metric Bore Dia.)

Part Number	Stock	No. of Inserts	No. of Flutes	No. of Stages	Dimensions (mm) DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LH	CBDP	KDP	KWW	APMX	$DCCB_3$	$DCCB_4$	$DCCB_5$	$DCCB_6$	Drawing	Weight (kg)
MSR 063R-1M	●	4	4	1	63	50	27	20	14	65	22	7.2	12.4	23.5	-	-	-	-	Fig.1	0.7
063R-2M	●	8		2						85				45					Fig.3	0.9
080R-1M	●	4	4	1	80	55	27	20	14	50	22	7.2	12.4	23.5	-	-	-	-	Fig.1	1.0
080R-2M	●	8		2						70				45					Fig.3	1.5
080R-4M	●	16		4						115				90					Fig.5	2.5
100R-1M	●	6	6	1	100	70	32	42	-	50	28	8	14.4	23.5	-	-	-	-	Fig.2	1.5
100R-2M	●	12		2						70				45					Fig.4	2.0
100R-4M	●	24		4						115				90					Fig.6	3.2
125R-1M	●	6	6	1	125	85	40	58	-	60	30	9	16.4	23.5	-	-	-	-	Fig.2	3.4
125R-2M	●	12		2						70				45					Fig.4	3.7
125R-4M	●	24		4						115				90					Fig.6	6.0
160R-1M	●	8	8	1	160	100	40	68	-	60	30	10	16.4	23.5	-	-	-	-	Fig.2	6.1
160R-2M	●	16		2						70				45					Fig.4	6.8
200R-1M	●	10	10	1	200	130	60	-	-	60	38	15	25.4	23.5	18	26	-	-	Fig.7	7.0
200R-2M	●	20		2						80				45					Fig.8	9.9
250R-1M	●	12	12	1	250	130	60	-	-	60	38	15	25.4	23.5	18	26	-	-	Fig.7	10.3
250R-2M	●	24		2						80				45					Fig.8	14.2
315R-1M	□	14	14	1	315	230	60	-	-	60	35	15	25.4	23.5	17	27	22	32	Fig.9	15.5

· Shim is not available for MSR063R (DC=63).
· Arbor bolt (HH12x35) is included for MSR063R / MSR080R.
· It is not recommended using only top edge part (D.O.C.=30mm) for 4 stages type. If D.O.C. is small, use 1 stage or 2 stage type.
· Deep slotting is not recommended with these cutters.

Spare Parts ➔ M131
Applicable Inserts ➔ M131

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● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
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MSR-BT50

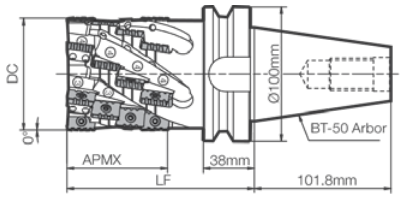


Fig.1

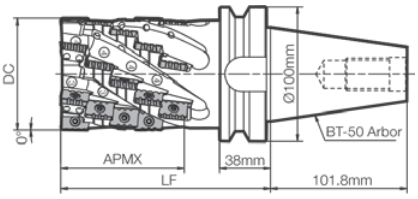
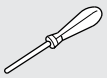


Fig.2

Toolholder Dimensions

Part Number	Stock	No. of Inserts	No. of Flutes	No. of Stages	Dimensions (mm)			Rake Angle		Drawing	Weight (kg)
					DC	LF	APMX	A.R.	R.R.		
MSR 063R-BT50-4	●	16	4	4	63	160	90	+9°	-8°	Fig.1	5.7
063R-BT50-5	●	20		5		180	111			Fig.2	6.2
080R-BT50-4	●	16	4	4	80	160	90			Fig.1	6.9
080R-BT50-5	●	20		5		180	111			Fig.2	7.4
100R-BT50-4	●	24	6	4	100	160	90	+9°	-5°	Fig.1	9.6
100R-BT50-5	●	30		5		180	111			Fig.2	10.5

Spare Parts

Part Number	Spare Parts					
	Clamp Screw	Wrench	Shim	Clamp Screw	Wrench	Anti-Seize Compound
						
MSR 063R-○□	SB-60120TR	TT-25L	-	-	-	P-37
MSR 080R-○□ ~ 315R-○□	For Insert Clamp		MAP-2506	SB-40140TR	DT-15	
			For Shim Clamp			
MSR 063R-BT50-○	SB-60120TR	TT-25L	-	-	-	P-37
MSR 080R-BT50-○ 100R-BT50-○	For Insert Clamp		MAP-2506	SB-40140TR	DT-15	
			For Shim Clamp			

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Applicable Inserts

Part Number	Applicable Inserts → M22			
	3-Notch	4-Notch	3-Notch / Low Cutting Force	4-Notch / Low Cutting Force
MSR... MSR...M	APMT 2506○○ER-NB3	APMT 2506○○ER-NB4	APMT 250616ER-NB3P	APMT 250616ER-NB4P
Custom-Ordered Left-hand Cutter	APMT 250616EL-NB3	APMT 250616EL-NB4	-	-

Recommended Cutting Conditions → M134-M135

Caution when Installing Notched Inserts

It is important to install the appropriate notched insert into the correct position. Failure to do so may result in damage to the toolholder body. The appropriate insert is marked on the pocket of the cutter body.

(3) is for APMT2506○○ER-**NB3**
(4) is for APMT2506○○ER-**NB4**

(No. of Inserts - Example)

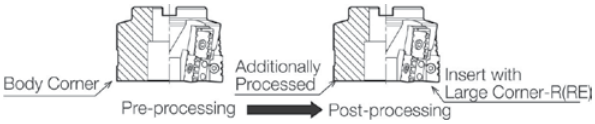
Part Number	No. of Inserts	No. of Flutes	No. of Inserts Notched	
			NB3	NB4
MSR 100R-1	6	6	3	3
100R-2	12		6	6
100R-4	24		12	12

Caution when Installing the Insert with Corner-R(RE) 4.0

When installing the insert with corner-radius 4.0mm, additional modifications for the body will be necessary. Refer to the table below for the recommended modifications.

Insert Corner-R (RE)	Additional Processing Dimension to Body Corner (mm)
4.0	R2.0

* Round- chamfer additional processing is recommended. When applying chamfer, do not cut away too much.



● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)		Recommended Insert Grade (Vc sfm)		
	General Purpose **NB3+NB4**	Low Cutting Force **NB3P+NB4P**	MEGACOAT		PVD Coated Carbide
			PR1230	**PR1210**	**PR830**
Carbon Steel	0.008	0.006	★ 330~**490**~660	-	☆ 300~**490**~590
Cast Iron	0.008	0.006	-	★ 330~**490**~660	-
Stainless Steel	Not Recommended				
Non-Ferrous Metals	Not Recommended				

* For MSR, cutting speed should be carefully adjusted depending on the length of toolholder protruding from the end of machine spindle.
· When the protruding length of toolholder is small, set the cutting speed to slightly higher than the recommended cutting conditions.
· When the protruding length of toolholder is large, set the cutting speed to slightly lower than the recommended cutting conditions.

★ :1st Recommendation ☆ : 2nd Recommendation

Recommended Cutting Conditions (Shouldering)

MSR100R-1

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in^3/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Carbon Steel	< 3.94	Vc = 590 sfm	fz = 0.008 ipt	0.79 × 3.15	67.13
	3.94~7.87	Vc = 590 sfm	fz = 0.008 ipt	0.79 × 1.57	33.56
	≥ 7.91	Vc = 400 sfm	fz = 0.008 ipt	0.79 × 1.18	16.84
Cast Iron	< 3.94	Vc = 500 sfm	fz = 0.008 ipt	0.79 × 3.15	56.14
	3.94~7.87	Vc = 500 sfm	fz = 0.008 ipt	0.79 × 1.57	28.07
	≥ 7.91	Vc = 325 sfm	fz = 0.008 ipt	0.79 × 1.18	13.91

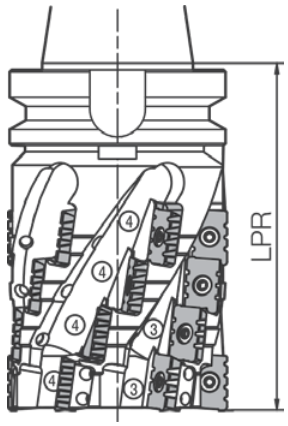
MSR100R-2

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in^3/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	< 5.12	Vc = 590 sfm	fz = 0.008 ipt	1.57 × 1.57	67.13
	5.12~9.06	Vc = 590 sfm	fz = 0.008 ipt	1.57 × 0.79	33.56
	≥ 9.09	Vc = 400 sfm	fz = 0.008 ipt	1.57 × 0.79	22.46
Carbon Steel	< 5.12	Vc = 500 sfm	fz = 0.008 ipt	1.57 × 1.57	56.14
	5.12~9.06	Vc = 500 sfm	fz = 0.008 ipt	1.57 × 0.79	28.07
	≥ 9.09	Vc = 325 sfm	fz = 0.008 ipt	1.57 × 0.79	18.55

MSR100R-4

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in^3/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	< 7.09	Vc = 590 sfm	fz = 0.008 ipt	2.95 × 0.79	63.16
	7.09~11.02	Vc = 590 sfm	fz = 0.008 ipt	2.95 × 0.39	31.61
	≥ 11.06	Vc = 400 sfm	fz = 0.008 ipt	2.95 × 0.39	21.05
Carbon Steel	< 7.09	Vc = 500 sfm	fz = 0.008 ipt	2.95 × 0.79	52.66
	7.09~11.02	Vc = 500 sfm	fz = 0.008 ipt	2.95 × 0.39	26.30
	≥ 11.06	Vc = 325 sfm	fz = 0.008 ipt	2.95 × 0.39	17.39

Overhang Length LPR (in)



◆ Recommended Cutting Conditions (Slotting)

MSR100R-1

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in^3/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	< 3.94	Vc = 590 sfm	fz = 0.008 ipt	0.55 × 3.94	58.95
	3.94~7.87	Vc = 500 sfm	fz = 0.008 ipt	0.28 × 3.94	24.59
	≥ 7.91	Vc = 400 sfm	fz = 0.008 ipt	0.16 × 3.94	11.23
Carbon Steel	< 3.94	Vc = 500 sfm	fz = 0.008 ipt	0.28 × 3.94	24.59
	3.94~7.87	Vc = 400 sfm	fz = 0.008 ipt	0.16 × 3.94	11.23
	≥ 7.91	Vc = 325 sfm	fz = 0.008 ipt	0.12 × 3.94	6.96

MSR100R-2

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in^3/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	< 5.12	Vc = 590 sfm	fz = 0.008 ipt	0.55 × 3.94	58.95
	5.12~9.06	Vc = 500 sfm	fz = 0.008 ipt	0.28 × 3.94	24.59
	≥ 9.09	Vc = 400 sfm	fz = 0.008 ipt	0.16 × 3.94	11.23
Carbon Steel	< 5.12	Vc = 500 sfm	fz = 0.008 ipt	0.28 × 3.94	24.59
	5.12~9.06	Vc = 400 sfm	fz = 0.008 ipt	0.16 × 3.94	11.23
	≥ 9.09	Vc = 325 sfm	fz = 0.008 ipt	0.12 × 3.94	6.96

MSR160R-1

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in^3/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	< 3.94	Vc = 600 sfm	fz = 0.008 ipt	0.39 × 6.30	56.63
	3.94~7.87	Vc = 500 sfm	fz = 0.008 ipt	0.20 × 6.30	28.32
	≥ 7.91	Vc = 400 sfm	fz = 0.008 ipt	0.16 × 6.30	14.83
Carbon Steel	< 3.94	Vc = 500 sfm	fz = 0.008 ipt	0.20 × 6.30	23.43
	3.94~7.87	Vc = 400 sfm	fz = 0.008 ipt	0.12 × 6.30	14.04
	≥ 7.91	Vc = 325 sfm	fz = 0.008 ipt	0.08 × 6.30	6.22

MSR160R-2

Workpiece Material	Overhang Length LPR (in)	Cutting Conditions		D.O.C. × ae (in)	Chip Removal Rate (in^3/min)
		Cutting Speed (Vc)	Feed Rate (fz)		
Cast Iron	< 5.12	Vc = 600 sfm	fz = 0.008 ipt	0.39 × 6.30	56.63
	5.12~9.06	Vc = 500 sfm	fz = 0.008 ipt	0.20 × 6.30	23.43
	≥ 9.09	Vc = 400 sfm	fz = 0.008 ipt	0.16 × 6.30	14.83
Carbon Steel	< 5.12	Vc = 500 sfm	fz = 0.008 ipt	0.20 × 6.30	23.43
	5.12~9.06	Vc = 400 sfm	fz = 0.008 ipt	0.12 × 6.30	11.11
	≥ 9.09	Vc = 325 sfm	fz = 0.008 ipt	0.08 × 6.30	6.22

*** Slotting is not recommended with 4 stage cutters**

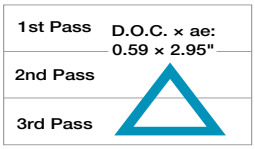
Q & A

Q-1 What cutting conditions are recommended in most cases for MSR?

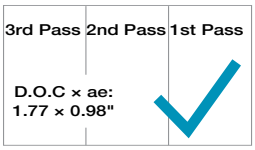
A-1 Vc= 500 sfm, fz = 0.008 ipt, larger cutting depth and smaller cutting width

In case of MSR100R-2

e.g.) Load Meter 120%



e.g.) Load Meter 90%



Q-2 What is the required equipment for MSR?

A-2 Maximum spindle revolution should be lower than 4000RPM. BT50 or larger.

* The reason it is not recommended for high RPM spindle machines is due to their lower torque value.
* Although MSR works with BT40 shank, maximum available fz is about 0.004ipt.

Q-3 What are the points to remember when using a lower horsepower machine?

A-3 Do not use large size cutters. Ø2.5" or Ø3.0" are recommended
Increase cutting speed and decrease feed rate.
Set up conditions to get the largest available torque by checking torque curve of the machine.
In conditions of Vc = 500 sfm, insufficient torque was amiable due to being in high gear.
In this case, use Vc which can exert enough torque, such as Vc = 400 sfm.
* Machine torque curve is a priority.

Q-4 How do I deal with an unstable workpiece?

A-4 Decrease feed rate during the initial cut.

* Vibration and workpiece movement are most likely to occur upon the cutters initial entry entry into the cut.

• Effective combinations for maintaining cycle time while reducing the feedrate.
Vc=500 sfm, fz=0.008 ipt
↓
Vc=650 sfm, fz=0.006 ipt

Q-5 What tool life can I expect?

A-5 Example:
Chip Weight: 1543lbs/Corner (Result by PR660)
Cutting Time: 90min. (Calculated Value)
Cutting Distance: 213.25ft (Calculated Value)
Metal Removal Rate? ➡ About 17.20lbs Chips Removed per Minute
Tool Life Time = 1543lbs (Chip Weight) **÷ 17.20lbs** (Chip Evacuation Amount per 1min) **= 90min**
Cutting Distance = 90min (Time by the End of Tool Life) **x 28.228ipm** (Table Feed Ratio per 1min) **= 213.25ft**
*** Cutting Vc = 490 sfm, D.O.C. x ae: 0.787" x 2.756", Vf = 28.228ipm.**
*** Tool: MSR100R-2 (6 Flutes)**

Q-6 How do I reduce chattering?

A-6 If chattering occurs, then the following conditions are recommended.
➡Reduce cutting speed and increase feed rate.

In case of Steel
· Vc=250 sfm
· fz=0.010 ipt

In case of Cast Iron
· Vc=250 sfm
· fz=0.014 ipt

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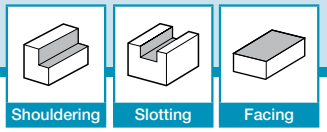


MTP90 End Mill

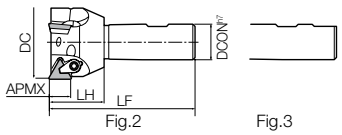


Fig.2 Fig.3

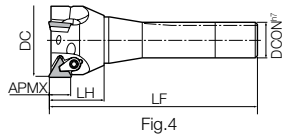
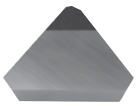


Fig.4

Toolholder Dimensions

Part Number	Stock	Unit	No. of Inserts	Dimensions					Drawing	Rake Angle (°)		Spare Parts						
				DC	DCON	LF	LH	APMX		A.R. (Max)	R.R.	Clamp Set	Clamp	Clamp Screw	Wrench	Shim	Shim Clamp Screw	Wrench
MTP 90-075-75W	●	inch	2	0.75	0.750	3.28	1.25	0.34	Fig.2	+3°	-3°	CPS-2S	-	-	FT-15	-	-	-
90-100-75W	●		3	1.00														
90-125-75W	●		2	1.25				0.53		+5°	0°	CPS-3	-	-	LW-3	KPT-32	SH3X6	LW-2
90-150-75W	●		3	1.50														
90-200-75W	●		3	2.00	0.750	3.53	1.50	0.53	Fig.2									
90-250-875W	●		3	2.50	0.875				Fig.3									
90-200-125W	●		3	2.00	1.250	3.90	1.69	0.71	Fig.3	+8°	0°	-	CP-8W	W8X18	LW-4	KPT-42	SH3X6	LW-2
90-250-125W	●		3	2.50														
90-300-125W	●		4	3.00		4.00	1.72											
MTP 90-200-R8	●		3	2.00	0.949	6.00	2.003	0.53	Fig.4	+5°		CPS-3	-	-	LW-3	KPT-32	SH3X6	LW-2

Applicable Inserts

Part Number	Applicable Inserts ➡ M14				Applicable PCD Inserts ➡ M30	
						
MTP90-075-75W MTP90-100-75W	-	-	-	TPG 22_ TPM 22_	-	TPG 22_
MTP90-125-75W MTP90-150-75W MTP90-200-75W MTP90-250-875W MTP90-200-R8	TPMR 32PDER-H		TPKN 32PDTR TPKN 32PDFR	TPG 32_ TPM 32_	-	-
MTP90...-125W	TPMR 43PDER-H	TPKR 43PDER-S	TPKN 43PDTR TPKN 43PDFR	-	-	-

Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade (Vc sfm)					
		Cermet	MEGACOAT		PVD Coated Carbide	Carbide	PCD
		TN100M	**PR1225**	**PR1210**	**PR830**	**KW10**	**KPD001 (KPD010)**
Carbon Steel	~0.010	★ 390~660	★ 390~820	-	☆ 390~660	-	-
Alloy Steel	~0.010	★ 330~590	★ 330~720	-	☆ 330~590	-	-
Mold Steel	~0.008	★ 330~590	★ 260~590	-	☆ 260~490	-	-
Stainless Steel	~0.008	☆ 390~660	★ 390~720	-	☆ 390~660	-	-
Cast Iron	~0.010	-	-	★ 330~720	-	☆ 260~490	-
Non-ferrous Metals	~0.008	-	-	-	-	★ 330~980	★ 980~2620

★ :1st Recommendation
☆ : 2nd Recommendation

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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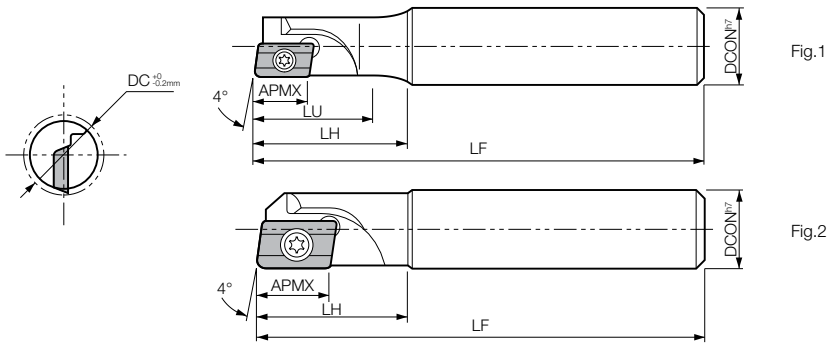
Shouldering | Slotting | Facing

DMC End Mill



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (mm)						Rake Angle (°)		Drawing	Spare Parts	
			DC	DCON	LF	LH	LU	APMX	A.R.	R.R.		Clamp Screw	Wrench
DMC 810-S16	●	1	10	16	90	27	16	8.5	+3°	-11°	Fig.1	SB-2545TR	FT-8
811-S16	●		11							-10°			
812-S16	●		12			31	20		+5°				
813-S16	△		13			28.5				-9°			
814-S16	●		14		100	33.5	25		+6°	-8°			
815-S16	●		15										
816-S16	●	2	16			31				-4°			
820-S20	●	3	20	20	120	36	30		+8°	-6°			
825-S25	△		25	25		46	40			-5°			
DMC 810	●	1	10	10	70	20	-	8.5	+3°	-6°	Fig.2	SB-2545TR	FT-8
812	●		12	12	80	25				-5°			
DMC 016	△	1	16	16	90	25	-	11.0	+4°	-2°	Fig.2	SB-3060TR	FT-10
020	●	2	20	20	110	30			+5°	0°			

Applicable Inserts

Part Number	Applicable Inserts ➡ M24	
DMC8○○(-S○○)	NDCT 831TR NDCT 831FR	NDMM 831ER-SP
DMC0○○	NDCT 032TR NDCT 032FR	NDMM 031ER-SP NDMM 032ER-SP

DMC Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade (Vc sfm)		Max. D.O.C. (in)		
		Cermet	Carbide			
		TN100M	**KW10**	Cutting Dia. (DC)	Slotting (D.O.C.)	Shouldering (D.O.C. x ae)
Carbon Steel	~0.008	★ 390~660	-	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Alloy Steel	~0.008	★ 330~590	-	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Mold Steel	~0.006	★ 330~590	-	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Stainless Steel	~0.006	☆ 390~660	-	~Ø12mm	0.059	0.157 x 0.079
				Ø14mm~	0.079	0.236 x 0.079
Cast Iron	~0.008	-	★ 260~490	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Non-ferrous Metals	~0.008	-	★ 330~980	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118

Use DMC8○○ with Max. D.O.C. = 0.236" for shouldering.

★ :1st Recommendation ☆ : 2nd Recommendation

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DMC-SX End Mill

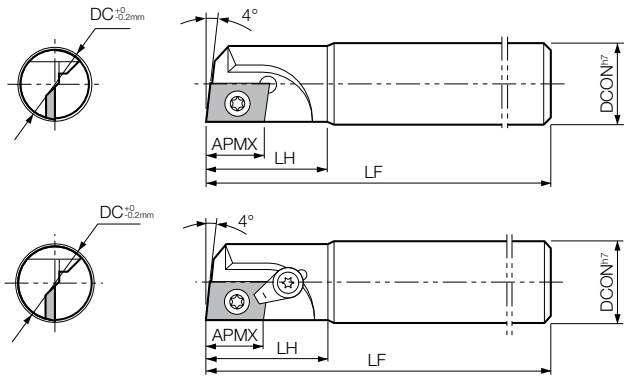


Fig.1

Fig.2

Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Drawing	Spare Parts		
			DC	DCON	LF	LH	APMX	A.R.	R.R.		Clamp Set	Clamp Screw	Wrench
DMC 316SXT	●	1	16	16	90	30	14.0	+3°	-3°	Fig.1	-	SB-4060TR	FT-15
320SX	●		20	20	110								
325SX	●	2	25	25	120	40			-2°	Fig.2	CPS-2TR	SB-4065TR	
332SX	●		32	32	130				0°				
340SX	●		40	32	150								
DMC 320SX-200	●	1	20	20	200	50	14.0	+3°	-3°	Fig.1	-	SB-4065TR	FT-15
325SX-220	●	2	25	25	220	60			-2°				
332SX-250	●		32	32	250	80			0°				

Applicable Inserts

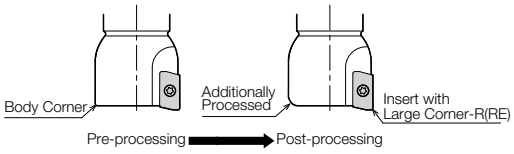
Part Number	Applicable Inserts ➡ M24		
DMC 316SXT 320SX 325SX 332SX 340SX DMC 320SX-200 325SX-220 332SX-250	NDCW 3205TR NDCW 321TR NDCW 322TR NDCW 325TR NDCW 3275TR NDCW 3210TR (NDCW 322TRX) (NDCW 322FRX)	NDCT 322TR NDCT 322FR (NDCT 322TRX)	NDMM 321ER-SP NDMM 322ER-SP

Inserts in parenthese ( ) are applicable, however toolholder will be further out from insert bottom.
(See lower section of ➡ M141)

When installing inserts with corner-R(RE) over 2.0mm, grind off the corner part of the tool's insert pocket to avoid contact with the workpiece.
Additional modifications for the body will be necessary. Ref. to the table below for the recommended modifications.
(Additional grind off is not necessary when corner-R(RE) is 0.8mm or less.)

Insert Corner-R(RE)	Additional Processing Dimension to Body Corner (mm)
2.0	R1.0
3.0	R1.6
4.0	R2.0

* Round- chamfer additional processing is recommended.
When applying chamfer, do not cut away too much.



DMC-SX Recommended Cutting Conditions

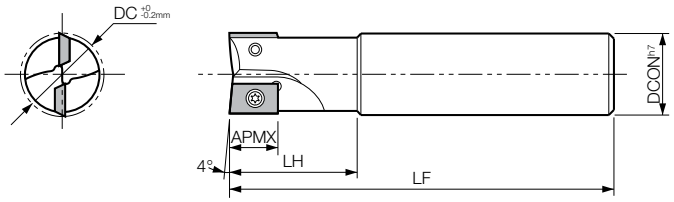
Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade (Vc sfm)		Max. D.O.C. (in)		
		Cermet	Carbide			
		TN100M	KW10	Cutting Dia. (DC)	Slotting (D.O.C.)	Shouldering (D.O.C. x ae)
Carbon Steel	~0.008	★ 390~660	-	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Alloy Steel	~0.008	★ 330~590	-	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Mold Steel	~0.006	★ 330~590	-	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Stainless Steel	~0.006	☆ 390~660	-	~Ø12mm	0.059	0.157 x 0.079
				Ø14mm~	0.079	0.236 x 0.079
Cast Iron	~0.008	-	★ 260~490	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118
Non-ferrous Metals	~0.008	-	★ 330~980	~Ø12mm	0.079	0.236 x 0.079
				Ø14mm~	0.118	0.354 x 0.118

Use DMC8○○ with Max. D.O.C. = 0.236" for shouldering.

★ :1st Recommendation ☆ : 2nd Recommendation

Shouldering | Slotting | Facing

DMC-H End Mill (High Rake)



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (mm)					Rake Angle (°)		Spare Parts	
			DC	DCON	LF	LH	APMX	A.R.	R.R.	Clamp Screw	Wrench
DMC 316H	●	1	16	16	90	30	14.0	+5°	-3.5°	SB-4060TR	FT-15
320H	●		20	20	110			+6°	-2°		
325H	●	2	25	25	120	40		+8°		SB-4065TR	
332H	●		32	32	130				0°		
340H	●		40		150						

Applicable Inserts

Part Number	Applicable Inserts M24			Applicable PCD Inserts M30
DMC 316H 320H 325H 332H 340H	NDMM 321ER-SP NDMM 322ER-SP	NDCT 322TRX	NDCW 322TRX NDCW 322FRX	NDCW 3205FRX-NE NDCW 3205FRX (PCD)

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

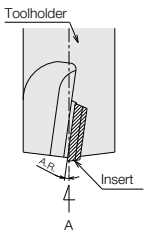
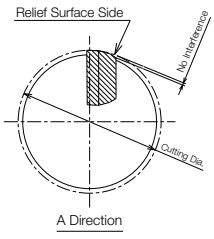
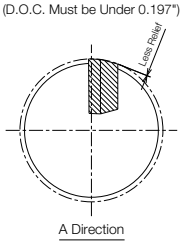
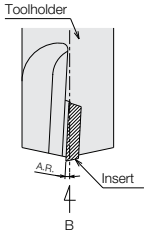
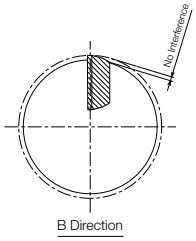
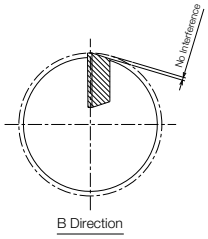
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

◆ DMC-H Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grade (Vc sfm)				Max. D.O.C. (in)		
		Cermet	Carbide	PCD				
		TN100M	**KW10**	**KPD230 (KPD001)**	**KPD010**	Cutting Dia. (DC)	Slotting (D.O.C.)	Shouldering (D.O.C. x ae)
Carbon Steel	~0.008	★ 390~660	-	-	-	~Ø20mm	0.157	0.315 x 0.157
						Ø25mm~	0.315	0.551 x 0.236
Alloy Steel	~0.008	★ 330~590	-	-	-	~Ø20mm	0.157	0.315 x 0.157
						Ø25mm~	0.315	0.512 x 0.236
Mold Steel	~0.006	★ 330~590	-	-	-	~Ø20mm	0.118	0.197 x 0.079
						Ø25mm~	0.236	0.394 x 0.118
Stainless Steel	~0.006	☆ 390~660	-	-	-	~Ø20mm	0.118	0.236 x 0.079
						Ø25mm~	0.236	0.512 x 0.118
Cast Iron	~0.008	-	★ 260~490	-	-	~Ø20mm	0.157	0.315 x 0.157
						Ø25mm~	0.236	0.551 x 0.236
Non-ferrous Metals	~0.008	-	★ 330~980	★ 980~1640	☆ 980~1640	~Ø20mm	0.157	0.315 x 0.157
						Ø25mm~	0.236	0.551 x 0.236

★ :1st Recommendation ☆ : 2nd Recommendation

• Above inserts are also applicable to DMC○○○SX type, but the conventional NDCW1503○○TR type insert is not applicable for this end mill.

Insert Part Number / Toolholder Part Number	NDC...TRX NDCW...(T/F)RX	NDCW...TR NDCT...(T/F)R	Insert Part Number / Toolholder Part Number	NDC...TRX NDCW...(T/F)RX	NDCW...TR NDCT...(T/F)R
DMC-H	No Interference of Relieve Surface	Less Relief	DMC-SX	No Interference of Relieve Surface	No Interference of Relieve Surface
					

MFAH

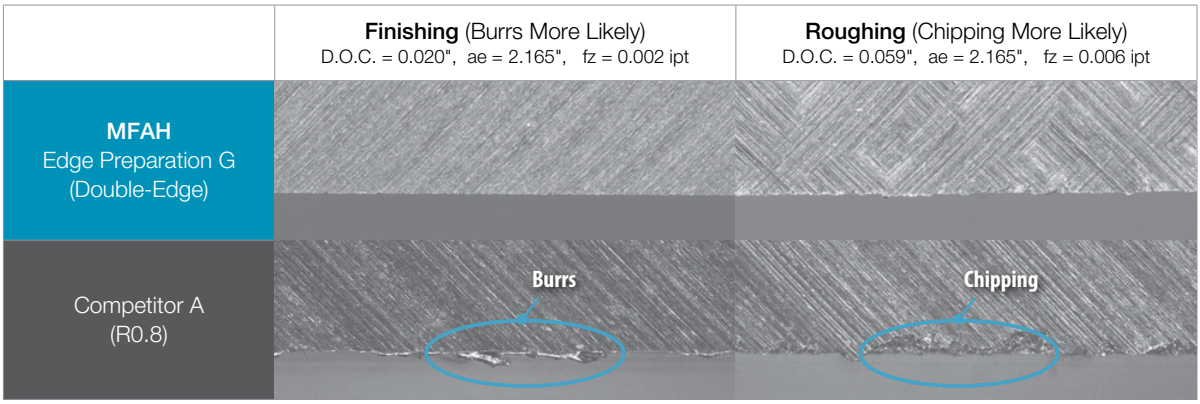
Milling Cutter for Finishing Aluminum

Low Cutting Forces Minimize Burrs for High Quality Machining Results
Easily Adjustable Blade Runout with 2 Body Types and 3 Inserts for a Variety of Milling Applications

1 Minimizes Burrs for High Quality Machining Results

Large True Rake Angle and Double-edge Insert Designs

Burr and Chipping Comparison (Internal Evaluation)

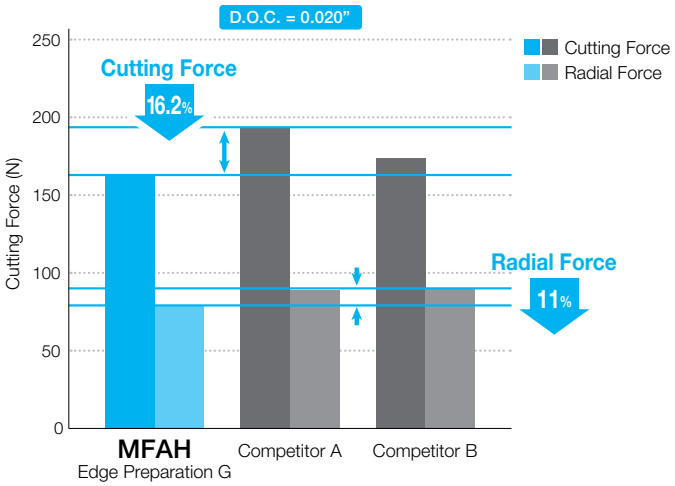


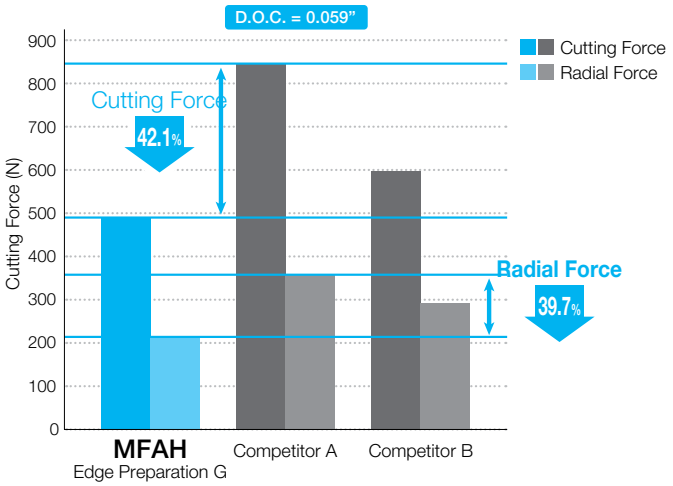
Cutting Conditions: Vc = 8,200 sfm, Wet, Cutting Dia. Ø80mm
MFAH080RS-10T-SF, ENET0905PAER-G KPD001
Workpiece: 383.0 Aluminum

2 Low Cutting Force Design

Low Cutting Force, Reduced Chattering and High Efficiency Machining

Cutting Force Comparison (Internal Evaluation)





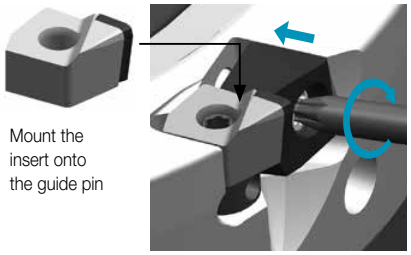
Cutting Conditions: Vc = 8,200 sfm, ae = 2.165", fz = 0.004 ipt Wet, Cutting Dia. Ø80mm
MFAH080RS-10T-SF ENET0905PAER-G KPD001 Workpiece: 383.0 Aluminum

3 Adjustable Blade Runout

Easily Install Inserts and Adjust Blade Runout

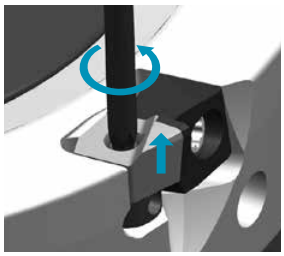
Burr and Chipping Comparison (Internal Evaluation)

Easy Insert Installment
Guide Pin Allows for Easier Positioning



Mount the insert onto the guide pin

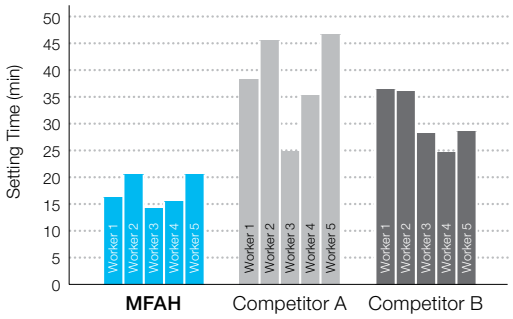
Easily Adjust Blade Runout
Adjustable from Both the Front and Outer Periphery



Unique Design for Easily Adjusting from the Front

Blade Runout Setting Time Comparison
(Internal Evaluation)

*Operation time of 5 workers

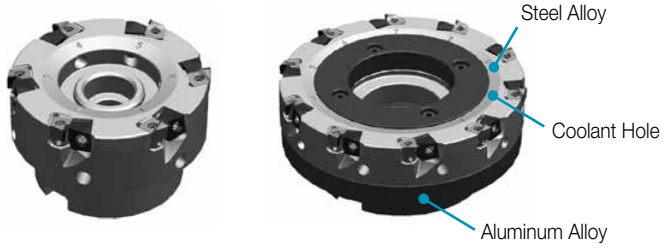


The MFAH can drastically shorten insert setting time

4 Large Tooling Lineup

Steel Body and Light-weight Hybrid Body with Internal Coolant Available
3 Different Edge Designs Offer a Variety of Machining Applications

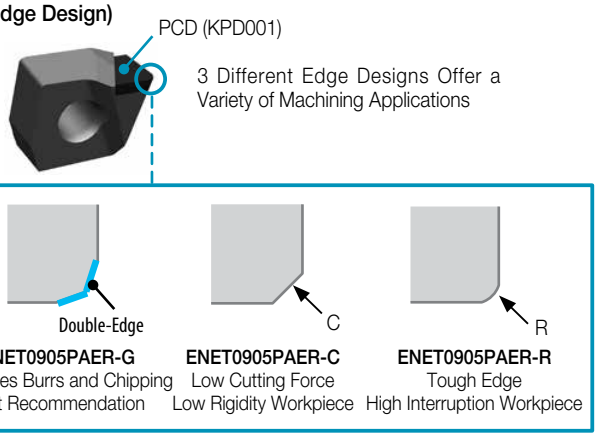
Cutter Body



Steel Body
Ø50mm – Ø125mm

Light-Weight Hybrid Body
Ø80mm – Ø315mm

Insert (Edge Design)



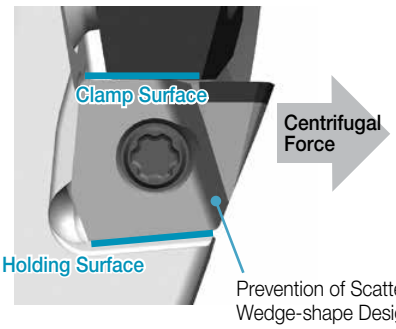
ENET0905PAER-G
Minimizes Burrs and Chipping
First Recommendation

ENET0905PAER-C
Low Cutting Force
Low Rigidity Workpiece

ENET0905PAER-R
Tough Edge
High Interruption Workpiece

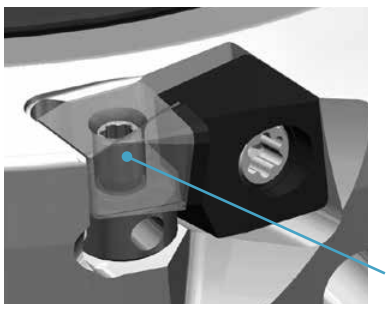
5 Safety Enhancements During High-Speed Revolution

1 Prevention of Scattering by Wedge-shape Design
New wedge-shape feature holds insert firmly in place and reduces chattering



Prevention of Scattering by Wedge-shape Design

2 Prevention of Scattering with Guide Pin
Guide pins improve safety during high-speed rotation



Prevention of Scattering with Guide Pin

MFAH Face Mill (Light-Weight Hybrid Body)

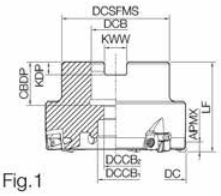


Fig.1

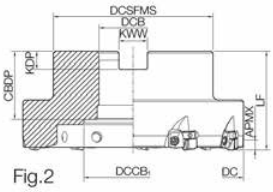


Fig.2

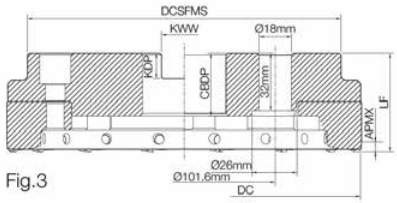


Fig.3

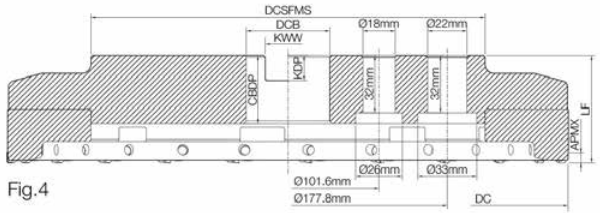


Fig.4

Toolholder Dimensions

	Part Number		Stock	No. of Inserts	Dimensions (mm)										Coolant Hole	Drawing	Max. RPM	Weight (kg)	Coolant Through Arbor Bolt (Included if Listed)	Coolant Cover (Included if Listed)	Coolant Cover (Optional / Sold Separately)
					DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX							
Inch Bore Dia.	MFAH	080RA-6T-SF	●	6	80	62	1.000"	20	13	50	1.063"	0.236"	0.375"	4.6	Yes	Fig.1	14,600	0.83	HH12X35HC	-	-
		080RA-10T-SF	●	10														0.78			
		100RA-8T-254-SF	●	8	100						0.945"						13,000	1.21			
		100RA-12T-254-SF	●	12														1.16			
		100RA-8T-SF	●	8		85	1.250"	42	-		1.339"	0.315"	0.500"			Fig.2		1.33	HF16X44HC		
		100RA-12T-SF	●	12														1.29			
		125RA-10T-254-SF	●	10	125	60	1.000"	20	13		0.945"	0.236"	0.375"			Fig.1	11,400	1.8	HH12X35H	CC-125-MFAH	
		125RA-16T-254-SF	●	16														1.74			
		125RA-10T-SF	●	10		89	1.500"	55			1.496"	0.394"	0.625"			Fig.2		2	HF20X53HA		
		125RA-16T-SF	●	16														1.95			
		160RA-12T-SF	●	12	160	130	2.000"	70		55		0.433"	0.750"				8,000	3.4	HF24X60HA	CC-160-MFAH	
		160RA-20T-SF	●	20														3.3			
		200RA-16T-SF	□	16	200	175	1.875"	126	-		1.378"	0.551"	1.000"			Fig.3	5,600	4.9	-	-	CC-200-MFAH
		200RA-24T-SF	□	24														4.8			
		250RA-20T-SF	□	20	250	140		165									4,500	7			CC-250-MFAH
		250RA-32T-SF	□	32														6.9			
		315RA-24T-SF	□	24	315	220		220		60	1.496"					Fig.4	3,500	11.7			CC-315-MFAH
		315RA-40T-SF	□	40														11.5			
Metric Bore Dia.	MFAH	080RA-6T-M-SF	●	6	80	62	27	20	13	50	27	7	12.4	4.6	Yes	Fig.1	14,600	0.82	HH12X35HC	-	-
		080RA-10T-M-SF	●	10														0.78			
		100RA-8T-M27-SF	●	8	100						24						13,000	1.2			
		100RA-12T-M27-SF	●	12														1.15			
		100RA-8T-M-SF	●	8		85	32	42	-		30	8	14.4			Fig.2		1.32	HF16X48HC		
		100RA-12T-M-SF	●	12														1.27			
		125RA-10T-M27-SF	●	10	125	60	27	20	13		24	7	12.4			Fig.1	11,400	1.8	HH12X35H	CC-125-MFAH	
		125RA-16T-M27-SF	●	16														1.73			
		125RA-10T-M-SF	●	10		94	40	55		55	33	9	16.4			Fig.2		2.1	HF20X53HA		
		125RA-16T-M-SF	●	16														2.1			
		160RA-12T-M-SF	●	12	160	125		57									8,000	3.5	HF24X60HA	CC-160-MFAH	
		160RA-20T-M-SF	●	20														3.4			
		200RA-16T-M-SF	□	16	200	175	60	126	-		35	14	25.7			Fig.3	5,600	4.7	-	-	CC-200-MFAH
		200RA-24T-M-SF	□	24														4.6			
		250RA-20T-M-SF	□	20	250	140		165									4,500	6.9			CC-250-MFAH
		250RA-32T-M-SF	□	32														6.8			
		315RA-24T-M-SF	□	24	315	220		220		60	38					Fig.4	3,500	11.7			CC-315-MFAH
		315RA-40T-M-SF	□	40														11.5			

* Confirm the total weight of the cutter and the arbor is within the machine's acceptable range

Recommended Cutting Conditions ➔ **M146**
Applicable Inserts ➔ **M146**

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(Technical Support) **800.823.7284 - Option 2**
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Contact your local Kyocera sales engineer to upgrade old products to new technology

MFAH Face Mill (Steel Body)

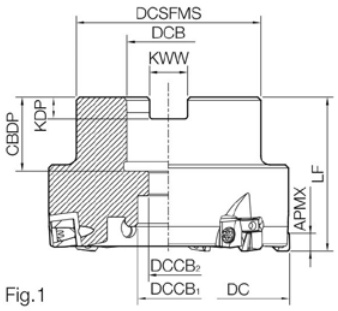


Fig.1

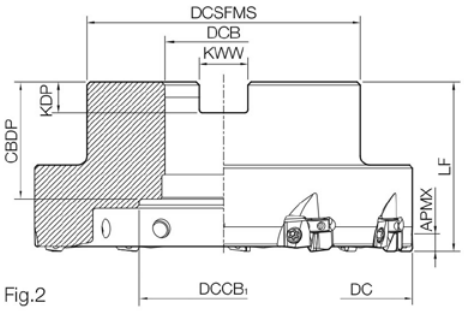


Fig.2

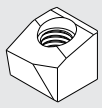
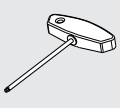
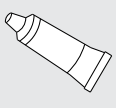
Toolholder Dimensions

	Part Number	Stock	No. of Inserts	Dimensions (mm) DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	Coolant Hole	Drawing	Max. RPM	Weight (kg)	Arbor Bolt (Included)
Inch Bore Dia.	MFAH 080RS-6T-SF	●	6	80	50	1.000"	20	13	50	1.063"	0.236"	0.375"	4.6	No	Fig.1	14,600	1	HH12X35
	080RS-10T-SF	●	10														0.98	
	100RS-8T-SF	●	8	100	70	1.250"	45	-		1.339"	0.315"	0.500"			Fig.2	13,000	2	-
	100RS-12T-SF	●	12														1.55	
	125RS-10T-SF	●	10	125	89	1.500"	55		55	1.496"	0.394"	0.625"				11,400	2.63	
	125RS-16T-SF	●	16														2.63	
Metric Bore Dia.	MFAH 050RS-4T-M-SF	●	4	50	48	16	13.6	9	40	19	5.6	8.4	4.6	No	Fig.1	19,200	0	HH8X25
	050RS-5T-M-SF	●	5														0.43	
	063RS-5T-M-SF	●	5	63	61	22	23	11		21	6.3	10.4				16,800	0.69	HH10X30
	063RS-6T-M-SF	●	6														0.68	
	080RS-6T-M-SF	●	6	80	60	27	20	13	50	24	7	12.4				14,600	1	HH12X35
	080RS-10T-M-SF	●	10														1.11	
	100RS-8T-M-SF	●	8	100	70	32	45	-		30	8	14.4			Fig.2	13,000	2	-
	100RS-12T-M-SF	●	12														1.51	
	125RS-10T-M-SF	●	10	125	89	40	55		55	33	9	16.4				11,400	3	
	125RS-16T-M-SF	●	16														2.5	

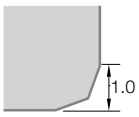
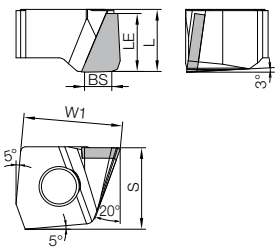
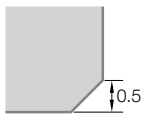
* Confirm the total weight of the cutter and the arbor is within the machine's acceptable range

Recommended Cutting Conditions ➔ **M146**

Spare Parts and Applicable Inserts (Metric Size)

Part Number		Spare Parts: Clamp	Clamp Screw	Wrench	Adjustment Screw	Wrench	Balance Screw	Anti-seize Compound	Applicable Inserts ➔ M146
									
Light-Weight Hybrid Body	MFAH080RA-... ~ MFAH315RA-...	C08R	W5X13L	TTW-15	AJ-4170	DTPM-8	HS6X4	P-37	ENET0905...
Steel Body	MFAH050RS-... ~ MFAH125RS-...								

Applicable Inserts

Insert			Part Number	Dimensions (mm)					PCD
				W1	S	L	BS	LE	KPD001
General Purpose (2-edge)	 1.0		**ENET 0905PAER-G**	9.61	7.9	6.02	2.6	5.6	●
Low Cutting Force	 0.5		**ENET 0905PAER-C**	9.61	7.9	6.02	3.0	5.6	●
Tough Edge	R0.4		**ENET 0905PAER-R**	9.61	7.9	6.02	3.1	5.6	●

Recommended Cutting Conditions

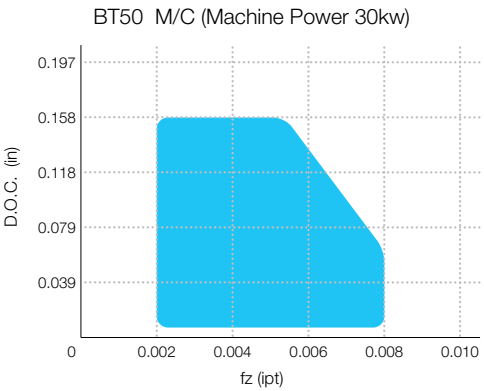
Workpiece Material	Property	Cutting Speed Vc (sfm)	Feed Rate fz (ipt)	Recommended Grade
Aluminum Alloy	Si Ratio ≤ 12.5%	3,280~8,200~9,840	0.002~0.004~0.008	**KPD001**
	Si Ratio ≥ 12.5%	1,310~1,970~2,630	0.002~0.004~0.008	

Recommended cutting conditions are reference values

Please adjust cutting speed and feed rate according to actual machining conditions taking into account machine and workpiece rigidity

Do not use the cutter at speeds exceeding the maximum cutting speed limit

Cutting Performance



Cutting Conditions: Vc = 8,200 sfm, ae = 2.165", Wet, Cutting Dia. Ø80mm
MFAH080RS-10T-SF, ENET0905PAER-G KPD001, Workpiece: 383.0 Aluminum

Max. Revolution and Max. Cutting Speed for Each Cutting Diameter

Cutting Diameter DC (mm)	Cutter RPM	Max. Cutting Speed Vc max (sfm)
Ø50	19,200	9,990
Ø63	16,800	10,910
Ø80	14,600	12,040
Ø100	13,000	13,400
Ø125	11,400	14,690
Ø160	8,000	13,190
Ø200	5,600	11,550
Ø250	4,500	11,590
Ø315	3,500	11,370

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Cautions

While in Use

⚠ Caution

Only use within recommended cutting conditions

Do not run the cutter at revolutions exceeding the printed maximum revolution limit of the cutter body

- Inserts or cutter body may be damaged due to centrifugal force and cutting load

Please do not use under the following conditions:

- When cutter is not fully loaded with inserts
- If the body and/or clamp is damaged
- If a clamp or clamp screw is removed
- If inserts that have different regrind amounts are mounted

Please wear protective equipment such as protective glove when changing inserts or adjusting edge fluctuation

- Injury can occur when touching the cutting edge

Dynamic Balance

Balance adjustment on the cutter is completed before shipping
Balance adjustment has been made with special high precision inserts to be ISO balance grade (ISO1940/1) G2.5

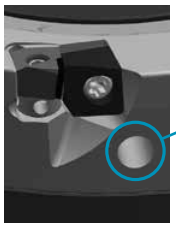
* See M146 for Recommended Cutting Conditions at Max. Revolution

Do not adjust the balance screw

⇒ This could lead to improper dynamic balance

Do not completely remove clamp and clamp screw from cutter

⇒ This requires additional balance adjustment

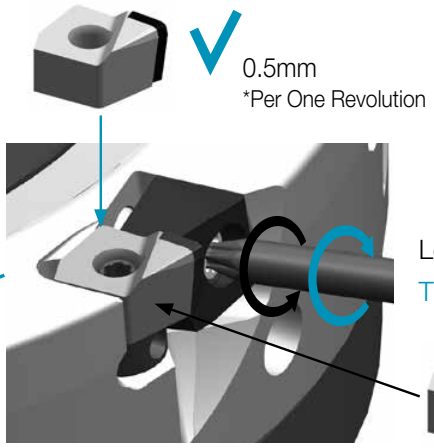


Balance Adjustment Screw is Mounted at the Necessary Point

* Do Not Adjust

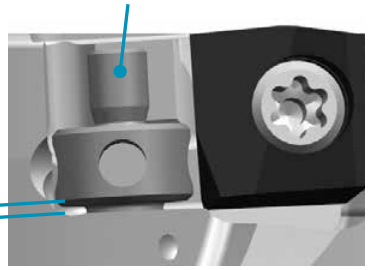
How to Mount Inserts

1. Adjust the clearance between adjustment screw for cutting edge and the surface of insert to be 0.5mm
2. Mount insert on guide pin
   (Be sure to install from the head)
   (Mounting from outer periphery is not recommended)
3. Tighten the clamp screw while lightly pressing the insert against the holding surface
   (Recommended Torque 4.2 Nm)
4. Make sure that there is no clearance between the insert and the mounting surface



0.5mm
*Per One Revolution

Guide Pin

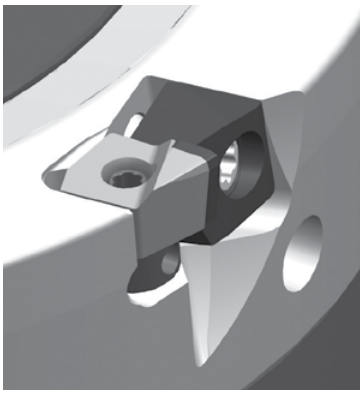


Loosening (Counter-Clockwise)
Tightening (Clockwise)

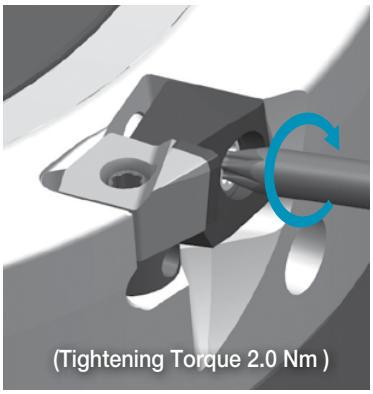
* Caution
Mounting from outer periphery is not recommended

How to Adjust Blade Runout

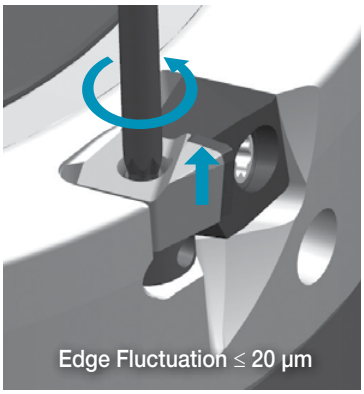
1 Install an Insert



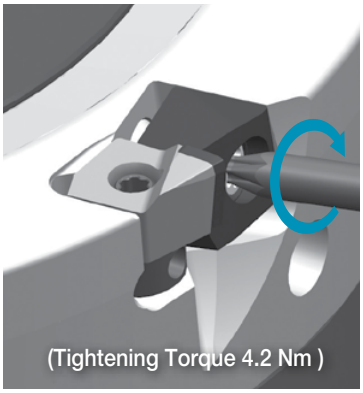
2 Partially Tighten



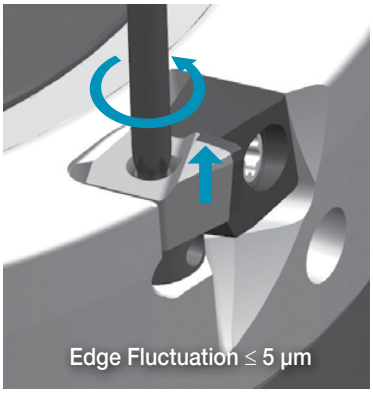
3 Adjustable Blade Runout

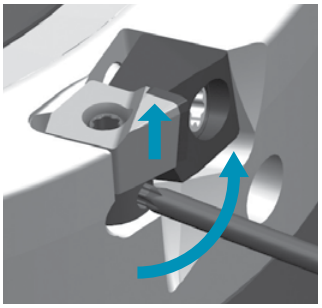


4 Fully Tighten



5 Adjustable Blade Runout





Adjustment from outer periphery is possible

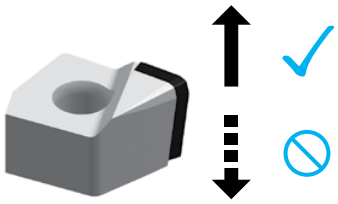
1 Install inserts into all pockets

2 Partially tighten the clamp screw
(Recommended Torque 2.0 Nm)

3 Turn the screw with the wrench to adjust and make sure that all screw heights are within 20 µm of each other (Recommended)

4 Fully tighten the clamp screw with tightening torque of 4.2 Nm

5 Slightly adjust position of cutting edge
(Recommended Position Difference: ≤ 5 µm)
*All inserts should be fine-tuned



Adjustment must conclude with insert moving upward as shown above

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Replacing the Insert Clamp

Correct Mounting Procedure for Clamp and Clamp Screw

1 Assembly

Screw the clamp screw into the clamp
(About one revolution)

2 Installation

Attach to holder

3 Tightening

Tighten with recommended torque
(Installation complete

Mounting Position of Clamp Screw

Correct Positioning
(There is no protruding head of the screw)

Wrong Positioning
(The screw head is protruding outside the clamp)

After tightening the clamp screw with the recommended torque, please check the protrusion of the clamp screw.
If it is protruding outside the clamp, please reinstall

When clamp screws need to be replaced and completely removed, a balance adjustment is necessary after installation

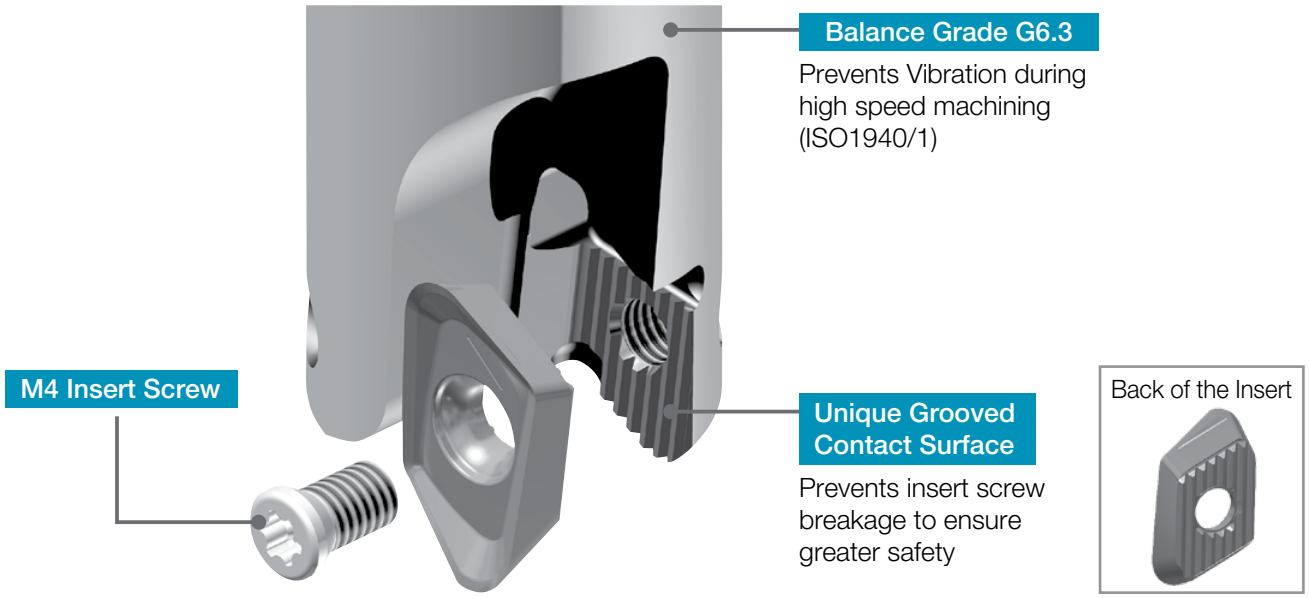
MEAS

High Efficiency Milling Cutters for Aluminum Machining

Excellent Scatter Prevention to Ensure Stable, High Speed Aluminum Machining
Simultaneous 3-axis with Large Ramping Angle for a Wide Range of Machining Applications

1 Reliable High Efficiency Machining

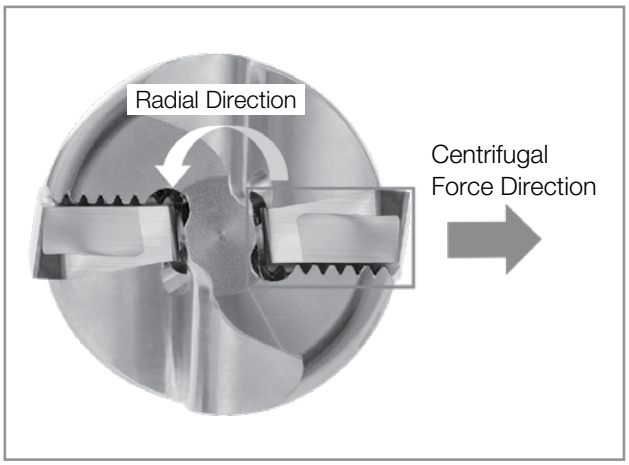
Grooved Connection Between the Insert and Holder for High Speed Aluminum Machining (Ø1.250" / Ø32mm: Recommended Max. Cutting Speed Vc = 9,842 sfm)



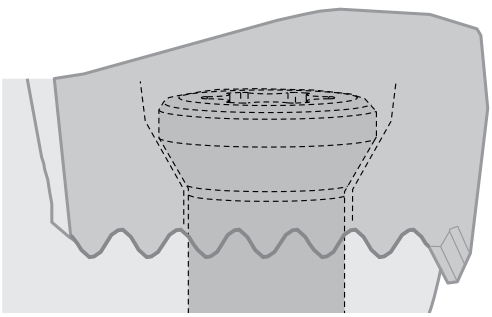
Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

Grooved Insert Pocket

Centrifugal force is applied across the grooved surface to reduce pressure on the insert screw and to prevent insert screw breakage and safely secure the insert during high-speed revolutions



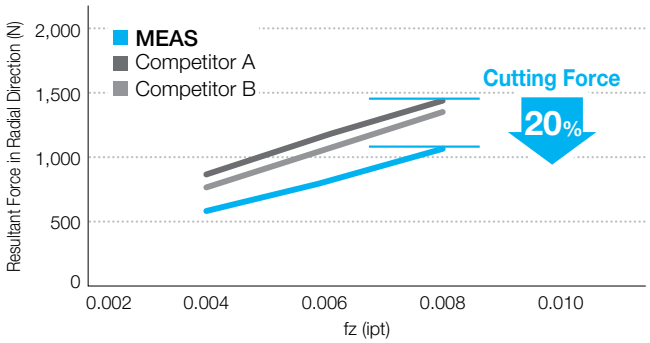
Grooved Contact Surface



2 Low Cutting Force with Sharp Cutting Edge

True Rake Angle Max. 20°
Low Cutting Force and Excellent Chattering Resistance

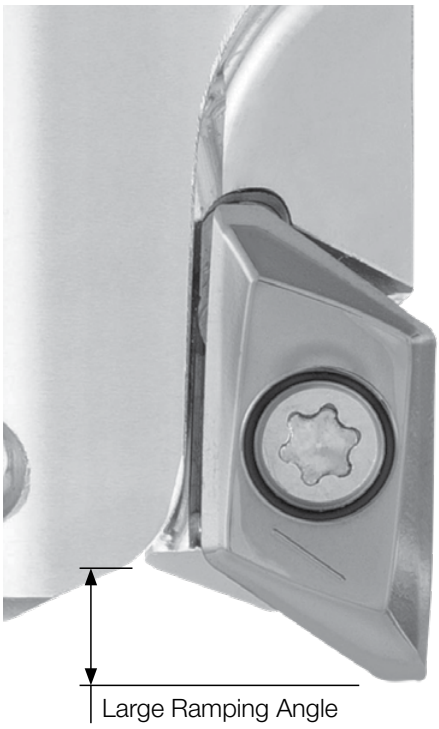
Cutting Force Comparison (Internal Evaluation)

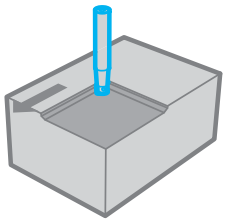


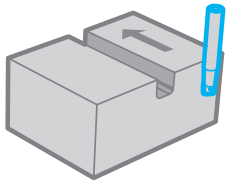
Cutting Conditions: Vc = 1280 sfm, D.O.C. × ae = 0.315" × 0.197", Dry
Cutter Diameter: Ø1.000" (2 Inserts) Workpiece: 7075

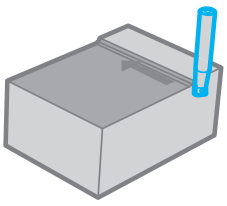
3 Machining for a Wide Variety of Applications

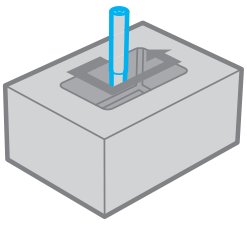
Max. Ramping Angle 20° (Ø1.000" / Ø25mm)
The MEAS can be used for shouldering, slotting, ramping, and helical milling applications

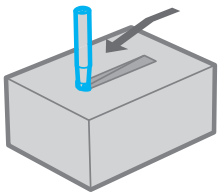


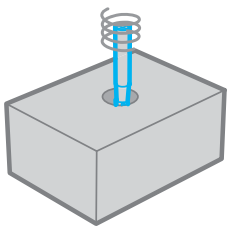

Face Milling & Shouldering

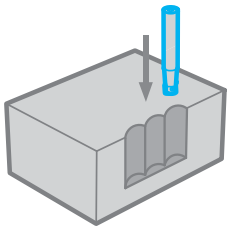

Slotting


Contouring


Pocketing


Ramping


Helical Milling


Plunging

MEAS End Mill

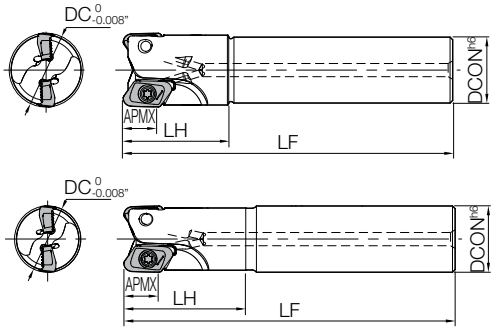


Fig. 1

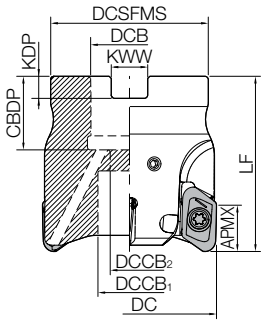
Fig. 2

Toolholder Dimensions

Part Number			Stock	Unit	No. of Inserts	Dimensions					Rake Angle		Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Spare Parts: Anti-seize Compound	Weight (kg)	Max RPM
						DC	DCON	LF	LH	APMX	A.R. (Max.)	R.R.							
Cylindrical Shank	Standard	MEAS 1000-S1000-13-2T	●	inch	2	1.000	1.000	5.000	2.000	0.472	+10°	14°	Yes	Fig.2	SB-4075TRP	DTPM-15 Recommended Torque for Insert Screw 3.5 Nm	P-37	0.4	59,000
		1250-S1250-13-2T	●		2	1.250	1.250	6.000	2.750	0.472	+10°	13°		Fig.2	SB-4090TRP			0.8	49,000
		1500-S1250-13-3T	●		3	1.500	1.250	6.000	2.000	0.472	+10°	12°		Fig.1				0.9	42,000
	Long	MEAS 1000S1000132T675	●		2	1.000	1.000	6.750	3.550	0.472	+10°	14°		Fig.2	SB-4075TRP			0.6	49,000
		1250S1250132T800	●		2	1.250	1.250	8.000	4.800	0.472	+10°	13°		Fig.2	SB-4090TRP			1.1	39,000
	Standard	MEAS 25-S25-13-2T	●	mm	2	25	25	125	49	12	+10°	-14°	Yes	Fig.2	SB-4075TRP	DTPM-15 Recommended Torque for Insert Screw 3.5 Nm	P-37	0.4	59,000
		28-S25-13-2T	●		2	28	25	125	40	12	+10°	-13°		Fig.1	SB-4090TRP			0.4	54,000
		32-S32-13-2T	●		2	32	32	150	69	12	+10°	-13°		Fig.2				0.8	49,000
		35-S32-13-2T	●		2	35	32	150	50	12	+10°	-13°		Fig.1				0.9	46,000
		40-S32-13-3T	●		3	40	32	150	50	12	+10°	-12°		Fig.1				0.9	42,000
	Long	MEAS 25-S25-13-2T-170	●		2	25	25	170	89	12	+10°	-14°		Fig.2	SB-4075TRP			0.5	49,000
		32-S32-13-2T-200	●		2	32	32	200	119	12	+10°	-13°		Fig.2	SB-4090TRP			1.1	39,000

When using inserts with a corner-R (RE) of 1/8" (3.2mm). or larger, additional modifications (R0.138" (3.5mm) or larger) on the corner of cutter body is necessary
(If corner-radius is 0.118" (3.0mm) or smaller, additional modifications are not needed)
Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is mounted.

MEAS Face Mill



Toolholder Dimensions

Part Number	Stock	Unit	No. of Inserts	Dimensions										Rake Angle		Coolant Hole	Spare Parts: Clamp Screw	Spare Parts: Arbor Bolt	Spare Parts: Wrench	Spare Parts: Anti-seize Compound	Weight (kg)	Max RPM
				DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	A.R. (Max.)	R.R.							
MEAS 2000R-13-4T	●	inch	4	2.000	1.750	0.750	0.669	0.433	1.969	0.750	0.187	0.313	0.472	+10°	-10°	Yes	SB-4090TRP	HH3/8-1.25	DTPM-15 Recommended Torque for Insert Screw 3.5 Nm	P-37	0.4	36,000
MEAS 050R-13-4T-M	●	mm	4	50	45	22	18	11	50	21	6.3	10.4	12	+10°	-11°	Yes	SB-4090TRP	HH10X30H			0.4	36,000

When using inserts with a corner-R (RE) of 1/8" (3.2mm). or larger, additional modifications (R0.138" (3.5mm) or larger) on the corner of cutter body is necessary
(If corner-radius is 0.118" (3.0mm) or smaller, additional modifications are not needed)
Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is mounted.

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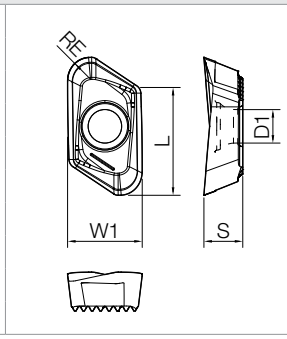
Applicable Inserts

Insert		Part Number	Dimensions (in)					DLC Coating
			W1	S	D1	L	RE	PDL025
		KCGT 130504FR-AL	0.390	0.201	0.173	0.555	1/64	●
		130508FR-AL				0.547	1/32	●
		130512FR-AL				0.543	3/64	●
		130516FR-AL				0.524	1/16	●
		130520FR-AL					5/64	●
		130524FR-AL					3/32	●
		130530FR-AL					0.118	●
		130532FR-AL				0.504	1/8	●
		130540FR-AL					0.157	●
		130550FR-AL					0.197	●

Recommended Cutting Conditions

Workpiece	Property	Cutting Speed Vc (sfm)	Feed fz (ipt)
Aluminum Alloy	Si Ratio ≤ 12.5%	660 ~ 3,280 ~ 9,840	0.002" ~ 0.006" ~ 0.010"
	Si Ratio ≥ 12.5%	660 ~ 980 ~ 1,310	0.002" ~ 0.004" ~ 0.008"

- Recommended cutting conditions are reference values. Please adjust cutting speed and feed rate according to actual machining conditions taking into account machine and workpiece rigidity
- Do not exceed the maximum cutting speed limit (see page 6)
- Regularly changing the insert screw is recommended
  Use appropriate safety covers to protect from tool breakage and chip scattering
- When using at a higher revolution (10,000 RPM or over), refer to the table below to adjust the balance of the MEAS and arbor

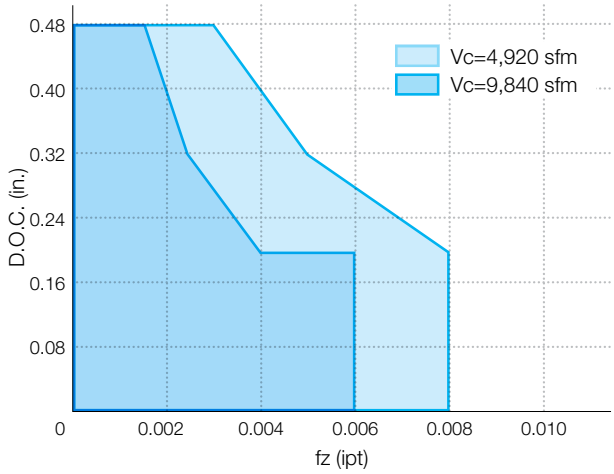
Spindle Revolution (RPM)	ISO Balance Grade ISO 1940-1/8821 (B0905)
~ 20,000	G16
~ 30,000	G6.3
30,000 ~	G2.5

Max. Revolution for Each Cutting Diameter

Cutting Diameter ØDC (mm)	Cutter Max. Revolutions (RPM)
Ø1.000" Ø25mm	59,000 (Long Shank: 49,000)
Ø28mm	54,000
Ø1.250" Ø32mm	49,000
Ø35mm	46,000 (Long Shank: 39,000)
Ø1.500" Ø40mm	42,000
Ø2.000" Ø50mm	36,000

MEAS Cutting Performance

ø50mm (4 Inserts) Shouldering ae = 0.984" Workpiece: 7175



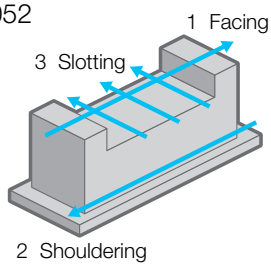
- Reduce the feed rate when machining at high speeds

Case Study

Industrial Machine Parts 5052

Vc = 4920 sfm (n = 9,550 rpm)
1. D.O.C. x ae = 0.118" x 1.575"
   fz = 0.008 ipt (Vf = 300 ipm)
2. D.O.C. x ae = 0.315" x 0.197"
   fz = 0.008 ipt (Vf =300 ipm)
3. D.O.C. x ae = 0.079" x ~ 1.97"
   fz = 0.006 ipt (Vf = 225 ipm)
   Wet

MEAS050R-13-4T-M
KCGT130504FR-AL PDL025



Cutting Time

MEAS ø50-4T 190 Sec

Cutting Time 50%

Competitor C ø50-3T 430 Sec

MEAS showed 50% faster cycle time or more compared to Competitor C
(User Evaluation)

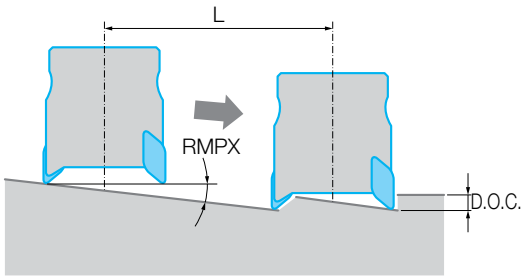
Ramping Reference Data

Cutting Dia. DC	1.000"	1.250"	1.500"	2.000"	25mm	28mm	32mm	35mm	40mm	50mm
Max. Ramping Angle RMPX	20°	12.5°	8.5°	6°	20°	16°	12.5°	11°	8.5°	6°
tan RMPX	0.363	0.221	0.149	0.105	0.363	0.287	0.221	0.194	0.149	0.105

Ramping Tips

Recommended ramping angle is ≤ RMPX
(see chart above for recommended ramp angle)
Reduce recommended feed rate by 50%

Formula for Max. Cutting max Length (L) at Max. Ramping Angle $L = \frac{D.O.C.}{\tan RMPX}$



Plunging Tips

* Reduce feed rate to fz ≤ 0.004 ipt when plunging

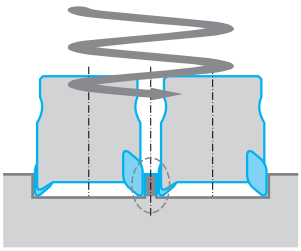
Insert	Maximum Width of Cut (ae)
KCGT13...	0.315"

Helical Milling Tips

For Helical milling, use between Min. Drilling Dia. and Max. Drilling Dia.

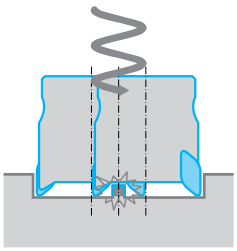
Exceeding Max. Machining Dia.

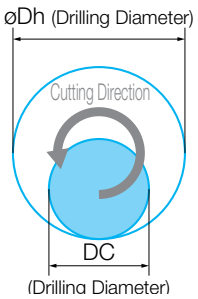
Center Core Remains After Machining



Under Min. Machining Dia.

Center Core Hits Holder Body



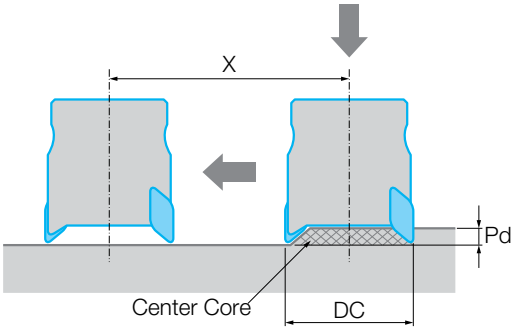


Cutter	Min. Drilling Dia.	Max. Drilling Dia.	Maximum Ramping Depth per Cycle
MEAS...-13-...	2 × DC - 0.630"	2 × DC - 0.118"	0.138"

Unit: inch

- Use climb milling. (Refer to detail on right above)
- Feed rates should be reduced to 50% of recommended cutting conditions
- Use caution to eliminate incidences caused by producing long chips

Drilling Tips



Drilling Depth

Please refer to the figure on the left (Pd: Max. Drilling depth)

Traversing after Drilling

1. It is recommended to reduce feed by fz = 0.006 ipt or less until the center core is removed
2. Axial feed rate recommendation per revolution is f = 0.004 ipr or less

Cutter	Max. Drilling Depth (Pd)	Min. Cutting Length (X) for Flat Bottom Surface
MEAS…-13-…	0.138"	DC - 0.630"

Unit: inch

How to Mount Inserts

1. Completely eliminate chips and dust from the insert mounting side
2. Insert Screw
   - Coat anti-seize compound (P-37) thinly on portion of taper and thread
   - Attach screw to the magnetized wrench tip and tighten while gently pressing the outside edge of the insert toward the insert pocket surface (grooved surface) (see picture on the right)
     (Recommended Torque 3.5Nm)

Cautions

While in Use

Caution

Please use within recommended cutting conditions

Do not run the cutter at revolutions exceeding the printed maximum revolution limit of the cutter body

- Inserts may be damaged due to the centrifugal force and cutting load

Please do not use under the following conditions:

- When cutter is not fully loaded with inserts
- If the body is damaged

Please wear protective equipment such as gloves when changing inserts

- Injury can occur when touching the cutting edge

Dynamic Balance

Balance adjustment on the cutter is completed before shipping

Balance adjustment has been made with special high precision inserts to be ISO balance grade (ISO1940/1) G6.3

When using at a higher revolution (10,000 RPM or above), refer to the table below to adjust the balance of MEAS and arbor

Do not operate the balance adjustment screw on the outer periphery of the cutter. This could lead to improper dynamic balance.

Spindle Revolution (RPM)	ISO Balance Grade ISO 1940-1/8821 (B0905)
~ 20,000	G16
~ 30,000	G6.3
30,000 ~	G2.5

Shouldering | Slotting | Facing

EM End Mill / Extended Length End Mill

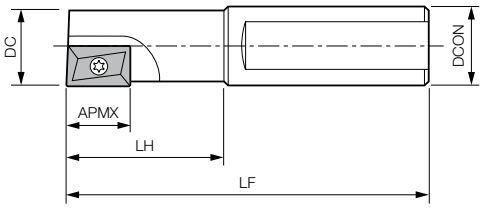


Fig.1

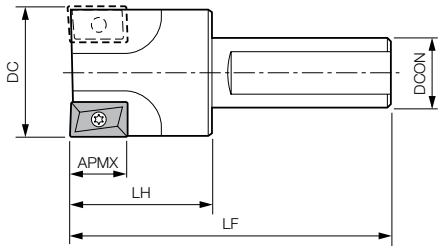


Fig.2

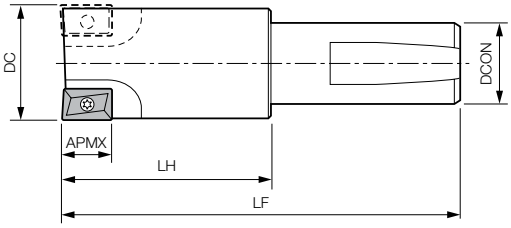


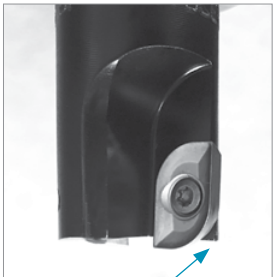
Fig.3

Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in) DC	DCON	LF	LH	APMX	Rake Angle (°) A.R.	R.R.	Drawing	Max. Ramping Angle (°)	Spare Parts: Clamp Screw	Spare Parts: Wrench
EM	0437-09	●	1	7/16	1/2	2.78	1.00	0.37	3°	-11°	Fig.1	3°	SCR-04	T7
	0500-09	●		1/2						-9°				
	0562-09	●		9/16						-7°		8°		
	0625-09	●	2	5/8	5/8	2.90			5°	-6°	Fig.2			
	0688-09	●		11/16					3°	-5°				
	0750-09	●		3/4	3/4	3.03			5°	-2°				
	0875-09	●		7/8						-4°			SCR-01	
	1000-09-3F	●	3	1					3°	-2°				
EM	0625	●	1	5/8	3/4	2.90	1.00	0.60	5°	-14°	Fig.1	3°	SCR-16	T10
	0688	●		11/16		3.40				-12°				
	0750	●		3/4			1.50			-10°		8°		
	0813	●		13/16						-8°				
	0875	●		7/8						-7°				
	0938	●	2	15/16						-5°	Fig.2			
	1000	●		1						-5°				
	1000-100S	●			1	3.78				-5°				
	1125	●		1-1/8	3/4	3.40				-4°			SCR-30	
	1250	●		1-1/4						-3°				
	1250-3F	●	3		1	3.78				-3°				
	1375	●	2	1-3/8	3/4	3.40				-2°				
	1500	●		1-1/2						-2°				
	1500-3F	●	3		1	3.78				-2°				
EM	1000-2.5	●	2	1	3/4	4.40	2.50	0.60	5°	-5°	Fig.3	8°	SCR-16	T10
	1000-3.5	●			1	5.78	3.50			-5°				
	1250-2.5	●		1-1/4		4.78	2.50			-3°			SCR-30	

Applicable Inserts

Part Number	Applicable Inserts ➔ M29
EM ○○○○-09(-3F)	XPMT 0902..
EM ○○○○ ○○○○-100S ○○○○-3F	*XPMT 15T3..
EM ○○○○-2.5	



*Toolholder modifications are necessary if using larger corner radius **XPMT15T324**, **XPMT15T331**, and **XPMT15T364** inserts due to interference between the holder and workpiece.

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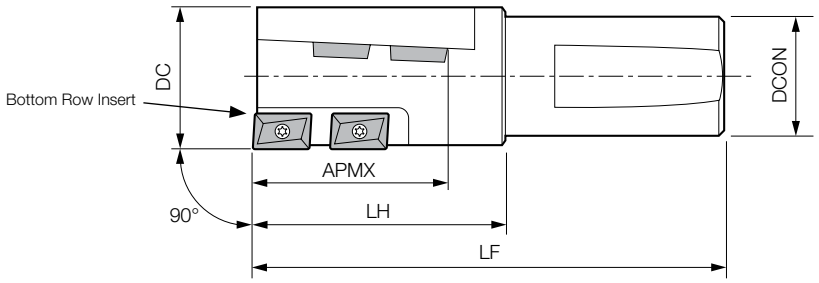
Shouldering | Slotting | Facing

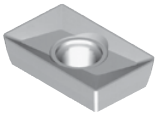
EM-LE Long Edge End Mill



Toolholder Dimensions

Part Number		Stock	No. of Inserts	No. of Flutes	Dimensions (in)					Rake Angle (°)		Spare Parts	
												Clamp Screw	Wrench
					DC	DCON	LF	LH	APMX	A.R.	R.R.		
EM	1250-1500-LE	●	6	2	1-1/4	1	4.41	2.13	1.50	5°	-3°	SCR-16	T10
	1500-2000-LE	●	8		1-1/2	1-1/4	4.91	2.63	2.00	5°	-2°	SCR-30	
	2000-2775-LE	●	10		2	1-1/2	6.25	3.50	2.77	5°	0		

Applicable Inserts

Part Number	Applicable Inserts ➔ M29	
		
EM ...-LE	*XPMT 15T3.. (Bottom Row)	XPMT 15T308 (Side Row)

*Toolholder modifications are necessary if using larger corner radius **XPMT15T324**, **XPMT15T331**, and **XPMT15T364** inserts due to interference between the holder and workpiece.

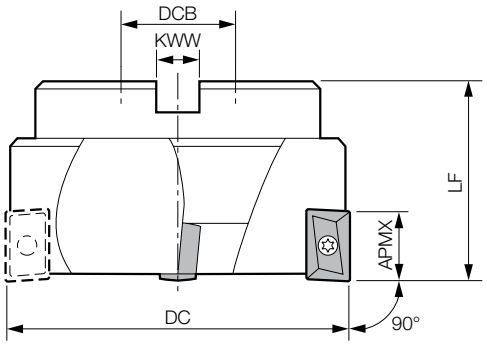
Recommended Cutting Conditions (EM, EM-LE, FM, FM-AL, EM-AL)

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm)									
		Cermet		MEGACOAT NANO			CVD Coated Carbide	PVD Coated Carbide			Carbide
		TN100M	TC60	PR1535	PR1525	PR1510	CA6535	PR930	PR905	PR830	KW10
Low Carbon Steel	0.003~0.006	☆ 800~1400	★ 800~1400	★ 400~800	★ 400~800	-	-	☆ 350~750	-	-	-
Carbon Steel	0.003~0.006	☆ 600~1200	★ 600~1200	★ 300~700	★ 300~700	-	-	☆ 250~650	-	-	-
Mold Steel	0.003~0.006	☆ 400~700	★ 400~700	★ 250~600	★ 250~600	-	-	☆ 250~600	-	-	-
Stainless Steel	0.002~0.006	☆ 300~800	☆ 300~800	★ 300~600	☆ 300~600	-	★ 550~950	☆ 300~500	-	☆ 300~800	-
Cast Iron	0.003~0.008	☆ 400~1200	★ 400~1200	-	-	★ 400~800	-	-	★ 400~800	-	☆ 300~500
Non-ferrous Metals	0.005~0.007	☆ 1500~1800	☆ 1500~1800	-	-	-	-	-	-	-	★ 2000~4000
Heat-resistant Alloy	0.002~0.005	-	-	☆ 70~160	-	-	★ 70~160	-	-	-	-
Titanium Alloy	0.002~0.005	-	-	★ 130~260	-	☆ 100~230	-	-	-	-	-

* Apply sufficient amount of coolant

★: 1st Recommendation ☆: 2nd Recommendation

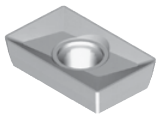
FM-90 Fixed Pocket Face Mill



Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in)					Rake Angle (°)		Spare Parts	
				DC	DCB	LF	KWW	APMX	A.R.	R.R.	Clamp Screw	Wrench
FM	2000-90RH	●	3	2.0	3/4	1-13/32	5/16	0.6	+5°	+3°	SCR-30	T10
	3000-90RH	●	4	3.0	1	1-25/32	3/8			+5°		

Applicable Inserts

Part Number	Applicable Inserts ➡ M29
	
FM 2000-90-RH 3000-90-RH	*XPMT 15T3..

Holder Interference

*Toolholder modifications are necessary if using larger corner radius **XPMT15T324**, **XPMT15T331**, and **XPMT15T364** inserts due to interference between the holder and workpiece.

Recommended Cutting Conditions (EM, EM-LE, FM, FM-AL, EM-AL)

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm)									
		Cermet		MEGACOAT NANO			CVD Coated Carbide	PVD Coated Carbide			Carbide
		TN100M	**TC60**	**PR1535**	**PR1525**	**PR1510**	**CA6535**	**PR930**	**PR905**	**PR830**	**KW10**
Low Carbon Steel	0.003~0.006	☆ 800~1400	★ 800~1400	★ 400~800	★ 400~800	-	-	☆ 350~750	-	-	-
Carbon Steel	0.003~0.006	☆ 600~1200	★ 600~1200	★ 300~700	★ 300~700	-	-	☆ 250~650	-	-	-
Mold Steel	0.003~0.006	☆ 400~700	★ 400~700	★ 250~600	★ 250~600	-	-	☆ 250~600	-	-	-
Stainless Steel	0.002~0.006	☆ 300~800	☆ 300~800	★ 300~600	☆ 300~600	-	★ 550~950	☆ 300~500	-	☆ 300~800	-
Cast Iron	0.003~0.008	☆ 400~1200	★ 400~1200	-	-	★ 400~800	-	-	★ 400~800	-	☆ 300~500
Non-ferrous Metals	0.005~0.007	☆ 1500~1800	☆ 1500~1800	-	-	-	-	-	-	-	★ 2000~4000
Heat-resistant Alloy	0.002~0.005	-	-	☆ 70~160	-	-	★ 70~160	-	-	-	-
Titanium Alloy	0.002~0.005	-	-	★ 130~260	-	☆ 100~230	-	-	-	-	-

* Apply sufficient amount of coolant

★: 1st Recommendation ☆: 2nd Recommendation

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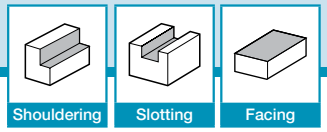
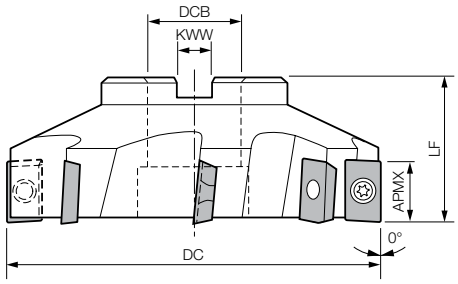


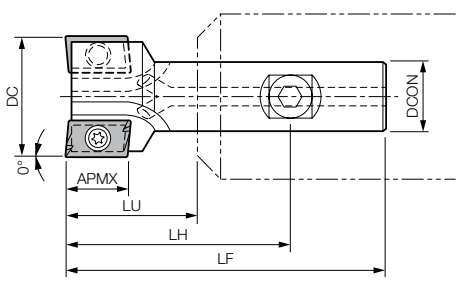
FM-AL Fixed Pocket Face Mill (Aluminum Machining)



Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in)					Rake Angle (°)		Max. Ramping Angle (°)	Spare Parts	
				DC	DCB	LF	KWW	APMX	A.R.	R.R.		Clamp Screw	Wrench
FM	AL-2500-90-3	●	3	2-1/2	3/4	1.570	3/8	0.64	+5°	-3°	8°	SCR-02	T15
	3000-90-AL	●	6	3	1				+5°	+0°			
	4000-90-AL	●	8	4									
	4000-90-AL-125	●			1-1/4		1/2						
	AL-4000-90-5	●	5		1		3/8						
	5000-90-AL	●	10	5	1-1/2		5/8						

EM-AL Fixed Pocket End Mill (Aluminum Machining)



Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in)						Rake Angle (°)		Max. Ramping Angle (°)	Spare Parts	
				DC	DCON	LF	LH	LU	APMX	A.R.	R.R.		Clamp Screw	Wrench
EM	0750-AL	●	2	3/4	3/4	3.360	2.351	1.350	0.30	+5°	-8°	8°	SCR-01	T7
	0875-AL	●		7/8							-5°			
	1000-AL	●		1		3.380	2.365	1.360	0.64		-10°		SCR-02	T15
	1250-AL	●		1-1/4							-7°			
	1500-AL	●		1-1/2	1	4.000	2.864	1.740			-5°			
	2000-AL	●	3	2		4.250	3.110	1.990			-2°			
EM	1000-2.75-AL	●	2	1	3/4	4.780	3.780	2.750	0.64		-10°	8°	SCR-02	T15
	1000-3.75-AL	●			1	6.015	4.875	3.750						
	1250-2.125-AL	●		1-1/4		4.433	3.293	2.125			-7°			

Applicable Inserts

Part Number	Applicable Inserts ➔ M29
FM AL-... ...-AL	APET 1604..
EM 0750-AL 0875-AL	-
EM ...-AL	APET 1604..

For Chamfering End Mills CM-AL for Aluminum Cutting, See Page ➔ M247

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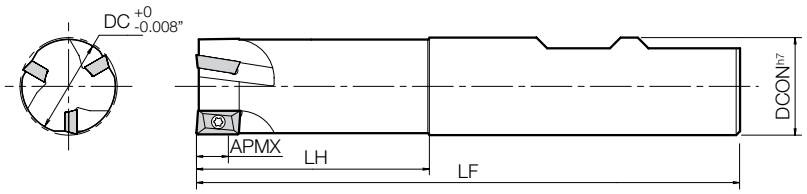
MAP End Mill



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (in)					Rake Angle (°)		Spare Parts	
			DC	DCON	LF	LH	APMX	A.R.	R.R.	Clamp Screw	Wrench
MAP 100R10-S100	●	3	1.000	1.000	3.78	1.417	0.354	+9°	+10°	SB-2560TR	DT-8
100R16-S100	●	2					0.590		+13°	SB-4085TR	DT-15

Applicable Inserts

Part Number	Applicable Inserts M22
MAP 100R10-S100	APKT 1003..
100R16-S100	APKT 1604..

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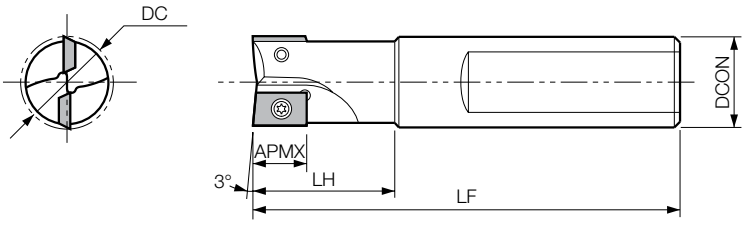
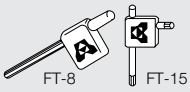
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

CEM End Mill



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (in)					Rake Angle (°)		Spare Parts	
										Clamp Screw	Wrench
			DC	DCON	LF	LH	APMX	A.R.	R.R.		 FT-8 FT-15
CEM 0375-1W	●	1	0.375	0.375	3.08	0.75	0.374	+3°	-6°	SB-2545TR	FT-8
0500-1W	●	1	0.500	0.500		1.00			-5°		
0625-1W	●	1	0.625	0.625		1.18	0.591		-4°	SB-4STR	FT-15
0750-1W	●	1	0.750	0.750	3.21				-3°		
CEM 0625-2W	●	2	0.625	0.625	3.08	1.18	0.374	+8°	-4°	SB-2545TR	FT-8
0750-2W	●	2	0.750	0.750	3.21		0.500		-3°	SB-3060TR	FT-10
1000-2W	●	2	1.000	1.000	3.85	1.57	0.591	+3°	-2°	SB-4STR	FT-15
1000-2W-7.5	●	2			7.50						
CEM 1000-3W	●	3	1.000	1.000	3.85	1.57	0.500	+8°	-5°	SB-3060TR	FT-10
1250-3W	●	3	1.250	1.250			0.591	+3°	-3°	SB-4STR	FT-15
CEM 1500-4W	●	4	1.500	1.250	3.85	1.57	0.591	+6°	0°	SB-4STR	FT-15

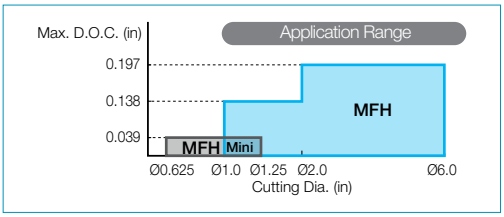
Applicable Inserts

Part Number	Applicable Inserts ➡ M24		
CEM 0375-1W 0500-1W 0625-2W	NDCT 831FR 831R-B 832R-B	-	NDMM 831ER-SP
CEM 0750-2W 1000-3W	NDCT 032TR 032FR	NDCW 032TR	NDMM 031ER-SP 032ER-SP
CEM 0625-1W 0750-1W 1000-2W 1000-2W-7.5 1250-3W 1500-4W	NDCT 322FR 322FR-B	NDCW 322TRX 322FRX	NDMM 321ER-SP 322ER-SP

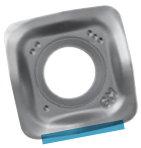
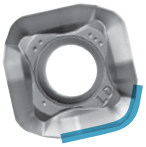
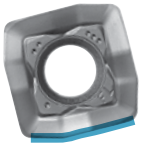
MFH-RAPTOR

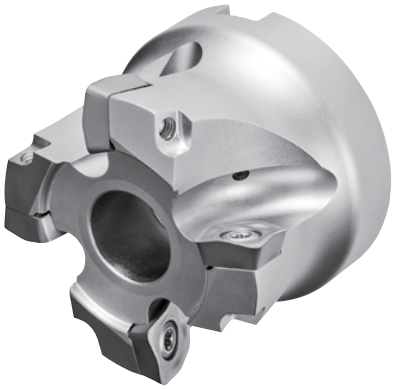
(Cutter Dia. Ø1.000" ~ Ø6.000")
(Cutter Dia. Ø25mm ~ Ø160mm)

Anti-vibration Design for Increased Chip Evacuation and Shortened Cutting Times



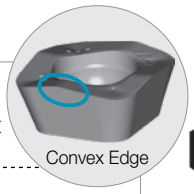
1 4 Different Insert Designs Offer a Variety of Machining Options

	GM (General Milling)	GH (Tough Edge)	LD (Large D.O.C.)	FL (Wiper Edge)
Shape		NEW		
Applications	**1st Choice for General Purpose** Multiple Metalworking Processes	**Heavy Milling** Excellent fracture resistance	**1st Choice for Large D.O.C.** MAX D.O.C. = 0.197" (SOMT14) MAX D.O.C. = 0.138" (SOMT10) *Available for Scale Removal*	**Wiper Edge** Roughing and Finishing Even in Low Horsepower Machining Centers

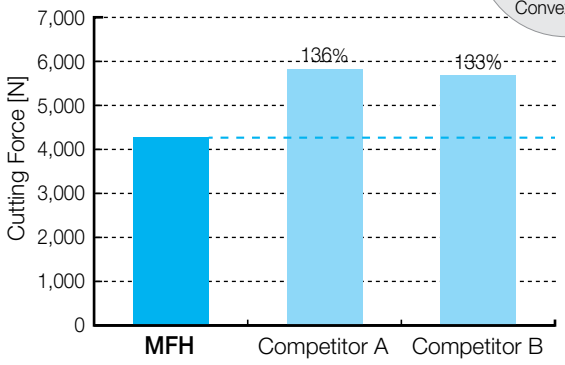


2 Reduced Chattering with Convex Cutting Edge Design

Reduces Cutting Forces at Initial Impact with a Convex Helical Edge Design



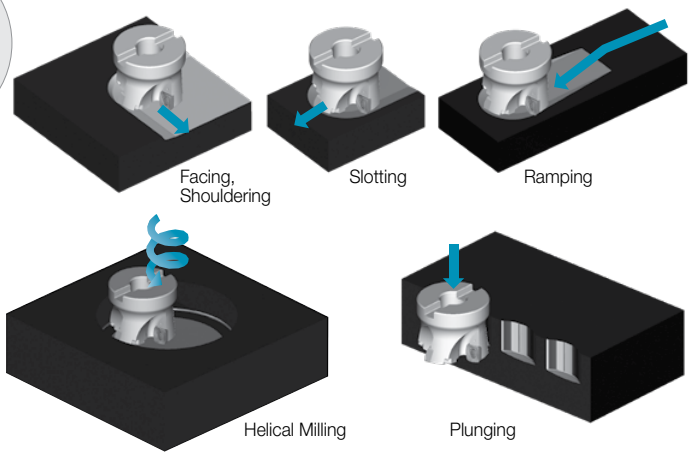
Width of cut ae is half of cutter diameter when cutting forces at initial contact are the greatest



Vc = 490 sfm, fz = 0.059 ipt, D.O.C. x ae = 0.059" x 1.240"
1049, Dry, Cutter Dia.Ø2.5"

Resultant Force Shown

3 Wide Application Range for Multiple Metalworking Processes



* **GM** chipbreaker is available for all of the above applications.
* **LD** and **FL** chipbreakers are not available for helical milling, plunging and contouring of rising wall.
(Refer to Page ➡ **M174**)

NEW ITEMS!

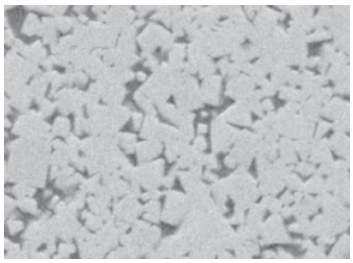
PR1535
MEGACOAT NANO

MEGACOAT NANO Grade PR1535 for stable machining of difficult-to-cut materials such as heat-resistant alloy, titanium alloy and precipitation hardened stainless steel

1 23% Improved Fracture Toughness

An increase in cobalt content yields a substrate with greater toughness. Fracture toughness values are improved by 23% over previous grades.

High Toughness Carbide Base Material

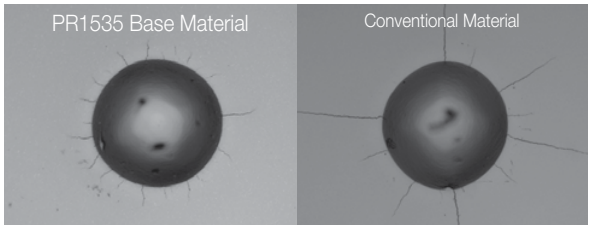


23% Fracture Toughness

2 Stability Improvement

The coarse grain structure and uniform particle size correspond to improved heat resistance, with conductivity values decreased by 11%. The uniform structure also reduces crack propagation.

Cracking Comparison by Diamond Indenter (In-house Evaluation)



Short Cracks
(High Impact Improvement)

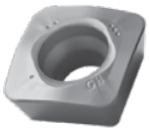
Long Cracks

Shock Resistance

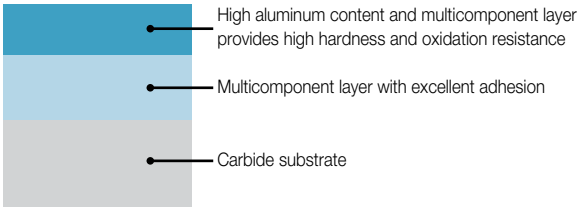
PR015S NEW
MEGACOAT HARD

Thermal property of the substrate reduces cracks and notch wear with a high hardness and heat-resistant coating for improved wear resistance when machining in hardened materials

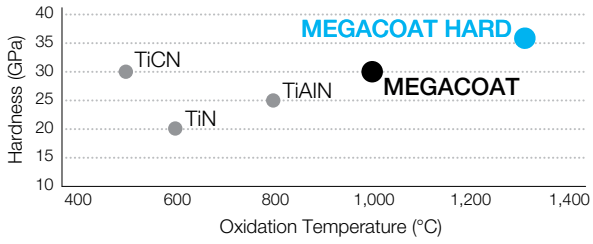
MEGACOAT HARD Improves Wear Resistance with High Hardness and High Heat-resistant PVD Layer



Coating Pattern Diagram



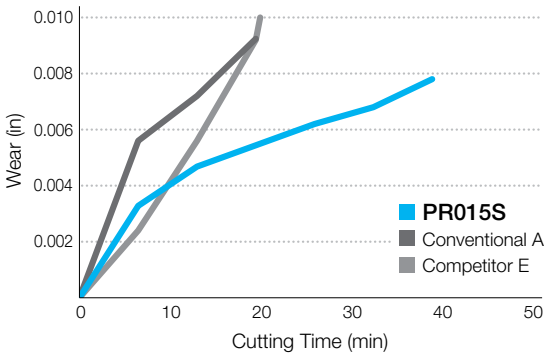
Coating Properties (Internal Evaluation)



Low Oxidation Resistance High

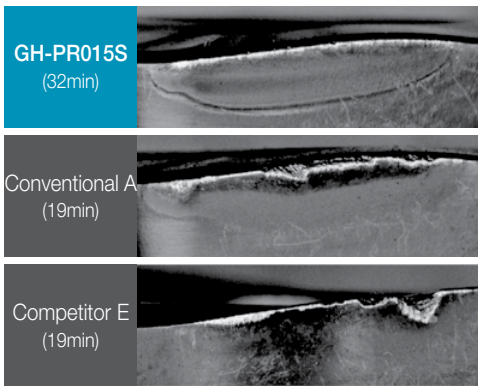
Combining GH chipbreaker and grade PR015S reduces heat cracking and improves fracture resistance for stable machining in hardened material

Cutting Performance Comparison (Internal Evaluation)



Cutting Conditions:
Vc = 165 sfm,
fz = 0.008ipt,
D.O.C. = 0.039" × 1.240",
Wet
SOMT140520ER-GH
Competitor Tough Edge Chipbreaker (Flat type)
Workpiece: D2 (55HRC)

Cutting Edge



MFH Face Mill (Inch Size)

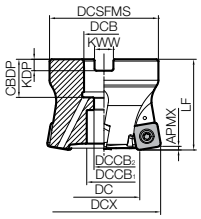


Fig.1

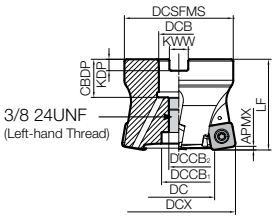


Fig.2

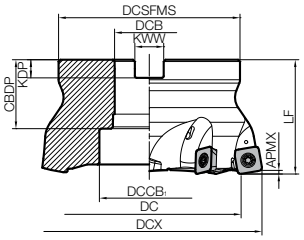


Fig.3

Toolholder Dimensions with SOMT10 Inserts (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)														Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
			DCX	DC			DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	*1APMX2	A.R.	R.R.				
				GM/GH	LD	FL																
MFH 2000R-10-4T	●	4	2.000	1.331	1.510	1.469	1.750	0.750	0.669	0.433	1.969	0.947	0.187	0.313	0.059	0.047	+10°	-5°	Yes	Fig.1	0.4	10,000
2000R-10-5T	●	5	2.000	1.331	1.510	1.469	1.750	0.750	0.669	0.433	1.969	0.947	0.187	0.313			+10°	-5°			0.4	10,000
2500R-10-5T	●	5	2.500	1.831	2.010	1.969	2.250	0.750	0.669	0.433	1.969	0.750	0.187	0.313	*2(0.138)		+10°	-4°			0.7	8,800
2500R-10-6T	●	6	2.500	1.831	2.010	1.969	2.250	0.750	0.669	0.433	1.969	0.750	0.187	0.313			+10°	-4°			0.7	8,800
3000R-10-7T	●	7	3.000	2.331	2.510	2.469	2.750	1.000	0.866	0.551	2.480	1.063	0.236	0.382			+10°	-4°			1.3	7,600

Toolholder Dimensions with SOMT14 Inserts (Inch Size)

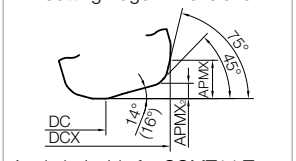
Part Number	Stock	No. of Inserts	Dimensions (in)														Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
			DCX	DC			DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	*1APMX2	A.R.	R.R.				
				GM/GH	LD	FL																
MFH 2000R-14-4T	●	4	2.000	1.094	1.330	1.291	1.750	0.750	0.500	3/8 24UNF	1.969	0.827	0.187	0.313	0.079	0.079	+10°	-10°	Yes	Fig.2	0.4	8,800
NEW 2000R-14-5T	●	5	2.000	1.094	1.330	1.291	1.750	0.750	0.500		1.969	0.827	0.187	0.313			+10°	-10°			0.4	8,800
2500R-14-4T	●	4	2.500	1.594	1.830	1.791	2.250	0.750	0.669	0.433	1.969	0.750	0.187	0.313			+10°	-10°	Yes	Fig.1	0.6	7,400
2500R-14-5T	●	5	2.500	1.594	1.830	1.791	2.250	0.750	0.669	0.433	1.969	0.750	0.187	0.313			+10°	-10°			0.6	7,400
NEW 2500R-14-5T-1000	●	5	2.500	1.594	1.830	1.791	2.251	1.000	0.866	0.551	2.480	1.063	0.236	0.382			+10°	-10°			0.7	7,400
3000R-14-5T	●	5	3.000	2.094	2.330	2.291	2.750	1.000	0.866	0.551	2.480	1.063	0.236	0.382			+10°	-9°			1.2	6,400
3000R-14-6T	●	6	3.000	2.094	2.330	2.291	2.750	1.000	0.866	0.551	2.480	1.063	0.236	0.382	*2(0.197)		+10°	-9°			1.2	6,400
NEW 3000R-14-6T-1250	●	6	3.000	2.094	2.330	2.291	2.750	1.250	1.000	0.657	2.480	1.063	0.280	0.504			+10°	-9°			1.3	6,400
4000R-14-6T	●	6	4.000	3.094	3.330	3.291	3.750	1.500	1.299	0.866	2.480	1.181	0.394	0.626			+10°	-7°			2.3	5,600
4000R-14-7T	●	7	4.000	3.094	3.330	3.291	3.750	1.500	1.299	0.866	2.480	1.181	0.394	0.626			+10°	-7°			2.3	5,600
5000R-14-7T	●	7	5.000	4.094	4.330	4.291	3.750	1.500	2.047	-	2.480	1.496	0.394	0.626			+10°	-7°	Yes	Fig.3	2.9	4,800
6000R-14-8T	●	8	6.000	5.094	5.330	5.291	4.880	2.000	2.835	-	2.480	1.496	0.433	0.752			+10°	-6°	No		4.5	4,200

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

Spare Parts and Applicable Inserts (Inch Size)

*1 Refer to LD dimensions in figure below *2 Dimension in ( ) is when mounting LD

Part Number	Spare Parts						Applicable Inserts → M20, M171
	Clamp Screw	Wrench		Anti-seize Compound	Mounting Bolt	Mounting Screw	
		DTPM	TTP				
MFH 2000R-10-4T	SB-4090TRPN	DTPM-15 Recommended Torque for Insert Clamp 3.5 N·m		P-37	HH3/8-1.25(H)	-	SOMT100420ER-GM SOMT100420ER-GH SOMT100420ER-LD SOMT100420ER-FL
2000R-10-5T					HH3/8-1.25(H)		
2500R-10-5T					HH3/8-1.25(H)		
2500R-10-6T					HH3/8-1.25(H)		
3000R-10-7T					HH1/2-1.25(H)		
MFH 2000R-14-4T	SB-50120TRP	TTP-20 Recommended Torque for Insert Clamp 4.5 N·m		P-37	-	XNS610*1	SOMT140520ER-GM SOMT140520ER-GH SOMT140520ER-LD SOMT140514ER-FL
2000R-14-5T							
2500R-14-4T					HH3/8-1.25(H)	-	
2500R-14-5T					HH3/8-1.25(H)		
2500R-14-5T-1000					HH1/2-1.25(H)		
3000R-14-5T					HH1/2-1.25(H)		
3000R-14-6T					HH1/2-1.25(H)		
3000R-14-6T-1250					HH5/8-1.50(H)		
4000R-14-6T					-		
4000R-14-7T					-		
5000R-14-7T					-		
6000R-14-8T					-		



Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

*1 Differential screw (3/8-24UNF)

(H) Optional coolant thru bolt available.

Recommended Cutting Conditions → M172~M173

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com
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Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

MFH Face Mill (Metric Size)

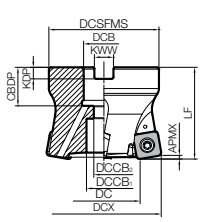


Fig.1

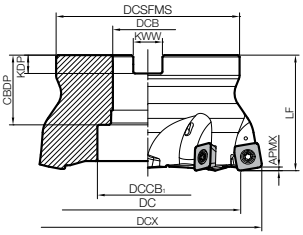


Fig.2

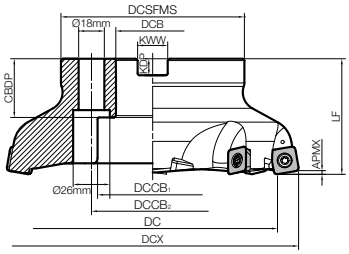


Fig.3

Toolholder Dimensions with SOMT10 Inserts (Metric Size)

	Part Number	Stock	No. of Inserts	Dimensions (mm)															Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC			DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	*1APMX2		A.R.	R.R.				
					GM/GH	LD	FL																	
Inch Bore Dia.	MFH 050R-10-4T	●	4	50	33	37.5	36.5	47	0.875"	19	11	50	0.748"	0.197"	0.331"	1.5 *2(3.5)	1.2		+10°	-5°	Yes	Fig.1	0.4	10,000
	050R-10-5T	●	5	50	33	37.5	36.5	47	0.875"	19	11	50	0.748"	0.197"	0.331"				+10°	-5°			0.4	10,000
	063R-10-5T	●	5	63	46	50.5	49.5	60	0.875"	19	11	50	0.748"	0.197"	0.331"				+10°	-4°			0.7	8,800
	063R-10-6T	●	6	63	46	50.5	49.5	60	0.875"	19	11	50	0.748"	0.197"	0.331"				+10°	-4°			0.7	8,800
	080R-10-7T	●	7	80	63	67.5	66.5	76	1.250"	26	17	63	1.260"	0.315"	0.500"				+10°	-4°			1.3	7,600
Metric Bore Dia.	MFH 050R-10-4T-M	●	4	50	33	37.5	36.5	47	22	19	11	50	21	6.3	10.4	1.5 *2(3.5)	1.2		+10°	-5°	Yes	Fig.1	0.4	10,000
	050R-10-5T-M	●	5	50	33	37.5	36.5	47	22	19	11	50	21	6.3	10.4				+10°	-5°			0.4	10,000
	063R-10-5T-22M	●	5	63	46	50.5	49.5	60	22	19	11	50	21	6.3	10.4				+10°	-4°			0.7	8,800
	063R-10-6T-22M	●	6	63	46	50.5	49.5	60	22	19	11	50	21	6.3	10.4				+10°	-4°			0.7	8,800
	063R-10-5T-27M	●	5	63	46	50.5	49.5	60	27	20	13	50	24	7.0	12.4				+10°	-4°			0.7	8,800
	063R-10-6T-27M	●	6	63	46	50.5	49.5	60	27	20	13	50	24	7.0	12.4				+10°	-4°			0.7	8,800
	080R-10-7T-M	●	7	80	63	67.5	66.5	76	27	20	13	63	24	7.0	12.4				+10°	-4°			1.6	7,600

Toolholder Dimensions with SOMT14 Inserts (Metric Size)

	Part Number	Stock	No. of Inserts	Dimensions (mm)															Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC			DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	*1APMX2		A.R.	R.R.				
					GM/GH	LD	FL																	
NEW Inch Bore Dia.	MFH 050R-14-4T	●	4	50	27	33	32	47	0.875"	12	-	50	0.748"	0.197"	0.331"	2 *2(5)	2		+10°	-10°	Yes	Fig.1	0.4	8,800
	063R-14-4T	●	4	63	40	46	45	60	0.875"	19	11	50	0.748"	0.197"	0.331"				+10°	-10°		Fig.1	0.6	7,400
	063R-14-5T	●	5	63	40	46	45	60	0.875"	19	11	50	0.748"	0.197"	0.331"				+10°	-10°		Fig.1	0.6	7,400
	080R-14-5T	●	5	80	57	63	62	76	1.250"	26	17	63	1.260"	0.315"	0.500"				+10°	-8°		Fig.1	1.3	6,400
	080R-14-6T	●	6	80	57	63	62	76	1.250"	26	17	63	1.260"	0.315"	0.500"				+10°	-8°		Fig.1	1.3	6,400
	100R-14-6T	●	6	100	77	83	82	96	1.250"	26	17	63	1.260"	0.315"	0.500"				+10°	-7°		Fig.1	2.4	5,600
	100R-14-7T	●	7	100	77	83	82	96	1.250"	26	17	63	1.260"	0.315"	0.500"				+10°	-7°		Fig.1	2.4	5,600
	125R-14-7T	●	7	125	102	108	107	100	1.500"	55	-	63	1.496"	0.394"	0.625"				+10°	-7°		Fig.2	2.9	4,800
	160R-14-8T	●	8	160	137	143	142	100	2.000"	72	-	63	1.496"	0.433"	0.750"				+10°	-6°	No	Fig.2	3.9	4,200
NEW Metric Bore Dia.	MFH 050R-14-4T-M	●	4	50	27	33	32	47	22	12	-	50	21	6.3	10.4	2 *2(5)	2		+10°	-10°	Yes	Fig.1	0.4	8,800
	063R-14-4T-22M	●	4	63	40	46	45	60	22	19	11.0	50	21	6.3	10.4				+10°	-10°		Fig.1	0.6	7,400
	063R-14-5T-22M	●	5	63	40	46	45	60	22	19	11.0	50	21	6.3	10.4				+10°	-10°		Fig.1	0.6	7,400
	063R-14-4T-27M	●	4	63	40	46	45	60	27	20	13.0	50	24	7	12.4				+10°	-10°		Fig.1	0.6	7,400
	063R-14-5T-27M	●	5	63	40	46	45	60	27	20	13.0	50	24	7	12.4				+10°	-10°		Fig.1	0.6	7,400
	080R-14-5T-M	●	5	80	57	63	62	76	27	20	13.0	63	24	7	12.4				+10°	-8°		Fig.1	1.4	6,400
	080R-14-6T-M	●	6	80	57	63	62	76	27	20	13.0	63	24	7	12.4				+10°	-8°		Fig.1	1.4	6,400
	100R-14-6T-M	●	6	100	77	83	82	96	32	26	17.0	63	28	8	14.4				+10°	-7°		Fig.2	2.4	5,600
	100R-14-7T-M	●	7	100	77	83	82	96	32	26	17.0	63	28	8	14.4				+10°	-7°		Fig.2	2.4	5,600
	125R-14-7T-M	●	7	125	102	108	107	100	40	55	-	63	33	9	16.4				+10°	-7°		Fig.2	2.8	4,800
	160R-14-8T-M	●	8	160	137	143	142	100	40	68	66.7	63	32	9	16.4				+10°	-6°	No	Fig.3	3.7	4,200

*1 Refer to LD cutting edge dimensions in figure on page M166
*2 Dimension in ( ) is when mounting LD

Spare Parts and Applicable Inserts M166

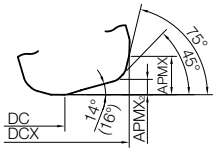
● Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts: Clamp Screw	Spare Parts: Wrench DTPM	Spare Parts: Wrench TTP	Spare Parts: Anti-seize Compound	Spare Parts: Arbor Bolt	Applicable Inserts ➡ M20, M171
MFH 050R-10-...(-M)	SB-4090TRPN	DTPM-15	-	P-37	HH10×30	SOMT100420ER-GM SOMT100420ER-GH SOMT100420ER-LD SOMT100420ER-FL
063R-10-...(-22M)					HH10×30	
063R-10-...-27M	Recommended Torque for Insert Clamp 3.5 Nm				HH12×35	
080R-10-...					HH16×40	
080R-10-...-M					HH12×35	
050R-14-...(-M)	SB-50120TRP	-	TTP-20	P-37	W10×30	SOMT140520ER-GM SOMT140520ER-GH SOMT140520ER-LD SOMT140514ER-FL
063R-14-...(-22M)					HH10×30	
063R-14-...-27M					HH12×35	
080R-14-...					HH16×40	
080R-14-...-M	Recommended Torque for Insert Clamp 4.5 Nm				HH12×35	
100R-14-...					HH16×40	
100R-14-...-M					-	
125R-14-...					-	
160R-14-...					-	

Recommended Cutting Conditions ➡ M172~M173

Holders on Page ➡ M165

LD Chipbreaker
Cutting Edge Dimensions



Angle in ( ) is for SOMT14 Type

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

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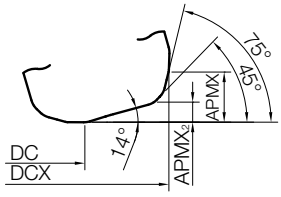
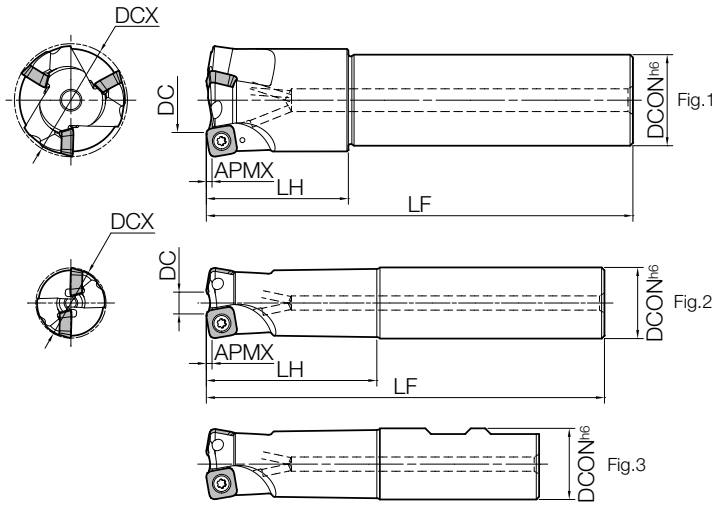
MFH End Mill (Inch Size)

Standard (Cylindrical)

LD Chipbreaker
Cutting Edge Dimensions





Toolholder Dimensions with SOMT10 Inserts (Inch Size)

Part Number		Stock	No. of Inserts	Dimensions (in)									Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC			DCON	LF	LH	APMX	APMX2	A.R.	R.R.				
					GM/GH	LD	FL											
Standard Shank (Weldon)	MFH 1000-W100-10-2T	●	2	1.000	0.331	0.508	0.469	1.000	5.500	3.173	0.059 *(0.138)	0.047	+10°	-5°	Yes	Fig.3	0.4	17,000
	1250-W125-10-2T	●	2	1.250	0.581	0.758	0.719	1.250	6.000	2.750			+10°	-5°			0.8	14,000
	1250-W125-10-3T	●	3	1.250	0.581	0.758	0.719	1.250	6.000	2.750			+10°	-5°			0.8	14,000
	1500-W150-10-3T	●	3	1.500	0.831	1.008	0.969	1.500	6.000	2.000			+10°	-5°			0.8	11,500
	1500-W150-10-4T	●	4	1.500	0.831	1.008	0.969	1.500	6.000	2.000			+10°	-5°			0.8	11,500
Long Shank (Cylindrical)	MFH 1000-S100-10-2T-8	●	2	1.000	0.331	0.508	0.469	1.000	8.000	4.750	0.059 *(0.138)	0.047	+10°	-5°	Yes	Fig.2	0.8	17,000
	1250-S125-10-2T-8	●	2	1.250	0.581	0.758	0.719	1.250	8.000	4.750			+10°	-5°			0.8	14,000
	1500-S125-10-4T10	●	4	1.500	0.831	1.008	0.969	1.250	10.000	2.000			+10°	-5°		Fig.1	0.8	11,500

* Dimension in ( ) is when mounting LD

Spare Parts and Applicable Inserts (Inch Size)

Part Number	Spare Parts			Applicable Inserts
	Clamp Screw	Wrench	Anti-Seize Compound	
				M20, M171
MFH...-10-...	SB-4075TRP	DTPM-15	P-37	SOMT100420ER-GM SOMT100420ER-GH SOMT100420ER-LD SOMT100420ER-FL
	Recommended Torque for Insert Clamp 3.5 Nm			

Recommended Cutting Conditions ➡ **M172~M173**

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

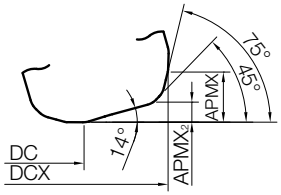
Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

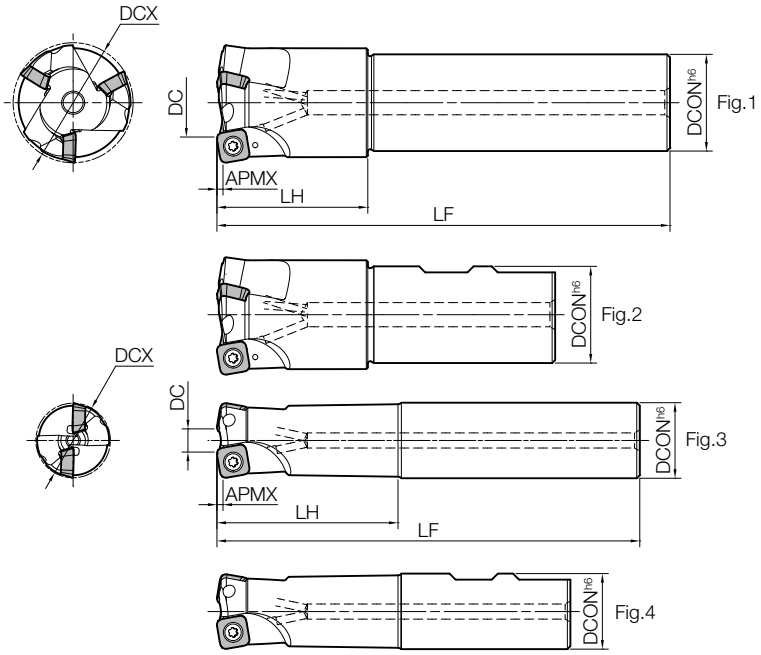
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFH End Mill (Metric Size)

Standard (Cylindrical)

LD Chipbreaker
Cutting Edge Dimensions





Toolholder Dimensions with SOMT10 Inserts (Metric Size)

	Part Number		Stock	No. of Inserts	Dimensions (mm)									Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
					DCX	DC			DCON	LF	LH	APMX	APMX2	A.R.	R.R.				
						GM/GH	LD	FL											
Standard Shank (Cylindrical)	MFH	25-S25-10-2T	●	2	25	8	12.5	11.5	25	140	60	1.5 *(3.5)	1.2	+10°	-5°	Yes	Fig.3	0.4	17,000
		28-S25-10-2T	●	2	28	11	15.5	14.5	25	140	40						Fig.1	0.5	15,500
		32-S32-10-2T	●	2	32	15	19.5	18.5	32	150	70						Fig.3	0.8	14,000
		32-S32-10-3T	●	3	32	15	19.5	18.5	32	150	70						Fig.3	0.8	14,000
		35-S32-10-2T	●	2	35	18	22.5	21.5	32	150	50						Fig.1	0.8	13,000
		35-S32-10-3T	●	3	35	18	22.5	21.5	32	150	50						Fig.1	0.8	13,000
		40-S32-10-3T	●	3	40	23	27.5	26.5	32	150	50						Fig.1	0.9	11,500
		40-S32-10-4T	●	4	40	23	27.5	26.5	32	150	50						Fig.1	0.9	11,500
Standard Shank (Weldon)	MFH	25-W25-10-2T	●	2	25	8	12.5	11.5	25	117	60	1.5 *(3.5)	1.2	+10°	-5°	Yes	Fig.4	0.4	17,000
		32-W32-10-3T	●	3	32	15	19.5	18.5	32	131	70						Fig.4	0.7	14,000
		40-W32-10-3T	●	3	40	23	27.5	26.5	32	112	50						Fig.2	0.7	11,500
		40-W32-10-4T	●	4	40	23	27.5	26.5	32	112	50						Fig.2	0.7	11,500
Long Shank (Cylindrical)	MFH	25-S25-10-2T-200	●	2	25	8	12.5	11.5	25	200	120	1.5 *(3.5)	1.2	+10°	-5°	Yes	Fig.3	0.6	17,000
		28-S25-10-2T-200	●	2	28	11	15.5	14.5	25	200	40						Fig.1	0.7	15,500
		32-S32-10-2T-200	●	2	32	15	19.5	18.5	32	200	120						Fig.3	1.0	14,000
		35-S32-10-2T-200	●	2	35	18	22.5	21.5	32	200	50						Fig.1	1.4	13,000
		40-S32-10-4T-250	●	4	40	23	27.5	26.5	32	250	50						Fig.1	1.5	11,500
Extra Long Shank (Cylindrical)	MFH	25-S25-10-2T-300	●	2	25	8	12.5	11.5	25	300	180	1.5 *(3.5)	1.2	+10°	-5°	Yes	Fig.3	1.0	17,000
		28-S25-10-2T-300	●	2	28	11	15.5	14.5	25	300	40						Fig.1	1.1	15,500
		32-S32-10-2T-300	●	2	32	15	19.5	18.5	32	300	180						Fig.3	1.6	14,000
		35-S32-10-2T-300	●	2	35	18	22.5	21.5	32	300	50						Fig.1	1.7	13,000
		40-S32-10-4T-300	●	4	40	23	27.5	26.5	32	300	50						Fig.1	1.8	11,500

* Dimension in ( ) is when mounting LD

Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts			Applicable Inserts
	Clamp Screw	Wrench	Anti-Seize Compound	M20, M171
MFH...-10-...	SB-4075TRP	DTPM-15	P-37	SOMT100420ER-GM SOMT100420ER-GH SOMT100420ER-LD SOMT100420ER-FL
	Recommended Torque for Insert Clamp 3.5 Nm			

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Recommended Cutting Conditions ➔ **M172~M173**

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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MFH End Mill (Metric Size)

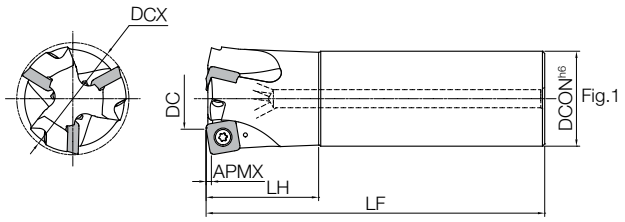
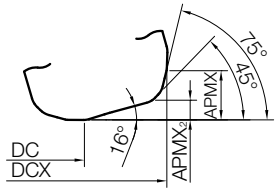


Fig.1

LD Chipbreaker
Cutting Edge Dimensions



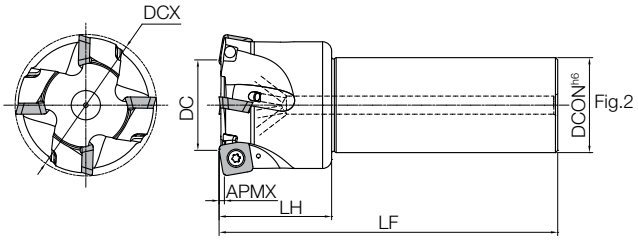


Fig.2

Toolholder Dimensions with SOMT14 Inserts (Metric Size)

Part Number		Stock	No. of Inserts	Dimensions (mm)									Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC			DCON	LF	LH	APMX	APMX2	A.R.	R.R.				
					GM	LD	FL											
MFH	50-S42-14-3T	●	3	50	27	33	32	42	150	50	2 *(5)	2	+10°	-10°	Yes	Fig.1	1.4	8,800
	63-S42-14-4T	●	4	63	40	46	45	42	150	50			+10°	-10°		Fig.2	1.7	7,400
	80-S42-14-5T	●	5	80	57	63	62	42	150	50			+10°	-8°		Fig.2	2.3	6,400

* Dimension in ( ) is when mounting LD

Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts			Applicable Inserts
	Clamp Screw	Wrench	Anti-Seize Compound	M20, M171
MFH...-14-...	SB-50120TRP Recommended Torque for Insert Clamp 4.5 N·m	TTP-20	P-37	SOMT140520ER-GM SOMT140520ER-GH SOMT140520ER-LD SOMT140514ER-FL

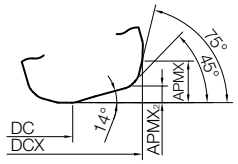
Recommended Cutting Conditions **M172~M173**

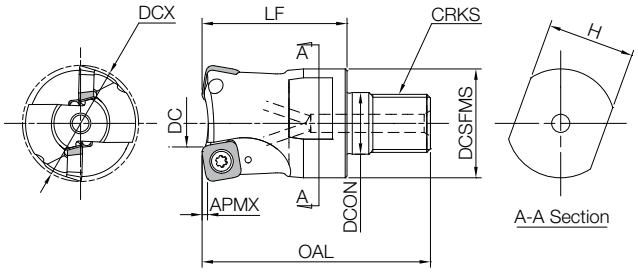
Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

MFH Modular End Mill (Metric Size)

LD Chipbreaker
Cutting Edge Dimensions





Toolholder Dimensions (Metric Size)

Part Number		Stock	No. of Inserts	Dimensions (mm)											Rake Angle (°)		Coolant Hole	Max RPM
				DCX	DC			DCSFMS	DCON	OAL	LF	CRKS	H	APMX	$APMX_2$	A.R.	R.R.		
					GM/GH	LD	FL												
MFH	**25-M12-10-2T**	●	2	25	8	12.5	11.5	23	12.5	57	35	M12×P1.75	19	1.5 *(3.5)	1.2	+10°	-5°	Yes	17,000
	28-M12-10-2T	●	2	28	11	15.5	14.5	23	12.5	57	35	M12×P1.75	19						15,500
	32-M16-10-2T	●	2	32	15	19.5	18.5	30	17.0	63	40	M16×P2.0	24						14,000
	32-M16-10-3T	●	3	32	15	19.5	18.5	30	17.0	63	40	M16×P2.0	24						14,000
	35-M16-10-2T	●	2	35	18	22.5	21.5	30	17.0	63	40	M16×P2.0	24						13,000
	35-M16-10-3T	●	3	35	18	22.5	21.5	30	17.0	63	40	M16×P2.0	24						13,000
	40-M16-10-3T	●	3	40	23	27.5	26.5	30	17.0	63	40	M16×P2.0	24						11,500
	40-M16-10-4T	●	4	40	23	27.5	26.5	30	17.0	63	40	M16×P2.0	24						11,500

* Dimension in ( ) is when mounting LD

Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts			Applicable Inserts ➔ M20, M171
	Clamp Screw	Wrench	Anti-Seize Compound	
MFH...-10-...	SB-4075TRP Recommended Torque for Insert Clamp 3.5 Nm	DTPM-15	P-37	SOMT100420ER-GM SOMT100420ER-GH SOMT100420ER-LD SOMT100420ER-FL

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

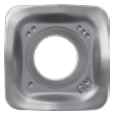
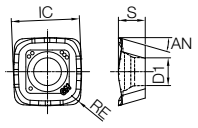
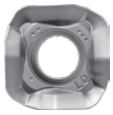
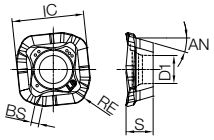
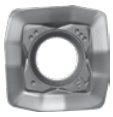
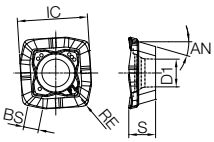
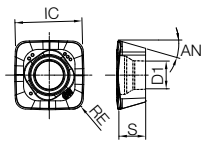
Recommended Cutting Conditions ➔ **M172~M173**

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

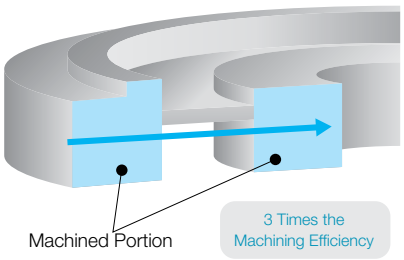
Applicable Inserts (M20)

Insert (Right-hand Shown)		Part Number	Dimensions (in) IC	S	D1	BS	RE	Angle (°) AN	MEGACOAT NANO PR1535	PR1525	PR1510	NEW MEGACOAT HARD PR015S	CVD Coated Carbide CA6535
 General Purpose		SOMT 100420ER-GM	0.406	0.180	0.181	-	0.079	16°	●	●	●		●
		140520ER-GM	0.557	0.219	0.228				●	●	●		●
 Large D.O.C.		SOMT 100420ER-LD	0.411	0.180	0.181	0.035	0.079	16°	●	●	●		●
		140520ER-LD	0.581	0.219	0.228	0.063			●	●	●		●
 Wiper Edge		SOMT 100420ER-FL	0.411	0.180	0.181	0.055	0.079	16°	●	●	●		●
		140514ER-FL	0.574	0.219	0.228	0.122	0.055		●	●	●		●
NEW Tough Edge		SOMT 100420ER-GH	0.411	0.180	0.179	-	0.079	16°	●	●	●	●	
		140520ER-GH	0.558	0.219	0.228				●	●	●	●	

Case Studies

SFVAF22B (Forged Alloy Steel)

- Turbine Parts
- Vc = 520 sfm
- fz = 0.0461 ipt
- D.O.C. × ae = 0.059" × max. 6.299"
- Dry
- MFH160R-14-8T (8 inserts)
- SOMT140520ER-GM (PR1525)



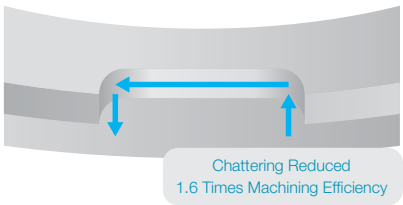
PR1525	**Chip Removal = 43.94in³/min**
Competitor G	Chip Removal = 14.65in³/min

Small machining noise even at 3 times higher feed rate.
Good edge condition without chipping and stable machining.

(User Evaluation)

304 (Stainless Steell)

- Clutch
- Vc = 390 sfm
- fz = 0.0472 ipt
- D.O.C. × ae= 0.039" × 0.787"
- Dry
- MFH32-S32-10-2T (2 inserts)
- SOMT100420ER-GM (PR1535)



PR1535	**Chip Removal = 3.54in³/min**
Competitor H	Chip Removal = 2.20in³/min

Competitor H caused chattering but MFH realized stable machining.
Good edge condition and long tool life.

(User Evaluation)

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Recommended Cutting Conditions

Chipbreaker	Workpiece	Holder Part Number and Feed Rate (fz: ipt)					Recommended Insert Grade (Vc: sfm)				
		End Mill Feed Rates			Face Mill Feed Rates		MEGACOAT NANO			MEGACOAT HARD	CVD Coated Carbide
		MFH1000 MFH25-	MFH1250 MFH32-	MFH1500 MFH40-	MFH…R-10	MFH…-14	PR1535	PR1525	PR1510	PR015S	CA6535
GM GH	Carbon Steel	① 0.020-0.032-0.039 ② 0.008-0.016-0.020	① 0.020-0.039-0.059 ② 0.012-0.028-0.039	① 0.020-0.047-0.071 ② 0.016-0.039-0.059	0.020-0.059-0.079		☆ 390-590-820	★ 390-590-820	-	-	-
	Alloy Steel	① 0.020-0.032-0.039 ② 0.008-0.016-0.020	① 0.020-0.039-0.059 ② 0.012-0.028-0.039	① 0.020-0.047-0.071 ② 0.016-0.039-0.059	0.020-0.059-0.079		☆ 330-520-720	★ 330-520-720	-	-	-
	Mold Steel ~ 40HRc	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		☆ 260-460-590	☆ 260-460-590	-	GH★ 260-460-590	-
	Mold Steel 40~50HRc	① 0.006-0.012-0.020 ② 0.006-0.008-0.010	① 0.008-0.020-0.032 ② 0.008-0.012-0.018	① 0.008-0.024-0.035 ② 0.008-0.020-0.028	0.008-0.028-0.039		☆ 200-330-430	☆ 200-330-430	-	GH★ 200-330-430	-
	Mold Steel 50~55HRc	① 0.006-0.010-0.016	① 0.006-0.014-0.024	① 0.006-0.010-0.028	0.008-0.020-0.031		-	☆ 200-330-430	-	GH★ 160-230-330	-
	Mold Steel 55~60HRc	① 0.0004-0.0024-0.0039 (Recommended only with GH chipbreaker)					-	-	-	GH★ 160-200-230	-
	Austenitic Stainless Steel	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		GM☆ 330-520-660	GM☆ 330-520-660	-	-	-
	Martensitic Stainless Steel	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		☆ 490-660-820	-	-	-	★ 590-790-980
	Precipitation Hardened Stainless Steel	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		★ 300-390-490	-	-	-	-
	Gray Cast Iron	① 0.020-0.032-0.039 ② 0.008-0.016-0.020	① 0.020-0.039-0.059 ② 0.012-0.028-0.039	① 0.020-0.047-0.071 ② 0.016-0.039-0.059	0.020-0.059-0.079		-	-	★ 390-590-820	-	-
	Nodular Cast Iron	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		-	-	★ 330-490-660	-	-
	Ni-base Heat Resistant Alloy	① 0.008-0.016-0.024 ② 0.006-0.008-0.012	① 0.008-0.020-0.035 ② 0.008-0.016-0.024	① 0.008-0.024-0.039 ② 0.008-0.020-0.032	0.008-0.032-0.047		☆ 70-100-160	-	-	-	★ 70-100-160
	Titanium Alloy	① 0.008-0.016-0.024 ② 0.006-0.008-0.012	① 0.008-0.020-0.035 ② 0.008-0.016-0.024	① 0.008-0.024-0.039 ② 0.008-0.020-0.032	0.008-0.032-0.047		GM★ 130-200-260	-	GM☆ 100-160-230	-	-
LD	Carbon Steel	① 0.020-0.032-0.039 ③ 0.002-0.004-0.008	① 0.020-0.039-0.059 ③ 0.002-0.006-0.012	① 0.020-0.047-0.071 ③ 0.002-0.008-0.012	① 0.020-0.059-0.079 ③ 0.002-0.008-0.012	④ 0.020-0.059-0.079 ⑤ 0.002-0.008-0.016	☆ 390-590-820	★ 390-590-820	-	-	-
	Alloy Steel	① 0.020-0.032-0.039 ③ 0.002-0.004-0.008	① 0.020-0.039-0.059 ③ 0.002-0.006-0.012	① 0.020-0.047-0.071 ③ 0.002-0.008-0.012	① 0.020-0.059-0.079 ③ 0.002-0.008-0.012	④ 0.020-0.059-0.079 ⑤ 0.002-0.008-0.016	☆ 330-520-720	★ 330-520-720	-	-	-
	Mold Steel (~40HRc)	① 0.020-0.028-0.032 ③ 0.002-0.003-0.006	① 0.020-0.032-0.047 ③ 0.002-0.004-0.008	① 0.020-0.039-0.063 ③ 0.002-0.006-0.008	① 0.020-0.047-0.071 ③ 0.002-0.006-0.008	④ 0.020-0.047-0.071 ⑤ 0.002-0.006-0.012	☆ 260-460-590	★ 260-460-590	-	-	-
	Mold Steel (40~50HRc)	① 0.008-0.012-0.020 ③ 0.001-0.002-0.004	① 0.008-0.020-0.032 ③ 0.001-0.003-0.006	① 0.008-0.024-0.035 ③ 0.001-0.004-0.006	① 0.008-0.028-0.039 ③ 0.001-0.004-0.006	④ 0.008-0.028-0.039 ⑤ 0.001-0.004-0.008	☆ 200-330-430	★ 200-330-430	-	-	-
	Austenitic Stainless Steel	① 0.020-0.028-0.032 ③ 0.002-0.003-0.006	① 0.020-0.032-0.047 ③ 0.002-0.004-0.008	① 0.020-0.039-0.063 ③ 0.002-0.006-0.008	① 0.020-0.047-0.071 ③ 0.002-0.006-0.008	④ 0.020-0.047-0.071 ⑤ 0.002-0.006-0.012	★ 330-520-660	☆ 330-520-660	-	-	-
	Martensitic Stainless Steel	① 0.020-0.028-0.032 ③ 0.002-0.003-0.006	① 0.020-0.032-0.047 ③ 0.002-0.004-0.008	① 0.020-0.039-0.063 ③ 0.002-0.006-0.008	① 0.020-0.047-0.071 ③ 0.002-0.006-0.008	④ 0.020-0.047-0.071 ⑤ 0.002-0.006-0.012	☆ 490-660-820	-	-	-	★ 590-790-980
	Precipitation Hardened Stainless Steel	① 0.020-0.028-0.032 ③ 0.002-0.003-0.006	① 0.020-0.032-0.047 ③ 0.002-0.004-0.008	① 0.020-0.039-0.063 ③ 0.002-0.006-0.008	① 0.020-0.047-0.071 ③ 0.002-0.006-0.008	④ 0.020-0.047-0.071 ⑤ 0.002-0.006-0.012	★ 300-390-490	-	-	-	-
	Gray Cast Iron	① 0.020-0.032-0.039 ③ 0.002-0.004-0.008	① 0.020-0.039-0.059 ③ 0.002-0.006-0.012	① 0.020-0.047-0.071 ③ 0.002-0.008-0.012	① 0.020-0.059-0.079 ③ 0.002-0.008-0.012	④ 0.020-0.059-0.079 ⑤ 0.002-0.008-0.016	-	-	★ 390-590-820	-	-
	Nodular Cast Iron	① 0.020-0.028-0.032 ③ 0.002-0.003-0.006	① 0.020-0.032-0.047 ③ 0.002-0.004-0.008	① 0.020-0.039-0.063 ③ 0.002-0.006-0.008	① 0.020-0.047-0.071 ③ 0.002-0.006-0.008	④ 0.020-0.047-0.071 ⑤ 0.002-0.006-0.012	-	-	★ 330-490-660	-	-
	Ni-base Heat Resistant Alloy	① 0.008-0.016-0.024 ③ 0.001-0.002-0.004	① 0.008-0.020-0.035 ③ 0.001-0.003-0.006	① 0.008-0.024-0.039 ③ 0.001-0.004-0.006	① 0.008-0.032-0.047 ③ 0.001-0.004-0.006	④ 0.008-0.032-0.047 ⑤ 0.001-0.004-0.008	☆ 70-100-160	-	-	-	★ 70-100-160
	Titanium Alloy	① 0.008-0.016-0.024 ③ 0.001-0.002-0.004	① 0.008-0.020-0.035 ③ 0.001-0.003-0.006	① 0.008-0.024-0.039 ③ 0.001-0.004-0.006	① 0.008-0.032-0.047 ③ 0.001-0.004-0.006	④ 0.008-0.032-0.047 ⑤ 0.001-0.004-0.008	★ 130-200-260	-	☆ 100-160-230	-	-

① For D.O.C. ≤ 0.039"
② For D.O.C. 0.040 - 0.059"
③ For D.O.C. 0.040 - 0.138"
④ For D.O.C. ≤ 0.079"
⑤ For D.O.C. 0.080 - 0.197"

- Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy
- The middle values are recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
- Machining with CAT30 or equivalent, feed rate should be reduced to 25% of recommended cutting conditions
- Internal coolant is recommended for slotting applications
- For finishing, maximum recommended feed is f = 0.059 ipt for **SOMT14-LD** type, f = 0.035 ipt for **SOMT10-LD** type, f = 0.118 ipt for **SOMT14-FL** type, f = 0.055 ipt for **SOMT10-FL** type

Recommended Cutting Conditions

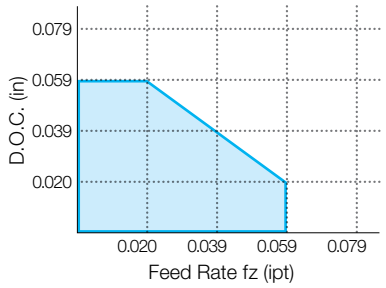
Chipbreaker	Workpiece	Holder Part Number and Feed Rate (fz: ipt)					Recommended Insert Grade (Vc: sfm)				
		End Mill Feed Rates			Face Mill Feed Rates		MEGACOAT NANO			MEGACOAT HARD	CVD Coated Carbide
		MFH1000 MFH25-	MFH1250 MFH32-	MFH1500 MFH40-	MFH...R-10	MFH...-14	PR1535	PR1525	PR1510	PR015S	CA6535
FL	Carbon Steel	① 0.020-0.032-0.039 ② 0.008-0.016-0.020	① 0.020-0.039-0.059 ② 0.012-0.028-0.039	① 0.020-0.047-0.071 ② 0.016-0.039-0.059	0.020-0.059-0.079		☆ 390-590-820	★ 390-590-820	-	-	-
	Alloy Steel	① 0.020-0.032-0.039 ② 0.008-0.016-0.020	① 0.020-0.039-0.059 ② 0.012-0.028-0.039	① 0.020-0.047-0.071 ② 0.016-0.039-0.059	0.020-0.059-0.079		☆ 330-520-720	★ 330-520-720	-	-	-
	Mold Steel (~40HRc)	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		☆ 260-460-590	★ 260-460-590	-	-	-
	Mold Steel (40~50HRc)	① 0.006-0.012-0.020 ② 0.006-0.008-0.010	① 0.008-0.020-0.032 ② 0.008-0.012-0.018	① 0.008-0.024-0.035 ② 0.008-0.020-0.028	0.008-0.028-0.039		☆ 200-330-430	★ 200-330-430	-	-	-
	Austenitic Stainless Steel	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		★ 330-520-660	☆ 330-520-660	-	-	-
	Martensitic Stainless Steel	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		☆ 490-660-820	-	-	-	★ 590-790-980
	Precipitation Hardened Stainless Steel	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		★ 300-390-490	-	-	-	-
	Gray Cast Iron	① 0.020-0.032-0.039 ② 0.008-0.016-0.020	① 0.020-0.039-0.059 ② 0.012-0.028-0.039	① 0.020-0.047-0.071 ② 0.016-0.039-0.059	0.020-0.059-0.079		-	-	★ 390-590-820	-	-
	Nodular Cast Iron	① 0.020-0.028-0.032 ② 0.008-0.012-0.016	① 0.020-0.032-0.047 ② 0.012-0.024-0.032	① 0.020-0.039-0.063 ② 0.016-0.032-0.047	0.020-0.047-0.071		-	-	★ 330-490-660	-	-
	Ni-base Heat Resistant Alloy	① 0.008-0.016-0.024 ② 0.006-0.008-0.012	① 0.008-0.020-0.035 ② 0.008-0.016-0.024	① 0.008-0.024-0.039 ② 0.008-0.020-0.032	0.008-0.032-0.047		☆ 70-100-160	-	-	-	★ 70-100-160
	Titanium Alloy	① 0.008-0.016-0.024 ② 0.006-0.008-0.012	① 0.008-0.020-0.035 ② 0.008-0.016-0.024	① 0.008-0.024-0.039 ② 0.008-0.020-0.032	0.008-0.032-0.047		★ 130-200-260	-	☆ 100-160-230	-	-

① For D.O.C. ≤ 0.039"
② For D.O.C. 0.040 - 0.059"
③ For D.O.C. 0.040 - 0.138"
④ For D.O.C. ≤ 0.079"
⑤ For D.O.C. 0.080 - 0.197"

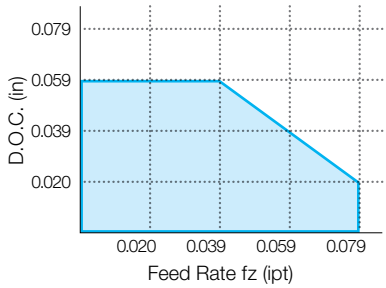
- Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy
- The middle values are recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
- Machining with CAT30 or equivalent, feed rate should be reduced to 25% of recommended cutting conditions
- Internal coolant is recommended for slotting applications
- For finishing, maximum recommended feed is f = 0.059 ipt for **SOMT14-LD** type, f = 0.035 ipt for **SOMT10-LD** type, f = 0.118 ipt for **SOMT14-FL** type, f = 0.055 ipt for **SOMT10-FL** type

MFH-RAPTOR Cutting Performance (GM, GH, FL Chipbreaker)

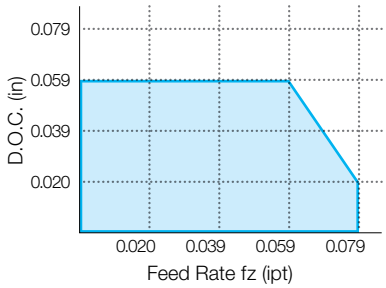
MFH1000-W100-10-2T
MFH25-S25-10-2T



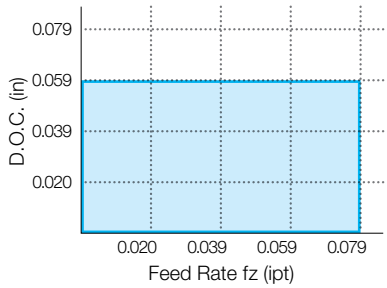
MFH1250-W125-10-◯T
MFH32-S32-10-◯T



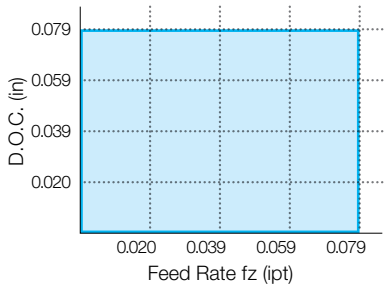
MFH1500-W150-10-◯T
MFH40-S32-10-◯T



MFH2000R ~ 3000R-10-◯T
MFH050R ~ 080R-10-◯T



MFH . . -14-◯T

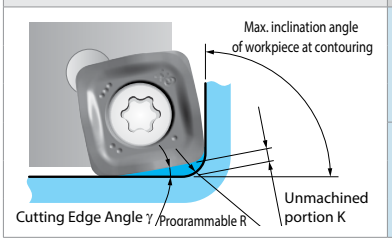


LD Chipbreaker:
MAX D.O.C. for LD chipbreaker is 0.197" (0.138" for SOMT10)
Please refer to M172 for feed rate

End Mill:
Please refer to the application map above

Face Mill:
MAX feed rate (inches per tooth) fz = 0.079ipt

Approximate Programming Radius Adjustment

Shape	Holder	Chipbreaker	Cutting Edge Angle γ (°)	Programmable R (in) Recommended	Max. Non-machined Portion K (in)	Side Wall Max. Inclination Angle (°)
	MFH…-10-…	GM / GH	10°	0.118	0.034	90°
		LD	14°	0.148	0.027	65°
		FL	14°	0.118	0.035	80°
	MFH…-14-…	GM / GH	10°	0.148	0.054	90°
		LD	16°	0.197	0.042	65°
		FL	13°	0.118	0.054	80°

Ramping Reference Data

MFH…-10-…

Cutter Dia. DCX (in)	1.00"	-	1.25"	-	1.50"	2.00"	2.50"	3.00"
Cutter Dia. DCX (mm)	25mm	28mm	32mm	35mm	40mm	50mm	63mm	80mm
Max. Ramping Angle RMPX (°)	5°	4.5°	4°	3.5°	3°	2.5°	2°	1°
tan RMPX	0.087	0.078	0.070	0.061	0.052	0.043	0.035	0.017

MFH…-14-…

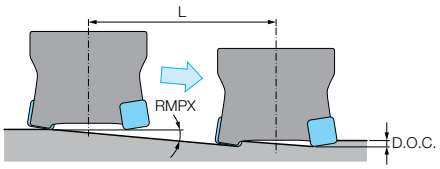
Cutter Dia. DCX (in)	2.00"	2.50"	3.00"	4.00"	5.00"	6.00"
Cutter Dia. DCX (mm)	50mm	63mm	80mm	100mm	125mm	160mm
Max. Ramping Angle RMPX (°)	2°	1.8°	1°	0.5°	0.4°	0.2°
tan RMPX	0.035	0.031	0.017	0.009	0.007	0.003

Ramping Guide

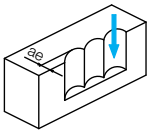
- Ramping angle should be under α max (maximum ramping angle) in the above cutting conditions
- Reduce recommended feed rate in cutting conditions above by 70%

Formula for Max. Cutting Length (L) at Max. Ramping Angle

$$L = \frac{\text{D.O.C.}}{\tan \text{RMPX}}$$



Plunging



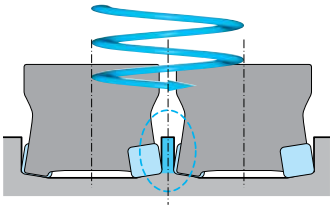
Insert Description	Maximum Width of Cut (ae)
SOMT10 Type	0.315"
SOMT14 Type	0.453"

- LD and FL chipbreakers are not available for plunging
- Reduce feed rate to fz ≤ 0.008ipt when plunging

Helical Milling

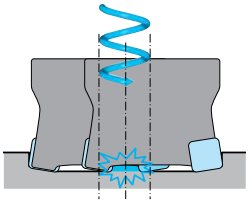
- For Helical milling, use between Min. Drilling Dia. and Max. Drilling Dia.

Exceeding Max. Machining Dia.



Center Core Remains

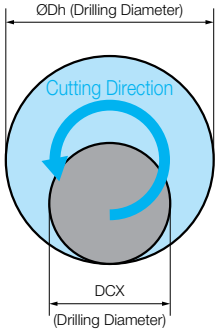
Under Min. Machining Dia.



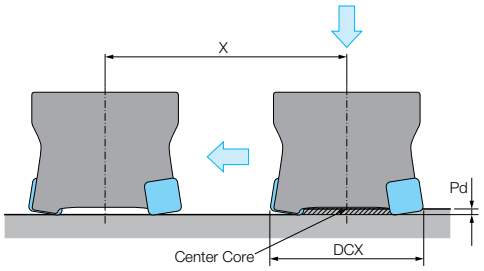
Center Core Hits Holder Body

Holder	Min. Drilling Dia. ØDh1	Max. Drilling Dia. ØDh2	Max. Ramping Depth per Cycle
MFH…-10-…	2×DCX–0.709"	2×DCX–0.079"	GM = 0.059"
MFH…-14-…	2×DCX–0.984"	2×DCX–0.079"	GM = 0.079"

- Keep machine depth per rotation less than max D.O.C. (APMX) in the cutter dimensions chart
- Use climb milling. (Refer to detail on right)
- Feed rates should be reduced to 50% of recommended cutting condition (Page ➔ **M172~M173**)
- Use caution to eliminate incidences caused by producing long chips



Drilling



3D Machining

Chipbreaker	Ramping	Contouring (Rising Wall Angle)	Plunging	Helical Milling	Pocketing
GM / GH	✓	✓ (90°)	✓	✓	✓
LD	✓	Limit (65°)	X	X	X
FL	✓	Limit (80°)	X	X	X

- Some applications are not available depending on chipbreaker.
- For FL and LD type, there is a limit of rising wall angle during contouring.

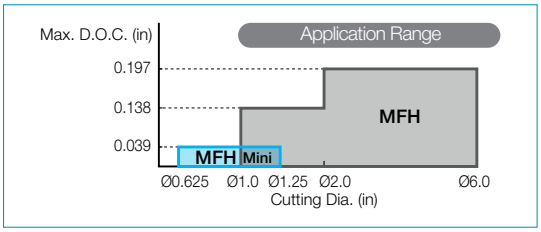
Holder	GM / GH		LD		FL	
	Max. Drilling Depth (Pd)	Min. Cutting Length (X) for Flat Bottom Surface	Max. Drilling Depth (Pd)	Min. Cutting Length (X) for Flat Bottom Surface	Max. Drilling Depth (Pd)	Min. Cutting Length (X) for Flat Bottom Surface
MFH…-10-…	0.059"	DCX–0.709"	0.059"	DCX–0.551"	0.059"	DCX–0.591"
MFH…-14-…	0.079"	DCX–0.945"	0.079"	DCX–0.709"	0.079"	DCX–0.748"

[Drilling Depth]
See Max. Drilling Depth (Pd) in the above cutting conditions
Traversing after Drilling
① It is recommended to reduce feed by 25% of recommendation on Page ➔ **M172~M173** until Center Core is removed
② Axial feed rate recommendation per revolution is 0.008 ipr while drilling

MFH-RAPTOR MINI

(Cutter Dia. Ø0.625" ~ Ø2.000")
(Cutter Dia. Ø16mm ~ Ø32mm)

Economical Inserts with 4 Cutting Edges High Feed Milling for Small Diameters and Small Machining Centers

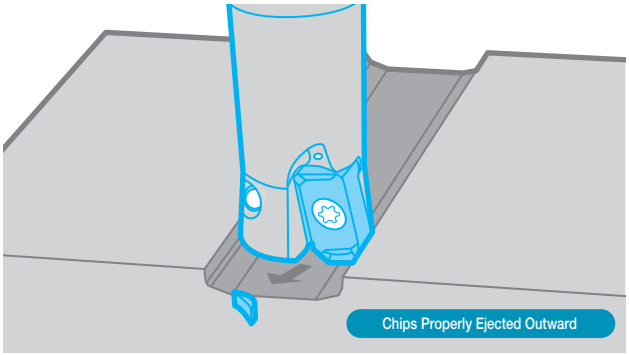


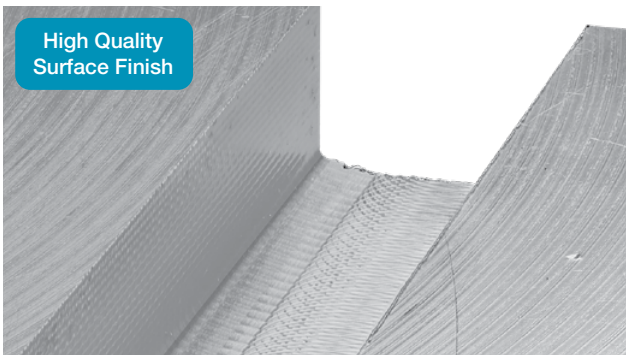
1 Good Chip Evacuation

MFH Mini Controls Chip Biting with Convex Cutting Edge

MFH Mini

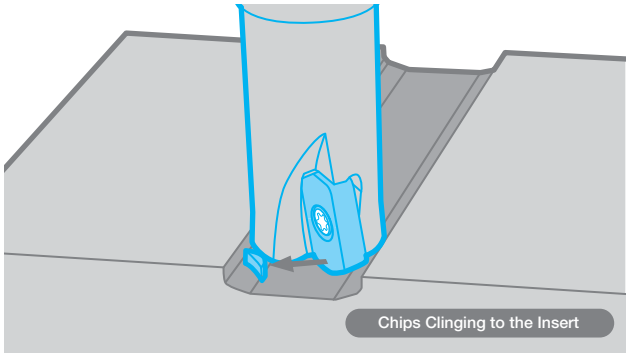
Good Chip Evacuation

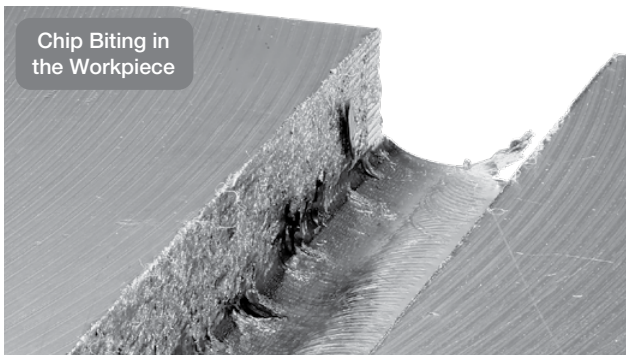




Competitor High Feed Cutter

Poor Chip Evacuation

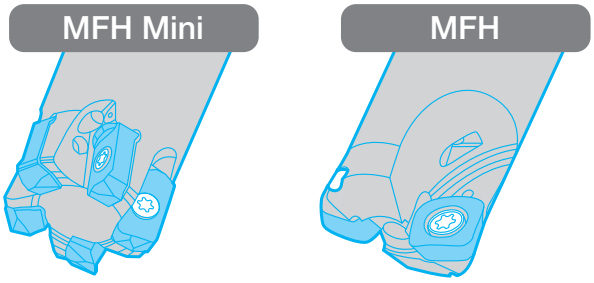




Cutting Conditions: Cutter Dia. Dc = Ø0.625" , Vc = 490 sfm, fz = 0.024 ipt, D.O.C. = 0.020" (20 Passes): Total 0.394" × 0.630", Dry Workpiece: Stainless Steel

2 Fine Pitch for Efficient Machining

Cutter Dia. 1.000" Type



5 Inserts
MFH1000-W100-03-5T47

2 Inserts
MFH1000-W100-10-2T

MFH Mini End Mill (Inch Size)

Standard (Cylindrical)

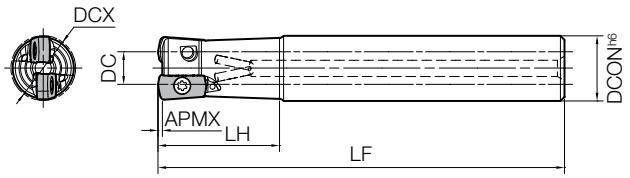


Fig.1

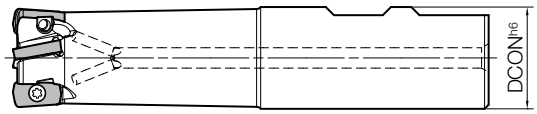


Fig.2

Toolholder Dimensions (Inch Size)

Part Number		Stock	No. of Inserts	Dimensions (in)						Max. Ramping Angle	Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC	DCON	LF	LH	APMX	RMPX	A.R.	R.R.				
Standard Shank (Weldon)	MFH 0625-W625-03-2T-3	●	2	0.625	0.310	0.625	3.196	1.250	0.039	2.8°	-10°	-15°	Yes	Fig.2	0.1	18,800
	0750-W750-03-3T-4	●	3	0.750	0.435	0.750	4.070	2.000	0.039	1.7°					0.2	15,700
	1000-W100-03-4T47	●	4	1.000	0.685	1.000	4.820	2.500	0.039	1.2°					0.4	13,400
	1000-W100-03-5T47	●	5	1.000	0.685	1.000	4.820	2.500	0.039	1.2°					0.4	13,400
	1250-W125-03-5T-5	●	5	1.250	0.935	1.250	5.070	2.750	0.039	0.8°					0.7	11,400
	1250-W125-03-6T-5	●	6	1.250	0.935	1.250	5.070	2.750	0.039	0.8°					0.7	11,400
Long Shank (Cylindrical)	MFH 0625-S625-03-2T-6	●	2	0.625	0.310	0.625	6.000	2.000	0.039	2.8°	-10°	-15°	Yes	Fig.1	0.2	18,800
	NEW 0750-S750-03-3T55	●	3	0.750	0.435	0.750	5.500	2.000	0.039	1.7°					0.3	15,700
	0750-S750-03-3T65	●	3	0.750	0.435	0.750	6.500	3.000	0.039	1.7°					0.3	15,700
	NEW 0875-S750-03-3T55	●	3	0.875	0.560	0.750	5.500	2.000	0.039	1.3°					0.3	14,700
	NEW 1000-S100-03-4T55	●	4	1.000	0.685	1.000	5.500	2.500	0.039	1.2°					0.5	13,400
	1000-S100-03-4T-7	●	4	1.000	0.685	1.000	7.000	4.000	0.039	1.2°					0.6	13,400
	NEW 1250-S125-03-5T62	●	5	1.250	0.935	1.250	6.250	3.000	0.039	0.8°					0.8	11,400
	1250-S125-03-5T-8	●	5	1.250	0.935	1.250	8.000	4.750	0.039	0.8°					1.1	11,400

Additional Ramping Information ➡ **M181**

Spare Parts and Applicable Inserts (Inch Size)

Part Number	Spare Parts			Applicable Inserts
	Clamp Screw	Wrench	Anti-Seize Compound	➡ M15, M179
MFH...-03-...	SB-3065TRP	DTPM-8	P-37	LOGU030310ER-GM LOGU030310ER-GH
	Recommended Torque for Insert Clamp 1.2 N·m			

Recommended Cutting Conditions ➡ **M180**

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFH Mini End Mill (Metric Size)

Standard (Cylindrical)

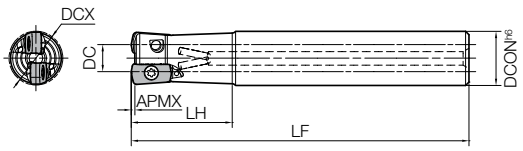


Fig.1

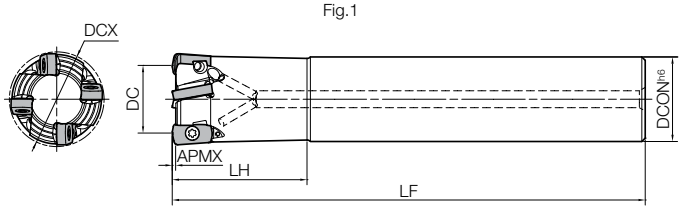


Fig.2

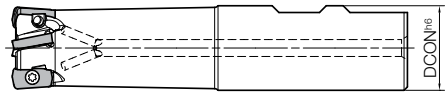


Fig.3

Toolholder Dimensions (Metric Size)

Part Number		Stock	No. of Inserts	Dimensions (mm)						Max. Ramping Angle	Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC	DCON	LF	LH	APMX	RMPX	A.R.	R.R.				
Standard Shank (Cylindrical)	MFH 16-S16-03-2T	●	2	16	8	16	100	30	1	2.8°	-10°	-15°	Yes	Fig.1	0.1	18,800
	17-S16-03-2T	●	2	17	9	16	100	20	1	2.5°				Fig.2	0.1	17,900
	18-S16-03-2T	●	2	18	10	16	100	20	1	2.1°					0.1	17,000
	20-S20-03-3T	●	3	20	12	20	130	50	1	1.7°				Fig.1	0.3	15,700
	20-S20-03-4T	●	4	20	12	20	130	50	1	1.7°					0.3	15,700
	22-S20-03-3T	●	3	22	14	20	130	30	1	1.4°				Fig.2	0.3	14,700
	22-S20-03-4T	●	4	22	14	20	130	30	1	1.4°					0.3	14,700
	25-S25-03-4T	●	4	25	17	25	140	60	1	1.2°				Fig.1	0.5	13,400
	25-S25-03-5T	●	5	25	17	25	140	60	1	1.2°					0.5	13,400
	28-S25-03-4T	●	4	28	20	25	140	40	1	1.0°				Fig.2	0.5	12,400
	28-S25-03-5T	●	5	28	20	25	140	40	1	1.0°					0.5	12,400
	32-S32-03-5T	●	5	32	24	32	150	70	1	0.8°				Fig.1	0.8	11,400
	32-S32-03-6T	●	6	32	24	32	150	70	1	0.8°					0.8	11,400
Standard Shank (Weldon)	MFH 16-W16-03-2T	●	2	16	8	16	79	30	1	2.8°	-10°	-15°	Yes	Fig.3	0.1	18,800
	20-W20-03-3T	●	3	20	12	20	101	50	1	1.7°					0.2	15,700
	20-W20-03-4T	●	4	20	12	20	101	50	1	1.7°					0.2	15,700
	25-W25-03-4T	●	4	25	17	25	117	60	1	1.2°					0.4	13,400
	25-W25-03-5T	●	5	25	17	25	117	60	1	1.2°					0.4	13,400
	32-W32-03-5T	●	5	32	24	32	131	70	1	0.8°					0.7	11,400
	32-W32-03-6T	●	6	32	24	32	131	70	1	0.8°					0.7	11,400
Long Shank (Cylindrical)	MFH 16-S16-03-2T-150	●	2	16	8	16	150	50	1	2.8°	-10°	-15°	Yes	Fig.1	0.2	18,800
	20-S20-03-3T-160	●	3	20	12	20	160	80	1	1.7°					0.3	15,700
	25-S25-03-4T-180	●	4	25	17	25	180	100	1	1.2°					0.6	13,400
	32-S32-03-5T-200	●	5	32	24	32	200	120	1	0.8°					1.1	11,400

Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts			Applicable Inserts
	Clamp Screw	Wrench	Anti-Seize Compound	
				M15, M179
MFH...-03-...	SB-3065TRP	DTPM-8	P-37	LOGU030310ER-GM LOGU030310ER-GH
	Recommended Torque for Insert Clamp 1.2 N·m			

Recommended Cutting Conditions M180

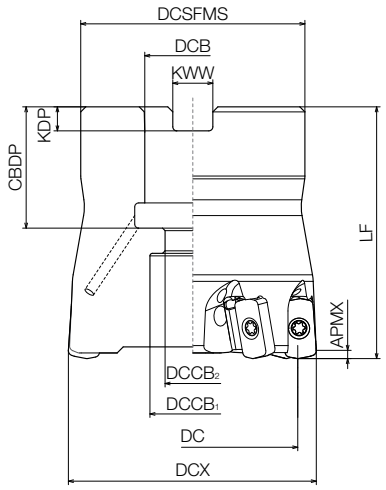
Additional Ramping Information M181

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFH Mini Face Mill (Inch Size)



Toolholder Dimensions (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)											Rake Angle (°)		Coolant Hole	Weight (kg)	Max RPM
			DCX	DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	A.R.	R.R.			
MFH 1500R-03-5T	●	5	1.500	1.185	1.400	0.500	0.433	0.276	1.575	0.709	0.156	0.250	0.039	-10°	-15°	Yes	0.2	10,200
1500R-03-6T	●	6	1.500	1.185	1.400	0.500	0.433	0.276	1.575	0.709	0.156	0.250	0.039	-10°	-15°	Yes	0.2	10,200
2000R-03-8T	●	8	2.000	1.685	1.750	0.750	0.669	0.433	1.968	0.947	0.188	0.312	0.039	-10°	-15°	Yes	0.5	8,600

Toolholder Dimensions (Metric Size)

Part Number	Stock	No. of Inserts	Dimensions (mm)											Rake Angle (°)		Coolant Hole	Weight (kg)	Max RPM
			DCX	DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	A.R.	R.R.			
MFH 040R-03-5T-M	●	5	40	32	38	16	15	9	40	19	5.6	8.4	1	-10°	-15°	Yes	0.2	9,900
040R-03-6T-M	●	6	40	32	38	16	15	9	40	19	5.6	8.4						
050R-03-8T-M	●	8	50	42	47	22	19	11	50	21	6.3	10.4	1	-10°	-15°	Yes	0.5	8,600

Multiple step slot milling is NOT recommended for MFH-Mini face mill diameters above Ø1.3" due to a danger of re-cutting chips

Spare Parts and Applicable Inserts (Inch Size)

Part Number	Spare Parts				Applicable Inserts
	Clamp Screw	Wrench	Anti-Seize Compound	Arbor Bolt	
					M15, M179
MFH1500R-03-5T	SB-3065TRP	DTPM-8	P-37	HH1/4-0.75(H)	LOGU030310ER-GM LOGU030310ER-GH
MFH1500R-03-6T	Recommended Torque for Insert Clamp 1.2 N·m				
MFH2000R-03-8T				HH3/8-1.25(H)	

(H) Optional coolant thru bolt available.

Recommended Cutting Conditions ➡ **M180**

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

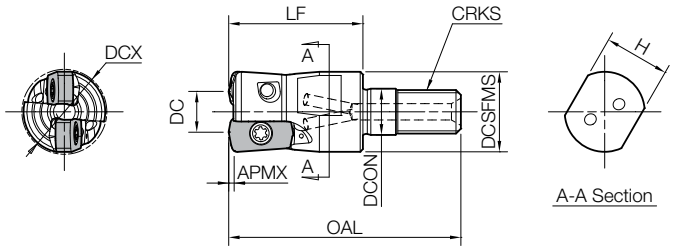
Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

(Customer Service) **800.823.7284 - Option 1**
(Technical Support) **800.823.7284 - Option 2**
Visit us online at **KyoceraPrecisionTools.com**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

MFH Mini Modular End Mill



Toolholder Dimensions

Part Number	Stock	Unit	No. of Inserts	Dimensions									Max. Ramping Angle	Rake Angle (°)		Coolant Hole	Max RPM
				DCX	DC	DCSFMS	DCON	OAL	LF	CRKS (mm)	H	APMX	RMPX	A.R.	R.R.		
MFH 0625-M08-03-2T	●	inch	2	0.625	0.310	0.579	0.335	1.693	0.984	M8xP1.25	0.472	0.039	2.8°	-10°	-15°	Yes	18,800
0750-M10-03-3T	●		3	0.750	0.435	0.728	0.413	1.929	1.181	M10xP1.5	0.591	0.039	1.7°				15,700
1000-M12-03-4T	●		4	1.000	0.685	0.906	0.492	2.244	1.378	M12xP1.75	0.748	0.039	1.2°				13,400
1000-M12-03-5T	●		5	1.000	0.685	0.906	0.492	2.244	1.378	M12xP1.75	0.748	0.039	1.2°				13,400
1250-M16-03-5T	●		5	1.250	0.935	1.181	0.669	2.480	1.575	M16xP2	0.945	0.039	0.8°				11,400
1250-M16-03-6T	●		6	1.250	0.935	1.181	0.669	2.480	1.575	M16xP2	0.945	0.039	0.8°				11,400
1500-M16-03-6T	●		6	1.500	1.185	1.181	0.669	2.480	1.575	M16xP2	0.945	0.039	0.5°				10,200
MFH 16-M08-03-2T	●	mm	2	16	8	14.7	8.5	43	25	M8xP1.25	12	1	2.8°	-10°	-15°	Yes	18,880
17-M08-03-2T	●		2	17	9	14.7	8.5	43	25	M8xP1.25	12	1	2.5°				17,900
18-M08-03-2T	●		2	18	10	14.7	8.5	43	25	M8xP1.25	12	1	2.1°				17,000
20-M10-03-3T	●		3	20	12	18.7	10.5	49	30	M10xP1.5	15	1	1.7°				15,700
20-M10-03-4T	●		4	20	12	18.7	10.5	49	30	M10xP1.5	15	1	1.7°				15,700
22-M10-03-3T	●		3	22	14	18.7	10.5	49	30	M10xP1.5	15	1	1.4°				14,700
22-M10-03-4T	●		4	22	14	18.7	10.5	49	30	M10xP1.5	15	1	1.4°				14,700
25-M12-03-4T	●		4	25	17	23.0	12.5	57	35	M12xP1.75	19	1	1.2°				13,400
25-M12-03-5T	●		5	25	17	23.0	12.5	57	35	M12xP1.75	19	1	1.2°				13,400
28-M12-03-4T	●		4	28	20	23.0	12.5	57	35	M12xP1.75	19	1	1.0°				12,400
28-M12-03-5T	●		5	28	20	23.0	12.5	57	35	M12xP1.75	19	1	1.0°				12,400
32-M16-03-5T	●		5	32	24	30.0	17.0	63	40	M16xP2	24	1	0.8°				11,400
32-M16-03-6T	●		6	32	24	30.0	17.0	63	40	M16xP2	24	1	0.8°				11,400

Spare Parts and Applicable Inserts

Part Number	Spare Parts			Applicable Inserts **Below**
	Clamp Screw	Wrench	Anti-Seize Compound	
MFH...-03-...	SB-3065TRP Recommended Torque for Insert Clamp 1.2 N·m	DTPM-8	P-37	LOGU030310ER-GM LOGU030310ER-GH

Additional Ramping Information ➡ **M181**

* Dimension in ( ) is when mounting LD

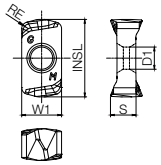
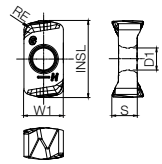
Caution with Max. Revolution

When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Applicable Inserts (➡ M15)

Recommended Cutting Conditions ➡ **M180**

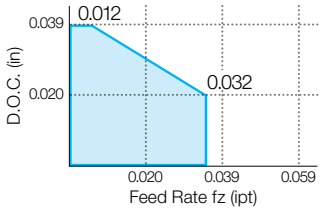
Insert		Part Number	Dimension (in)					MEGACOAT NANO			MEGACOAT HARD	CVD
			W1	S	D1	INSL	RE	**PR1535**	**PR1525**	**PR1510**	PR015S	**CA6535**
General Purpose		**LOGU 030310ER-GM**	0.244	0.156	0.136	0.469	0.039	●	●	●		●
NEW Tough Edge		**LOGU 030310ER-GH**	0.244	0.156	0.136	0.469	0.039	●	●	●	●	

● : Standard Item △ : Phaseout Item (will be removed from next catalog)

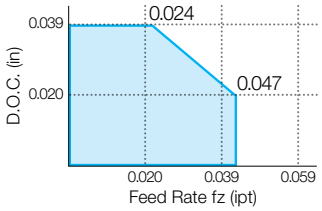
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFH Mini Cutting Performance (GM / GH Chipbreaker)

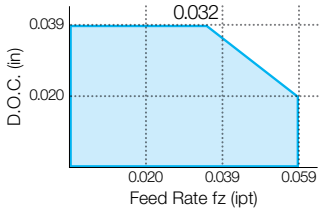
Fine Pitch End Mill



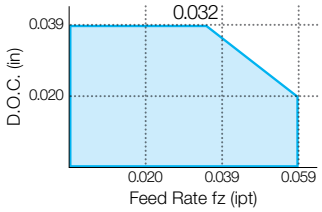
Standard Pitch End Mill
(Cutter Dia. 0.625" - 0.750")



Standard Pitch End Mill
(Cutter Dia. 1.000" - 1.250")



MFH Mini Face Mill
(Cutter Dia. 1.500" - 2.000")



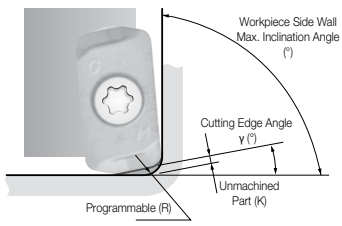
Recommended Cutting Conditions

Chipbreaker	Workpiece Material	Holder Part Number and Feed Rate (fz: ipt) *Recommended D.O.C. = 0.020" Reference Value								Recommended Insert Grade (Vc: sfm)				
		MFH0625...2T (MFH16...2T)	MFH0750...3T (MFH20...3T)	(MFH20...4T)	MFH1000...4T (MFH25...4T)	MFH1000...5T (MFH25...5T)	MFH1250...5T (MFH32...5T)	MFH1250...6T (MFH32...6T)	MFH1500...5T/6T MFH2000...8T	MEGACOAT NANO			MEGACOAT HARD	CVD Coated Carbide
										PR1535	PR1525	PR1510	PR015S	CA6535
GM GH	Carbon Steel	0.008-0.028-0.047		0.008-0.020-0.031	0.008-0.031-0.059	0.008-0.020-0.031	0.008-0.031-0.059	0.008-0.020-0.031	0.008-0.031-0.059	☆ 390-590-820	★ 390-590-820	-	-	-
	Alloy Steel									☆ 330-520-720	★ 330-520-720	-	-	-
	Mold Steel ~40 HRc	0.008-0.020-0.035		0.008-0.016-0.024	0.008-0.024-0.047	0.008-0.016-0.024	0.008-0.024-0.047	0.008-0.016-0.024	0.008-0.024-0.047	☆ 260-460-590	☆ 260-460-590	-	GH ★ 260-460-590	-
	Mold Steel 40~50 HRc	0.008-0.012-0.020		0.008-0.010-0.012	0.008-0.012-0.024	0.008-0.010-0.012	0.009-0.012-0.024	0.008-0.010-0.012	0.008-0.012-0.024	-	☆ 200-330-430	-	GH ★ 200-330-430	-
	Mold Steel 50~55 HRc	0.004-0.012-0.020		0.004-0.008-0.012	0.004-0.012-0.020	0.004-0.008-0.012	0.004-0.012-0.020	0.004-0.008-0.012	0.004-0.008-0.012	-	☆ 160-230-330	-	GH ★ 160-230-330	-
	Mold Steel 55~60 HRc	0.0004-0.0024-0.0039 (Recommended only with GH chipbreaker)								-	-	-	GH ★ 160-200-230	-
	Austenitic Stainless Steel	0.008-0.020-0.035		0.008-0.016-0.024	0.008-0.024-0.047	0.008-0.016-0.024	0.008-0.024-0.047	0.008-0.016-0.024	0.008-0.024-0.047	GM ★ 330-520-660	GM ☆ 330-520-660	-	-	-
	Martensitic Stainless Steel									☆ 490-660-820	-	-	-	★ 590-790-980
	Precipitation Hardened Stainless Steel									★ 300-390-490	-	-	-	-
	Gray Cast Iron	0.008-0.028-0.047		0.008-0.020-0.031	0.008-0.031-0.059	0.008-0.020-0.031	0.008-0.031-0.059	0.008-0.020-0.031	0.008-0.031-0.059	-	-	★ 390-590-820	-	-
	Nodular Cast Iron	0.008-0.020-0.035		0.008-0.016-0.024	0.008-0.024-0.047	0.008-0.016-0.024	0.008-0.024-0.047	0.008-0.016-0.024	0.008-0.024-0.047	-	-	★ 330-490-660	-	-
	Ni-base Heat-Resistant Alloy	0.008-0.012-0.024		0.008-0.010-0.016	0.008-0.016-0.031	0.008-0.010-0.016	0.008-0.016-0.031	0.008-0.010-0.016	0.008-0.016-0.031	☆ 70-100-160	-	-	-	★ 70-100-160
	Titanium Alloy									GM ★ 130-200-260	-	GM ☆ 100-160-230	-	-

Standard Pitch End Mills | Fine Pitch End Mills | MFH Mini Face Mills ★: 1st Recommendation ☆: 2nd Recommendation

- Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy
- The middle values are recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
- Machining with CAT30 or equivalent, feed rate should be reduced to 25% of recommended cutting conditions
- Internal coolant is recommended for slotting applications
- Slotting and pocketing are not recommended for face mill types

Approximate Programming Radius Adjustment

Shape	Cutter	Chipbreaker	Cutting Edge Angle γ (°)	Programmable R (in)	Maximum Over Machining of Radius (in)	Max. Non-machined Portion K (in)	Side Wall Max. Inclination Angle
	**MFH...-03-...**	GM / GH	12°	R0.063 (Recommended)	0	0.0154	90°
				R0.079	0.0035	0.0138	
				R0.098	0.0102	0.0102	
				R0.118	0.0181	0.0067	

Ramping

Inch Size Standard and Modular End Mills and Mini Face Mills

Holder	Cutter Dia. DCX	0.625"	0.750"	0.875"	1.000"	1.250"	1.500"	2.000"
MFH…-03-…	Max. Ramping Angle (°) RMPX	2.8°	1.7°	1.3°	1.2°	0.8°	0.5°	0.4°
	tan RMPX max	0.049	0.030	0.023	0.021	0.014	0.009	0.007

Metric Size Standard & Modular End Mills and Face Mills

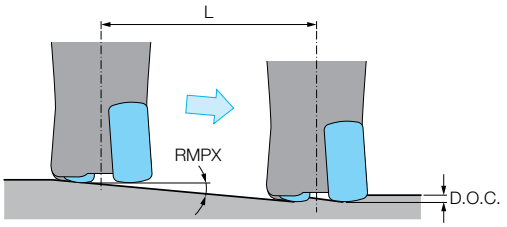
Holder	Cutter Dia. DCX	16mm	17mm	18mm	20mm	22mm	25mm	28mm	32mm	40mm	50mm
MFH…-03-…	Max. Ramping Angle (°)	2.8°	2.5°	2.1°	1.7°	1.4°	1.2°	1.0°	0.8°	0.5°	0.4°
	tan RMPX max	0.049	0.042	0.037	0.030	0.024	0.021	0.017	0.014	0.009	0.007

- Decrease ramping angle if chips become excessively long
- Recommended ramping angle is ≤ RMPX (see chart above for recommended ramp angle)
- Reduce recommended feed rate by 70%

Multiple step slot milling is NOT recommended for MFH-Mini face mill diameters above Ø1.3" due to a danger of re-cutting chips

Formula for Max. Cutting Length (L) at Max. Ramping Angle

$$L = \frac{D.O.C.}{\tan RMPX\ max}$$

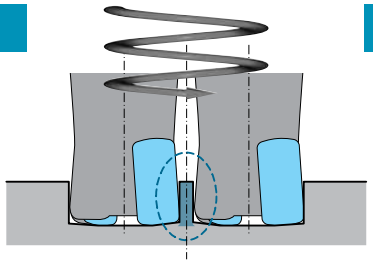


Helical Milling

- For Helical milling, use between Min. Drilling Dia. and Max. Drilling Dia.

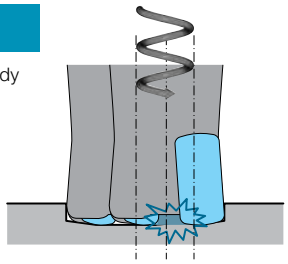
Exceeding Max. Machining Dia.

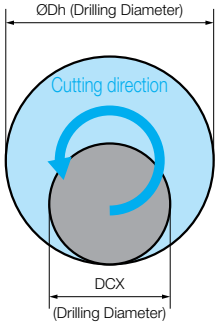
Center Core Remains



Under Min. Machining Dia.

Center Core Hits Holder Body

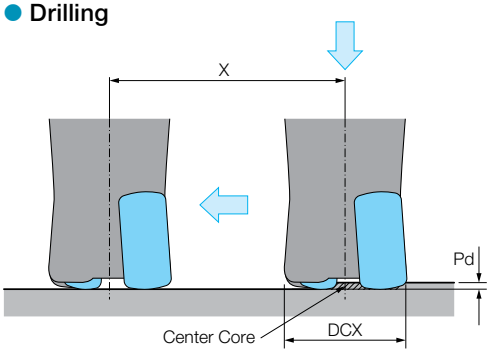




Holder	Min. Drilling Dia.	Max. Drilling Dia.	Max. Ramping Depth per Cylce
MFH…-03-…	2xDCX–0.315"	2xDCX–0.079"	0.039"

- Keep machine depth per rotation less than max D.O.C. (0.039")
- Use climb milling. (Refer to detail on right)
- Feed rate should be reduced to 50% of recommended cutting condition (Page ➔ **M180**)
- Use caution to eliminate incidences caused by producing long chips

Drilling

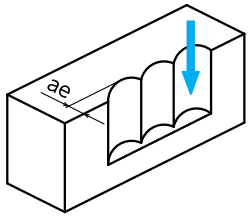


Holder	Max. Drilling Depth (Pd)	Min. Cutting Length (X) for Flat Bottom Surface
MFH…-03-…	0.039"	DCX–0.354"

Plunging After Drilling

- It is recommended to reduce feed by 25% of recommendation on Page ➔ **M180** until Center Core is removed
- Axial feed rate recommendation per revolution is 0.008ipr while drilling

Plunging



Insert Description	Maximum Width of Cut (ae)
LOGU03...	0.138"

- Reduce feed rate to fz ≤ 0.008 ipt when plunging

(Cutter Dia. Ø0.375" ~ Ø0.625")
(Cutter Dia. Ø8mm ~ Ø16mm)

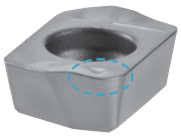
MFH-RAPTOR MICRO

Durable Design Aids in Chatter Resistance
Maximum D.O.C. 0.020". Stable High Feed Machining on a Wide Range of Applications

1 Stable Machining with Chattering Resistance

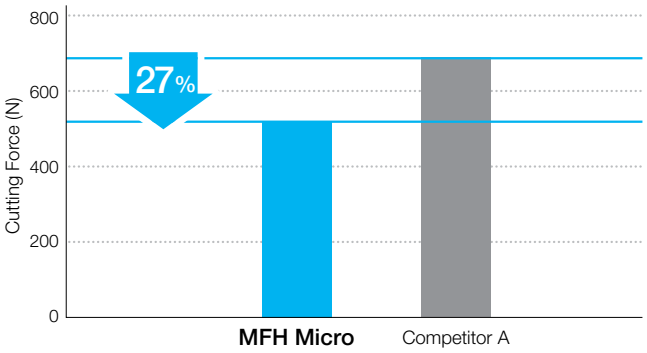
Molded Convex Cutting Edge Controls Initial Impact when Entering the Workpiece

Molded Convex Cutting Edge



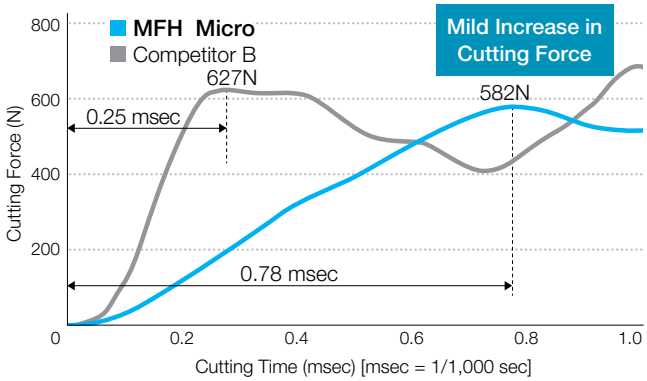
High Precision G Class Insert

Cutting Force Comparison (In-house Evaluation)



Cutting Conditions: Vc = 390 sfm, fz = 0.024 ipt, D.O.C. = 0.016"
Cutter Dia. Ø0.375", Slotting, Dry Workpiece: 1049

Increase in Cutting Force when Entering Work Piece
(In-house Evaluation)

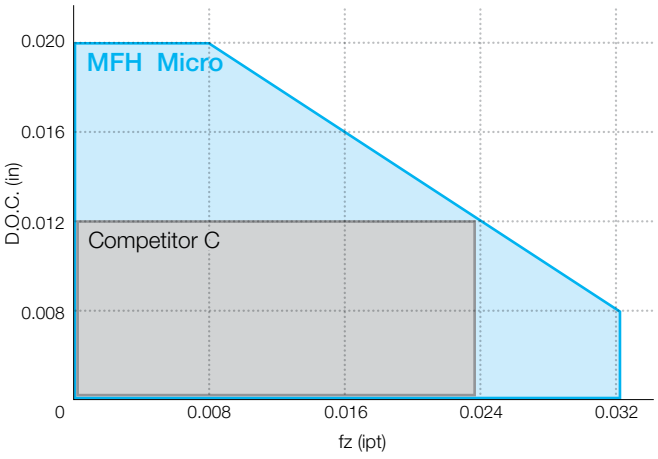


Cutting Conditions: Vc = 390 sfm, fz = 0.024 ipt, D.O.C. × ae = 0.016" × 0.197"
Cutter Dia. Ø0.375", Dry Workpiece: 1049

2 Wide Range of Machining Applications

Wide Range of Machining Applications at a Maximum Depth of Cut of 0.020"
Stable Machining Even with Small Machining Centers

Cutting Performance Map (Cutter Dia. Ø0.375")



(In-house Evaluation)

800.823.7284
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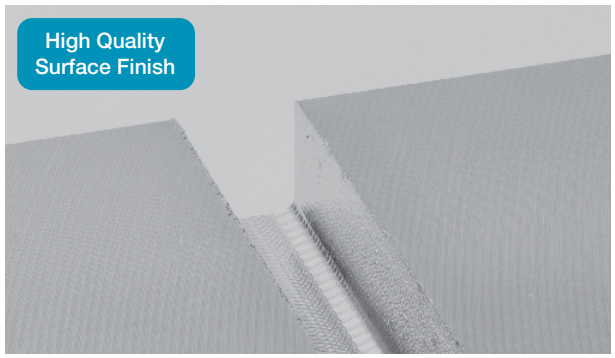
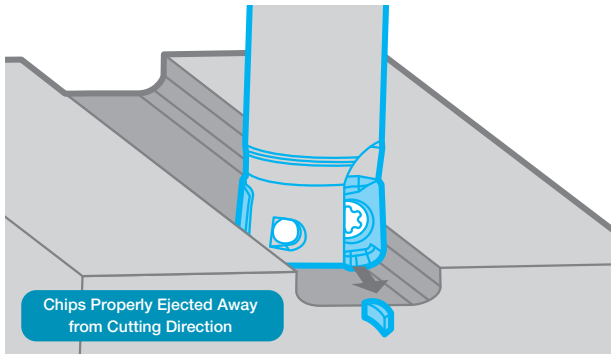
3 Good Chip Evacuation

Controls Chip Biting with Convex Cutting Edge

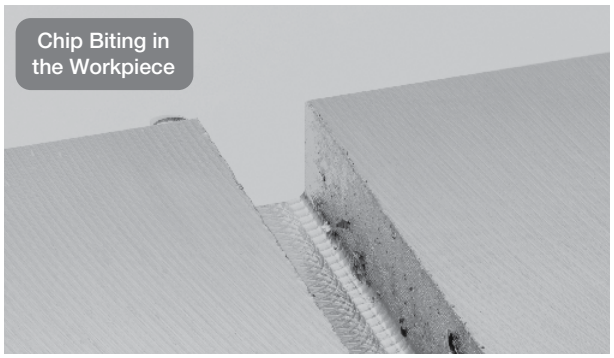
MFH Micro



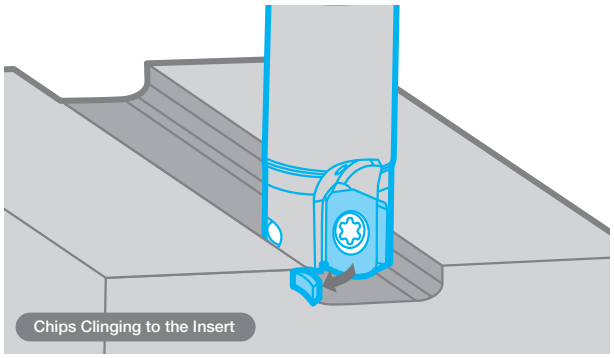
Good Chip Evacuation



Competitor F



Poor Chip Evacuation



Cutting Conditions: Cutter Dia. Dc = Ø0.375", Vc = 390 sfm, fz = 0.024 ipt,
D.O.C. = 0.016" (25 Passes) Total 0.394", Dry Workpiece: Structural Steel

(Internal Evaluation)

4 Replaces Solid End Mills to Reduce Machining Costs

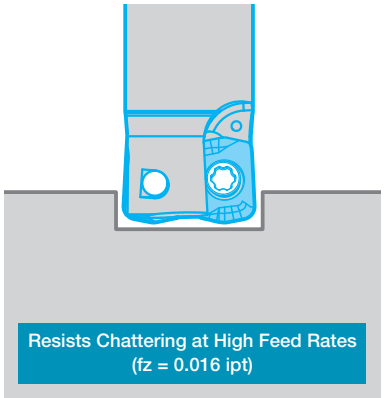
Suppresses Chattering and Increases Milling Efficiency

MFH Micro Compared to Solid End Mills

MFH Micro Q = 0.93in³/min

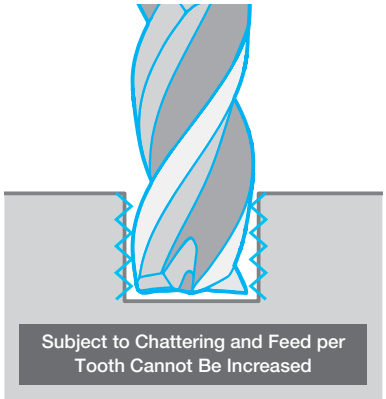
Vc = 490 sfm, fz = 0.016 ipt
D.O.C. × ae = 0.016" × 0.394", Dry
MFH10-S10-01-2T (2 Inserts)
LPGT010210ER-GM (PR1525)

1.2x
Machining Efficiency



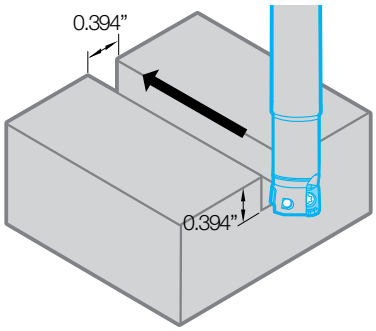
Solid End Mill Q = 0.74in³/min

Vc = 260 sfm, fz = 0.002 ipt
D.O.C. × ae = 0.012" × 0.394", Dry
Ø10mm (4 Flute)



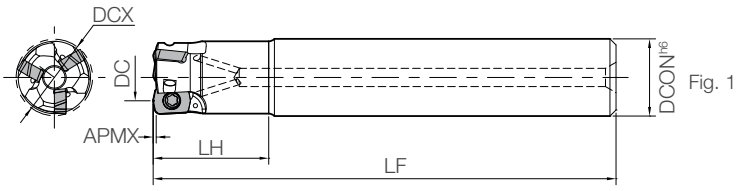
Mechanical Parts Slotting

Workpiece: 1049



(User Evaluation)

MFH Micro End Mill



MFH0500-S500-01-3T-3 Fig. 1

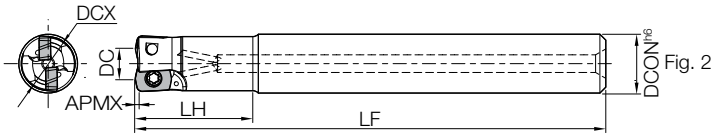


Fig. 2

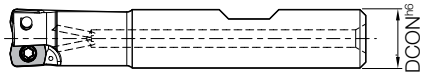


Fig. 3

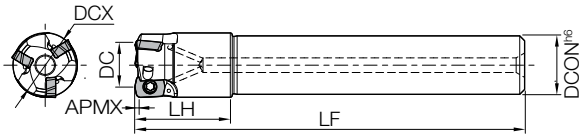


Fig. 4

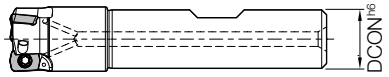


Fig. 5

Toolholder Dimensions (Inch Size)

Part Number		Stock	No. of Inserts	Dimensions (in)						Max. Ramping Angle	Rake Angle (°)	Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC	DCON	LF	LH	APMX	RMPX	A.R.				
Standard Shank (Cylindrical)	MFH 0375-S375-01-1T-3	●	1	0.375	0.225	0.375	3.000	0.750	0.020	3.0°	+5°	Yes	Fig. 1	0.04	16,200
	NEW 0394-S375-01-2T-3	●	2	10mm	0.244	0.375	3.000	0.750	0.020	3.0°				0.04	16,200
	0500-S500-01-3T-3	●	3	0.500	0.350	0.500	3.000	0.750	0.020	2.0°				0.07	14,000
	NEW 0500-S500-01-3T-5	●	3	0.500	0.350	0.500	5.000	0.750	0.020	2.0°				0.04	16,200
	0625-S625-01-4T35	●	4	0.625	0.475	0.625	3.500	1.000	0.020	1.2°				0.12	11,400

Additional Ramping Information ➡ M187

Toolholder Dimensions (Metric Size)

Part Number		Stock	No. of Inserts	Dimensions (mm)						Max. Ramping Angle	Rake Angle (°)	Coolant Hole	Drawing	Weight (kg)	Max RPM
				DCX	DC	DCON	LF	LH	APMX	RMPX	A.R.				
Standard Shank (Cylindrical)	MFH 08-S10-01-1T	●	1	8	4.2	10	75	16	0.5	4.0°	5°	Yes	Fig. 2	0.04	20,000
	10-S10-01-2T	●	2	10	6.2	10	80	20	0.5	3.0°				0.04	16,200
	12-S12-01-3T	●	3	12	8.2	12	80	20	0.5	2.0°				0.06	14,000
	16-S16-01-4T	●	4	16	12.2	16	90	25	0.5	1.2°				0.12	11,400
Oversize Shank (Cylindrical)	MFH 14-S12-01-3T	●	3	14	10.2	12	80	20	0.5	1.5°	5°	Yes	Fig. 4	0.07	12,500
Standard Shank (Weldon)	MFH 08-W10-01-1T	●	1	8	4.2	10	58	16	0.5	4.0°	5°	Yes	Fig. 3	0.03	20,000
	10-W10-01-2T	●	2	10	6.2	10	60	20	0.5	3.0°				0.03	16,200
	12-W12-01-3T	●	3	12	8.2	12	65	20	0.5	2.0°				0.05	14,000
	16-W16-01-4T	●	4	16	12.2	16	73	25	0.5	1.2°				0.10	11,400
Oversize (Weldon)	MFH 14-W12-01-3T	●	3	14	10.2	12	65	20	0.5	1.5°	5°	Yes	Fig. 5	0.05	12,500

Additional Ramping Information ➡ M187

Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts			Applicable Inserts
	Clamp Screw	Wrench	Anti-Seize Compound	
				➡ M16, M185
MFH...-01-...	SB-1840TRP	FTP-6	P-37	LPGT010210ER-GM

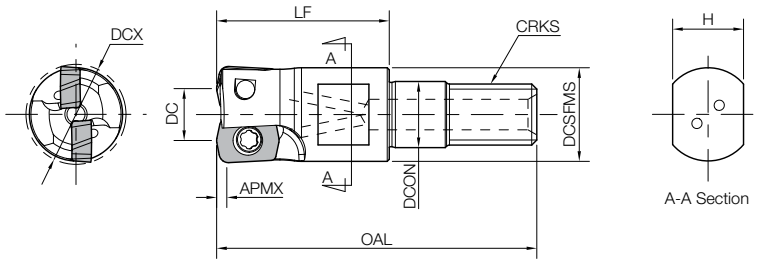
Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Recommended Cutting Conditions ➡ M186

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFH Micro Modular End Mill



Toolholder Dimensions

Part Number	Stock	Unit	No. of Inserts	Dimensions									Max. Ramping Angle	Rake Angle (°)	Coolant Hole	Max RPM
				DCX	DC	DCSFMS	DCON	OAL	LF	CRKS (mm)	H	APMX	RMPX	A.R.		
MFH 0500-M06-01-3T	●	inch	3	0.500	0.350	0.441	0.256	1.240	0.669	M6xP1.0	0.276	0.020	2°	+5°	Yes	14,000
0625-M08-01-4T	●		4	0.625	0.475	0.579	0.335	1.575	0.866	M8xP1.25	0.472		1.2°			11,400
MFH 08-M06-01-1T	●	mm	1	8	4.2	9.2	6.5	31.5	17	M6×P1.0	7	0.5	4°		Yes	20,000
10-M06-01-2T	●		2	10	6.2								3°			16,200
12-M06-01-3T	●		3	12	8.2	11.2							2°			14,000
14-M06-01-3T	●		3	14	10.2								1.5°			12,500
16-M08-01-4T	●		4	16	12.2	14.7	8.5	40	22	M8×P1.25	12		1.2°			11,400

Additional Ramping Information ➡ M187

Spare Parts and Applicable Inserts

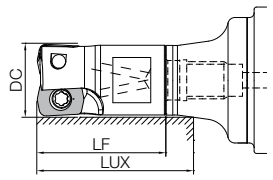
Part Number	Spare Parts			Applicable Inserts ➡ M16, M185
	Clamp Screw	Wrench	Anti-Seize Compound	
MFH...-01-...	SB-1840TRP	FTP-6	P-37	LPGT010210ER-GM

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

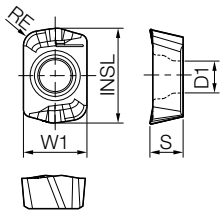
Recommended Cutting Conditions ➡ M186

Actual End Mill Depth (MFH16-M080-01-4T)



Arbor Part Number	Applicable End Mill			Actual End Mill Depth (mm)
	Part Number	Cutting Dia. (mm)	Dimension (mm)	
		DC	LF	LUX
BT30K-M08-45	MFH16-M08-01...	Ø16	22	28.8
BT40K-M08-55	MFH16-M08-01...	Ø16	22	28.7

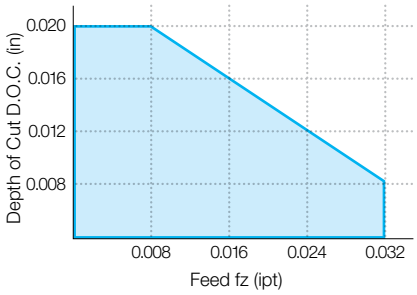
Applicable Inserts (➡ M13)

Insert		Part Number	Dimension (in)					MEGACOAT NANO		CVD
			W1	S	D1	INSL	RE	PR1535	PR1525	CA6535
General Purpose		LPGT010210ER-GM	0.165	0.086	0.083	0.247	0.039	●	●	●

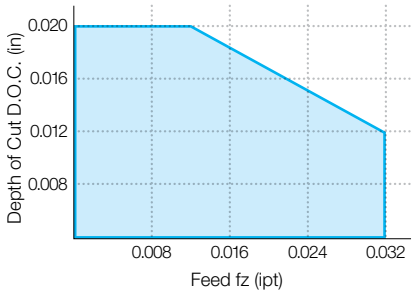
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MFH Micro Cutting Performance

Cutter Dia: Ø0.375" ~ Ø0.500"
Cutter Dia: Ø8mm ~ Ø12mm



Cutter Dia: Ø0.625"
Cutter Dia: Ø14mm ~ Ø16mm



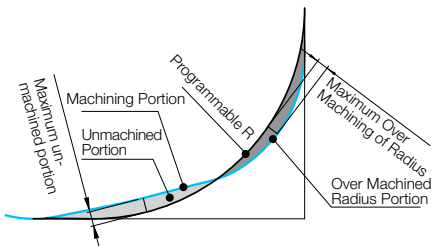
Recommended Cutting Conditions

Chipbreaker	Workpiece Material	Holder Description and Feed Rate (fz: ipt) *Recommended D.O.C. = 0.012" Reference Value					Recommended Insert Grade (Vc: sfm)		
		MFH08-…-1T	MFH0375…-1T-3 MFH0394…-2T-3 MFH10-…-2T	MFH0500…-3T-.. MFH12-…-3T	MFH14-…-3T	MFH0625…-4T(35) MFH16-…-4T	MEGACOAT NANO		CVD
							PR1535	**PR1525**	**CA6535**
GM	Carbon Steel	0.008~**0.016**~0.024			0.008~**0.020**~0.031		☆ 390~**590**~820	★ 390~**590**~820	-
	Alloy Steel	0.008~**0.016**~0.024			0.008~**0.020**~0.031		☆ 330~**520**~720	★ 330~**520**~720	-
	Mold Steel (~40 HRc)	0.008~**0.012**~0.020			0.008~**0.016**~0.024		☆ 260~**460**~590	★ 260~**460**~590	-
	Mold Steel (40~50 HRc)	0.008~**0.010**~0.012			0.008~**0.010**~0.016		☆ 200~**330**~430	★ 200~**330**~430	-
	Austenitic Stainless Steel	0.008~**0.012**~0.020			0.008~**0.016**~0.024		★ 330~**520**~660	☆ 330~**520**~660	-
	Martensitic Stainless Steel	0.008~**0.012**~0.020			0.008~**0.016**~0.024		☆ 490~**660**~820	-	★ 590~**790**~980
	Precipitation Hardened Stainless Steel	0.008~**0.012**~0.020			0.008~**0.016**~0.024		★ 300~**390**~490	-	-
	Gray Cast Iron	0.008~**0.016**~0.024			0.008~**0.020**~0.031		-	★ 390~**590**~820	-
	Nodular Cast Iron	0.008~**0.012**~0.020			0.008~**0.016**~0.024		-	★ 330~**490**~660	-
	Ni-base Heat Resistant Alloy	0.008~**0.010**~0.012			0.008~**0.010**~0.016		☆ 70~**100**~160	-	★ 70~**100**~160
	Titanium Alloy	0.008~**0.010**~0.012			0.008~**0.010**~0.016		★ 130~**200**~260	-	-

★: 1st Recommendation ☆: 2nd Recommendation

- Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy
- The number in bold font is recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
- Internal coolant is recommended for slotting applications

Approximate Programming Radius Adjustment

Drawing	Programmable R (in)	Maximum Over Machining of Radius (in)	Over Machined Radius Portion (in)	Maximum Unmachined Portion (in)
	**0.039**	0	0	0.0083
	0.047 (Recommended)	0	0	0.0067
	0.059	0.0032	0.0032	0.0039
	0.079	0.0110	0.0110	0.0004

Cutting Edge Angle: 12°

Ramping

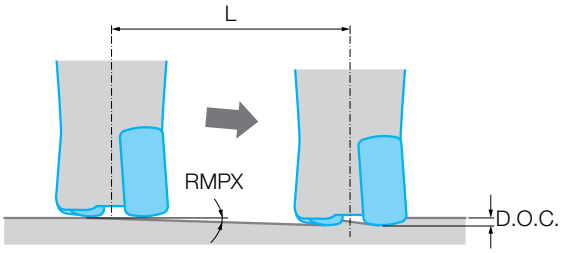
Holder	Cutter Dia. DCX	0.375"	0.500"	0.625"	8mm	10mm	12mm	14mm	16mm
MFH…-01-…	Max. Ramping Angle RMPX	3.0°	2.0°	1.2°	4.0°	3.0°	2.0°	1.5°	1.2°
	tan RMPX max	0.052	0.035	0.021	0.070	0.052	0.035	0.026	0.021

Decrease Ramping Angle if Chips Become Excessively Long

- Recommended ramping angle is ≤ RMPX (see chart above for recommended ramp angle)
- Reduce recommended feed rate by 70%

Formula for Max. Cutting Length (L) at Max. Ramping Angle

$$L = \frac{D.O.C.}{\tan RMPX\ max}$$

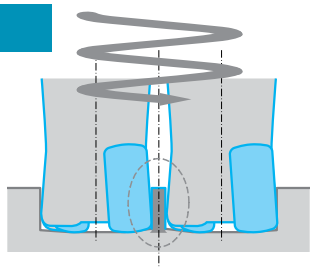


Helical Milling

- For Helical milling, use between Min. Drilling Dia. and Max. Drilling Dia.

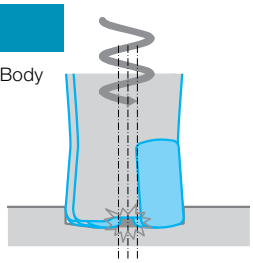
Exceeding Max. Machining Dia.

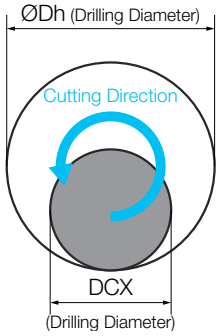
Center Core Remains



Under Min. Machining Dia.

Center Core Hits Holder Body

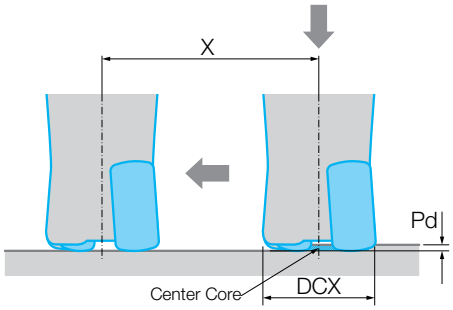




Holder	Min. Drilling Dia.	Max. Drilling Dia.	Max. Ramping Depth per Cycle
MFH…-01-…	2xDCX–0.138"	2xDCX–0.079"	0.020"

- Keep machine depth per rotation less than max D.O.C. (0.020")
- Use climb milling. (Refer to detail on right)
- Feed rate should be reduced to 50% of recommended cutting condition (Page ➡ **M186**)
- Use caution to eliminate incidences caused by producing long chips

Drilling

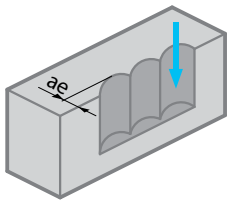


Holder	Min. Drilling Depth (Pd)	Min. Cutting Length X for Flat Bottom Surface
MFH…-01-…	0.020"	DCX-0.138"

Plunging After Drilling

- It is recommended to reduce feed by 25% of recommendation on Page ➡ **M186** until Center Core is removed
- Axial feed rate recommendation per revolution is 0.008ipr while drilling

Plunging



Insert Description	Maximum Width of Cut (ae)
LPGT01...	0.067"

- Reduce feed rate to fz ≤ 0.008 ipt when plunging

MFF

High-Precision Cutter for Finishing Applications

Cutter Body Design Provides Excellent Reliability
Molded Wiper Inserts Increase Machining Efficiency

1 Innovative Solutions for Finish Machining

Designed with a unique insert combination of semi-finishing and finishing, the MFF drastically improves productivity by reducing finish quality issues.

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

SOLUTION

Increase feed to f = 0.197 ipt

Achieved 0.8 µm Ra surface finish

No grinding required

Achieved 5 µm flatness

The above is the result of a field test. Actual results will depend on machining environment, workpiece rigidity, machine, etc.
For more details, see case studies on page 4 and 5.

MFF Machining Solutions

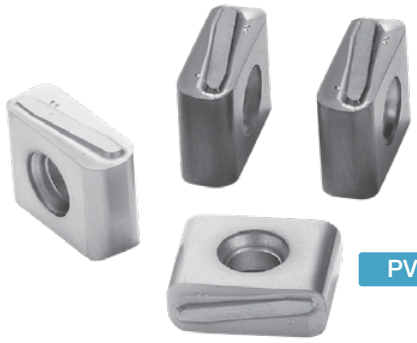
Can be used on a wide variety of parts and workpieces

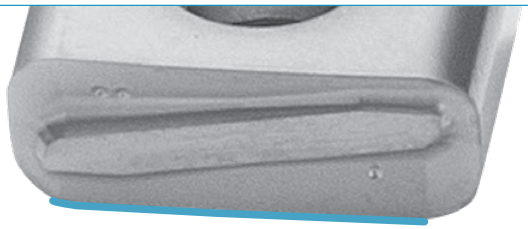
Parts	Workpieces	Industries
Plate / Frame / Case	SS400 / NO.45 / 80-60-03	Industrial Machining
Cylinder Pump / Rail	Cast Iron	Machine Tools
Turbine Housing	Mold Steel	Shipbuilding / Automotive
Casing / Mold Base	Carburized and Hardened Steel (60 HRC)	Construction Machinery
		Molds

NEW ITEMS!

2 Molded Wiper Insert for High-Quality Surface Finish

Utilizes Kyocera's unique molded insert technology for high feed rates and excellent surface finish





Low cutting force with special edge preparation

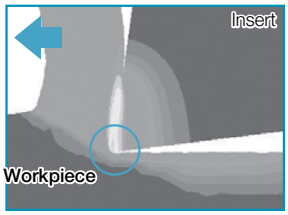
Micro-honing
Good sharpness

Wiper edge

Large S-curve shape developed for higher feed rates

Edge Temperature Simulation Comparison (Internal Evaluation)

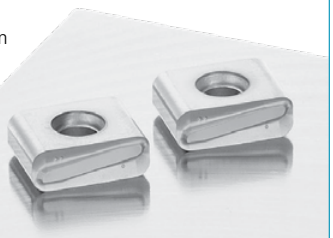
MFF



Conventional Tool After 2 sec machining

MEGACOAT NANO Cermet PV60M

For high-speed machining
Recommended Vc = ~ 1,150 sfm



High-quality surface finish

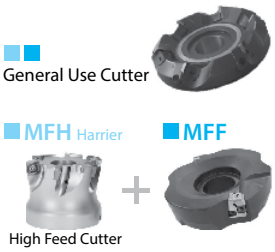
Molded TT Chipbreaker

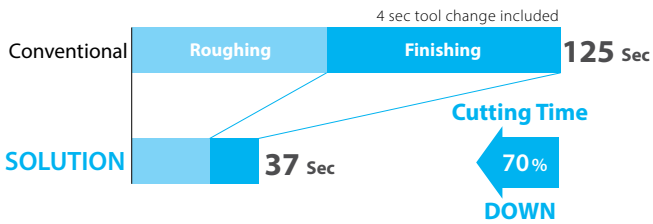
Reduces chip clogging
High feed machining

Comprehensive Machining Solutions

From Roughing to Finish Machining Improvements (Internal Evaluation)

Combine with Kyocera's MFH high feed cutter to improve quality and efficiency



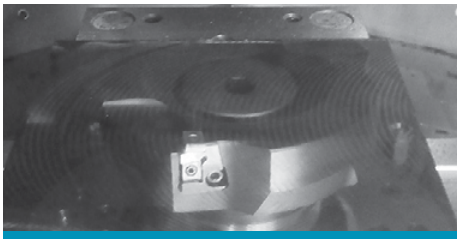


Cutting Conditions
Conventional Ø200mm (6 flute)
Vc = 660 sfm
Roughing : Vf = 11.26 ipm (fz = 0.006 ipt), D.O.C. = 0.047"
Finishing : Vf = 9.06 ipm (fz = 0.005 ipt), D.O.C. = 0.012"

SOLUTION
Roughing: MFH-RAPTOR Ø63mm (6 flute)
Vc = 660 sfm
Vf = 287.40 ipm (fz = 0.047 ipt), D.O.C. = 0.028"
Finishing: MFF Ø200mm (2 flute)
Vc = 980 sfm
Vf = 94.49 ipm (f = 0.197 ipt), D.O.C. = 0.004"

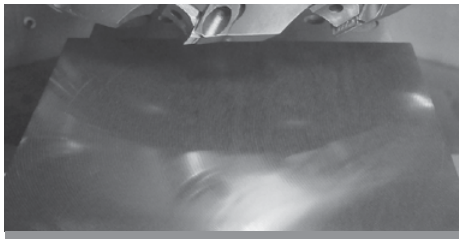
Surface Finish Quality after Machining

The MFF SOLUTION



Excellent Surface Finish (0.27 µm Ra)

Conventional Machining



Cloudy Surface Finish (1.01 µm Ra)

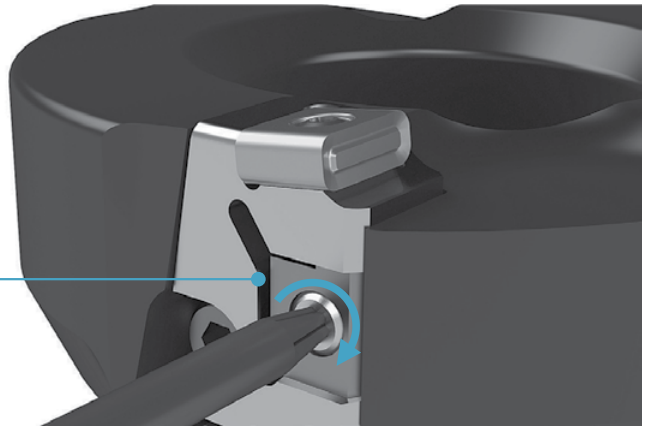
3 Adjustable Cutting Edge Height for Increased Usability

Cartridge height comes pre-adjusted and adjustment should not be necessary.

Adjustment is not required after replacing insert.

Easy-to-adjust Cutting Edge Height

Cutting edge height can be adjusted easily with one screw

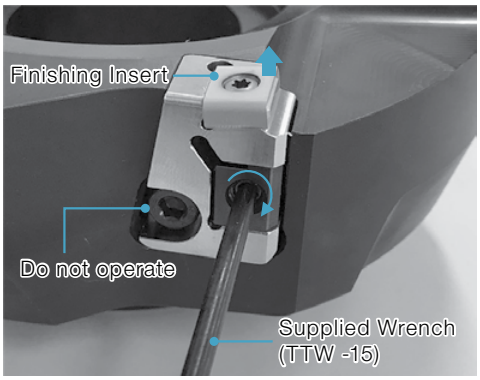


Included adjustment wrench

Edge Adjustment

If D.O.C. is 0.004"~0.008" (0.1mm ~ 0.2mm), no adjustment is necessary (Pre-adjusted before holder is shipped).
Cutting edge adjustment is NOT required when replacing inserts.

If D.O.C. is less than 0.004" (0.1mm) or if you prefer a different edge height, use the following method:



Adjusting the Cutting Edge
Use the supplied TTW-15 wrench to rotate the screw and easily adjust the cutting edge position.

Procedure
To adjust, start with the screw turned counterclockwise about two rotations (lowering the cutting edge). Tighten the screw clockwise (raising the cutting edge) to adjust the amount of protrusion.
*Use a dial gauge to measure protrusion amount.

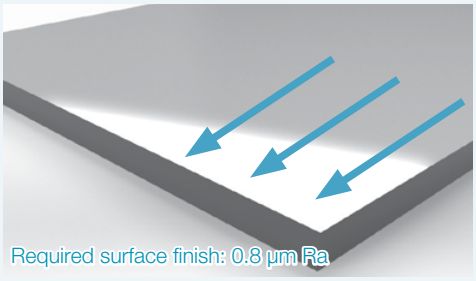
Precautions:
Make sure to lower the cutting edge below the desired height first (turning screw counterclockwise) and then raise the edge up to the final height (turning screw clockwise). If cutting edge is simply lowered to the final edge height, chattering or loosening of the screw may occur due to backlash. Make sure the measurement position of the cutting edge is the same machining diameter.

Standard Cutting Edge Height
D.O.C. = 0.0020" => protrusion against rough edge: 0.0012"
ap = 0.0039" ~ => protrusion against rough edge : 0.0024" *Pre-adjusted before shipment

NEW ITEMS!

SOLUTION 1 — 1.7 times increase in efficiency at f = 0.197 ipt with a 0.8 µm Ra surface finish

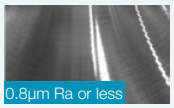
Plate (SS400)



SOLUTION
MFF
Ø200mm 2 flute

1.7 times Machining Efficiency

Vf = 8,530 sfm



Vc = 1,080 sfm, f = 0.169 ipt, D.O.C. = 0.004", Dry

Conventional
Competitor A
Ø200mm 2 flute

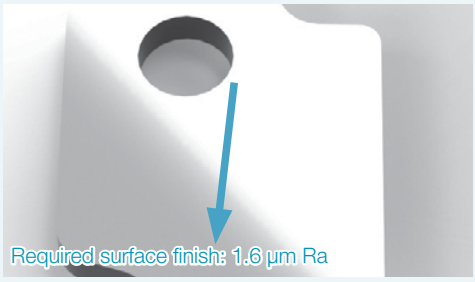
Vf = 4,920 sfm

Vc = 720 sfm, f = 0.169 ipt, D.O.C. = 0.004", Dry

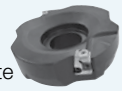
The conventional cutter was not able to feed faster than f = 0.169 ipt as surface finish deteriorated.
The MFF showed good surface finish of 0.8 µmRa or less even at f = 0.197 ipt.
Increasing the cutting speed increased machining efficiency by 1.7 times.

SOLUTION 2 — Surface finish 0.5 µm Ra. No grinding required (Fewer Processes)

Valve (65-45-12)



SOLUTION
MFF
Ø160mm 2 flute



No grinding required

127 sec

Vc = 980 sfm, Vf = 9.84 ipm (f = 0.016 ipt) D.O.C. = 0.004", Wet

Conventional
Competitor B
Ø200mm 10 flute

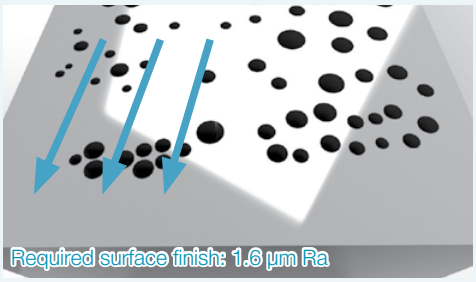
Machining 32 sec + Grinding 10 min

Vc = 980 sfm, Vf = 31.50 ipm (f = 0.063 ipt) D.O.C. = 0.004", Wet

Conventional cutter showed cloudy finished surface, MFF provided 0.5 µm Ra with a glossy finish.
Reduced grinding process and cycle time by 80%.

SOLUTION 3 — Improved flatness and machining efficiency tripled in interrupted mold steel

Mold (H13 Equivalent)



SOLUTION
MFF
Ø200mm 2 flute

Machining Efficiency x 3

Vf = 14.96 ipm 6 Pass

Vc = 390 sfm, f = 0.079 ipt, D.O.C. = 0.002", Dry

Conventional
Competitor C
Ø125mm 5 flute

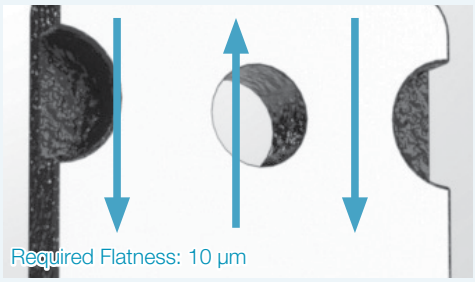
Vf = 8.27 ipm 10 Pass

Vc = 390 sfm, f = 0.026 ipt, D.O.C. = 0.002", Dry

The MFF left a good finished surface with no gaps among tool path seams.
Larger cutter diameter reduced the number of passes to six and improved productivity.
Desirable chip shape and size were achieved.

SOLUTION 4 — Flatness of 5 µm was achieved. Showed good surface finish with reduced chattering on the thin part

Case (NO.45)



SOLUTION
MFF
Ø100mm 2 flute

Machining Quality Improvement

Reduced Chattering and Good Finish

Vc = 1,080 sfm, Vf = 62.99 ipm (f = 0.059 ipt) D.O.C. = 0.004", Dry

Conventional
Competitor D
Ø100mm 8 flute (CBN)

Chattering occurred in thin wall

Vc = 3,940 sfm, Vf = 96.46 ipm (f = 0.025 ipt) D.O.C. = 0.004", Dry

Conventional cutter needed adjustment due to chattering on the thin portion.
MFF prevented chattering. Finished surface is good and there is no gap in the tool path seams.
Flatness of 5 µm achieved.

MFF Face Mill NEW

Rake Angle	
A.R.	R.R.
-8°	Medium-Finishing Insert: -9° Finishing Insert: -20°

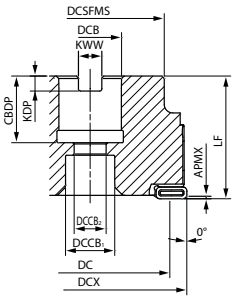


Fig.1

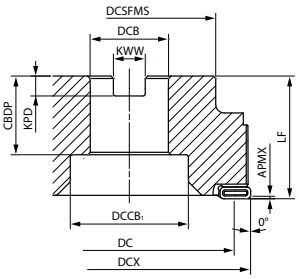


Fig.2

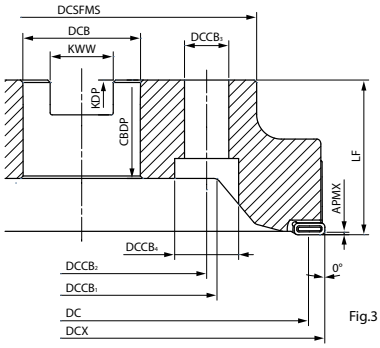


Fig.3

Toolholder Dimensions (Metric Size)

	Part Number		Stock	No. of Inserts	Dimensions (mm)													Coolant Hole	Drawing	Weight (kg)	Max RPM
					DCX	DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	$DCCB_3$	$DCCB_4$	LF	CBDP	KDP	KWW	APMX				
Inch Bore Dia.	MFF	080R-SF	●	2	80	67.3	60	1.000"	20	13	-	-	50	1.063"	0.236"	0.375"	0.3	No	Fig.1	1.3	2,000
		100R-SF	●		100	87.3	70	1.250"	48	-	-	-	50	1.260"	0.315"	0.500"			Fig.2	1.8	1,600
		125R-SF	●		125	112.3	87	1.500"	58	-	-	-	63	1.496"	0.394"	0.625"				3.5	1,300
		160R-SF	●		160	147.3	102	2.000"	72	-	-	-	63	1.496"	0.433"	0.750"				5.9	1,000
		200R-SF	●		200	187.3	142	1.875"	110	101.6	26	18	63	1.575"	0.551"	1.000"			Fig.3	8.1	800
		250R-SF	●		250	237.3	142	1.875"	110	101.6	26	18	63	1.575"	0.551"	1.000"				10.8*	800
Metric Bore Dia.	MFF	080R-M-SF	●	2	80	67.3	60	27	20	13	-	-	50	24	7	12.4	0.3	No	Fig.1	1.3	2,000
		100R-M-SF	●		100	87.3	70	32	48	-	-	-	50	32	8	14.4			Fig.2	1.8	1,600
		125R-M-SF	●		125	112.3	87	40	55	-	-	-	63	33	9	16.4				3.5	1,300
		160R-M-SF	●		160	147.3	102	40	72	-	-	-	63	33	9	16.4				5.9	1,000
		200R-M-SF	●		200	187.3	142	60	110	101.6	26	18	63	40	14	25.7			Fig.3	7.7	800
		250R-M-SF	●		250	237.3	142	60	110	101.6	26	18	63	40	14	25.7				10.5*	800

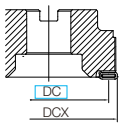
*Ø250mm sizes have holes for lighter weight.

Caution with Max. Revolution

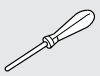
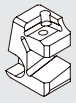
Set the number of revolutions per minute within the recommended cutting speed specified by the workpiece on back cover. Do not use the end mill or cutter at the maximum revolution or higher since the centrifugal force may cause chips and parts to scatter even under no load.

Surface Finish

The surface will be finished flat within the range of DC shown on the right.



Spare Parts

Spare Parts							
Clamp Screw	Wrench	Wedge	Cartridge	Cartridge Clamp Screw	Wrench	Adjustment Screw	Anti-seize Compound
							
SB-3592TR	DTM-10	AD-MFF	CR-MFF	HH5X15L	TTW-15	W6X18N	P-37

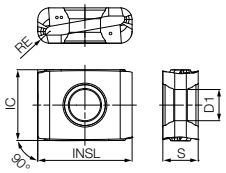
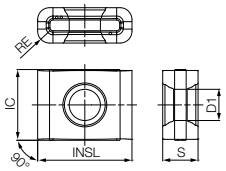
Tightening Torque for Insert Screw 1.2 Nm

(Customer Service) 800.823.7284 - Option 1
(Technical Support) 800.823.7284 - Option 2
Visit us online at KyoceraPrecisionTools.com

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

NEW ITEMS!

Applicable Inserts (M15)

Insert		Part Number	Dimension (mm)					MEGACOAT NANO Cermet	MEGACOAT NANO
			IC	S	D1	INSL	RE	PV60M	PR1525
Steel and Stainless Steel (Low Cutting Force)		**LNGX 120916R-TT**	3/8	1/4	0.165	1/2	1/16	●	●
Cast Iron		**LNGX 120916**	3/8	1/4	0.165	1/2	1/16	●	●

Recommended Cutting Conditions

Chipbreaker	Workpiece	f (ipt)	D.O.C. (in)	Recommended Insert Grade (Cutting Speed Vc: sfm)	
				PV60M	PR1525
TT	Structural Steel	0.059 - **0.158** - 0.197	0.001 - **0.004** - 0.012	★ 750 - **920** - 1,150	☆ 750 - **920** - 1,150
	Carbon Steel	0.039 - **0.158** - 0.197		★ 660 - **820** - 1,150	☆ 660 - **820** - 1,150
	Alloy Steel	0.039 - **0.158** - 0.197		★ 660 - **820** - 1,150	☆ 660 - **820** - 1,150
	Mold Steel	0.039 - **0.079** - 0.158	0.001 - **0.004** - 0.008	☆ 390 - **660** - 820	★ 390 - **660** - 820
	Mold Steel (50 HRC~)	0.024 - **0.039** - 0.047	0.001 - **0.002** - 0.004	-	★ 160 - **230** - 260
	Austenitic Stainless Steel *	0.039 - **0.079** - 0.158	0.001 - **0.004** - 0.008	☆ 390 - **660** - 820	★ 390 - **660** - 820
	Martensitic Stainless steel *	0.039 - **0.118** - 0.158		☆ 490 - **660** - 980	★ 490 - **660** - 980
Standard	Gray Cast Iron	0.039 - **0.079** - 0.158	0.001 - **0.004** - 0.012	☆ 660 - **820** - 1,150	★ 660 - **820** - 1,150
	Nodular Cast Iron	0.059 - **0.079** - 0.158		☆ 490 - **820** - 980	★ 490 - **820** - 980

*Machining with coolant is recommended for stainless steel
The number in **bold** is recommended starting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.

★: 1st Recommendation ☆: 2nd Recommendation

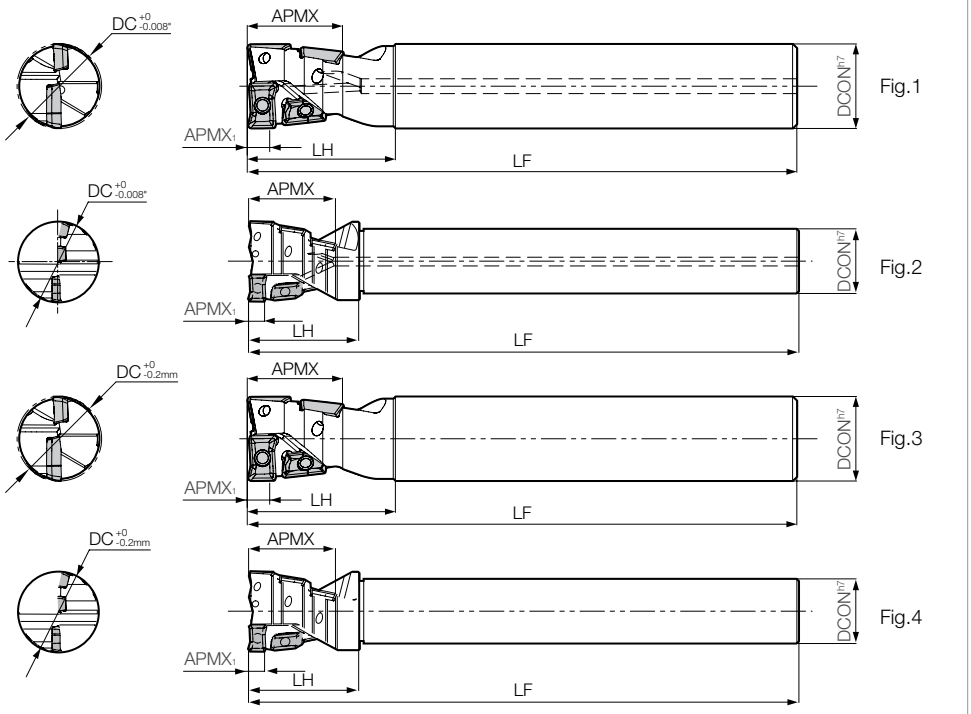
Pocketing | Drilling | Shouldering | Deep Slotting | Facing

MEY End Mill

Standard

Long Head

Long Shank



Toolholder Dimensions

	Part Number		Stock	Unit	No. of Inserts	No. of Flutes	Dimensions DC	DCON	LF	LH	APMX	APMX1	Rake Angle (°) A.R.	R.R.	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Wrench	Anti-seize Compound
Standard	MEY	0625-S625-HG	●	inch	4	2	0.625	0.625	4.699	1.195	0.748	0.177	+11°	-11°	Yes	Fig.1	SB-2040TRG	DTM-6	P-37
		0750-S750-HG	●				0.750	0.750	5.091	1.350	0.866	0.236	+13°	-9°			SB-2555TRG	DTM-6	
		1000-S100-HG	●				1.000	1.000	5.486	1.549	1.102	0.295		-11°			SB-3070TRG	DT-10	
		1250-S125-HG	●				1.250	1.250	5.858	1.921	1.417	0.374		-9°			SB-4070TRG	DT-15	
		1500-S125-HG	●		7		1.500		6.260	2.126	1.654	0.295		-11°		Fig.2	SB-3070TRG	DT-10	
		2000-S150-HG	●				1.984	1.500	6.649	2.712	2.126	0.374		-9°			SB-4070TRG	DT-15	
Standard	MEY	16-S16	●	mm	4	2	16	16	120	31	19	4.5	+11°	-11°	No	Fig.3	SB-2040TRG	DTM-6	P-37
		17-S16	●				17												
		20-S20	●				20	20	130	35	22	6.0	+13°	- 9°			SB-2555TRG	DT-8	
		21-S20	●				21												
		25-S25	●				25	25	140	40	28	7.5	+13°	-11°			SB-3070TRG	DT-10	
		26-S25	●				26												
		32-S32	●				32	32	150	50	36	9.5	+13°	- 9°			SB-4070TRG	DT-15	
		33-S32	●				33												
		40-S32	●		7		40	32	160	55	42	7.5	+13°	-11°		Fig.4	SB-3070TRG	DT-10	
		50-S42	●				50	42	170	70	54	9.5		- 9°			SB-4070TRG	DT-15	
Long Head	MEY	16-S16-140H	●		4	2	16	16	140	51	19	4.5	+11°	-11°	No	Fig.3	SB-2040TRG	DTM-6	
		20-S20-150H	●				20	20	150	53	22	6.0	+13°	- 9°			SB-2555TRG	DT-8	
		25-S25-170H	●				25	25	170	70	28	7.5		-11°			SB-3070TRG	DT-10	
		32-S32-180H	●				32	32	180	80	36	9.5		- 9°			SB-4070TRG	DT-15	
Long Shank	MEY	16-S16-190	●		4	2	16	16	190	61	19	4.5	+11°	-11°	No	Fig.3	SB-2040TRG	DTM-6	
		17-S16-190	●				17			31									
		20-S20-200	●				20	20	200	63	22	6.0	+13°	- 9°			SB-2555TRG	DT-8	
		21-S20-200	●				21			35									
		25-S25-220	●				25	25	220	80	28	7.5	+13°	-11°			SB-3070TRG	DT-10	
		26-S25-220	●				26			40									
		32-S32-230	●				32	32	230	90	36	9.5	+13°	- 9°			SB-4070TRG	DT-15	
		33-S32-230	●				33			50									
		40-S32-240	●		7		40		240	55	42	7.5	+13°	-11°		Fig.4	SB-3070TRG	DT-10	
		50-S42-250	●		7		50	42	250	70	54	9.5	+13°	- 9°			SB-4070TRG	DT-15	

APMX1 shows the edge length of the complete 2-insert part.

Coat Anti-seize Compound (P-37) thinly on portion of taper and thread when insert is fixed

Applicable Inserts ➡ M195

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Applicable Inserts

Part Number		Applicable Inserts M23			
		Side Edge Insert	No. of Inserts	Side Edge Insert	No. of Inserts
MEY	0625-S625-HG	JOMT08T208ER-D	3	GOMT08T208ER-D	1
	0750-S750-HG	JOMT100308ER-D		GOMT100308ER-D	
	1000-S100-HG	JOMT13T308ER-D		GOMT13T308ER-D	
	1250-S125-HG	JOMT160408ER-D		GOMT160408ER-D	
	1500-S125-HG	JOMT13T308ER-D	6	GOMT13T308ER-D	
	2000-S150-HG	JOMT160408ER-D		GOMT160408ER-D	
MEY	16-S16(-...)	JOMT08T208ER-D	3	GOMT08T208ER-D	1
	17-S16(-...)				
	20-S20(-...)	JOMT100308ER-D		GOMT100308ER-D	
	21-S20(-...)				
	25-S25(-...)	JOMT13T308ER-D		GOMT13T308ER-D	
	26-S25(-...)				
	32-S32(-...)	JOMT160408ER-D		GOMT160408ER-D	
	33-S32(-...)				
	40-S32(-...)	JOMT13T308ER-D	6	GOMT13T308ER-D	
	50-S42(-...)	JOMT160408ER-D		GOMT160408ER-D	

Recommended Cutting Conditions

Workpiece Material	fz (ipt)		Recommended Insert Grade (Vc: sfm)		
	Drilling	Shouldering Slotting	MEGACOAT		PVD Coated Carbide
			PR1225	PR1210	PR830
Carbon Steel	0.003~0.006	0.002~0.010	★ 390~820	-	☆ 390~660
Alloy Steel	0.003~0.006	0.002~0.010	★ 330~720	-	☆ 330~590
Mold Steel	0.003~0.005	0.002~0.006	★ 260~590	-	☆ 260~490
Stainless Steel	0.003~0.005	0.002~0.006	★ 390~720	-	☆ 330~590
Cast Iron	0.002~0.008	0.002~0.010	-	★ 330~720	-

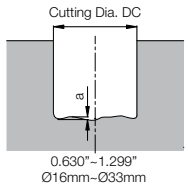
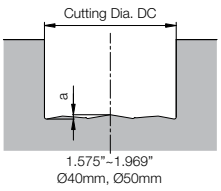
★: 1st Recommendation ☆: 2nd Recommendation

Drilling Precautions

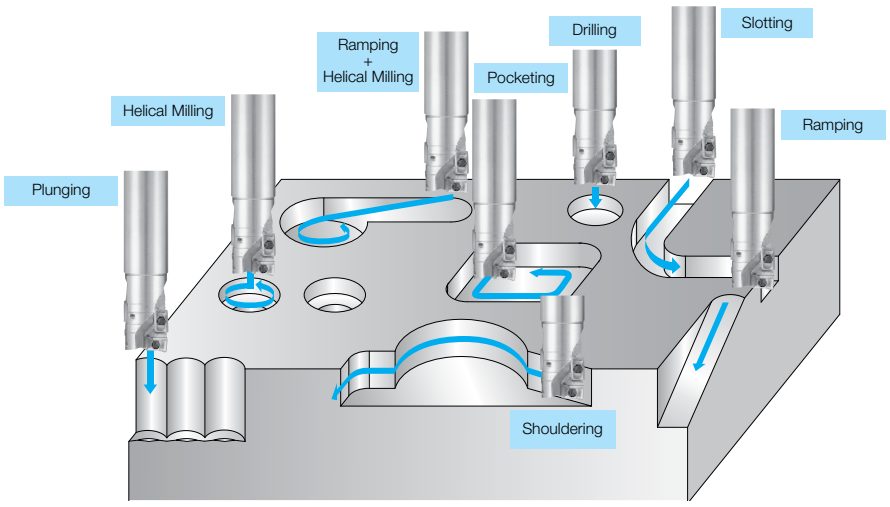
(1) Drilling conditions should be calculated as one flute effective.
(2) Use compressed air during drilling.
(3) Carbon Steel other than low carbon steel can be drilled to a depth of 0.5D without step feeding. For soft steel or sticky material such as stainless steel, step feed drilling (0.020"-0.039") is recommended.
(4) For stainless steel drilling, coolant is recommended.
(5) Please refer to the chart for maximum hole depth.

Cutting Dia. (DC)	Max. Hole Depth
0.630" / Ø16mm	0.512" / 13mm
0.669" / Ø17mm	0.512" / 13mm
0.787" / Ø20mm	0.669" / 17mm
0.827" / Ø21mm	0.669" / 17mm
0.984" / Ø25mm	0.866" / 22mm
1.024" / Ø26mm	0.866" / 22mm
1.260" / Ø32mm	1.142" / 29mm
1.299" / Ø33mm	1.142" / 29mm
1.575" / Ø40mm	1.417" / 36mm
1.969" / Ø50mm	1.575" / 40mm

Drilled Hole Bottom Shape

Cutting Dia.	a	Shape of the bottom
0.630" / 0.669" Ø16mm, Ø17mm	0.020" 0.50mm	
0.787" / 0.827" Ø20mm, Ø21mm	0.025" 0.64mm	
0.984" / 1.024" Ø25, Ø26	0.033" 0.85mm	
1.260" / 1.299" Ø32mm, Ø33mm	0.044" 1.12mm	
1.575" Ø40mm	0.061" 1.54mm	
1.969" Ø50mm	0.065" 1.65mm	

Examples of MEY Multi-function Cutting



Pocketing | Drilling | Shouldering | Deep Slotting | Facing

MEZ-G End Mill

Standard

Long Shank / Long Head

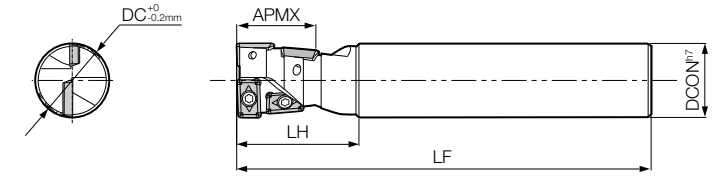


Fig.1

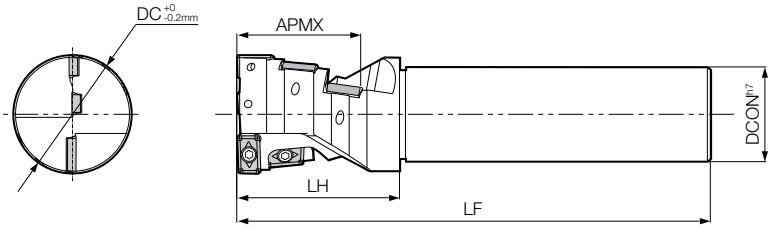


Fig.2

Toolholder Dimensions

	Part Number		Stock	No. of Inserts	No. of Flutes	Dimensions DC	DCON	LF	LH	APMX	Rake Angle (°) A.R.	R.R.	Drawing	Spare Parts: Clamp Screw	Wrench	Applicable Inserts See Page M24
Standard	MEZ	16-S16G	△	4	2	16	16	120	31	16	+9°	-5°	Fig.1	SB-2040TRG	DTM-6	NDMT 080208ER-D□
		20-S20G	△			20	20	130	33	21		-4°		SB-2555TRG	DT-8	NDMT 10T208ER-D□
		25-S25G	△			25	25	140	40	25		-5°		SB-3070TRG	DT-10	NEMT 120308ER-D□
		32-S32G	△			32	32	150	50	33		-2°		SB-4070TRG	DT-15	NEMT 16T308ER-D□
		40-S32G	△	7		39	32	160	55	39		-3°	Fig.2	SB-3070TRG	DT-10	NEMT 120308ER-D□
		50-S42G	△			49	42	170	70	51		-2°		SB-4070TRG	DT-15	NEMT 16T308ER-D□
Long Head	MEZ	16-S16-140HG	△	4		16	16	140	51	16	+9°	-5°	Fig.1	SB-2040TRG	DTM-6	NDMT 080208ER-D□
		20-S20-150HG	△			20	20	150	53	21		-4°		SB-2555TRG	DT-8	NDMT 10T208ER-D□
		25-S25-170HG	△			25	25	170	70	25		-5°		SB-3070TRG	DT-10	NEMT 120308ER-D□
		32-S32-180HG	△			32	32	180	80	33		-2°		SB-4070TRG	DT-15	NEMT 16T308ER-D□
Long Shank	MEZ	16-S16-190G	△	4		16	16	190	61	16	+9°	-5°	Fig.1	SB-2040TRG	DTM-6	NDMT 080208ER-D□
		20-S20-200G	△			20	20	200	63	21		-4°		SB-2555TRG	DT-8	NDMT 10T208ER-D□
		25-S25-220G	△			25	25	220	80	25		-5°		SB-3070TRG	DT-10	NEMT 120308ER-D□
		32-S32-230G	△			32	32	230	90	33		-2°		SB-4070TRG	DT-15	NEMT 16T308ER-D□
		40-S32-240G	△	7		39	32	240	55	39		-3°	Fig.2	SB-3070TRG	DT-10	NEMT 120308ER-D□
		50-S42-250G	△			49	42	250	70	51		-2°		SB-4070TRG	DT-15	NEMT 16T308ER-D□

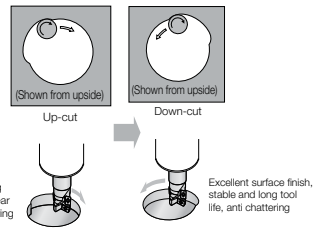
Recommended Cutting Conditions

Workpiece Material	fz (ipt) Drilling	Shouldering Slotting	Recommended Insert Grade (Vc: sfm) Cermet TN100M	MEGACOAT PR1225	MEGACOAT PR1210	Carbide KW10
Carbon Steel	0.002~0.008	0.002~0.008	★ 390~660	★ 390~820	-	-
Alloy Steel	0.002~0.008	0.002~0.008	★ 330~590	★ 330~720	-	-
Mold Steel	0.002~0.005	0.002~0.006	★ 330~590	★ 260~590	-	-
Stainless Steel	0.002~0.005	0.002~0.006	☆ 390~660	★ 390~720	-	-
Cast Iron	0.002~0.008	0.002~0.008	-	-	★ 330~720	☆ 260~490
Non-ferrous Metals	0.002~0.008	0.002~0.008	-	-	-	★ 330~980

★: 1st Recommendation ☆: 2nd Recommendation

- Drilling conditions should be calculated as one flute line.Step feed (0.5-0.1mm) is recommended.
- Coolant is recommended when drilling stainless steel / cast iron.

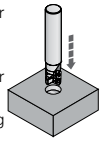
- Down-Cut milling is recommended for the improvement of tool life and surface finish.
- Compressed air is recommended.



How to Use the Silver Drill Mill MEZ-G Effectively

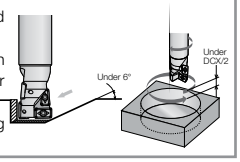
Drilling

- Step feeding is recommended for good chip control. (Depth approx. 1mm)
- Drill depth should be under 0.5DC. (DC:Drilling Dia.) Use compressed air when during machining.



Ramping · Helical Milling

- Ramping angle is recommended to be under 6°.
- Plunge depth per revolution when helical milling should be under 0.5DC.
- Use compressed air when during machining.



End Milling

- Tough edge insert is recommended for high load end milling. (High feed rate, large D.O.C.) Use a low cutting force insert to prevent chattering.

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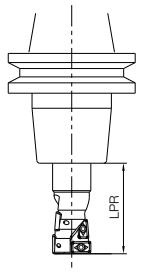
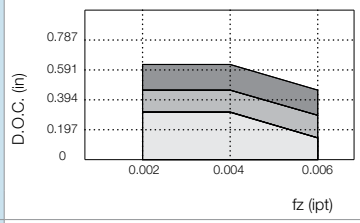
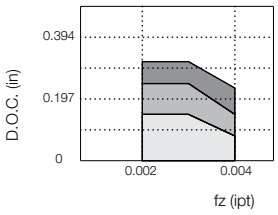
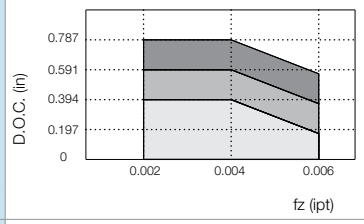
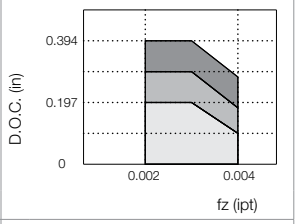
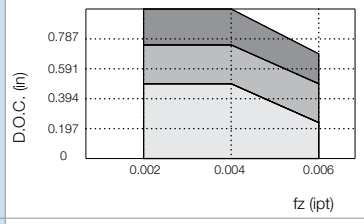
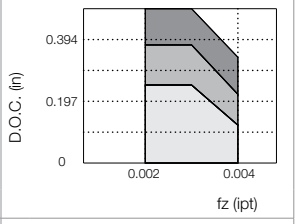
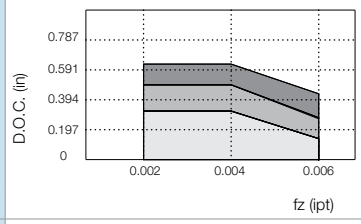
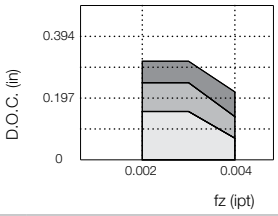
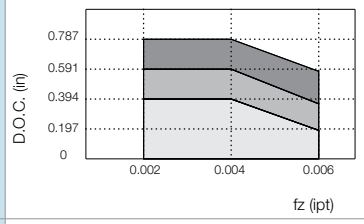
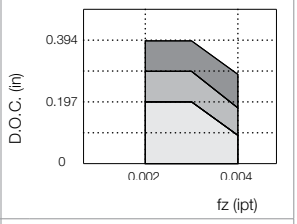
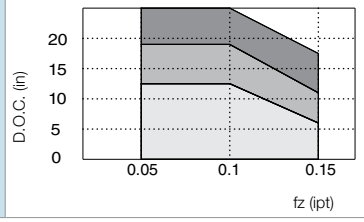
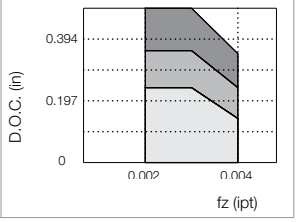
Cutting Performance of MEZ-G

[Workpiece Material: 1049]

Cutting Dia.	Part Number	Overhang Length LPR (in)			Cutting Dia.	Part Number	Overhang Length LPR (in)			Shape
Ø16	**MEZ16-S16G**	1.220	[~2.402]	(Not Recommended)	Ø32	**MEZ32-S32G**	1.969	[~3.150]	(Not Recommended)	
	MEZ16-S16-140HG	-	~2.402	[~3.583]		**MEZ32-S32-180HG**	-	3.150	[~4.331]	
	MEZ16-S16-190G	-	2.402	~3.583		**MEZ32-S32-230G**	-	3.543	~4.331	
Ø20	**MEZ20-S20G**	1.299	[~2.480]	(Not Recommended)	Ø39	**MEZ40-S32G**	2.165	[~3.346]	[~4.528]	
	MEZ20-S20-150HG	-	~2.480	[~3.661]		**-**	-	-	-	
	MEZ20-S20-200G	-	2.480	~3.661		**MEZ40-S32-240G**	2.165	~3.346	~4.528	
Ø25	**MEZ25-S25G**	1.575	[~2.756]	(Not Recommended)	Ø49	**MEZ50-S42G**	2.756	[~3.937]	[~5.118]	
	MEZ25-S25-170HG	-	2.756	[~3.937]		**-**	-	-	-	
	MEZ25-S25-220G	-	3.150	~3.937		**MEZ50-S42-250G**	2.756	~3.937	~5.118	

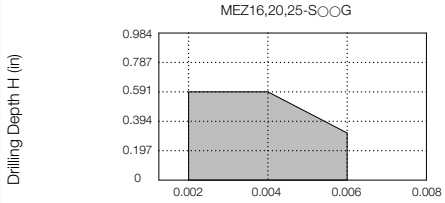
When using dimensions in [ ], be careful that the chucking amount is sufficient.

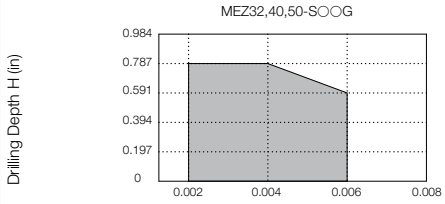
Shouldering / Slotting

Part Number	■ Shouldering (Cutting width ae = DC/2) Note) ☐ Part ae = DC/4	■ Slotting ■ Ramping and Helical Milling
MEZ16-S16G		
MEZ20-S20G		
MEZ25-S25G		
MEZ32-S32G		
MEZ40-S32G		
MEZ50-S42G		

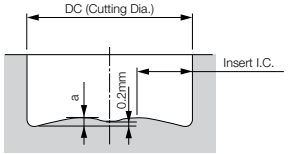
Drilling Depth

■ Drilling Depth
(Standard / Long Head / Long Shank)



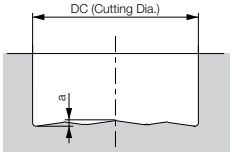


Shape of the bottom of the drilled hole
(Ø16mm~Ø49mm)



Ø16mm~Ø32mm

Cutting Dia.	Ø16mm	Ø20mm	Ø25mm	Ø32mm
a	0.30mm	0.33mm	0.38mm	0.45mm



Ø39mm,Ø49mm

Cutting Dia.	Ø39mm	Ø49mm
a	0.68mm	0.74mm

MST Slot Mill

MSTA
For Narrow Groove Widths
Self Clamping Type

Slot Width: 1.60 ~ 4.05mm

MSTB
For Medium Groove Widths
Semi-adjustable Width Type

Slot Width: 6.00 ~ 13.00mm

MSTC
For Wide Groove Widths
Full-adjustable Width Type

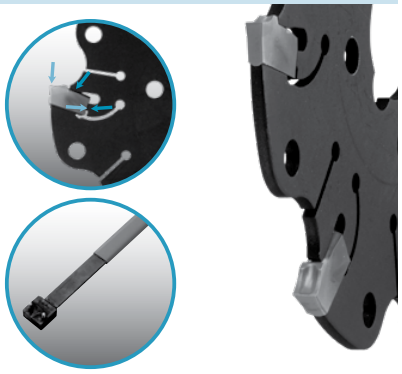
Slot Width: 14.00 ~ 23.30mm

Lineup of MST Series Slot Mills

Type	Applicable Inserts	Features	Slot Width (mm)													
			1.60	2.20 (2.25)	3.05	4.05	6.00	8.00	10.00	13.00	14.00	16.00	18.00	20.00	22.00	24.00
MSTA	SLT..	1.60~4.05mm Fixed	●	●	●	●										
MSTB	LNEU12..	6.00~13.00mm Semi-adjustable					← * Adjustable in 0.50mm increments between 6.00mm and 13.00mm depending on combination of inserts →									
MSTC	SP..10T3..	14.00~18.00mm Full-adjustable									← * Adjustable between 14.00mm and 18.00mm →					
	SD..1204...	18.00~23.30mm Full-adjustable											← * Adjustable between 18.00mm and 23.30mm →			

MSTA Slot Mill [Slot Width 1.6, 2.2 (2.25), 3.05, 4.05mm]

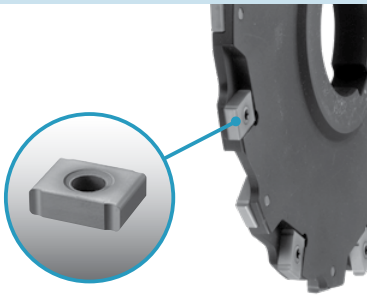
- **Self-clamping Type Slot Mill**
  MSTA Slot Mills have simple self-clamping system to allow for easy attachment by just installing the insert.
- **High Rigidity Clamping System**
  Owing to the highly rigid clamping system - with an end-stopper, the cutter enables high operability and stable slotting by maintaining an accurate edge position.
- **Double-Prism Clamping System**
  High replacement precision due to the clamping system with two prisms.
- **Easy Replacement**
  The replacement of inserts is easy and quick by using special wrench.



*Wrench Sold Separately

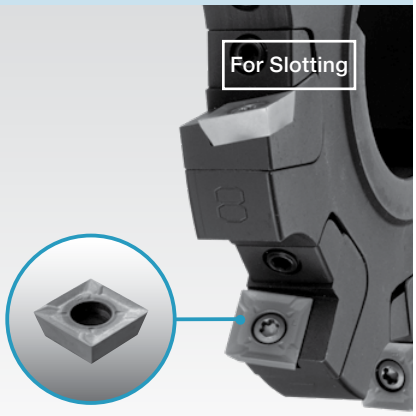
MSTB Slot Mill (Slot Width 6.0~13.0mm)

- **Up-right Type / Semi-adjustable Slot Width**
- **Easy and Secure Screw Holding**
  Inserts can be attached to the MSTB Slot Mills very easily by using clamp screws.
- **Inserts have four edge and are, therefore, cost-effective**
- **Applicable to a variety of slotting by choosing different inserts**
  By changing the thickness of inserts, various slotting widths are possible up to a max of 13.00mm in 0.50mm increments.



MSTC Slot Mill (Slot Width 14.0~23.3mm)

- Lay-down type inserts / fully adjustable slot width
- Applicable to various slotting needs. Slotting widths: 14.0mm to 23.3mm
  Cutter Dia.: from 100mm to 160mm
- Smooth slotting width adjustment is possible due to unique cam style adjustment mechanism
- Four-sided inserts are cost-effective
- Wide range of corner radii available
- When utilizing wiper edge insert, an excellent surface finish can be expected
- Numerous insert geometries and grades, are available for various types of workpiece machining



Insert Features

Insert Shape			
Symbol	SB	SD	SE
Rake Angle	5°	15°	20°
Shape			

CA0835

- TiN+TiCN+Al_2O_3 based CVD Coated Carbide
- For Carbon Steel, Alloy Steel, Stainless Steel and Nodular Cast Iron.
- For middle to high speed machining.

PR0725

- TiN+TiCN+TiN based Multi-layer PVD Coated Carbide
- For Carbon Steel, Alloy Steel, Stainless Steel, Heat Resistant Alloys and Nodular Cast Iron.
- For medium speed machining.

PR0735

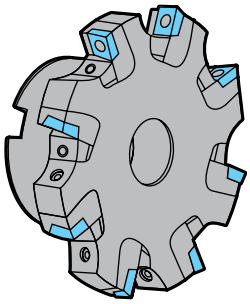
- TiN based PVD Coated Carbide
- For Stainless Steel, Heat Resistant Alloys, etc.
- For low to medium speed machining.

PR0110

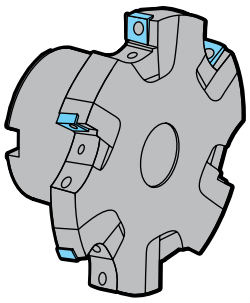
- TiB_2 based PVD Coated Carbide
- For Non-ferrous Metals such as Aluminum Alloys (Si<10%) and Titanium Alloys.
- For high speed machining.

With Boss

Right-hand



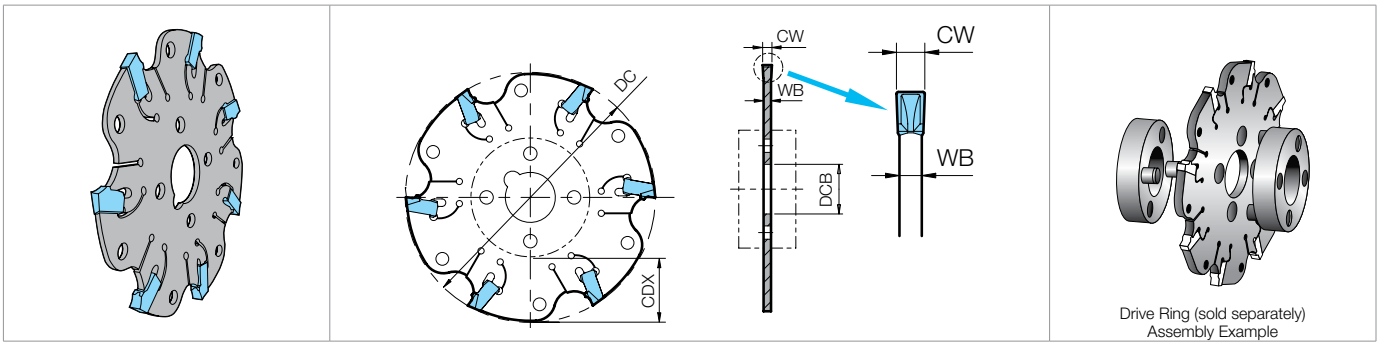
Left-hand



Identification System

MSTA	○○○	N	○○○	–	○○	T
Self-clamping Type Slot Mill	Cutting Dia.	Neutral	Edge Width		No. of Flutes	

MSTA (Inch Size)



Drive Ring (sold separately)
Assembly Example

Toolholder Dimensions (Inch Size)

Part Number	Stock	Edge Width CW (in)	Slot Depth CDX (in)	No. of Inserts	Dimensions (in) DC	DCB (H7)	WB	Weight (kg)	Max. RPM	Spare Parts: Wrench	Applicable Inserts ➡ M202
MSTA 02N063-5T	●	0.063	0.625	5	2.500	0.625	0.051	0.03	5,100	MS-FRW1 (Wrench is not included. Please purchase it separately) • How to Use Wrench Ref. to Page ➡ M203	SLT16…
03N063-7T	●		0.875	7	3.000	0.625		0.04	4,000		
04N063-9T	●		1.063	9	4.000	1.000		0.07	3,200		
05N063-11T	●		1.375	11	5.000	1.250		0.10	2,600		
MSTA 03N089-7T	●	0.089	0.875	7	3.000	0.625	0.071	0.05	4,000		SLT22…
04N089-9T	●		1.063	9	4.000	1.000		0.08	3,200		
06N089-14T	●		1.438	14	6.000	1.250		0.30	2,000		
MSTA 02N126-4T	●	0.120	0.625	4	2.500	0.625	0.095	0.05	5,100		SLT30…
03N126-6T	●		0.875	6	3.000	0.625		0.08	4,000		
04N126-9T	●		1.063	9	4.000	1.000		0.13	3,200		
05N126-11T	●		1.375	11	5.000	1.250		0.20	2,600		
06N126-14T	●		1.438	14	6.000	1.250		0.35	2,000		
MSTA 03N164-6T	●	0.160	0.875	6	3.000	0.625	0.134	0.10	4,000		SLT40…
04N164-9T	●		1.063	9	4.000	1.000		0.15	3,200		
05N164-11T	●		1.375 (34.925mm)	11	5.000	1.250		0.25	2,600		

Note) 1. Attach the drive ring (sold separately) to MSTA slot mill to use. Drive ring is sold separately. Please purchase two drive rings per one MSTA slot mill.
2. Do not exceed the max. revolution.
3. Do not operate cutter on reverse revolution.
4. Wrench (MS-FRW1) is not included. Please purchase it separately.

Recommended Cutting Conditions ➡ M203

Drive Ring (Inch Size)

Shape	Part Number	Stock	Dimensions (in) DCB	DIOUT	WB	KWW	DCON	Drawing	Applicable Toolholders
Fig.1	DR0625-1250A	●	0.625 (15.875mm)	1.250 (31.750mm)	0.315 (8mm)	0.130 (3.3mm)	0.158 (4mm)	Fig.1	MSTA 02N126-4T
Fig.2	DR0625-1250B	●	0.625 (15.875mm)	1.250 (31.750mm)	0.315 (8mm)	0.130 (3.3mm)	0.120 (3mm)	Fig.2	MSTA 02N063-5T
	DR0625-1250C	●						Fig.3	MSTA 03N○○○-○T
	DR1000-1875	●	1.000 (25.400mm)	1.875 (47.625mm)	0.394 (10mm)	0.256 (6.5mm)	0.200 (5mm)	Fig.3	MSTA 04N○○○-○T
	DR1250-2250	●	1.250 (31.750mm)	2.250 (57.150mm)	0.394 (10mm)	0.319 (8.1mm)	0.240 (6mm)	Fig.3	MSTA 05N○○○-○T
Fig.3	DR1250-3125	●	1.250 (31.750mm)	3.125 (79.375mm)	0.472 (12mm)	0.319 (8.1mm)	0.472 (12mm)	Fig.3	MSTA 06N○○○-○T

Wrenches and drive rings are sold in 1 piece per box.

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(Technical Support) 800.823.7284 - Option 2
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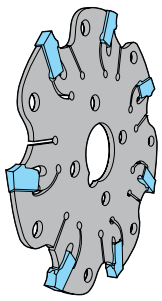
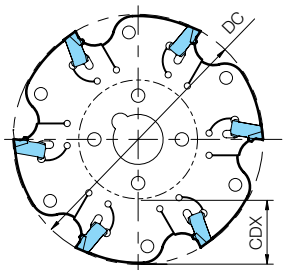
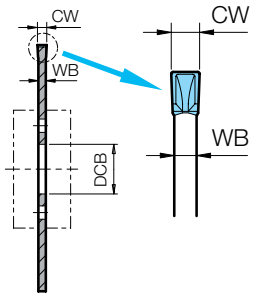
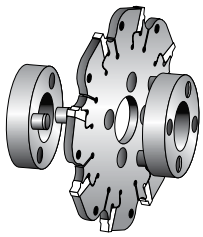
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MSTA (Metric Size)









Drive Ring (sold separately)
Assembly Example

Toolholder Dimensions (Metric Size)

Part Number	Stock	Edge Width CW (mm)	Slot Depth CDX (mm)	No. of Inserts	Dimensions (mm) DC	DCB (H7)	WB	Weight (kg)	Max. RPM	Spare Parts Wrench	Applicable Inserts M202
MSTA 63N16-5T	●	1.60	15	5	63	16	1.3	0.03	5,100	MS-FRW1 (Wrench is not included. Please purchase it separately) • How to use Wrench Ref. to page M203	SLT16…
MSTA 80N16-7T	●		21	7	80	16		0.04	4,000		
MSTA 100N16-9T	●		27	9	100	22		0.07	3,200		
MSTA 125N16-11T	●		35	11	125	32		0.10	2,600		
MSTA 63N22-5T	●	2.20 (2.25)	15	5	63	16	1.8	0.03	5,100		SLT22…
MSTA 80N22-7T	●		21	7	80	16		0.05	4,000		
MSTA 100N22-9T	●		27	9	100	22		0.08	3,200		
MSTA 125N22-11T	●		35	11	125	32		0.12	2,600		
MSTA 160N22-14T	●		40	14	160	40		0.30	2,000		
MSTA 63N30-4T	●	3.00	15	4	63	16	2.4	0.05	5,100		SLT30…
MSTA 80N30-6T	●		21	6	80	16		0.08	4,000		
MSTA 100N30-9T	●		27	9	100	22		0.13	3,200		
MSTA 125N30-11T	●		35	11	125	32		0.20	2,600		
MSTA 160N30-14T	●		40	14	160	40		0.35	2,000		
MSTA 63N40-4T	●	4.00	15	4	63	16	3.4	0.06	5,100		SLT40…
MSTA 80N40-6T	●		21	6	80	16		0.10	4,000		
MSTA 100N40-9T	●		27	9	100	22		0.15	3,200		
MSTA 125N40-11T	●		35	11	125	32		0.25	2,600		
MSTA 160N40-14T	●		40	14	160	40		0.40	2,000		

Note) 1. Attach the drive ring (sold separately) to MSTA slot mill to use. Drive ring is sold separately. Please purchase two drive rings per one MSTA slot mill.
2. Do not exceed the max. revolution.
3. Do not operate cutter on reverse revolution.
4. Wrench (MS-FRW1) is not included. Please purchase it separately.

Recommended Cutting Conditions M203

Drive Ring (Metric Size)

Shape	Part Number	Stock	Dimensions (mm) DCB	DIOUT	WB	KWW	DCON	Drawing	Applicable Toolholders
Fig.1	DR16-32A	●	16	32	8	4.1	3	Fig.2	MSTA 63N16-5T / 63N22-7T
Fig.2	DR16-32B	●	16	32	8	4.1	4	Fig.1	MSTA 63N30-4T / 63N40-4T
Fig.3	DR16-38	●	16	38	8	4.1	4	Fig.3	MSTA 80NOO-OT
	DR22-46	●	22	46	10	6.1	5	Fig.3	MSTA 100NOO-OT
	DR32-55	●	32	55	10	8.1	6	Fig.3	MSTA 125NOO-OOT
	DR40-80	●	40	80	12	10.1	12	Fig.3	MSTA 160NOO-OOT

Wrenches and drive rings are sold in 1 piece per box.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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Insert Identification System

SLT	16	–	15	S	KB
①	②		③	④	⑤

① Insert Symbol

② Edge Width

Symbol	Edge Width
16	1.60mm
22	2.20mm(2.25mm)
30	3.05mm
40	4.05mm

③ Corner-R(RE)

Symbol	Corner-R(RE)
15	0.15mm
20	0.20mm

④ Edge Preparation

Symbol	Edge Preparation
S	Chamfer + R-honed

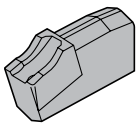
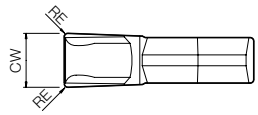
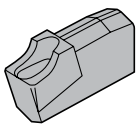
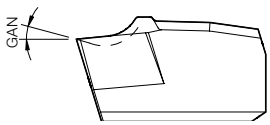
⑤ Chipbreaker Symbol

Symbol	Rake Angle
KB	5°
KD	15°

Applicable Inserts (SLT)

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel	●	○
M	Stainless Steel	○	●
K	Cast Iron	○	
N	Non-ferrous Metals		
S	Heat-resistant Alloys		●
	Titanium Alloy		

Insert	Part Number	Dimensions (mm) CW	Dimensions (mm) RE	Rake Angle (°) GAN	CVD Coated Carbide CA0835	PVD Coated Carbide PR0735	Applicable Toolholder
	SLT 16-15SKB	1.60 +0.00 -0.10	0.15	5°	●	●	
	22-20SKB	2.20 +0.08 -0.05	0.20	5°	●	●	
	30-20SKB	3.05 +0.15 -0.00			●	●	
	40-20SKB	4.05 +0.15 -0.00			●	●	M200
 Low Cutting Force	SLT 16-15SKD	1.60 +0.00 -0.10	0.15	15°	●	●	M201
	22-20SKD	2.25 +0.15 -0.00	0.20	15°	●	●	
	30-20SKD	3.05 +0.15 -0.00			●	●	
	40-20SKD	4.05 +0.15 -0.00			●	●	

Chipbreaker Selection

KB Chipbreaker ··· General Purpose Chipbreaker for Steel and Cast Iron
KD Chipbreaker ··· Low Cutting Force Chipbreaker for Stainless Steel

Feature of Insert Grades

CA0835

- TiN+TiCN+Al_2O_3 based CVD Coated Carbide
- For Carbon Steel, Alloy Steel, Stainless Steel and Nodular Cast Iron.
- For medium to high speed machining.

PR0735

- TiN base PVD Coated Carbide
- For Stainless Steel, Heat-Resistant Alloys, etc.
- For low to medium speed machining.

Inserts are sold in 10 piece boxes.

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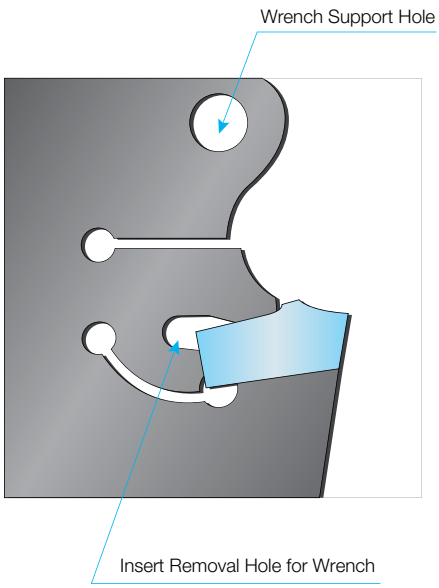
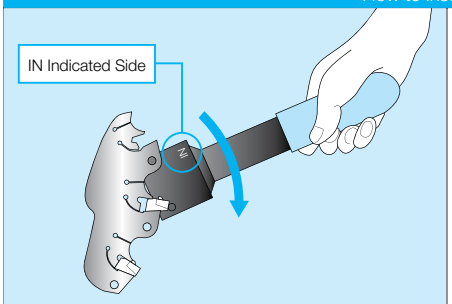
Set up

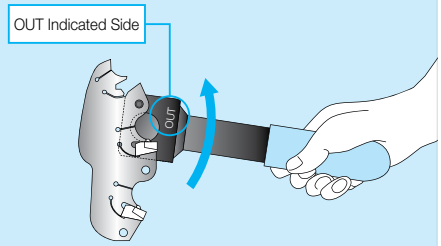


How to install inserts



1. Put insert inside the slot mill.
2. Insert one of the pins on the wrench (on IN indicated side) into the wrench support hole.
3. Using the other pin, push the front relief surface of the insert.
4. Rotate the wrench until insert's back end makes contact with slot mill.

How to remove inserts



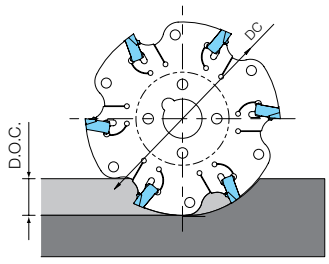
1. Insert one of the pins on the wrench (on OUT indicated side) into the wrench support hole, and insert other pin into the insert removal hole.
2. Insert can be removed by rotating the wrench counter clock wise. (A magnet is installed on OUT indicated side.)

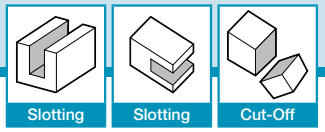
Note) Use appropriate wrench for set up.

Recommended Cutting Conditions

Workpiece Material		Hardness (HRC)	Recommended Insert Grade (Vc: sfm)		fz (ipt)				Notes
			CVD Coated Carbide	PVD Coated Carbide	Edge Width				
			CA0835	**PR0735**	0.063" 1.60mm	0.087" (0.089") 2.20mm (2.25mm)	0.118" 3.00mm	0.157" 4.00mm	
Low Carbon Steel	1010~1025	20	820~1020	660~820	0.001~0.005	0.002~0.006	0.002~0.007	0.003~0.008	Coolant
Carbon Steel	1030~1059, 1060 Annealed	29	520~620	430~520	0.001~0.005	0.002~0.006	0.002~0.007	0.003~0.008	
	1030~1059, 1060 Heat Treated	37	460~590	360~490	0.001~0.005	0.002~0.006	0.002~0.007	0.003~0.008	
Alloy Steel	Annealed	28	460~590	360~490	0.001~0.005	0.002~0.006	0.002~0.007	0.003~0.008	
	Heat Treated	41	390~520	330~430	0.001~0.004	0.002~0.005	0.002~0.006	0.003~0.007	
High Carbon Alloy	D2, H13, etc.	42	330~460	260~390	0.001~0.004	0.002~0.005	0.002~0.006	0.003~0.007	
Stainless Steel	304, 316, etc. Austenitic	33	490~620	260~390	0.001~0.004	0.002~0.005	0.002~0.006	0.003~0.007	
	403, 410, etc. Martensitic	45	460~590	200~260	0.001~0.004	0.002~0.005	0.002~0.006	0.003~0.007	
Gray Cast Iron	NO.45~NO.60	38	520~660	-	0.001~0.005	0.002~0.006	0.002~0.007	0.003~0.008	Dry
Nodular Cast Iron	60-40-18~70-50-05	25	430~520	-	0.001~0.005	0.002~0.006	0.002~0.007	0.003~0.008	
	80-60-03~120-90-02	37	360~460	-	0.001~0.005	0.002~0.006	0.002~0.007	0.003~0.008	

Note) 1. Use down-cut machining.
2. If D.O.C. is under 1/10 of Cutter Dia.(DC), it is possible to increase feed per tooth (fz) 40%.





Identification System

MSTB Slot Mill

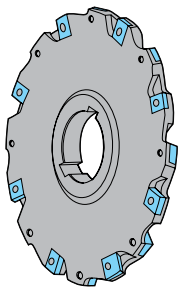
Inch Size

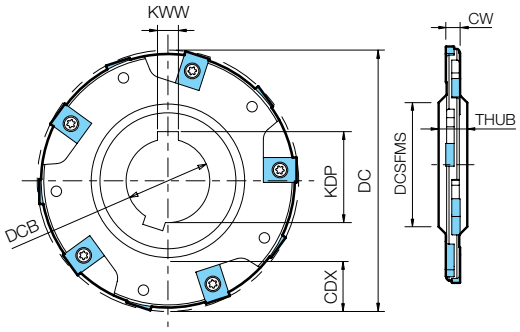
MSTB	○○○○	A	N	○○○	–	○	T
Slot Mill with Up-right Insert	Cutting Dia. (inch)	A : Without Boss	N : Neutral	Edge Width (inch)		No. of Flutes	

Metric Size

MSTB	○○○	A	N	○○○○	–	○	T
Slot Mill with Up-right Insert	Cutting Dia. (mm)	A : Without Boss S : With Boss	N : Neutral	Edge Width (mm)		No. of Flutes	

MSTB Without Boss





In order to be used in combination with two or more mills, this slot mill has 2 key slots.

Toolholder Dimensions (Inch Size)

Part Number	Stock	Edge Width (inch)		Slot Depth	No. of Inserts	No. of Edge Lines → M207	Dimensions (inch)						Weight (kg)	Max. RPM
		CW (Min.)	CW (Max.)	CDX (inch)			DC	DCB (H7)	DCSFMS	THUB	KDP	KWW		
MSTB 3000AN250-4T	●	0.250	0.289	0.625	8	4	3.000	1.000	1.500	0.500	1.106	0.250	0.3	9,470
4000AN250-5T	●	0.250	0.289	0.935	10	5	4.000	1.250	1.880	0.500	1.386	0.312	0.3	8,200
5000AN250-6T	●			1.435	12	6	5.000						0.7	7,300
6000AN250-8T	●	0.250	0.289	1.750	16	8	6.000	1.500	2.250	0.500	1.665	0.375	1.0	6,700
MSTB 4000AN312-5T	●	0.312	0.351	0.966	10	5	4.000	1.250	1.880	0.500	1.386	0.312	0.5	7,400
5000AN312-6T	●			1.466	12	6	5.000						0.8	6,600
6000AN312-8T	●	0.312	0.351	1.781	16	8	6.000	1.500	2.250	0.500	1.665	0.375	1.1	6,000
MSTB 4000AN375-3T	●	0.375	0.414	1.000	9	3	4.000	1.250	1.880	0.500	1.386	0.312	0.5	7,400
5000AN375-4T	●			1.500	12	4	5.000						0.8	6,600
6000AN375-5T	●	0.375	0.414	1.812	15	5	6.000	1.500	2.250	0.500	1.665	0.375	1.3	6,000
MSTB 4000AN500-3T	●	0.500	0.539	1.060	9	3	4.000	1.250	1.880	0.500	1.386	0.312	0.6	4,900
5000AN500-4T	●			1.560	12	4	5.000						1.1	4,400
6000AN500-5T	●	0.500	0.539	1.875	15	5	6.000	1.500	2.250	0.500	1.665	0.375	1.7	4,000

Toolholder Dimensions (Metric Size)

Part Number	Stock	Edge Width (mm)		Slot Depth	No. of Inserts	No. of Edge Lines → M207	Dimensions (mm)						Weight (kg)	Max. RPM
		CW (Min.)	CW (Max.)	CDX (mm)			DC	DCB (H7)	DCSFMS	THUB	KDP	KWW		
MSTB 80AN0607-4T	●	6	7	15.0	8	4	80	27	44	12	29.8	7	0.3	9,240
100AN0607-5T	●	6	7	21.0	10	5	100	32	52	12	34.8	8	0.4	8,270
125AN0607-6T	●	6	7	28.0	12	6	125	40	63	12	43.5	10	0.7	7,390
160AN0607-8T	●			45.5	16	8	160						1.1	6,540
MSTB 80AN0809-4T	●	8	9	16.0	8	4	80	27	44	12	29.8	7	0.4	9,240
100AN0809-5T	●	8	9	22.0	10	5	100	32	52	12	34.8	8	0.5	8,270
160AN0809-8T	●	8	9	45.5	16	8	160	40	63	12	43.5	10	1.3	6,540
MSTB 125AN1011-4T	●	10	11	30.0	12	4	125	40	63	12	43.5	10	0.9	7,390
160AN1011-5T	●			47.5	15	5	160						1.6	6,540
MSTB 160AN1213-5T	●	12	13	48.5	15	5	160	40	63	12	43.5	10	1.6	6,540

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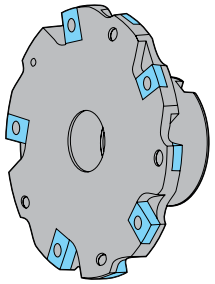
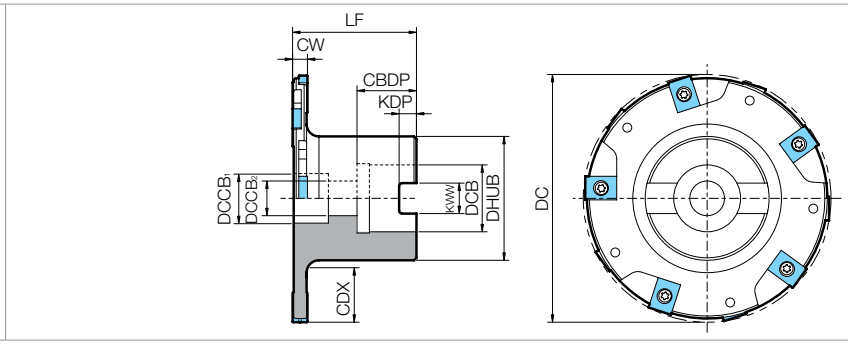
MSTB With Boss





Toolholder Dimensions

Part Number	Stock	Unit	Edge Width		Slot Depth	No. of Inserts	No. of Edge Lines	Dimensions									Weight (kg)	Max. RPM
			CW (Min.)	CW (Max.)	CDX			DC	DCB (H7)	DHUB	LF (Min.)	CBDP	KDP	KWW	$DCCB_1$	$DCCB_2$		
MSTB 2500SN250-3T	●	inch	0.250	0.289	0.550	6	3	2.500	0.750	1.580	1.875	0.075	0.220	0.332	-	0.406	0.5	10,400
2500SN312-3T	●		0.312	0.351	0.550	6	3	2.500	0.750	1.580	1.875	0.075	0.220	0.332	-	0.406	0.6	9,400
MSTB 80SN0607-4T	●	mm	6	7	16	8	4	80	22	40	50	23	6.3	10.4	18	12	0.7	9,240
100SN0607-5T	●				21	10	5	100	27	50		24	7.0	12.4	20	14	1.0	8,270
160SN0607-8T	●				41	16	8	160	40	70		28	9.0	16.4	33	22	1.9	6,540
MSTB 80SN0809-4T	●		8	9	16	8	4	80	22	40	50	23	6.3	10.4	18	12	0.8	9,240
100SN0809-5T	●				21	10	5	100	27	50		24	7.0	12.4	20	14	1.2	8,270
160SN0809-8T	●				41	16	8	160	40	70		28	9.0	16.4	33	22	2.2	6,540
MSTB 125SN1011-4T	●		10	11	26	12	4	125	40	70	50	28	9.0	16.4	33	22	2.0	7,390
160SN1011-5T	●				43	15	5	160									2.5	6,540

Note) CW (Min.) dimension shows case of minimum edge width.

Spare Parts and Applicable Inserts

Part Number				Spare Parts				Applicable Inserts ➡ M206
				Clamp Screw	Wrench	Anti-seize Compound	Arbor Bolt	
Without Boss	Inch Sizes	**MSTB**	○○○○**AN250-○T**	SE-40055TR	TT-15L	P-37	-	LNEU12...
			○○○○**AN312-○T**	SE-40068TR	TT-15L	P-37	-	
			○○○○**AN375-○T**					
			○○○○**AN500-○T**	SE-40090TR	TT-15L	P-37	-	
Without Boss	Metric Sizes	**MSTB**	○○○**AN0607-○T**	SE-40050TRN	TT-15L	P-37	-	
			○○○**AN0809-○T**	SE-40068TR	TT-15L	P-37	-	
			○○○**AN1011-○T**					
			160AN1213-5T	SE-40090TR	TT-15L	P-37	-	
With Boss		**MSTB**	**80SN0607-4T**	SE-40050TRN	TT-15L	P-37	HH10X35	
			100SN0607-5T	SE-40050TRN	TT-15L	P-37	HH12X35	
			160SN0607-8T	SE-40050TRN	TT-15L	P-37	HH20X40	
		MSTB	**80SN0809-4T**	SE-40068TR	TT-15L	P-37	HH10X35	
			100SN0809-5T	SE-40068TR	TT-15L	P-37	HH12X35	
			160SN0809-8T	SE-40068TR	TT-15L	P-37	HH20X40	
		MSTB	○○○**SN1011-○T**	SE-40068TR	TT-15L	P-37	HH20X40	

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Recommended Cutting Conditions ➡ **M208**

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Insert Identification System

LNEU	12	35	–	03	S
①	②	③		④	⑤

① Insert Symbol

② Insert Length

Symbol	Insert Length
12	12.70mm

③ Edge Width

Symbol	Edge Wdth
35	3.50mm
40	4.00mm

④ Corner-R(RE)

Symbol	Corner-R(RE)
03	0.30mm
04	0.40mm

⑤ Edge Preparation

Symbol	Edge Preparation
S	Chamfer + R-honed

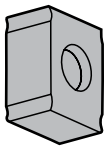
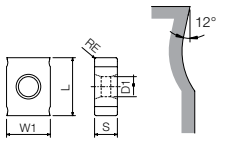
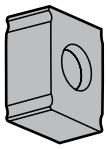
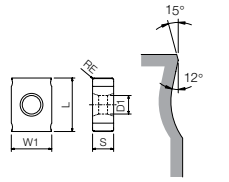
Applicable Inserts (LN)

(mm)

Part Number	L	W1
LNEU12	12.7	9.52

Usage Classification
● : 1st Choice
○ : 2nd Choice

		Applicable Clamp Screw
P	Carbon Steel / Alloy Steel	●
M	Stainless Steel	●
K	Cast Iron	○
N	Non-ferrous Metals	
S	Heat-resistant Alloys	●
	Titanium Alloy	○

Insert		Part Number	Usable Edges	Dimensions (mm) S	D1	RE	PVD Coated Carbide PR0725	Applicable Clamp Screw	Applicable Toolholders
 Honed		LNEU 1245-04	4	4.5	4.2	0.4	●	SE-40068TR	M204-M205
		1245-08	4	4.5	4.2	0.8	●		
		1250-04	4	5.0	4.2	0.4	●	SE-40080TR	
		1250-08	4	5.0	4.2	0.8	●		
		1255-04	4	5.5	4.2	0.4	●	SE-40090TR	
		1255-08	4	5.5	4.2	0.8	●		
		1260-04	4	6.0	4.2	0.4	●	SE-40100TR	
 Tough Edge		LNEU 1235-03S-4	4	3.5	4.4	0.3	●	SE-40050TRN	
		1240-03S-4	4	4.0	4.4	0.3	●	SE-40055TR	
		1245-04S	4	4.5	4.2	0.4	●		
		1245-08S	4	4.5	4.2	0.8	●	SE-40068TR	
		1250-04S	4	5.0	4.2	0.4	●		
		1250-08S	4	5.0	4.2	0.8	●	SE-40080TR	

Notes) 1. Please select the applicable clamp screw depending on each insert part number.
2. Ref. to page M207 for insert description and applicable clamp screw depending on edge width.

Recommended Cutting Conditions M208

Feature of Insert Grades

PR0725

- TiN+TiCN+TiN based Multi-layer PVD Coated Carbide
- For Carbon Steel, Alloy Steel, Stainless Steel, Heat Resistant Alloys and Cast Iron.
- For medium speed machining.

Inserts are sold in 10 piece boxes.

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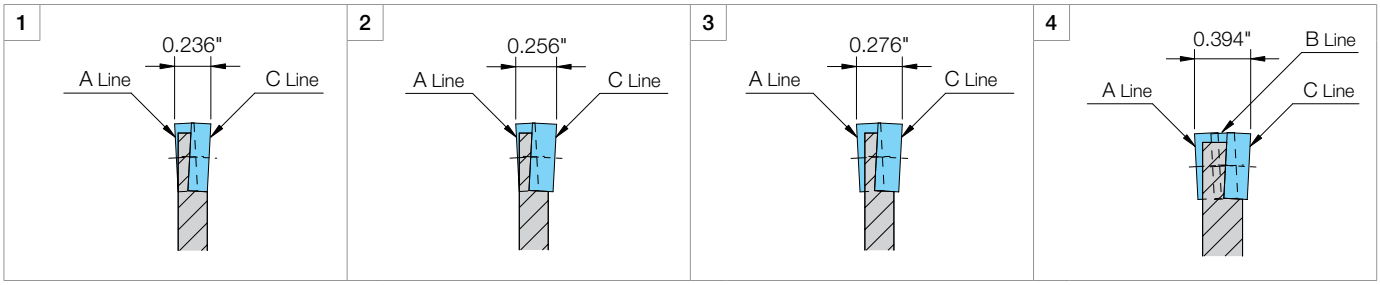
Combination of Applicable Inserts

	Part Number	Clamp Screw (Standard attachment parts)	Edge Width		A Line		B Line		C Line		Wrench for Clamp Screw	Tightening Torque (N·m)
			mm	inch	Applicable Inserts	Clamp Screw	Applicable Inserts	Clamp Screw	Applicable Inserts	Clamp Screw		
Inch Size	MSTB ○○○AN250-○T	SE-40055TR	-	0.250	LNEU1240..	SE-40055TR	-	-	LNEU1240..	SE-40055TR	TT-15L	3
				0.270					LNEU1245..	SE-40068TR		
				0.289	LNEU1245..	SE-40068TR	-	-				
	MSTB ○○○AN312-○T	SE-40068TR	-	0.312	LNEU1245..	SE-40068TR	-	-	LNEU1245..	SE-40068TR		
				0.332					LNEU1250..	SE-40080TR		
				0.351	LNEU1250..	SE-40080TR	-	-				
	MSTB ○○○AN375-○T	SE-40068TR	-	0.375	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR		
				0.395					LNEU1250..	SE-40080TR		
				0.414	LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR				
	MSTB ○○○AN500-○T	SE-40090TR	-	0.500	LNEU1255...	SE-40090TR	LNEU1255...	SE-40090TR	LNEU1255...	SE-40090TR		
				0.520					LNEU1260...	SE-40100TR		
				0.539	LNEU1260...	SE-40100TR	LNEU1260...	SE-40100TR				
Metric Size	MSTB ○○○AN0607-○T	SE-40050TRN	6.0	-	LNEU1235..	SE-40050TRN	-	-	LNEU1235..	SE-40050TRN		
	○○○SN0607-○T		6.5						LNEU1240..	SE-40055TR		
			7.0		LNEU1240..	SE-40055TR						
	MSTB ○○○AN0809-○T	SE-40068TR	8.0	-	LNEU1245..	SE-40068TR	-	-	LNEU1245..	SE-40068TR		
	○○○SN0809-○T		8.5						LNEU1250..	SE-40080TR		
			9.0		LNEU1250..	SE-40080TR						
	MSTB ○○○AN1011-○T	SE-40068TR	10.0	-	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR	LNEU1245..	SE-40068TR		
	○○○SN1011-○T		10.5						LNEU1250..	SE-40080TR		
			11.0		LNEU1250..	SE-40080TR	LNEU1250..	SE-40080TR				
	MSTB ○○○AN1213-○T	SE-40090TR	12.0	-	LNEU1255...	SE-40090TR	LNEU1255...	SE-40090TR	LNEU1255...	SE-40090TR		
			12.5						LNEU1260...	SE-40100TR		
			13.0		LNEU1260...	SE-40100TR	LNEU1260...	SE-40100TR				

* For clamp screw, above listed “Standard attachment parts” are included. In case of necessity of another size of clamp screw by changing slotting width, please purchase separately.

Slot Width (Edge Width) Adjustment



The Slot width (edge width) of MSTB Slot Mills is adjustable by a maximum of 1.00mm (0.039") with the combination of inserts.

1. In the case of MSTB○○○AN0607-○T the width (W) is 6.00mm (0.236") by installing LNEU1235 on both A line and C line.
2. By replacing C line only with LNEU1240 the width (W) is 6.50mm (0.256").
3. By replacing A line and C line with LNEU1240 the width (W) is 7.00mm (0.276").
4. If the slotting width (edge width) is 10.00mm (0.394") or more, the B line (middle edge) is necessary.

* Caution

1) There is no description such as “A line”, “B line”, and “C line” on the actual Slot Mill. These are only for explanation of the combination of inserts.
2) Use proper clamp screws for applicable inserts on the basis of the above chart.
3) The Slot width (edge width) of MSTB Slot Mills is adjustable by a maximum of 1.00mm (0.039") with the combination of inserts.

Bottom Cutting Shape of MSTB Slot Mill

Slot bottom shape will be (Fig.1) convex shape.

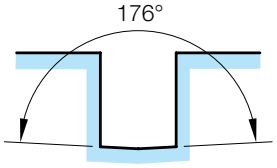
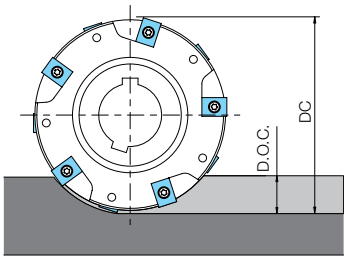


Fig.1 Convex bottom shape

Recommended Cutting Conditions

Workpiece Material		Hardness (HRC)	Recommended Insert Grade (Vc: sfm)	fz (ipt)		Notes
			PVD Coated Carbide	Insert Thickness		
			PR0725	0.138"~0.157" 3.50mm~4.00mm	0.177"~0.236" 4.50mm~6.00mm	
Low Carbon Steel	1010~1025	20	560~690	0.003~0.008	0.004~0.009	Dry
Carbon Steel	1030~1059, 1060 Annealed	29	330~460	0.003~0.008	0.004~0.009	
	1030~1059, 1060 Heat Treated	37	300~390	0.003~0.008	0.004~0.009	
Alloy Steel	Annealed	28	300~390	0.003~0.008	0.004~0.009	
	Heat Treated	41	260~360	0.002~0.007	0.003~0.008	
High Carbon Alloy	D2, H13, etc.	41	230~300	0.002~0.007	0.003~0.008	
Stainless Steel	304, 316, etc. Austenitic	33	360~460	0.002~0.007	0.003~0.008	Coolant
	403, 410, etc. Martensitic	45	330~390	0.002~0.007	0.003~0.008	
Heat-resistant Alloys	Inconel 718, etc.	37.7	50~100	0.002~0.007	0.003~0.008	
Titanium Alloys	Ti-6Al-4V, etc.	40	70~160	0.002~0.007	0.003~0.008	
Gray Cast Iron	NO.45~NO.60	38	360~430	0.003~0.009	0.004~0.010	Dry
Nodular Cast Iron	60-40-18~70-50-05	25	260~330	0.003~0.009	0.004~0.010	
	80-60-03~120-90-02	37	230~300	0.003~0.009	0.004~0.010	

Note) 1. Use down-cut machining.
2. If D.O.C. is under 1/10 of Cutter Dia.(DC), it is possible to increase feed per tooth (fz) 40%.



Identification System

MSTC Slot Mill

Inch Size

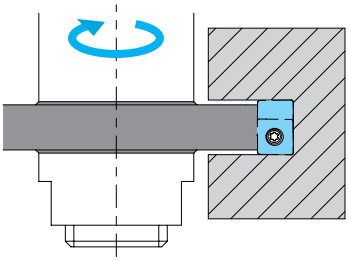
MSTC	○○○	A	N	○○○–○○○	–	○○
Slot Mill with Lay-down Type	Cutting Dia. (inch)	A : Without Boss S : With Boss	N : Neutral R : Right-hand L : Left-hand	Edge Width (inch)		Applicable Inserts 10 : SP..10T3.. 12 : SD..1204..

Metric Size

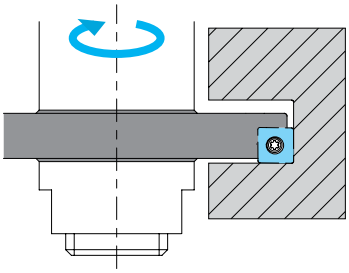
MSTC	○○○	A	N	○○○○	–	○○	–	○○	T
Slot Mill with Lay-down Type	Cutting Dia. (mm)	A : Without Boss S : With Boss	N : Neutral R : Right-hand L : Left-hand	Edge Width (mm)		Applicable Inserts 10 : SP..10T3.. 12 : SD..1204..		No. of Flutes	

Cutting Direction of MSTC Slot Mill

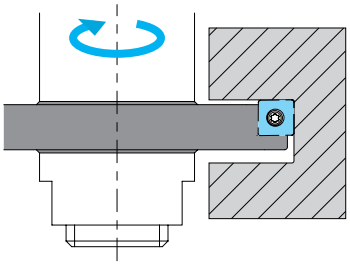
AN Type (Slotting)



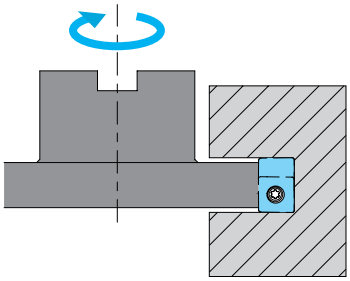
AR Type (Lower Surface Machining)



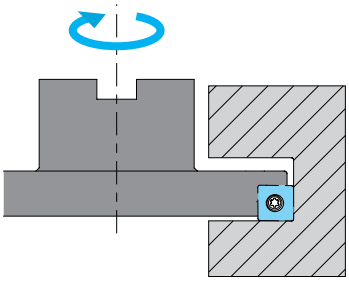
AL Type (Upper Surface Machining)



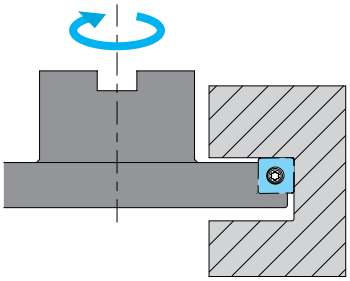
SN Type (Slotting)

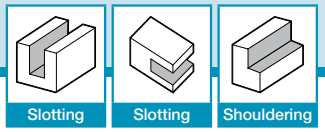


SR Type (Lower Surface Machining)

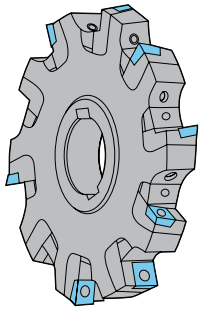


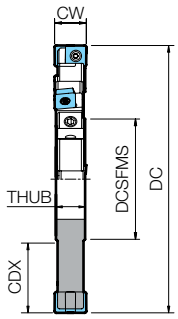
SL Type (Upper Surface Machining)

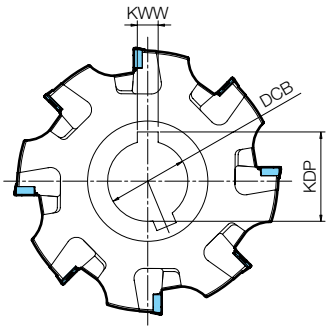




MSTC Without Boss Neutral







Toolholder Dimensions (Inch Size)

Part Number	Stock	Edge Width (inch) CW (Min.)	Edge Width (inch) CW (Max.)	Slot Depth CDX (inch)	No. of Inserts	No. of Edge Lines	Dimensions (inch) DC	DCB (H7)	DCSFMS	THUB	KDP	KWW	Weight (kg)	Max. RPM
MSTC 400AN551-630-10	●	0.551	0.630	1.030	6	3	4.000	1.250	1.880	0.545	1.386	0.312	0.6	17,100
500AN551-630-10	●	0.551	0.630	1.345	8	4	5.000	1.500	2.250	0.545	1.665	0.375	0.9	15,300
600AN551-630-10	●			1.845	10	5	6.000						1.4	14,000
MSTC 500AN630-709-10	●	0.630	0.709	1.345	8	4	5.000	1.500	2.250	0.624	1.665	0.375	1.1	15,300
600AN630-709-10	●			1.845	10	5	6.000						1.6	14,000
MSTC 500AN709-813-12	●	0.709	0.813	1.331	8	4	5.000	1.500	2.250	0.716	1.665	0.375	1.1	10,300
600AN709-813-12	●			1.831	10	5	6.000						1.7	9,400
MSTC 500AN813-917-12	●	0.813	0.917	1.331	8	4	5.000	1.500	2.250	0.820	1.665	0.375	1.3	10,300
600AN813-917-12	●			1.831	10	5	6.000						2.0	9,400

Toolholder Dimensions (Metric Size)

Part Number	Stock	Edge Width (mm) CW (Min.)	Edge Width (mm) CW (Max.)	Slot Depth CDX (mm)	No. of Inserts	No. of Edge Lines	Dimensions (mm) DC	DCB (H7)	DCSFMS	THUB	KDP	KWW	Weight (kg)	Max. RPM
MSTC 100AN1416-10-3T	●	14.0	16.0	25.9	6	3	100	32	46.8	13.9	34.8	8	0.5	17,250
125AN1416-10-4T	●	14.0	16.0	34.4	8	4	125	40	54.8	13.9	43.5	10	0.8	15,450
160AN1416-10-5T	●			51.9	10	5	160						1.5	13,650
MSTC 125AN1618-10-4T	●	16.0	18.0	34.4	8	4	125	40	54.8	15.9	43.5	10	1.0	15,450
160AN1618-10-5T	●			51.9	10	5	160						1.8	13,650
MSTC 125AN1820-12-4T	●	18.0	20.7	34.0	8	4	125	40	54.8	18.2	43.5	10	1.0	10,350
160AN1820-12-5T	●			51.5	10	5	160						1.8	9,150
MSTC 125AN2123-12-4T	●	21.0	23.3	34.0	8	4	125	40	54.8	20.8	43.5	10	1.2	10,350
160AN2123-12-5T	●			51.5	10	5	160						2.1	9,150

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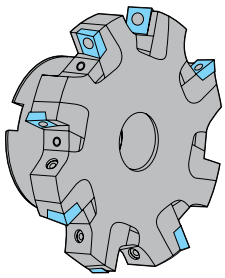
MSTC With Boss Neutral (Metric Size)



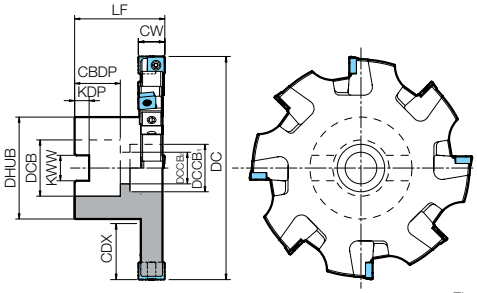


Fig.1

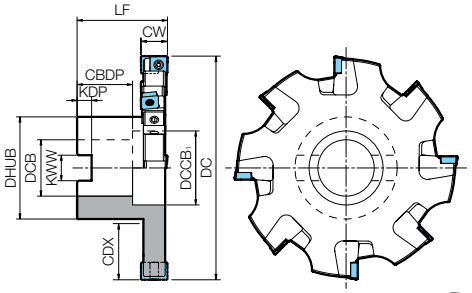


Fig.2

Toolholder Dimensions (Metric Size)

Part Number	Stock	Edge Width (mm)		Slot Depth	No. of Inserts	No. of Edge Lines	Dimensions (mm)									Drawing	Weight (kg)	Max. RPM
		CW (Min.)	CW (Max.)	CDX (mm)			DC	DCB (H7)	DHUB	LF (Min.)	CBDP	KDP	KWW	$DCCB_1$	$DCCB_2$			
MSTC 100SN1416-10-3T	●	14.0	16.0	24.4	6	3	100	27	48	50.8	24	7	12.4	20	14	Fig.1	1.0	17,250
125SN1416-10-4T	●			31.9	8	4	125	32	58		26	8	14.4	27	18	Fig.1	1.6	15,450
160SN1416-10-5T	●			43.4	10	5	160	40	70		30	9	16.4	56	-	Fig.2	2.0	13,650
MSTC 125SN1618-10-4T	●	16.0	18.0	31.9	8	4	125	32	58	50.8	26	8	14.4	27	18	Fig.1	1.7	15,450
160SN1618-10-5T	●			43.4	10	5	160	40	70		30	9	16.4	56	-	Fig.2	2.3	13,650
MSTC 125SN1820-12-4T	●	18.0	20.7	31.9	8	4	125	32	58	51.0	26	8	14.4	27	18	Fig.1	1.6	10,350
160SN1820-12-5T	●			43.4	10	5	160	40	70		30	9	16.4	56	-	Fig.2	2.3	9,150
MSTC 125SN2123-12-4T	●	20.7	23.3	31.9	8	4	125	32	58	51.0	26	8	14.4	27	18	Fig.1	1.7	10,350
160SN2123-12-5T	●			43.4	10	5	160	40	70		30	9	16.4	56	-	Fig.2	2.6	9,150

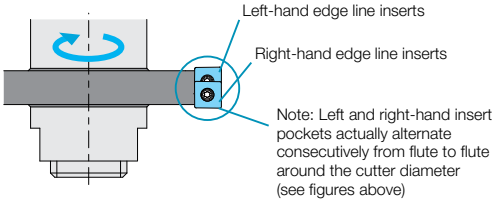
Note) LF (Min.) dimension shows case of minimum of edge width.

Recommended Cutting Conditions ➔ **M220**

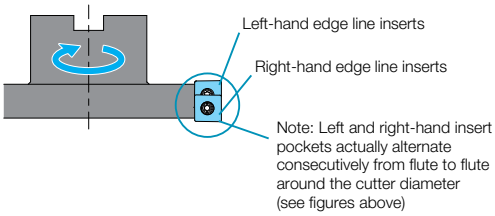
Applicable Insert Installation Method (Inch Sizes / Metric Sizes)

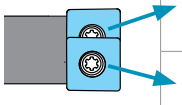
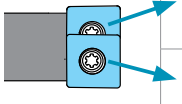
When installing handed inserts, it is necessary to equip same number of right-hand and left-hand inserts as shown in "No. of Edge Lines" respectively. Install left-hand inserts in left edge line pockets and right-hand inserts in right edge line pockets. Note that left and right-hand edge line pockets differentiate consecutively from flute to flute around the cutter diameter.

MSTC...AN... (Without Boss)



MSTC...SN... (With boss)



Part Number	Insert Location Indication	Applicable Inserts ➔ M218-M219	
		With hand	Neutral
MSTC...AN...10.. MSTC...SN...10..		SP..10T3...L...	SP..10T3...N...
		SP..10T3...R...	
MSTC...AN...12.. MSTC...SN...12..		SD..1204...L...	SD..1204...N...
		SD..1204...R...	

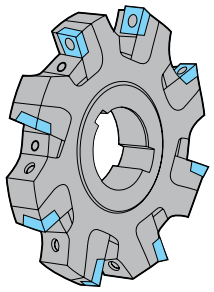
Spare Parts (Inch Sizes / Metric Sizes)

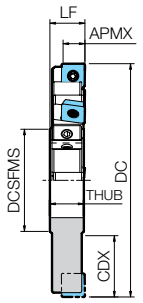
- For spare parts, ref. to page ➔ **M216**

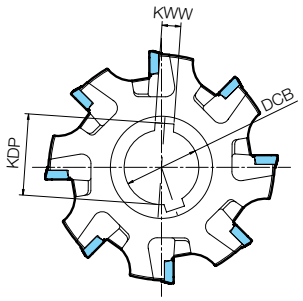
Slot Width (Edge Width) Adjustment

- Ref. to page ➔ **M220-M223**

MSTC Without Boss Right-hand







● Right-hand Shown

In order to be used in combination with two or more mills, this slot mill has 2 key slots.

Toolholder Dimensions (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)									Weight (kg)	Max. RPM
			DC	DCB (H7)	DCSFMS	THUB	LF (Min.)	LF (Max.)	CDX	APMX (Max.)	KDP	KWW		
MSTC 500AR709-813-12	●	8	5.000	1.500	2.250	0.716	0.712	0.764	1.331	0.461	1.665	0.375	1.1	10,300
600AR709-813-12	●	10	6.000						1.831				1.7	9,400

Toolholder Dimensions (Metric Size)

Part Number	Stock	No. of Inserts	Dimensions (mm)									Weight (kg)	Max. RPM
			DC	DCB (H7)	DCSFMS	THUB	LF (Min.)	LF (Max.)	CDX	APMX (Max.)	KDP	KWW		
MSTC 160AR1416-10-10T	●	10	160	40	54.8	13.9	13.9	14.9	51.9	9.1	43.5	10	1.5	13,650
MSTC 125AR1820-12-8T	●	8	125	40	54.8	18.2	18.1	19.4	34.0	11.7	43.5	10	1.0	10,350
160AR1820-12-10T	●	10	160						51.5				1.8	9,150

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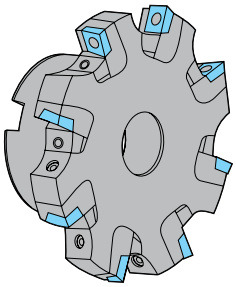
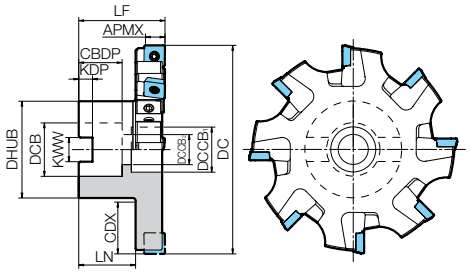
MSTC With Boss Right-hand





● Right-hand Shown Fig.1

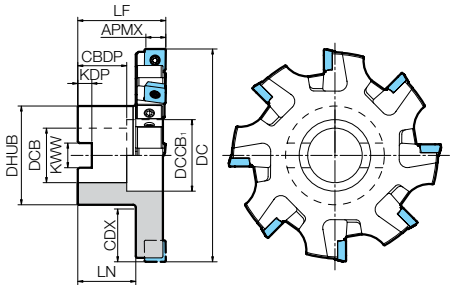


Fig.2

Toolholder Dimensions (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)												Drawing	Weight (kg)	Max. RPM
			DC	DCB (H7)	DHUB	LF (Min.)	LF (Max.)	CDX	APMX (Max.)	CBDP	KDP	KWW	$DCCB_1$	$DCCB_2$			
MSTC 500SR709-813-12	●	8	5.000	1.25	2.88	2.041	2.093	0.997	0.461	0.75	0.319	0.5	1.05	0.656	Fig.1	2.1	10,300
600SR709-813-12	●	10	6.000	1.5	3.81			1.032		0.972	0.394	0.626	2.5	-	Fig.2	2.9	9,400

Toolholder Dimensions (Metric Size)

Part Number	Stock	No. of Inserts	Dimensions (mm)													Drawing	Weight (kg)	Max. RPM
			DC	DCB (H7)	DHUB	LN	LF (Min.)	LF (Max.)	CDX	APMX (Max.)	CBDP	KDP	KWW	$DCCB_1$	$DCCB_2$			
MSTC 125SR1820-12-8T	●	8	125	32	58	34.0	51.0	52.3	31.9	11.7	26	8	14.4	27	18	Fig.1	1.6	10,350
160SR1820-12-10T	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.3	9,150

Applicable Inserts (Inch Sizes / Metric Sizes)

Part Number	Applicable Inserts ➡ M218-M219	
	With hand	Neutral
MSTC...AR...10.. MSTC...SR...10..	SP..10T3...R...	SP..10T3...N...
MSTC...AR...12.. MSTC...SR...12..	SD..1204...R...	SD..1204...N...

Recommended Cutting Conditions ➡ **M220**

Spare Parts (Inch Sizes / Metric Sizes)

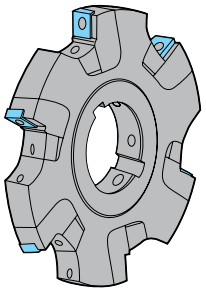
- For spare parts, ref. to page ➡ **M217**

Slot Width (Edge Width) Adjustment

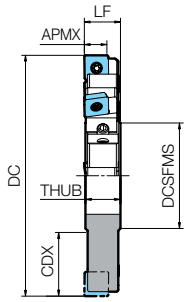
- Ref. to page ➡ **M220-M223**

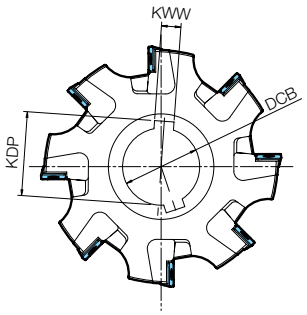
Shouldering | Back Side Milling

MSTC Without Boss Left-hand



● Left-hand Shown





In order to be used in combination with two or more mills, this slot mill has 2 key slots.

Toolholder Dimensions (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)									Weight (kg)	Max. RPM
			DC	DCB (H7)	DCSFMS	THUB	LF (Min.)	LF (Max.)	CDX	APMX (Max.)	KDP	KWW		
MSTC 500AL709-813-12	●	8	5.000	1.500	2.250	0.716	0.712	0.764	1.331	0.461	1.665	0.375	1.1	10,300
600AL709-813-12	●	10	6.000						1.831				1.7	9,400

Toolholder Dimensions (Metric Size)

Part Number	Stock	No. of Inserts	Dimensions (mm)									Weight (kg)	Max. RPM
			DC	DCB (H7)	DCSFMS	THUB	LF (Min.)	LF (Max.)	CDX	APMX (Max.)	KDP	KWW		
MSTC 125AL1820-12-8T	●	8	125	40	54.8	18.2	18.1	19.4	34.0	11.7	43.5	10	1.0	10,350
160AL1820-12-10T	●	10	160						51.5				1.8	9,150

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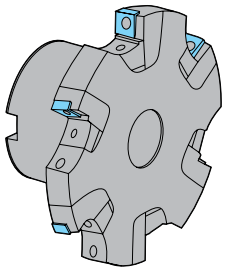
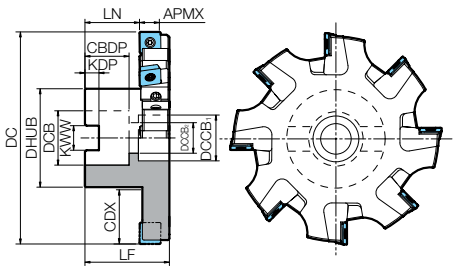
MSTC With Boss Left-hand





● Left-hand Shown Fig.1

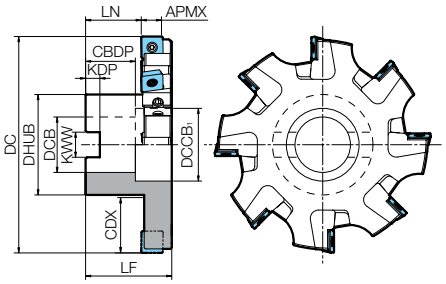


Fig.2

Toolholder Dimensions (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)												Drawing	Weight (kg)	Max. RPM
			DC	DCB (H7)	DHUB	LN (Min.)	LN (Max.)	CDX	APMX (Max.)	CBDP	KDP	KWW	$DCCB_1$	$DCCB_2$			
MSTC 500SL709-813-12	●	8	5.000	1.250	2.880	1.280	1.332	0.997	0.461	0.750	0.319	0.500	1.050	0.656	Fig.1	2.1	10,300
600SL709-813-12	●	10	6.000	1.500	3.810			1.032		0.972	0.394	0.626	2.500	-	Fig.2	2.9	9,400

Toolholder Dimensions (Metric Size)

Part Number	Stock	No. of Inserts	Dimensions (mm)												Drawing	Weight (kg)	Max. RPM
			DC	DCB (H7)	DHUB	LF	LN (Min.)	LN (Max.)	CDX	APMX (Max.)	CBDP	KDP	KWW	$DCCB_1$	$DCCB_2$			
MSTC 125SL1820-12-8T	●	8	125	32	58	50	31.7	33.0	31.9	11.7	26	8	14.4	27	18	Fig.1	1.6	10,350
160SL1820-12-10T	●	10	160	40	70				43.4		30	9	16.4	56	-	Fig.2	2.3	9,150

Applicable Inserts (Inch Sizes / Metric Sizes)

Part Number	Applicable Inserts ➡ M218-M219	
	With hand	Neutral
MSTC...AL...10.. MSTC...SL...10..	SP..10T3...L...	SP..10T3...N...
MSTC...AL...12.. MSTC...SL...12..	SD..1204...L...	SD..1204...N...

Recommended Cutting Conditions ➡ **M220**

Spare Parts (Inch Sizes / Metric Sizes)

- For spare parts, ref. to page ➡ **M217**

Slot Width (Edge Width) Adjustment

- Ref. to page ➡ **M220-M223**

● Spare Parts (Inch Sizes / Metric Sizes)

Part Number			Spare Parts										
			Cartridge		Wedge	Wedge Screw	Cam Pin	Clamp Screw	Wrench			Anti-seize Compound	Arbor Bolt
			Right-hand	Left-hand					for Wedge Screw	for Cam Pin	for Clamp Screw		
Without Boss	Inch Size	**MSTC 400AN551-630-10**	C90SP1416-10R	C90SP1416-10L	WC-14	W6X18	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	-
		500AN551-630-10	C90SP1416-10R	C90SP1416-10L	WC-14	W6X20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	-
		600AN551-630-10											
		MSTC 500AN630-709-10	C90SP1618-10R	C90SP1618-10L	WC-16	W6X20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	-
		600AN630-709-10											
		MSTC 500AN709-813-12	C90SD1820-12R	C90SD1820-12L	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		600AN709-813-12											
		MSTC 500AN813-917-12	C90SD2023-12R	C90SD2023-12L	WC-20	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		600AN813-917-12											
	Metric Size	**MSTC 100AN1416-10-3T**	C90SP1416-10R	C90SP1416-10L	WC-14	W6X18	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	-
		125AN1416-10-4T	C90SP1416-10R	C90SP1416-10L	WC-14	W6X20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	-
		160AN1416-10-5T											
		MSTC 125AN1618-10-4T	C90SP1618-10R	C90SP1618-10L	WC-16	W6X20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	-
		160AN1618-10-5T											
		MSTC 125AN1820-12-4T	C90SD1820-12R	C90SD1820-12L	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		160AN1820-12-5T											
		MSTC 125AN2123-12-4T	C90SD2023-12R	C90SD2023-12L	WC-20	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		160AN2123-12-5T											
With Boss	Metric Size	**MSTC 100SN1416-10-3T**	C90SP1416-10R	C90SP1416-10L	WC-14	W6X20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	HH12X35
		125SN1416-10-4T											HH16X35
		160SN1416-10-5T											-
		MSTC 125SN1618-10-4T	C90SP1618-10R	C90SP1618-10L	WC-16	W6X20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	HH16X35
		160SN1618-10-5T											-
		MSTC 125SN1820-12-4T	C90SD1820-12R	C90SD1820-12L	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	HH16X35
		160SN1820-12-5T											-
		MSTC 125SN2123-12-4T	C90SD2023-12R	C90SD2023-12L	WC-20	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	HH16X35
		160SN2123-12-5T											-

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

● Tightening Torque

Wrench	TH-3L	DTP-9	DTP-15
Tightening Torque (Nm)	5~6	1.5	4

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● Spare Parts (Inch Sizes / Metric Sizes)

Part Number			Spare Parts										
			Cartridge		Wedge	Wedge Screw	Cam Pin	Clamp Screw	Wrench			Anti-seize Compound	Arbor Bolt
			Right-hand	Left-hand					for Wedge Screw	for Cam Pin	for Clamp Screw		
Without Boss	Inch Size	MSTC 500AR709-813-12	C90SD1820-12R	-	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		600AR709-813-12											
		MSTC 500AL709-813-12	-	C90SD1820-12L	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		600AL709-813-12											
	Metric Size	MSTC 160AR1416-10-10T	C90SP1416-10R	-	WC-14	W6X20	AP-1416	SE-3070TRP	TH-3L	LW-2.5	DTP-9	P-37	-
		MSTC 125AR1820-12-8T	C90SD1820-12R	-	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		160AR1820-12-10T											
		MSTC 125AL1820-12-8T	-	C90SD1820-12L	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	-
		160AL1820-12-10T											
With Boss	Inch Size	MSTC 500SR709-813-12	C90SD1820-12R	-	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	HH16X35
		600SR709-813-12											-
		MSTC 500SL709-813-12	-	C90SD1820-12L	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	HH16X35
		600SL709-813-12											-
	Metric Size	MSTC 125SR1820-12-8T	C90SD1820-12R	-	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	HH16X35
		160SR1820-12-10T											-
		MSTC 125SL1820-12-8T	-	C90SD1820-12L	WC-18	W6X20	AP-1820	SB-3590TRP	TH-3L	LW-3	DTP-15	P-37	HH16X35
		160SL1820-12-10T											-

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

● Tightening Torque

Wrench	TH-3L	DTP-9	DTP-15
Tightening Torque (Nm)	5~6	1.5	4

Insert Identification System

① Shape	
Symbol	Shape
S	Square

③ Tolerance			
Symbol	Class		
	Corner Height	Thickness	I.C. Size
C	±0.013mm	±0.025mm	±0.025mm
E	±0.025mm		

⑤ Edge Length
S / L

⑦ Corner-R(RE)	
Symbol	Corner-R(RE)
16	1.60mm
12	1.20mm
08	0.80mm

⑨ Hand of Tool	
Symbol	Hand of Tool
N	Neutral
L	Left-hand
R	Right-hand

S	P	C	T	10	T3	08	E	R	-	SD
①	②	③	④	⑤	⑥	⑦	⑧	⑨		⑩

② Relief Angle	
Symbol	Relief Angle
D	15°
P	11°

④ Hole / Chipbreaker	
Symbol	Shape
T	Single-sided Chipbreaker, with Hole

⑥ Thickness	
Symbol	Thickness
T3	3.97mm
04	4.76mm

⑧ Edge Preparation	
Symbol	Edge Preparation
E	Honed
F	Sharp Edge
S	Chamfer + R-honed

⑩ Chipbreaker Symbol	
Symbol	Rake Angle
SB	5°
SD	15°
SE	20°

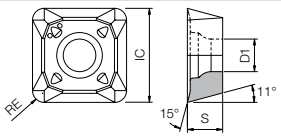
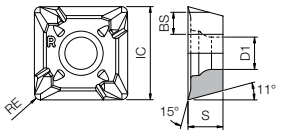
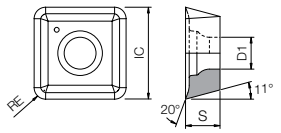
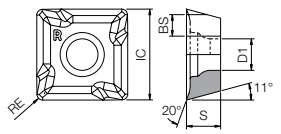
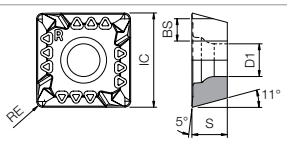
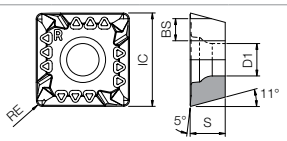
Applicable Inserts (SP..10T3)

Classification of Usage	
● : 1st Choice	
○ : 2nd Choice	

P	Carbon Steel / Alloy Steel	●	●	
M	Stainless Steel	○	●	
K	Cast Iron	○	●	
N	Non-ferrous Metals			●
S	Heat-resistant Alloys		●	
	Titanium Alloy		●	○

(in)

Part Number	IC	S	D1
SP..10T3	0.394	5/32	0.134

Insert (Right-handed Insert Shown)		Part Number	Usable Edges	Dimensions (in)		CVD Coated Carbide	PVD Coated Carbide	
				RE	BS (Wiper Edge)	CA0835	PR0725	PR0110
		SPCT 10T316EN-SD	4	0.063	-		●	
With Wiper Edge		SPCT 10T308E℞-SD	4	0.031	0.098		●	
		10T312E℞-SD	4	0.047	0.071		●	
Sharp Edge		SPCT 10T316FN-SE	4	0.063	-			●
Sharp Edge / With Wiper Edge		SPCT 10T308F℞-SE	4	0.031	0.106			●
		10T312F℞-SE	4	0.047	0.087			●
With Wiper Edge		SPET 10T308E℞-SB	4	0.031	0.106	●	●	
Tough Edge / With Wiper Edge		SPET 10T308S℞-SB	4	0.031	0.106	●	●	

Inserts are sold in 10 piece boxes.

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● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

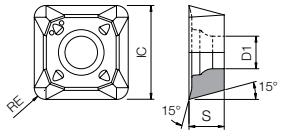
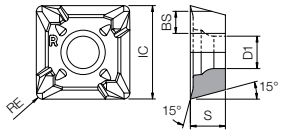
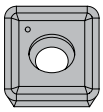
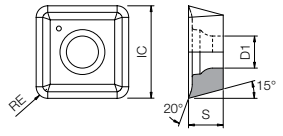
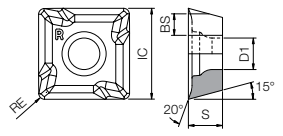
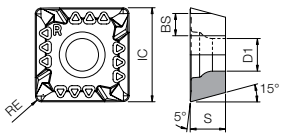
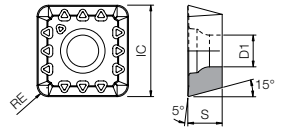
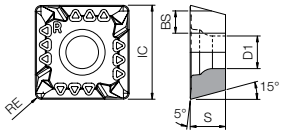
Applicable Inserts (SD..1204)

(in)

Part Number	IC	S	D1
SD..1204	1/2	3/16	0.173

Usage Classification
● : 1st Choice
○ : 2nd Choice

P	Carbon Steel / Alloy Steel	●	●	
M	Stainless Steel	○	●	
K	Cast Iron	○	●	
N	Non-ferrous Metals			●
S	Heat-resistant Alloys		●	
	Titanium Alloy		●	○

Insert Right-handed Insert Shown	Part Number	Usable Edges	Dimensions (in)		CVD Coated Carbide	PVD Coated Carbide	
			RE	BS (Wiper Edge)	CA0835	PR0725	PR0110
	SDCT 120416EN-SD	4	0.063	-		●	
With Wiper Edge 	SDCT 120408E℞-SD	4	0.031	0.098		●	
	120412E℞-SD	4	0.047	0.071		●	
 Sharp Edge 	SDCT 120416FN-SE	4	0.063	-			●
Sharp Edge / With Wiper Edge 	SDCT 120408F℞-SE	4	0.031	0.106			●
	120412F℞-SE	4	0.047	0.075			●
With Wiper Edge 	SDET 120408E℞-SB	4	0.031	0.098	●	●	
	120412E℞-SB	4	0.047	0.071	●	●	
	SDET 120416SN-SB	4	0.063	-	●	●	
Tough Edge / With Wiper Edge 	SDET 120408S℞-SB	4	0.031	0.098	●	●	

Feature of Insert Grades

CA0835

- TiN+TiCN+Al_2O_3 based CVD Coated Carbide
- For Carbon Steel, Alloy Steel, Stainless Steel and Cast Iron.
- For medium to high speed machining

PR0725

- TiN+TiCN+TiN based Multi-layer PVD Coated Carbide
- For Carbon Steel, Alloy Steel, Stainless Steel, Heat Resistant Alloys and Cast Iron.
- For medium speed machining

PR0110

- TiB_2 based PVD Coated Carbide
- For Non-ferrous Metals such as Aluminum Alloys (Si<10%) and Titanium Alloys.
- For high speed machining

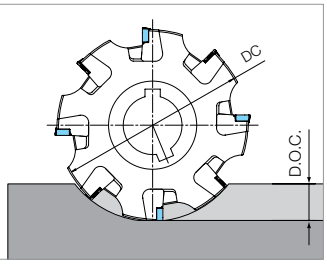
Inserts are sold in 10 piece boxes.

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

◆ Recommended Cutting Conditions (CA0835 / PR0725 / PR0110)

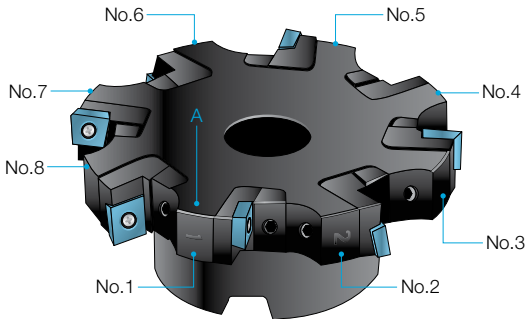
Workpiece Material		Hardness (HB)	Recommended Insert Grade (Vc: sfm)			fz (ipt)				Notes
			CVD Coated Carbide	PVD Coated Carbide		Chipbreaker				
			CA0835	**PR0725**	**PR0110**	EN-SD ER-SD EL-SD	ER-SB EL-SB	SN-SB SR-SB SL-SB	FN-SE FR-SE FL-SE	
Low Carbon Steel	1010~1025	20	820~1020	560~690	-	0.003~0.008	0.004~0.009	0.006~0.012	-	Dry
Carbon Steel	1030~1059, 1060 Annealed	29	520~620	330~460	-	0.003~0.008	0.004~0.009	0.006~0.012	-	
	1030~1059, 1060 Heat Treated	37	460~590	300~390	-	0.003~0.008	0.004~0.009	0.006~0.012	-	
Alloy Steel	Annealed	28	460~590	300~390	-	0.003~0.008	0.004~0.009	0.006~0.012	-	
	Heat Treated	41	390~520	260~360	-	0.002~0.007	0.003~0.008	0.005~0.010	-	
High Carbon Alloy	D2, H13, etc.	41	360~430	230~300	-	0.002~0.007	0.003~0.008	0.005~0.010	-	
Stainless Steel	304, 316, etc. Austenitic	33	520~660	360~460	-	0.002~0.007	0.003~0.008	0.005~0.010	-	Coolant
	403, 410, etc. Martensitic	45	490~590	330~390	-	0.002~0.007	0.003~0.008	0.005~0.010	-	
Heat-resistant Alloys	Inconel 718, etc.	37.7	-	50~100	-	0.002~0.007	0.003~0.008	0.005~0.010	-	
Titanium Alloys	Ti-6Al-4V, etc.	40	-	70~160	-	0.002~0.007	0.003~0.008	0.005~0.010	-	
Gray Cast Iron	NO.45~NO.60	38	520~660	360~430	-	0.003~0.009	0.004~0.010	0.006~0.014	-	Dry
Nodular Cast Iron	60-40-18~70-50-05	25	430~520	260~330	-	0.003~0.009	0.004~0.010	0.006~0.014	-	
	80-60-03~120-90-02	37	360~460	230~300	-	0.003~0.009	0.004~0.010	0.006~0.014	-	
Non-ferrous Metals		-	-	-	2460~3120	-	-	-	0.003~0.008	

Note) 1. Use down-cut machining.
2. If D.O.C. is under 1/10 of Cutter Dia.(DC), it is possible to increase feed per tooth (fz) 40%.

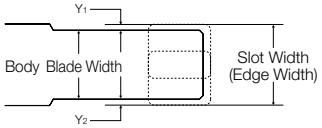


Slot Width (Edge Width) Adjustment of MSTC Slot Mills

Slot Width (Edge Width) Measurement



① Please check slot mill insert location number.
(The insert location number is marked on the slot mill body.)
② Set up the slot mill on length measuring equipment such as tool presetters.
③ Place the side A of the slot mill body near the insert position No.1 to "0 (zero)" the length measuring equipment.
④ Move the length measuring equipment to the insert corner and measure the step (Y_1) between side A and the corner of insert No.1.
⑤ Likewise, on the other side, measure the step between the slot mill body and the insert corner (Y_2), and you will obtain the slot width (edge width).



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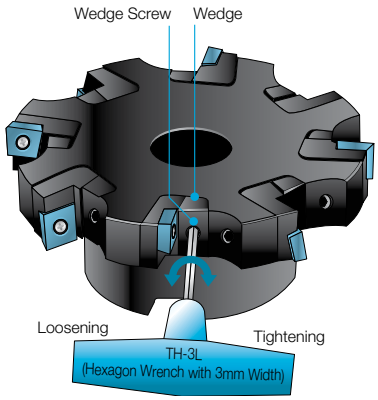
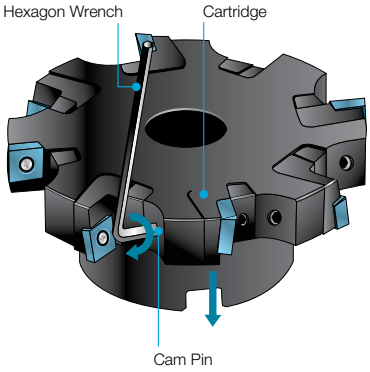
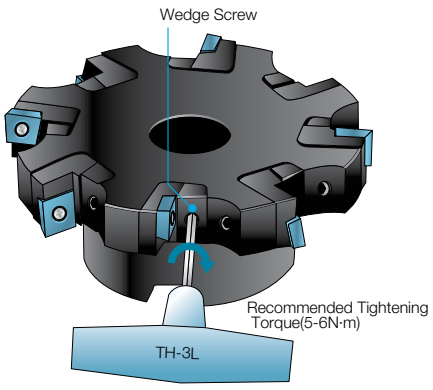
Changing the Slot Width (Edge Width)



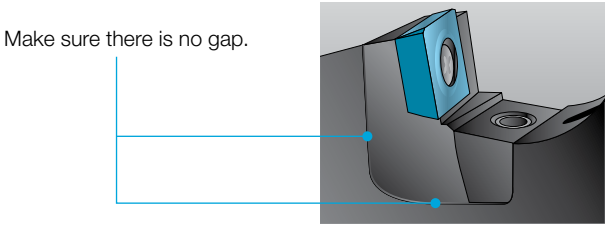
① Set up the slot mill on length measuring equipment such as tool presetters.
② Insert a 3mm Hexagon Wrench (TH-3L) into the wedge screw.
③ Turn TH-3L counterclockwise to loosen the Wedge.
④ Turn TH-3L clockwise by the torque of 1 N·m to tighten the wedge lightly and make the wedge contact the cartridge and the Slot Mill body.
In doing so, some resistance occurs against the cartridge.



⑤ Insert a Hexagon Wrench (LW-2.5 or LW-3) into the Cam Pin on the back of the cartridge.
⑥ Turn the wrench and adjust the position of the Cartridge.
⑦ To secure the adjustment, back-turn the Cam Pin and make sure that it does not touch the groove surface of the back of the Cartridge.
⑧ Remove the Hexagon wrench from the Cam Pin.

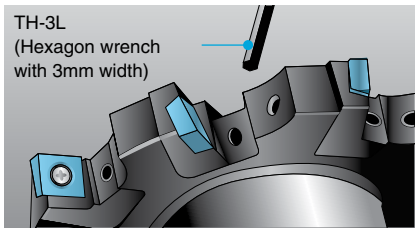


⑨ Insert TH-3L into the Wedge Screw.
⑩ Tighten the Wedge Screw by the torque of 5-6N·m.
(Use a torque wrench to get the correct torque.)
⑪ Make sure there is no gap between the Cartridge and the Slot Mill body.

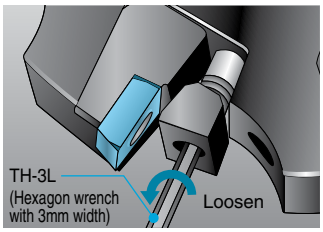


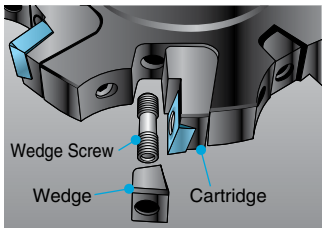
Replacement of the Cartridge

Follow the instructions below to replace the Cartridge.



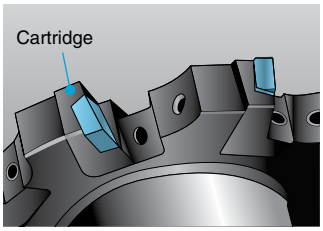
(1) Insert Hexagon wrench with 3mm width (TH-3L) into the Wedge Screw. TH-3L

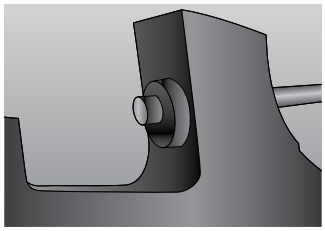




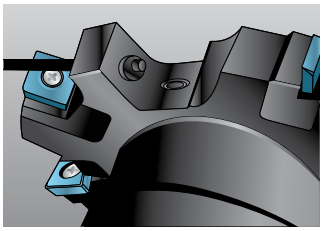
(2) Loosen the Wedge Screw.

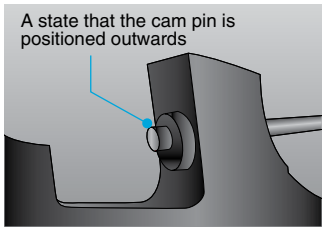
(3) Remove the Wedge Screw and Wedge.



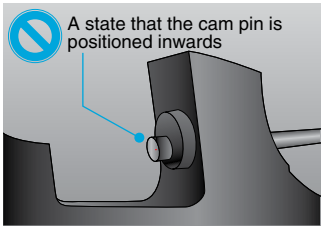


(4) Remove the Cartridge.

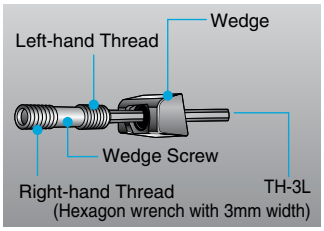


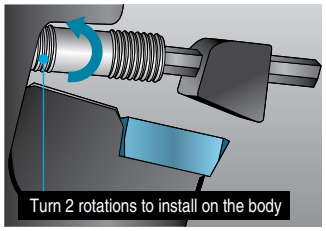


(5) Before replacing the Cartridge, make sure that the Cam Pin is positioned radially-outwards.



(6) If the Cam Pin is in the position shown in the left diagram, assembling the Cartridge is not possible.

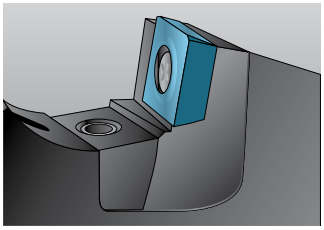




(7) Place the wedge so that its larger slant surface faces toward the Cartridge.

(8) Turn the Wedge Screw two times to install the Wedge to the body.

(9) When installing the Wedge Screw to the body, keep the Wedge from rotating and screw it in.



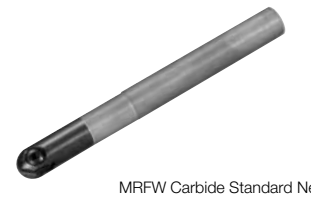
(10) Tighten the Wedge Screw by the torque of 5-6N·m. Keep the Screw head and the Wedge even (prevent either of those from sticking out).

Finishing Contouring / Profiling | Finishing Pocketing

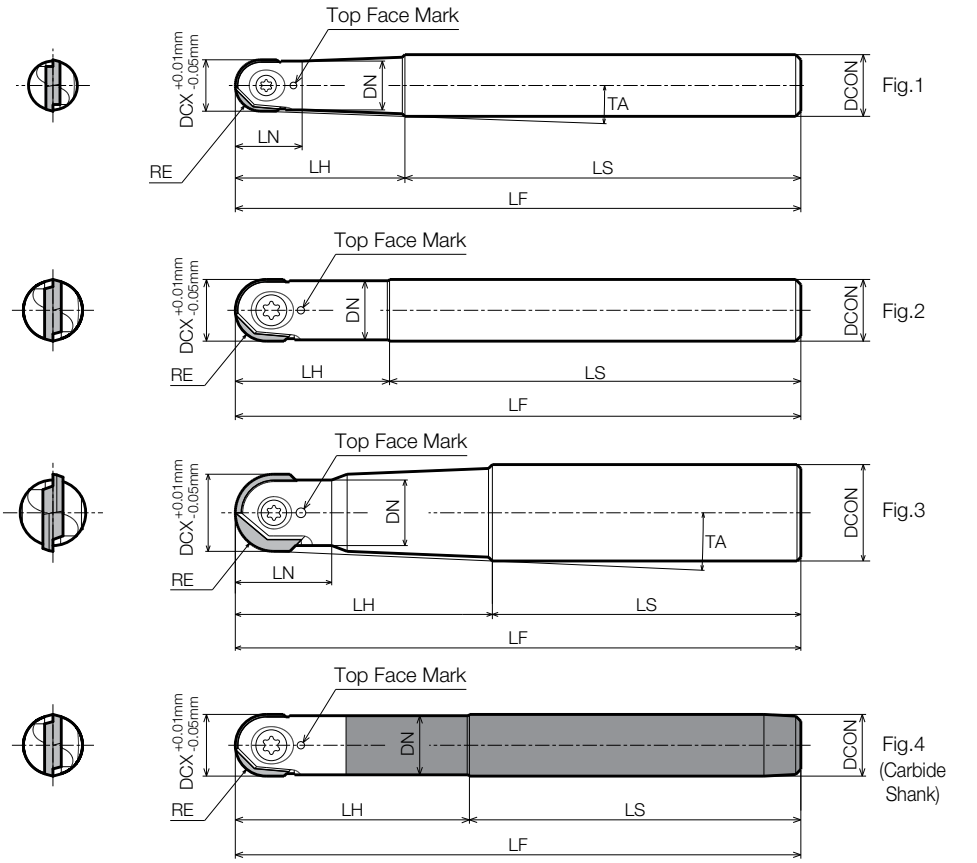
MRF (Steel Shank) / MRFW (Carbide Shank)

MRF Standard Neck

MRF Long Neck


MRFW Carbide Standard Neck

MRFW Carbide Long Neck



● Top Face Shown

Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

● Toolholder Dimensions (Metric Size)

	Part Number		Stock	No. of Inserts	Dimensions (mm)									Drawing	Spare Parts			Applicable Inserts ➡ M25
					RE	DCX	DCON	DN	LF	LN	LH	LS	TA		Clamp Screw	Wrench	Anti-seize Compound	
Standard Neck	MRF	08-S12	●	1	4.0	8	12	7.5	100	10	22	78	6°20'	Fig.1	SC-30067	DT-8	P-37	RDFG08FR
		10-S12	●	1	5.0	10	12	9.5	100	13	25	75	3°	Fig.1	SC-35085	DT-10		RDFG10FR
		12-S12	●	1	6.0	12	12	11.5	110	-	30	80	-	Fig.2	SC-40100	DT-15		RDFG12FR
		16-S20	●	1	8.0	16	20	14.0	130	20	50	80	2°50'	Fig.1	SC-50130	DT-20		RDFG16FR
		20-S25	●	1	10.0	20	25	17.0	140	25	60	80	3°	Fig.3	SC-60160	TT-25		RDFG20FR
		25-S32	●	1	12.5	25	32	22.0	150	31	70	80	3°30'	Fig.3	SC-60210	TT-30		RDFG25FR
Long Neck	MRF	08-S12-130	●	1	4.0	8	12	7.5	130	10	50	80	2°30'	Fig.1	SC-30067	DT-8	P-37	RDFG08FR
		10-S16-150	●	1	5.0	10	16	9.5	150	15	50	100	3°50'	Fig.1	SC-35085	DT-10		RDFG10FR
		12-S16-160	●	1	6.0	12	16	11.5	160	16	60	100	2°10'	Fig.1	SC-40100	DT-15		RDFG12FR
		16-S20-160	●	1	8.0	16	20	14.0	160	20	65	95	2°	Fig.1	SC-50130	DT-20		RDFG16FR
		20-S25-180	●	1	10.0	20	25	17.0	180	25	80	100	2°10'	Fig.3	SC-60160	TT-25		RDFG20FR
		25-S32-200	●	1	12.5	25	32	22.0	200	31	90	110	2°40'	Fig.3	SC-60210	TT-30		RDFG25FR
Carbide Standard Neck	MRFW	08-S08	●	1	4.0	8	8	7.4	100	-	30	70	-	Fig.4	SC-30067	DT-8	P-37	RDFG08FR
		10-S10	●	1	5.0	10	10	9.5	100	-	35	65	-	Fig.4	SC-35085	DT-10		RDFG10FR
		12-S12	●	1	6.0	12	12	11.5	110	-	45	65	-	Fig.4	SC-40100	DT-15		RDFG12FR
Carbide Long Neck	MRFW	08-S08-130	●	1	4.0	8	8	7.4	130	-	65	65	-	Fig.4	SC-30067	DT-8	P-37	RDFG08FR
		10-S10-140	●	1	5.0	10	10	9.5	140	-	75	65	-	Fig.4	SC-35085	DT-10		RDFG10FR
		12-S12-150	●	1	6.0	12	12	11.5	150	-	85	65	-	Fig.4	SC-40100	DT-15		RDFG12FR

- TA (Toolholder's interference angle) is the angle formed by the tangential line from insert dia. to toolholder's shank dia.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

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(Technical Support) 800.823.7284 - Option 2
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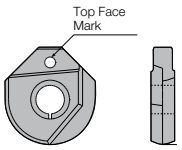
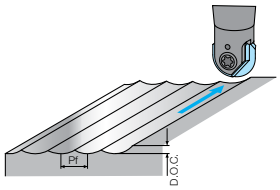
● : Standard Item △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

Applicable Inserts (M25)

Insert		Part Number
	 ● Top Face Shown	RDFG 08FR 10FR 12FR 16FR 20FR 25FR

- Align the Top Face Mark of both insert and toolholder.

Recommended Depth of Cut

	Part Number	Depth of Cut (in) D.O.C.	Depth of Cut (in) Pf	Applications
Standard Neck	MRF08-S12	0.008 (Max 0.012)	0.031	
	MRF10-S12	0.008	0.039	
	MRF12-S12	0.020	0.047	
	MRF16-S20	0.020	0.063	
	MRF20-S25	0.039	0.079	
	MRF25-S32	0.039	0.098	
Long Neck	MRF08-S12-130	0.008 (Max 0.012)	0.031	
	MRF10-S16-150	0.008	0.039	
	MRF12-S16-160	0.020	0.047	
	MRF16-S20-160	0.020	0.063	
	MRF20-S25-180	0.039	0.079	
	MRF25-S32-200	0.039	0.098	
Carbide Standard Neck	MRFW08-S08	0.008 (Max 0.012)	0.031	
	MRFW10-S10	0.008	0.039	
	MRFW12-S12	0.020	0.047	
Carbide Long Neck	MRFW08-S08-130	0.008 (Max 0.012)	0.031	
	MRFW10-S10-140	0.008	0.039	
	MRFW12-S12-150	0.020	0.047	

For Ø8mm, Holder may be broken because of overload if D.O.C. exceeds 0.012".

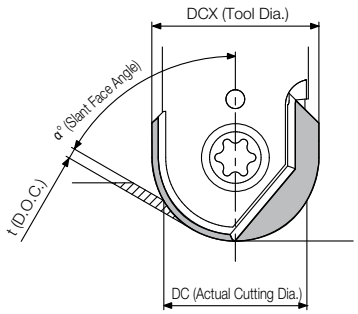
Recommended Cutting Conditions (At Cutting Dia. DCX)

Workpiece Material	Insert Grades	Vc (sfm)	fz (ipt)	Ø8mm Vc (sfm) (RPM)	Ø8mm fz (ipt) Vf (ipm)	Ø10mm Vc (sfm) (RPM)	Ø10mm fz (ipt) Vf (ipm)	Ø12mm Vc (sfm) (RPM)	Ø12mm fz (ipt) Vf (ipm)
Carbon Steel	PR915	330~660	0.004~0.012	490 (5,970)	0.008 (94.095)	490 (4,770)	0.008 (75.197)	490 (3,980)	0.008 (62.598)
Alloy Steel	PR915	260~590	0.004~0.012	430 (5,170)	0.008 (81.496)	430 (4,140)	0.008 (65.354)	430 (3,450)	0.008 (54.331)
Mold Steel	PR915	160~490	0.004~0.008	330 (3,980)	0.006 (46.850)	330 (3,180)	0.006 (37.402)	330 (2,650)	0.006 (31.496)
Stainless Steel	PR915	160~490	0.004~0.008	330 (3,980)	0.006 (46.850)	330 (3,180)	0.006 (37.402)	330 (2,650)	0.006 (31.496)
Cast Iron	PR915	330~660	0.008~0.016	490 (5,970)	0.012 (140.945)	490 (4,770)	0.012 (112.598)	490 (3,980)	0.012 (94.095)

Workpiece Material	Insert Grades	Vc (sfm)	fz (ipt)	Ø16mm Vc (sfm) (RPM)	Ø16mm fz (ipt) Vf (ipm)	Ø20mm Vc (sfm) (RPM)	Ø20mm fz (ipt) Vf (ipm)	Ø25mm Vc (sfm) (RPM)	Ø25mm fz (ipt) Vf (ipm)
Carbon Steel	PR915	330~660	0.004~0.012	490 (2,980)	0.008 (46.850)	490 (2,390)	0.008 (37.402)	490 (1,910)	0.008 (29.921)
Alloy Steel	PR915	260~590	0.004~0.012	430 (2,590)	0.008 (40.551)	430 (2,070)	0.008 (32.677)	430 (1,660)	0.008 (25.984)
Mold Steel	PR915	160~490	0.004~0.008	330 (1,990)	0.006 (23.622)	330 (1,590)	0.006 (18.898)	330 (1,270)	0.006 (14.961)
Stainless Steel	PR915	160~490	0.004~0.008	330 (1,990)	0.006 (23.622)	330 (1,590)	0.006 (18.898)	330 (1,270)	0.006 (14.961)
Cast Iron	PR915	330~660	0.008~0.016	490 (2,980)	0.012 (70.472)	490 (2,390)	0.012 (56.299)	490 (1,910)	0.012 (45.276)

Actual Cutting Speed (Vd) Conversion Coefficient Table

Vd varies depending on D.O.C. and slant face angle.
Vd can be obtained by dividing the conversion coefficient into the recommended cutting speed.

Model	Tool Dia. (DCX)		Ø8mm		Ø10mm		Ø12mm	
	D.O.C. (t: in)		0.004"	0.008"	0.004"	0.008"	0.008"	0.020"
	Slant Face Angle (α°)	15°	1.00	1.00	1.00	1.00	1.00	1.00
		30°	1.05	1.02	1.05	1.03	1.04	1.01
		45°	1.18	1.12	1.20	1.14	1.16	1.07
		60°	1.47	1.34	1.51	1.38	1.42	1.24
		75°	2.15	1.82	2.24	1.92	2.02	1.60
		90°(Horizontal Plane)	4.48	3.22	5.06	3.57	3.92	2.50
	Tool Dia. (DCX)		Ø16mm		Ø20mm		Ø25mm	
	D.O.C. (t: in)		0.008"	0.020"	0.020"	0.039"	0.020"	0.039"
	Slant Face Angle (α°)	15°	1.00	1.00	1.00	1.02	1.00	1.01
		30°	1.05	1.01	1.02	1.00	1.03	1.00
		45°	1.18	1.10	1.12	1.06	1.14	1.08
		60°	1.47	1.30	1.34	1.21	1.38	1.25
		75°	2.14	1.73	1.83	1.53	1.93	1.62
		90°(Horizontal Plane)	4.48	2.87	3.20	2.29	3.57	2.55

e.g.) Suppose tool dia. 8mm, D.O.C. = 0.039", slant face angle 90°: The actual cutting speed Vd for carbon steel machining, when Vc is 490sfm at the full cutter diameter, Vd can be obtained by calculating: Vd = 490 ÷ 4.48 = 109.4sfm

Shouldering | Facing

RAD-8 (MRW)

The MRW Radius Cutter Lowers Cutting Costs and Increases Efficiency

The double-faced inserts improve milling in a wide variety of materials

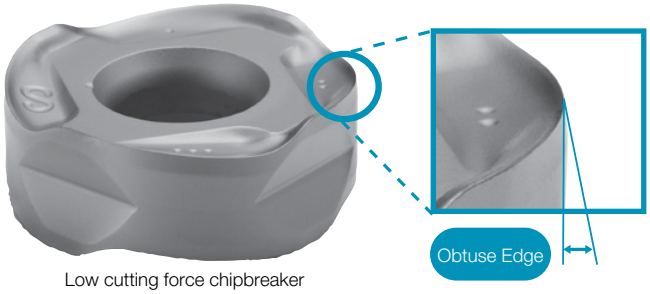
Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

Advantages

Economical 8-edge Insert

Combined Sharpness & Cutting Edge Strength

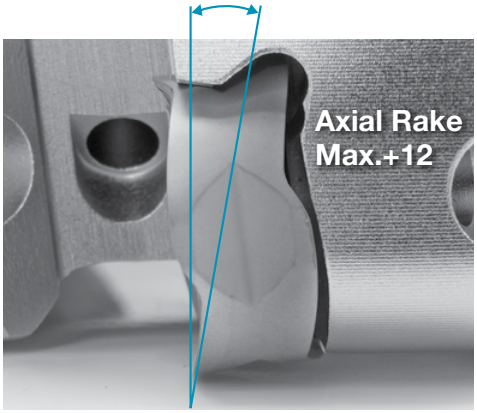
Improved edge strength due to obtuse edge

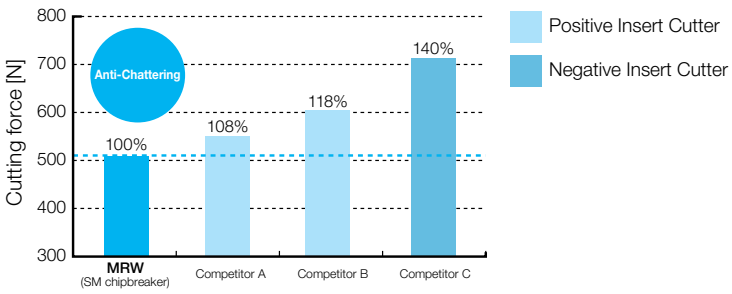


Low cutting force chipbreaker

Helical Cutting Edge Design with Maximum Axial Rake 12°

Lower cutting forces equivalent to positive inserts

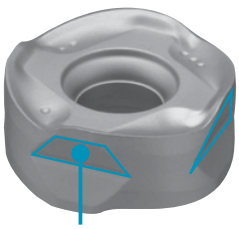




< Cutting Condition >
Vc = 390 sfm, D.O.C. × ae = 0.039" × 1.575", fz = 0.008 ipt
304 Stainless Steel, Cutter Ø2.000"

Flat Lock Structure Holds Insert Firmly

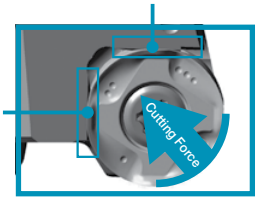
Prevents insert rotation during machining to provide stable cutting



Wide and flat binding face

Flat Lock Structure

Wide Flat Binding Face
- Receives even cutting forces
- Prevents insert rotation



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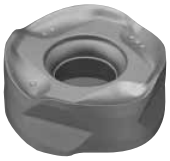
Available for Steel, Stainless Steels, Cast Iron, and Heat-Resistant Alloys

Workpiece Material		Applicable Insert Grade	Applicable Chipbreaker
P Carbon Steel / Alloy Steel / Die Steel		**PR1525**	**GM/SM/GH** Chipbreaker
K Gray Cast Iron / Nodular Cast Iron		**PR1510**	**GH/GM** Chipbreaker
S Ni-base Heat Resistant Alloy	M Martensitic Stainless Steel	**CA6535**	**SM/GM** Chipbreaker
S Titanium Alloy	M Austenitic Stainless Steel M Precipitation Hardened Stainless Steel	**PR1535**	**SM/GM** Chipbreaker

New Grades for Difficult-to-cut Materials

- Stable cutting prevents insert fracturing
- Good for high efficiency machining

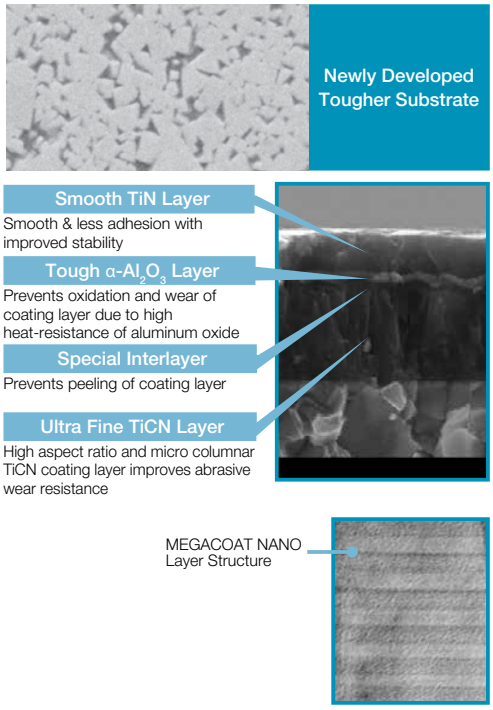


CA6535

- For Ni-base heat resistant alloys and martensitic stainless steels
- High heat resistance and wear resistance with CVD coating
- Improved stability due to thin film coating technology

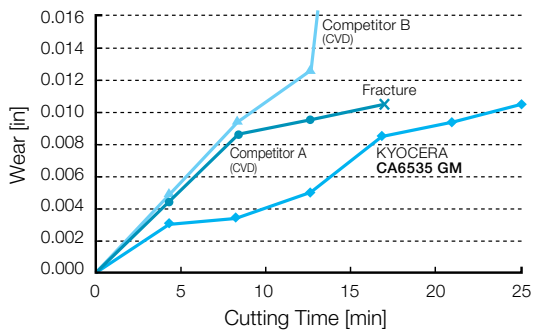
PR1535

- For titanium alloys and precipitation hardened stainless steel
- Stable milling operation and long tool life with Kyocera's MEGACOAT NANO coating technology
- Improved stability due to thin film coating technology



Tool Life Comparison

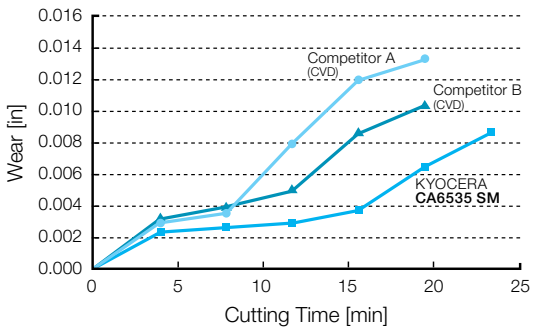
Ni-base Heat Resistant Alloy



<Cutting Conditions> Vc = 160 sfm, D.O.C. = 0.039", fz = 0.006 ipt, WET

1st recommendation GM Chipbreaker

Martensitic Stainless Steel



<Cutting Conditions> Vc = 980 sfm, D.O.C. = 0.079", fz = 0.008 ipt, WET

1st recommendation SM Chipbreaker

MRW Face Mill (Inch Size)

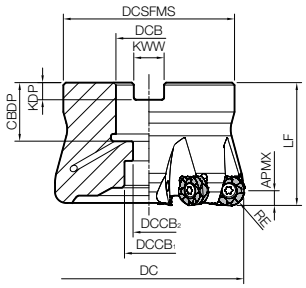


Fig.1

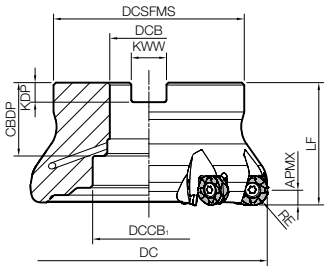


Fig.2

Toolholder Dimensions (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)											Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max. RPM
			RE	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX	A.R.	R.R.				
MRW 2000R-12-5T	●	5	0.236 (6mm)	2.00	1.75	0.75	0.748	0.433	1.575	0.750	0.187	0.312	0.236 (6mm)	+12°	-15.5°	Yes	Fig.1	0.3	16,000
2000R-12-6T	●	6																0.3	
2500R-12-6T	●	6		2.50	1.75	0.75	0.748	0.433	1.575	0.750	0.187	0.312		+12°	-15.5°	Yes	Fig.1	0.6	14,000
2500R-12-7T	●	7																0.6	
3000R-12-6T	●	6		3.00	2.25	1.00	0.866	0.551	1.969	1.063	0.236	0.381		+12°	-15.5°	Yes	Fig.1	1.1	12,000
3000R-12-8T	●	8																1.1	
4000R-12-7T	●	7		4.00	3.54	1.50	2.047	-	1.969	1.142	0.393	0.625		+12°	-15.5°	Yes	Fig.2	1.5	10,600
4000R-12-9T	●	9																1.4	
MRW 2500R-16-5T	●	5	0.315 (8mm)	2.50	1.75	0.75	0.748	0.433	1.575	0.750	0.187	0.312	0.315 (8mm)	+11°	-16.5°	Yes	Fig.1	0.5	12,800
2500R-16-6T	●	6																0.5	
3000R-16-6T	●	6		3.00	2.25	1.00	0.866	0.551	1.969	1.063	0.236	0.381		+11°	-16.5°	Yes	Fig.1	1.1	11,000
3000R-16-7T	●	7																1.0	
4000R-16-6T	●	6		4.00	3.54	1.50	2.047	-	1.969	1.142	0.393	0.625		+11°	-16.5°	Yes	Fig.2	1.4	9,600
4000R-16-8T	●	8																1.3	
5000R-16-8T	●	8		5.00	3.54	1.50	2.047	-	2.480	1.496	0.393	0.625		+11°	-16.5°	Yes	Fig.2	2.6	8,560
5000R-16-10T	●	10																2.5	

Spare Parts and Applicable Inserts (Inch Size)

Part Number	Spare Parts					Applicable Inserts ➡ M19		
	Clamp Screw	Wrench		Anti-seize Compound	Arbor Bolt			
		DTPM-15	TTP-20			General Purpose	Low Cutting Force	Tough Edge (For Heavy Milling)
MRW 2000R-12...	SB-4085TRP	DTPM-15	-	P-37	HH3/8-1.25 (HH3/8-1.25H)	ROMU1204M0ER-GM	ROMU1204M0ER-SM	ROMU1204M0ER-GH
2500R-12...								
3000R-12...					HH1/2-1.25 (HH1/2-1.25H)			
4000R-12...	Recommended Torque for Insert Clamp 3.5 N·m				-			
MRW 2500R-16...	SB-50140TRP	-	TTP-20	P-37	HH3/8-1.25 (HH3/8-1.25H)	ROMU1605M0ER-GM	ROMU1605M0ER-SM	ROMU1605M0ER-GH
3000R-16...					HH1/2-1.25 (HH1/2-1.25H)			
4000R-16...	Recommended Torque for Insert Clamp 4.5 N·m				-			
5000R-16...								

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

APMX is Maximum D.O.C.

For more details, see Page ➡ M232

Recommended Cutting Conditions ➡ M232

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MRW Face Mill (Metric Size)

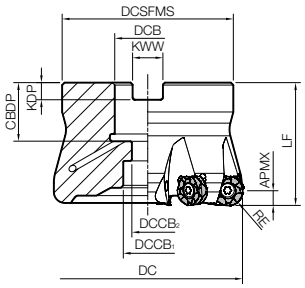

Fig.1

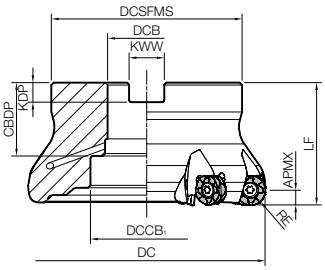

Fig.2

Toolholder Dimensions (Metric Size)

	Part Number		Stock	No. of Inserts	Dimensions (mm)											Rake Angle (°)		Coolant Hole	Drawing	Weight (kg)	Max. RPM
					RE	DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	A.R.	R.R.				
Inch Bore Dia.	MRW	080R-12-6T	●	6	6	80	70	1.000"	20	13	50	1.063"	0.236"	0.375"	6.0	+12°	-15.5°	Yes	Fig.1	1.2	12,000
		080R-12-8T	●	8																1.1	
		100R-12-7T	●	7		100	78	1.250"	46	-	50	1.339"	0.315"	0.500"		+12°	-15.5°	Yes	Fig.2	1.5	10,600
		100R-12-9T	●	9																1.4	
	MRW	080R-16-6T	●	6	8	80	70	1.000"	20	13	50	1.063"	0.236"	0.375"	8.0	+11°	-16.5°	Yes	Fig.1	1.1	11,000
		080R-16-7T	●	7																1.1	
		100R-16-6T	●	6		100	78	1.250"	46	-	50	1.339"	0.315"	0.500"		+11°	-16.5°	Yes	Fig.2	1.4	9,600
		100R-16-8T	●	8																1.4	
		125R-16-8T	●	8		125	89	1.500"	55	-	63	1.496"	0.394"	0.625"		+11°	-16.5°	Yes	Fig.2	2.6	8,560
		125R-16-10T	●	10																2.6	
Metric Bore Dia.	MRW	050R-12-5T-M	●	5	6	50	48	22	18	11	40	21	6.3	10.4	6.0	+12°	-15.5°	Yes	Fig.1	0.3	16,000
		050R-12-6T-M	●	6																0.3	
		063R-12-6T-M	●	6		63	60	22	19	11	40	21	6.3	10.4		+12°	-15.5°	Yes	Fig.1	0.6	14,000
		063R-12-7T-M	●	7																0.6	
		080R-12-6T-M	●	6		80	70	27	20	13	50	24	7	12.4		+12°	-15.5°	Yes	Fig.1	1.1	12,000
		080R-12-8T-M	●	8																1.1	
		100R-12-7T-M	●	7		100	78	32	46	-	50	30	8	14.4		+12°	-15.5°	Yes	Fig.2	1.5	10,600
		100R-12-9T-M	●	9																1.4	
	MRW	063R-16-5T-M	●	5	8	63	60	22	19	11	40	21	6.3	10.4	8.0	+11°	-16.5°	Yes	Fig.1	0.5	12,800
		063R-16-6T-M	●	6																0.5	
		080R-16-6T-M	●	6		80	70	27	20	13	50	24	7	12.4		+11°	-16.5°	Yes	Fig.1	1.1	11,000
		080R-16-7T-M	●	7																1.0	
		100R-16-6T-M	●	6		100	78	32	46	-	50	30	8	14.4		+11°	-16.5°	Yes	Fig.2	1.4	9,600
		100R-16-8T-M	●	8																1.3	
		125R-16-8T-M	●	8		125	89	40	55	-	63	33	9	16.4		+11°	-16.5°	Yes	Fig.2	2.6	8,560
		125R-16-10T-M	●	10																2.5	

Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts					Applicable Inserts ➡ M19		
	Clamp Screw	Wrench		Anti-seize Compound	Arbor Bolt			
		DTPM-15	TTP-20			General Purpose	Low Cutting Force	Tough Edge (For Heavy Milling)
MRW 050R-12...	SB-4085TRP	DTPM-15	-	P-37	HH10x30	ROMU1204M0ER-GM	ROMU1204M0ER-SM	ROMU1204M0ER-GH
063R-12...	Recommended Torque for Insert Clamp 3.5 N·m				HH12x35			
080R-12...					-			
100R-12...								
MRW 063R-16...	SB-50140TRP	-	TTP-20	P-37	HH10x30	ROMU1605M0ER-GM	ROMU1605M0ER-SM	ROMU1605M0ER-GH
080R-16...	Recommended Torque for Insert Clamp 4.5 N·m				HH12x35			
100R-16...					-			
125R-16...								

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Recommended Cutting Conditions ➡ **M232**

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

APMX is Maximum D.O.C.

For more details, see Page ➡ **M232**

MRW End Mill (Inch Size)

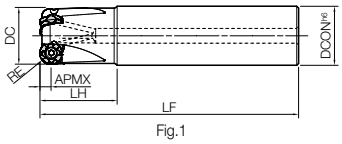

Fig.1

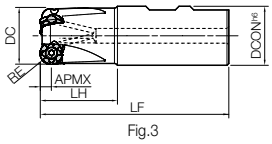

Fig.3

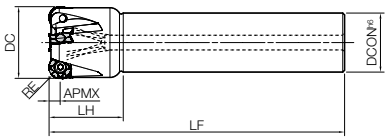

Fig.2

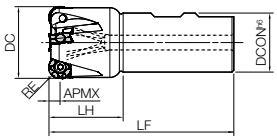

Fig.4

Toolholder Dimensions (Inch Size)

Part Number		Stock	No. of Inserts	Dimensions (in)						Rake Angle (°)		Coolant Hole	Drawing	Max. RPM
				RE	DC	DCON	LF	LH	APMX	A.R. (Max.)	R.R.			
Standard Shank (Weldon)	MRW 1250-W125-12-3T	●	3	0.236 (6mm)	1.25	1.25	3.921	1.575	0.236 (6mm)	+12°	-20°	Yes	Fig.3	22,000
	1500-W125-12-4T	●	4		1.50	1.25	3.856	1.575			-16.5°	Yes	Fig.4	18,800
	2000-W150-12-5T	●	5		2.00	1.50	4.266	1.575			-15.5°			16,000
	MRW 1500-W125-16-2T	●	2	0.315 (8mm)	1.50	1.25	3.856	1.575	0.315 (8mm)	+11°	-18°	Yes	Fig.4	17,200
	2000-W150-16-4T	●	4		2.00	1.50	4.262	1.575			-16.5°			14,800
	2500-W150-16-5T	●	5		2.50	1.50	4.262	1.575			-16.5°			12,800
Long Shank (Cylindrical)	MRW 1250-S125-12-2T-8	●	2	0.236 (6mm)	1.25	1.25	8.000	1.575	0.236 (6mm)	+12°	-20°	Yes	Fig.1	22,000
	1500-S125-12-3T-8	●	3		1.50	1.25	8.000	1.575			-16.5°	Yes	Fig.2	18,800
	2000-S150-12-4T-12	●	4		2.00	1.50	12.000	1.969			-15.5°			16,000
	MRW 1500-S125-16-2T-8	●	2	0.315 (8mm)	1.50	1.25	8.000	1.575	0.315 (8mm)	+11°	-18°	Yes	Fig.2	17,200
	2000-S150-16-3T-8	●	3		2.00	1.50	8.000	1.575			-16.5°			14,800
	2500-S150-16-4T-12	●	4		2.50	1.50	12.000	1.969			-16.5°			12,800

Spare Parts and Applicable Inserts (Inch Size)

Part Number	Spare Parts				Applicable Inserts ➡ M19		
	Clamp Screw	Wrench		Anti-seize Compound			
		DTPM-15	TTP-20		General Purpose	Low Cutting Force	Tough Edge (For Heavy Milling)
MRW ····12...	SB-4085TRP	DTPM-15	-	P-37	ROMU1204M0ER-GM	ROMU1204M0ER-SM	ROMU1204M0ER-GH
	Recommended Torque for Insert Clamp 3.5 N·m						
MRW ····16...	SB-50140TRP	-	TTP-20	P-37	ROMU1605M0ER-GM	ROMU1605M0ER-SM	ROMU1605M0ER-GH
	Recommended Torque for Insert Clamp 4.5 N·m						

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Recommended Cutting Conditions ➡ **M232**

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

APMX is Maximum D.O.C.

For more details, see Page ➡ **M232**

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MRW End Mill (Metric Size)

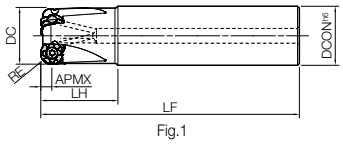


Fig.1

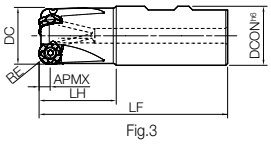


Fig.3

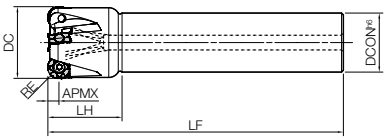


Fig.2

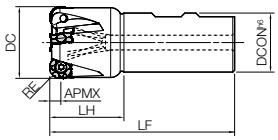


Fig.4

Toolholder Dimensions (Metric Size)

	Part Number	Stock	No. of Inserts	Dimensions (mm)						Rake Angle (°)		Coolant Hole	Drawing	Max. RPM
				RE	DC	DCON	LF	LH	APMX	A.R. (Max.)	R.R.			
Standard Shank (Cylindrical)	MRW 32-S32-12-3T	●	3	6	32	32	140	40	6.0	+12°	-20°	Yes	Fig.1	22,000
	40-S32-12-4T	●	4		40	32	160	40			-16.5°	Yes	Fig.2	18,800
	50-S42-12-5T	●	5		50	42	170	40			-15.5°			16,000
	MRW 40-S32-16-3T	●	3	8	40	32	160	40	8.0	+11°	-18°	Yes	Fig.2	17,200
	50-S42-16-4T	●	4		50	42	170	40			-16.5°			14,800
	63-S42-16-5T	●	5		63	42	170	50			-16.5°			12,800
Long Shank (Cylindrical)	MRW 32-S32-12-2T-200	●	2	6	32	32	200	40	6.0	+12°	-20°	Yes	Fig.1	22,000
	40-S32-12-3T-200	●	3		40	32	200	40			-16.5°	Yes	Fig.2	18,800
	50-S42-12-4T-300	●	4		50	42	300	40			-15.5°			16,000
	MRW 40-S32-16-2T-200	●	2	8	40	32	200	40	8.0	+11°	-18°	Yes	Fig.2	17,200
	50-S42-16-3T-300	●	3		50	42	300	40			-16.5°			14,800
	63-S42-16-4T-300	●	4		63	42	300	50			-16.5°			12,800
Standard Shank (Weldon)	MRW 32-W32-12-3T	●	3	6	32	32	102	40	6.0	+12°	-20°	Yes	Fig.3	22,000
	40-W32-12-4T	●	4		40	32	100	40			-16.5°	Yes	Fig.4	18,800
	50-W40-12-5T	●	5		50	40	110	40			-15.5°			16,000
	MRW 40-W32-16-3T	●	3	8	40	32	100	40	8.0	+11°	-18°	Yes	Fig.4	17,200
	50-W40-16-4T	●	4		50	40	110	40			-16.5°			14,800
	63-W40-16-5T	●	5		63	40	120	50			-16.5°			12,800

Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts				Applicable Inserts ➡ M19		
	Clamp Screw	Wrench		Anti-seize Compound	General Purpose	Low Cutting Force	Tough Edge (For Heavy Milling)
		DTPM-15	TTP-20				
MRW ····12...	SB-4085TRP	DTPM-15	-	P-37	ROMU1204M0ER-GM	ROMU1204M0ER-SM	ROMU1204M0ER-GH
	Recommended Torque for Insert Clamp 3.5 N·m						
MRW ····16...	SB-50140TRP	-	TTP-20	P-37	ROMU1605M0ER-GM	ROMU1605M0ER-SM	ROMU1605M0ER-GH
	Recommended Torque for Insert Clamp 4.5 N·m						

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Recommended Cutting Conditions ➡ **M232**

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

APMX is Maximum D.O.C.

For more details, see Page ➡ **M232**

Recommended Cutting Conditions

Workpiece Material	Recommended Chipbreaker fz (ipt) Recommended feed rate (standard value) ※ ROMU12 : D.O.C. = 0.118" ROMU16 : D.O.C. = 0.158"			Recommended Insert Grades (Cutting Speed Vc: sfm)			
				MEGACOAT NANO			CVD Coated Carbide
	GM	SM	GH	PR1535	PR1525	PR1510	CA6535
Carbon Steel	★ 0.004~**0.008**~0.012	☆ 0.002~**0.006**~0.008	☆ 0.006~**0.012**~0.014	☆ 390~**590**~820	★ 390~**590**~820	-	-
Alloy Steel	★ 0.004~**0.008**~0.012	☆ 0.002~**0.006**~0.008	☆ 0.006~**0.012**~0.014	☆ 330~**520**~720	★ 330~**520**~720	-	-
Mold Steel	★ 0.004~**0.006**~0.010	☆ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.012	☆ 260~**460**~590	★ 260~**460**~590	-	-
Austenitic Stainless Steel	☆ 0.004~**0.006**~0.008	★ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.010	★ 330~**520**~660	☆ 330~**520**~660	-	-
Martensitic Stainless Steel	☆ 0.004~**0.006**~0.008	★ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.010	☆ 490~**660**~820	-	-	★ 590~**790**~980
Precipitation Hardened Stainless Steel	★ 0.004~**0.006**~0.008	☆ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.010	★ 300~**390**~490	-	-	-
Gray Cast Iron	★ 0.004~**0.008**~0.012	-	☆ 0.006~**0.012**~0.014	-	-	★ 390~**590**~820	-
Nodular Cast Iron	★ 0.004~**0.006**~0.010	-	☆ 0.006~**0.008**~0.012	-	-	★ 330~**490**~660	-
Ni-base Heat Resistant Alloy	★ 0.004~**0.005**~0.006	☆ 0.002~**0.004**~0.006	☆ 0.005~**0.006**~0.008	☆ 70~**100**~160	-	-	★ 70~**100**~160
Titanium Alloy	☆ 0.004~**0.005**~0.006	★ 0.002~**0.004**~0.006	-	★ 130~**200**~260	-	☆ 100~**160**~230	-

※ Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy ★: 1st Recommendation ☆: 2nd Recommendation

※ The figure in bold font is center value of the recommended cutting conditions. Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.

※ Recommended feed rate is the reference value when D.O.C. is RE/2 (0.118" for ROMU12, 0.158" for ROMU16).
For lower feed rates than the above conditions, the conversion factor in the following table is recommended.

Conversion Factor for Feed Per Tooth by Depth of Cut (D.O.C.)

Insert	D.O.C. (Recommended)	D.O.C. (Max.)	Conversion Factor for Feed Per Tooth				
			D.O.C. = 0.020"	D.O.C. = 0.039"	D.O.C. = 0.079"	D.O.C. = 0.118"	D.O.C. = 0.158"
ROMU12 Type	0.118" or less	0.236"	2.1	1.5	1.1	1.0 (Standard)	-
ROMU16 Type	0.158" or less	0.315"	2.4	1.7	1.3	1.1	1.0 (Standard)

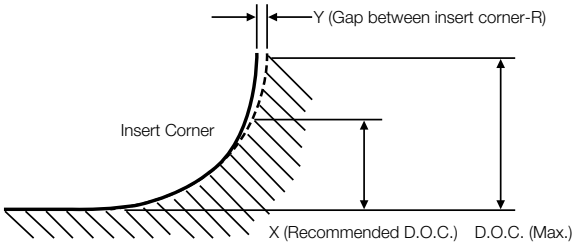
Calculation Example (ROMU12, Carbon Steel, GM Chipbreaker, D.O.C. = 0.039")

fz = 0.008 ipt (Standard value for carbon steel and GM chipbreaker)	X	**1.5** (Conversion factor for ROMU12 type, D.O.C. = 0.039")	=	**fz = 0.012 ipt** (Recommended feed rate)

※ Recommended D.O.C. : 0.118" or less for ROMU12, 0.158" or less for ROMU16

Corner R Shape During Processing with MRW (See Fig.1)

Insert	D.O.C. (Max.)	X	Y
ROMU12 Type	0.236"	0.118"	0.004"
ROMU16 Type	0.315"	0.158"	0.004"



※ When machining with larger D.O.C. than recommended D.O.C. (X), there is a gap (Y) between the workpiece corner and insert corner R(RE).
※ The above figure is an estimation. There is a ±0.008" variation depending on the cutting conditions.

Fig.1

How to Mount an Insert

1. Be sure to remove dust and chips from the insert mounting pocket.

2. Apply anti-seize compound on portion of taper and thread of clamp screw.
   ① Attach the screw to the front end of the wrench
   ② While lightly pressing the insert against the mating surfaces, put the screw into the hole of the insert and tighten. (See **Fig.1**)

3. Wrenches and clamp screws are "Torx Plus".
   ① **Fig.2** wrench is for MRW-12. (Straight grip)
   ② **Fig.3** wrench is for MRW-16. (T-shaped grip)
   Use a "Torx Plus" Wrench for tightening clamp screw.

   *If a "Torx" Wrench (**Fig.4**) is used to tighten, the screw head might become damaged and then the screw cannot be removed.

4. When tightening the screw, make sure that the wrench is parallel to the screw.
   For recommended torque, see **pages** M228-M231.

5. After tightening the screw, make sure that there is no clearance between the insert seat surface and the bearing surface of the holder or between the insert side surfaces and the mating surface of the holder.

If there is any clearance, remove the insert and mount it again according to the above steps.

Fig.1

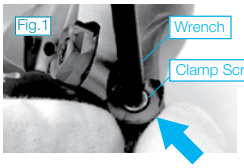
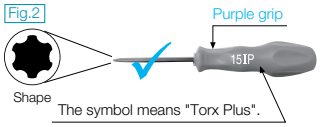
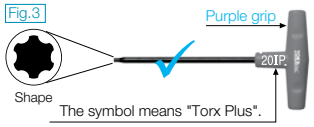


Fig.2



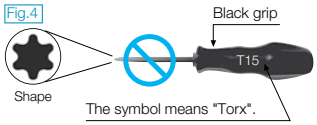
Straight grip wrench for MRW-12

Fig.3



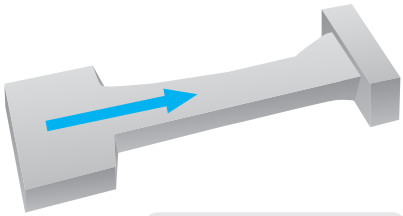
T-shaped grip wrench for MRW-16

Fig.4



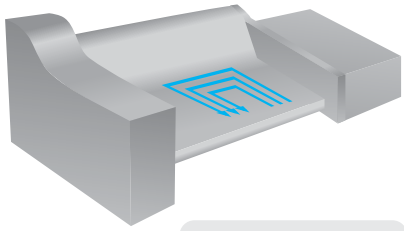
"Torx" Wrench (Do **NOT** use for MRW)

Case Studies

410 Stainless Steel	
• Turbine Blade • Vc = 890 sfm • fz = 0.011 ipt • D.O.C. = 0.020~0.039" • ae = Max. 1.378" • Dry • MRW050R-12-6T-M (6 Flutes) • ROMU1204M0ER-SM (CA6535)	 1.2 times the machining efficiency Economical double-faced insert
CA6535	**Stable Machining**
Competitor A (Positive Insert Cutter)	Unstable Machining

MRW improved machining efficiency 1.2 times with same tool life compared to Competitor A.
MRW has a cost advantage due to double sided inserts.

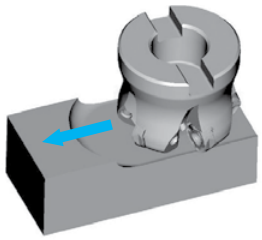
(User Evaluation)

410 Stainless Steel	
• Turbine Blade • Vc = 820 sfm • fz = 0.006 ipt • D.O.C. = 0.079" • ae = 0.197~1.181" • Wet • MRW050R-12-5T-M (5 Flutes) • ROMU1204M0ER-SM (CA6535)	 Same or longer tool life Economical double-faced insert
CA6535	**Stable, available for further machining**
Competitor B (Positive Insert Cutter)	Unstable Machining

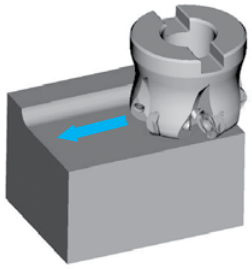
MRW showed less damage on the cutting edge and reduced machining noise.
MRW has equal or longer tool life and cost advantage due to double sided inserts.

(User Evaluation)

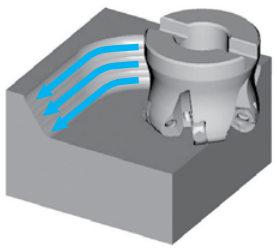
Application



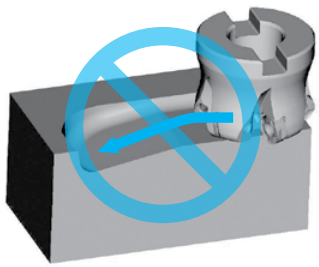
Facing



Shouldering

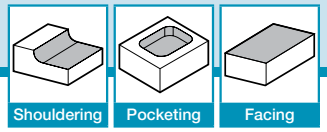


Contour-Line Milling



Plunging / Profiling

※MRW is not available for 3D machining such as Plunging and Profiling.

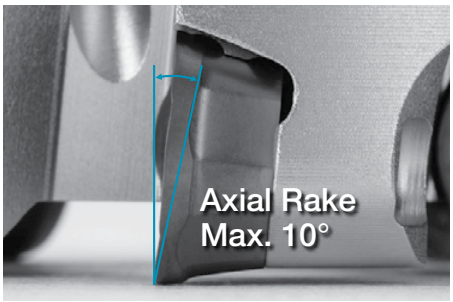


RAD-6 (MRX)

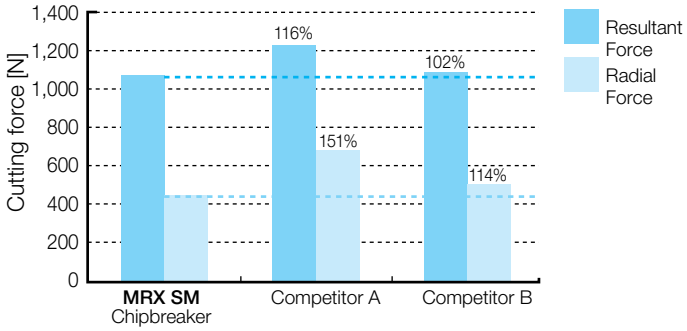
The MRX Radius Cutter
Lowers Cutting Costs and
Increases Efficiency!

Advantages

Low Cutting Forces with Helical Cutting Edge Design



• **Cutting Force Comparison**



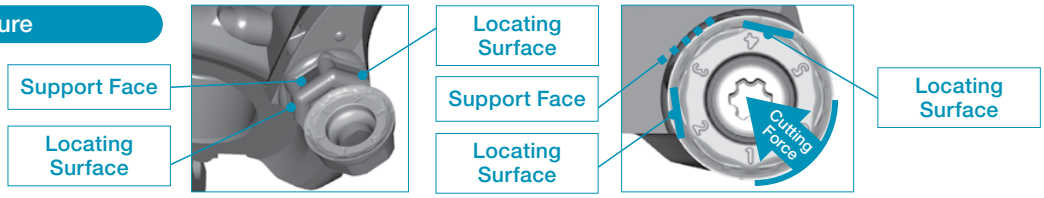
< Cutting Conditions >
Vc = 400 sfm, D.O.C. × ae = 0.079 × 0.984", fz = 0.008 ipt, 304 Stainless Steel, Cutter Ø50mm

Flat Lock Structure to Hold Insert Firmly in Place

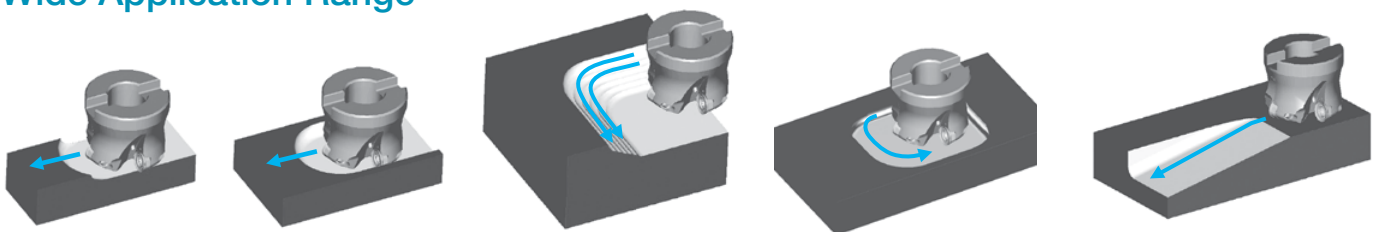
Prevents insert rotation during machining to provide stable cutting

Flat Lock Structure

Wide flat binding face
- Receives even cutting forces
- Prevents insert rotation



Wide Application Range



Facing | Slotting | Shouldering | Pocketing | Ramping / Profiling

Grades for Difficult-to-cut Materials

Longer tool life with a wide lineup including 4 grades and 3 chipbreakers!
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MRX Face Mill (Inch Size)

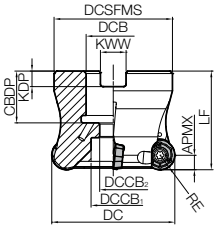

Fig.1

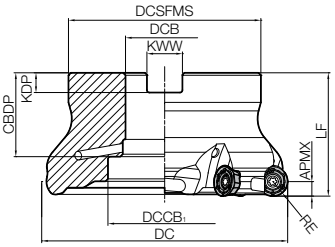

Fig.2

Rake Angle (°)	A.R.	R.R.
	(MAX) +10°	-5.5°

Toolholder Dimensions (Inch Size)

Part Number	Stock	No. of Inserts	Dimensions (in)											Coolant Hole	Drawing	Weight (kg)	Max. RPM
			RE	DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX				
MRX 1500R-10-5T	●	5	0.197 (5mm)	1.500	1.400	0.500	0.433	0.276	1.575	0.709	0.156	0.250	0.197 (5mm)	Yes	Fig.1	0.2	20,000
2000R-10-6T	●	6		2.000	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313				0.3	17,500
2500R-10-7T	□	7		2.500	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313				0.5	15,000
MRX 1500R-12-4T	□	4	0.236 (6mm)	1.500	1.400	0.500	0.394	0.276	1.575	0.709	0.156	0.250	0.236 (6mm	Yes	Fig.1	0.2	21,000
2000R-12-4T	□	4		2.000	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313				0.3	18,000
2000R-12-5T	●	5		2.000	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313				0.3	18,000
2500R-12-5T	□	5		2.500	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313				0.4	15,500
2500R-12-6T	□	6		2.500	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313				0.4	15,500
3000R-12-6T	●	6		3.000	2.250	1.000	0.866	0.551	1.969	1.063	0.236	0.382				0.8	13,500
3000R-12-7T	□	7		3.000	2.250	1.000	0.866	0.551	1.969	1.063	0.236	0.382				0.8	13,500
4000R-12-7T	□	7	0.236 (6mm)	4.000	3.540	1.500	2.047	-	1.969	1.142	0.394	0.626	0.236 (6mm	Yes	Fig.2	1.7	12,000
4000R-12-9T	□	9		4.000	3.540	1.500	2.047	-	1.969	1.142	0.394	0.626				1.6	12,000
MRX 2500R-16-4T	□	4	0.315 (8mm)	2.500	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313	0.315 (8mm)	Yes	Fig.1	0.4	13,500
2500R-16-5T	●	5		2.500	1.750	0.750	0.669	0.433	1.575	0.750	0.187	0.313				0.4	13,500
3000R-16-5T	□	5		3.000	2.250	1.000	0.866	0.551	1.969	1.063	0.236	0.382				0.8	11,500
3000R-16-6T	●	6		3.000	2.250	1.000	0.866	0.551	1.969	1.063	0.236	0.382				0.8	11,500
4000R-16-6T	□	6	0.315 (8mm)	4.000	3.540	1.500	2.047	-	1.969	1.142	0.394	0.626	0.315 (8mm)	Yes	Fig.2	1.6	10,000
4000R-16-7T	●	7		4.000	3.540	1.500	2.047	-	1.969	1.142	0.394	0.626				1.6	10,000
5000R-16-6T	□	6		5.000	3.540	1.500	2.047	-	2.480	1.496	0.394	0.626				2.9	9,000
5000R-16-8T	□	8		5.000	3.540	1.500	2.047	-	2.480	1.496	0.394	0.626				2.8	9,000

Face Mill Spare Parts and Applicable Inserts (Inch Size)

Part Number	Spare Parts					Applicable Inserts ➡ M19
	Clamp Screw	Wrench		Anti-seize Compound	Arbor Bolt	
		DTPM	TTP			
MRX 1500R-10...	SB-3070TRP	DTPM-10	-	P-37	HH1/4-0.75	RPMT10T3M0**ER-GM** RPGT10T3M0**ER-GM** RPGT10T3M0**ER-SM** ※1 RPMT10T3M0**EN-GH**
2000R-10...	Recommended Torque for Insert Clamp 2.0 N·m				HH3/8-1.25	
2500R-10...					HH3/8-1.25	
MRX 1500R-12...	SB-4090TRP	DTPM-15	-	P-37	HH1/4-0.75	RPMT1204M0**ER-GM** RPGT1204M0**ER-GM** RPGT1204M0**ER-SM** ※2 RPMT1204M0**EN-GH** RPMW1204M0TN
2000R-12...					HH3/8-1.25	
2500R-12...	Recommended Torque for Insert Clamp 3.5 N·m				HH3/8-1.25	
3000R-12...					HH1/2-1.25	
4000R-12...					-	
MRX 2500R-16...	SB-50120TRP	-	TTP-20	P-37	HH3/8-1.25	RPMT1605M0ER-GM RPGT1605M0ER-GM RPGT1605M0ER-SM ※3 RPMT1605M0EN-GH RPMW1605M0TN
3000R-16...					HH1/2-1.25	
4000R-16...	Recommended Torque for Insert Clamp 4.5 N·m				-	
5000R-16...					-	

Recommended Cutting Conditions ➡ **M240**

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

※1...Not compatible with conventional RPMT10T3M0 inserts (without **ER**-.. or **EN**-..)

※2...Not compatible with conventional RPMT1204M0 or RPMT1204M0-H inserts (without **ER**-.. or **EN**-..)

※3...Not compatible with conventional RPMT1605M0-H inserts.

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

MRX Face Mill (Metric Size)

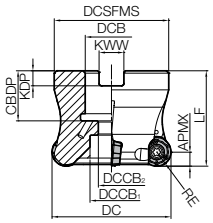

Fig.1

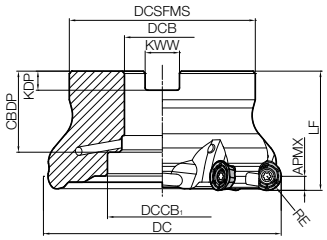

Fig.2

Rake Angle (°)	A.R.	R.R.
	(MAX) +10°	-5.5°

Toolholder Dimensions (Metric Size)

	Part Number	Stock	No. of Inserts	Dimensions (mm) RE	DC	DCSFMS	DCB	$DCCB_1$	$DCCB_2$	LF	CBDP	KDP	KWW	APMX	Coolant Hole	Drawing	Weight (kg)	Max. RPM
Inch Bore Dia.	MRX 080R-12-6T	●	6	6	80	70	1.000"	20.0	13	50	1.063"	0.236"	0.375"	6	Yes	Fig.1	1.2	13,500
	080R-12-8T	●	8														1.1	13,500
	100R-12-7T	●	7		100	78	1.250"	46.0	-	50	1.339"	0.315"	0.500"		Yes	Fig.2	1.5	12,000
	100R-12-9T	●	9														1.5	12,000
	MRX 080R-16-5T	●	5	8	80	70	1.000"	20.0	13	50	1.063"	0.236"	0.375"	8	Yes	Fig.1	1.1	11,500
	080R-16-6T	●	6														1.1	11,500
	100R-16-6T	●	6		100	78	1.250"	46.0	-	50	1.339"	0.315"	0.500"		Yes	Fig.2	1.4	10,000
	100R-16-7T	●	7														1.4	10,000
	125R-16-6T	●	6		125	89	1.500"	55.0	-	63	1.496"	0.394"	0.625"		Yes	Fig.2	2.7	9,000
	125R-16-8T	●	8															9,000
Metric Bore Dia.	MRX 040R-10-5T-M	●	5	5	40	38	16	15.0	9	40	19	5.6	8.4	5	Yes	Fig.1	0.2	20,000
	050R-10-6T-M	●	6		50	48	22	18.0	11	40	21	6.3	10.4		Yes	Fig.1	0.3	17,500
	063R-10-7T-M	●	7		63	60											0.6	15,000
	MRX 040R-12-4T-M	●	4	6	40	38	16	13.5	9	40	19	5.6	8.4	6	Yes	Fig.1	0.2	21,000
	050R-12-4T-M	●	4		50	48	22	18.0	11	40	21	6.3	10.4		Yes	Fig.1	0.3	18,000
	050R-12-5T-M	●	5														0.3	18,000
	063R-12-5T-M	●	5		63	60	22	18.0	11	40	21	6.3	10.4		Yes	Fig.1	0.6	15,500
	063R-12-6T-M	●	6														0.6	15,500
	080R-12-6T-M	●	6		80	70	27	20.0	13	50	24	7.0	12.4		Yes	Fig.1	1.2	13,500
	080R-12-8T-M	●	8														1.1	13,500
	100R-12-7T-M	●	7		100	78	32	46.0	-	50	30	8.0	14.4		Yes	Fig.2	1.4	12,000
	100R-12-9T-M	●	9														1.4	12,000
	MRX 063R-16-4T-M	●	4	8	63	60	22	18.0	11	40	21	6.3	10.4	8	Yes	Fig.1	0.5	13,500
	063R-16-5T-M	●	5														0.5	13,500
	080R-16-5T-M	●	5		80	70	27	20.0	13	50	24	7.0	12.4		Yes	Fig.1	1.1	11,500
	080R-16-6T-M	●	6														1.1	11,500
	100R-16-6T-M	●	6		100	78	32	46.0	-	50	30	8.0	14.4		Yes	Fig.2	1.4	10,000
	100R-16-7T-M	●	7														1.4	10,000
	125R-16-6T-M	●	6		125	89	40	55.0	-	63	33	9.0	16.4		Yes	Fig.2	2.6	9,000
	125R-16-8T-M	●	8														2.6	9,000

Face Mill Spare Parts and Applicable Inserts (Metric Size)

Part Number	Spare Parts: Clamp Screw	Wrench: DTPM	Wrench: TTP	Anti-seize Compound	Arbor Bolt	Applicable Inserts (M19)
MRX 040R-10...	SB-3070TRP	DTPM-10	-	P-37	HH8X25	RPMT10T3M0**ER-GM** RPGT10T3M0**ER-GM** RPGT10T3M0**ER-SM** ※1 RPMT10T3M0**EN-GH**
050R-10...	Recommended Torque for Insert Clamp 2.0 N·m				HH10X30	
063R-10...					HH10X30	
MRX 040R-12...	SB-4090TRP	DTPM-15	-	P-37	HH8X25	RPMT1204M0**ER-GM** RPGT1204M0**ER-GM** RPGT1204M0**ER-SM** ※2 RPMT1204M0**EN-GH** RPMW1204M0TN
050R-12...	Recommended Torque for Insert Clamp 3.5 N·m				HH10X30	
063R-12...					HH10X30	
080R-12...					HH12X35	
100R-12...					-	
MRX 063R-16...	SB-50120TRP	-	TTP-20	P-37	HH10X30	RPMT1605M0ER-GM RPGT1605M0ER-GM RPGT1605M0ER-SM ※3 RPMT1605M0EN-GH RPMW1605M0TN
080R-16...	Recommended Torque for Insert Clamp 4.5 N·m				HH12X35	
100R-16...					-	
125R-16...					-	

Recommended Cutting Conditions ➡ **M240**

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37)
thinly on portion of taper and thread prior to installation.

※1...Not compatible with conventional RPMT10T3M0 inserts (without **ER**-.. or **EN**-..)

※2...Not compatible with conventional RPMT1204M0 or RPMT1204M0-H inserts (without **ER**-.. or **EN**-..)

※3...Not compatible with conventional RPMT1605M0-H inserts.

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MRX End Mill (Inch Size)

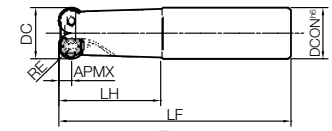

Fig.1

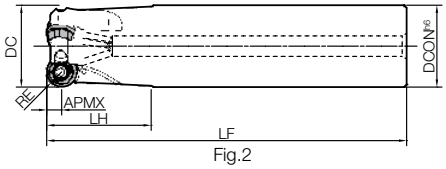

Fig.2

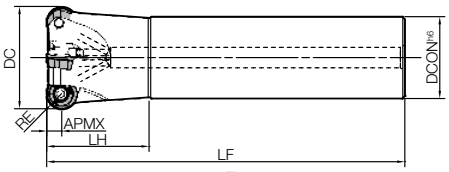

Fig.3

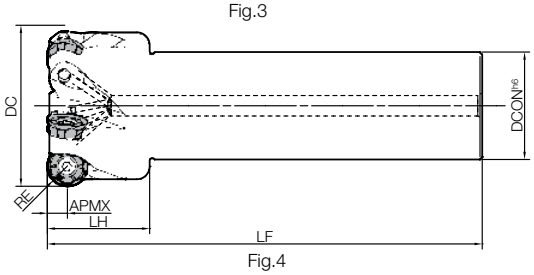

Fig.4

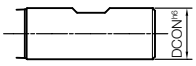

Fig.5

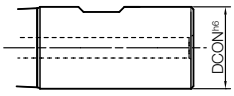

Fig.6

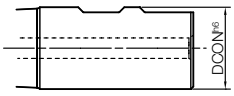

Fig.7

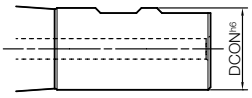

Fig.8

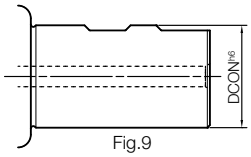

Fig.9

Toolholder Dimensions (Inch Size)

Part Number		Stock	No. of Inserts	Dimensions (in)						Rake Angle (°)		Coolant Hole	Drawing	Max. RPM
				RE	DC	DCON	LF	LH	APMX	A.R. (Max.)	R.R.			
Standard Shank (Weldon)	MRX 0625-W625-08-2T	●	2	0.157 (4mm)	0.625	0.625	4.331	2.386	0.157 (4mm)	+3°	-6.5°	No	Fig.5	38,000
	0750-W750-08-2T	●	2		0.750	0.750	4.724	2.654		+10°	-5.5°	Yes	Fig.6	32,000
	1000-W100-08-4T	●	4		1.000	1.000	4.724	2.406		+10°	-5.5°	Yes	Fig.7	28,000
	MRX 1000-W100-10-3T	●	3	0.197 (5mm)	1.000	1.000	4.724	2.409	0.197 (5mm)	+10°	-5.5°	Yes	Fig.7	28,000
	1250-W125-10-4T	●	4		1.250	1.250	5.512	3.197						22,500
	MRX 1250-W125-12-3T	●	3	0.236 (6mm)	1.250	1.250	5.512	3.189	0.236 (6mm)	+10°	-5.5°	Yes	Fig.7	24,500
	1500-W125-12-4T	●	4		1.500	1.250	5.512	1.575						21,000
	2000-W150-12-5T	□	5		2.000	1.500	6.693	1.575						18,000
	MRX 1500-W125-16-2T	●	2	0.315 (8mm)	1.500	1.250	5.512	1.575	0.315 (8mm)	+10°	-5.5°	Yes	Fig.8	18,000
	2000-W150-16-4T	●	4		2.000	1.500	6.693	1.575						15,500
Standard Shank (Cylindrical)	MRX 0625-S625-08-2T-6	□	2	0.157 (4mm)	0.625	0.625	6.000	3.150	0.157 (4mm)	+3°	-6.5°	No	Fig.1	38,000
	0750-S750-08-2T-7	□	2		0.750	0.750	7.000	3.150		+10°	-5.5°	Yes	Fig.2	32,000
	1000-S100-08-4T-7	□	4		1.000	1.000	7.000	3.150						28,000
	MRX 1000-S100-10-2T-7	□	2	0.197 (5mm)	1.000	1.000	7.000	3.150	0.197 (5mm)	+10°	-5.5°	Yes	Fig.2	28,000
	MRX 1250-S125-12-2T-8	□	2	0.236 (6mm)	1.250	1.250	8.000	3.150	0.236 (6mm)	+10°	-5.5°	Yes	Fig.2	24,500
	1500-S125-12-4T-8	□	4		1.500	1.250	8.000	1.575						21,000
	2000-S150-12-4T12	□	4		2.000	1.500	12.000	1.575						18,000
	MRX 1500-S125-16-2T-8	□	2	0.315 (8mm)	1.500	1.250	8.000	1.575	0.315 (8mm)	+10°	-5.5°	Yes	Fig.3	18,000
	2000-S150-16-4T12	□	4		2.000	1.500	12.000	1.575						15,500
	2500-S150-16-4T12	□	4		2.500	1.500	12.000	1.575		+10°	-5.5°	Yes	Fig.4	13,500

Recommended Cutting Conditions ➔ **M240**
End Mill Spare Parts and Applicable Inserts ➔ **M239**

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Contact your local Kyocera sales engineer to upgrade old products to new technology

MRX End Mill (Metric Size)

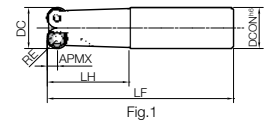

Fig.1

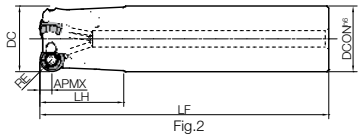

Fig.2

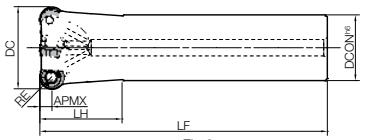

Fig.3

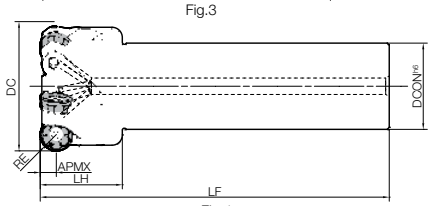

Fig.4

Fig.5

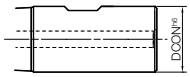

Fig.6

Fig.7

Fig.8

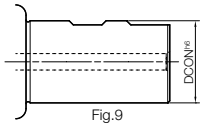

Fig.9

Toolholder Dimensions (Metric Size)

	Part Number		Stock	No. of Inserts	Dimensions (mm)						Rake Angle (°)		Coolant Hole	Drawing	Max. RPM
					RE	DC	DCON	LF	LH	APMX	A.R. (Max.)	R.R.			
Standard Shank (Cylindrical)	MRX	16-S16-08-2T	●	2	4	16	16	110	40	4.0	+3°	-5.5°	No	Fig.1	38,000
		20-S20-08-2T	●	2		20	20	120	40	4.0	+10°	-5.5°	Yes	Fig.2	32,000
		25-S25-08-4T	●	4		25	25	120							28,000
	MRX	20-S20-10-2T	●	2	5	20	20	120	40	5.0	+5°	-8.0°	No	Fig.1	30,000
		25-S25-10-3T	●	3		25	25	120	40	5.0	+10°	-5.5°	Yes	Fig.2	28,000
		32-S32-10-4T	●	4		32	32	140							22,500
	MRX	32-S32-12-3T	●	3	6	32	32	140	40	6.0	+10°	-5.5°	Yes	Fig.2	24,500
		40-S32-12-4T	●	4		40	32	140	40	6.0	+10°	-5.5°	Yes	Fig.3	21,000
		50-S42-12-5T	●	5		50	42	170							18,000
	MRX	40-S32-16-2T	●	2	8	40	32	140	40	8.0	+10°	-5.5°	Yes	Fig.3	18,000
		50-S42-16-4T	●	4		50	42	170							15,500
		63-S42-16-5T	●	5		63	42	170	40	8.0	+10°	-5.5°	Yes	Fig.4	13,500
Standard Shank (Weldon)	MRX	16-W16-08-2T	●	2	4	16	16	89	40	4.0	+3°	-5.5°	No	Fig.5	38,000
		20-W20-08-2T	●	2		20	20	91	40	4.0	+10°	-5.5°	Yes	Fig.6	32,000
		25-W25-08-4T	●	4		25	25	97						Fig.7	28,000
	MRX	20-W20-10-2T	●	2	5	20	20	91	40	5.0	+5°	-8.0°	No	Fig.5	30,000
		25-W25-10-3T	●	3		25	25	97	40	5.0	+10°	-5.5°	Yes	Fig.7	28,000
		32-W32-10-4T	●	4		32	32	101							22,500
	MRX	32-W32-12-3T	●	3	6	32	32	101	40	6.0	+10°	-5.5°	Yes	Fig.7	24,500
		40-W32-12-4T	●	4		40	32	101	40	6.0	+10°	-5.5°	Yes	Fig.8	21,000
		50-W40-12-5T	●	5		50	40	111							18,000
	MRX	40-W32-16-2T	●	2	8	40	32	101	40	8.0	+10°	-5.5°	Yes	Fig.8	18,000
		50-W40-16-4T	●	4		50	40	111							15,500
		63-W40-16-5T	●	5		63	40	112	40	8.0	+10°	-5.5°	Yes	Fig.9	13,500
Long Shank (Cylindrical)	MRX	16-S16-08-2T-160	●	2	4	16	16	160	70	4.0	+3°	-5.5°	No	Fig.1	38,000
		20-S20-08-2T-180	●	2		20	20	180	80	4.0	+10°	-5.5°	Yes	Fig.2	32,000
		25-S25-08-4T-180	●	4		25	25	180							28,000
	MRX	20-S20-10-2T-180	●	2	5	20	20	180	80	5.0	+5°	-8°	No	Fig.1	30,000
		25-S25-10-2T-180	●	2		25	25	180	80	5.0	+10°	-5.5°	Yes	Fig.2	28,000
		32-S32-10-4T-200	●	4		32	32	200							22,500
	MRX	32-S32-12-2T-200	●	2	6	32	32	200	80	6.0	+10°	-5.5°	Yes	Fig.2	24,500
		40-S32-12-4T-200	●	4		40	32	200	40	6.0	+10°	-5.5°	Yes	Fig.3	21,000
		50-S42-12-4T-300	●	4		50	42	300							18,000
	MRX	40-S32-16-2T-200	●	2	8	40	32	200	40	8.0	+10°	-5.5°	Yes	Fig.3	18,000
		50-S42-16-4T-300	●	4		50	42	300							15,500
		63-S42-16-4T-300	●	4		63	42	300	40	8.0	+10°	-5.5°	Yes	Fig.4	13,500

Recommended Cutting Conditions ➡ M240
End Mill Spare Parts and Applicable Inserts ➡ M239

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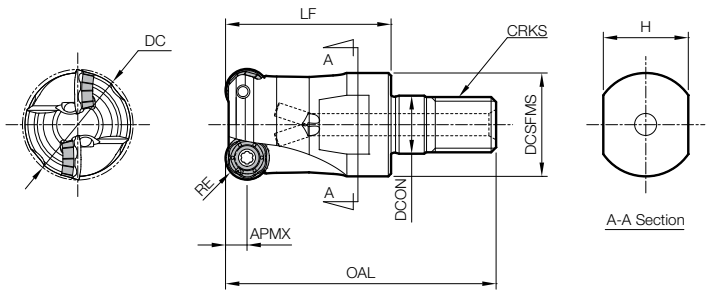
MRX Modular End Mill (Metric Size)



Toolholder Dimensions (Metric Size)

Part Number	Stock	No. of Inserts	Dimensions (mm)									Rake Angle (°)		Coolant Hole	Applicable Inserts	Max. RPM
			RE	DC	DCSFMS	DCON	OAL	LF	CRKS	H	APMX	A.R. (Max.)	R.R.			
MRX 16-M08-08-2T	●	2	4	16	14.7	8.5	43	25	M8xP1.25	12	4	+3°	-5.5°	No	RDMT08 RDGT08	38,000
20-M10-08-2T	●	2	4	20	18.7	10.5	49	30	M10xP1.50	15	4	+10°	-5.5°	Yes		32,000
25-M12-08-4T	●	4		25	23.0	12.5	57	35	M12xP1.75	19						28,000
MRX 20-M10-10-2T	●	2	5	20	18.7	10.5	49	30	M10xP1.50	15	5	+5°	-8.0°	No	RPMT10 RPGT10	30,000
25-M12-10-3T	●	3	5	25	23.0	12.5	57	35	M12xP1.75	19	5	+10°	-5.5°	Yes		28,000
32-M16-10-4T	●	4		32	30.0	17.0	63	40	M16xP2.00	24						22,500
MRX 32-M16-12-3T	●	3	6	32	30.0	17.0	63	40	M16xP2.00	24	6	+10°	-5.5°	Yes	RPMT12 RPGT12 RPMW12	24,500
40-M16-12-4T	●	4		40	30.0	17.0	63	40	M16xP2.00	24						21,000
MRX 40-M16-16-2T	●	2	8	40	30.0	17.0	63	40	M16xP2.00	24	8	+10°	-5.5°	Yes	RPMT16 RPGT16 RPMW16	18,000

End Mill Spare Parts and Applicable Inserts (Inch / Metric Size)

Part Number	Spare Parts				Applicable Inserts	
	Clamp Screw	Wrench		Anti-seize Compound		
		DTPM	TTP			
MRX ...-08...	SB-2555TRP	DTPM-8	-	P-37	RDMT0803M0ER-GM RDGT0803M0ER-GM RDGT0803M0ER-SM RDMT0803M0EN-GH	※1
	Recommended Torque for Insert Clamp 1.2 N·m					
MRX ...-10...	SB-3070TRP	DTPM-10	-	P-37	RPMT10T3M0**ER-GM** RPGT10T3M0**ER-GM** RPGT10T3M0**ER-SM** RPMT10T3M0**EN-GH**	※2
	Recommended Torque for Insert Clamp 2.0 N·m					
MRX ...-12...	SB-4090TRPN	DTPM-15	-	P-37	RPMT1204M0**ER-GM** RPGT1204M0**ER-GM** RPGT1204M0**ER-SM** RPMT1204M0**EN-GH** RPMW1204M0TN	※3
	Recommended Torque for Insert Clamp 3.5 N·m					
MRX ...-16...	SB-50120TRP	-	TTP-20	P-37	RPMT1605M0ER-GM RPGT1605M0ER-GM RPGT1605M0ER-SM RPMT1605M0EN-GH RPMW1605M0TN	※4
	Recommended Torque for Insert Clamp 4.5 N·m					

Recommended Cutting Conditions ➡ **M240**

Caution with Max. Revolution
When running an end mill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

Coat Anti-Seize Compound (P-37) thinly on portion of taper and thread prior to installation.

Pre-Set Torque Wrench sold separately.

※**1**...Not compatible with conventional RPMT08T2M0-H inserts

※**2**...Not compatible with conventional RPMT10T3M0 inserts (without **ER**-.. or **EN**-..)

※**3**...Not compatible with conventional RPMT1204M0 or RPMT1204M0-H inserts (without **ER**-.. or **EN**-..)

※**4**...Not compatible with conventional RPMT1605M0-H inserts.

Recommended Cutting Conditions

Workpiece Material	Recommended Chipbreaker per Material (fz: ipt)					Recommended Insert Grades (Cutting Speed Vc: sfm)			
	RD..08... : D.O.C. = 0.079" RP..10... : D.O.C. = 0.098"			RP..12... : D.O.C. = 0.118" RP..16... : D.O.C. = 0.158"		MEGACOAT NANO			CVD Coated Carbide
	RDMT-GM RPMT-GM	**RDGT-GM RPGT-GM**	**RDGT-SM RPGT-SM**	**RDMT-GH RPMT-GH**	**RPMW**	**PR1535**	**PR1525**	**PR1510**	**CA6535**
Carbon Steel	★ 0.004~**0.008**~0.012	☆ 0.004~**0.008**~0.012	☆ 0.002~**0.006**~0.008	☆ 0.006~**0.012**~0.014	☆ 0.006~**0.012**~0.016	☆ 390~**590**~820	★ 390~**590**~820	-	-
Alloy Steel	★ 0.004~**0.008**~0.012	☆ 0.004~**0.008**~0.012	☆ 0.002~**0.006**~0.008	☆ 0.006~**0.012**~0.014	☆ 0.006~**0.012**~0.016	☆ 330~**520**~720	★ 330~**520**~720	-	-
Mold Steel	★ 0.004~**0.006**~0.010	☆ 0.004~**0.006**~0.010	☆ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.012	☆ 0.006~**0.008**~0.012	☆ 260~**460**~590	★ 260~**460**~590	-	-
Austenitic Stainless Steel	☆ 0.004~**0.006**~0.008	☆ 0.004~**0.006**~0.008	★ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.010	☆ 0.006~**0.008**~0.010	★ 330~**520**~660	☆ 330~**520**~660	-	-
Martensitic Stainless Steel	☆ 0.004~**0.006**~0.008	☆ 0.004~**0.006**~0.008	★ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.010	☆ 0.006~**0.008**~0.010	☆ 490~**660**~820	-	-	★ 590~**790**~980
Precipitation Hardened Stainless Steel	☆ 0.004~**0.006**~0.008	★ 0.004~**0.006**~0.008	☆ 0.002~**0.005**~0.008	☆ 0.006~**0.008**~0.010	☆ 0.006~**0.008**~0.010	★ 300~**390**~490	-	-	-
Gray Cast Iron	★ 0.004~**0.008**~0.012	☆ 0.004~**0.008**~0.012	-	☆ 0.006~**0.012**~0.014	☆ 0.006~**0.012**~0.016	-	-	★ 390~**590**~820	-
Nodular Cast Iron	★ 0.004~**0.006**~0.010	☆ 0.004~**0.006**~0.010	-	☆ 0.006~**0.008**~0.012	☆ 0.006~**0.010**~0.014	-	-	★ 330~**490**~660	-
Ni-base Heat Resistant Alloy	☆ 0.004~**0.005**~0.006	★ 0.004~**0.005**~0.006	☆ 0.002~**0.004**~0.006	☆ 0.005~**0.006**~0.008	☆ 0.005~**0.006**~0.008	☆ 70~**100**~160	-	-	★ 70~**100**~160
Titanium Alloy	☆ 0.004~**0.005**~0.006	☆ 0.004~**0.005**~0.006	★ 0.002~**0.004**~0.006	-	-	★ 130~**200**~260	-	☆ 100~**160**~230	-

★: 1st Recommendation ☆: 2nd Recommendation

- Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy.
- RDGT / RPGT are recommended for Stainless Steel, Ni-base Heat Resistant Alloy, and Titanium Alloy.
- The figure in bold font is the starting value of the recommended cutting conditions.
  Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.
- Recommended feed rate is the reference value when D.O.C. is RE/2 (0.079" for RD..08 / 0.098" for RP..10 / 0.118" for RP..12 / 0.158" for RP..16).
  For other D.O.C., calculate the recommended feed rate based on the conversion factor below.
- For MRX16-S16-08-2T(-160), MRX16-W-08-2T, MRX20-S20-10-2T(-180), MRX20-W20-10-2T, MRX0625-W625-08-2T, MRX0625-S625-08-2T-6 set the feed rate no higher than 50% of the recommended cutting conditions.

Conversion Factor for Feed Per Tooth by Depth of Cut (D.O.C.)

Insert	D.O.C. (Max.)	Conversion Factor for Feed Per Tooth									
		D.O.C. = 0.020" (0.5mm)	D.O.C. = 0.039" (1.0mm)	D.O.C. = 0.059" (1.5mm)	D.O.C. = 0.079" (2.0mm)	D.O.C. = 0.098" (2.5mm)	D.O.C. = 0.118" (3.0mm)	D.O.C. = 0.158" (4.0mm)	D.O.C. = 0.197" (5.0mm)	D.O.C. = 0.236" (6.0mm)	D.O.C. = 0.315" (8.0mm)
RD..08... (GM/SM/GH Chipbreaker)	0.158" (4mm)	1.7	1.3	1.1	1.0 (Standard)	0.9	0.8	0.8	-	-	-
RP..10... (GM/SM/GH Chipbreaker)	0.197" (5mm)	1.9	1.4	1.2	1.0	1.0 (Standard)	0.9	0.8	0.8	-	-
RP..12... (GM/SM/GH Chipbreaker)	0.236" (6mm)	2.1	1.5	1.3	1.1	1.0	1.0 (Standard)	0.9	0.8	0.8	-
RP..16... (GM/SM/GH Chipbreaker)	0.315" (8mm)	2.4	1.7	1.4	1.3	1.1	1.1	1.0 (Standard)	0.9	0.8	0.8

Calculation Example (RPMT12, Carbon Steel, GM Chipbreaker, D.O.C. = 0.039")

fz = 0.008 ipt (Standard value for carbon steel and GM chipbreaker)	X	**1.5** (Conversion factor for ROMU12 type, D.O.C. = 0.039")	=	**fz = 0.012 ipt** (Recommended feed rate)

Max. D.O.C. and Usable Edges

Usable Edges	Insert Corner-R			
	R4	R5	R6	R8
3 Edges	D.O.C. = 0.079"~0.158"	D.O.C. = 0.098"~0.197"	D.O.C. = 0.118"~0.236"	D.O.C. = 0.158"~0.315"
6 Edges	Less than D.O.C. = 0.079"	Less than D.O.C. = 0.098"	Less than D.O.C. = 0.118"	Less than D.O.C. = 0.158"

Drilling Conditions

[Drilling Depth]

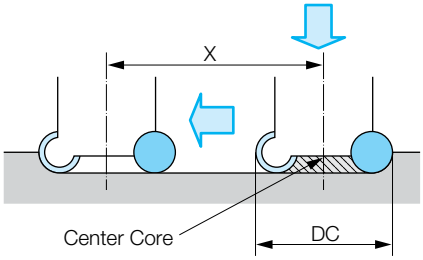
See Max. Cutting Depth **(Pd)** in the table below.

[Traversing After Drilling]

Caution when Traversing right after Drilling

① Reduce the table feed by 50% of the recommended conditions until the center core part is completely cut off. The internal cutting edge's radial rake angle is large in the negative direction.

② Min cutting length for flat bottom face **(X)** is in the table to the right.

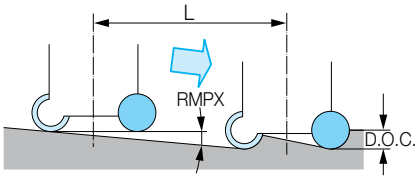


Inch					Metric				
Inch Tool Spec.		Max **D.O.C.**	Max. Cutting Depth **(Pd)**	Min. Cutting Length for flat bottom face **(X)**	**Metric** Tool Spec.		Max **D.O.C.**	Max. Cutting Depth **(Pd)**	Min. Cutting Length for flat bottom face **(X)**
Insert	Tool **Dia.**				**Insert**	Tool Dia. **Metric**			
RD..08	**0.625**	0.157	0.028	0.349	**RD..08**	**16**	4	0.7	9
	0.750	0.157	0.055	0.474		**20**	4	1.4	13
	1.000	0.157	0.055	0.724		**25**	4	1.4	18
RP..10	**0.750**	0.197	0.024	0.396	**RP..10**	**20**	5	0.6	11
	1.000	0.197	0.075	0.646		**25**	5	1.9	16
	1.250	0.197	0.075	0.896		**32**	5	1.9	23
	1.500	0.197	0.075	1.146		**40**	5	1.9	31
	2.000	0.197	0.075	1.646		**50**	5	1.9	41
	2.500	0.197	0.075	2.146		**63**	5	1.9	54
RP..12	**1.250**	0.236	0.094	0.817	**RP..12**	**32**	6	2.4	21
	1.500	0.236	0.094	1.067		**40**	6	2.4	29
	2.000	0.236	0.094	1.567		**50**	6	2.4	39
	2.500	0.236	0.094	2.067		**63**	6	2.4	52
	3.000	0.236	0.094	2.567		**80**	6	2.4	69
	4.000	0.236	0.094	3.567		**100**	6	2.4	89
RP..16	**1.500**	0.315	0.134	0.909	**RP..16**	**40**	8	3.4	25
	2.000	0.315	0.134	1.409		**50**	8	3.4	35
	2.500	0.315	0.134	1.909		**63**	8	3.4	48
	3.000	0.315	0.134	2.409		**80**	8	3.4	65
	4.000	0.315	0.134	3.409		**100**	8	3.4	85
	5.000	0.315	0.134	4.346		**125**	8	3.4	110

- Above value is based on the clearance of 0.039" between the tool and the workpiece.

Ramping Conditions

- Ramping angle should be under **RMPX** (maximum ramping angle) in the table below.
- Feed rate should be under 70% of the cutting conditions on **page** M240



Inch						Metric					
Inch Tool Spec.		Max **D.O.C.**	Max Ramping Angle **RMPX**	**tan RMPX**	Max. Cutting Length at Max. Ramping Angle **(L)**	**Metric** Tool Spec.		Max **D.O.C.**	Max Ramping Angle **RMPX**	**tan RMPX**	Max. Cutting Length at Max. Ramping Angle **(L)**
Insert	Tool **Dia.**					**Insert**	Tool **Dia.**				
RD..08	**0.625**	0.157	7°	0.123	1.282	**RD..08**	**16**	4	8°	0.141	28
	0.750	0.157	9°	0.158	0.994		**20**	4	9°	0.158	25
	1.000	0.157	5°	0.087	1.800		**25**	4	5°	0.087	45
RP..10	**0.750**	0.197	4°	0.070	2.816	**RP..10**	**20**	5	5°	0.087	57
	1.000	0.197	9°	0.158	1.243		**25**	5	10°	0.176	28
	1.250	0.197	6°	0.105	1.873		**32**	5	6°	0.105	47
	1.500	0.197	4°	0.070	2.816		**40**	5	4°	0.070	71
	2.000	0.197	3°	0.052	3.757		**50**	5	3°	0.052	95
	2.500	0.197	2°	0.035	5.640		**63**	5	2°	0.035	143
RP..12	**1.250**	0.236	9°	0.158	1.491	**RP..12**	**32**	6	9°	0.158	37
	1.500	0.236	6°	0.105	2.248		**40**	6	5°	0.087	68
	2.000	0.236	4°	0.070	3.379		**50**	6	4°	0.070	85
	2.500	0.236	2°	0.035	6.768		**63**	6	2°	0.035	171
	3.000	0.236	2°	0.035	6.768		**80**	6	2°	0.035	171
	4.000	0.236	1°	0.017	13.498		**100**	6	1°	0.017	343
RP..16	**1.500**	0.315	12°	0.213	1.481	**RP..16**	**40**	8	11°	0.194	41
	2.000	0.315	6°	0.105	2.997		**50**	8	7°	0.123	65
	2.500	0.315	4°	0.070	4.506		**63**	8	4°	0.070	114
	3.000	0.315	3°	0.052	6.011		**80**	8	3°	0.052	152
	4.000	0.315	2°	0.035	9.025		**100**	8	2°	0.035	229
	5.000	0.315	1°	0.017	17.998		**125**	8	1°	0.017	458

- Above value is based on the clearance of 0.039" between the tool and the workpiece.

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Helical Milling Conditions

- Sinking depth **(h)** when helical milling should be under **Max D.O.C.** in table below. Sinking **angle** α (with trajectory of the center line of tool) should be under ***RMPX*** (maximum ramping angle) in cutting conditions on **page** M242.
- Feed rate should be under 70% of cutting conditions on **page** M240.
- Climb milling is recommended.

Formula for Sinking Depth (h)
$h = \pi \times ØDs \times RMPX$
(**h** should be under **D.O.C.**)
(α should be under ***RMPX***)

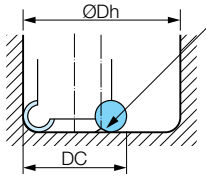
ØDs (Trajectory diameter of cutter's center line)
ØDs=ØDh-DC

Inch						Metric					
Inch Tool Spec.						**Metric** Tool Spec.					
Insert	Tool **Dia.**	Max **D.O.C.**	Min. Cutting Dia. **ØDh1**	Min. Cutting Dia. for flat bottom facing **ØDh2**	Max. Cutting Dia. **ØDh3**	**Insert**	Tool **Dia.**	Max **D.O.C.**	Min. Cutting Dia. **ØDh1**	Min. Cutting Dia. for flat bottom facing **ØDh2**	Max. Cutting Dia. **ØDh3**
RD..08	**0.625**	0.157	0.787	0.935	1.171	RD..08	**16**	4	20	24	30
	0.750	0.157	0.984	1.185	1.421		**20**	4	26	32	38
	1.000	0.157	1.457	1.685	1.921		**25**	4	36	42	48
RP..10	**0.750**	0.197	0.945	1.106	1.421	RP..10	**20**	5	26	30	38
	1.000	0.197	1.299	1.606	1.921		**25**	5	33	40	48
	1.250	0.197	1.811	2.106	2.421		**32**	5	47	54	62
	1.500	0.197	2.323	2.606	2.921		**40**	5	63	70	78
	2.000	0.197	3.307	3.606	3.921		**50**	5	83	90	98
	2.500	0.197	4.331	4.606	4.921		**63**	5	109	116	124
RP..12	**1.250**	0.236	1.654	2.028	2.421	RP..12	**32**	6	43	52	62
	1.500	0.236	2.165	2.528	2.921		**40**	6	59	68	78
	2.000	0.236	3.150	3.528	3.921		**50**	6	79	88	98
	2.500	0.236	4.173	4.528	4.921		**63**	6	105	114	124
	3.000	0.236	5.157	5.528	5.921		**80**	6	139	148	158
	4.000	0.236	7.165	7.528	7.921		**100**	6	179	188	198
RP..16	**1.500**	0.315	1.890	2.370	2.921	RP..16	**40**	8	51	64	78
	2.000	0.315	2.874	3.370	3.921		**50**	8	71	84	98
	2.500	0.315	3.858	4.370	4.921		**63**	8	97	110	124
	3.000	0.315	4.882	5.370	5.921		**80**	8	131	144	158
	4.000	0.315	6.890	7.370	7.921		**100**	8	171	184	198
	5.000	0.315	8.740	9.244	9.795		**125**	8	221	234	248

- Above value is based on the clearance of 0.039" between the tool and the workpiece.

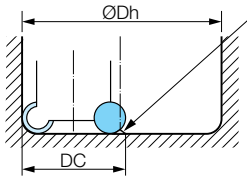
Requirements for Removing Core

[When Cutting Dia. ØDh1 ≦ØDh＜ØDh2]



Center core part remains after machining. (Not removable with the same cutter)

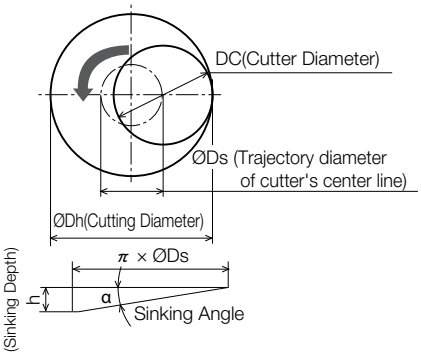
[When Cutting Dia. ØDh2 ≦ØDh ≦ØDh3]



Center core part remains after machining. (Removable by traversing with the same cutter)

※ Refer to table on the left for ØDh1~ØDh3.

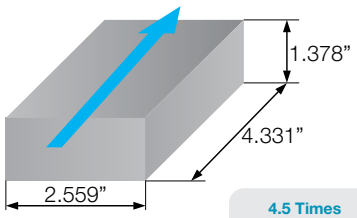
Helical Milling Factors



Case Studies

304 Stainless Steel

- Nozzle Parts
- Vc = 370 sfm
- fz = 0.006 ipt
- D.O.C. × ae = 0.039" × 2.559"
- Dry
- MRX100R-12-9T-M (9 Flutes)
- RPGT1204M0ER-SM (PR1535)



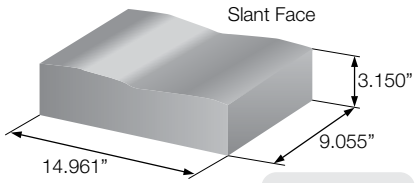
4.5 Times Longer Tool Life

PR1535	**450 pcs / Edge**
Conventional	100 pcs / Edge

Cost savings with 4.5 times longer tool life with 1.5 times more insert edges. MRX prevented burr formation and improved surface finish.
(User Evaluation)

H13 Tool Steel (47~49HRC)

- Mold Parts
- Vc = 410 sfm
- fz = 0.010 ipt
- D.O.C. × ae = 0.039~0.079" × 0.394"
- Dry
- MRX20-S20-08-2T (2 Flutes)
- RDGT0803M0ER-GM (PR1525)



More than Double Tool Life

PR1525	**2 pcs with Stable Machining**
Conventional	1pc with Unstable Tool Life

Conventional tool only machined 1 workpiece due to unstable tool life, but the MRX doubled the tool life with stable machining.
(User Evaluation)

Ring Grooving

API Ring Groover

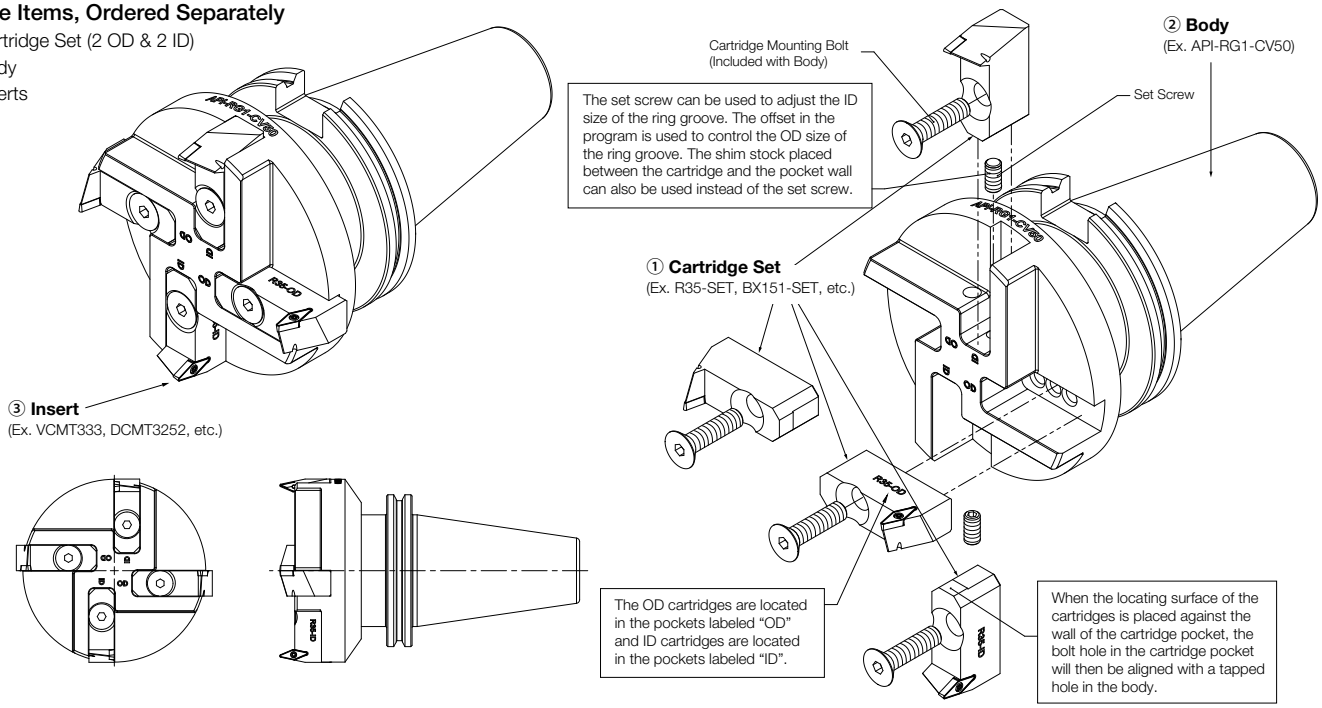
Kyocera is the only choice for economical ring groovers. Featuring an integral shank for maximum rigidity, Kyocera's API Ring Groovers are the most versatile ring grooving tools on the market.

ADVANTAGES

- Create ring grooves per API Spec 6A for BX, R, and RX style grooves
- Roughout and finish of inlay of API Ring Grooves
- Replaceable cartridges allow a single cutter body to produce multiple size API grooves
- Integral shank, multiple sizes and styles available

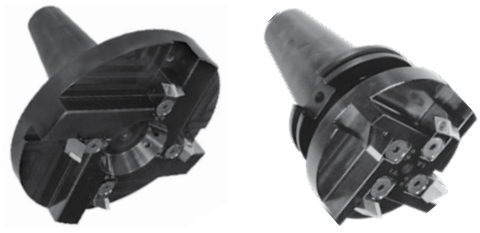
3 Line Items, Ordered Separately

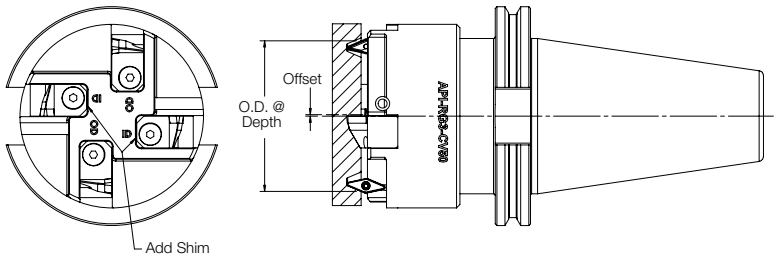
① Cartridge Set (2 OD & 2 ID)
② Body
③ Inserts

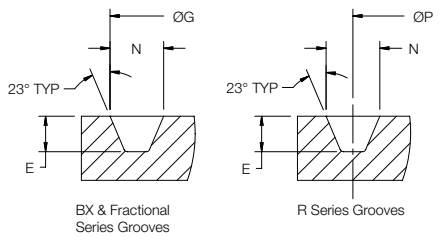


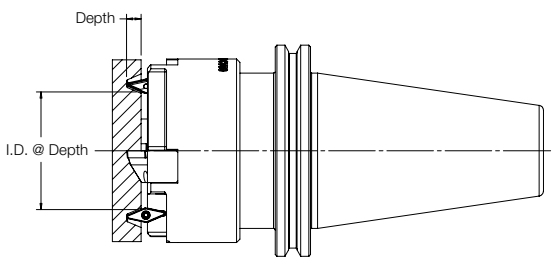
Inserts
45°~70° Lead Angle
75° Lead Angle
90°/88° Lead Angle
High Feed Milling
Finish Milling
Multi-Function
Slot Mill
Ball-Nose Radius
Other Applications
M MILLING

API Ring Groover Dimensions









See Dimension Table ➔ **M245**

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Ring / Cartridge Set Dimensions

Ring Specification	① Cartridge Set Part Number **Choose Set**	Stock	No. of Inserts	No. of Flutes	Dimensions (in)							Roughout Cartridges	Applicable Body Part Number
					Offset	Pitch	OD	Width	Depth	OD Depth	ID Depth		
						P	G	N	E				
BX-150	BX150-SET	●	4	2	0.061	-	2.893	0.450	0.220	2.771	2.115	-	API-RG-3-CV40 API-RG-3-CV50 API-RG-3-BT50 API-RG-3-DIN-69871
BX-150-R	BX150-R-SET	●		1	0.097		3.341	0.841	0.485	3.147	1.853	Yes	
BX-151	BX151-SET	●	4	2	0.065	-	3.062	0.466	0.220	2.932	2.260	-	API-RG-1-CV40 API-RG-1-CV50 API-RG-1-BT50 API-RG-1-BT40 API-RG-1-DIN-69871
BX-151-R	BX151-R-SET	●	4	1	0.097	-	3.496	0.846	0.485	3.302	1.998	Yes	API-RG-3-CV40 API-RG-3-CV50 API-RG-3-BT50 API-RG-3-DIN-69871
BX-152	BX152-SET	●	4	2	0.069	-	3.395	0.498	0.230	3.257	2.537	-	API-RG-1-CV40 API-RG-1-CV50 API-RG-1-BT50 API-RG-1-BT40 API-RG-1-DIN-69871
BX-152-R	BX152-R-SET	●		1	0.091		3.826	0.876	0.505	3.644	2.256	Yes	
BX-153	BX153-SET	●		2	0.077		4.046	0.554	0.270	3.892	3.092	-	
BX-153-R	BX153-R-SET	●		1	0.110		4.486	0.936	0.535	4.266	2.834	Yes	
BX-154	BX154-SET	●		2	0.083		4.685	0.606	0.300	4.519	3.369	-	
BX-154-R	BX154-R-SET	●		1	0.112		5.116	0.971	0.570	4.892	3.398	Yes	
BX-155	BX155-SET	●	4	2	0.100	-	5.930	0.698	0.330	5.730	4.734	-	API-RG-2-CV50 API-RG-2-BT50 API-RG-2-DIN-69871
BX-155-R	BX155-R-SET	●		1	0.223		6.366	1.076	0.595	5.920	4.660	Yes	
BX-156	BX156-SET	●	4	2	0.132	-	9.521	0.921	0.440	9.257	7.943	-	API-RG-4-CV50 API-RG-4-BT50 API-RG-4-DIN-69871
BX-156-R	BX156-R-SET	●		1	0.166		9.956	1.306	0.710	9.624	7.676	Yes	
BX-169	BX169-SET	●	4	2	0.081	-	6.955	0.666	0.380	6.793	5.785	-	API-RG-2-CV50 API-RG-2-BT50 API-RG-2-DIN-69871
R-16	R16-SET	●	4	2	0.026	2.000	-	0.344	0.250	2.292	1.708	-	API-RG-3-CV40 API-RG-3-CV50 API-RG-3-BT50 API-RG-3-DIN-69871
R-18	R18-SET	●				2.375				2.667	2.083		
R-20	R20-SET	●				2.688				2.980	2.396		
R-23	R23-SET	●	4	2	0.046	3.250	-	0.469	0.310	3.627	2.873	-	API-RG-1-CV40 API-RG-1-CV50 API-RG-1-BT50 API-RG-1-BT40 API-RG-1-DIN-69871
R-23-R	R23-R-SET	●		1	0.081	3.300		0.856	0.575	3.994	2.606	Yes	
R-24	R24-SET	●		2	0.046	3.750		0.469	0.310	4.127	3.373	-	
R-24-R	R24-R-SET	●		1	0.077	3.800		0.871	0.590	4.517	3.083	Yes	
R-26	R26-SET	●		2	0.046	4.000		0.469	0.310	4.377	3.623	-	
R-27	R27-SET	●				4.250				4.627	3.873		
R-31	R31-SET	●	4	2	0.044	4.875	-	0.469	0.310	5.256	4.494	-	API-RG-2-CV50 API-RG-2-BT50 API-RG-2-DIN-69871
R-31-R	R31-R-SET	●		1	0.072	4.920		0.856	0.575	5.632	4.208	Yes	
R-35	R35-SET	●		2	0.046	5.375		0.469	0.310	5.752	4.998	-	
R-35-R	R35-R-SET	●		1	0.081	5.420		0.856	0.575	6.114	4.726	Yes	
R-37	R37-SET	●		2	0.046	5.875		0.469	0.310	6.252	5.498	-	
R-39	R39-SET	●				6.375				6.752	5.998		
R-39-R	R39-R-SET	●		1	0.081	6.420		0.856	0.575	7.114	5.726	Yes	
R-41	R41-SET	●		2	0.046	7.125		0.469	0.310	7.502	6.748	-	
R-44	R44-SET	●				7.625				8.002	7.248		
R-44-R	R44-R-SET	●		1	0.071	7.670		0.856	0.575	8.384	6.956	Yes	
R-45	R45-SET	●		2	0.046	8.313		0.469	0.310	8.690	7.936	-	
R-46	R46-SET	●			0.048			0.531	0.380	8.748	7.878		
R-46-R	R46-R-SET	●		1	0.082	8.360		0.916	0.645	9.112	7.608	Yes	
1-13/16	1-13/16-SET	●	4	2	0.034	-	4.373	0.377	0.258	4.305	3.687	-	API-RG-1-CV40 API-RG-1-CV50 API-RG-1-BT50 API-RG-1-BT40 API-RG-1-DIN-69871
2-1/16-10K	2-1/16-10K-SET	●					4.623			4.555	3.937		
2-9/16-15K	2-9/16-15K-SET	□	4	2	0.034	-	5.873	0.377	0.258	5.805	5.187	-	API-RG-2-CV50 API-RG-2-BT50 API-RG-2-DIN-69871
3-1/16-10K	3-1/16-10K-SET	●					5.748			5.680	5.062		
4-1/16-10K	4-1/16-10K-SET	●					7.123			7.055	6.437		
5-1/8-10K	5-1/8-10K-SET	●					8.748			8.680	8.062		

Applicable Body Stock

② Body Part Number **Choose Body**	Stock	Shank	Body Spare Parts	
			Mounting Bolt	Set Screw
API-RG-1-CV40	●	CAT40	01-05	01-08
API-RG-1-CV50	●	CAT50		
API-RG-1-BT50	●	BT50		
API-RG-1-BT40	□	BT40		
API-RG-1-DIN-69871	□	DIN69871		
API-RG-2-CV50	●	CAT50	01-05	01-08
API-RG-2-BT50	●	BT50		
API-RG-2-DIN-69871	□	DIN69871		
API-RG-3-CV40	●	CAT40	01-06	01-09
API-RG-3-CV50	●	CAT50		
API-RG-3-BT50	□	BT50		
API-RG-3-DIN-69871	□	DIN69871		
API-RG-4-CV50	●	CAT50	01-07	01-10
API-RG-4-BT50	□	BT50		
API-RG-4-DIN-69871	□	DIN69871		

Note

The OD and ID dimensions are to set the cut diameter of a given cartridge set using a presetter. The dimensions are the cut diameter of the tool at the depth of the ring groove. By setting zero at the nose radius then moving the presetter to the depth of the API groove the OD and ID can be preset to the dimensions shown.

See illustration on page ➡ **M244**

Cartridge Set Spare Parts & Applicable Inserts ➡ **M246**

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
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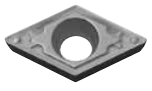
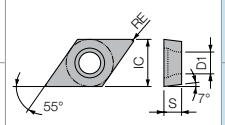
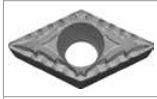
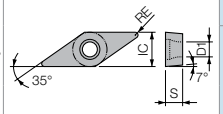
Cartridge Set Spare Parts & Applicable Inserts

Ring Specification	Cartridge Set Part Number	Spare Parts: Clamp Screw	Spare Parts: Wrench	③ Applicable Inserts **Choose Inserts**
BX-150	**BX150-SET**	SCR-02	T15	**DCMT3252**
BX-150-R	**BX150-R-SET**			**DCMT3253**
BX-151	**BX151-SET**			**DCMT3252**
BX-151-R	**BX151-R-SET**			**DCMT3253**
BX-152	**BX152-SET**			**DCMT3252**
BX-152-R	**BX152-R-SET**			**DCMT3253**
BX-153	**BX153-SET**			**DCMT3252**
BX-153-R	**BX153-R-SET**			**DCMT3253**
BX-154	**BX154-SET**			**DCMT3252**
BX-154-R	**BX154-R-SET**			**DCMT3253**
BX-155	**BX155-SET**			**DCMT3252**
BX-155-R	**BX155-R-SET**			**VCMT333**
BX-156	**BX156-SET**			**VCMT332**
BX-156-R	**BX156-R-SET**			**VCMT333**
BX-169	**BX169-SET**			**VCMT332**
R-16	**R16-SET**	SCR-01	T7	**VCMT222**
R-18	**R18-SET**			
R-20	**R20-SET**			
R-23	**R23-SET**	SCR-02	T15	**DCMT3252**
R-23-R	**R23-R-SET**			**VCMT333**
R-24	**R24-SET**			**DCMT3252**
R-24-R	**R24-R-SET**			**VCMT333**

Ring Specification	Cartridge Set Part Number	Spare Parts: Clamp Screw	Spare Parts: Wrench	③ Applicable Inserts **Choose Inserts**
R-26	**R26-SET**	SCR-02	T15	**DCMT3252**
R-27	**R27-SET**			
R-31	**R31-SET**			
R-31-R	**R31-R-SET**			**VCMT333**
R-35	**R35-SET**			**DCMT3252**
R-35-R	**R35-R-SET**			**VCMT333**
R-37	**R37-SET**			**DCMT3252**
R-39	**R39-SET**			
R-39-R	**R39-R-SET**			**VCMT333**
R-41	**R41-SET**			**DCMT3252**
R-44	**R44-SET**			
R-44-R	**R44-R-SET**			**VCMT333**
R-45	**R45-SET**			**DCMT3252**
R-46	**R46-SET**			**VCMT333**
R-46-R	**R46-R-SET**			
1-13/16	**1-13/16-SET**	SCR-01	T7	**VCMT222**
2-1/16-10K	**2-1/16-10K-SET**			
2-9/16-15K	**2-9/16-15K-SET**			
3-1/16-10K	**3-1/16-10K-SET**			
4-1/16-10K	**4-1/16-10K-SET**			
5-1/8-10K	**5-1/8-10K-SET**			

Applicable Inserts (Inch Size)

Insert	ANSI Part Number	ISO Part Number	Dimensions (in) IC	S	D1	RE	Insert Grades: CVD Coated Carbide CA525	CA5525	CA6525	MEGACOAT Coated Carbide PR1225	PR1425	PVD Coated Carbide PR660
 	**DCMT 3252HQ**	**DCMT 11T308HQ**	3/8	5/32	0.173	1/32	●	●	●		△	△
	**DCMT 3253CQ**	**DCMT 11T312CQ**	3/8	5/32	0.173	3/64		●	●			●
	**VCMT 222HQ**	**VCMT 110308HQ**	1/4	1/8	0.110	1/32				●		
	VCMT 332HQ	**VCMT 160408HQ**	3/8	3/16	0.173	1/32	●	●	●			●
	333HQ	**160412HQ**	3/8	3/16	0.173	3/64				●		

Sample CNC Program for the API Ring Groover

Sample is shown without cutter comp.
N10 (Incremental Program)
N20 G00 X (As required) Y (As required) Z.100 M03 S (As required)
N30 G01 Z0.0 F100
N40 G91 -Y (Offset) Z-.100 F (As required)
N50 G03 J (Offset) Z-.100 F (As required)
N60 G03 J (Offset) Z-.100
Continue to Depth
Last Pass
N90 G03 J (Offset) Z0.00

Use 0.03 Depth in Z for Inconel and 0.04 Depth in Z for Steel

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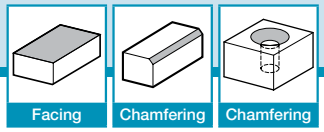
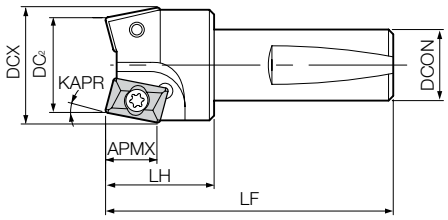


CM (General Purpose) / CM-AL (For Aluminum Cutting)



Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (in)							Spare Parts		Applicable Inserts M29
				DCX	DC_2	DCON	LF	LH	APMX	KAPR	Clamp Screw	Wrench	
CM	0563-15-09	●	2	0.741	0.563	0.500	2.780	1.000	0.340	15.0°	SCR-04	T7	XPMT090208
	0563-20-09	●		0.795					0.330	20.0°			
	0563-25-09	●		0.849					0.310	25.0°			
	0563-30-09	●		0.901	0.563	0.625	2.910	1.000	0.300	30.0°	SCR-04	T7	
	0563-35-09	●		0.951					0.280	35.0°			
	0563-45-09	●		1.041	0.563	0.625	2.910	1.000	0.240	45.0°	SCR-01	T7	
	0563-60-09	●		1.165					0.160	60.0°			
	0563-75-09	●		1.217					0.080	75.0°			
CM	1000-03	●	2	1.062	1.000	0.750	3.150	1.250	0.589	3.0°	SCR-16	T10	XPMT15T3...
	1000-05	●		1.104					0.586	5.0°			
	1000-10	●		1.206					0.577	10.0°			
	1000-15	●		1.308					0.564	15.0°			
	1000-20	●		1.408	1.000	0.750	3.150	1.250	0.547	20.0°	SCR-30	T10	
	1000-25	●		1.504					0.526	25.0°			
	1000-30	●		1.596					0.501	30.0°			
	1000-35	●		1.686					0.472	35.0°			
	1000-37.5	●		1.744	1.000	0.750	3.150	1.250	0.456	37.5°	SCR-30	T10	
	1000-41	●		1.786					0.433	41.0°			
	1000-45	●		1.800					0.400	45.0°			
	1000-50	●		1.908					0.376	50.0°			
	1000-55	●		2.014					0.327	55.0°			
	1000-60	●		2.042					0.284	60.0°			
	1000-70	●		2.094					0.193	70.0°			
	1000-75	●		2.168					0.146	75.0°			
CM	1000-15-AL	●	2	1.316	1.000	0.750	3.250	1.350	0.613	15.0°	SCR-02	T15	APET1604...
	1000-20-AL	●		1.416					0.595	20.0°			
	1000-30-AL	●		1.608					0.544	30.0°			
	0800-45-AL	●		1.66	0.800	0.750	3.250	1.350	0.440	45.0°	SCR-02	T15	
	0800-60-AL	●		1.856					0.308	60.0°			
	0690-75-AL	●		1.872	0.690	0.750	3.250	1.350	0.158	75.0°	SCR-02	T15	

Recommended Cutting Conditions (EM, EM-LE, FM, FM-AL, EM-AL)

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm)									
		Cermet		MEGACOAT NANO			CVD Coated Carbide	PVD Coated Carbide			Carbide
		TN100M	TC60	PR1535	PR1525	PR1510	CA6535	PR930	PR905	PR830	KW10
Low Carbon Steel	0.003~0.006	☆ 800~1400	★ 800~1400	★ 400~800	★ 400~800	-	-	☆ 350~750	-	-	-
Carbon Steel	0.003~0.006	☆ 600~1200	★ 600~1200	★ 300~700	★ 300~700	-	-	☆ 250~650	-	-	-
Mold Steel	0.003~0.006	☆ 400~700	★ 400~700	★ 250~600	★ 250~600	-	-	☆ 250~600	-	-	-
Stainless Steel	0.002~0.006	☆ 300~800	☆ 300~800	★ 300~600	☆ 300~600	-	★ 550~950	☆ 300~500	-	☆ 300~800	-
Cast Iron	0.003~0.008	☆ 400~1200	★ 400~1200	-	-	★ 400~800	-	-	★ 400~800	-	☆ 300~500
Non-ferrous Metals	0.005~0.007	☆ 1500~1800	☆ 1500~1800	-	-	-	-	-	-	-	★ 2000~4000
Heat-resistant Alloy	0.002~0.005	-	-	☆ 70~160	-	-	★ 70~160	-	-	-	-
Titanium Alloy	0.002~0.005	-	-	★ 130~260	-	☆ 100~230	-	-	-	-	-

* Apply sufficient amount of coolant

★: 1st Recommendation ☆: 2nd Recommendation

● : Standard Item △ : Phaseout Item (will be removed from next catalog)
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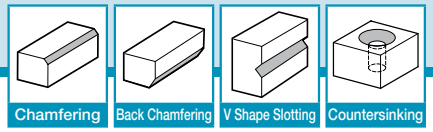
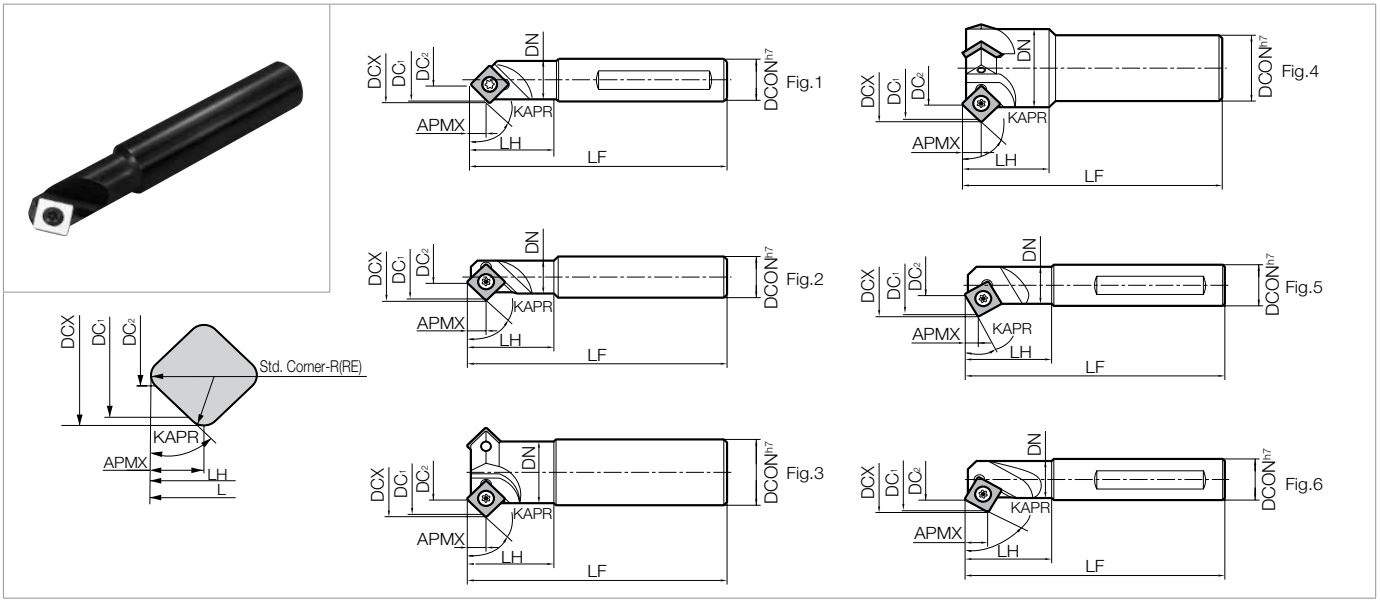


MCSE



Toolholder Dimensions

Part Number	Stock	No. of Inserts	Dimensions (mm)								Std. Corner-R (RE)	Angle (°)	Rake Angle (°)		Drawing	Spare Parts	
			DCX	DC_1	DC_2	DCON	DN	LF	LH	APMX		KAPR	A.R.	R.R.		Clamp Screw	Wrench
MCSE 104	●	1	16.0	15	4	16	15	85	30	6.5	0.4	45°	0°	-4.5°	Fig.1	SB-3060TR	DT-10
106	●	1	22.0	21	6	20	16	120	40	8.6	0.8	45°	0°	-1.0°	Fig.2	SB-5090TR	LTW-20
115	●	1	31.0	30	15	20	18	120	40	8.6				+5.0°			
227	●	2	43.0	42	27	32	30	120	40	8.6	0.8	45°	0°	+8.0°	Fig.3	SB-5090TR	LTW-20
336	●	3	52.0	51	36	32	38	120	40	8.6	0.8	45°	0°	+10.0°	Fig.4	SB-5090TR	LTW-20
MCSE 104-30D	●	1	19.0	18	4	16	15	85	30	4.7	0.4	30°	0°	-4.0°	Fig.5	SB-3060TR	DT-10
108-30D	●	1	28.0	27	8	20	19	110	40	6.3	0.8	30°	0°	-2.5°	Fig.5	SB-5090TR	LTW-20
110-30D	●	1	30.0	28	10	20	18	120	40	6.3				0.0°			
MCSE 108-60D	●	1	19.5	19	8	20	19	110	40	10.0	0.8	60°	0°	-3.5°	Fig.6	SB-5070TR	LTW-20
120-60D	●	1	31.0	30	20	20	18	120	40	10.0				0.0°	Fig.6	SB-5090TR	LTW-20

Recommended Cutting Conditions ➡ **M249**

Applicable Inserts (Metric Size)

Part Number	Applicable Inserts ➡ M26		
MCSE 104	SDKW 09T204TN	SDKW 09T204FN	SDMT 31.81C
104-30D			
MCSE 106	SEKW 421TN SEKW 422TN	SEKW 421FN SEKW 422FN	SEMT 421C
115			
227			
336			
MCSE 108-30D			
110-30D			
MCSE 108-60D			
120-60D			

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Recommended Cutting Conditions

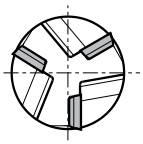
Workpiece Material	Feed Rate fz (ipt)		Recommended Insert Grades (Cutting Speed Vc: sfm)		
			Cermet	MEGACOAT	Carbide
	DC_2 (Ø4mm~Ø20mm)	DC_2 (Ø27mm~Ø36mm)	**TN100M**	**PR1225**	**KW10**
Carbon Steel	0.002~0.010	0.008~0.016	★ 330~590	★ 390~820	-
Alloy Steel	0.002~0.010	0.008~0.016	★ 330~590	★ 330~720	-
Mold Steel	0.002~0.010	0.008~0.016	★ 330~490	★ 260~590	-
Stainless Steel	0.002~0.008	0.004~0.012	☆ 330~590	★ 390~720	-
Cast Iron	0.004~0.012	0.012~0.020	-	-	☆ 260~490
Non-ferrous Metals	0.004~0.012	0.012~0.020	-	-	★ 330~980

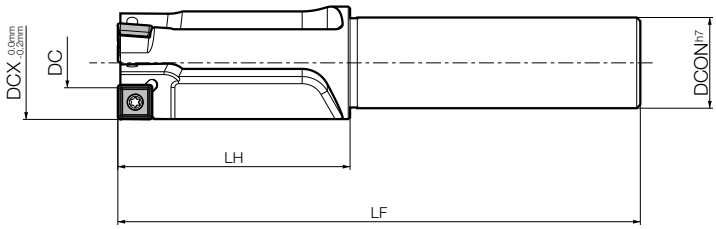
- Use down-cut machining.

★: 1st Recommendation ☆: 2nd Recommendation

Bolt Countersinking | Shouldering | Facing

MEF





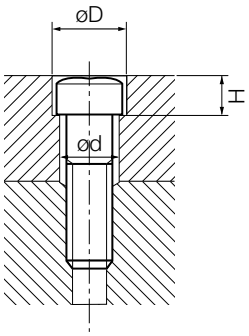
Toolholder Dimensions

Part Number		Stock	No. of Inserts	Dimensions (mm) DCX	DC	DCON	LF	LH	Std. Corner-R (RE)	Rake Angle (°) A.R.	R.R.	Objective Bolt Size	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Inserts (M28)
MEF	11-S10	●	1	11.0	3.0	10	103	23	0.4	+5°	-13°	M6	SB-2250TR	DT-7	SPMT060204E-Z SPMT060208E-Z
	14-S12	●		14.0	4.5	12	108	28				M8	SB-2260TR		
	17-S16	●	2	17.5	7.3	16	115	35	0.4	+5°	-13°	M10	SB-2260TR	DT-7	
	18-S16	●		18.0	7.7	16	117	38				-			
	20-S16	●	3	20.0	9.5	16	120	40	0.4	+5°	-12°	M12	SB-2260TR	DT-7	
	22-S20	●		22.0	11.4	20	124	44				-			
	23-S20	●		23.0	12.4	20	126	46				M14			
	24-S20	●		24.0	13.4	20	128	48				-			
	25-S20	●		25.0	14.4	20	130	50				-			
	26-S25	●	3	26.0	9.8	25	132	52	0.8	+5°	-13°	M16	SB-3080TR	DT-10	SPMT090304E-Z SPMT090308E-Z
	27-S25	●		27.0	10.6	25	134	54				-			
	28-S25	●		28.0	11.5	25	136	56				-			
	29-S25	●		29.0	12.6	25	138	58				M18			
	30-S25	●		30.0	13.5	25	140	60				-			
	32-S25	●		32.0	15.5	25	144	64				M20			
	35-S32	●		35.0	18.4	32	150	70				M22			
	39-S32	●	4	39.0	22.5	32	158	78	0.8	+5°	-13°	M24	SB-3080TR	DT-10	
	43-S32	●	4	43.0	26.2	32	166	86	0.8	+5°	-12°	M27	SB-3080TR	DT-10	
	48-S32	●		48.0	31.3	32	176	96				M30			

- Although Corner-R(RE) pertains to MEF11-S10, DC = 3.0mm.

Recommended Cutting Conditions M251

Bolt Counter Sink (Hexagon Socket Head Cap Screw)



Nominal Screw Size	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
øD (mm)	11.0	14.0	17.5	20.0	23.0	26.0	29.0	32.0	35.0	39.0	43.0	48.0
H (mm)	6.5	8.6	10.8	13.0	15.2	17.5	19.5	21.5	23.5	25.5	29.0	32.0
ød (mm)	6.6	9.0	11.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	30.0	33.0
Applicable End Mill	MEF11	MEF14	MEF17	MEF20	MEF23	MEF26	MEF29	MEF32	MEF35	MEF39	MEF43	MEF48

Inch Size Counterbores and Countersinks Available on Page K116~K117

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Recommended Cutting Conditions

Workpiece Material	fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm)		
		MEGACOAT		Carbide
		PR1225	PR1210	KW10
Carbon Steel	0.004~0.006	★ 390~720	-	-
Alloy Steel	0.004~0.006	★ 390~720	-	-
Mold Steel	0.002~0.004	★ 330~590	-	-
Stainless Steel	0.002~0.004	★ 260~590	-	-
Cast Iron	0.004~0.008	-	★ 330~720	☆ 260~390
Non-ferrous Metals	0.004~0.008	-	-	★ 330~980

★: 1st Recommendation ☆: 2nd Recommendation

Points at Bolt Counter Sink Milling

① Carbon Steel

Increase the feed rate to fz = 0.004~0.006 ipt for preventing long chips at low feed rates.
Chip control is good when setting Vc = 260 sfm for MEF11~MEF25, and Vc = 390 sfm for MEF26~MEF48.

Part Number	Cutting Speed Vc (sfm)	fz (ipt)
MEF11~MEF25	260	0.004~0.006
MEF26~MEF48	390	0.004~0.006

② Sticky Materials

Step feed is recommended for good chip control
Increase the feed rate to fz = 0.004~0.006 ipt for preventing long chips at low feed rate fz = 0.002 ipt.
Use cover to prevent accidents or injury by thick chips at higher feed rates.

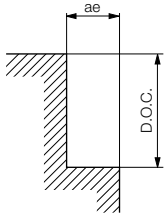
Part Number	Cutting Speed Vc (sfm)	fz (ipt)	Step Feed (inch)
MEF11~MEF48	260~490	0.004~0.006	0.020~0.059

③ Stainless Steel

Use a lower Cutting Speed. High Cutting Speeds cause chattering.

Cutting Performance when Shouldering

MEF Bolt Countersink End Mill is also recommended for shouldering.



Vc = 260~390 sfm
1055
DRY
Overhang Length:
Same as LH in the dimension table

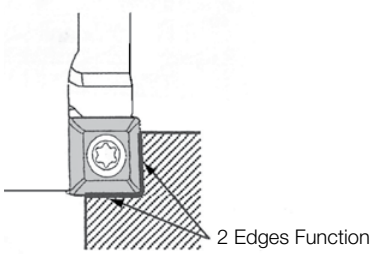


Fig.1

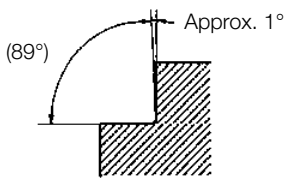
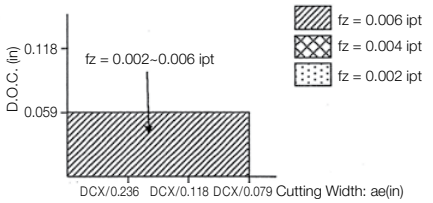
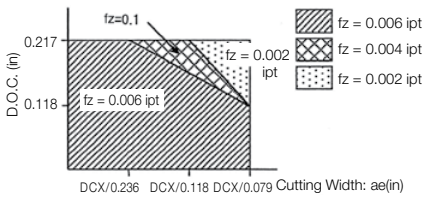
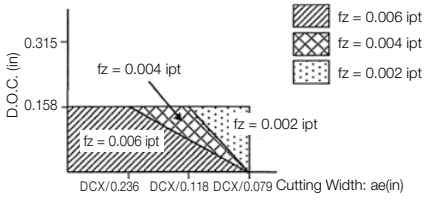
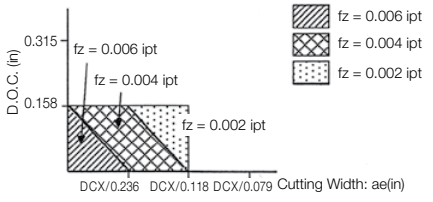


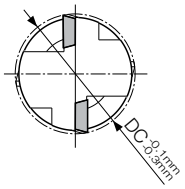
Fig.2

- When shouldering, both side edge and bottom edges function.
  Both edges wear at the same time depending on D.O.C..
  The insert uses 2 edges instead of 4.
  (Ref. to Fig.1)
- MEF type's side edge is designed to have a slight clearance for the countersink milling.
  Therefore, worked side wall is approx. 1° inclined against the vertical face.
  (Ref. to Fig.2)

Part Number	Cutting Range
MEF11-S12 MEF14-S12 MEF17-S16 MEF18-S16	
MEF20-S16 MEF22-S20 ~ MEF25-S20	
MEF26-S25 ~ MEF32-S25 MEF35-S32	
MEF39-S32 MEF43-S32 MEF48-S32	

T-Slotting | Back Side Milling

METS



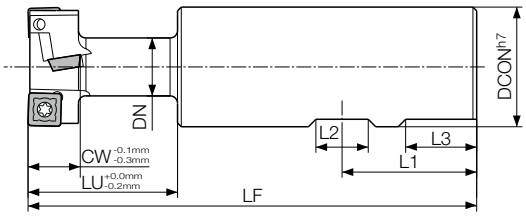
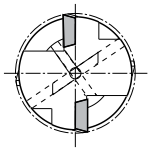


Fig.1



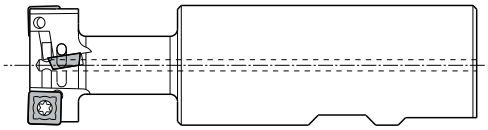


Fig.2

Toolholder Dimensions

Part Number	Stock	No. of Inserts	No. of Flutes	Dimensions (mm)									Rake Angle (°)		Drawing	Spare Parts		Applicable Inserts ➡ M26
				DC	DCON	DN	CW	LF	LU	L1	L2	L3	A.R.	R.R.		Clamp Screw	Wrench	
METS 21-S25	●	2	1	21	25	10.5	9	109	29	32	12	17	+9°	-10°	Fig.1	SB-2560TR	DT-8	SDMT221E-K
25-S25	●	4	2	25		12.5	11	112	32									
32-S32	●	4	2	32	32	15.5	14	120	38	36	14	19	+9°	-10°	Fig.1	SB-3060TR	DT-10	SDMT080308E-K
40-S32	●	4	2	40	32	20.5	18	130	50	36	14	19	+9°	-12°	Fig.1	SB-4085TR	DT-15	SDMT432E-K
50-S32	●			50		26.5	22	140	60									
METS 21-S25-H	●	2	1	21	25	10.5	9	109	29	32	12	17	+9°	-10°	Fig.2	SB-2560TR	DT-8	SDMT221E-K
25-S25-H	●	4	2	25		12.5	11	112	32									
32-S32-H	●	4	2	32	32	15.5	14	120	38	36	14	19	+9°	-10°	Fig.2	SB-3060TR	DT-10	SDMT080308E-K
40-S32-H	●	4	2	40	32	20.5	18	130	50	36	14	19	+9°	-12°	Fig.2	SB-4085TR	DT-15	SDMT432E-K
50-S32-H	●			50		26.5	22	140	60									

- METS····H type has air holes

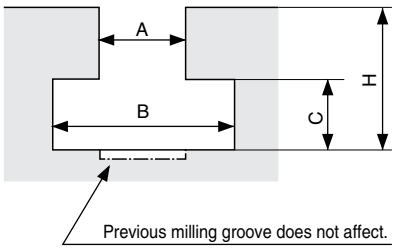
Recommended Cutting Conditions ➡ **M253**

Applicable Inserts

Part Number	Applicable Inserts ➡ M26
METS 21-S25	SDMT 221E-K
21-S25-H	
25-S25	
25-S25-H	
METS 32-S32	SDMT 080308E-K
32-S32-H	
METS 40-S32	SDMT 432E-K
40-S32-H	
50-S32	
50-S32-H	

JIS Standard of T-Slot (Extracted from B0952) (Unit: mm)

A (Nominal Size)	B	C	H	
			Max.	Min.
12	19^{+2}_{0}	8^{+1}_{0}	25	20
14	23^{+2}_{0}	9^{+2}_{0}	28	23
18	30^{+2}_{0}	12^{+2}_{0}	36	30
22	37^{+3}_{0}	16^{+2}_{0}	45	38
28	46^{+4}_{0}	20^{+2}_{0}	56	48



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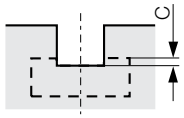
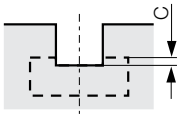
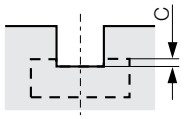
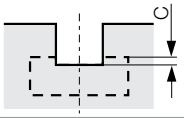
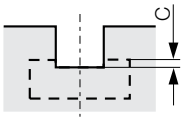
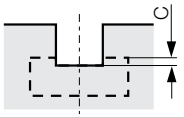
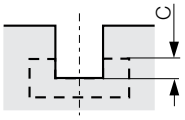
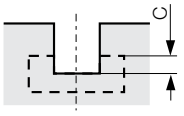
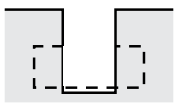
Recommended Cutting Conditions

Workpiece Material	fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm)		
		MEGACOAT		Carbide
		PR1230	**PR1210**	**KW10**
Carbon Steel	0.004~0.006	★ 330~660	-	-
Alloy Steel	0.003~0.005	★ 330~660	-	-
Mold Steel	0.002~0.004	★ 260~490	-	-
Cast Iron	0.004~0.006	-	★ 330~660	☆ 260~390
Non-ferrous Metals	0.004~0.006	-	-	★ 330~980

★: 1st Recommendation ☆: 2nd Recommendation

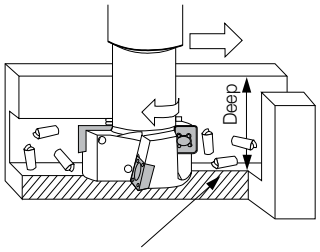
Part Number (T-Slot Nominal Size)	Steel			Cast Iron		
	Groove Shape at Pre-process	T-Slotting Conditions	Conditions to Prevent Chattering	Groove Shape at Pre-process	T-Slotting Conditions	Conditions to Prevent Chattering
METS21-S25(-H) (Nominal Size 12)	C = 0.039~0.118" 	Vc = 390 fz = 0.004 (n = 1,820) (Vf = 7.165)	Vc = 200 fz = 0.006 (n = 920) (Vf = 5.394)	C = Over 0.039" 	Vc = 390 fz = 0.005 (n = 1,820) (Vf = 8.583)	Vc = 260 fz = 0.006 (n = 1,210) (Vf = 7.165)
METS25-S25(-H) (Nominal Size 14)	C = 0.039~0.118" 	Vc = 390 fz = 0.004 (n = 1,530) (Vf = 12.047)	Vc = 200 fz = 0.006 (n = 760) (Vf = 8.976)	C = Over 0.039" 	Vc = 390 fz = 0.005 (n = 1,530) (Vf = 14.449)	Vc = 260 fz = 0.006 (n = 1,020) (Vf = 12.047)
METS32-S32(-H) (Nominal Size 18)	C = 0.039~0.118" 	Vc = 330 fz = 0.004 (n = 1,000) (Vf = 7.874)	Vc = 200 fz = 0.006 (n = 600) (Vf = 7.087)	C = Over 0.039" 	Vc = 390 fz = 0.005 (n = 1,190) (Vf = 11.260)	Vc = 260 fz = 0.006 (n = 800) (Vf = 9.449)
METS40-S32(-H) (Nominal Size 22)	C = 0.354" 	Vc = 260 fz = 0.006 Chattering is likely when set to shallower than C = 0.354".	Vc = 200 fz = 0.006 (n = 480) (Vf = 5.669)	C = Over 0.354" 	Vc = 390 fz = 0.006 (n = 960) (Vf = 8.976)	Vc = 260 fz = 0.006 (n = 640) (Vf = 7.559)
METS50-S32(-H) (Nominal Size 28)	Not recommended for steel because of chattering				Vc = 390 fz = 0.006 (n = 760) (Vf = 8.976)	Vc = 260 fz = 0.006 (n = 510) (Vf = 6.024)

[Cutting Speed : Vc (sfm), Spindle Revolution : n (min^{-1}), Feed Rate fz (ipt), Table Feed Vf (ipm)]

- Chattering is likely when fz is less than fz = 0.004 ipt. Keep feed rate between fz = 0.004~0.006 ipt.
  For cast iron machining, the bigger the C-dimension becomes, the less chattering occurs.

How to Prevent Damaging Chips when Steel Machining

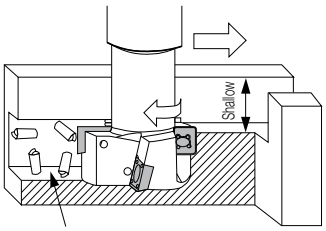
Before Improvement (Deep Groove at Pre-Process)



Chips stay in the pre-process groove.

Improvement of chip biting

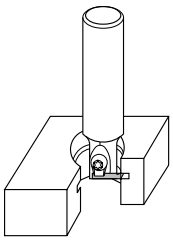
After Improvement (Shallow Groove at Pre-Process)



Chips are evacuated backward and chances of damaging chips are less.

Make pre-process groove shallower to prevent the tool from becoming damaged from chips.
Use compressed air to aid in chip evacuation.

MGI



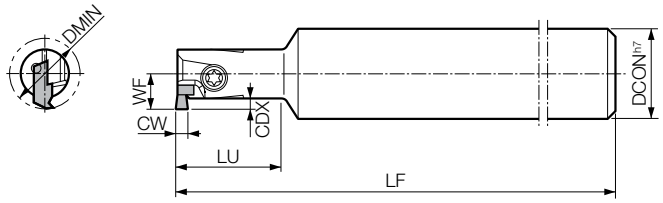


Fig.1

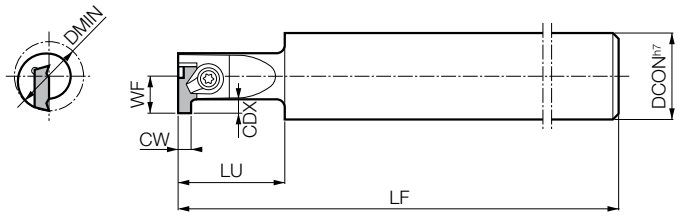


Fig.2

Toolholder Dimensions

Part Number	Stock	Min. Bore Dia.	Dimensions (mm)					Edge Width	Drawing	Spare Parts				Applicable Inserts
										Clamp Set		Clamp Screw	Wrench	
		DMIN	DCON	LF	LU	WF	CDX	CW		5F	6F		FT / LW	M255
MGI 1420-1SS	●	14	20	100	20	6.8	2.2	1.0~3.0	Fig.1	-	-	SB-4065TR	FT-15	GVR...-020SS
1620-1S	●	16	20	110	25	7.8	2.2	1.0~3.4	Fig.1	-	-	SB-4085TR	FT-15	GVR...-020S
2020-1A	●	20	20	110	30	9.8	2.2	1.0~3.4	Fig.2	CPS-5F	-	-	FT-15	GVR...-020A GVR...-...AR
2220-1B	●	22	20	110	30	11.0	2.8	1.45~4.0	Fig.2	CPS-5F	-	-	FT-15	GVR...-020B GVR...-...BR
3225-1C	●	32	25	120	35	16.0	5.5 (4.5)	2.8~4.0	Fig.2	-	CPS-6F	-	LW-3	GVR...-020C
4025-1C	△	40	25	120	40	20.0								

- Dimension CDX shows available grooving depth.
- **GVR280-020C**, **GVR300-020C** inserts are available for groove depths up to 4.5mm.
- **GVR430-020C** ~ **GVR500-020C** inserts can be installed into **MGI3225-1C** and **MGI4025-1C** holders, but are not recommended for steel machining because of toolholder's rigidity.

Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm)					
		Cermet			MEGA COAT	PVD Coated Carbide	Carbide
		TN90	**TC40**	**TC60**	**PR1225**	**PR930**	**KW10**
Carbon Steel	0.002~0.006	★ 390~660	☆ 390~660	☆ 330~590	★ 260~490	☆ 260~490	-
Alloy Steel	0.002~0.006	★ 390~660	☆ 390~660	☆ 330~590	★ 260~490	☆ 260~490	-
Mold Steel	0.001~0.005	★ 330~590	☆ 330~590	☆ 260~490	★ 200~430	☆ 200~430	-
Stainless Steel	0.001~0.005	☆ 330~590	☆ 330~590	★ 260~490	★ 200~430	☆ 200~430	-
Cast Iron	0.002~0.008	★ 330~490	☆ 330~490	-	-	-	★ 260~490
Non-ferrous Metals	0.002~0.008	-	-	-	-	-	★ 330~980

- Use down-cut machining.

★: 1st Recommendation ☆: 2nd Recommendation

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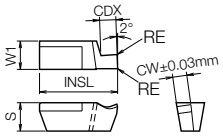
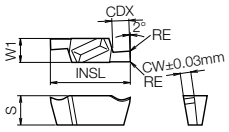
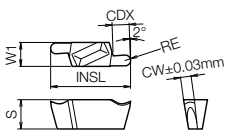
Applicable Inserts (Metric Size)

Insert (Right-handed Insert Shown)		Part Number	Previous Part Number	Dimensions (mm)						Insert Grades					
										Cermet			MEGA COAT	PVD	Carbide
				CW	CDX	RE	W1	INSL	S	TN90	TC40	TC60	PR1225	PR930	KW10
1-Edge		GVR 100-020SS	GVR 100SS	1.00	2.3	0.2	3.6	9	3.0	△		●	●	●	●
		125-020SS	125SS	1.25						△		●	●	●	●
		145-020SS	145SS	1.45						△		●	●	●	●
		200-020SS	200SS	2.00						△		●	●	●	●
		250-020SS	250SS	2.50								●	●	●	●
		300-020SS	300SS	3.00						△		●	●	●	●
		GVR 100-020S	GVR 100S	1.00	2.3	0.2	4.0	11	4.0	△	●	●	●	●	●
		125-020S	125S	1.25						△	●	●	●	●	●
		145-020S	145S	1.45							●	●	●	●	●
		185-020S	185S	1.85							●	●	●	●	●
		200-020S	200S	2.00						△	●	●	●	●	●
		250-020S	250S	2.50							●	●	●	●	●
		340-020S	340S	3.40							●	●	●	●	●
2-Edge		GVR 100-020A	GVR 100A	1.00	2.3	0.2	4.0	12	5.0	△	●	●	●	●	●
		125-020A	125A	1.25						△	●	●	●	●	●
		145-020A	145A	1.45						△	●	●	●	●	●
		185-020A	185A	1.85						△	●	●	●	●	●
		200-020A	200A	2.00						△	●	●	●	●	●
		250-020A	250A	2.50						△	●	●	●	●	●
		300-020A	300A	3.00						△	●	●	●	●	●
		340-020A	340A	3.40							●	●	●	●	●
		GVR 145-020B	GVR 145B	1.45	2.8	0.2	4.5	15	5.5	△	●	●	●	●	●
		185-020B	185B	1.85						△	●	●	●	●	●
		200-020B	200B	2.00	3.2	0.2	4.5	15	5.5	△	●	●	●	●	●
		230-020B	230B	2.30						△	●	●	●	●	●
		250-020B	250B	2.50						△	●	●	●	●	●
		280-020B	280B	2.80							●	●	●	●	●
		300-020B	300B	3.00	4.2	0.2	4.5	15	5.5	△	●	●	●	●	●
		340-020B	340B	3.40							●	●	●	●	●
		400-020B	400B	4.00						△	●	●	●	●	●
		GVR 280-020C	GVR 280C	2.80	4.5	0.2	5.8	21	6.5	△	●	●	●	●	●
		300-020C	300C	3.00						△	●	●	●	●	●
		340-020C	340C	3.40	5.5	0.2	5.8	21	6.5	△	●	●	●	●	●
		400-020C	400C	4.00						△	●	●	●	●	●
		(430-020C)	(430C)	4.30	6.3	0.2	5.8	21	6.5	△	●	●	●	●	●
		(460-020C)	(460C)	4.60							●		●	●	●
		(500-020C)	(500C)	5.00							●	●	●	●	●
2-Edge Full-R		GVR 200-100AR	GVR 100AR	2.00	2.3	1.00	4.0	12	5.0			●	●	●	●
		250-125AR	125AR	2.50	2.3	1.25						●	●	●	●
		300-150AR	150AR	3.00	2.3	1.50						●	●	●	●
		GVR 200-100BR	GVR 100BR	2.00	3.2	1.00	4.5	15	5.5	△		●	●	●	●
		300-150BR	150BR	3.00	4.2	1.50				△		●	●	●	●

- Only Right-hand insert is applicable.
- **GVR280-020C**, **GVR300-020C** inserts are available for groove depths up to 4.5mm.
- **GVR430-020C** ~ **GVR500-020C** inserts can be installed into **MGI3225-1C** and **MGI4025-1C** holders, but are not recommended for steel machining because of toolholder's rigidity.

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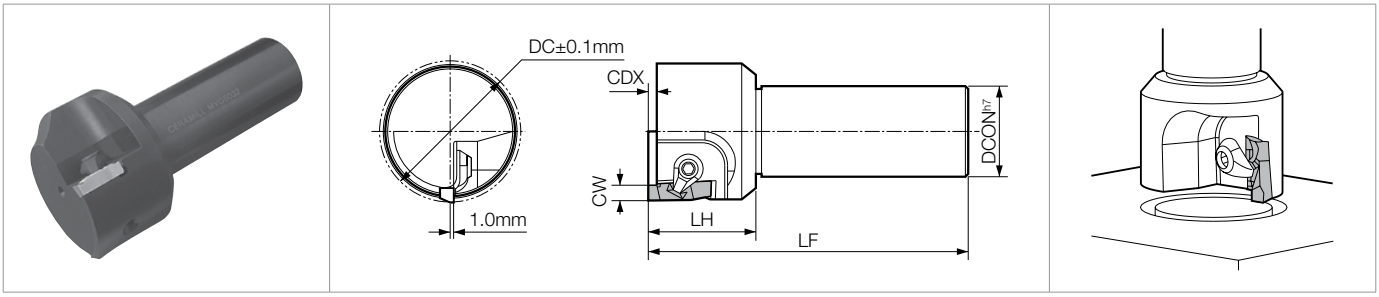
MVG

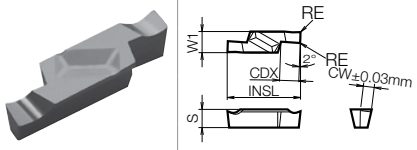


Toolholder Dimensions

Part Number		Stock	Dimensions (mm) DC	DCON	LF	LH	CDX	Edge Width CW	Spare Parts: Clamp Set	Spare Parts: Wrench
MVG	3032	●	30	32	120	40	5.2	4.00 ~ 4.90	CPS-6V	LW-3
	3532	●	35							
	4032	●	40							
	4532	●	45							
	5032	●	50							
	5532	●	55							
	6032	●	60							

- Dimension CDX shows available grooving depth.

Applicable Inserts

Insert (Right-handed Insert Shown)	Part Number	Previous Part Number	Dimensions (mm) CW	CDX	RE	W1	INSL	S	Insert Grades: Cermet TN90	Cermet TC40	Cermet TC60	MEGA COAT PR1225	PVD PR930	Carbide KW10
	GVFR 400-020B	GVFR 400B	4.00	5.3	0.2	5.8	20	5.0	△	●	●	●	●	●
	430-020B	430B	4.30							●	●	●	●	●
	460-020B	460B	4.60							●		●	●	●
	490-020B	490B	4.90							●	●	●	●	●

- **GVFR430B-020B** inserts are applicable for sealing groove of G-series
  For other ring grooving applications, **GVFR400B-020B** ~ **GVFR490B-020B** are applicable.
- Only Right-hand insert is applicable.

Recommended Cutting Conditions

Workpiece Material	Feed Rate fz (ipt)	Recommended Insert Grades (Cutting Speed Vc: sfm) Cermet TN90	Cermet TC40	Cermet TC60	MEGACOAT PR1225	PVD Coated Carbide PR930	Carbide KW10
Carbon Steel	0.002~0.006	-	★ 390~660	☆ 330~590	★ 260~560	☆ 260~490	-
Alloy Steel	0.002~0.006	-	★ 390~660	☆ 330~590	★ 260~560	☆ 260~490	-
Mold Steel	0.001~0.005	-	★ 330~590	☆ 260~490	★ 200~490	☆ 200~430	-
Stainless Steel	0.001~0.005	-	☆ 330~590	☆ 260~490	★ 200~490	☆ 200~430	-
Cast Iron	0.002~0.008	-	-	-	-	-	★ 260~490
Non-ferrous Metals	0.002~0.008	-	-	-	-	-	★ 330~980

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QUICK CHANGE TOOLING

N1 - N26

QUICK CHANGE SYSTEMS		**N2 - N22**
KPC-SERIES	Polygon Shank Holders	N2
HSK-T TOOLING	(ICTM Standard)	N12
KQC	Flower Petal Adapter	N21
CARTRIDGE		**N23 - N26**
LEVER LOCK	PS / PT	N24
TOP CLAMP	CT	N25
SCREW CLAMP	ST	N26
LEVER LOCK PARTS COMPATIBILITY		**R72**

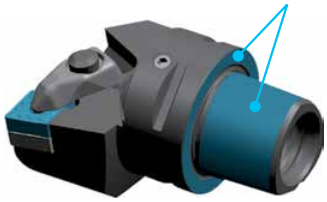
KPC-Series

Polygon Taper Shank Holders

Polygon taper shank with high rigidity and high precision

PSC Shank Tools

JIS B 6066-1 Dual contact between polygon taper shank and the main spindle face
ISO26623-1 Polygonal taper interface with flange contact surface



1 High Rigidity

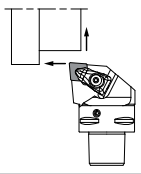
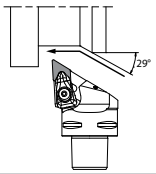
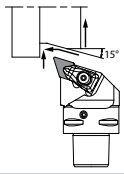
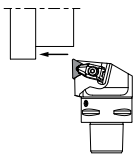
Polygon taper design and dual contact between the taper and the flange face for high rigidity

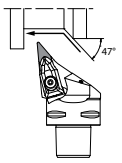
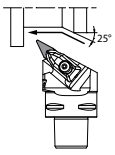
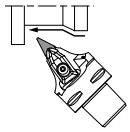
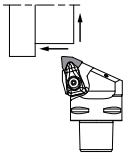
2 High Precision

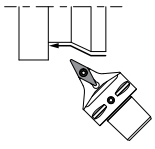
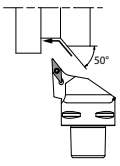
Locational accuracy within ±2µm

Distributes cutting forces evenly between 3 faces for enhanced rigidity and centering accuracy

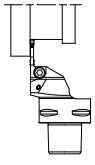
Turning

DCLN	DDJN	DDHN	DTGN
			

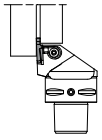
DVLN	DVPN	DVVN	DWLN
			

SVVB	SVJB
	

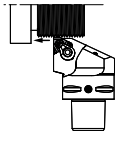
Grooving / Cut-Off

KGD


Shallow Grooving

KGBA


Threading

KTN


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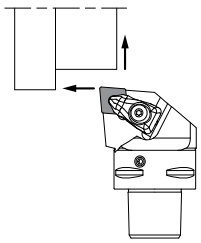
DCLN (External / Facing)



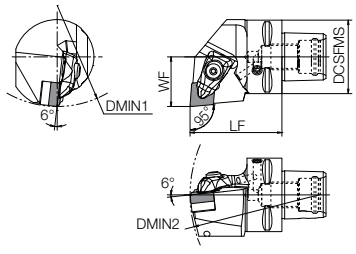


Fig.1

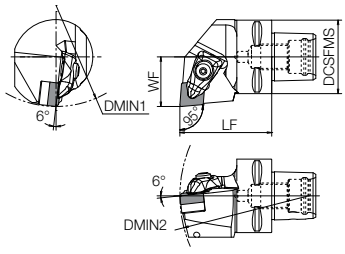


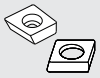
Fig.2

Right-hand Shown

Applicable Inserts	
CN□A CN□G CN□M	43..

Side Rake Angle	-6°
Angle of Inclination	-6°

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Drawing	Spare Parts					
											Clamp	Screw	Spring	Shim	Shim Screw	Wrench
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2								
KPC3-DCLN□22045-12A	●	●	Yes	32	45	22	60	121	0.8	Fig.1	CP-3D-S	CS-3D-TR	SP-3D	SP-441P *3(SP-441P-C)	M3X8	FT-15
KPC4-DCLN□27050-12A	●	●		40	50	27	110	140						DC-44 *3(DC-44-C)	SB-4085TR	
KPC5-DCLN□35060-12A	●	●		50	60	35	110	165								
KPC3-DCLN□22045-12S	●	●	No	32	45	22	60	121	0.8	Fig.2	CP-3D-S	CS-3D-TR	SP-3D	SP-441P *3(SP-441P-C)	M3X8	FT-15
KPC4-DCLN□27050-12S	●	●		40	50	27	110	140						DC-44 *3(DC-44-C)	SB-4085TR	
KPC5-DCLN□35060-12S	●	●		50	60	35	110	165								

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) greater than 3/64" (1.2mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
∗3 SX chipbreaker inserts require a different shim (sold separately)
∗4 Recommended tightening torque 3.9 Nm

Identification System (for External Holders)

KPC3 - D C L N R 22 045 12 A

Interface Size
KPC3 : PSC32 DCSFMS=32mm
KPC4 : PSC40 DCSFMS=40mm
KPC5 : PSC50 DCSFMS=50mm

Clamping System
D : Double Clamp
S : Screw Clamp

Insert Shape
C : 80° Diamond
D : 55° Diamond
T : 30° Triangle
V : 35° Diamond
W : 80° Trigon

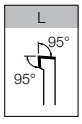
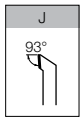
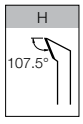
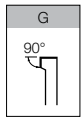
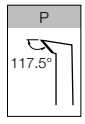
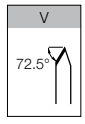
Insert Relief Angle
B : 5°
N : 0°

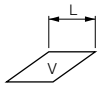
Hand of Tool
R : Right-hand
L : Left-hand
N : Neutral

Cutting Edge Offset
WF Dimension

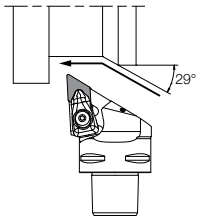
Toolholder Length (Length from Gauge Line)
LF Dimension

Coolant Hole
A : With
S : Without

Cutting Edge Angle					
L	J	H	G	P	V
					

Insert Size			
C	D	T	V
			

DDJN (External / Copying)



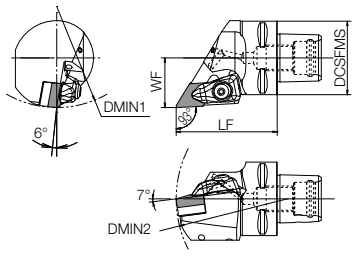


Fig.1

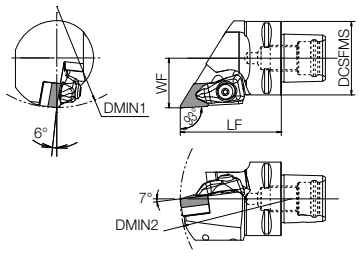


Fig.2

Right-hand Shown

Applicable Inserts	
DN□A DN□G DN□M DNMX	43.. (44..)

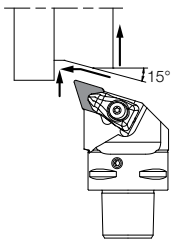
Side Rake Angle	-6°
Angle of Inclination	-7°

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Drawing	Spare Parts					
											Clamp	Screw	Spring	Shim	Shim Screw	Wrench
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2								
KPC3-DDJNR/L**22050-15A**	●	●		32	50	22	110	121								
KPC4-DDJNR/L**27055-15A**	●	●	Yes	40	55	27	110	145	0.8	Fig.1	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *3(DD-43)	SB-4085TR	FT-15
KPC5-DDJNR/L**35060-15A**	●	●		50	60	35	110	165								
KPC3-DDJNR/L**22050-15S**	●	●		32	50	22	110	121								
KPC4-DDJNR/L**27055-15S**	●	●	No	40	55	27	110	145	0.8	Fig.2	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *3(DD-43)	SB-4085TR	FT-15
KPC5-DDJNR/L**35060-15S**	●	●		50	60	35	110	165								

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) greater than 3/64" (1.2mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
∗3 Shims in parentheses ( ) must be purchased separately for thicker inserts
∗4 Recommended tightening torque 3.9 Nm

DDHN (External / Copying)



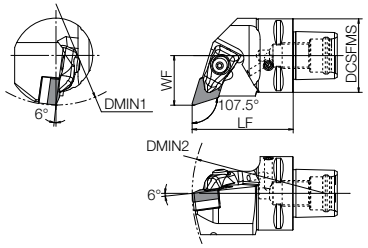


Fig.1

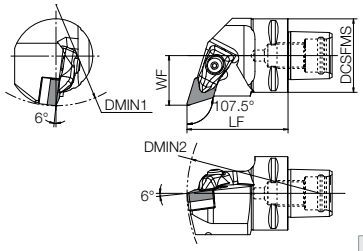


Fig.2

Right-hand Shown

Applicable Inserts	
DN□A DN□G DN□M	43.. (44..)

Side Rake Angle	-6°
Angle of Inclination	-6°

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Drawing	Spare Parts					
											Clamp	Screw	Spring	Shim	Shim Screw	Wrench
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2								
KPC3-DDHNR/L**22050-15A**	●	●		32	50	22	110	121								
KPC4-DDHNR/L**27055-15A**	●	●	Yes	40	55	27	110	145	0.8	Fig.1	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *3(DD-43)	SB-4085TR	FT-15
KPC5-DDHNR/L**35060-15A**	●	●		50	60	35	110	165								
KPC3-DDHNR/L**22050-15S**	●	●		32	50	22	110	121								
KPC4-DDHNR/L**27055-15S**	●	●	No	40	55	27	110	145	0.8	Fig.2	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *3(DD-43)	SB-4085TR	FT-15
KPC5-DDHNR/L**35060-15S**	●	●		50	60	35	110	165								

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) greater than 3/64" (1.2mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
∗3 Shims in parentheses ( ) must be purchased separately for thicker inserts
∗4 Recommended tightening torque 3.9 Nm

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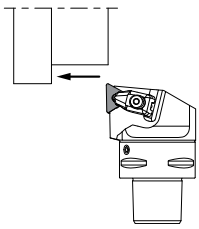
DTGN (External)



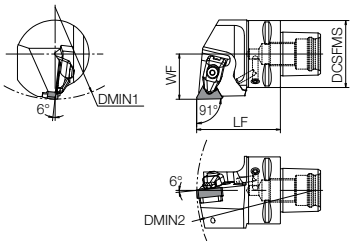


Fig.1

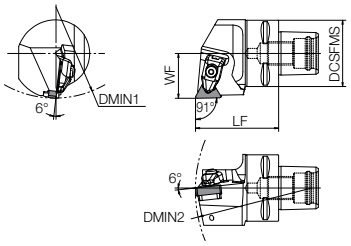


Fig.2

Right-hand Shown

Applicable Inserts	
TN□A TN□G TN□M TNMX	33..

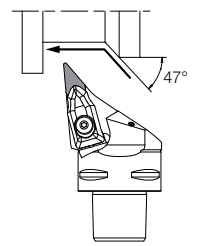
Side Rake Angle	-6°
Angle of Inclination	-6°

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Drawing	Spare Parts						
											Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (Sold Separately)
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2								For Clamp	For Shim
KPC3-DTGN□22040-16A	●	●	Yes	32	40	22	110	116	0.8	Fig.1	CP-2D	CS-2D	SP-2D	DT-32	SB-3080TR	LW-2.5	FT-10
KPC4-DTGN□27050-16A	●	●		40	50	27	110	140									
KPC5-DTGN□35060-16A	●	●		50	60	35	110	165									
KPC3-DTGN□22040-16S	●	●	No	32	40	22	110	116	0.8	Fig.2	CP-2D	CS-2D	SP-2D	DT-32	SB-3080TR	LW-2.5	FT-10
KPC4-DTGN□27050-16S	●	●		40	50	27	110	140									
KPC5-DTGN□35060-16S	●	●		50	60	35	110	165									

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) greater than 1/16" (1.6mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
∗3 Recommended tightening torque 3.9 Nm

DVLN (External / Copying)



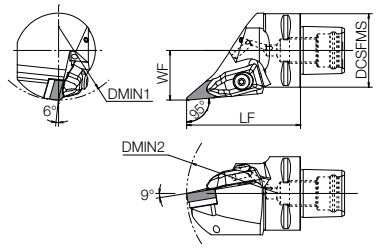


Fig.1

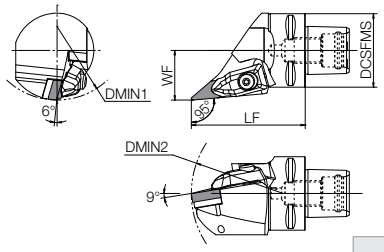


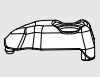
Fig.2

Right-hand Shown

Applicable Inserts	
VN□A VN□G VN□M	33..

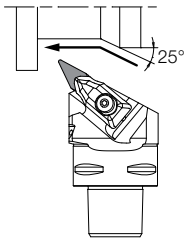
Side Rake Angle	-6°
Angle of Inclination	-9°

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Drawing	Spare Parts					
											Clamp	Screw	Spring	Shim	Shim Screw	Wrench
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2								
KPC3-DVLN□22058-16A	●	●	Yes	32	58	22	80	100	0.8	Fig.1	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVLN□27062-16A	●	●		40	62	27	80	100								
KPC5-DVLN□35065-16A	●	●		50	65	35	80	100								
KPC3-DVLN□22058-16S	●	●	No	32	58	22	80	100	0.8	Fig.2	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVLN□27062-16S	●	●		40	62	27	80	100								
KPC5-DVLN□35065-16S	●	●		50	65	35	80	100								

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) greater than 3/64" (1.2mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
∗3 Recommended tightening torque 3.9 Nm

DVPN (External / Facing / Copying / Undercutting)



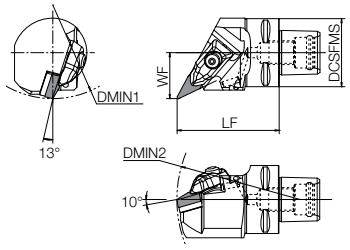


Fig.1

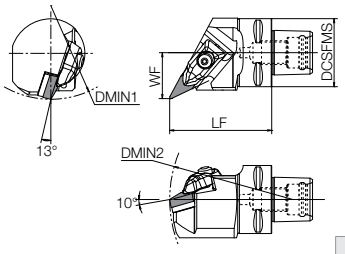


Fig.2

Right-hand Shown

Applicable Inserts	
VN□A VN□G VN□M	33..

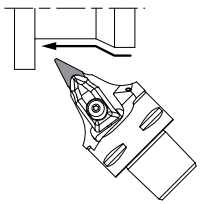
Side Rake Angle	-13°
Angle of Inclination	-10°

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Drawing	Spare Parts					
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC3-DVPN℄22055-16A	●	●	Yes	32	55	22	110	130	0.8	Fig.1	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVPN℄27060-16A	●	●		40	60	27	110	145								
KPC5-DVPN℄35065-16A	●	●		50	65	35	110	165								
KPC3-DVPN℄22055-16S	●	●	No	32	55	22	110	130	0.8	Fig.2	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVPN℄27060-16S	●	●		40	60	27	110	145								
KPC5-DVPN℄35065-16S	●	●		50	65	35	110	165								

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) greater than 3/64" (1.2mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
∗3 Recommended tightening torque 3.9 Nm

DVVN (External / Copying)



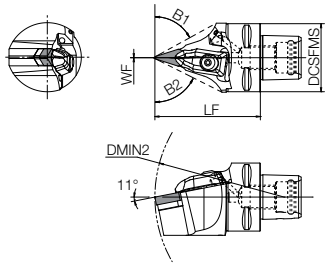


Fig.1

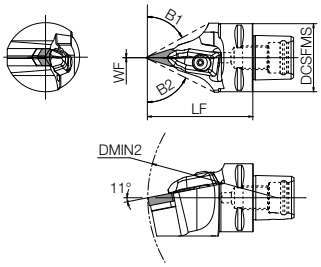


Fig.2

Applicable Inserts	
VN□A VN□G VN□M	33..

Back Rake Angle	-11°

Toolholder Dimensions

Part Number	Stock			Coolant Hole	Dimensions (mm)						Standard Corner-R (RE)	Drawing	Spare Parts					
	R	N	L		DCSFMS	LF	WF	B1*3 (°)	B2*3 (°)	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC4-DVVNN00062-16A		●		Yes	40	62	0	61	63	152	0.8	Fig.1	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC5-DVVNN00065-16A		●			50	65	0	59	59	170								
KPC3-DVVNN00058-16S		●		No	32	58	0	68	68	140	0.8	Fig.2	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVVNN00062-16S		●			40	62	0	61	63	152								
KPC5-DVVNN00065-16S		●			50	65	0	59	59	170								

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) greater than 3/64" (1.2mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
∗3 Angle B1 and B2 show the area of interference between the holder and the cutting edge

N QUICK CHANGE TOOLING

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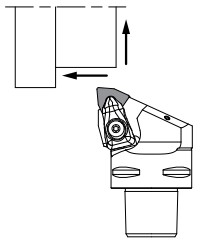
DWLN (External / Facing)



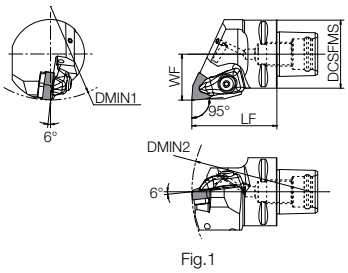


Fig.1

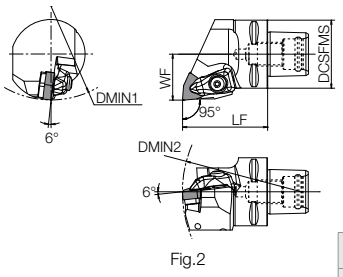


Fig.2

Right-hand Shown

Applicable Inserts	
WN□A WN□G WN□M	43..

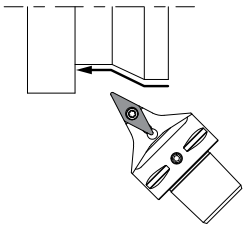
Side Rake Angle	-6°
Angle of Inclination	-6°

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Drawing	Spare Parts					
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC3-DWLNR/L**22047-08A**	●	●	Yes	32	47	22	110	121	0.8	Fig.1	CP-3D-S	CS-3D-TR	SP-3D	DW-42	SB-4085TR	FT-15
KPC4-DWLNR/L**27050-08A**	●	●		40	50	27	110	140								
KPC5-DWLNR/L**35060-08A**	●	●		50	60	35	110	165								
KPC3-DWLNR/L**22047-08S**	●	●	No	32	47	22	110	121	0.8	Fig.2	CP-3D-S	CS-3D-TR	SP-3D	DW-42	SB-4085TR	FT-15
KPC4-DWLNR/L**27050-08S**	●	●		40	50	27	110	140								
KPC5-DWLNR/L**35060-08S**	●	●		50	60	35	110	165								

∗1 Pressure Resistance : up to 1,015 psi
∗2 Recommended tightening torque 3.9 Nm

SVVB (External / Copying)



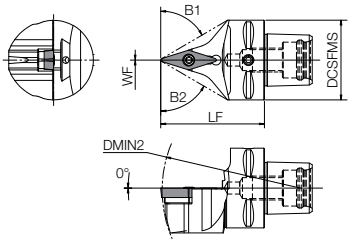


Fig.1

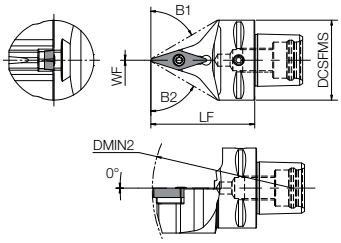


Fig.2

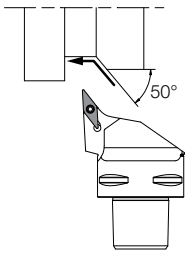
Applicable Inserts	
VB□□ VCGT	33..

Toolholder Dimensions

Part Number	Stock			Coolant Hole	Dimensions (mm)						Standard Corner-R (RE)	Drawing	Spare Parts				
	R	N	L		DCSFMS	LF	WF	B1*3 (°)	B2*3 (°)	DMIN2			Insert Screw	Wrench	Shim	Shim Screw	Wrench
KPC3-SVVBN00048-16A		●		Yes	32	48	0	62	62	116	0.8	Fig.1	SB-40125TRN	FT-15	SVN-32N *2(SVN-32S)	SS-4N	LW-4 For Shim
KPC4-SVVBN00052-16A		●			40	52	0	59	59	140							
KPC5-SVVBN00060-16A		●			50	60	0	56	56	165							
KPC3-SVVBN00048-16S		●		No	32	48	0	62	62	116	0.8	Fig.2					
KPC4-SVVBN00052-16S		●			40	52	0	59	59	140							
KPC5-SVVBN00060-16S		●			50	60	0	56	56	165							

∗1 Pressure Resistance : up to 1,015 psi
∗2 When using inserts with corner-R (RE) of 0.008" and 1/64" (0.2mm and 0.4mm), shim in parentheses is recommended (sold separately)
∗3 Angle B1 and B2 show the area of interference between the holder and the cutting edge
∗4 Recommended tightening torque 3.9 Nm

SVJB (External / Facing / Copying / Undercutting)



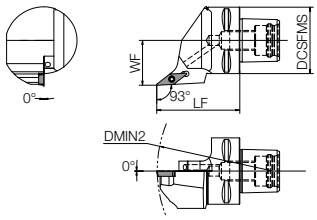


Fig.1

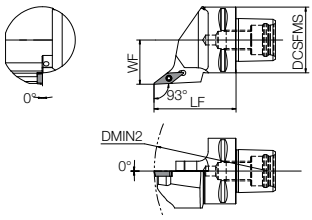


Fig.2

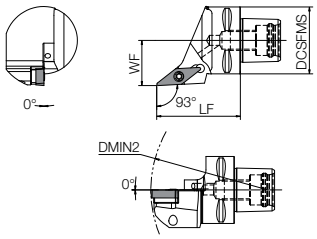


Fig.3

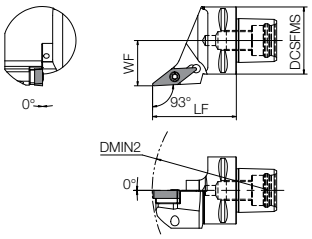


Fig.4

Right-hand Shown

Applicable Inserts	
VB□□	22.. 33..
VCGT	33..

Toolholder Dimensions

	Part Number	Stock R	Stock L	Coolant Hole	Dimensions (mm) DCSFMS	LF	WF	DMIN2	Standard Corner-R (RE)	Drawing	Spare Parts: Insert Screw	Wrench	Shim	Shim Screw	Wrench
＊1	**KPC3-SVJB□22040-11A**	●	●	Yes	32	40	22	116	0.4	Fig.1	SB-2570TR	FT-8	-	-	-
＊1	**KPC4-SVJB□27050-11A**	●	●		40	50	27	140							
＊1	**KPC5-SVJB□35060-11A**	●	●		50	60	35	165							
＊1	**KPC3-SVJB□22040-11S**	●	●	No	32	40	22	116	0.4	Fig.2	SB-2570TR	FT-8	-	-	-
＊1	**KPC4-SVJB□27050-11S**	●	●		40	50	27	140							
＊1	**KPC5-SVJB□35060-11S**	●	●		50	60	35	165							
＊2	**KPC3-SVJB□22047-16A**	●	●	Yes	32	47	22	116	0.8	Fig.3	SB-40125TRN	FT-15	SVN-32N ＊3(SVN-32S)	SS-4N	LW-4
＊2	**KPC4-SVJB□27050-16A**	●	●		40	50	27	140							
＊2	**KPC5-SVJB□35060-16A**	●	●		50	60	35	165							
＊2	**KPC3-SVJB□22047-16S**	●	●	No	32	47	22	116	0.8	Fig.4	SB-40125TRN	FT-15	SVN-32N ＊3(SVN-32S)	SS-4N	LW-4
＊2	**KPC4-SVJB□27050-16S**	●	●		40	50	27	140							
＊2	**KPC5-SVJB□35060-16S**	●	●		50	60	35	165							

- Pressure Resistance : up to 1,015 psi
- Recommended tightening torque is 1.2 Nm for VB□□22.. inserts and 3.5Nm for VB(C)□□33.. inserts

＊1 When using inserts with corner-R (RE) of 1/32" (0.8mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
＊2 When using inserts with corner-R (RE) of 3/64" (1.2mm), additional modifications to the toolholder or shim may be necessary to prevent interference with workpiece
＊3 When using inserts with corner-R (RE) of 0.008" and 1/64" (0.2mm and 0.4mm), shim in parentheses is recommended (sold separately)

N QUICK CHANGE TOOLING

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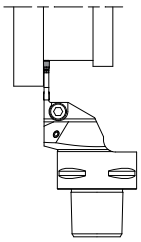
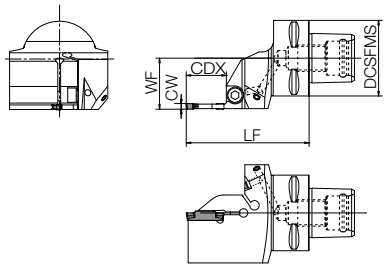
KGD (Grooving / Cut-Off)





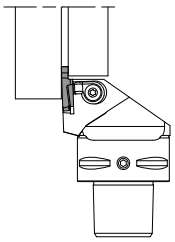
Right-hand Shown

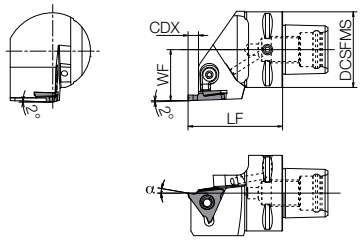
Toolholder Dimensions

Groove Width CW (mm)	Available Grooving Depth CDX (mm)	Part Number	Stock R	Stock L	Coolant Hole	Dimensions (mm) DCSFMS	LF	WF	CDX	Width CW (mm) MIN	Width CW (mm) MAX	Spare Parts: Clamp Bolt	Spare Parts: Wrench	Applicable Inserts
2	10	KPC3-KGD□22050-2T10	●	●	Yes	32	50	22	10	2.0	3.0	HH5X16	LW-4	G26, G27
		KPC4-KGD□27055-2T10	●	●		40	55	27						GDM Type
		KPC5-KGD□35060-2T10	●	●		50	60	35						GDG Type
	17	KPC3-KGD□22055-2T17	●	●	Yes	32	55	22	17					
		KPC4-KGD□27060-2T17	●	●		40	60	27						
		KPC5-KGD□35060-2T17	●	●		50	60	35						
3	10	KPC3-KGD□22050-3T10	●	●	Yes	32	50	22	10	3.0	4.0			
		KPC4-KGD□27055-3T10	●	●		40	55	27						
		KPC5-KGD□35060-3T10	●	●		50	60	35						
	20	KPC3-KGD□22060-3T20	●	●	Yes	32	60	22	20					
		KPC4-KGD□27065-3T20	●	●		40	65	27						
		KPC5-KGD□35065-3T20	●	●		50	65	35						
4	10	KPC3-KGD□22050-4T10	●	●	Yes	32	50	22	10	4.0	5.0			
		KPC4-KGD□27055-4T10	●	●		40	55	27						
		KPC5-KGD□35060-4T10	●	●		50	60	35						
	20	KPC4-KGD□27065-4T20	●	●	Yes	40	65	27	20					
		KPC5-KGD□35065-4T20	●	●		50	65	35						
	25	KPC4-KGD□27070-4T25	●	●	Yes	40	70	27	25					
		KPC5-KGD□35070-4T25	●	●		50	70	35						
5	10	KPC4-KGD□27055-5T10	●	●	Yes	40	55	27	10	5.0	6.0			
		KPC5-KGD□35060-5T10	●	●		50	60	35						
	17	KPC4-KGD□27060-5T17	●	●	Yes	40	60	27	17					
		KPC5-KGD□35060-5T17	●	●		50	60	35						

∗1 Pressure Resistance : up to 1,015 psi
∗2 Recommended tightening torque 6.5 Nm
∗3 CDX dimension shows available grooving depth (if CDX dimension is 20mm or more, using a 2-edge insert, the maximum grooving depth is 18mm)

KGBA (External Shallow Grooving)





Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)				Spare Parts		Applicable Inserts
								Clamp Set	Wrench	
	R	L		DCSFMS	LF	WF	CDX			
KPC3-KGBA□22040-16	●	●	Yes	32	40	22	2.5	LGBA-16□S	FT-15	GBA32□ Type
KPC4-KGBA□27050-16	●	●		40	50	27				
KPC5-KGBA□35060-16	●	●		50	60	35				
KPC3-KGBA□22040-2215	●	●	No	32	40	22	4.0	LGBA-22□S		GBA43□ Type
KPC4-KGBA□27050-2215	●	●		40	50	27				
KPC5-KGBA□35060-2215	●	●		50	60	35				
KPC3-KGBA□22040-2225	●	●	Yes	32	40	22	5.5			
KPC4-KGBA□27050-2225	●	●		40	50	27				
KPC5-KGBA□35060-2225	●	●		50	60	35				
KPC3-KGBA□22040-2235	●	●	No	32	40	22	5.5			
KPC4-KGBA□27050-2235	●	●		40	50	27				
KPC5-KGBA□35060-2235	●	●		50	60	35				

∗1 Pressure Resistance : up to 1,015 psi
∗2 CDX dimension shows the distance from the holder to the cutting edge. Actual grooving depth is the CDX dimension of the insert
∗3 Use clamp set LGBA-..RS for right-hand (R) holder and LGBA-..LS for left-hand (L) holder
∗4 See tables below for rake angle of the insert after installing in the holder

GBA-GM Rake Angle (α) after Installment

α	Insert Part Number
10°	GBA43□150-020GM
15°	GBA43□175-020GM ~ GBA43□265-030GM
12°	GBA43□300-030GM ~ GBA43□400-040GM

α indicates the rake angle from the center of the groove width when installed

GBA-MY Rake Angle (α) after Installment

α	Insert Part Number
15°	GBA43□175-020MY ~ GBA43□350-030MY
14°	GBA43□400-040MY

α indicates the rake angle from the center of the groove width when installed

GBA Rake Angle (α) after Installment

GBA32□○○○-○○○		GBA43□○○○-○○○		GBA32□○○○-○○○R (Full-R)		
α	Insert Grade	α	Insert Grade	α	Insert Grade	Full-R
10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905 KPD001, KPD010	0°	KBN510, KBN525	10°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905	050R ~ 150R
		10°	TN620, TC40, TN90,PV7040 PR930, PR1115, PR1215, PR1625 PR905, KPD001, KPD010	14°	TN620, TN90, PV7040, PR930 PR1115, PR1215, PR1625, PR905	200R
20°	KW10	20°	KW10		KW10	050R ~ 200R

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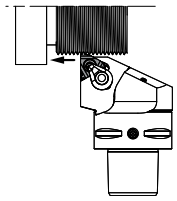
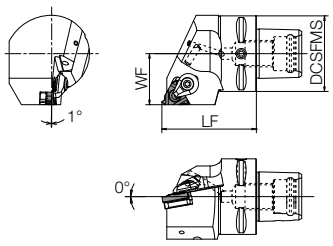
KTN (External Threading)





Right-hand shown

Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder

Toolholder Dimensions

Part Number	Stock		Coolant Hole	Dimensions (mm)			Spare Parts				Applicable Inserts
							Clamp Set	Wrench	Shim	Shim Screw	
	R	L		DCSFMS	LF	WF					J6, J8, J10, J12, J14, J16, J18
KPC3-KTN□22040-16	●	●	Yes	32	40	22	CPS-5S	FT-15	TN-32	SP3X8	16E□ Type
KPC4-KTN□27050-16	●	●		40	50	27					
KPC5-KTN□35060-16	●	●		50	60	35					

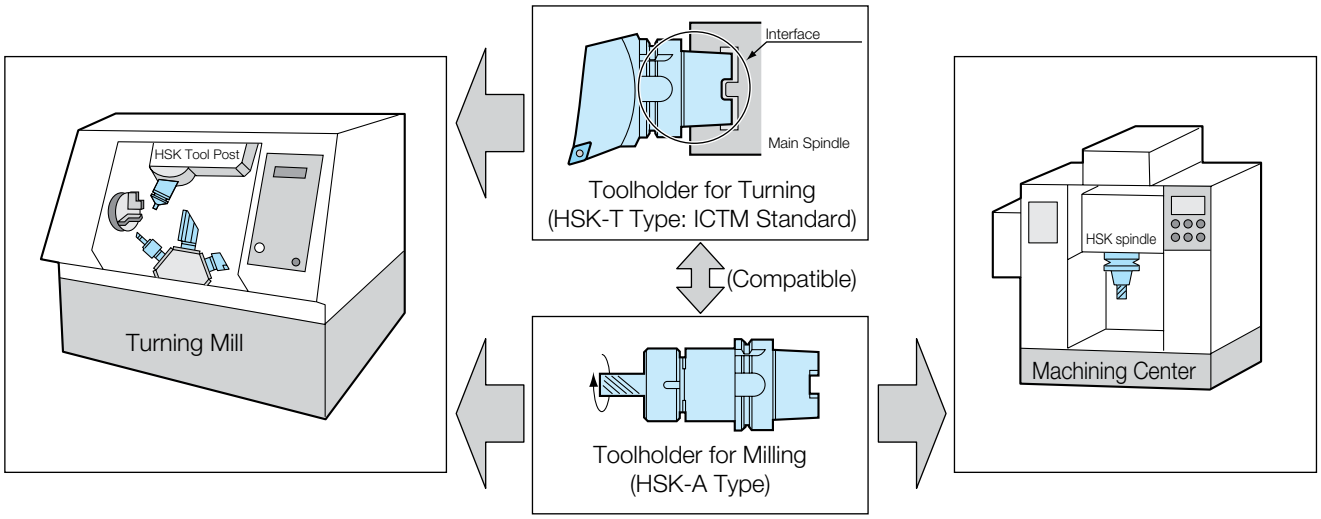
* 1 Pressure Resistance : up to 1,015 psi

HSK Tooling

- The turning mill is a machine that combines turning and milling functions. Now an interface (between workpiece and toolholder - similar to a milling arbor) is available for the turning mill that fulfils the ICTM standard.
- ICTM standard was developed by 16 companies in Japan, as the interface between turning mill machines. It is based on the two-face restraint type standard “ISO 12164-1:2001 HSK Standard Shank”
- This standard became an International Standard as ISO Standard “ISO12164-3:2008” in 2008.
  Description is indicated as HSK-T○○.

Features

① Compatible with HSK-A type for Machining Centers



② Machining precision for turning is improved by minimizing the gap between the drive key slot on the toolholder side and the drive key on the toolpost side.

Table 1: Gap Comparison of a Key and Key Slot

(Unit: mm)

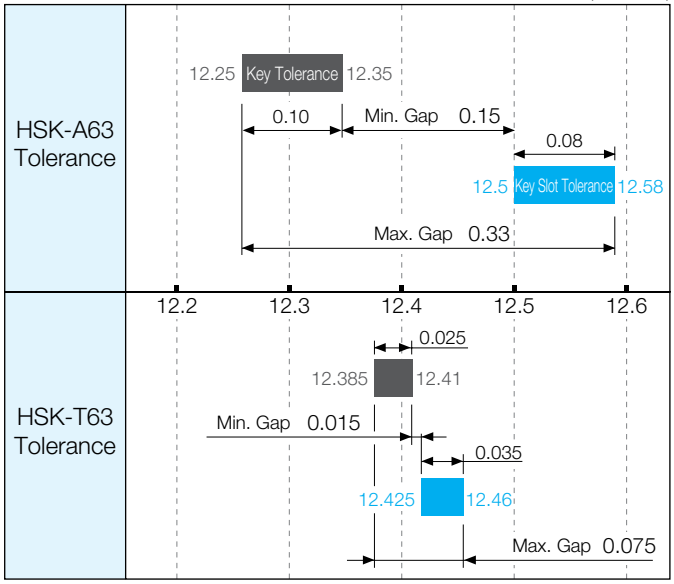
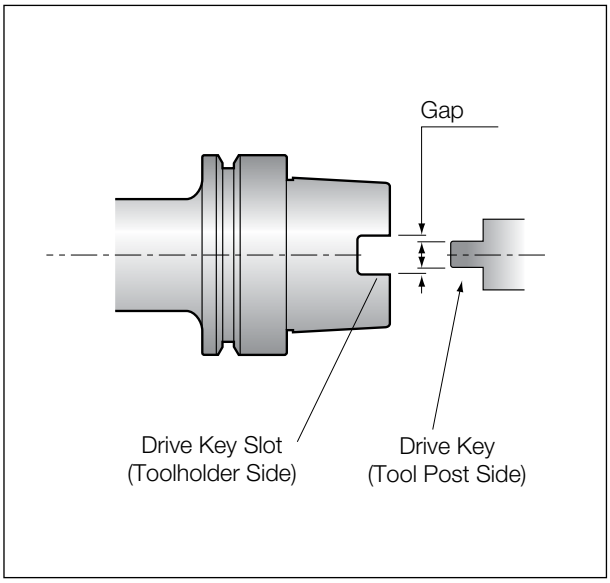


Table 2: Gap Effect



Identification System (for External)

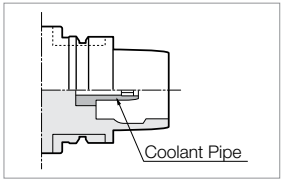
Interface Size	Manual Clamping Hole		Shank Size	Hand of Tool		Toolholder Length
T63 : HSK-T63 T100 : HSK-T100	H	Yes	25mm Square (Height / Width)	R	Right-hand	Length from Gauge Line (mm)
	No Code	No		L	Left-hand	

T63 **H** – **S2525** **R** – **105** ... (Toolholder for Square Shank)

A63 (Previous Description) **P** **C** **L** **N** **R** – **DX** **12** ... (Solid Type)

Clamping System	Insert Shape	Cutting Edge Angle	Insert Relief Angle	Hand of Tool	Toolholder Length	Insert Size
P : Lever Lock M : Multi-Lock W : Wedge Lock S : Screw Clamp	C : 80° Diamond D : 55° Diamond T : 60° Triangle V : 35° Diamond W : 80° Trigon	E 60°, G 90°, J 93° L 95°/95°, M 50°, N 63° V 72.5°	N : 0° B : 5°	R Right-hand L Left-hand N Neutral	Length from Gauge Line (mm) DX : 65 H : 100 L : 140	T, C, D, V (L)

Coolant Pipe is Built into Toolholder



Toolholder for Square Shank (for External / Facing)

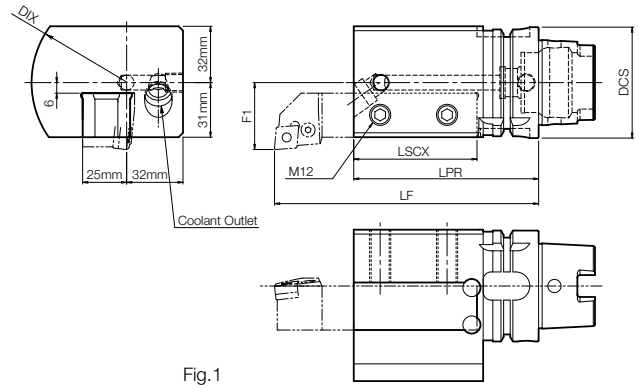


Fig.1

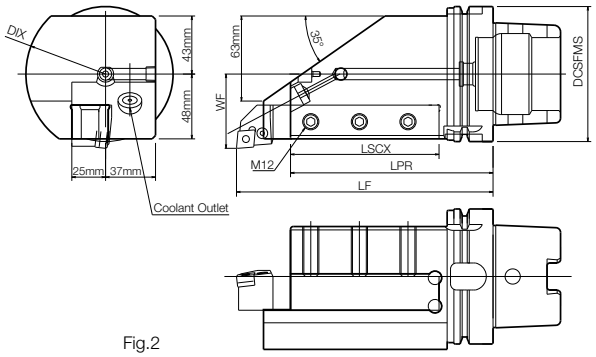


Fig.2

Right-hand Shown

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)						Drawing	Spare Parts		
			DCSFSM	DIX	LF	LPR	LSCX	WF		Clamp Screw	Wrench	Coolant Pipe
T63H- S2525R-105	A63-WH- S2525R-105	●	63	108	150	105	70	38	Fig.1	HS12X25	LW-6	CL63-1
S2525L-105	S2525L-105	●										
T100H- S2525R-150	-	□	100	118	190	150	110	55	Fig.2	HS12X30		CL100-1
S2525L-150		□										

- Coolant Outlet Direction is Adjustable
- For 25mm Square Shank

● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
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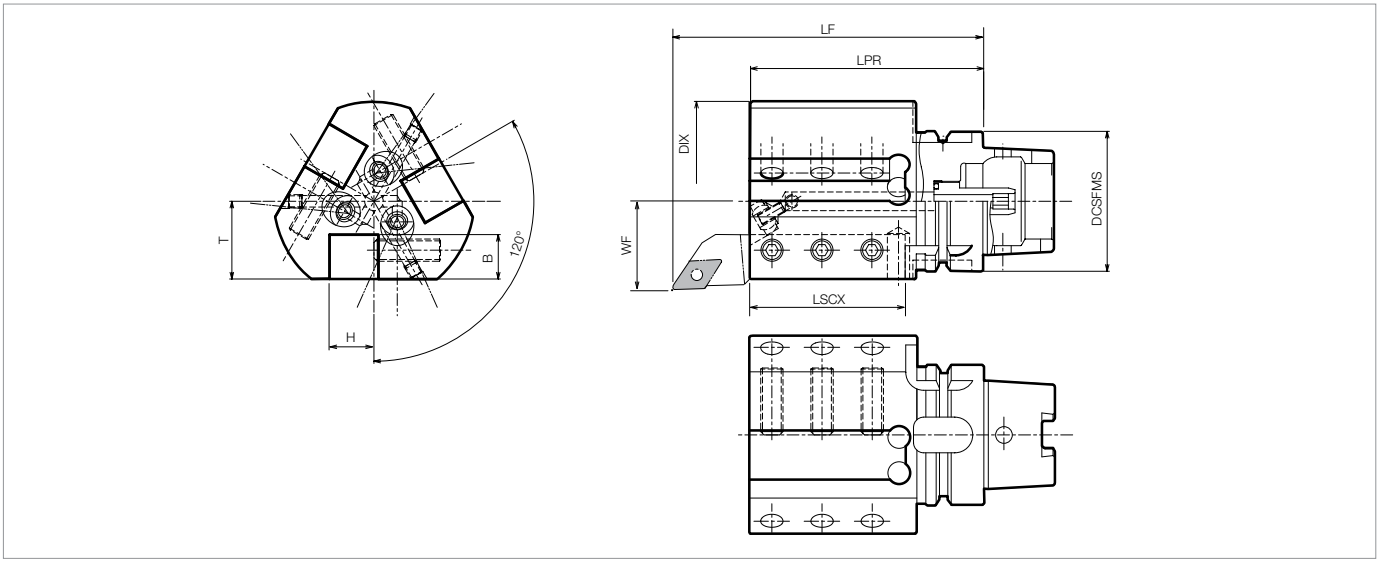
Toolholder for Square Shank (for External / Facing)

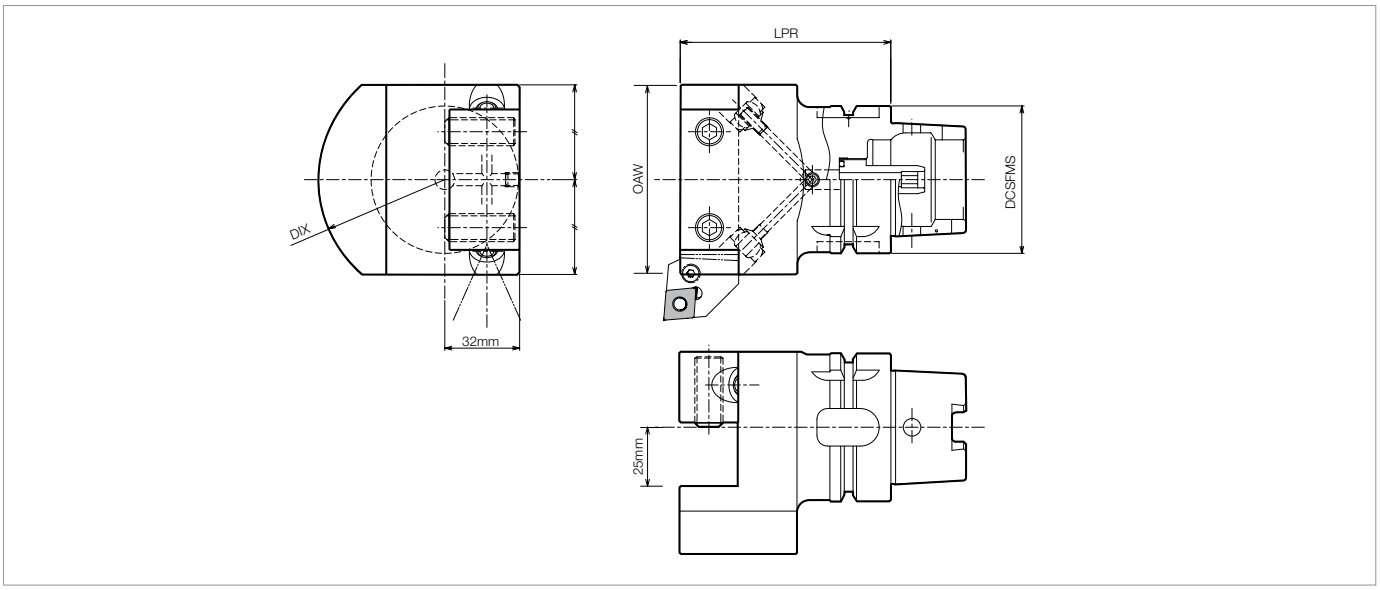


Toolholder Dimensions

Part Number	Attachment Toolholder Shank Dimension	Stock	Dimensions (mm)									Spare Parts		
			DCSFMS	DIX	H	B	T	LF	LPR	LSCX	WF	Clamp Screw	Wrench	Coolant Pipe
T63H- S2020R-105T	(20mm Square)	□	63	90	20	20	35	150	105	70	40	HS12X30	LW-6	CL63-1
T100H- S2525R-150T	(25mm Square)	□	100	118	25	25	48	190	150	110	55	HS12X35		CL100-1

• Coolant Outlet Direction is Adjustable

Toolholder for Square Shank (for Facing / External)



Toolholder Dimensions

Part Number	Attachment Toolholder Shank Dimension	Stock	Dimensions (mm)				Spare Parts		
			DCSFMS	DIX	LPR	OAW	Clamp Screw	Wrench	Coolant Pipe
T63H- S2525-90F	(25mm Square)	□	63	108	90	81	HS12X30	LW-6	CL63-1
S2525-120F		□			120				
T100H- S2525-105F	(25mm Square)	□	100	118	105	96			CL100-1
S2525-150F		□			150				

• Coolant Outlet Direction is Adjustable

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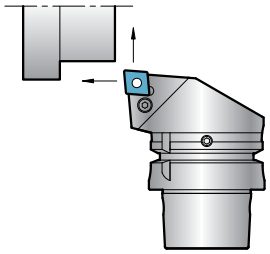
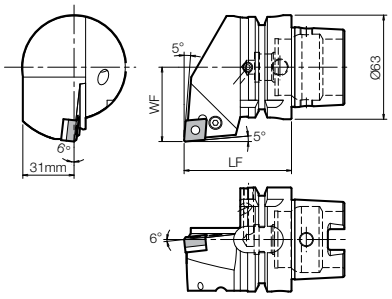
PCLN (External / Facing)





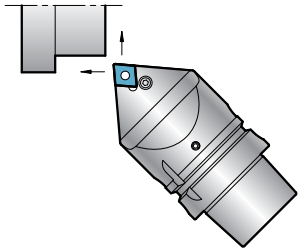
Right-hand Shown

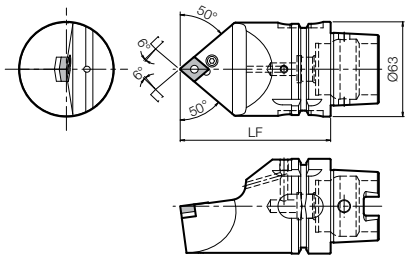
Applicable Inserts	
CN□A CN□G CN□M	43..

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)		Spare Parts						
					Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Coolant Pipe
			LF	WF							
T63H- PCLNR-DX12	A63-WH- PCLNR-DX12	□	65	45	LL-2N	LS-2N	LC-42N	LSP-2	PC-2	LW-3	CL63-1
PCLNL-DX12	PCLNL-DX12	□									

PCMN (External / Facing)





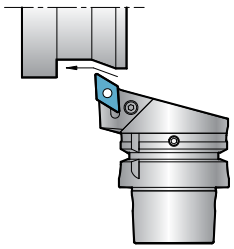
Right-hand Shown

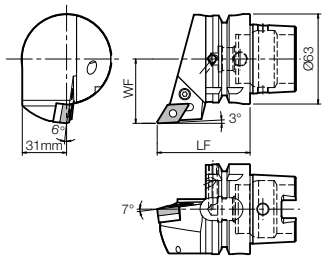
Applicable Inserts	
CN□A CN□G CN□M	43..

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)	Spare Parts						
				Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Coolant Pipe
			LF							
T63H- PCMNN-H12	A63-WH- PCMNN-H12	●	100	LL-2N	LS-2N	LC-42N	LSP-2	PC-2	LW-3	CL63-1
PCMNN-L12	PCMNN-L12	□	140							

PDJN (External / Copying)





Right-hand Shown

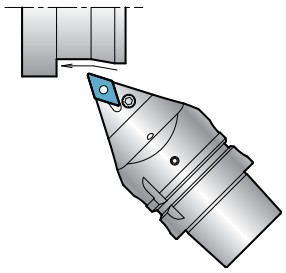
Applicable Inserts	
DN□A DN□G DN□M	43..

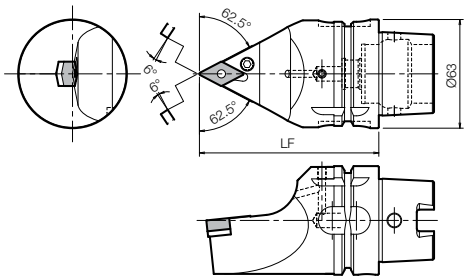
Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)		Spare Parts						
					Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Coolant Pipe
			LF	WF							
T63H- PDJNR-DX15	A63-WH- PDJNR-DX15	●	65	45	LL-3N	LS-2N	LD-42 *LD-42-20	LSP-2	PC-2	LW-3	CL63-1
PDJNL-DX15	PDJNL-DX15	□									

• When using inserts whose corner-R(rε) is greater than 1.6mm, please purchase shim with * mark and use it in order to prevent workpiece and shim from interfering with each other.

PDNN (External / Copying)





Right-hand Shown

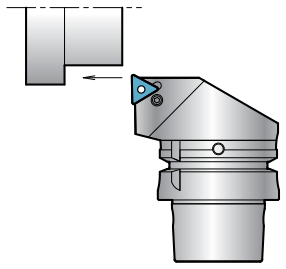
Applicable Inserts	
DN□A DN□G DN□M	43..

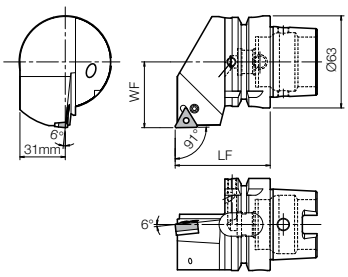
Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)	Spare Parts						
				Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Coolant Pipe
			LF							
T63H- PDNNN-H15	A63-WH- PDNNN-H15	□	100	LL-3N	LS-2N	LD-42 *LD-42-20	LSP-2	PC-2	LW-3	CL63-1
PDNNN-L15	PDNNN-L15	□	140							

• When using inserts whose corner-R(rε) is greater than 1.6mm, please purchase shim with * mark and use it in order to prevent workpiece and shim from interfering with each other.

PTGN (External)





Right-hand Shown

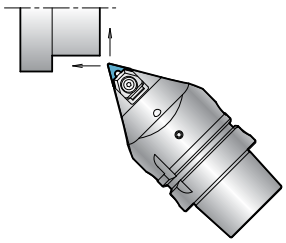
Applicable Inserts	
TN□A TN□G TN□M	33..

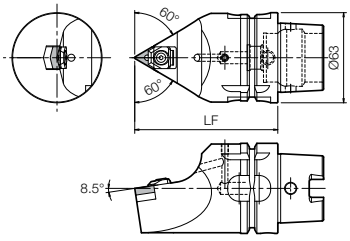
Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)		Spare Parts						
					Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Coolant Pipe
			LF	WF							
T63H- PTGNR-DX16	A63-WH- PTGNR-DX16	□	65		LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	FH-2.5	CL63-1
PTGNL-DX16	PTGNL-DX16	□	45								

• When using inserts whose corner-R(rε) is greater than 1.6mm, please purchase shim with * mark and use it in order to prevent workpiece and shim from interfering each other.

WTEN (External)

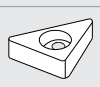
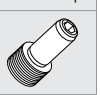




Right-hand Shown

Applicable Inserts	
TN□A TN□G TN□M	33..

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)	Spare Parts						
				Clamp Set	Shim	Shim Pin	Shim Nut	Wrench	Spear	Coolant Pipe
			LF							
T63H- WTENN-H16	A63-WH- WTENN-H16	□	100	WCS-1N	WTN-33	WP-1S	WN-1	LW-3	WSP-1	CL63-1
WTENN-L16	WTENN-L16	□	140							

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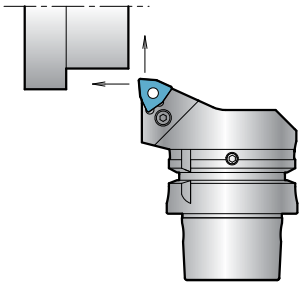
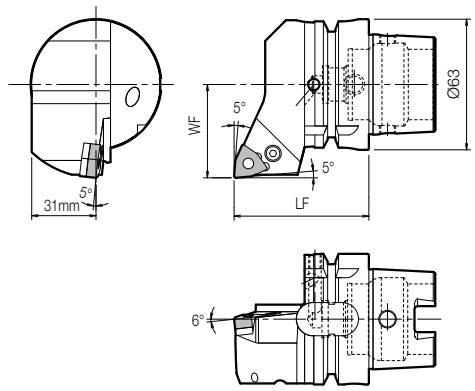
PWLN (External / Facing)





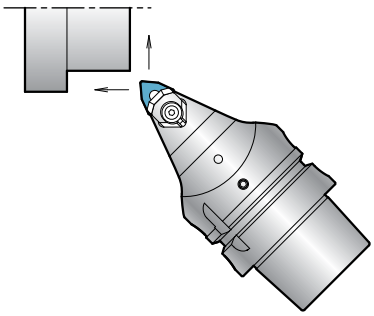
Right-hand Shown

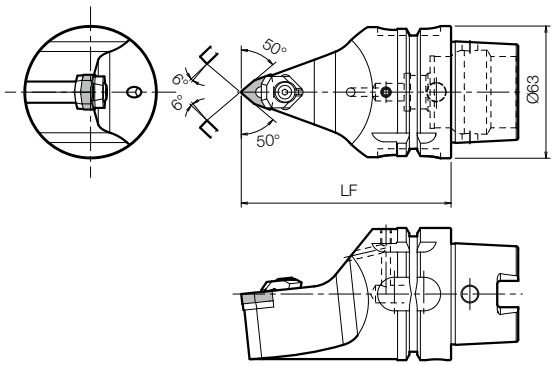
Applicable Inserts	
WN□A WN□G WN□M	43..

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)		Spare Parts						
					Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Coolant Pipe
			LF	WF							
T63H- PWLNR-DX08	A63-WH- PWLNR-DX08	□	65	45	LL-2N	LS-2N	LW-42N	LSP-2	PC-2	LW-3	CL63-1
PWLNL-DX08	PWLNL-DX08	□									

WWMN (External / Facing)





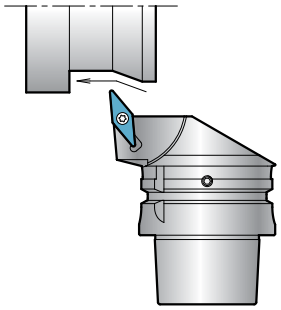
Right-hand Shown

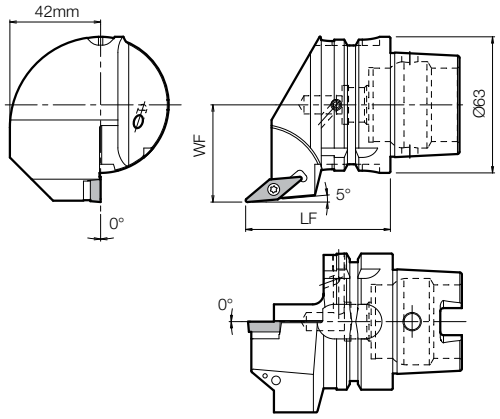
Applicable Inserts	
WN□A WN□G WN□M	43..

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)	Spare Parts					
				Clamp Set	Shim	Shim Pin	Shim Nut	Wrench	Coolant Pipe
			LF						
T63H- WWMNN-H08	A63-WH- WWMNN-H08	□	100	WCS-8	WWN-42	WP5X15	WN-1	LW-3	CL63-1
WWMNN-L08	WWMNN-L08	□	140						

SVLB (External / Copying)





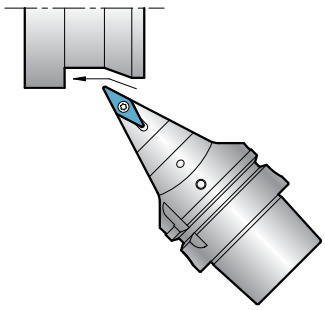
Right-hand Shown

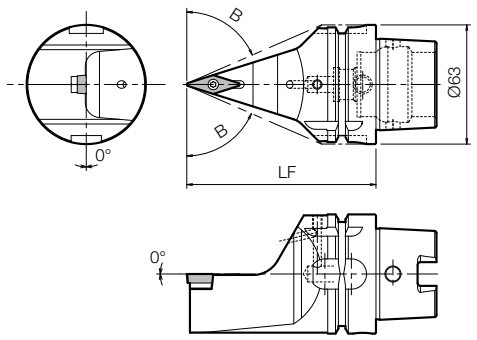
Applicable Inserts	
VB□T VBGW VCGT	33..

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)		Spare Parts					
					Clamp Screw	Wrench	Shim	Shim Screw	Wrench	Coolant Pipe
			LF	WF						
T63H-	SVLBR-DX16N	□	65	45	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4	CL63-1
	SVLBL-DX16N	□								

SVVB (External / Copying)





Applicable Inserts	
VB□T VBGW VCGT	33..

Toolholder Dimensions

Part Number		Stock	Dimensions (mm)		Spare Parts					
					Clamp Screw	Wrench	Shim	Shim Screw	Wrench	Coolant Pipe
			LF	* B (°)						
T63H-	SVVBN-H16N	●	100	66.5	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4	CL63-1
	SVVBN-L16N	●	140	72.5						

• Angle B shows the interference angle from the line of cutting edge point and toolholder.

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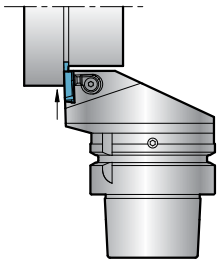
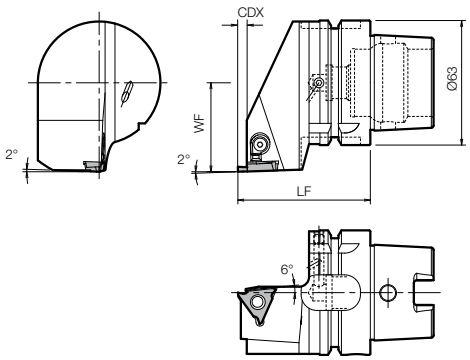
KGBA (External Grooving)





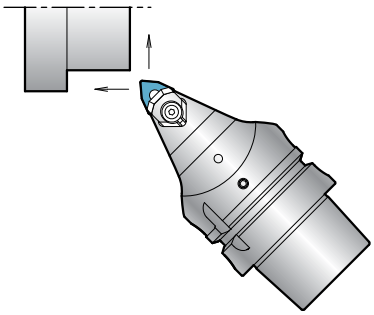
Right-hand Shown

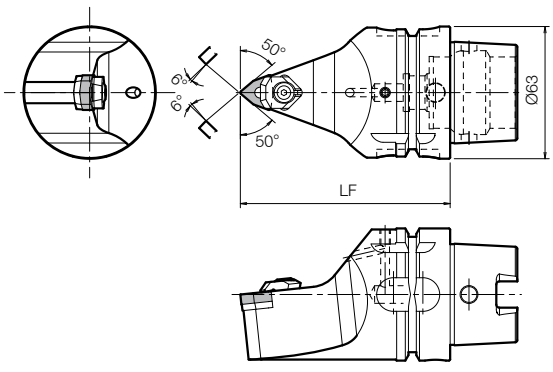
Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)			Spare Parts			Applicable Inserts
						Clamp Set	Wrench	Coolant Pipe	
			LF	WF	CDX				G6~G10
T63H- KGBAR-16	A63-WH- KGBAR-16	□	67	45	2.5	LGBA-16RS	FT-15	CL63-1	GBA32R Type
KGBAR-22-15	KGBAR-22-15	□	67	45	4.0	LGBA-22RS			GBA43R Type
KGBAR-22-25	KGBAR-22-25	□			4.5				
KGBAR-22-35	KGBAR-22-35	□			5.5				
T63H- KGBAL-16	A63-WH- KGBAL-16	□	67	45	2.5	LGBA-16LS	FT-15	CL63-1	GBA32L Type
KGBAL-22-15	KGBAL-22-15	□	67	45	4.0	LGBA-22LS			GBA43L Type
KGBAL-22-25	KGBAL-22-25	□			4.5				
KGBAL-22-35	KGBAL-22-35	□			5.5				

• Dimension CDX shows the distance from the toolholder to the cuttting edge.

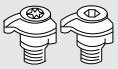
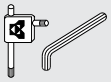
KTN (Threading)





Right-hand Shown

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)		Spare Parts					Applicable Inserts
					Clamp Set	Wrench	Shim	Shim Screw	Coolant Pipe	
			L1	F1						J6, J8, J10, J12, J14, J16, J18
T63H- KTNR-16	A63-WH- KTNR-16	□	67	45	CPS-5S	FT-15	TN-32	SP3X8	CL63-1	16ER Type
KTNR-22	KTNR-22	□			CPS-6S	LW-3	TN-43			22ER Type

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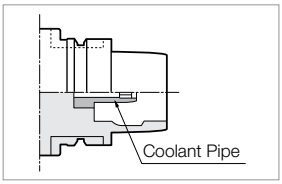
Identification System (Boring Bar / Drill)

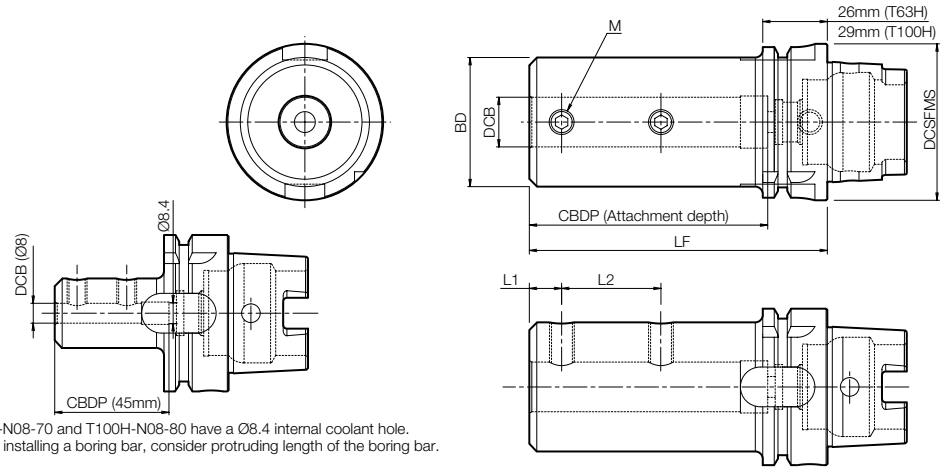
T63 H – N 08 – 70

Tolerance Symbol	Manual Clamping Hole		Toolholder		Internal Dia.		Toolholder Length (mm)
T63 : HSK-T63 T100 : HSK-T100	H	Yes	N	For Boring Bar	08	Ø8	Length from Gauge Line
	No Code	No	C	For Drill	10	Ø10	
					⋮	⋮	

Coolant Pipe is Built into Toolholder



Toolholder for Boring Bars and Drills



T63H-N08-70 and T100H-N08-80 have a Ø8.4 internal coolant hole.
When installing a boring bar, consider protruding length of the boring bar.

Toolholder Dimensions

Part Number	Previous Part Number	Stock	Dimensions (mm)								Spare Parts			Notes
			DCB	DCSFMS	BD	L1	L2	L3	L4	M	Clamp Screw	Wrench	Coolant Pipe	
T63H- N08-70	**A63-WH- N08-70**	□	8	63	28	70	45	9	20	M8	HS8X10	LW-4	CL63-1	For Boring Bar
N10-80	**N10-80**	□	10		35	80	55	9	22		HS8X12			
N12-90	**N12-90**	□	12		42	90	65	9	22					
N16-100	**N16-100**	□	16		48	100	75	11	30	M10	HS10X16	LW-5		
N20-120	**N20-120**	□	20		52	120	95	13	40					
N25-140	**N25-140**	□	25		56	140	115	13	50	M12	HS12X16	LW-6		
N32-160	**N32-160**	□	32		56	160	135	13	60		HS12X12			
T63H- C20-75	**A63-WH- C20-75**	□	20	63	52	75	50	13	22	M10	HS10X16	LW-5	CL63-1	*For Drill
C25-85	**C25-85**	□	25		56	85	58	15	28	M12	HS12X16	LW-6		
C32-90	**C32-90**	□	32		56	90	62	15	30		HS12X12			
C40-100	**C40-100**	□	40		68	100	72	18	35	M16	HS16X12	LW-8		
T100H- N08-80	-	□	8	100	28	80	45	9	20	M8	HS8X10	LW-4	CL100-1	For Boring Bar
N10-90		□	10		35	90	55	9	22		HS8X12			
N12-100		□	12		42	100	65	9	22					
N16-110		□	16		48	110	75	11	30	M10	HS10X16	LW-5		
N20-130		□	20		52	130	95	13	40					
N25-150		□	25		62	150	115	13	50	M12	HS12X18	LW-6		
N32-170		□	32		72	170	135	13	60		HS12X20			
T100H- C20-85	-	□	20	100	52	85	50	13	22	M10	HS10X16	LW-5	CL100-1	*For Drill
C25-90		□	25		62	90	58	15	20	M16	HS16X18	LW-8		
C32-95		□	32		72	95	62	15	20					
C40-105		□	40		82	105	72	15	25	M16	HS16X20	LW-8		

* Shorter than boring bar toolholder.

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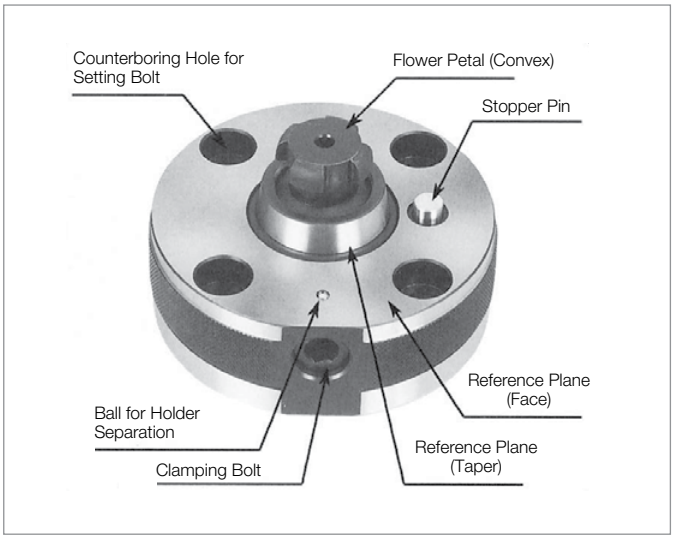
Contact your local Kyocera sales engineer to upgrade old products to new technology

KQC Series

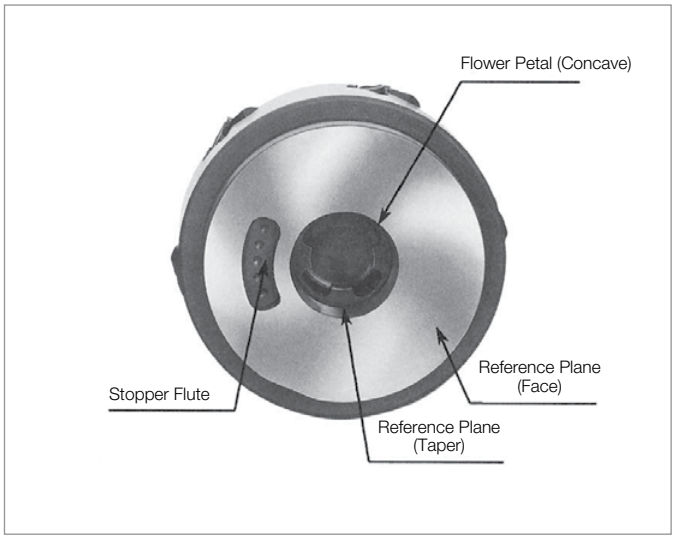
Features

1. The way to assemble holder is turn the clamping bolt 1 revolution. Tool exchange time is less than 1 minute.
2. Junction of adapter and attachment touch both taper part and face part. And repeatability is less than 2μm.
3. Applicable to Various Tools.
   - Boring Tool (Rough & Fine)
   - Face Milling (Min. Ø63, Max. Ø160 is possible)
   - Centering Tool
   - External Turning
   - Applicable to Tools with Coolant Hole

Clamping System



Adapter Side

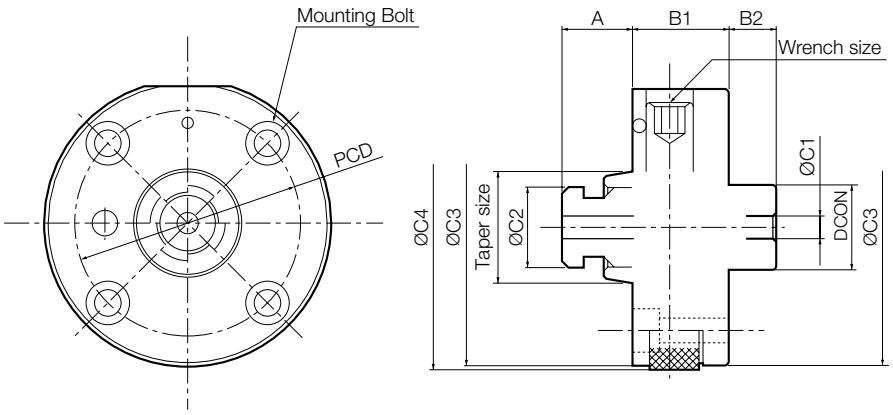


Attachment Side

How to Use Clamping System

1. Combine flower petal of adapter side with that of attachment side and insert the attachment.
2. Turn the attachment 45 degrees until stop (clockwise direction).
3. Turn the clamping bolt attached to adapter side 1 revolution and tighten by hexagon wrench.

Adapter

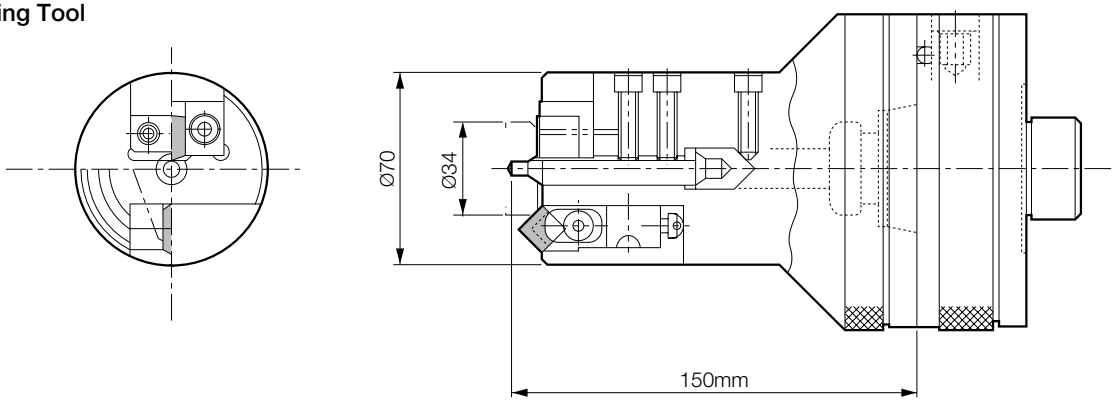


Toolholder Dimensions (mm)

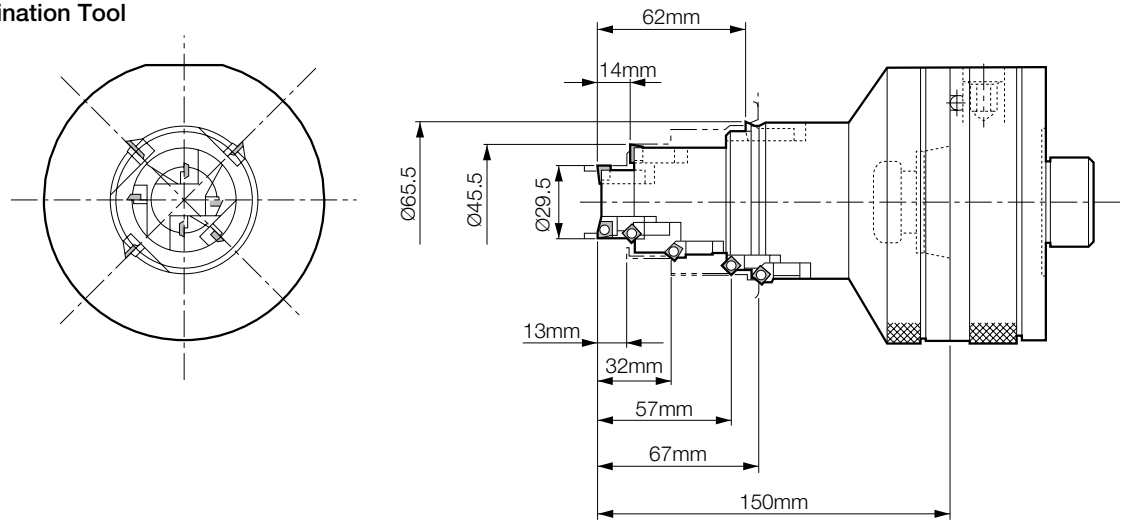
Part Number	Taper Size	A	B1	B2	ØC1	ØC2	ØC3	ØC4	DCON	PCD	Wrench Size	Mounting Bolt
KQC28	Ø28	23	25 Over	15 Over	4	24	60 Over	62 Over	20	43 Over	6	6~8
KQC35	Ø35	27	30 Over	15 Over	6	28	75 Over	77 Over	25	54 Over	8	8~10
KQC45	Ø45	30	40 Over	15 Over	8	32	90 Over	92 Over	25	66 Over	10	8~12
KQC70	Ø70	33	50 Over	15 Over	10	40	130 Over	132 Over	25	100 Over	12	10~16

Toolholder (Attachment) Reference Example

Centering Tool



Combination Tool



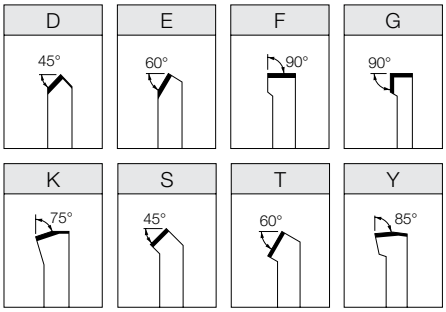
• Applicable to various tooling (also with coolant hole)

Identification System for Cartridge (Square Shank)

① Clamping System	② Insert Shape	⑤ Insert Shape	⑥ Edge Height	⑦ Cartridge Type
C : Top Clamp	S : 90° Square	R : Right-hand	Edge Height (mm)	CA : ISO A Type
P : Lever Lock	T : 60° Triangle			
S : Screw Clamp				

①	②	③	④	⑤	⑥	⑦	⑧
P	S	K	N	R	16	CA	12

③ Cutting Edge Angle



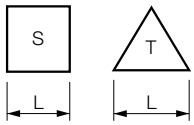
④ Insert Relief Angle

E : 20° Positive

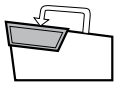
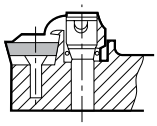
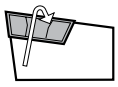
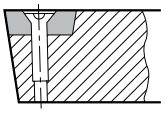
N : 0° Negative

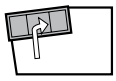
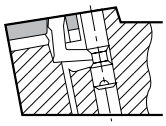
P : 11° Positive

⑧ Insert Size



Clamping System

Series	Design		Features
Top Clamp (C)			• Rigid Clamping • Negative Insert : Medium to Heavy Machining (Mainly for Ceramic Insert) • Positive Insert : Low Cutting Force
Screw Clamp (S)			• Simple Mechanism • Fewer Parts • Finishing to Medium Machining

Series	Design		Features
Lever Lock (P)			• Easy Insert Replacement • General Use

Lever Lock (Right-hand Shown)

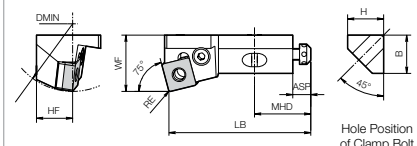


Fig.1

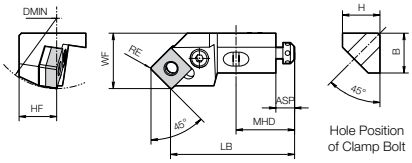


Fig.2

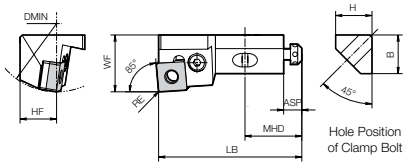


Fig.3

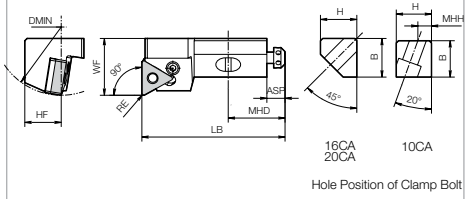


Fig.4

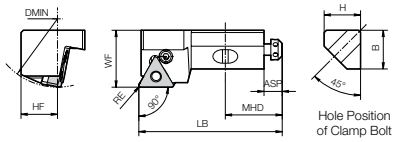


Fig.5

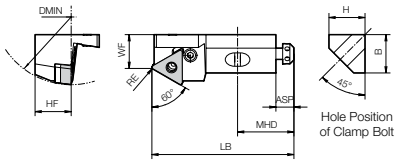
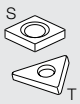
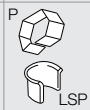
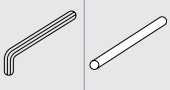


Fig.6

Toolholder Dimensions

Part Number	Stock	Dimensions (mm)								Standard Corner-R (RE)	Min. Bore Dia. DMIN (mm)	Drawing	Applicable Inserts		Applicable Inserts Ref. Page
		H	B	LB	MHD	ASP	MHH	HF	WF						
PSKNR 16CA12	□	16	17	63	25	8	-	16	25	0.8	60	Fig.1	SN□A SN□G SN□M	43..	**B32 ~ B35** **B109** **C10**
PSSNR 16CA12	□			53					15			Fig.2			
PSYNR 16CA12	□			63					25			Fig.3			
PTFNR 10CA11	□	12.5	11	50	20	8	5	10	14	0.4	40	Fig.4	TN□A TN□G	22..	**B40** **B42**
16CA16	□	15.5	16	63	25	8	-	16	25	0.8	60		TN□A TN□G TN□M	33..	**B36 ~ B43** **B111** **C10** **C11** **C23**
20CA22	□	20	19	70	30	10		20			70			43..	
PTGNR 16CA16	□	16	17	63	25	8		16	25		60	Fig.5		33..	
PTTNR 16CA16	□								15		70	Fig.6			

Spare Parts

Part Number	Lever	Lock	Shim	Shim Pin	Punch	Wrench	Radial Adjustment Screw	Axial Adjustment Screw	Wrench	Axial Screwdriver	Plate	Clamp Bolt	Wrench
													
PSKNR 16CA12	LL-2N	LS-2N	LS-42	LSP-2	PC-2	LW-3	HS4X4	AJM5F	LW-2	SW-1.8	SM0816B SM1016B	HH8X25	LW-6
PSSNR 16CA12													
PSYNR 16CA12													
PTFNR 10CA11	LL-03N	LS-03N	-	P-03	-	FH-2	HS4X4	AJM5F	LW-2	SW-1.8	SM0810A SM1010A	HH6X16	LW-5
16CA16	LL-1N	LS-1N	LT-32N	LSP-1	PC-1	FH-2.5	HS5X5		LW-2.5		SM0816B SM1016B	HH8X25	LW-6
20CA22	LL-2N	LS-2N	LT-42N	LSP-2	PC-2	LW-3		AJM6			SM0820B SM1020B	HH8X30	
PTGNR 16CA16	LL-1N	LS-1N	LT-32N	LSP-1	PC-1	FH-2.5		AJM5F			SM0816B SM1016B	HH8X25	
PTTNR 16CA16													

Note) Plate includes a set of two pieces for each toolholder.

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Top Clamp (Right-hand Shown)

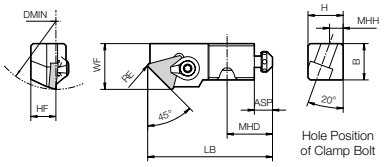


Fig.1

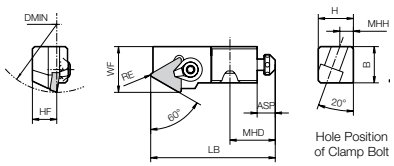


Fig.2

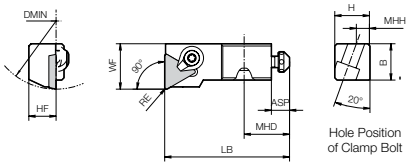
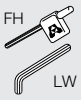


Fig.3

Toolholder Dimensions

Part Number	Stock	Dimensions (mm)								Standard Corner-R (RE)	Min. Bore Dia. DMIN (mm)	Drawing	Applicable Inserts		Applicable Inserts Ref. Page
		H	B	LB	MHD	ASP	MHH	HF	WF						
CTDPR 10CA11	□	12.5	11	50	20	8	5	10	7	0.4	38	Fig.1	TP□N TP□R	22..	**B87** **B88** **B113** **C18** **C29**
12CA16	□	15.5	16	55			6	12	10	0.8	50			32..	
CTEPR 10CA11	□	12.5	11	50			5	10	9	0.4	38	Fig.2		22..	
12CA16	□	15.5	16	55			6	12	13	0.8	50			32..	
CTFPR 10CA11	□	12.5	11	50			5	10	14	0.4	38	Fig.3		22..	
12CA16	□	15.5	16	55			6	12	20	0.8	50			32..	

Spare Parts

Part Number	Clamp Set	Wrench	Radial Adjustment Screw	Axial Adjustment Screw	Wrench	Axial Screwdriver	Plate	Clamp Bolt	Wrench
									
CTDPR 10CA11	CPS-4V	FT-10	HS4X4	AJM5F	LW-2	SW-1.8	SM0810A SM1010A	HH6X16	LW-5
12CA16	CPS-5V	FT-15	HS5X5		LW-2.5		SM0812A SM1012A	HH6X20	
CTEPR 10CA11	CPS-4V	FT-10	HS4X4		LW-2		SM0810A SM1010A	HH6X16	
12CA16	CPS-5V	FT-15	HS5X5		LW-2.5		SM0810A SM1010A	HH6X20	
CTFPR 10CA11	CPS-4V	FT-10	HS4X4		LW-2		SM0810A SM1010A	HH6X16	
12CA16	CPS-5V	FT-15	HS5X5		LW-2.5		SM0812A SM1012A	HH6X20	

Note) Plate includes a set of two pieces for each toolholder.

Screw Clamp (Right-hand Shown)

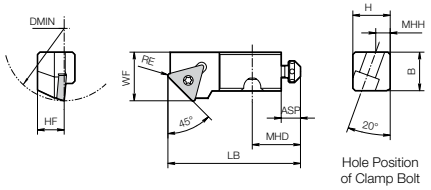


Fig.1

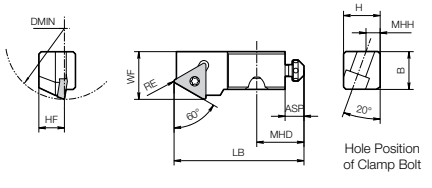


Fig.2

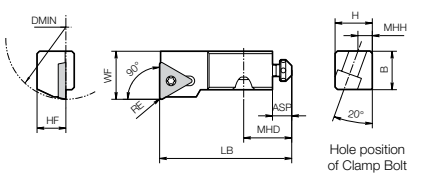


Fig.3

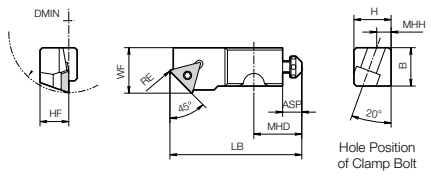


Fig.4

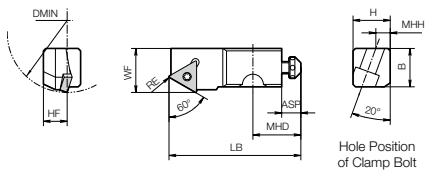


Fig.5

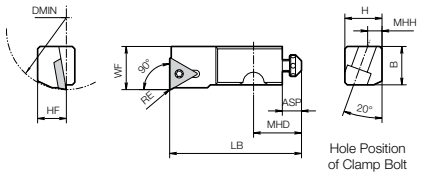


Fig.6

Toolholder Dimensions

Part Number	Stock	Dimensions (mm)								Standard Corner-R (RE)	Min. Bore Dia. DMIN (mm)	Drawing	Applicable Inserts		Applicable Inserts Ref. Page
		H	B	LB	MHD	ASP	MHH	HF	WF						
STDPR 10CA11	□	12.5	11	50	20	8	5	10	7	0.4	38	Fig.1	TP□H TP□T TPGB	22.. 32..	**B80 ~ B86** **C16** **C26 ~ C28**
12CA16	□	15.5	16	55			6	12	10	0.8	50				
STEPR 10CA11	□	12.5	11	50			5	10	9	0.4	38	Fig.2		22..	
12CA16	□	15.5	16	55			6	12	13	0.8	50			32..	
STFPR 10CA11	□	12.5	11	50			5	10	14	0.4	38	Fig.3		22..	
12CA16	□	15.5	16	55			6	12	20	0.8	50			32..	
STDER 12CA13	□	15.5	16	55	20	8	6	12	10	0.4	50	Fig.4	TEGW	252..	-
STEER 12CA13	□								12			Fig.5			
STFER 12CA13	□								18			Fig.6			

Spare Parts

Part Number	Clamp Set	Wrench	Radial Adjustment Screw	Axial Adjustment Screw	Wrench	Axial Screwdriver	Plate	Clamp Bolt	Wrench
STDPR 10CA11	SB-3TR	FT-10	HS4X4	AJM5F	LW-2	SW-1.8	SM0810A SM1010A	HH6X16	LW-5
12CA16	SB-4TR	FT-15	HS5X5		LW-2.5		SM0812A SM1012A	HH6X20	
STEPR 10CA11	SB-3TR	FT-10	HS4X4		LW-2		SM0810A SM1010A	HH6X16	
12CA16	SB-4TR	FT-15	HS5X5		LW-2.5		SM0812A SM1012A	HH6X20	
STFPR 10CA11	SB-3TR	FT-10	HS4X4		LW-2		SM0810A SM1010A	HH6X16	
12CA16	SB-4TR	FT-15	HS5X5		LW-2.5		SM0812A SM1012A	HH6X20	
STDER 12CA13	SB-3080TR	FT-10	HS4X4	AJM5F	LW-2	SW-1.8	SM0812A SM1012A	HH6X20	LW-5
STEER 12CA13									
STFER 12CA13									

Note) Plate includes a set of two pieces for each toolholder.

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(Technical Support) **800.823.7284 - Option 2**
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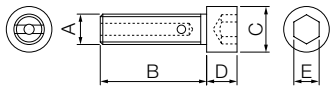
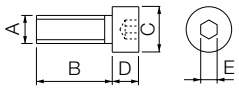
● : Standard Item □ : Made to Order △ : Phaseout Item (will be removed from next catalog)
Contact your local Kyocera sales engineer to upgrade old products to new technology

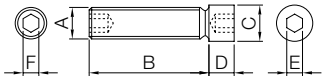
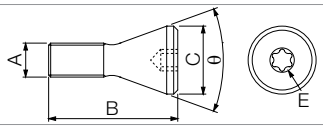
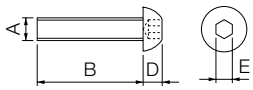
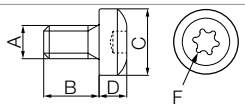
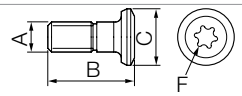
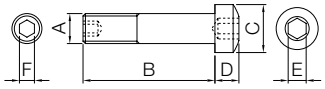
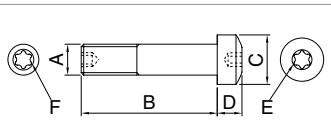
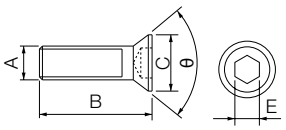
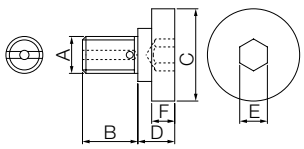
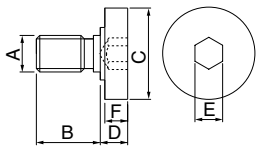
SPARE PARTS

P1 - P37

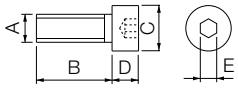
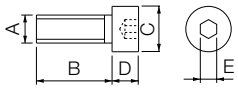
SCREWS / BOLTS	P2 - P7
PINS	P8
SHIMS	P9 - P14
CARTRIDGES	P14
CLAMP SETS	P15 - P16
CLAMPS	P17 - P18
CHIPBREAKERS	P18
WRENCHES	P19 - P21
WRENCHES / SPRINGS / NUTS / PUNCHES / OTHER	P20 - P21
PREVIOUS SPARE PARTS LIST	P22 - P37

Screws / Bolts

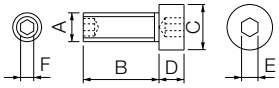
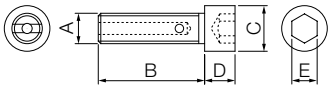
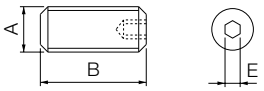
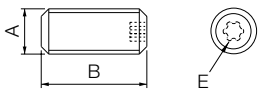
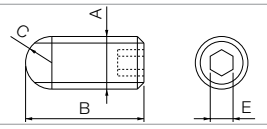
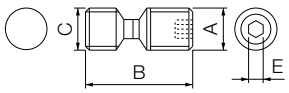
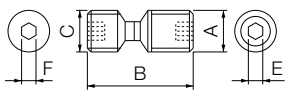
Drawing	Part Number		Dimension (in) A	B	C	D	E	F	Angle (°) α	θ	Torque (N • m)	Notes
	HH	3/8-1.25H	3/8-24 UNF	1.250	0.550	0.375	0.312	-	-	-	-	With Coolant Hole
		1/2-1.25H	1/2-20 UNF		0.750	0.500	0.375					
		3/4-2.3H	3/4-16 UNF	1.500	1.120	0.750	0.625					
	HH	1/4-0.75	1/4-28 UNF	0.750	0.375	0.250	0.188	-	-	-	-	-
		3/8-1.25	3/8-24 UNF	1.250	0.550	0.375	0.312					
		3/8-1.5	3/8-24 UNF	1.500								
		1/2-1.25	1/2-20 UNF	1.250	0.750	0.500	0.375					
		3/4-2.3	3/4-16 UNF	1.500	1.120	0.750	0.625					

Drawing	Part Number		Dimension (mm) A	B	C	D	E	F	Angle (°) α	θ	Torque (N • m)	Notes
	AJ	-6X38	M6X1.0	38.0	6.0	10.0	3.0	3.0	-	-	-	-
		-8X44-9.5	M8X1.25	44.0	9.5	6.0	4.0	4.0	-	-		
		-10X46	M10X1.5	46.0	11.5	8.0	5.0	5.0	-	-		
	AJ	-519TR	M5X0.8	19	10	-	T15	-	-	40°	-	-
	BH	3X6	M3X0.5	6.0	-	1.7	2.0	-	-	-	-	-
		3X12	M3X0.5	12.0	-	1.7	2.0	-	-	-		
		6X25	M6X1.0	25.0	-	3.3	4.0	-	-	-		
		8X30	M8X1.25	30.0	-	4.4	5.0	-	-	-		
	BH	6X10TR	M6X1.0	10.0	12.0	5.0	-	T25	-	-	6.5	-
	CP	8X15TL	M8X1.25	15.0	15.0	-	-	T25	-	-	6.0	L Shows Left-hand Thread
		8X23TL		23.0								
	CS	-2D	M4X0.7	21.5	6.4	3.5	2.5	2.0	-	-	1.7	-
		-3D	M5X0.8	22.0	8.0	4.0	3.0	2.5	-	-	3.9	
		-5D	M5X0.8	28.0	8.0	4.0	3.0	2.5	-	-	3.0	
	CS	-3D-TR	M5X0.8	22.0	8.0	4.0	T15	T15	-	-	3.9	-
	GS	-50	M5X0.8	13.0	7.5	-	3.0	-	-	82°	-	-
	HF	16X40HA	M16X2.0	24.0	40.0	16.0	12.0	10.0	-	-	-	With Coolant Hole
		20X53H	M20X2.5	35.0	43.0	18.0	14.0	14.0				
		20X53HA		33.0	50.0	20.0						
		24X60H	M24X3.0	40.5	65.0	19.5	17.0					
		24X60HA		36.0		24.0						
	HF	16X40S	M16X2.0	29.0	40.00	11.00	14.0	10.0	-	-	-	

Screws / Bolts

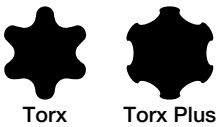
Drawing	Part Number	Dimension (mm)						Angle (°)		Torque (N • m)	Notes
		A	B	C	D	E	F	α	θ		
	HH 3X6	M3X0.5	6.0	5.5	3.0	2.5	-	-	-	-	-
	3X12		12.0								
	HH 4X16	M4X0.7	16.0	7.0	4.0	3.0	-	-	-		
	HH 5X15	M5X0.8	15.0	8.5	5.0	4.0	-	-	-		
	5X16		16.0								
	5X20		20.0								
	5X25		25.0								
	5X30		30.0								
	HH 6X12	M6X1.0	12.0	10.0	6.0	5.0	-	-	-	-	-
	6X16		16.0								
	6X16A		16.0								
	6X18		18.0								
	6X18A		18.0								
	6X20		20.0								
	6X25		25.0								
	6X30		30.0								
	HH 8X20	M8X1.25	20.0	13.0	8.0	6.0	-	-	-	-	-
	8X25		25.0								
	HH 10X25	M10X1.5	25.0	16.0	10.0	8.0	-	-	-	-	-
	10X30		30.0								
	10X30M		30.0								
	10X30S		30.0		6.0	7.0					
	10X35		35.0		10.0	8.0					
	10X40		40.0								
	HH 12X25	M12X1.75	25.0	18.0	12.0	10.0	-	-	-	-	-
	12X35		35.0								
	12X35M		35.0								
	12X40		40.0								
	12X55		55.0								
	12X65		65.0								
	12X80		80.0								
	12X85		85.0								
	12X100		100.0								
	12X110		110.0								
	12X120		120.0								
	12X130		130.0								
	12X140		140.0								
	12X150		150.0								
	HH 16X35	M16X2.0	35.0	24.0	16.0	14.0	-	-	-	-	-
	16X40		40.0								
	16X45		45.0								
	16X65		65.0								
	16X90		90.0								
	16X110		110.0								
	16X130		130.0								
	HH 20X40	M20X2.5	40.0	30.0	20.0	17.0	-	-	-	-	-
	20X53		53.0								
	20X55		55.0								
	20X75		75.0								
	20X90		90.0								
	20X110		110.0								
	20X120		120.0								
	20X140		140.0								
	20X150		150.0								
	20X170		170.0								
	HH 24X40	M24X3.0	40.0	36.0	24.0	19.0	-	-	-	-	-
	24X60		60.0								
	24X75		75.0								
	24X90		90.0								
	24X110		110.0								
	24X120		120.0								
	24X140		140.0								
	24X150		150.0								
	24X170		170.0								

Screws / Bolts

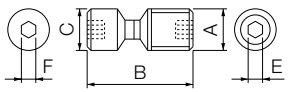
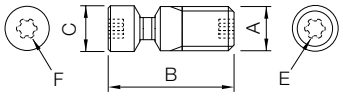
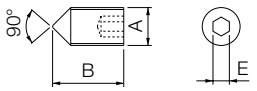
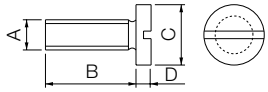
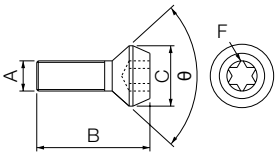
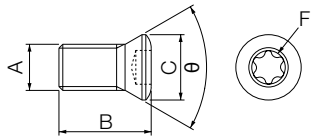
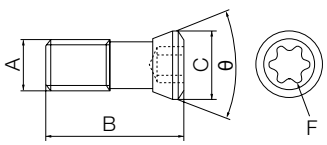
Drawing	Part Number		Dimension (mm) A	B	C	D	E	F	Angle (°) α	θ	Torque (N • m)	Notes
	HH	4X12	M4X0.7	10.0	7.0	4.0	3.0	2.0	-	-	-	-
	HH	8X25H	M8X1.25	25.0	13.0	8.0	5.0					
		10X30H	M10X1.5	30.0	16.0	10.0	6.0					
		10X35HK		35.0				-	-	-	-	With Coolant Hole
		12X35H	M12X1.75	35.0	18.0	12.0	8.0					
		12X35HK										
		16X52H	M16X2.0	36.0	24.0	16.0	12.0					
	HS	3X4P	M3X0.5	3.9	-	-	1.5	-	-	-	1.0	HS4X4P and HS6X4P Have a Flat Edge Clamp Screw Equivalent to JIS B-1177
		3X4		4.0								
		3X8		8.0								
		3X12		12.0								
		3X16		16.0								
	HS	4X4P	M4X0.7	3.9	-	-	2.0	-	-	-	2.0	
		4X4		4.0								
	HS	5X5	M5X0.8	5.0			2.5				3.0	
	HS	6X4P	M6X0.75	3.9	-	-	3.0	-	-	-	4.0	
		6X6	M6X1.0	6.0								
		6X8T		8.0								
		6X14		14.0								
		6X22		22.0								
	HS	8X10	M8X1.25	10.0	-	-	4.0	-	-	-	-	
		8X12		12.0								
	HS	10X10	M10X1.5	10.0	-	-	5.0	-	-	-		
		10X16		16.0								
	HS	12X12	M12X1.75	12.0	-	-	6.0	-	-	-		
		12X16		16.0								
		12X18		18.0								
		12X20		20.0								
		12X25		25.0								
		12X30		30.0								
		12X35		35.0								
	HS	16X12	M16X2.0	12.0	-	-	8.0	-	-	-		
		16X18		18.0								
		16X20		20.0								
	HS	-2524TRP	M2.5X0.35	2.4	-	-	5IP	-	-	-	0.4	○IP shows Torx Plus
		-2534TRP		3.4								
		-3048TRP	M3X0.5	4.8			6IP				0.5	
		-4067TRP	M4X0.7	6.7			7IP				0.8	
	HSB	4X8°R/L	M4X0.7	8.0	R2.0	-	2.0	-	-	-	2.0	R Shows Right-hand Thread L Shows Left-hand Thread
	LS	-03	M5X0.8	10.0	M5X0.8	-	2.0	-	-	-	2.0	-
		-03S		12.2			2.5				3.0	
	LS	-03N	M5X0.8	9.7	M5X0.8	-	2.0	-	-	-	2.0	N : Silver Coated
		-03SN		12.0			2.5				3.0	
	W	10X31	M10X1.0	31.0	M10X1.5	-	5	-	-	-	-	-
	LS	-05	M5X0.8	15.5	M5X0.8	-	2.0	2.0	-	-	2.0	-

Reference

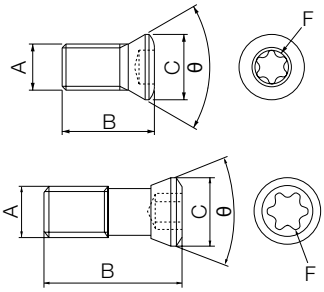
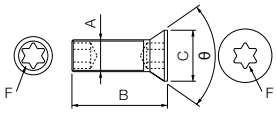
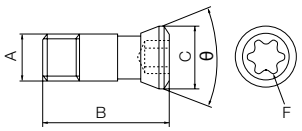
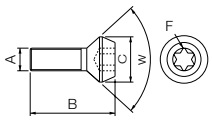
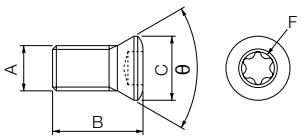
Torx and Torx Plus have different cross-sections.



Screws / Bolts

Drawing	Part Number		Dimension (mm) A	B	C	D	E	F	Angle (°) α	θ	Torque (N • m)	Notes
	LS	-1	M6X1.0	17.0	6.0	-	2.5	2.5	-	-	3.0	N : Silver Coated
		-1N										
		-1S		14.2								
		-1SN										
		-1T		21.0								
	LS	-2	M8X1.0	20.0	8.0	-	3.0	3.0	-	-	4.0	
		-2N										
		-3		22.0								
		-4		24.0								
		-4N										
		-5	M10X1.0	29	10	-	4	4	-	-	-	
	LS	-1P	M6X1.0	16.5	6.0	-	10IP	10IP	-	-	2.0	○○IP Shows Torx Plus
		-2P	M8X1.0	18.2	8.0		15IP	15IP			3.5	
		-3P		21.8								
	LS	-11	M6X1.0	9.5	-	-	3.0	-	-	-	-	-
		-15		12.5								
	M	3X8	M3X0.5	8.0	5.5	2.0	-	-	-	-	-	Flat Fillister Head Screw Equivalent to JIS B-1101
		3X12		12.0								
		4X10	M4X0.7	10.0	7.0	2.6						
	SB	-1TR	M2X0.4	5.3	3.8	-	-	T6	-	-	0.5	R Shows Right-hand Thread
		-2TR	M2.5X0.45	6.2	4.5			T8			1.2	
		-3TR	M3X0.5	7.2	4.8			T10		82°	2.0	
		-3STR		6.4	5.2							
		-3.5TR	M3.5X0.6	9.3	5.6			T15			3.5	
		-4TR	M4X0.7	7.7	5.8							
		-5TR	M5X0.8	20.0	8.7			T20		90°	4.5	
		-2290TR	M2.2X0.45	9.2	2.8			T6		60°	0.5	
		-25100TR	M2.5X0.45	10.0	3.5			T7			0.8	
		-40115TR	M4X0.7	11.5	5.5			T15			3.5	
		-5070TR	M5X0.8	7.0	6.8			T20			4.5	
		-5090TR		9.0								
		-50120TR		12.0								
  SB-40125TRN	SB	-1635TR	M1.6X0.35	3.3	2.6	-	-	T6	-	60°	0.5	R Shows Right-hand Thread ○○IP Shows Torx Plus
	SB	-1STR		5.0	3.1							
		-1840TRP	M2X0.4	4.0	2.5			6IP		55°		
		-2035TR		3.7	3.0			T6		60°		
		-2035TRG		3.5	2.7							
		-2037TRP		3.7				6IP		55°		
		-2040TR		3.8	3.0			T6		60°		
		-2040TRG		4.0								
		-2041TRP		4.1	2.7			6IP		60°		
		-2042TRG		4.1	2.7			T6		60°		
		-2045TR		4.3								
		-2045TRN			2.8			T6		37°		
		-2050TR		4.8	3.0			T6		60°		
		-2060TR		5.8	3.5			T8		60°	1.2	
		-2080TR		8.3	2.8			T6		60°	0.5	
	SB	-2250TR	M2.2X0.45	5.1	3.1	-	-	T7	-	60°	0.8	
		-2255TR		5.5	3.5							
		-2260TR		5.8	3.1							
		-2260TR-L		6.8	3.2							
	SB	-2545TR	M2.5X0.45	4.6	3.5	-	-	T8	-	60°	1.2	
		-2555TRG		5.4								
		-2555TRP		5.5				8IP				
		-2560TR		5.7				T8				
		-2570TR		6.8								
	SB	-3060TR	M3X0.5	5.3	4.2	-	-	T10	-	60°	2.0	
		-3060TRG		5.9								
		-3060TRP		6.0				10IP				
		-3065TRP		6.5	4.0			8IP			1.2	
		-3070TRG		7.0	4.2			T10			2.0	
		-3070TR-L			4.0			T8			1.2	
		-3070TRP			4.2			10IP			2.0	
		-3076TRP		7.6	3.9					55°		
		-3080TR		8.0	4.2			T10		60°		

Screws / Bolts

Drawing	Part Number		Dimension (mm)						Angle (°)		Torque (N • m)	Notes
			A	B	C	D	E	F	α	θ		
 SB-40125TRN	SB	-3573TRP	M3.5X0.6	7.3	5.0	-	-	10IP	-	60°	2	R Shows Right-hand Thread ○○IP Shows Torx Plus
		-3580TR		8.0	5.3			T15			3.5	
		-3590TRP		9.0				15IP			4.0	
		-3592TR		9.2	5.1			T10			2.0	
	SB	-4050TRN	M4X0.5	4.6	5.1			T10		57°	2.0	
		-4060TR	M4X0.7	5.9	5.5			T15		60°	3.5	
		-4065TR		6.7								
		-4070TRG		7.0								
		-4070TRN		7.7	5.4							
		-4070TRS		6.7	5.5			T10			2.0	
		-4075TRP		7.5				15IP			3.5	
		-4082TPR		8.2								
		-4085TR		8.5				T15				
		-4085TRP						15IP				
		-4090TRP		9.0	5.7							
		-4090TRPN			5.5							
		-40120TR		12.0	5.1			T15				
		-40125TRN		12.5	5.2					50°		
		-40140TR		14.0	5.5					60°		
		-40140TRN			6.7					75°		
	SB	-4570TRN	M4.5X0.5	6.8	6.0	-	-	T10	-	57°	2.0	
		-45130TR	M4.5X0.75	13.0	6.6	-	-	20IP	-	55°	4.5	
	SB	-5085TR	M5X0.8	8.5	6.8			T20		50°	4.5	
		-50120TRP		12.0				20IP		60°		
		-50120TRPH			6.8							
		-50120TRS			7.2			15IP			3.5	
		-50137K		13.7	9.7			T20		70°	4.5	
		-50140TR		14.0	7.3			T15		50°	3.5	
		-50140TRP						20IP		60°	4.5	
	SB	-60120TR	M6X1.0	12.0	8.5			T25			6.0	
		-60130TRP		13.0				20IP			4.5	
		-60200TRP		20.0							6.0	
	SB	-4070TRW	M4X0.7	6.7	5.5	-	-	T8	-	60°	1.2	R Shows Right-hand Thread
		-4590TRWN	M4.5X0.75	9.3	5.6			T10		57°	2.0	
	SC	-30067	M3X0.35	6.7	4.4	-	-	T8	-	60°	1.2	-
		-35085	M3.5X0.35	8.5	5.7			T10			2.0	
		-40100	M4X0.5	10.0	6.0			T15			3.5	
		-50130	M5X0.5	13.0	6.6			T20		40°	4.5	
		-60160	M6X0.75	16.0	8.0			T25			6.0	
		-60210		21.0	9.6			T30			8.0	
	SCR	-01	M2.5X0.45	6.6	3.6	-	-	T7	-	60°	0.8	-
		-03	M3X0.5	8.4	4.6	-	-	T9			1.6	
		-04	M2.5X0.45	4.6	3.6	-	-	T7			0.8	
		-05										
		-16	M3.5X0.6	6.9	5.0	-	-	T10			2.0	
		-30		8.9								
	SE	-3070TRP	M3X0.5	7.0	4.3	-	-	9IP	-	43°	1.7	○○IP Shows Torx Plus
		-40050TRN	M4X0.7	5.0	5.0			T15		44°	3.5	
		-40055TR		5.5								
		-40068TR		6.8								
		-40080TR		8.0								
		-40090TR		9.0								
		-40100TR		10.0								

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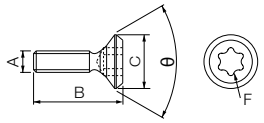
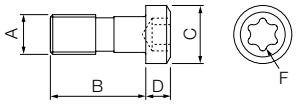
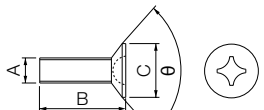
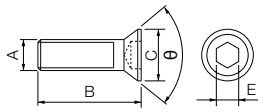
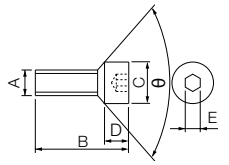
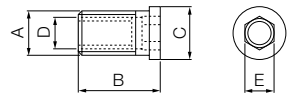
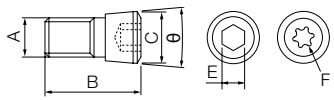
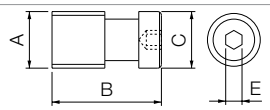
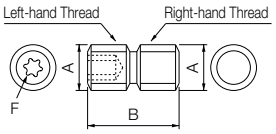
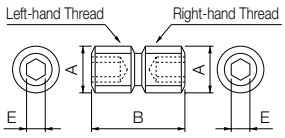
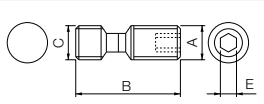
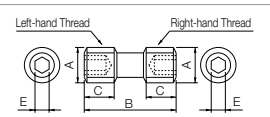
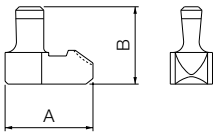
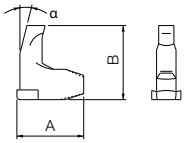
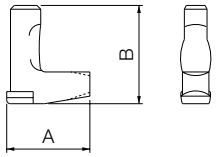
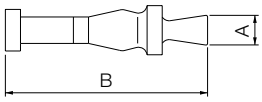
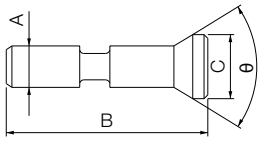
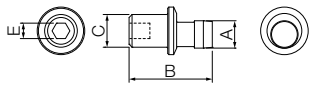
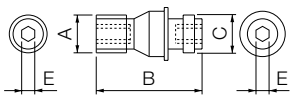
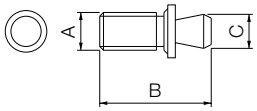
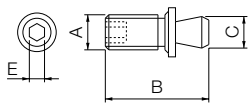
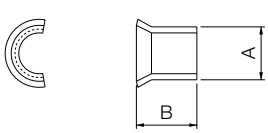
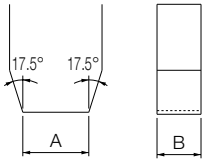
Screws / Bolts

Drawing	Part Number	Dimension (mm)						Angle (°)		Torque (N • m)	Notes
		A	B	C	D	E	F	α	θ		
	SE -40120TR	M4X0.7	12.0	5.6	-	-	T15	-	60°	3.5	-
	-50125TR	M5X0.8	12.5	6.8			T20			4.5	
	SH -50150TR	M5X0.8	15.1	7.3	3.1	-	T20	-	-	4.5	-
	SP 3X4	M3X0.5	4.0	4.0	-	-	-	-	90°	-	With Additional Machining Below the Fillister Head
	3X6		6.0	6.0							Cross Recessed Flat Head Screw equivalent to JIS...B-1111
	3X8		8.0								
	3X10		10.0								
	SP 4X9	M4X0.7	9.0	5.6	-	2.0	-	-	90°	-	-
	SP 8X35	M8X1.25	35.0	11.0	4.4	5.0	-	-	90°	-	-
	SPW -6045	M6X0.75	9.0	7.5	M4.5X0.75	4.5	-	-	-	-	A Shows External D Shows Internal External and Internal Threads are Both Right-hand Threads
	-7050	M7X0.75	9.0	8.8	M5X0.8	5.0	-	-	-		
	SS -4N	M5.5X0.5	8.5	6.6	M4X0.7	4.0	-	-	-		
	SV -60136R	M6X1.0	13.6	6.3	-	4.0	-	-	6°	-	Hexagon Socket
	-60136TR					-	T20	-		4.5	Torx
	TH 8X15	M8X1.25	20.0	8.5	-	4.0	-	-	-	-	-
	W 6X17	M6X1.0	17.0	-	-	-	T20	-	-	4.5	-
	6X18N		18.0				T15			3.5	
	8X16	M8X1.0	16.0				T25			6.0	
	W 6X18	M6X1.0	17.5	-	-	3.0	-	-	-	-	-
	6X20	M6X1.0	20.5								
	8X18	M8X1.25	18.0			4.0					
	*8X21	M8X1.0	21.0								
	W 10X31	M10X1.0	31.0	M10X1.5	-	5.0	-	-	-	-	-
	XNS 610	3/8-24UNF	1.250"	0.500"	-	0.188"	-	-	-	-	Differential Screw

Pins

Drawing	Part Number		Dimension (mm)						Angle (°)		Notes
			A	B	C	D	E	F	α	θ	
	LL	-03	7.8	6.3	-	-	-	-	-	-	-
		-03N									
		-03S	11.1	8.9							
		-03SN									
		-03T	8.3	8.9							
		-03TN									
	LL	-05C	10.7	11.7	-	-	-	-	12°	-	-
		-1C	13.0	13.3					14°		
		-1CN									
		-2C	18.8	17.6					14°		
	LL	-1	10.3	12.0	-	-	-	-	-	-	-
		-1K	10.0	12.0							
		-1N	10.3	12.0							
		-1D	12.3	12.0							
		-1DN									
		-2	13.5	13.0							
		-2K	13.3	13.2							
		-2N	13.5	13.0							
		-3	16.4	13.0							
		-3K	16.0	14.8							
		-3N	16.4	13.0							
		-4	16.4	14.7							
		-5	17.1	16.7							
		-5N	17.1	16.7							
		-6	20.7	21.0							
	LP	-2S	3.65	20.0	-	-	-	-	-	-	-
		-6S	3.65	25.0							
	LPA	-11	2.8	11.0	4.2	-	-	-	-	60°	-
		-13		13.0							
		-17		17.0							
	LPF	-11	2.5	11.0	3.5	-	-	-	-	60°	
		-1113		13.0							
		-1117		17.0							
		-13	3.8	13.0	5.5						
		-17		17.0							
	PP	-4	4.6	14.0	5.5	-	3.0	-	-	-	-
	TS	-3S	M5X0.8	15.0	3.60	-	2.0	-	-	-	-
	WP	-1S	M5X0.8	18.0	3.65	-	-	-	-	-	-
		5X15		15.0	5.0						
	WP	5X11	M5X0.8	10.5	5.0	-	2.0	-	-	-	-
	LSP	-1	5.0	5.3	-	-	-	-	-	-	-
		-2	6.5	5.6							
		-3	8.25	7.9							
		-4	9.5	10.0							
	LSP	-2K	5.1	5.2							
		-3K	6.7	5.7							
	P	-03	2.8	1.95	-	-	-	-	-	-	-
		-03S	3.5	1.95							

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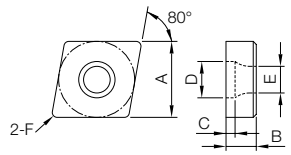
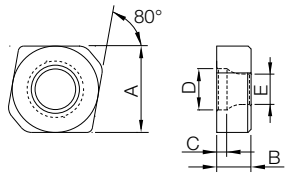
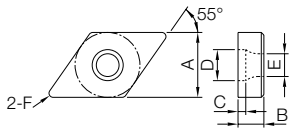
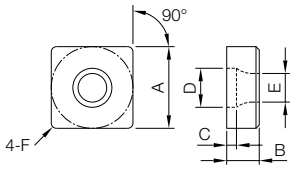
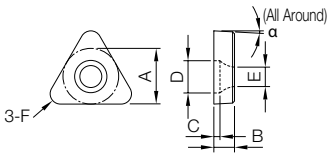
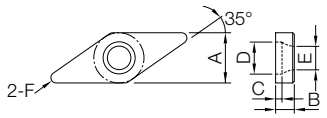
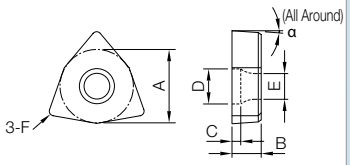
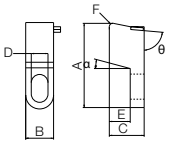
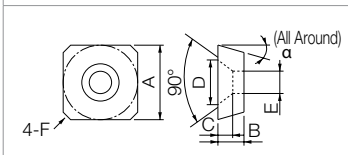
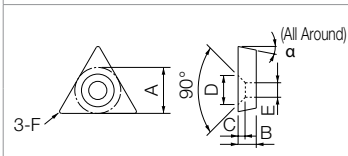
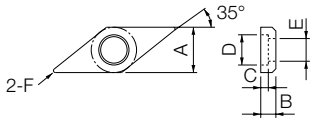
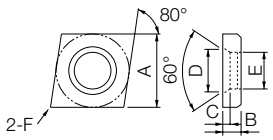
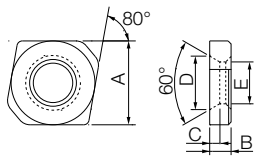
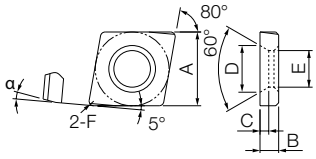
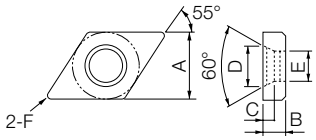
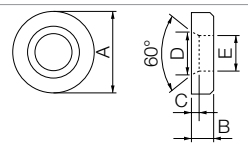
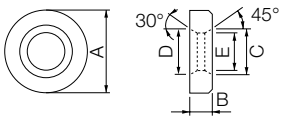
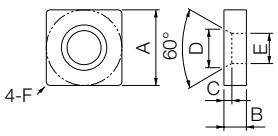
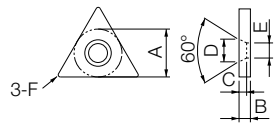
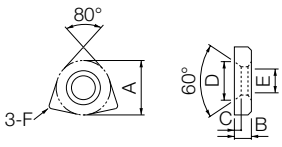
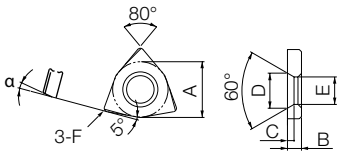
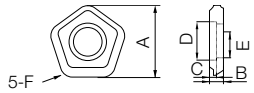
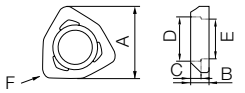
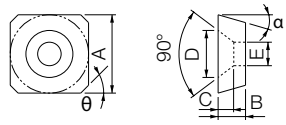
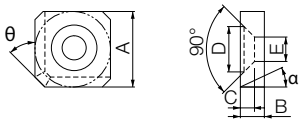
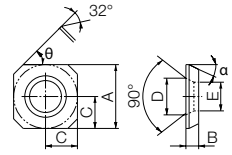
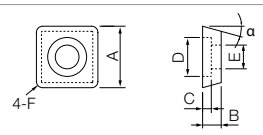
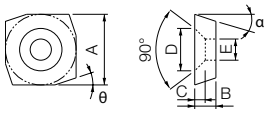
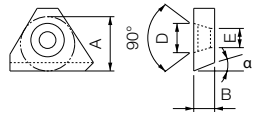
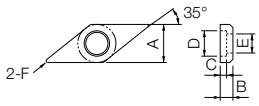
Shims

Drawing	Part Number	Dimension (mm)						Angle (°)		Notes
		A	B	C	D	E	F	α	θ	
	**DC -42**	12.0	3.2	1.2	6.0	4.4	R1.2	-	-	Shim Screw : SB-4085TR
	-44	12.55	5.0	1.5			R0.8			
	**DC -44-C**	12.55	5	1.5	6	4.4	-	-	-	Shim Screw : SB-4085TR
	**DD -42**	12.55	3.2	1.2	6.0	4.4	R1.2	-	-	Shim Screw : SB-4085TR
	-42-16						R1.6			
	-43		3.4	1.3			R0.8			
	-44		5.0	1.5						
	**DS -42**	12.0	3.2	1.2	6.0	4.4	R1.2	-	-	Shim Screw : SB-4085TR
	-44	12.55	5.0	1.5			R0.8			
	**DT -32**	8.63	3.2	0.95	5.0	3.4	R1.6	3°	-	Shim Screw : SB-3080TR
	-42	12.46		1.2	6.0	4.4	R1.2	-		Shim Screw : SB-4085TR
	**DV -33**	9.40	3.5	1.2	6.0	4.4	R1.0	-	-	Shim Screw : SB-4085TR
	**DW -42**	11.5	3.2	1.2	6.0	4.4	R1.2	4°	-	Shim Screw : SB-4085TR
	-44	12.65	5.0	1.5			R0.8	-		
	**556 CRL**	34.0	10.0	12.7	5.6	5.0	R1.6	0°	55°	R Shows Right-hand Thread L Shows Left-hand Thread Shim Screw : HH5X16
	**KPS -42**	11.5	3.2	2.0	7.2	3.2	C1.0	7°	-	Shim Screw : SP3X8
	**KPT -32**	8.0	3.2	1.9	7.0	3.2	R0.4	11°	-	Shim Screw : SP3X8 SP3X10
	-42	10.5	3.2	1.9	7.0	3.2	R0.8	11°	-	

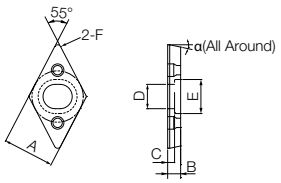
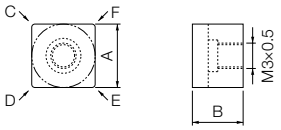
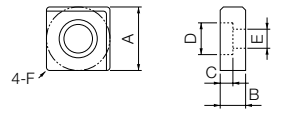
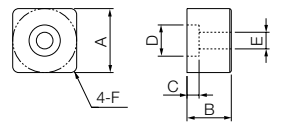
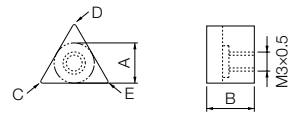
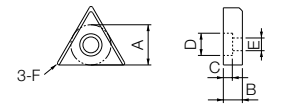
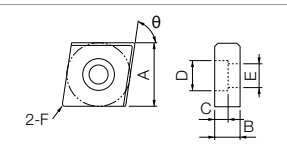
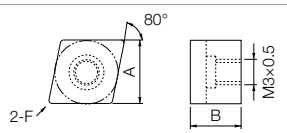
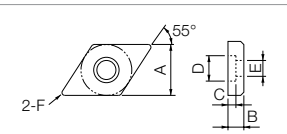
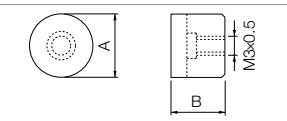
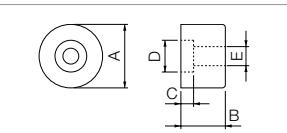
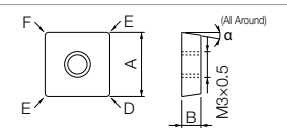
Shims

Drawing	Part Number		Dimension (mm)						Angle (°)		Notes
			A	B	C	D	E	F	α	θ	
	KVN	-32	9.52	3.2	2.1	7.6	5.5	R0.8	-	-	Lock Pin : LP-6S LP-2S
	LC	-32	9.47	2.4	1.3	6.18	4.68	R0.8	-	-	Shim Pin : LSP-1
		-32N									
		-4K	11.7	3.2	1.4	8.1	6.73	R0.8	-	-	Shim Pin : LSP-3K
		-42	12.65	3.2	1.5	8.01	6.28	R0.8	-	-	Shim Pin : LSP-2
		-42N									
		-42N-20						R2.0			
		-53	15.9	4.8	1.7	10.0	8.0	R1.2	-	-	Shim Pin : LSP-3
		-53N									
		-63	19	4.8	2	11.61	9.3	R1.6	-	-	Shim Pin : LSP-4
	LC	-42N-C	12.65	3.2	1.5	8.01	6.28	-	-	-	Shim Pin : LSP-2
		-53N-C	15.9	4.8	1.7	10	8	-	-	-	Shim Pin : LSP-3
		-63-C	19	4.8	2	11.61	9.3	-	-	-	Shim Pin : LSP-4
	LC	-42R/L	12.65	3.2	1.5	8.01	6.28	R0.8	10°	-	R Shows Right-hand Thread L Shows Left-hand Thread Shim Pin : LSP-2
		-42NR/L									
		-42NR/L-20						R2.0			
	LD	-32	9.47	2.4	1.3	6.18	4.68	R0.8	-	-	Shim Pin : LSP-1
		-32N									
		-4K	11.7	3.2	1.4	8.1	6.73	R0.8	-	-	Shim Pin : LSP-3K
		-4K43		4.8	3.0	8.3	6.60	R1.2			
		-42	12.65	3.2	1.5	8.01	6.28	R0.8	-	-	Shim Pin : LSP-2
		-42-20						R2.0			
		-43	12.65	4.8	3.1	8.5	6.28	R0.8	-	-	
		-43-20						R2.0			
	LR	-80	9.47	3.2	1.3	6.25	4.75	-	-	-	Shim Pin : LSP-1
		-81	12.65	3.2	1.5	8.01	6.28	-	-	-	Shim Pin : LSP-2
	LR	-10C	8.5	3.2	6.3	6.3	4.7	-	-	-	Shim Pin : LSP-1
		-12C	10.0	3.2	6.3	6.3	4.7	-	-	-	
		-16C	13.6	3.2	7.9	8.01	6.28	-	-	-	Shim Pin : LSP-2
	LS	-32	9.47	3.2	1.3	6.18	4.68	R0.8	-	-	Shim Pin : LSP-1
		-42	12.65	3.2	1.5	8.01	6.28	R0.8	-	-	Shim Pin : LSP-2

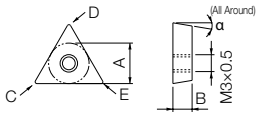
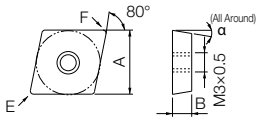
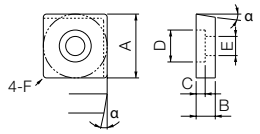
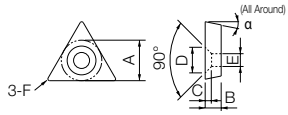
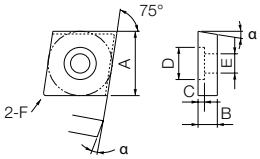
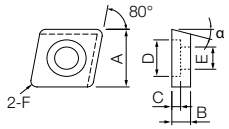
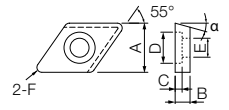
Shims

Drawing	Part Number		Dimension (mm)						Angle (°)		Notes
			A	B	C	D	E	F	α	θ	
	LT	-3K	8.53	2.7	1.0	6.1	5.13	R0.8	-	-	Shim Pin : LSP-2K
		-32	9.47	2.7	1.3	6.18	4.68	R0.8	-	-	Shim Pin : LSP-1
		-32N									
		-32N-20						R2.0			
		-42	12.65	3.2	1.5	8.01	6.28	R0.8	-	-	Shim Pin : LSP-2
		-42N									
		-42N-20						R2.0			
	LW	-32	9.47	2.4	1.3	6.18	4.68	R0.8	-	-	Shim Pin : LSP-1
		-32N									
		-42	12.65	3.2	1.5	8.01	6.28	R0.8	-	-	Shim Pin : LSP-2
		-42N									
	LW	-42R	12.65	3.2	1.5	8.01	6.28	R0.8	10°	-	R Shows Right-hand Thread L Shows Left-hand Thread Shim Pin : LSP-2
		-42NR									
	MFPN	-45	17.07	3.5	1.95	9.8	7.18	R3.5	-	-	Shim Screw : SPW-7050
	MFWN	-90	15.25	4.0	2.5	9.44	7.25	R3.0 R4.0	-	-	Shim Screw : SPW-7050
	MSD	-42	10.7	3.2	1.85	7.0	3.3	-	20°	45°	Shim Screw : SP3X8
	MSE	-4245S	10.3	3.2	2.0	6.0	5.0	-	20°	45°	Shim Screw : SP4X9
	MSE	-4215	10.53	3.2	1.5	6.4	3.4	-	25°	15°	Shim Screw : SP3X8
		-4245	10.53	3.2	1.5	6.4	3.4	-	25°	45°	Shim Screw : SP3X8
	MSO	-4T245	10.0	2.0	4.7	6.4	4.8	-	27°	45°	Shim Screw : SP3X6
	MSO	-5200	12.6	3.18	1.8	8.27	6.66	R0.8	15°	-	Shim Screw : SPW-6045
	MSP	-42	11.3	3.2	1.85	7.0	3.3	-	15°	15°	Shim Screw : SP3X8
	MTE	-42	9.8	3.2	-	6.4	3.4	-	25°	-	Shim Screw : SP3X8
	MVN	-32	9.52	3.2	2.1	7.4	6.5	R0.8	-	-	Lock Pin : TS-3S

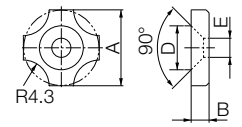
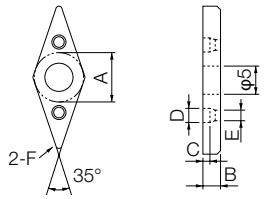
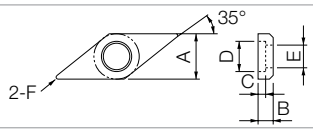
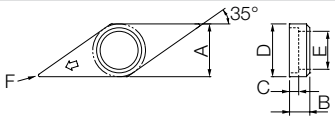
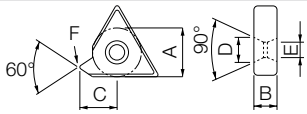
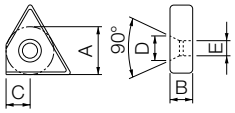
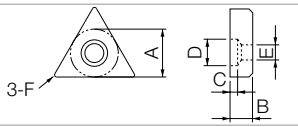
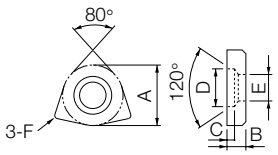
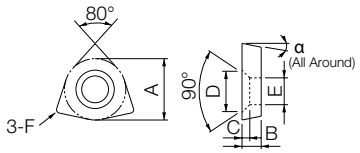
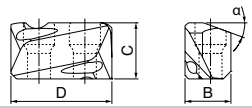
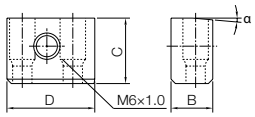
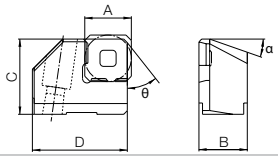
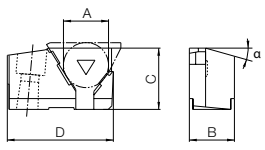
Shims

Drawing	Part Number	Dimension (mm)						Angle (°)		Notes
		A	B	C	D	E	F	α	θ	
	**PD -42**	12.7	3.2	1.7	6.0	8.4	0.8	12°	-	Shim Screw : SB-2050TR
	**SP -129**	9.52	9.52	R0.8	R1.6	R1.2	R1.6	-	-	Shim Screw : HH3X12
	**SP -141**	12.7	4.0	2.4	6.2	3.3	R1.2	-	-	Shim Screw : M3X8
	-143	12.7	7.2	2.4	6.2	3.3	R1.2	-	-	Shim Screw : M3X12
	-162	15.8	6.0	3.4	8.0	4.4	R1.5	-	-	Shim Screw : M4X10
	**SP -148**	12.7	8.8	2.4	6.2	3.3	R1.2	-	-	Shim Screw : BH3X12
	**SP -219**	6.35	9.52	R0.8	R1.2	R1.6	-	-	-	Shim Screw : HH3X12
	**SP -221**	9.52	4.0	2.5	6.5	3.5	R1.2	-	-	Shim Screw : M3X8
	-223	9.52	7.2	2.5	6.5	3.5	R1.2	-	-	Shim Screw : M3X12
	**SP -342**	12.7	6.0	2.5	6.5	3.5	R1.2	-	75°	Shim Screw : M3X8
	-441	12.7	4.0	2.5	6.2	3.3	R0.8	-	80°	Shim Screw : M3X8
	-443	12.7	7.2	2.5	6.2	3.3	R0.8	-	80°	Shim Screw : M3X12
	-454	15.7	8.0	3.4	8.0	4.5	R1.6	-	80°	Shim Screw : M4X10
	**SP -429**	9.52	9.52	-	-	-	R1.2	-	-	Shim Screw : HH3X12
	**SP -521**	10.0	4.0	2.5	6.2	3.3	R1.0	-	-	Shim Screw : M3X8
	-523		7.2							Shim Screw : M3X12
	-541	12.7	4.0	2.5	6.2	3.3	R1.2	-	-	Shim Screw : M3X8
	-543		7.2							Shim Screw : M3X12
	**SP -826**	9.52	7.9	-	-	-	-	-	-	Shim Screw : HH3X12
	-829	9.52	9.52	-	-	-	-	-	-	
	**SP -841**	12.7	4.0	2.4	6.2	3.3	-	-	-	Shim Screw : M3X8
	-843	12.7	7.2	2.4	6.2	3.3	-	-	-	Shim Screw : M3X12
	-849	12.7	8.8	2.4	6.2	3.3	-	-	-	Shim Screw : BH3X12
	-861	15.8	6.0	3.4	8.0	4.4	-	-	-	Shim Screw : M4X10
	**SP -130A**	9.52	3.2	-	R0.4	R0.8	R1.2	8°	-	Shim Screw : BH3X12

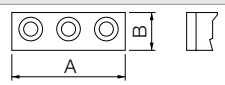
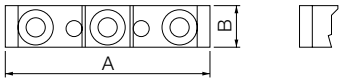
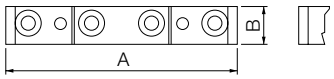
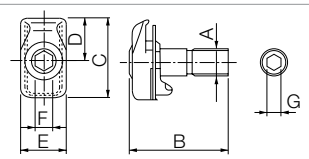
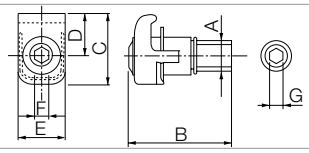
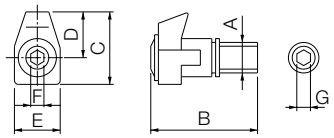
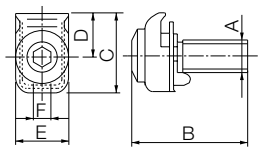
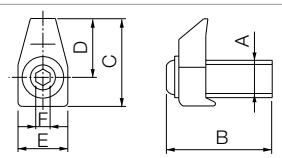
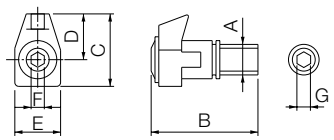
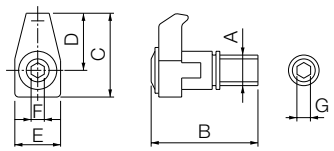
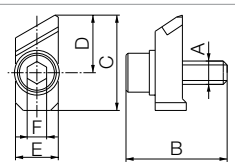
Shims

Drawing	Part Number	Dimension (mm)						Angle (°)		Notes
		A	B	C	D	E	F	α	θ	
	SP -210A	6.35	3.2	R0.4	R0.8	R1.2	-	8°	-	Shim Screw : BH3X6
	SP -420A	9.52	3.2	-	-	R0.8	R1.2	8°	-	Shim Screw : BH3X6
	SP -141P	12.7	4.0	2.4	6.2	3.3	R1.2	7°	-	Shim Screw : M3X8
	-143P	12.7	7.2	2.4	6.2	3.3	R1.2	7°	-	Shim Screw : M3X12
	SP -230P	8.3	3.2	2.0	7.2	3.2	R0.5	7°	-	Shim Screw : SP3X10
	SP -341P	12.6	4.0	2.5	6.5	3.5	R1.2	7°	-	Shim Screw : M3X8
	SP -441P	12.7	4.0	2.5	6.2	3.3	R1.2	11°	-	Shim Screw : M3X8
	-443P		7.2							Shim Screw : M3X12
	SP -521P	10.0	4.0	2.5	6.2	3.3	R1.2	11°	-	Shim Screw : M3X8
	-523P		7.2							Shim Screw : M3X12

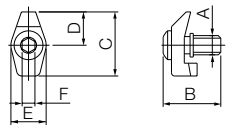
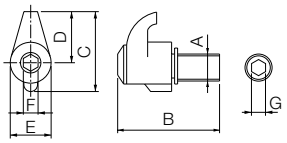
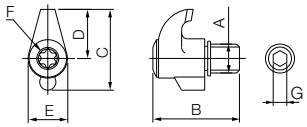
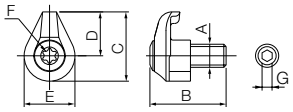
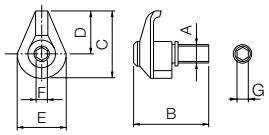
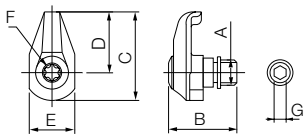
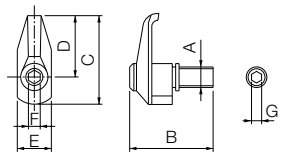
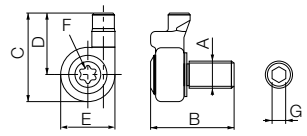
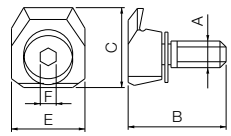
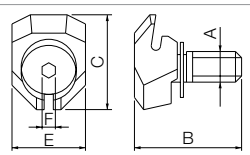
Shims / Cartridges

Drawing	Part Number	Dimension (mm)						Angle (°)		Notes
		A	B	C	D	E	F	α	θ	
	**SP -RC**	12.6	3.0	-	7.35	3.35	-	-	-	Shim Screw : SP3X8
	**SVN -32**	8.0	3.2	1.5	3.1	2.3	R0.4	-	-	Shim Screw : SB-2050TR
	**SVN -32N**	8.2	3.2	1.5	7.0	5.9	R0.6	-	-	Shim Screw : SS-4N
	**SVN -32S**	8.2	3.2	1.5	7	5.9	R0.2	-	-	Shim Screw : SS-4N 1-corner use only
	**TN -32**	9.52	3.2	6.5	7.0	4.2	R0.4	-	-	Shim Screw : SP3X8
	-43	12.70	3.2	8.1	7.0	4.2	R0.5	-	-	
	**TNW -32**	9.52	3.2	4.8	7.0	4.2	-	-	-	Shim Screw : SP3X8
	**WTN -33**	9.52	4.76	2.5	7.0	5.3	R0.8	-	-	Shim Pin : WP-1S
	-33-20						R2.0			
	**WWN -42**	12.7	3.0	1.4	7.0	5.3	R1.2	-	-	Shim Pin : WP5X15
	**WWP -42**	12.7	3.0	1.5	8.3	5.3	R1.2	11°	-	Shim Pin : WP5X11
	-42-16						R1.6			
	**MAP -2216**	-	9.0	11.0	19.8	-	-	20°	-	Clamp Screw : SB-40140TR
	**MAP -2506**	-	9.5	14.9	20	-	-	5°	-	Clamp Screw : SB-40140TR
	**LSD -445R**	12.7	13.0	20.0	26.5	-	-	20°	45°	Dimension A shows Insert I.D.
	LSE -445R	12.7	13.0	19.5	26.0	-	-	20°	45°	
	LSO -445R	13.494	12.0	21.3	23.5	-	-	27°	45°	
	LSP -415R	12.7	13.0	18.0	26.0	-	-	15°	15°	
	**LTE -490R**	12.7	12.0	17.0	30.0	-	-	15°	-	Dimension A shows Insert I.D.

Clamp Sets

Drawing	Part Number	Dimension (mm)							Notes
		A	B	C	D	E	F	G	
	BCS -1	64.0	13.0	-	-	-	-	-	-
	-5	48.0	16.5	-	-	-	-	-	
	BCS -2	74.0	15.0	-	-	-	-	-	-
	-3	88.0	16.0	-	-	-	-	-	
	BCS -4	98.0	16.0	-	-	-	-	-	-
	CE -010	M8X1.25	28.0	24.0	12.8	13.0	4.0	4.0	G : Indicates hexagon hole two side widths of back side of bolts
	-220			27.0	15.8	15.0			
	CE -020	M8X1.25	30.0	17.0	10.5	12.7	4.0	4.0	G : Indicates hexagon hole two side widths of back side of bolts
	CE -030	M8X1.25	30.0	19.0	12.5	12.7	4.0	4.0	G : Indicates hexagon hole two side widths of back side of bolts
	-040			22.5	16.0				
	CE -320	M6X1.0	24.5	18.2	9.7	12.7	4.0	-	-
	CE -360S	M6X1.0	16.0	18.0	10.55	12.4	4.0	-	-
	CE -030A	M8X1.25	30.0	20.0	13.7	12.7	4.0	-	G : Indicates hexagon hole two side widths of back side of bolts
	CE -410	M8X1.25	30.0	26.0	19.5	12.7	4.0	4.0	G : Indicates hexagon hole two side widths of back side of bolts
	-430			29.0	22.5				
	CP -RC℞	M6X1.0	20.0	24.5	14.8	11.0	5.0	-	R Shows Right-hand Thread L Shows Left-hand Thread

Clamp Sets

Drawing	Part Number	Dimension (mm)							Notes
		A	B	C	D	E	F	G	
	CPS -1	M3X0.5	9.0	10.0	5.2	5.5	2.0	-	-
	CPS -2	M5X0.8	14.5	14.0	8.5	6.8	2.5	2.5	G : Indicates hexagon hole two side widths of back side of bolts
	-2P		18.0						
	-3	M6X1.0	19.0	16.5	10.0	8.8	3.0	3.0	
	CPS -2S	M5X0.8	13.5	14.0	8.5	6.8	T15	2.0	G : Indicates hexagon hole two side widths of back side of bolts
	-2TR		15.0						
	CPS -4V	M4X0.7	8.9	11.3	7.3	8.0	T10	-	G : Indicates hexagon hole two side widths of back side of bolts
	-5F	M5X0.8	11.3	12.7	7.5	10.3	T15	2.5	
	-5S		18.0	15.0	9.5	11.0		2.0	
	-5V		13.5	12.7	7.5	10.3		2.5	
	CPS -6F	M6X1.0	16.5	15.6	9.5	12.2	3.0	-	G : Indicates hexagon hole two side widths of back side of bolts
	-6M		18.5	17.5	11.0	13.0		3.0	
	-6S			18.0	12.0	12.0			
	-6V			15.6	9.5	12.2			
	-8V	M8X1.25	24.0	20.8	13.0	15.5	4.0	4.0	
	CPS -5E	M5X0.8	13.5	17.5	12.0	9.0	T15	2.5	G : Indicates hexagon hole two side widths of back side of bolts
	CPS -5R/L	M5X0.8	18.0	17.5	12.0	9.0	2.5	2.5	G : Indicates hexagon hole two side widths of back side of bolts R Shows Right-hand Thread L Shows Left-hand Thread
	LGBA-16R/LS	M5X0.8	15.0	16.1	11.2	9.85	T15	2.0	G : Indicates hexagon hole two side widths of back side of bolts R Shows Right-hand Thread L Shows Left-hand Thread
	-22R/LS			17.6	12.7				
	WCS -1N	M6X1.0	21.0	15.7	-	15.0	3.0	-	-
	WCS -8	M6X1.0	21.0	19.4	-	15.0	3.0	-	-

P SPARE PARTS

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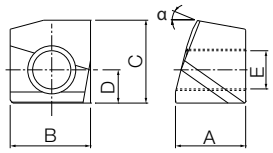
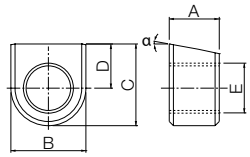
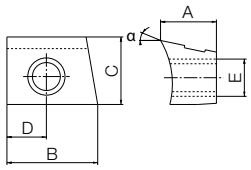
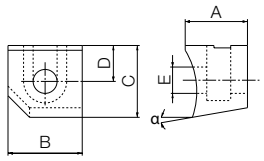
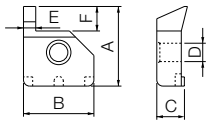
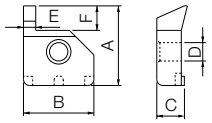
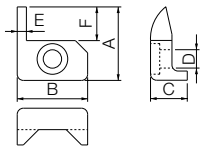
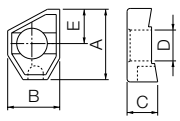
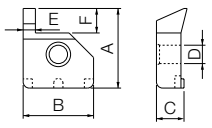
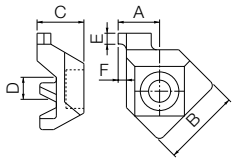
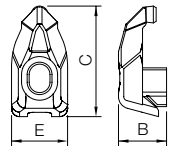
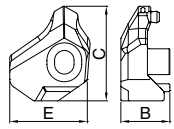
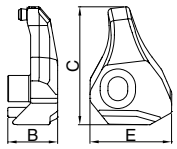
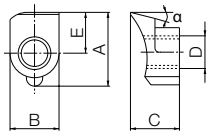
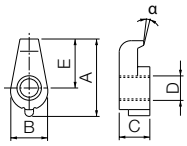
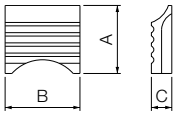
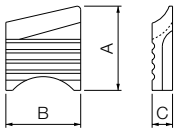
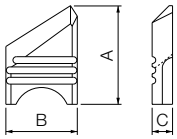
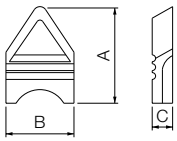
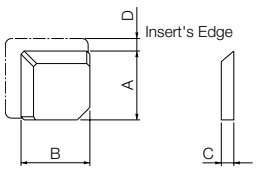
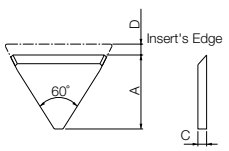
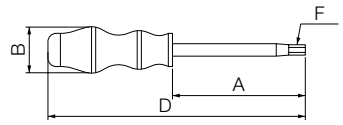
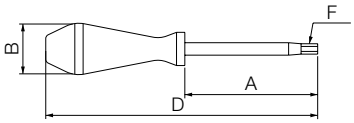
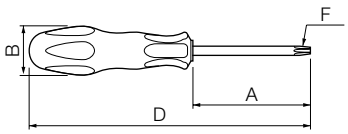
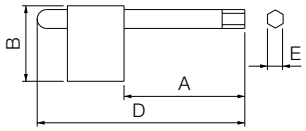
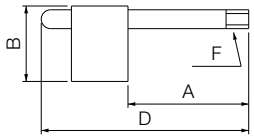
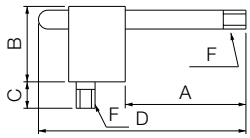
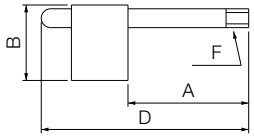
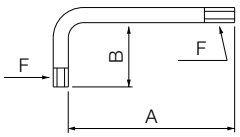
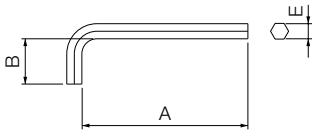
Clamps

Drawing	Part Number	Dimension (mm)						Angle (°)		Notes
		A	B	C	D	E	F	α	θ	
	C 08R	7.6	8.7	8.9	3.6	M5X0.8 (L-hand Thread)	-	10°	-	Clamp Screw : W6X18N
	C 09N	6.0	9.0	9.8	5.3	M6X1.0 (L-hand Thread)	-	10°	-	Clamp Screw : W6X18N
	C 17R	12.2	20.0	14.3	8.5	M8X1.25 (L-hand Thread)	-	12°	-	Clamp Screw : W6X18N
	C 20R	15.1	15.5	15.0	7.5	5.3	-	10°	-	Clamp Screw : TX8X15
	CH -20R	13.1	15.5	14.8	7.5	5.3	-	10°	-	Clamp Screw : TX8X15
	C 25R	13.2	15.5	15.0	7.5	5.3	-	10°	-	Clamp Screw : TX8X15
	CE -111	35.0	25.0	10.0	8.0	3.0	10.0	-	-	Right-hand
	-121									Left-hand
	-131					4.5		-	-	Right-hand
	-141									Left-hand
	CGA -3R/L	24.0	17.66	12.0	6.2	1.9	11.0	-	-	R Shows Right-hand L Shows Left-hand
	-4R/L	24.0	17.66	12.0	6.2	2.9	11.0	-	-	
	-5R/L	27.5	18.66	12.0	6.2	3.9	14.5	-	-	
	CGB R/L	19.0	14.0	8.2	6.35	9.5	-	-	-	R Shows Right-hand L Shows Left-hand
	CGH -1R/L	25.0	22.0	8.0	6.05	3.0	5.5	-	-	R Shows Right-hand L Shows Left-hand
	-2R/L					5.0				
	-3R/L	30.0	23.0	8.5		6.0	7.0			
	CGIA -3R	10.7	17.0	10.5	5.2	1.8	2.0	-	-	-
	-4R			11.5		2.5				
	-5R	15.7		10.5		3.5	7.0			

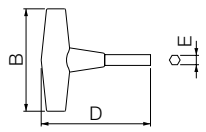
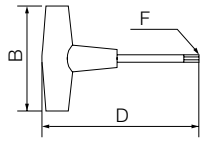
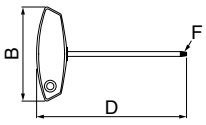
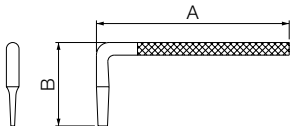
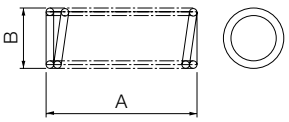
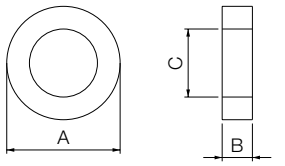
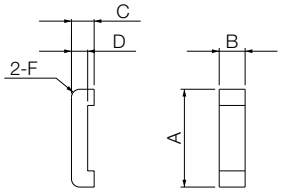
Clamps / Chipbreakers

Drawing	Part Number	Dimension (mm)						Angle (°)		Notes
		A	B	C	D	E	F	α	θ	
	CP -2D	-	10.0	21.6	-	10.4	-	-	-	-
	-3D		12.0	27.6		14.0				
	-5D		13.0	32.0						
	CP -2D$^{R}\!/_{L}$-JCT	-	13.5	25.3	-	21.5	-	-	-	
	CP -3D-$^{R}\!/_{L}$-JCT	-	13.1	26.4	-	17.9	-	-	-	
	-4D-$^{R}\!/_{L}$-JCT			28.4		18.2				
	-5D-JCT			31.9		21.5				
	CP -8TE	17.9	12.0	12.0	M8X1.25 (L-hand Thread)	10.0	-	15°	-	-
	CP -8W	20.9	12.0	8.0	M8X1.25 (L-hand Thread)	13.0	-	3°	-	-
	CB -11	11.5	12.7	3.5	-	-	-	-	-	-
	-51	16.0	15.6	3.5	-	-	-	-	-	
	CB -12	14.0	12.7	3.5	-	-	-	-	-	Right-hand
	-13	14.0	12.7	3.5	-	-	-	-	-	Left-hand
	CB -14	18.51	12.7	3.5	-	-	-	-	-	Right-hand
	-15	18.51	12.7	3.5	-	-	-	-	-	Left-hand
	CB -16	18.0	12.7	3.5	-	-	-	-	-	-
	-17	21.0	15.6	3.5	-	-	-	-	-	
	CB -S3220	7.94	7.94	1.0	2.0	-	-	-	-	-
	-S4220	11.12	11.12	2.0	2.0	-	-	-	-	
	CB -T2212	7.48	-	1.5	1.2	-	-	-	-	-
	-T3220	10.87	-	2.0	2.0	-	-	-	-	

Wrenches

Drawing	Part Number		Dimension (mm)						Angle (°)		Notes
			A	B	C	D	E	F	α	θ	
	**DT**	**-7**	44	16	-	114	-	T7	-	-	Torx
		-8	70	26		150		T8			
	**DT**	**-10**	70	29	-	160	-	T10	-	-	Torx
		-15	70	32		170		T15			
		-20	90	32		190		T20			
		-25	82	36		190		T25			
	**DTM**	**-6**	40	17	-	115	-	T6	-	-	Torx Top of Wrench is Magnetized
		-7	44	17		119		T7			
		-8	70	24		150		T8			
		-10	70	28		167		T10			
		-15	70	31		174		T15			
	DTP	**-6**	73	23	-	150	-	6IP	-	-	○○IP Shows Torx Plus
		-7						7IP			
		-9	61	30		174	-	9IP			
		-15	81	33		186		15IP			
		-20	100			206		20IP			
	DTPM	**-8**	70	24	-	150	-	8IP	-	-	○○IP Shows Torx Plus Top of Wrench is Magnetized
		-10	70	28		165		10IP			
		-15	70	31		174		15IP			
	**FH**	**-2**	40	20	-	71	2.0	-	-	-	Hexagon
		-2.5	45	20		76	2.5				
	**FT**	**-6**	35	15	-	65	-	T6	-	-	Torx
		-7	34	15		62		T7			
		-8	40	20		74		T8			
		-10	40	20		74		T10			
	**FT**	**-15**	45	25	10	80	-	T15	-	-	Torx
	**FTP**	**-5**	34	15	-	62	-	5IP	-	-	○IP Shows Torx Plus
		-6						6IP			
		-7						7IP			
	**LTP**	**-10**	51	17	-	-	-	10IP	-	-	○○IP Shows Torx Plus
		-15	54	18				15IP			
	LTW	**-8SS**	43	6	-	-	-	T8	-	-	Torx
		-10S	62	10				T10			
		-10SS	47	7				T10			
		-15S	62	10				T15			
		-20	58	19				T20			
		-25	65	20				T25			
	**LW**	**-1.5**	45	14	-	-	1.5	-	-	-	Hexagon
		-2	50	16			2.0				
		-2.5	56	18			2.5				
		-3	63	20			3.0				
		-4	70	25			4.0				
		-4.5	78	26			4.5				
		-5	80	28			5.0				
		-6	90	32			6.0				
		-8	109	36			8.0				
		-10	112	40			10.0				
		-14	140	56			14.0				
		-17	160	63			17.0				
		-19	180	70			19.0				

Wrenches / Springs / Nuts / Punches / Other

Drawing	Part Number	Dimension (mm)						Angle (°)		Notes
		A	B	C	D	E	F	α	θ	
	**TH -4**	-	80	-	83	4.0	-	-	-	Hexagon
	**TT -15**	-	70	-	118	-	T15	-	-	Torx
	-25		70		69		T25			
	-25L		80		145		T25			
	-30		80		110		T30			
	TTC -20	-	98	-	130	-	T20	-	-	
	-25						T25			
	TTP -20	-	70	-	138	-	20IP	-	-	○○IP Shows Torx Plus
	**TTW -15**	-	80	-	125	-	T15	-	-	Torx
	**LTK -5**	70	30	-	-	-	-	-	-	
	**SP -2D**	8.5	5.6	-	-	-	-	-	-	Spring
	-3D	12.0	7.0							
	-5	12.0	6.7							
	-5D	12.0	7.2							
	-6	12.0	7.7							
	-8	11.0	9.7							
	**W -6**	11.5	1.6	6.4	-	-	-	-	-	Washer
	6-14	11.5	1.4	6.4						
	-8	15.5	1.6	8.4						
	WB -5	10.0	1.0	5.3	-	-	-	-	-	Washer (Brass)
	-6	11.5	1.6	6.4						
	-8	15.5	1.6	8.4						
	**WSP -1**	15.1	4.0	3.5	2.5	-	R1.25	-	-	Spacer

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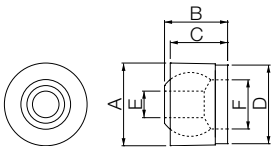
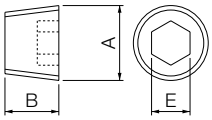
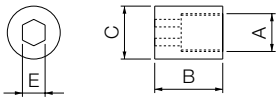
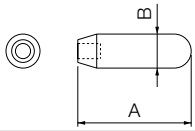
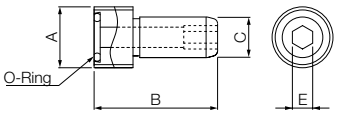
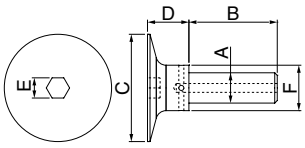
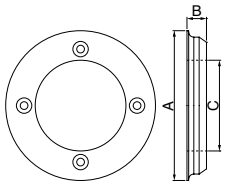
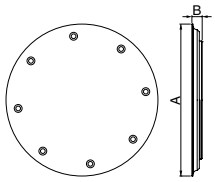
Wrenches / Springs / Nuts / Punches / Other

Drawing	Part Number		Dimension (mm)						Angle (°)		Notes
			A	B	C	D	E	F	α	θ	
	**DN**	**10**	6.2	5.1	4.5	5.7	2.6	4.0	-	-	Nozzle
		20	10.1	7.7	7.0	9.6	M4X0.7	6.0			
	**GP**	**-1**	PT1/8	7.0	-	-	5.0	-	-	-	Plug
		-2	PT1/4	9.0	-	-	6.0	-	-	-	
	**WN**	**-1**	M5X8	10.0	7.0	-	3.0	-	-	-	Nut
	**PC**	**-1**	60.0	8.5	-	-	-	-	-	-	Punch
		-2	62.2	10.0	-	-	-	-	-	-	
	**CL**	**63-1**	M18X1.0	36.5	12	-	6.0	-	-	-	Coolant Pipe
		100-1	M24X1.5	44.0	16.0		8.0				
	**HH**	**12X35HC**	M12X1.75	35.0	42.5	16.4	8.0	18.0	-	-	Coolant Bolt
	HF	**16X44HC**	M16X2.0	30.0	62.5	14.4	12.0	40.0	-	-	
		16X48HC	M16X2.0			18.4			-	-	
	**CC**	**-125-MFAH**	87.5	11.4	53.0	-	-	-	-	-	Coolant Plug
		-160-MFAH	122.5	12.4	70.0	-	-	-	-	-	
	**CC**	**-200-MFAH**	162.5	14.4	-	-	-	-	-	-	Coolant Plug
		-250-MFAH	212.5		-	-	-	-	-	-	
		-315-MFAH	277.5		-	-	-	-	-	-	

Toolholders for Ceramic Tools

Part Number			Spare Parts			
			Lever	Lock Screw	Punch	Wrench
PTGN□□	1212F	-11	LL-03N	LS-03N	P-03	FH-2
	.....	-11	LL-03TN	LS-03SN	P-03S	FH-2.5
PTFN□□	1212F	-11	LL-03N	LS-03N	P-03	FH-2
	.....	-11	LL-03TN	LS-03SN	P-03S	FH-2.5

Toolholders for Ceramic Tools

Part Number			Spare Parts				
			Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
CCLNR	2525M	-16	CB-17	CE-220	LW-4	SP-454	M4X10
CS-N□□	.....	-12	CB-11	CE-020	LW-4	SP-141 *(SP143)	M3X8 *(M3X12)
CSKN□□	.....	-12	CB-11	CE-020	LW-4	SP-141 *(SP143)	M3X8 *(M3X12)
CSYN□□	.....	-12	CB-11	CE-020	LW-4	SP-141 *(SP143)	M3X8 *(M3X12)
CSSN□□	.....	-12	CB-11	CE-020	LW-4	SP-141 *(SP143)	M3X8 *(M3X12)

* Shim & Shim Screw : When using SN□□415 insert, purchase spare parts in ( ) separately.

Part Number			Spare Parts			
			Clamp Set	Wrench	Shim	Shim Screw
CCLN□□	.....	-12GX	CE-410	LW-4	SP-441	M3X8
CDHN□□	.....	-12GX	CE-410	LW-4	SP-521	M3X8
	.....	-15GX	CE-430		SP-541	
CDJN□□	.....	-12GX	CE-410	LW-4	SP-521	M3X8
	.....	-15GX	CE-430		SP-541	
CSRN□□	.....	-12GX	CE-410	LW-4	SP-141	M3X8
	.....	-15GX			SP-162	M4X10
CSDNN	.....	-12GX	CE-410	LW-4	SP-141	M3X8
	.....	-15GX			SP-162	M4X10
CSSN□□	.....	-12GX	CE-410	LW-4	SP-141	M3X8
	.....	-15GX			SP-162	M4X10
CS-N□□	.....	-12GX	CE-410	LW-4	SP-141	M3X8
	.....	-15GX			SP-162	M4X10
CSKN□□	.....	-12GX	CE-410	LW-4	SP-141	M3X8
	.....	-15GX			SP-162	M4X10
CSYN□□	.....	-12GX	CE-410	LW-4	SP-141	M3X8
	.....	-15GX			SP-162	M4X10

Toolholders for Solid CBN Tools

Part Number			Spare Parts			
			Clamp Set	Wrench	Shim	Shim Screw
CCLN□□	.....	-09A	CE-030A	LW-4	SP-429	HH3X12
CSRN□□	2525M	-09A	CE-030A	LW-4	SP-129	HH3X12
	2525M	-12A			SP-148 (SP-143)	BH3X12
CSKN&	2525M	-09A	CE-030A	LW-4	SP-129	HH3X12
	2525M	-12A			SP-148 (SP-143)	BH3X12
CSYN&	2525M	-09A	CE-030A	LW-4	SP-129	HH3X12
	2525M	-12A			SP-148 (SP-143)	BH3X12
CSDNN	.....	-09A	CE-040	LW-4	SP-129	HH3X12
	2525M	-12A			SP-148 (SP-143)	BH3X12
CTUN&	.....	-11A	CE-030A	LW-4	SP-219	HH3X12

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Toolholders for Bearing Machining

Part Number			Spare Parts					
			Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
PRGCR/L	.....	-12BE	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
	.....	-16BE	LL-2C	LS-1T	LR-16C	LSP-2	PC-2	FH-2.5
PRGCR/L	.....	-12BF	LL-1CN	LS-1N	LR-12C	LSP-1	PC-1	FH-2.5
	.....	-16BF	LL-2C	LS-1T	LR-16C	LSP-2	PC-2	FH-2.5

Toolholders for Back Turning

Part Number			Spare Parts			
			Anchor Pin	Lock Screw	Clamp Screw	Wrench
AABSR	0810K	-40F	LPA-11	HSB4X8R	-	FH-2
	1010..	-40F				
	1212..	-40F	LPA-13			
	1616..	-40F	LPA-17			
SABSR	.....	-40F	-	-	SB-3080TR	FT-10
AABWR	0810K	-40F	LPA-11	HSB4X8R	-	FH-2
	1010..	-40F				
	1212..	-40F	LPA-13			
	1616..	-40F	LPA-17			
SABWR	.....	-40F	-	-	SB-3080TR	FT-10
AABWR	0810K	-50F	LPA-11	HSB4X8R	-	FH-2
	1010..	-50F				
	1212..	-50F	LPA-13			
	1616..	-50F	LPA-17			
SABWR	.....	-50F	-	-	SB-3080TR	FT-10

KTKF

Part Number			Spare Parts	
			Clamp Screw	Wrench
KTKFR/L	.....	-12	SB-4590TRWN	LTW-10S
	.....	-16		

External Toolholders (Back Clamp)

Part Number			Spare Parts		
			Anchor Pin	Lock Screw	Wrench
ACLCR/L	0810K	-06F	LPF-11	HSB4X8R/L	FH-2
	1010K	-06F			
	1010K	-09F	LPF-13		
	1212M	-09F			
	1616M	-09F	LPF-17		
ADJCR/L	0810K	-07F	LPF-11	HSB4X8R/L	FH-2
	1010K	-07F			
	1010K	-11F	LPF-13		
	1212M	-11F			
	1616M	-11F	LPF-17		
ADNCR	0810K	-07F	LPF-11	HSB4X8R	FH-2
	1010K	-07F			
	1010K	-11F	LPF-13		
	1212M	-11F			
	1616M	-11F	LPF-17		
AVJBR/L	1010K	-11F	LPF-11	HSB4X8R/L	FH-2
	1212M	-11F	LPF-1113		
	1616M	-11F	LPF-1117		
AVVBR	1010K	-11F	LPF-11	HSB4X8R	FH-2
	1212M	-11F	LPF-1113		
	1616M	-11F	LPF-1117		

* Lock Screw: HSB4X8R for R-hand Toolholder, HSB4X8L for L-hand Toolholder.

External Toolholders (Screw Clamp)

Part Number			Spare Parts	
			Clamp Screw	Wrench
SCLCR/L	.....	-06	SB-2570TR	FT-8
	.....	-09	SB-4085TR	FT-15
	.....	-12	SB-5090TR	LTW-20
SCACR/L	.....	-06	SB-2570TR	FT-8
	.....	-09	SB-4085TR	FT-15
	1212F	-09FF		
SDJCR/L	.....	-07F	SB-2570TR	FT-8
	.....	-11F	SB-4085TR	FT-15
SDLCR/L	.....	-07FF	SB-2570TR	FT-8
	.....	-11FF	SB-4085TR	FT-15
SDXCR/L	.....	-07	SB-2570TR	FT-8
	.....	-11	SB-4085TR	FT-15
SDNCR/L	.....	-07F	SB-2570TR	FT-8
	.....	-11F	SB-4085TR	FT-15
SDNCN	.....	-07	SB-2570TR	FT-8
	.....	-11	SB-4085TR	FT-15
SDLPR/L	.....	-07F	SB-2570TR	FT-8
	.....	-11F	SB-4085TR	FT-15
STGCR/L	.....	-8	SB-2050TR	FT-6
STGPR/L	.....	-08	SB-2050TR	FT-6
	.....	-11	SB-3080TR	FT-10
SVJBR/L	.....	-11F	SB-2570TR	FT-8
SVLPR/L	.....	-08FF	SB-2050TR	FT-6
	.....	-11FF	SB-2570TR	FT-8
	.....	-11F		
SVPPR/L	.....	-08FF	SB-2050TR	FT-6
	.....	-11FF	SB-2570TR	FT-8
	.....	-11		
SYXPR/L	.....	-06F	SB-2050TR	FT-6

External Toolholders (Screw Clamp)

Part Number			Spare Parts				
			Clamp Screw	Wrench	Shim	Shim Screw	Wrench
SVPBR/L	.....	-11	SB-2570TR	FT-8	-	-	-
	.....	-16N	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4
SVVBN	.....	-11	SB-2570TR	FT-8	-	-	-
	.....	-16N	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4

External Toolholders (Top Clamp)

Part Number			Spare Parts				
			Clamp Set	Wrench	Shim	Shim Screw	Chipbreaker
CSBPR/L	.....	-09N	CPS-2P	LW-2.5	-	-	CB-S3220
CSKPR/L	.....	-09N	CPS-2P	LW-2.5	-	-	CB-S3220
	.....	-12N	CPS-3	LW-3	KPS-42	SP3X8	CB-S4220
CSSPR/L	.....	-09N	CPS-2P	LW-2.5	-	-	CB-S3220
	.....	-12N	CPS-3	LW-3	KPS-42	SP3X8	CB-S4220
CSDPN	.....	-12N	CPS-3	LW-3	KPS-42	SP3X8	CB-S4220
CTGPR/L	.....	-11N	CPS-2P	LW-2.5	-	-	CB-T2212
	.....	-16N	CPS-3	LW-3	KPT-32	SP3X8	CB-T3220
CTFPR/L	.....	-11N	CPS-2P	LW-2.5	-	-	CB-T2212
	.....	-16N	CPS-3	LW-3	KPT-32	SP3X8	CB-T3220
CTTPR/L	.....	-11N	CPS-2P	LW-2.5	-	-	CB-T2212
	.....	-16N	CPS-3	LW-3	KPT-32	SP3X8	CB-T3220

EZ Bar PLUS

Part Number	Spare Parts	
	Clamp Screw	Wrench
S045X-SCLCR03-050EZ	SB-1635TR	FT-6
S060X-SCLCR04-070EZ	SB-2035TR	
C045X-SCLCR03-050EZ	SB-1635TR	FT-6
C060X-SCLCR04-070EZ	SB-2035TR	

Twin Bars

Part Number			Spare Parts	
			Clamp Screw	Wrench
STW□	.....	-15	SB-3080TR	LTW-10S
STWSR	.....	-15T	SB-3080TR	LTW-10S

Swiss IQ Bars

Part Number			Spare Parts			
			Clamp Screw	Wrench	Screw (Side Stopper)	Wrench
SVNR	1010H	-12	SB-3080TR	FT-10	HS3X4	LW-1.5
	1212K	-12				
	1616K	-12			HS3X8	
	2020K	-12			HS3X12	
	2525M	-12			HS3X16	
SVNSR	.....	-12-..	SB-3080TR	LTW-10S	HS3X4	LW-1.5
S12F-	SVNR	12	SB-3080TR	FT-10	HS3X4	LW-1.5
S14G-	SVNR	12				
S16H-	SVNR	12			HS3X8	
S19H-	SVNR	12				
S19N-	SVNR	12				
S20H-	SVNR	12				
S25H-	SVNR	12			HS3X12	
S25Q-	SVNR	12				
S....	SVNR	12S	SB-3080TR	FT-10	HS3X4	LW-1.5

Swiss IQ Bars (S...SVN-XN)

Part Number			Spare Parts		
			Clamp Screw	Wrench	Set Screw
S...-	SVNR	12XN	SB-3080TR	FT-10	SP3X4

PSH Sleeve

Part Number			Spare Parts	
			Clamp Screw	Wrench
PSH	02..	-..	HS3×4P	LW-1.5
	03..	-..		
PSH	04..	-..	HS4×4P	LW-2
	05..	-..		
	06..	-..		
	07..	-..		

Boring Bars (Screw Clamp)

Part Number		Spare Parts	
		Clamp Screw	Wrench
S10H-	SCLC%03-..E	SB-1635TR	FT-6
S10J-	SCLC%04-..E	SB-2035TR	
S08X-	SCLC%06-10E	SB-2545TR	FT-8
S08X-	SCLC%06-10	SB-2545TR	FT-8
C...-	SCLC%03-..	SB-1635TR	FT-6
C...-	SCLC%04-..	SB-2035TR	
C08L-	SCLC%06-10	SB-2545TR	FT-8
A08H-	SCLC%06-10E	SB-2545TR	FT-8
E...-	SCLC%06-..	SB-2545TR	FT-8
S..M-	SCLP%08-..E	SB-3STR	FT-10
S...-	SCLP%09-..E	SB-4TR	FT-15
S..M-	SCLP%08-..	SB-3STR	FT-10
S...-	SCLP%09-..	SB-4TR	FT-15
C10N-	SCLP%08-..	SB-3STR	FT-10
C...-	SCLP%09-..	SB-4TR	FT-15
A..X-	SCLP%08-..E	SB-3STR	FT-10
A...-	SCLP%09-..E	SB-4TR	FT-15
E10N-	SCLP%08-12	SB-3STR	FT-10
E10N-	SCLP%08-12A-..	SB-3060TR	
E...-	SCLP%09-..	SB-4TR	FT-15
S...-	SDUC%07-..E	SB-2560TR	FT-8
S...-	SDUC%11-..E	SB-4085TR	FT-15
S...-	SDUC%07-..	SB-2560TR	FT-8
S...-	SDUC%11-..	SB-4085TR	FT-15
C...-	SDUC%07-..	SB-2560TR	FT-8
C...-	SDUC%11-..	SB-4085TR	FT-15
S...-	SDZC%07-..E	SB-2560TR	FT-8
S...-	SDZC%11-..E	SB-4085TR	FT-15
S...-	SDZC%07-..	SB-2560TR	FT-8
S...-	SDZC%11-..	SB-4085TR	FT-15
C06J-	STLB%06-08A	SB-2035TR	FT-6
E08L-	STLP%08-10A	SB-1TR	
E08L-	STLP%09-10A	SB-2545TR	FT-8
E10N-	STLP%09-..		
E10N-	STLP%11-..	SB-3060TR	FT-10
S06H-	STUB%06-08E	SB-1STR	FT-6
S08K-	STUP%08-10E	SB-1TR	
S..M-	STUP%09-..E	SB-2TR	FT-8
S...-	STUP%11-..E	SB-3TR	FT-10
S..X-	STUP%16-..E	SB-4TR	FT-15
S06H-	STUB%06-08	SB-1STR	FT-6
S08K-	STUP%08-10	SB-1TR	
S..M-	STUP%09-..	SB-2TR	FT-8
S...-	STUP%11-..	SB-3TR	FT-10
S25X-	STUP%16-32	SB-4TR	FT-15
C10L-	STUB%06-08	SB-1STR	FT-6
C08L-	STUP%08-10	SB-1TR	
C...-	STUP%09-..	SB-2TR	FT-8
C...-	STUP%11-..	SB-3TR	FT-10
C20S-	STUP%16-..	SB-4TR	FT-15
A08H-	STUP%08-10E	SB-1TR	FT-6
A..X-	STUP%09-..E	SB-2TR	FT-8
A...-	STUP%11-..E	SB-3TR	FT-10
A...-	STUP%16-..E	SB-4TR	FT-15
E08L-	STUP%08-10	SB-1TR	FT-6
E...-	STUP%09-..	SB-2TR	FT-8
E...-	STUP%11-..	SB-3TR	FT-10
E20S-	STUP%16-25	SB-4TR	FT-15

Boring Bars (Screw Clamp)

Part Number		Spare Parts	
		Clamp Screw	Wrench
S...-	SWUB□08-..E	SB-2050TR	FT-6
S12M-	SWUP□11-14E	SB-2545TR	FT-8
S...-	SWUP□11-..E	SB-2560TR	
S...-	SWUP□16-..E	SB-4065TR	FT-15
S...-	SWUB□06-..	SB-2040TR	FT-6
S10J-	SWUB□08-..	SB-2035TR	
C...-	SWUB□06-..	SB-2035TR	FT-6
C07K-	SWUB□08-..		
C08L-	SWUB□08-..	SB-2050TR	
C10N-	SWUB□08-..		
C12Q-	SWUP□11-14(-./.)	SB-2545TR	FT-8
C12Q-	SWUP□11-16(-./.)	SB-2560TR	
C16X-	SWUP□11-18(-./.)		
C...-	SWUP□16-..	SB-4065TR	FT-15
E...-	SWUB□08-..	SB-2050TR	FT-6
S16Q-	SSKPR09-20	SB-4TR	FT-15
S20R-	SSKPR09-25		
S25X-	SSKPR12-32	GS-50S	LW-3
S32S-	SSKPR12-40	GS-50	
S12M-	SYXP□06-12E	SB-2040TR	FT-6
S16Q-	SYXP□06-16E	SB-2045TR	

Boring Bars (Screw Clamp)

Part Number		Spare Parts				
		Clamp Screw	Wrench	Shim	Shim Screw	Wrench (for Shim Screw)
S12M-	SVJP□08-16E	SB-2050TR	FT-6	-	-	-
S...-	SVJC□08-..E					
S...-	SVJB□11-..E	SB-2570TR	FT-8			
S...-	SVJB□16-..EN	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4
S32S-	SVJB□16-40E	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
S40T-	SVJB□16-50E					
S10M-	SVPC□08-16E	SB-2050TR	FT-6	-	-	-
S...-	SVPB□11-..E	SB-2570TR	FT-8			
S...-	SVPB□16-..EN	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4
S25X-	SVPB□16-34E	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
S32S-	SVPB□16-40E					
S12M-	SVUC□08-16E	SB-2050TR	FT-6	-	-	-
S...-	SVUB□11-..E	SB-2570TR	FT-8			
S...-	SVUB□16-..EN	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4
S25X-	SVUB□16-34E	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
S32S-	SVUB□16-40E					
S12M-	SVZC□08-16E	SB-2050TR	FT-6	-	-	-
S...-	SVZB□11-..E	SB-2570TR	FT-8			
S...-	SVZB□16-..EN	SB-40125TRN	FT-15	SVN-32N	SS-4N	LW-4
S25X-	SVZB□16-34E	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
S32S-	SVZB□16-40E					

Boring Bars (Top Clamp)

Part Number		Spare Parts				
		Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
S12L-	CTUP□09-16	-	CPS-1	FH-2	-	-
S...-	CTUP□11-..	-	CPS-2	FH-2.5	-	-
S25X-	CTUP□16-34	-	CPS-3	LW-3	-	-
S32S-	CTUP□16-43				KPT-32	SP3X10
S40X-	CTUP□16-50					
S32S-	CTUC□16-40	*CB-13/12	CE-320	LW-4	SP-230P	SP3X10
S...-	CCLN□09- ..A	-	CE-360S	LW-4	SP-420A	BH3X6
S...-	CSKN□09- ..A	-	CE-360S	LW-4	SP-130A	BH3X12
S32S-	CSKPR12-43	CPS-3	-	LW-3	KPS-42	SP3X10

* CB-13 for Right-hand Toolholder, CB-12 for Left-hand Toolholder.

Boring Bars for Ceramic Inserts (Dimple Clamp)

Part Number	Spare Parts				
	Chipbreaker	Clamp Set	Wrench	Shim	Clamp Screw
S32S- CCLN□ -12-40GX	-	CE-410	LW-4	-	-
S40T- CCLN□ -12-50GX				SP-441P	M3X8
S32S- CDUN□ -12-40GX	-	CE-410	LW-4	-	-
S40T- CDUN□ -12-50GX				SP-521P	M3X8
S32S- CSKN□ -12-40GX	-	CE-410	LW-4	-	-
S40T- CSKN□ -12-50GX				SP-141P	M3X8
S40T- CSKN□ -12-50	*1 CB-13/12	CE-320	LW-4	SP-141P *2 (SP-143P)	M3X8 *2 (M3X12)

*1 Right-hand holders take CB-13 and Left-hand holders take CB-12
*2 When using SN□□43.. inserts, please purchase parts in ( ) separately

Bearing Machining (Boring)

Part Number	Spare Parts	
	Clamp Screw	Wrench
CBSN□ 2020B-12 -A20	-	CE-410
2525B-16 -A32		

Bearing Machining (Internal Corner Filleting)

Part Number	Spare Parts	
	Clamp Screw	Wrench
CBSN□ ....B-12 -A20	CP-RC□	LW-5

· Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

KTGF-F

Part Number	Spare Parts	
	Clamp Screw	Wrench
PH 02 ..-..	HS3X4	LW-1.5
03 ..-..		
04 ..-..	HS4X4	LW-2
05 ..-..		
06 ..-..		
07 ..-..		

KTGF-F

Part Number	Spare Parts	
	Clamp Screw	Wrench
KTGF□ ..... -16F	SB-4070TRW	FT-8

KTG

Part Number	Spare Parts	
	Clamp Screw	Wrench
KTG□ ..... -16	SB-4TR	FT-15
..... 22-..	GS-50	LW-3

KN91

Part Number	Spare Parts				
	Clamp	Clamp Bolt	Washer	Spring	Wrench
KN91□ 44 -4	*CE-111/121	BH8X30	W-8	SP-8	LW-5
44 -5					
44 -7	*CE-131/141				

* KN91□44-4 / 5 ... CE-111 for Right-hand Toolholder, and CE-121 for Left-hand Toolholder.
KN91□44-7 ... CE-131 for Right-hand Toolholder, and CE-141 for Left-hand Toolholder.

KGHS

Part Number	Spare Parts				
	Clamp	Clamp Bolt	Washer	Spring	Wrench
KGHS& ..... -4	CGH-1	HH6X25	W-6	SP-6	LW-5
..... -5					
..... -7	CGH-2				

* CGH-○R for left-hand holder and CGH-○L for right-hand holder

KGA

Part Number	Spare Parts			
	Clamp	Clamp Bolt	Spring	Wrench
KGA□ .... -3	CGA-3&	HH6X20	SP-6	LW-5
.... -4	CGA-4&			
.... -5	CGA-5&			

* CGA-○R for right-hand holder and CGA-○L for left-hand holder

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KGDR/L...-S

Part Number	Spare Parts		
	Clamp Bolt	Mounting Bold (for Blade)	Wrench
KGDR/L ...-S	BH6X10TR	SB-60120TR	LTW-25

KGDFR/L...-S

Part Number	Spare Parts		
	Clamp Bolt	Mounting Bold (for Blade)	Wrench
KGDFR/L ...-S	BH6X10TR	SB-60120TR	LTW-25

KGM (Small Parts Machining)

Part Number		Spare Parts	
		Clamp Screw	Wrench
KGMR/L	1212H -3	SB-5TR	LTW-20
	1616H -3	HH5X16	LW-4
	2020K -3		
	2525M -3	HH5X25	
KGMR/L	2020K -4	HH5X16	LW-4
	2525M -4	HH5X25	
KGMR/L	2020K -5	HH5X16	LW-4
	2525M -5	HH5X25	
	3232P -5		
KGMR/L	2525M -8	HH6X25	LW-5
	3232P -8		

KGM-T

Part Number		Spare Parts	
		Clamp Screw	Wrench
KGMR/L	2012K-2T17	SB-5TR	LTW-20
	2020K-2T17	HH5X16	LW-4
	2525M-2T17	HH5X25	
KGMR/L	1616H-3T20	HH5X16	LW-4
	2012K-3T20	SB-5TR	LTW-20
	2020K-3T20	HH5X16	LW-4
	2525M-3T20	HH5X25	
KGMR/L	2020K-4T20	HH5X16	LW-4
	2525M-4T20	HH5X25	
	2525M-4T25		
KGMR/L	2525M-5T25	HH5X25	LW-4
	3232P-5T25		
KGMR/L	2525M-6T30	HH5X25	LW-4

KGM (Small Parts Machining)

Part Number		Spare Parts	
		Clamp Screw	Wrench
KGMR/L	0810K - ...	SE-40120TR	LTW-15S
	1010.. - ...		
	1212.. - 1.5-...		
	1212.. - 2-...		
	1212.. - 2.5-...		
	1616.. - 2-...	SE-50125TR	LTW-20
	1616.. - 2.5-...		
	1616.. - 3-...		

KGMM / KGMS

Part Number		Spare Parts	
		Clamp Screw	Wrench
KGMMR/L	1212H-3	SB-5TR	LTW-20
	1616H-3	HH5X16	LW-4
	2020K-3		
	2525M-3	HH5X25	
KGMSR/L	1212H-3	SB-5TR	LTW-20
	1616H-3	GS-50	LW-3
	2020K-3	HH5X16	LW-4
	2525M-3	HH5X25	

KGMU

Part Number		Spare Parts	
		Clamp Screw	Wrench
KGMU℞	2020K	HH5X16	LW-4
	2525M	HH5X25	

KIGH

Part Number		Spare Parts				
		Clamp	Clamp Bolt	Washer	Spring	Wrench
KIGHR	....-4	CGH-1L	HH6X25	W-6	SP-6	LW-5
	....-5					
	....-7	CGH-2L				

KIGM-V

Part Number		Spare Parts	
		Clamp Screw	Wrench
KIGM℞	2016B-3V	GS-50	LW-3
	2520B-3V		
	3225B-3V	SB-5TR	LTW-20
	3225B-4V	SB-5TR	LTW-20
	4032B-4V		

GFVS-AA / GFVT-AA

Part Number			Spare Parts	
			Clamp Set	Wrench
GFVS℞	.....	-08AA	CPS-5V	FT-15
GFVT℞	.....	-08AA	CPS-5V	FT-15

GIFV

Part Number		Spare Parts	
		Clamp Set	Wrench
GIFV℞	5032B-502B	CPS-6V	LW-3

KTKH-S

Part Number			Spare Parts
			Releasing Wrench
KTKH℞	.....	- ...S	LTK-5

KTKH-B

Part Number			Spare Parts	
			Clamp Screw	Wrench
KTKH℞	0808K	- ...B	SE-40120TR	FT-15
	1010K	- ...B		
	1212M	- ...B		
	1414M	- ...B		
	1616M	- ...B	SE-50125TR	LTW-20

KTTX

Part Number			Spare Parts	
			Clamp Screw	Wrench
KTTXR	.....	-16F	SB-4070TRW	FT-8

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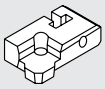
MFPN45

Part Number	Spare Parts		
	Clamp Screw	Wrench	Anti-Seize Compound
MFPN 45100R-10T-M ~ 45200R-20T-M	SB-40140TRN	DTM-15	P-37

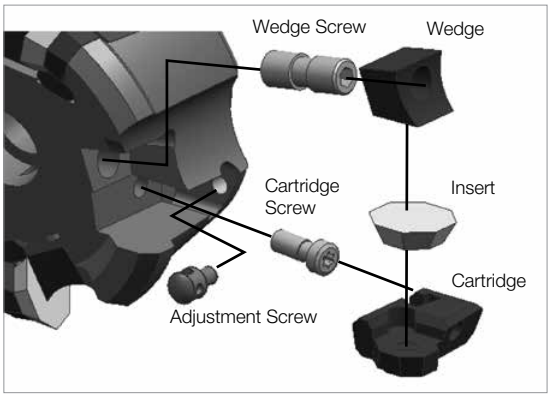
MOF45

Part Number	Spare Parts		
	① Clamp Screw	② Wrench	Arbor Bolt
MOF 45080R-05-6T	SB-4082TPR	DTP-15	HH12X35
45100R-05-.T ~ 45200R-05-..T	SB-4082TPR	DTP-15	-
MOF 45080R-07-5T	SB-50120TRS	DTP-15	HH12X35
45100R-07-.T ~ 45200R-07-..T	SB-50120TRS	DTP-15	-
MOF 45040R-05-3T-M	SB-4082TPR	DTP-15	HH8X25
45050R-05-4T-M	SB-4082TPR	DTP-15	HH10X30
45063R-05-5T-M			
45080R-05-6T-M	SB-4082TPR	DTP-15	HH12X35
45100R-05-.T-M ~ 45200R-05-..T-M	SB-4082TPR	DTP-15	-
MOF 45063R-07-4T-M	SB-50120TRS	DTP-15	HH10X30S
45080R-07-5T-M	SB-50120TRS	DTP-15	HH12X35
45100R-07-.T-M ~ 45200R-07-..T-M	SB-50120TRS	DTP-15	-

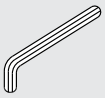
MOFX45

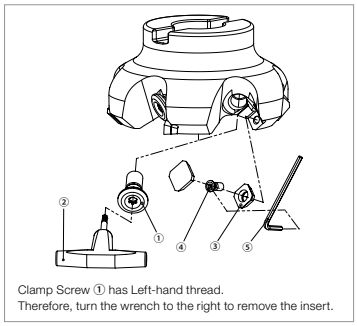
Part Number	Cartridge	Cartridge Screw	Wedge	Wedge Screw
				
MOFX45...	LOF07R	SH-50150TR	WOF07R	W8X21

Part Number	Adjustment Screw	Wrench (for Wedge)	Wrench (for Cartridge)
MOFX45...	AJ-412	TH-4	TTC-20



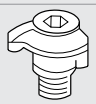
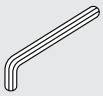
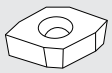
MSE45 (Face Mills)

Part Number	① Clamp Screw	② Wrench	③ Shim	④ Clamp Screw	⑤ Wrench
					
MSE 45040R-.T-M 45050R-.T-M	CP8X15TL (Left-hand Thread)	TTC-25	MSE-4245S	SP4X9	LW-2 (Shim Screw)
MSE 45080R-.T ~ 45200R-..T	CP8X23TL (Left-hand Thread)				
MSE 45063R-.T-M ~ 45200R-..T-M					



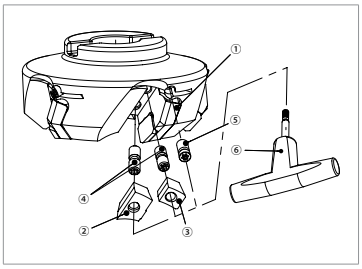
* Mounting bolt (SP8X35) is included for MSE45040R-.OT-M.
* Mounting bolt (HH10X30S) is included for MSE45050R-.OT-M and MSE45063R-.OT-M.
* Mounting bolt (HH12X35) is included for MSE45080R-.OT-M and MSE45080R-.OT.

MSE45 (End Mills)

Part Number	Spare Parts			
	Clamp Set	Wrench	Shim	Shim Screw
				
MSE 4550 **4563** **4580-32**	CPS-6M	LW-3	MSE-4245	SP3X8

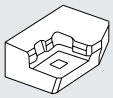
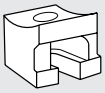
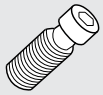
MSE45-SF (Face Mills)

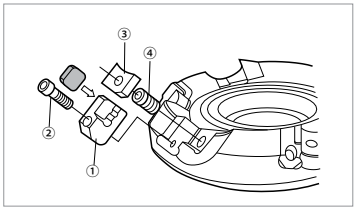
Part Number	Spare Parts					
	① Cartridge	② Clamp	③ Clamp	④ Clamp Screw	⑤ Adjustment Screw	⑥ Wrench
MSE 45080R-5T-SF **MSE 45125R-7T-M-SF**	LSE-445SR	C43R (for Insert)	C44R (for Cartridge)	W6X17	SV-60136TR	TTC-20



· Arbor Bolt (HH10X30S) is included for MSE45063R-4T-M-SF.
· Arbor Bolt (HH12X35) is included for MSE45080R-5T-M-SF.

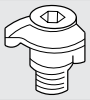
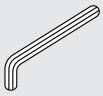
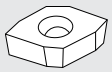
MSD45 (Face Mills)

Part Number	Spare Parts				
	① Cartridge	② Clamp Bolt	③ Clamp	④ Clamp Screw	Wrench
					
MSD 45...R	LSD-445R	HH4X16	C20R	TH8X15	TH-4

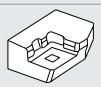


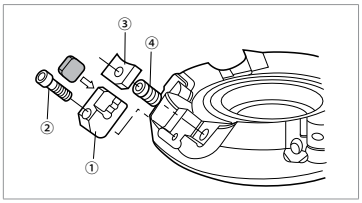
· Mounting bolt (HH12X35) is included for MSD4580R.

MSD45 (End Mills)

Part Number	Spare Parts			
	Clamp Set	Wrench	Shim	Shim Screw
				
MSD 4550 **4563** **4580-32**	CPS-445R	LW-3	MSD-42	SP3X8

MSO45 (Face Mills)

Part Number	Spare Parts				
	① Cartridge	② Cartridge Clamp Screw	③ Clamp	④ Clamp Screw	Wrench
					
MSO 45...R	LSO-445R	HH4X16	CH-20R	TH8X15	TH-4



MSO45-S (Face Mills)

Part Number	Spare Parts				
	Shim	Shim Screw	Clamp	Clamp Screw	Wrench
MSO 45..-S	MSO-4T245	SP3X6	CH-20R	TH8X15	TH-4

MSO45-09 (Face Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MSO 45...R-09	SB-3060TR	DT-10

MSO45-S-09 (End Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MSO 45..-S32-09	SB-3060TR	DT-10

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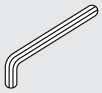
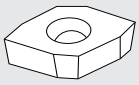
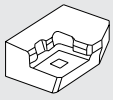
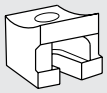
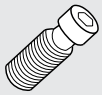
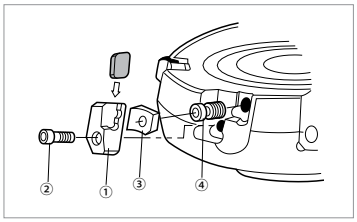
MSP15 / MSE15 (End Mills)

Part Number	Clamp Set	Wrench	Shim	Shim Screw
				
MSP 15..	CPS-6M	LW-3	MSP-42	SP3X8
MSE 15..	CPS-6M	LW-3	MSE-4215	SP3X8

MSP15 (Face Mills)

Part Number	① Cartridge	② Clamp Bolt	③ Clamp	④ Clamp Screw	Wrench
					
MSP 15...R	LSP-415R	HH4X16	C25R	TH8X15	TH-4



* Mounting bolt (HH12X35) is included with MSP1580R

MEC (Face Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MEC ...R-11-..T(-M)	SB-2555TRG	DTM-8
...R-11T-..T		
...R-17-..T(-M)	SB-4070TRN	DTM-15

MEC (End Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MEC ..-W..-1103 (-H)	SB-2545TR	DTM-8
..-W..-11T3 (-H)	SB-2555TRG	DTM-8
..-W..-1704-H	SB-4070TRN	DTM-15

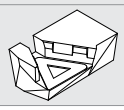
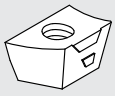
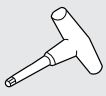
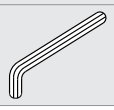
MECX (Face Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MECX 050R-07-12T-M	SB-2042TRG	DTM-6
063R-07-14T-M		

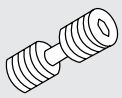
MECX (End Mills)

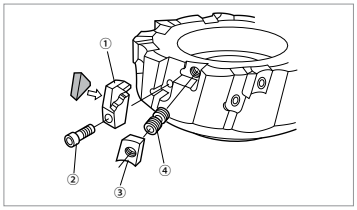
Part Number	Spare Parts	
	Clamp Screw	Wrench
MECX 33-S32-07-6T	SB-2042TRG	DTM-6
33-S32-200-07-3T		

MTE90-SF

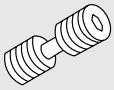
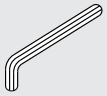
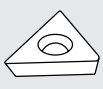
Part Number	Cartridge	Clamp	Clamp	Clamp Screw	Adjustment Screw	Wrench	Wrench
							
MTE 90...-SF	LTE-490SR	C91R (for Insert)	C92R (for Cartridge)	W8X16	SV-60136R	TTC-25	LW-4 (For Adjustment Screw)

MTE90 (Face Mills)

Part Number	① Cartridge	② Clamp Bolt	③ Clamp	④ Clamp Screw	Wrench
					
MTE 90...R	LTE-490R	HH4X16	C17R	W8X18	TH-4



MTE90 (End Mills)

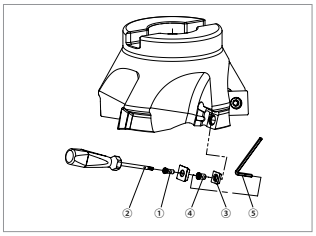
Part Number	Clamp	Clamp Screw	Wrench	Shim	Shim Clamp Screw
					
MTE 9050	CP-8TE	W8X18	LW-4	MTE-42	SP3X8
9063					
9080-32					

MFWN (Face Mills)

Part Number	Spare Parts		
	Clamp Screw	Wrench	Anti-Seize Compound
MFWN 90100R-9T-M ~ 90250R-18T-M	SB-40140TRN	DTM-15	P-37

MSO90 (Face Mills)

Part Number	① Clamp Screw	② Wrench	③ Shim	④ Shim Clamp Screw	⑤ Wrench
MSO 90...R-15-.T	SB-45130TR	DTP-20	MSO-5200	SPW-6045	LW-4.5 (for Shim Clamp Screw)
MSO 90...R-15-.T-M					



- Mounting bolts (HH12X35M) are included for MSO90080R-15-○T-M and MSO90080R-15-○T
- Mounting bolts (HH10X30S) are included for MSO90063R-15-○T-M

MSO90-S (End Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MSO 90..-S32-09	SB-3080TR	DT-10
90..-S32-15	SB-5085TR	DT-20

MSO90-09 (Face Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MSO 90...R-09	SB-3060TR	DT-10

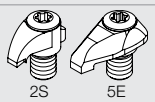
MEA / MEB

Part Number	Spare Parts	
	Clamp Screw	Wrench
MEA .. -S..(-...)	SB-2560TR	DT-8
MEB .. -S..	SB-4085TR	DT-15

DMC

Part Number	Spare Parts	
	Clamp Screw	Wrench
DMC ...-S..	SB-2545TR	FT-8
0..	SB-3060TR	FT-10

MTPS / MTES

Part Number	Clamp	Wrench
	 2S 5E	
MTPS ...	CPS-2S	FT-15
MTES ...	CPS-5E	

MEAL

Part Number	Spare Parts	
	Clamp Screw	Wrench
MEAL ..-S..	SB-5085TR	DT-20

MRP-S (End Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MRP ...-S.. -08(-...)	SB-3060TR	DT-10
...-S.. -10-.T(-...)	SB-3080TR	DT-10
...-S.. -12(-.T)(-...)	SB-4085TR	DT-15
050-S42 -12(-300)	SB-40115TR	
...-S.. -16(-...)	SB-50120TR	DT-20

MRP (Face Mills)

Part Number	Spare Parts	
	Clamp Screw	Wrench
MRP ...R -10-.T	SB-3080TR	DT-10
MRP 050R -12	SB-40115TR	DT-15
063R -12		
080R -12	SB-4085TR	
080R -12-7T		
MRP ...R -16(-.T)	SB-50120TR	DT-20
MRP ...R -20	SB-60120TR	DT-25

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MHD (Helical End Mills)

Part Number	Spare Parts				
	Clamp Screw	Wrench	Arbor Bolt		Wrench
			1 Front Piece	2 Front Piece	
MHD 32-S32 -SA	SB-2560TR	DT-8	-	HH8X50	LW-6
MHD 40-S32 -SA	SB-3080TR	DT-10		HH8X65	
MHD 40-S42 -SA					
MHD 50-S42 -SA				HH12X65	LW-10
MHD 40-S42 -SB	SB-3080TR	DT-10	HH8X40	-	LW-6
MHD 50-S42 -SB			HH12X40		LW-10
MHD 20S-S20 -C	SB-2560TR	DT-8	-	-	-
MHD 25-S25 -C					
MHD 32-S32 -C					
MHD 40-S42 -C	SB-3080TR	DT-10			
MHD 50-S42 -C					
MHD 32-S32 -A	SB-2560TR	DT-8	HH8X35	HH8X50	LW-6
MHD 40-S32 -A	SB-3080TR	DT-10	HH8X40	HH8X65	
MHD 40-S42 -A					
MHD 50-S42 -A			HH12X40	HH12X65	LW-10
MHD 32-S32 -A-130	SB-2560TR	DT-8	HH8X35	HH8X50	LW-6
MHD 40-S32 -A-150	SB-3080TR	DT-10	HH8X40	HH8X65	
MHD 50-S42 -A-150			HH12X40	HH12X65	LW-10
MHD 40-S42 -B	SB-3080TR	DT-10	HH8X40	-	LW-6
MHD 50-S42 -B			HH12X40		LW-10
MHD 32 -F	SB-2560TR	DT-8	-	-	-
MHD 40 -F	SB-3080TR	DT-10			
MHD 50 -F					

MHD (Face Mills and Integral Arbor Type)

Part Number	Spare Parts			
	Clamp Screw	Wrench	Arbor Bolt	Wrench
MHD 63-FMA -SA	SB-3080TR	DT-10	HH16X90	LW-14
MHD 80-FMA -SA			HH20X110	LW-17
MHD 100-FMA -SA			HH24X110	LW-19
MHD 63-FMA -A			HH16X90	LW-14
MHD 80-FMA -A			HH20X110	LW-17
MHD 100-FMA -A			HH24X110	LW-19
MHD 63-BT50 -SA			HH16X90	LW-14
MHD 80-BT50 -SA			HH20X110	LW-17
MHD 100-BT50 -SA			HH24X110	LW-19
MHD 63-BT50 -A			HH16X65	LW-14
MHD 80-BT50 -A			HH20X90	LW-17
MHD 100-BT50 -A			HH24X90	LW-19
MHD 63 -F			-	-
MHD 80 -F				
MHD 100 -F				

MHD (Radius Type)

Part Number			Spare Parts						
			Clamp Screw		Wrench		Arbor Bolt		Wrench
			For End Blade	For Middle Blade	For End Blade	For Middle Blade	1 Front Piece	2 Front Piece	
MHD	32-S32	-4RSA	SB-2560TR	SB-2560TR	DT-8	DT-8	-	HH8X50	LW-6
	40-S32	-5RSA	SB-3080TR	SB-3080TR	DT-10	DT-10		HH8X55	
	40-S42	-5RSA							
	50-S42	-6RSA	SB-4085TR		DT-15			HH12X55	LW-10
MHD	32-S32	-A	SB-2560TR		DT-8		-	HH8X50	LW-6
	40-S32	-A	SB-3080TR		DT-10			HH8X65	
	40-S42	-A							
	50-S42	-A						HH12X65	LW-10
MHD	32	-F	SB-2560TR		DT-8		-	-	-
	40	-F	SB-3080TR		DT-10				
	50	-F							
MHD	32	-4RF	SB-2560TR	SB-2560TR	DT-8	DT-8	-	-	-
	40	-5RF	SB-3080TR	SB-3080TR	DT-10	DT-10			
	50	-6RF	SB-4085TR		DT-15				

MGI

Part Number		Spare Parts	
		Clamp Set	Wrench
MGI	...-1C	CPS-6F	LW-3

MVG

Part Number		Spare Parts	
		Clamp Set	Wrench
MVG	...	CPS-6V	LW-3

Blank Tool

Part Number		Spare Parts
		Coolant Pipe
T63H-	BL...-...	CL63-1

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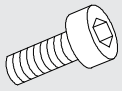
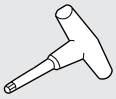
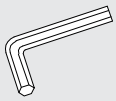
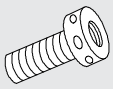
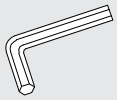
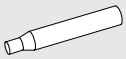
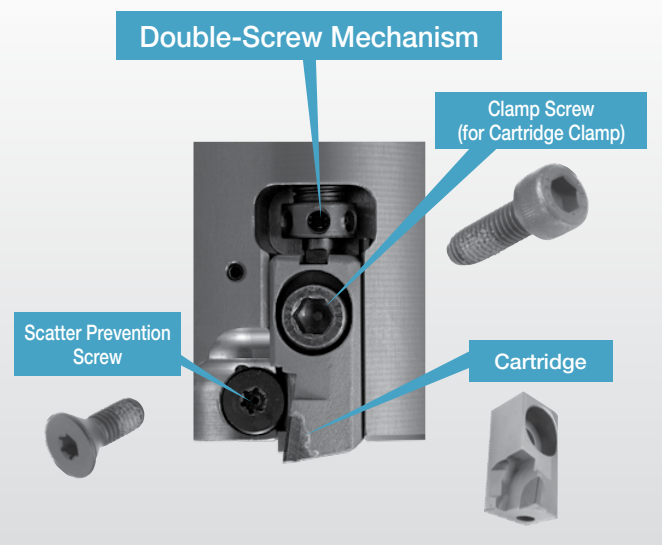
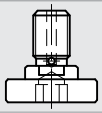
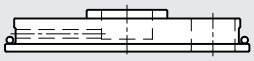
HS-MFAL

Part Number	① Scatter Prevention Screw	② Clamp Screw	③ Wrench	④ Wrench	⑤ Adjustment Screw A	⑥ Adjustment Screw B	⑦ Wrench	⑧ Adjustment Wrench	⑨ Balance Screw
									
HS-MFAL 063R-...	SB-50137K for Cartridge Clamp	HH6X16A	TTC-20	LW-5	AJ-816	AJ-519	LW-2.5	AW-3L	HS6X8T
080R-... ~ 250R-...		HH6X18A							

Cutter Parts and Assembly



Part Number	Spare Parts: Arbor Mounting Bolt (Standard Accessory)	Arbor Mounting Bolt with Coolant Hole (Sold Separately)	Coolant Hole Cover (Sold Separately)
			
HS-MFAL 080R-6T-SF	HH12X35HK	-	-
100R-6T-SF	-	HF16X40HA	
125R-8T-SF		HF20X53HA	
160R-12T-SF		HF24X60HA	
200R-14T-SF		-	CC-200
250R-18T-SF			CC-250
HS-MFAL 063R-4T-M-SF	HH10X35HK	-	-
080R-6T-M-SF	HH12X35HK		
100R-6T-M-SF	-	HF16X40HA	
125R-8T-M-SF		HF20X53HA	
160R-12T-M-SF			
200R-14T-M-SF		-	CC-200
250R-18T-M-SF			CC-250

• For HS-MFAL100R to 250R, when using coolant-through, please use arbor mounting bolt with coolant hole HF...HA (sold separately)

TECHNICAL

R

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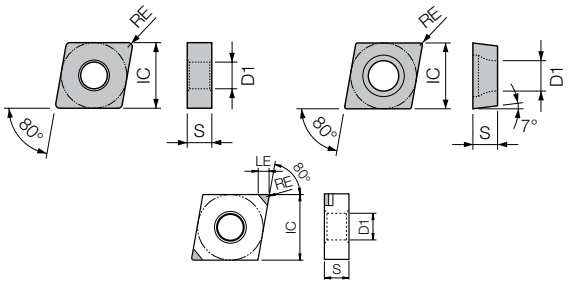
Turning Dimensions

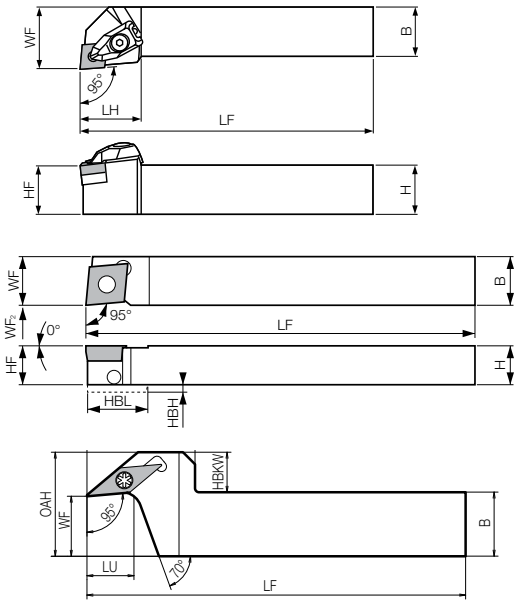
Turning Inserts

New Symbol	Description	Previous Symbol
AN	Relief Angle	α
D1	Hole Diameter	Ød
IC	Inscribed Circle Diameter	A
RE	Corner Radius	rε
S	Insert Thickness	T
LE	Edge Length (PCD / CBN Tip)	S



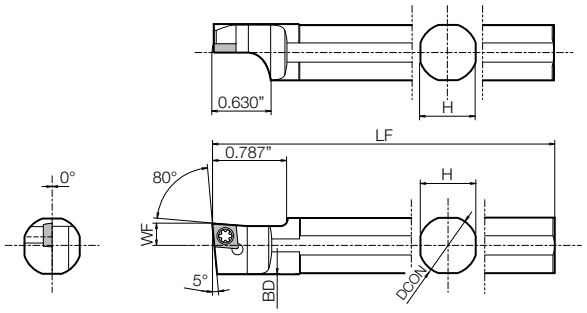
External Turning Holders (Square Shank)

New Symbol	Description	Previous Symbol
B	Shank Width	B
H	Shank Height	H1
HF	Cutting Edge Height	h
HBL	Head Bottom Offset Length	L2
HBH	Head Bottom Offset Height	H2
HBKW	Head Back Offset Width	F2
LF	Functional Length	L1
LH	Head Length	L2
LU	Usable Length	T
LN	Neck Length	L3, L4
WF	Cutting Edge Distance	F1
WF_2, WFS	Cutting Edge Distance (Secondary)	F2
OAH	Overall Height	F1
MHD	Mounting Hole Distance	M1
MHD2	Mounting Hole Distance (Secondary)	M2



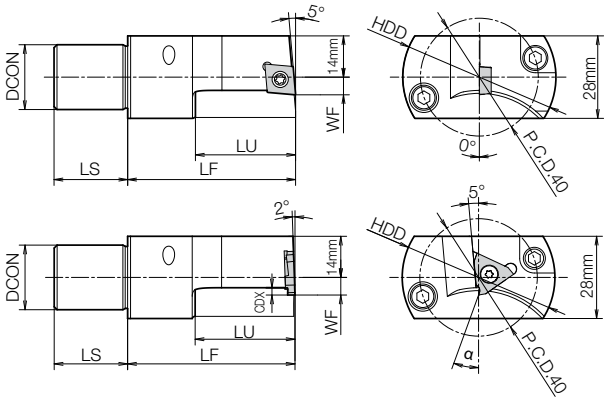
External Turning Holders (Round Shank)

New Symbol	Description	Previous Symbol
DCON	Connection Diameter	ØD, ØD1
LF	Functional Length	L1
WF	Cutting Edge Distance	F1
WF_2	Cutting Edge Distance (Secondary)	F2
BD	Body Diameter	Ød, Ød1
H	Shank Flat Width	H1



Sub-Spindle Turning Holders

New Symbol	Description	Previous Symbol
DCON	Connection Diameter	ØD
HDD	Head Diameter	ØD1, ØD2
LF	Functional Length	L2
LS	Shank Length	-
LU	Usable Length	L3
WF	Cutting Edge Distance	F1
WF_2	Cutting Edge Distance (Secondary)	F2
CDX	Maximum Cutting Depth	B



Boring Dimensions

Boring Bars

New Symbol	Description	Previous Symbol
DMIN	Minimum Bore Diameter	ØA
DCON	Connection Diameter	ØD, ØD1
GAMO	Rake Angle	θ
H	Shank Flat Width	H
LF	Functional Length	L1
LH	Head Length	L2
LPR	Full Length	L1
LU	Usable Length	L2
RE	Corner Radius	rε
WF	Cutting Edge Distance	F
WF_2	Cutting Edge Distance (Secondary)	F2

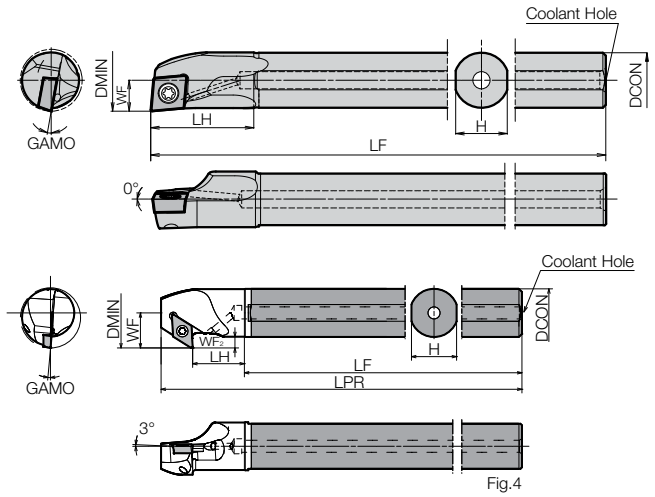
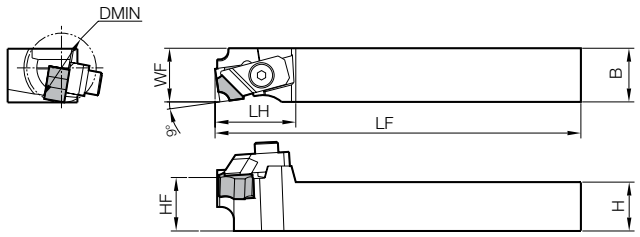


Fig.4

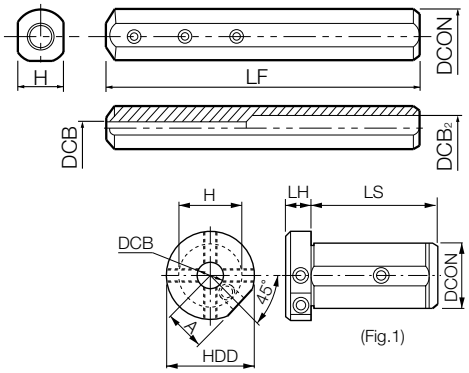
Boring Bars (Square Shank)

New Symbol	Description	Previous Symbol
DMIN	Minimum Bore Diameter	ØA
B	Shank Width	B
H	Shank Height	H1
HF	Cutting Edge Height	h
LF	Functional Length	L1
LH	Head Length	L2
WF	Cutting Edge Distance	F1



Boring Bar Sleeves

New Symbol	Description	Previous Symbol
DCON	Connection Diameter	ØD, ØD1
DCB	Connection Bore Diameter	Ød1
HDD	Head Diameter	ØD2
DCB_2	Connection Bore Diameter (Secondary)	Ød1, Ød2
H	Shank Flat Width	-
LF	Functional Length	L1
LS	Shank Length	L1
LH	Head Length	L2
A	Head Flat Distance	-

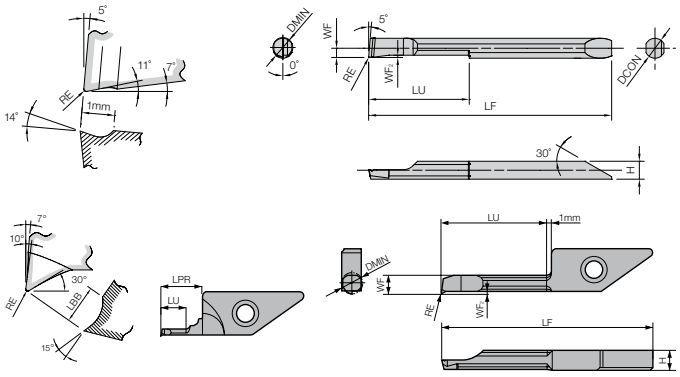


(Fig.1)

Boring Dimensions (Continued)

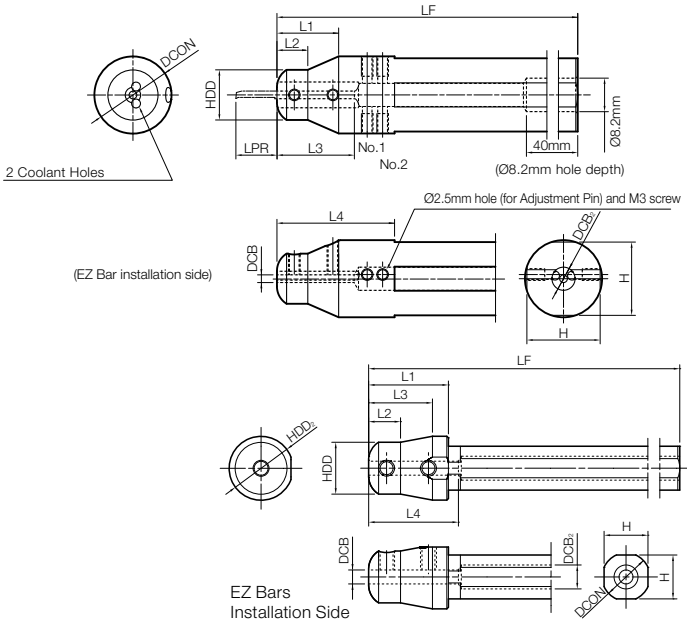
Micro Boring Bars

New Symbol	Description	Previous Symbol
DMIN	Minimum Bore Diameter	ØA
H	Bar Flat Height	-
LF	Functional Length	L1
LU	Usable Length	L2
LPR	Bar Overhang Length	L3
WF	Cutting Edge Distance	F
WF_2	Cutting Edge Distance (Secondary)	S
RE	Corner Radius	rε
LBB	Cutting Edge Width	W



Micro Boring Bar Sleeves

New Symbol	Description	Previous Symbol
DCB	Connection Bore Diameter	Ød1
DCON	Connection Diameter	ØD1
HDD	Neck Diameter	ØD2
HDD_2	Head Diameter	ØD3
DCB_2	Connection Bore Diameter (Secondary)	Ød2
H	Shank Flat Height	-
LF	Functional Length	L1
L1	Head Length	L2
L2	Neck Length	L3
L3	Connection Bore Depth	L4
LPR	Bar Overhang Length	T
No.1	Overhang Length of Bar at Position 1	-
No.2	Overhang Length of Bar at Position 2	-
No.3	Overhang Length of Bar at Position 3	-
No.4	Overhang Length of Bar at Position 4	-



Micro Boring Bar Holders (Round Shank)

New Symbol	Description	Previous Symbol
DCON	Connection Diameter	ØD1
HDD	Head Diameter	ØD2
H	Shank Flat Height	-
LF	Functional Length	L1
LH	Head Length	L2
WF	Cutting Edge Height	F1
L2	Neck Length	-

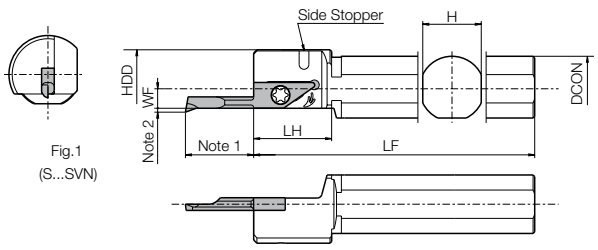
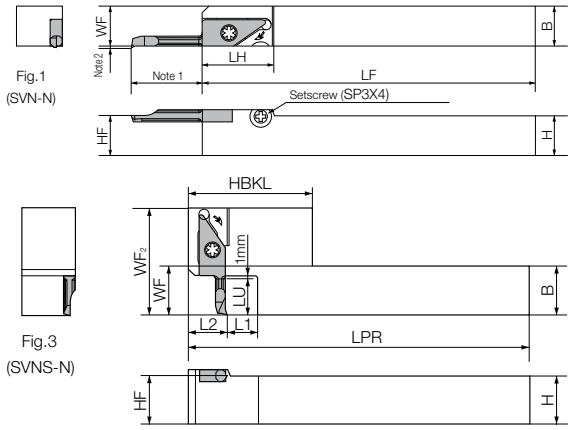


Fig.1
(S...SVN)

Boring Dimensions (Continued)

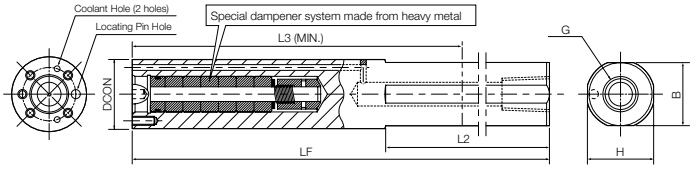
Micro Boring Bar Holders (Square Shank)

New Symbol	Description	Previous Symbol
HF	Cutting Edge Height	h
H	Shank Height	H1
B	Shank Width	-
LF	Functional Length	L1
LPR	Protruding Length	L1
LH	Head Length	L2
HBKL	Head Back Offset Length	F2
HBKW	Head Back Offset Width	F2
WF	Cutting Edge Distance	F1
WF_2	Cutting Edge Distance (Secondary)	F1
LU	Usable Length	F3
L1	Holder Clearance Distance 1	L3
L2	Holder Clearance Distance 2	L4



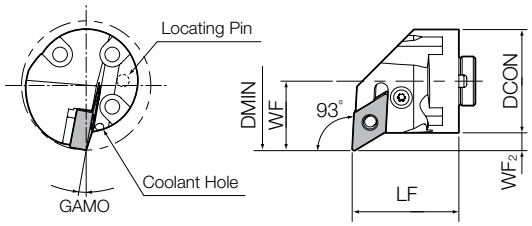
Boring Bar Adapters

New Symbol	Description	Previous Symbol
DCON	Connection Diameter	ØD1
H	Shank Flat Height	-
B	Shank Flat Width	-
LF	Functional Length	L1
L2	Shank Length	-
L3 (Min)	Minimum Modification Length	-
G	Coolant Hole Thread Size	-



Replaceable Boring Bar Heads

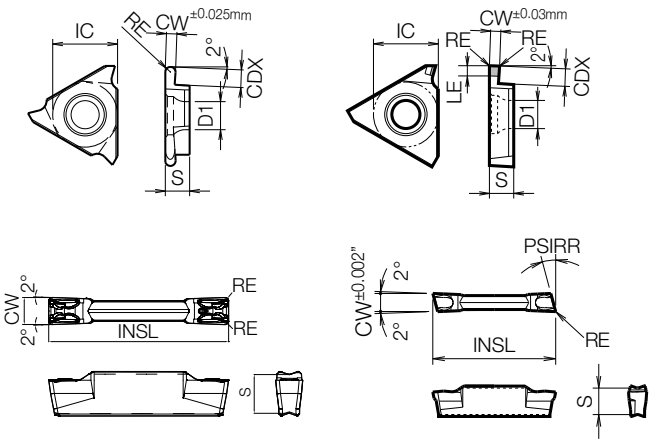
New Symbol	Description	Previous Symbol
DMIN	Minimum Bore Diameter	ØA
DCON	Connection Diameter	ØD
LF	Functional Length	L1
WF	Cutting Edge Distance	F
WF_2	Cutting Edge Distance (Secondary)	S
GAMO	Rake Angle	θ
RE	Corner Radius	rε



Grooving & Cut-Off Dimensions

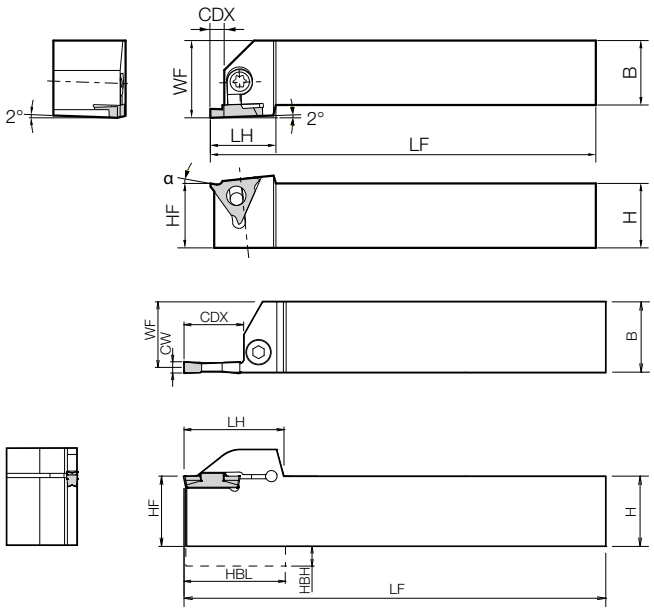
Grooving & Cut-Off Inserts

New Symbol	Description	Previous Symbol
IC	Inscribed Circle Diameter	A
BCH	Corner Chamfer Length	C
CDX	Maximum Cutting Depth	B
CW	Cutting Edge Width	W
CUTDIA	Maximum Cut-Off Diameter	ØDmax
LE	Edge Length (PCD / CBN Tip)	S
D1	Hole Diameter	Ød
DAXN	Face Groove Diameter (Min.)	ØD
DAXX	Face Groove Diameter (Max.)	ØD
INSL	Insert Length	L
PSIRR/L	Lead Angle	θ
RE	Corner Radius	rε
S	Insert Thickness	H, T, M
W1	Insert Width	A



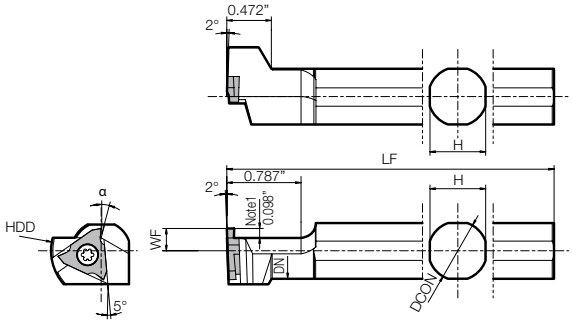
External Grooving Holders (Square Shank)

New Symbol	Description	Previous Symbol
B	Shank Width	-
CDX	Maximum Cutting Depth	T
H	Shank Height	H1
HF	Cutting Edge Height	h
HBL	Head Bottom Offset Length	L3
HBH	Head Bottom Offset Height	H2
HBKW	Head Back Offset Width	F2
LF	Functional Length	L1
LH	Head Length	L2
LN	Neck Length	-
WF	Cutting Edge Distance	F1
GAMP	Axial Rake Angle	θ
MHD	Mounting Hole Distance	M1
MHD2	Mounting Hole Distance (Secondary)	M2



External Grooving Holders (Round Shank)

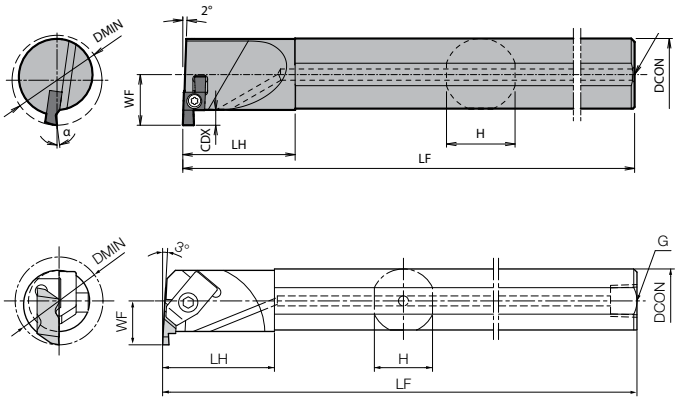
New Symbol	Description	Previous Symbol
DCON	Connection Diameter	ØD
LF	Functional Length	L1
WF	Cutting Edge Distance	F1
DN	Neck Diameter	Ød1
HDD	Head Diameter	Ød2
H	Shank Flat Height	H1



Grooving & Cut-Off Dimensions (Continued)

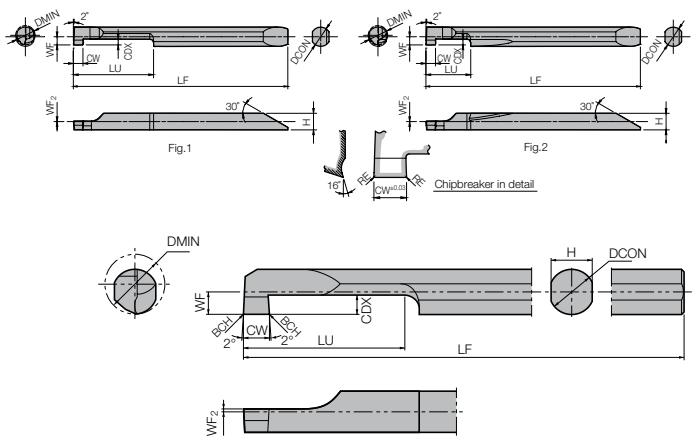
Internal Grooving Holders

New Symbol	Description	Previous Symbol
DMIN	Minimum Bore Diameter	ØA
DCON	Connection Diameter	ØD
H	Shank Flat Height	H1
LF	Functional Length	L1
LH	Head Length	L2
LU	Usable Length	L2
WF	Cutting Edge Distance	F1
CDX	Maximum Cutting Depth	T
G	Coolant Hole Thread Size	-



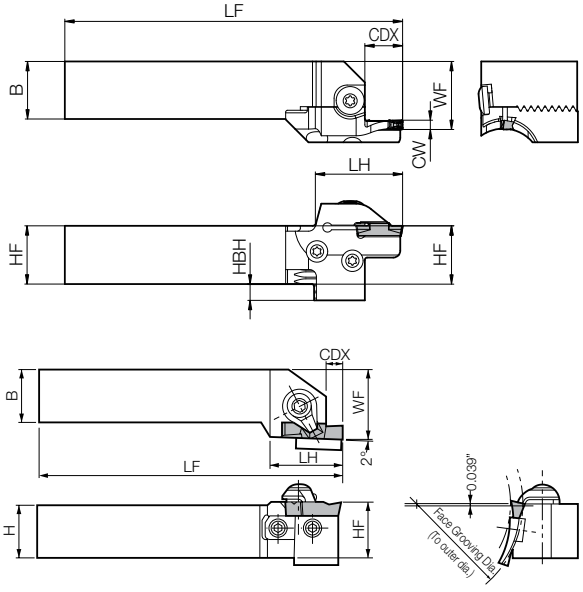
Micro Grooving Bars

New Symbol	Description	Previous Symbol
DMIN	Minimum Bore Diameter	ØA
DCON	Connection Diameter	ØD
DAXN	Face Groove Diameter (Min.)	ØD
DAXX	Face Groove Diameter (Max.)	ØD
CW	Cutting Edge Width	W
BCH	Corner Chamfer Length	C
H	Bar Flat Height	H1
LF	Functional Length	L1
LU	Usable Length	L2
WF	Cutting Edge Distance	F
WF_2	Cutting Edge Distance (Secondary)	L4
LH	Head Length	L2
CDX	Maximum Cutting Depth	T
RE	Corner Radius	rε



Face Grooving Toolholders

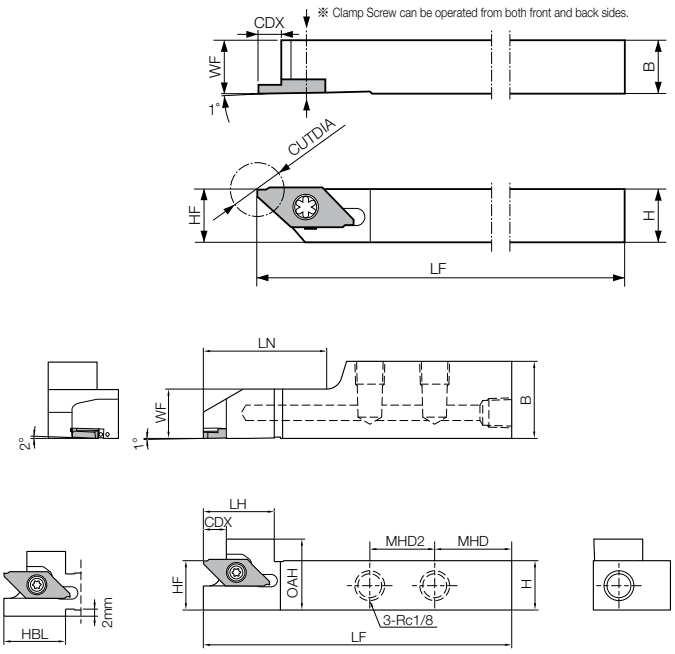
New Symbol	Description	Previous Symbol
DAXN	Face Groove Diameter (Min.)	ØD
DAXX	Face Groove Diameter (Max.)	ØD
H	Shank Height	H1
HF	Cutting Edge Height	h
HBH	Head Bottom Offset Height	H2
B	Shank Width	-
LF	Functional Length	L1
LH	Head Length	L2
WF	Cutting Edge Distance	F, F1
WF_2	Cutting Edge Distance (Secondary)	S
CDX	Maximum Cutting Depth	T
CW	Cutting Edge Width	W



Grooving & Cut-Off Dimensions (Continued)

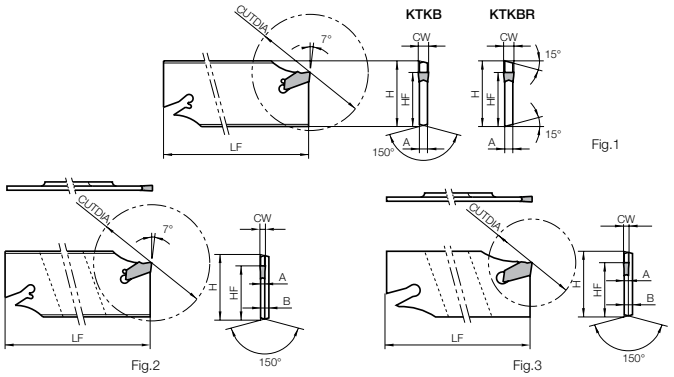
Cut-Off Toolholders

New Symbol	Description	Previous Symbol
CUTDIA	Maximum Cut-Off Diameter	ØDmax
H	Shank Height	H1
HF	Cutting Edge Height	h
OAL	Overall Length	L1
B	Shank Width	-
LF	Functional Length	L1
LH	Head Length	L2
LN	Neck Length	L3
LN2	Neck Length (Secondary)	-
HBL	Head Bottom Offset Length	L3
HBH	Head Bottom Offset Height	H2
WF	Cutting Edge Distance	F1
CDX	Maximum Cutting Depth	T
GAMP	Axial Rake Angle	θ
MHD	Mounting Hole Distance	M1
MHD2	Mounting Hole Distance (Secondary)	M2



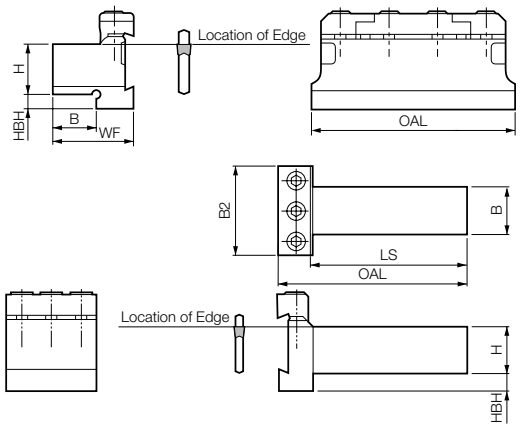
Cut-Off Blades

New Symbol	Description	Previous Symbol
CUTDIA	Maximum Cut-Off Diameter	ØDmax
H	Blade Height	H1
HF	Cutting Edge Height	h
B	Blade Width	-
LF	Functional Length	L1
A	Insert Mount Width	-
CW	Cutting Edge Width	W



Cut-Off Tool Blocks

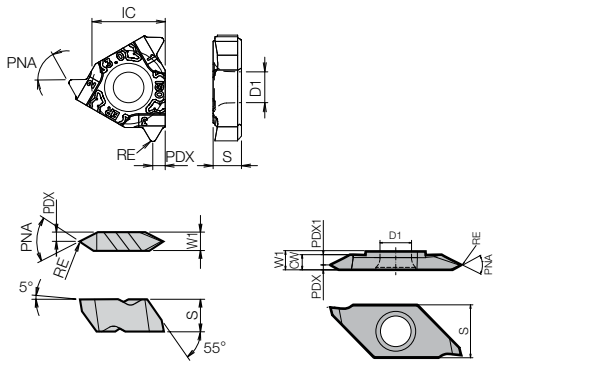
New Symbol	Description	Previous Symbol
H	Shank Height	H1
HBH	Head Bottom Offset Height	H2
B	Shank Width	B1
B2	Blade Mount Width	-
OAL	Overall Length	L1
LS	Shank Length	L2



Threading Dimensions

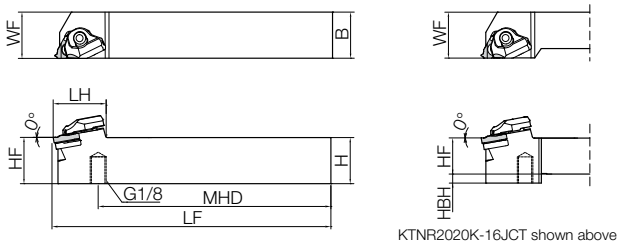
Threading Inserts

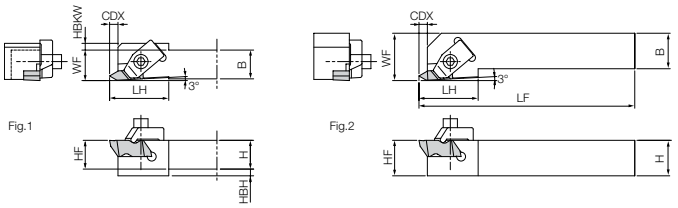
New Symbol	Description	Previous Symbol
IC	Inscribed Circle Diameter	A
S	Insert Thickness	T
D1	Hole Diameter	Ød
PDX	Profile Distance	S, S1
PDX1	Profile Distance (Secondary)	S2
PNA	Included Angle	θ
RE	Corner Radius	rε
W1	Insert Width	T
CW	Cutting Edge Width	W



External Threading Toolholders (Square Shank)

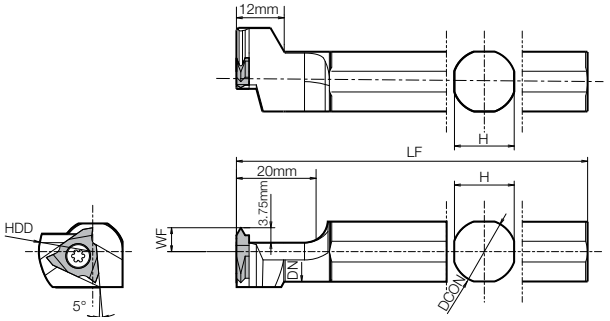
New Symbol	Description	Previous Symbol
H	Shank Height	H1
HF	Cutting Edge Height	h
HBH	Head Bottom Offset Height	H2
B	Shank Width	-
LF	Functional Length	L1
LH	Head Length	L2
WF	Cutting Edge Distance	F1
MHD	Mounting Hole Distance	M1
HBKW	Head Back Offset Width	F2
CDX	Maximum Cutting Depth	T
LPR	Protruding Length	T





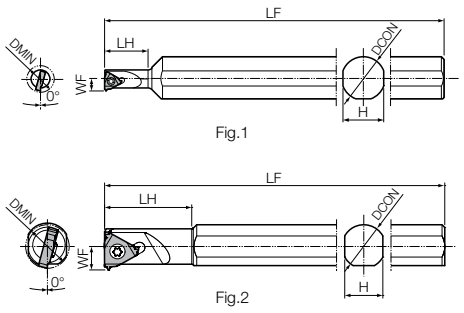
External Threading Toolholders (Round Shank)

New Symbol	Description	Previous Symbol
DCON	Connection Diameter	ØD
LF	Functional Length	L1
WF	Cutting Edge Distance	F1
DN	Neck Diameter	Ød1
HDD	Head Diameter	Ød2
H	Shank Flat Height	H1



Internal Threading Toolholders

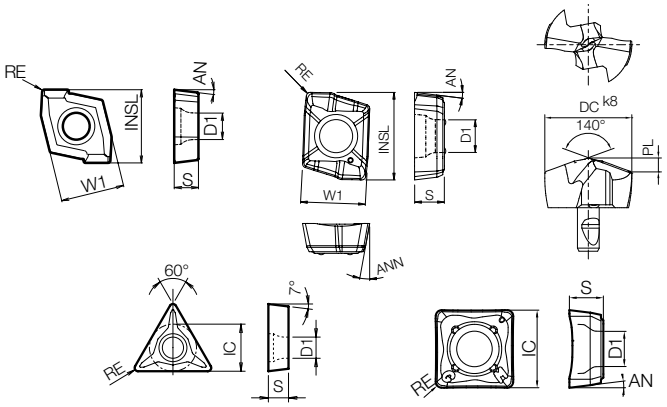
New Symbol	Description	Previous Symbol
DMIN	Minimum Bore Diameter	ØA
DCON	Connection Diameter	ØD
H	Shank Flat Width	-
LF	Functional Length	L1
LH	Head Length	L2
WF	Cutting Edge Distance	F1



Drilling Dimensions

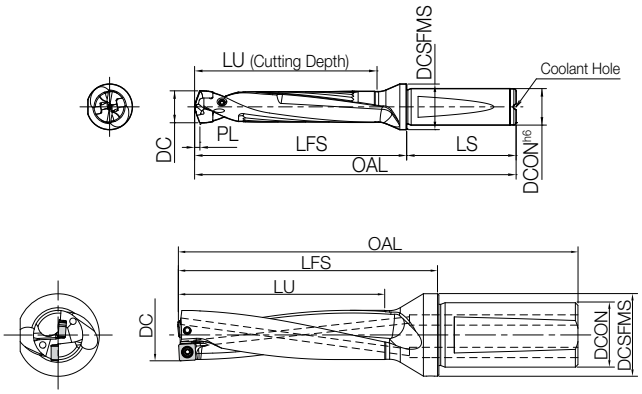
Drilling Inserts

New Symbol	Description	Previous Symbol
IC	Inscribed Circle Diameter	A
S	Insert Thickness	T
W1	Insert Width	W
INSL	Insert Length	L
D1	Hole Diameter	Ød
DC	Cutting Diameter	ØDc
DC_2	Cutting Diameter	ØD2
PL	Point Length	Lp
RE	Corner Radius	rε
AN	Relief Angle (Minor)	α
ANN	Relief Angle (Major)	β



Drilling Toolholders

New Symbol	Description	Previous Symbol
DC	Cutting Diameter	ØDc
DCON	Connection Diameter	ØD
OAL	Overall Length	L
LFS	Functional Length	L1
LU	Cutting Depth	L3
LS	Shank Length	-
DCSFMS	Contact Surface Diameter Machine Side	Ød1
LCF	Flute Length	L2
Rc	Coolant Hole Thread Size	-

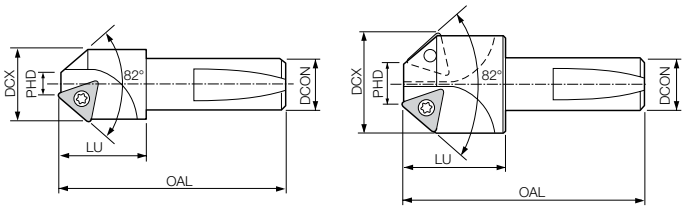


R TECHNICAL

Drilling Dimensions (Continued)

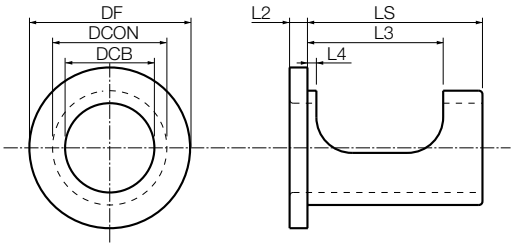
Countersinks

New Symbol	Description	Previous Symbol
DCX	Maximum Cutting Diameter	ØD
PHD	Premachined Hole Diameter	ØDs
DCON	Connection Diameter	Ød
OAL	Overall Length	L
LU	Usable Length	L1



Drilling Sleeves

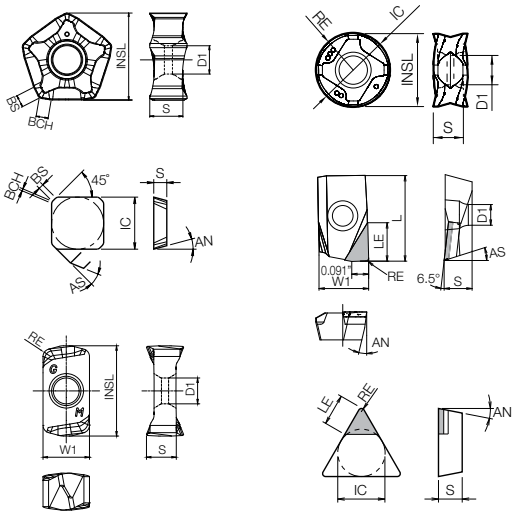
New Symbol	Description	Previous Symbol
DCB	Connection Bore Diameter	Ød
DCON	Connection Diameter	ØD1
DF	Flange Diameter	ØD2
LS	Shank Length	L1



Milling Dimensions

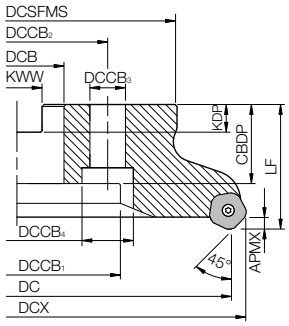
Milling Inserts

New Symbol	Description	Previous Symbol
IC	Inscribed Circle Diameter	A
S	Insert Thickness	T
BCH	Corner Chamfer Length	X
RE	Corner Radius	rε
BS	Wiper Edge Length	Z
INSL	Insert Length	L
D1	Hole Diameter	Ød
L	Cutting Edge Length	W
W1	Insert Width	A
AN	Relief Angle (Major)	α
AS	Relief Angle (Wiper Edge)	β
LE	Edge Length (PCD / CBN Tip)	S
GAN	Insert Rake Angle	θ



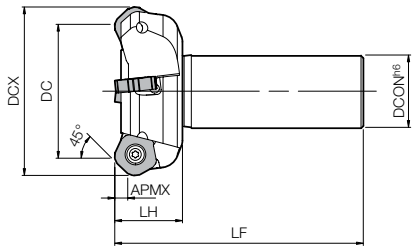
Face Mills

New Symbol	Description	Previous Symbol
DC	Cutting Diameter	ØD
DCX	Maximum Cutting Diameter	ØD1
DCSFMS	Contact Surface Diameter Machine Side	ØD2
DCB	Connection Bore Diameter	Ød
$DCCB_1$	Connection Counterbore Diameter	Ød1
$DCCB_2$	Mounting Bolt Hole Diameter	Ød2
LF	Functional Length	H
CBDP	Connection Bore Depth	E
KDP	Keyway Depth	a
KWW	Keyway Width	b
PCD	Secondary Bolt Distance	ØC
APMX	Maximum Cutting Depth	S
KAPR	Lead Angle	-



End Mills

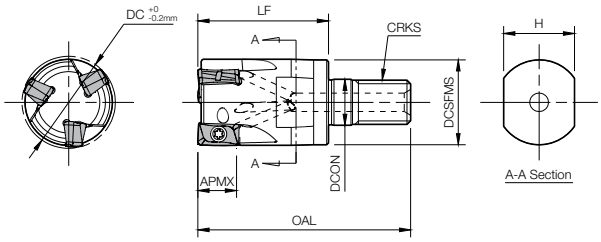
New Symbol	Description	Previous Symbol
DC	Cutting Diameter	ØD
DCX	Maximum Cutting Diameter	ØD1
DCON	Connection Diameter	Ød, Ød1
DN	Neck Diameter	Ød2
CW	Cutting Width	W
LF	Functional Length	L
LH	Head Length	ℓ, ℓ1, L2
LU	Usable Length	ℓ2
LS	Shank Length	L3
LN	Neck Length	L1
APMX	Maximum Cutting Depth	S
RMPX	Maximum Ramping Angle	α
A.R.	Axial Rake Angle	-
R.R.	Radial Rake Angle	-
KAPR	Lead Angle	-
TA	Taper Angle	θ



Milling Dimensions (Continued)

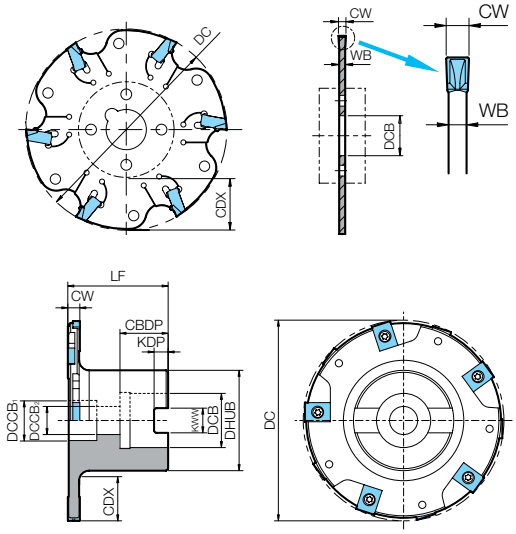
Modular End Mills

New Symbol	Description	Previous Symbol
DC	Cutting Diameter	ØD
DCSFMS	Contact Surface Diameter Machine Side	ØD1
DCON	Connection Diameter	Ød
OAL	Overall Length	L
LF	Functional Length	L1
CRKS	Connection Retaining Knob Thread Size	M1
H	Weldon Flat Width	-
APMX	Maximum Cutting Depth	S
RMPX	Maximum Ramping Angle	α
A.R.	Axial Rake Angle	-
R.R.	Radial Rake Angle	-
KAPR	Lead Angle	-



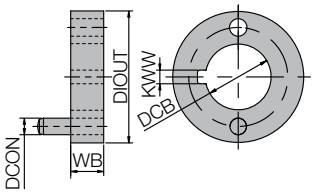
Slot Mills

New Symbol	Description	Previous Symbol
CW	Cutting Edge Width	W
CDX	Maximum Cutting Depth	T
DC	Cutting Diameter	ØD
DCB	Connection Bore Diameter	Ød
WB	Body Width	A
DCSFMS	Contact Surface Diameter Machine Side	Ød1
DHUB	Hub Diameter	ØA
THUB	Hub Thickness	A
LF	Functional Length	L1
LN	Neck Leck	H
CBDP	Connection Bore Depth	E
KDP	Keyway Depth	a
KWW	Keyway Width	b
$DCCB_1$	Connection Counterbore Diameter	Ød1
$DCCB_2$	Mounting Bolt Hole Diameter	Ød2
APMX	Maximum Cutting Depth	W.O.C.1, S



Slot Mill Drive Rings

New Symbol	Description	Previous Symbol
DCB	Connection Bore Diameter	Ød
DIOUT	Outside Diameter	ØD
WB	Body Width	A1
KWW	Keyway Width	a
DCON	Connection Diameter	Ød1



MATERIAL GROUPS			
Name	Group	Representative Materials	Description
Steel	1	1008, 1010, 1015, 1018, 1022, 1025, 1030, 1040, 1045, 1050, 1055, 1110, 1140, 1151, 1525, 1526, 1541, 1552, 10L18, 11L14, 12L13, 12L14	Low to medium carbon steels Leaded and freer cutting
	2	1340, 4140, 4145, 5140, 8640, 4150, 4060, 5150, 6150, 8650, 8660, 8620, 8630, 50100, 51100, 52100	Medium to high carbon steels and alloy steels
	3	A2, D2, M2, D4, M7, M35, M50, S7	Tool steel, high alloy steel casting
	4	Case hardened steel, induction hardened steel, heat treated steel	Hardened steels (>40Rc)
Stainless Steel	5	303, 304, 310, 316, 317, 321	Austenitic, moderate to difficult machinability
	6	403, 410, 416, 422, 430	Martensitic, free cutting stainless
	7	13-8Mo, 15-5PH, 17-4PH, 17-7PH	Wrought stainless steel Precipitation hardened
Cast Iron	8	A48-64, G3000, G4000, J431a	Gray cast iron with low to medium hardness
	9	A439-62, A476-67, A536-67, J434, 60-40-18, 80-55-06, A48-50B, A48-60B, D4512	Medium hard alloy cast iron Moderate to difficult to machine Malleable castings, nodular cast iron
	10	Cast iron with hardness greater than 36Rc	Chilled cast iron
Powdered Metals	11	P/M iron, P/M steel, P/M copper iron, P/M copper steel, P/M nickel steel, P/M infiltrated steel	Consolidated compacts of metal powders Generally considered to have poor machinability
Heat-Resistant Alloy	12	Inconel, Hastelloy, Waspalloy, Rene, Monel	Nickel and iron based superalloys
	13	Stellite, Haynes 188, Haynes 25 (L605)	Cobalt based superalloys
	14	Titanium, tungsten, tantalum, zirconium	Titanium based alloys and refractory metals
Non-Ferrous Alloys	15	Aluminum less than 8% silicon, brass, silver, platinum, gold	Non-ferrous alloys Free machining
	16	Aluminum greater than 8% silicon, aluminum castings, aluminum bronze, copper alloys	Non-ferrous alloys Non-free machining
Non-Metallics	17	Plastics, graphite, epoxy, nylon, "Green" ceramics, PVC, teflon, fiberglass, glass, sintered ceramics, fiber reinforced plastic	Easy to difficult to machine non-metallics

Steel Turning

Negative Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.006 ipr	0.018 ipr
	Cermet	0.001 ipr	0.005 ipr	0.010 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
1	CA025P	500	650	800
	CA510	550	700	850
	CA515	550	700	850
	CA525	450	600	750
	CA530	400	550	700
	PR1425	300	450	600
	PR1225	300	450	600
	PR930	300	450	600
	TN610	750	975	1200
	TN620	700	925	1150
	PV710	800	1050	1300
	PV720	750	975	1200

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.007 ipr	0.0014 ipr
	Cermet	0.001 ipr	0.004 ipr	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
2	CA025P	450	600	750
	CA510	550	675	800
	CA515	550	675	800
	CA525	400	550	700
	CA530	400	550	700
	PR1425	250	375	500
	PR1225	250	375	500
	PR930	250	375	500
	TN610	600	800	1000
	TN620	500	700	900
	PV710	650	850	1050
	PV720	650	800	950

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.007 ipr	0.014 ipr
	Cermet	0.001 ipr	0.004 ipr	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
3	CA025P	450	600	750
	CA510	550	675	800
	CA515	550	675	800
	CA525	400	550	700
	CA530	400	550	700
	PR1425	250	375	500
	PR1225	250	375	500
	PR930	250	375	500
	TN610	600	800	1000
	TN620	500	700	900
	PV710	650	850	1050
	PV720	650	800	950

Positive Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.001 ipr	0.004 ipr	0.008 ipr
	Cermet	0.001 ipr	0.005 ipr	0.010 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
1	CA025P	450	600	750
	CA510	500	650	800
	CA515	500	650	800
	CA525	400	550	700
	CA530	350	500	650
	PR1425	300	450	600
	PR1225	300	450	600
	PR930	300	450	600
	TN610	750	975	1200
	TN620	700	925	1150
	PV710	800	1050	1300
	PV720	750	975	1200

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.001 ipr	0.004 ipr	0.008 ipr
	Cermet	0.001 ipr	0.004 ipr	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
2	CA025P	350	475	600
	CA510	400	550	700
	CA515	400	550	700
	CA525	300	425	550
	CA530	300	425	550
	PR1425	200	350	500
	PR1225	200	350	500
	PR930	200	350	500
	TN610	600	800	1000
	TN620	500	700	900
	PV710	650	850	1050
	PV720	650	800	950

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.001 ipr	0.004 ipr	0.008 ipr
	Cermet	0.001 ipr	0.004 ipr	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
3	CA025P	350	450	550
	CA510	400	550	700
	CA515	400	550	700
	CA525	250	375	500
	CA530	250	375	500
	PR1425	200	350	500
	PR1225	200	350	500
	PR930	200	350	500
	TN610	600	800	1000
	TN620	500	700	900
	PV710	650	850	1050
	PV720	650	800	950

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Steel Turning

Material		Grade Type	Machining Parameters								
			Feed Rate								
			Finishing			Finishing-Medium			Medium-Roughing		
		Ceramic	See Below			See Below			See Below		
		CBN	See Below			See Below			-		
Material Group	Hardness	Grade	Cutting Speed (sfm)								
			FROM	MEDIAN	TO	FROM	MEDIAN	TO	FROM	MEDIAN	TO
4	44Rc 0.009 ipr MAX	A65	240	800	1050	240	800	1050			
		A66N	240	800	1050	240	800	1050			
		PT600M	240	800	1050	240	800	1050			
		KBN510	240	900	1200						
		KBN525	240	900	1200						
		KBN900				300	400	500	300	400	500
		KBN05M	290	1089	1450	290	1089	1450			
		KBN10M	264	990	1320	264	990	1320			
		KBN25M	264	990	1320	264	990	1320			
		KBN30M	240	890	1190	240	890	1190			
		KBN35M	240	890	1190	240	890	1190			
	48Rc 0.009 ipr MAX	A65	230	750	980	230	750	980			
		A66N	230	750	980	230	750	980			
		PT600M	230	750	980	230	750	980			
		KBN510	230	850	1150						
		KBN525	230	850	1150						
		KBN900				300	400	500	300	400	500
		KBN05M	280	1030	1400	280	1030	1400			
		KBN10M	230	850	1140	230	850	1140			
		KBN25M	253	935	1265	253	935	1265			
		KBN30M	230	850	1140	230	850	1140			
		KBN35M	230	850	1140	230	850	1140			
	52Rc 0.008 ipr MAX	A65	200	660	800	200	660	800			
		A66N	200	660	800	200	660	800			
		PT600M	200	660	800	200	660	800			
		KBN510	200	700	1000						
		KBN525	200	700	1000						
		KBN900				250	350	450	250	350	450
		KBN05M	240	850	1210	240	850	1210			
		KBN10M	220	770	1100	220	770	1100			
		KBN25M	220	770	1100	220	770	1100			
		KBN30M	200	700	1000	200	700	1000			
		KBN35M	200	700	1000	200	700	1000			
	56Rc 0.006 ipr MAX	A65	175	550	650	175	550	650			
		A66N	175	550	650	175	550	650			
		PT600M	175	550	650	175	550	650			
		KBN510	175	600	800						
		KBN525	175	600	800						
		KBN900				200	300	400	200	300	400
		KBN05M	240	850	1210	240	850	1210			
		KBN10M	220	770	1100	220	770	1100			
		KBN25M	220	770	1100	220	770	1100			
		KBN30M	200	700	1000	200	700	1000			
		KBN35M	200	700	1000	200	700	1000			
	60Rc 0.004 ipr MAX	A65	150	450	650	150	450	650			
		A66N	150	450	650	150	450	650			
		PT600M	150	450	650	150	450	650			
		KBN510	150	500	675						
		KBN525	150	500	675						
		KBN900				150	250	350	150	250	350
		KBN05M	180	600	825	180	600	825			
		KBN10M	165	550	750	165	550	750			
		KBN25M	165	550	750	165	550	750			
		KBN30M	150	500	675	150	500	675			
		KBN35M	150	500	675	150	500	675			
	64Rc 0.004 ipr MAX	A65	100	400	450	100	400	450			
		A66N	100	400	450	100	400	450			
		PT600M	100	400	450	100	400	450			
		KBN510	100	450	550						
		KBN525	100	450	550						
		KBN900				100	200	300	100	200	300
		KBN05M	120	550	660	120	550	660			
		KBN10M	110	500	600	110	500	600			
		KBN25M	110	500	600	110	500	600			
		KBN30M	100	450	540	100	450	540			
		KBN35M	100	450	540	100	450	540			

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Stainless Steel Turning

Negative Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.008 ipr	0.014 ipr
	Cermet	0.002 ipr	0.004 ipr-	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
5	**PR1225**	300	450	600
	PR930	250	400	550
	PR1535	225	388	550
	CA6515	400	575	750
	CA6525	300	500	700
	TN620	300	400	500
	PV720	350	450	550

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.008 ipr	0.014 ipr
	Cermet	0.002 ipr	0.003 ipr	0.004 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
6	**PR1225**	250	400	550
	PR930	200	350	500
	PR1535	200	350	500
	CA6515	300	400	500
	CA6525	250	325	400
	TN620	250	375	500
	PV720	300	425	550

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.008 ipr	0.014 ipr
	Cermet	0.002 ipr	0.003 ipr	0.004 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
7	**PR1225**	250	400	550
	PR930	200	350	500
	PR1535	200	350	500
	CA6515	300	400	500
	CA6525	250	325	400
	TN620	250	375	500
	PV720	300	425	550

Positive Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.001 ipr	0.004 ipr	0.006 ipr
	Cermet	0.002 ipr	0.004 ipr-	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
5	**PR1225**	250	325	400
	PR930	200	263	325
	PR1535	200	263	325
	CA6515	350	425	500
	CA6525	300	375	450
	TN620	300	375	450
	PV720	350	425	500

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.004 ipr	0.006 ipr
	Cermet	0.002 ipr	0.003 ipr	0.004 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
6	**PR1225**	125	213	300
	PR930	100	175	250
	PR1535	100	175	250
	CA6515	150	275	400
	CA6525	225	288	350
	TN620	200	300	400
	PV720	250	350	450

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.004 ipr	0.006 ipr
	Cermet	0.002 ipr	0.003 ipr	0.004 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
7	**PR1225**	125	213	300
	PR930	100	175	250
	PR1535	100	175	250
	CA6515	150	275	400
	CA6525	225	288	350
	TN620	200	300	400
	PV720	250	350	450

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Cast Iron Turning

Negative Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipr	0.008 ipr	0.012 ipr
	Cermet	0.004 ipr	0.008 ipr	0.012 ipr
	Ceramic	0.004 ipr	0.008 ipr	0.012 ipr
	CBN	0.002 ipr	0.007 ipr	0.012 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
8	**CA310**	650	825	1000
	CA315	500	650	800
	CA320	500	650	800
	PR905	500	650	800
	PV7005	1000	1150	1300
	KS6000	650	1075	1500
	KS6050	800	1200	1600
	CS7050	1000	1400	1800
	PT600M	1000	1500	2000
	KBN900	1600	2800	4000
	KBN60M	1100	1650	2200

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipr	0.008 ipr	0.012 ipr
	Cermet	0.004 ipr	0.008 ipr	0.012 ipr
	Ceramic	0.004 ipr	0.006 ipr	0.008 ipr
	CBN	0.004 ipr	0.006 ipr	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
9	**CA310**	500	650	800
	CA315	400	600	800
	CA320	400	550	700
	PR905	400	550	700
	PV7005	500	750	1000
	KS6000	600	850	1100
	KS6050	600	850	1100
	CS7050	650	900	1150
	PT600M	650	925	1200
	KBN900	800	1150	1500
	KBN60M	650	975	1300

Positive Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.004 ipr	0.008 ipr
	Cermet	0.002 ipr	0.004 ipr	0.008 ipr
	Ceramic	0.002 ipr	0.004 ipr	0.008 ipr
	CBN	0.002 ipr	0.004 ipr	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
8	**CA310**	350	425	500
	CA315	300	375	450
	CA320	300	350	400
	PR905	300	350	400
	PV7005	500	750	1000
	KS6000	550	875	1200
	KS6050	600	1000	1400
	CS7050	800	1200	1600
	PT600M	800	1300	1800
	KBN900	1400	2200	3000
	KBN60M	900	1350	1800

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.004 ipr	0.008 ipr
	Cermet	0.002 ipr	0.004 ipr	0.008 ipr
	Ceramic	0.002 ipr	0.004 ipr	0.008 ipr
	CBN	0.002 ipr	0.004 ipr	0.008 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
9	**CA310**	350	425	500
	CA315	300	375	450
	CA320	300	350	400
	PR905	300	350	400
	PV7005	400	650	900
	KS6000	500	750	1000
	KS6050	500	750	1000
	CS7050	550	800	1050
	PT600M	550	850	1150
	KBN900	700	1050	1400
	KBN60M	550	875	1200

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Heat-Resistant Alloy Turning

Negative Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.006 ipr	0.012 ipr
	Ceramic	0.004 ipr	0.008 ipr	0.012 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
12	PR005S	100	200	300
	PR015S	80	155	230
	PR1535	130	165	200
	PR1305	150	205	260
	PR1310	130	165	200
	PR1325	110	135	160
	PR1225	80	115	150
	PR930	80	115	150
	CA6515	80	120	160
	CA6525	80	115	150
	KS6030	500	850	1200
	KS6040	500	750	1000

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 IPT	0.005 IPT	0.006 IPT
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
12	PR005S	100	200	300
	PR015S	80	155	230
	CA6515	80	120	160
	CA6525	80	115	150
	PR1535	130	165	200
	SW05	130	230	330
	PR1305	150	205	260
	PR1310	130	165	200
	PR1325	110	135	160
	PR1225	110	135	160

Positive Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipr	0.006 ipr	0.012 ipr
	Ceramic	0.004 ipr	0.008 ipr	0.012 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
12	PR005S	100	200	300
	PR015S	80	155	230
	PR1535	80	140	200
	PR1305	150	205	260
	PR1310	130	165	200
	PR1325	110	135	160
	PR1225	80	115	150
	PR930	80	115	150
	CA6515	80	115	150
	CA6525	80	115	150
	KS6030	500	850	1200
	KS6040	500	750	1000

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 IPT	0.005 IPT	0.006 IPT
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
12	PR005S	100	200	300
	PR015S	80	155	230
	CA6515	80	120	160
	CA6525	80	115	150
	PR1535	130	165	200
	SW05	130	230	330
	PR1305	150	205	260
	PR1310	125	163	200
	PR1325	110	135	160
	PR1225	110	135	160

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Non-Ferrous Turning

Negative Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipr	0.010 ipr	0.016 ipr
	PCD	0.002 ipr	0.004 ipr	0.006 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
15	**KW10**	650	1150	2300
	PDL010	700	1300	2600
	PDL025	700	1300	2600
	KPD001	1000	3250	6500
	KPD010	1000	3250	6500

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipr	0.010 ipr	0.016 ipr
	PCD	0.002 ipr	0.004 ipr	0.006 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
16	**KW10**	600	1100	2200
	PDL010	650	1250	2500
	PDL025	650	1250	2500
	KPD001	950	3200	6400
	KPD010	950	3200	6400

Positive Inserts

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipr	0.010 ipr	0.016 ipr
	PCD	0.002 ipr	0.004 ipr	0.006 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
15	**KW10**	300	625	950
	PDL010	350	675	1000
	PDL025	350	675	1000
	KPD001	500	850	1200
	KPD010	500	850	1200

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipr	0.010 ipr	0.016 ipr
	PCD	0.002 ipr	0.004 ipr	0.006 ipr
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
16	**KW10**	250	575	850
	PDL010	300	625	900
	PDL025	300	625	900
	KPD001	450	800	1100
	KPD010	450	800	1100

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Steel Milling

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	00.004 ipt	0.006 ipt	0.010 ipt
	Cermet	00.002 ipt	0.004 ipt	0.006 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
1	**PR830**	350	550	650
	PR1225	390	590	820
	PR1230	400	600	725
	PR1525	390	590	820
	PR1535	390	590	820
	TN100M	500	900	1100
	TN620M	650	820	1000

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipt	0.004 ipt	0.006 ipt
	Cermet	0.002 ipt	0.004 ipt	0.006 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
2	**PR830**	350	500	600
	PR1225	330	520	720
	PR1230	400	600	725
	PR1525	390	590	820
	PR1535	390	590	820
	TN100M	300	650	800
	TN620M	590	720	820

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipt	0.004 ipt	0.008 ipt
	Cermet	0.002 ipt	0.004 ipt	0.005 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
3	**PR830**	200	425	550
	PR1225	260	460	590
	PR1230	325	525	675
	PR1525	390	590	820
	PR1535	390	590	820
	TN100M	250	450	600
	TN620M	500	590	720

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Stainless Steel Milling

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipt	0.004 ipt	0.006 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
5	**PR1225**	330	520	660
	PR1525	330	520	660
	PR1535	330	520	660
	CA6535	590	790	960

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipt	0.005 ipt	0.008 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
6	**PR1225**	-	-	-
	PR1525	-	-	-
	PR1535	490	660	820
	CA6535	590	790	980

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.003 ipt	0.005 ipt	0.008 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
7	**PR1225**	-	-	-
	PR1525	-	-	-
	PR1535	300	390	490
	CA6535	-	-	-

Cast Iron Milling

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipt	0.010 ipt	0.016 ipt
	Ceramic	0.002 ipt	0.004 ipt	0.008 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
8	**PR1210**	390	590	820
	PR1510	390	590	820
	CA420M	550	750	980
	KS6000	650	2500	3300
	KS6050	1900	2950	3900
	CS7050	1900	2950	3900

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipt	0.008 ipt	0.012 ipt
	Ceramic	0.002 ipt	0.004 ipt	0.008 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
9	**PR1210**	330	490	660
	PR1510	330	490	660
	CA420M	490	660	820
	KS6000	500	1200	1800
	KS6050	1300	1950	2950
	CS7050	1300	1950	2950

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Heat-Resistant Alloy Milling

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.003 ipt	0.005 ipt	0.006 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
12	**PR1535**	70	100	160
	CA6535	70	100	160

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.003 ipt	0.006 ipt	0.008 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
14	**PR1535**	130	200	260

Non-Ferrous Milling

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.004 ipt	0.008 ipt	0.012 ipt
	PCD	0.002 ipt	0.004 ipt	0.008 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
15	**KW10**	660	1970	2950
	GW25	660	1970	2950
	PDL025	660	1640	2620
	KPD001	1640	3280	4920
	KPD230	1640	3280	4920

Material	Grade Type	Machining Parameters		
		Feed Rate		
	Carbide	0.002 ipt	0.005 ipt	0.008 ipt
	PCD	0.002 ipt	0.004 ipt	0.006 ipt
Material Group	Grade	Cutting Speed (sfm)		
		FROM	MEDIAN	TO
16	**KW10**	660	820	980
	GW25	660	820	980
	PDL025	660	820	980
	KPD001	980	2460	3280
	KPD230	980	2460	3280

Note)
Recommended cutting conditions seen above are general machining parameters.
For more accurate cutting conditions, see specific products in previous sections.

For Material Groups See Page R14

Inch / Metric Conversion Chart

• Cutting Speed (Vc)

Cutting Speed (Vc)	
SFM	m/min
300	91
600	183
900	274

SFM = (0.262 x rpm) x dia.(inch)
3.28feet/min (SFM) = 1m/min

SFM (Surface Feet per Minute)

• D.O.C. (ap)

D.O.C. (ap)	
inch	mm
0.02	0.5
0.04	1.0
0.08	2.0

1inch = 25.4mm
0.04inch = 1mm

• IPR Feed Rate (f)

Feed Rate (f)	
ipr	m/min
0.002	0.05
0.004	0.1
0.008	0.2

1ipr = 25.4mm/rev
0.004ipr = 0.1mm/rev

ipr (Inch per Revolution)
mm/rev (mm per Revolution)

• IPT Feed Rate (fz)

Feed Rate (fz)	
ipt	mm/t
0.002	0.05
0.004	0.1
0.008	0.2

1ipt = 25.4mm/t
0.004ipt = 0.1mm/t

ipt (Inch per Tooth)
mm/t (mm per Tooth)

• Torque

lbft	Nm
0.738	1

lbft (Pound x Feet)
Nm (Newton x Meter)

SI Derived Units Conversion Chart

(Extracted from JIS Handbook "Iron & Steel")

• Force

N	kgf	dyn
1	$1.019\ 72X10^{-1}$	$1X10^{5}$
9.806 65	1	$9.806\ 65X10^{5}$
$1X10^{-5}$	$1.019\ 72X10^{-6}$	1

• Stress

Pa or N/m^2	MPa or N/mm^2	kgf/mm^2	kgf/cm^2	kgf/m^2
1	$1X10^{-6}$	$1.019\ 72X10^{-7}$	$1.019\ 72X10^{-5}$	$1.019\ 72X10^{-1}$
$1X10^{6}$	1	$1.019\ 72X10^{-1}$	$1.019\ 72X10$	$1.019\ 72X10^{5}$
$9.806\ 65X10^{6}$	9.806 65	1	$1X10^{-2}$	$1X10^{-6}$
$9.806\ 65X10^{4}$	$9.806\ 65X10^{-2}$	$1X10^{-2}$	1	$1X10^{-4}$
9.806 65	$9.806\ 65X10^{-6}$	$1X10^{-6}$	$1X10^{-4}$	1

• Pressure

Pa	kPa	MPa	bar	kgf/cm2
1	$1X10^{-3}$	$1X10^{-6}$	$1X10^{-5}$	$1.019\ 72X10^{-5}$
$1X10^{3}$	1	$1X10^{-3}$	$1X10^{-2}$	$1.019\ 72X10^{-2}$
$1X10^{6}$	$1X10^{3}$	1	1X10	1.019 72X10
$1X10^{5}$	$1X10^{2}$	$1X10^{-1}$	1	1.019 72
$9.806\ 65X10^{4}$	9.806 65X10	$9.806\ 65X10^{-2}$	$9.806\ 65X10^{-1}$	1

• Power

W	kW	kgf · m/s	PS	kcal/h
1	$1X10^{-3}$	$1.019\ 72X10^{-1}$	$1.359\ 62X10^{-3}$	$8.600\ 00X10^{-1}$
$1X10^{3}$	1	$1.019\ 72X10^{-2}$	$1.359\ 62$	$8.600\ 00X10^{2}$
9.806 65	$9.806\ 65X10^{-3}$	1	$1.333\ 33X10^{-2}$	8.433 71
$7.355X10^{2}$	$7.355X10^{-1}$	7.5X10	1	$6.325\ 29X10^{2}$
1.162 79	$1.162\ 79X10^{-3}$	$1.185\ 72X10^{-1}$	$1.580\ 95X10^{-3}$	1

• Revolution

min^{-1}	s^{-1}	r.p.m.
1	0.0167	1
60	1	60

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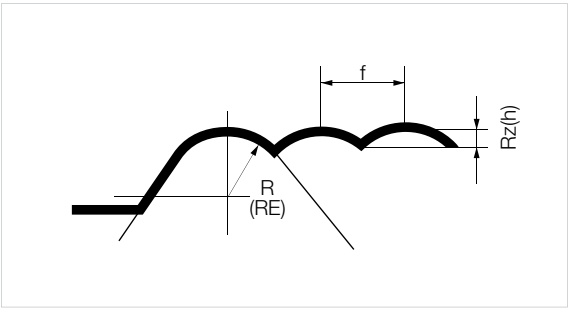
Theoretical (Geometrical) Surface Roughness

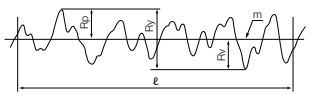
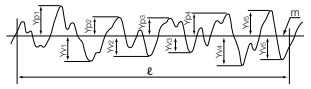
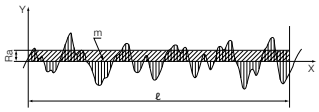
Theoretical Surface Roughness for Turning indicates the minimum roughness value from the cutting conditions and it is shown by the formula as follows:

$$Rz(h)=\frac{f^2}{8R(RE)}x10^3$$

Rz(h) : Theoretical Surface Roughness [μm]
f : Feed Rate [mm/rev]
R(RE) : Corner Radius of Insert [mm]



How to Obtain Surface Roughness Values

Type	Symbol	How to Obtain	Explanation
Max. Height Roughness	Rz	Ry is a mean value in micron meter obtained from the distance of the highest peaks and the lowest valleys within the range of sampled reference length (l) in the direction of the center line of the roughness curve. Note) When calculating Rz, extraordinarily high or low threads are considered as damages and excluded from the calculation, and only standard lengths are used. Rz=Rp+Rv	
Ten Points Mean Roughness	RzJIS	Rz is a mean value in micron meter obtained from the distance of 5 highest peaks (Yp) and the 5 lowest valleys (Yv) measured from the center line of the roughness curve within the range of sampled reference length "l ". $Rz_{JIS}=\frac{(Yp1+Yp2+Yp3+Yp4+Yp5)+(Yv1+Yv2+Yv3+Yv4+Yv5)}{5}$	Yp1,Yp2,Yp3,Yp4,Yp5 : Distance from the mean line to highest 5 peaks in the range of sampled reference length "l " Yv1,Yv2,Yv3,Yv4,Yv5 : Distance from the mean line to the lowest 5 valleys in the range of sampled reference length "l " 
Arithmetical Mean Roughness	Ra	Ra is obtained from the following formula in micron meter, the roughness curve is expressed by y=f(x), the X-axis is in the direction of the center line and the Y-axis is the vertical magnification of the roughness curve in the range of sampled reference length "l ". $Ra=\frac{1}{\ell}\int_0^{\ell}\{f(x)\}dx$	

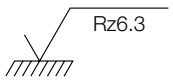
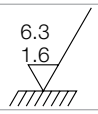
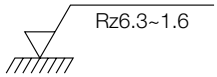
Relationship with Triangle Symbol

Arithmetical Mean Roughness Ra(μm)	Max. Height Roughness Rz(μm)	Ten Points Mean Roughness RzJIS(μm)	※(Relationship with Triangle)
0.025	0.1	0.1	▽▽▽▽
0.050	0.2	0.2	
0.100	0.4	0.4	
0.200	0.8	0.8	
0.400	1.6	1.6	▽▽▽
0.800	3.2	3.2	
1.600	6.3	6.3	
3.200	12.5	12.5	▽▽
6.300	25.0	25.0	
12.500	50.0	50.0	▽
25.000	100.0	100.0	

※ Finishing symbol (Triangle ▽ and wave ~) was removed from JIS standard in the 1994 Revision.

- How to Indicate
  ① When Ra is 1.6μm→1.6μmRa
  ② When Rz is 6.3μm→6.3μmRz
  ③ When RzJIS is 6.3μm→6.3μmRzJIS

Indication in JIS Standard

Example of Ra Indication		Example of Ry, (Rz) Indication	
① When indicating the upper limit only (when upper limit is 6.3 mRa)		① When indicating upper limit only Indicate surface roughness following the parameter symbol.	
② When indicating both lower and upper limit (when upper limit is 6.3 mRa, lower limit is 1.6 mRa)		② When indicating both lower and upper limit Indicate surface roughness as (upper limit ~ lower limit) following the parameter symbol.	

Note: The indications of Ra and Rz are different.

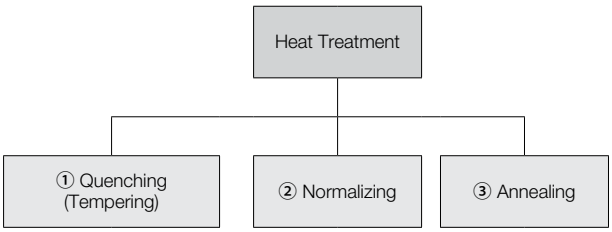
Caution-Symbols for Surface Roughness

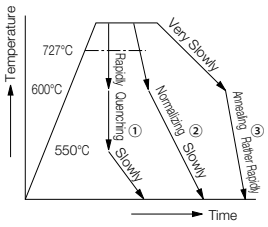
The above information is based on JIS B 0601-2001. However, some symbols were revised as shown in the right table in accordance with ISO Standard from JIS B 0601-2001 version. Ten Points Mean Roughness (Rz) was eliminated from 2001 version but it still remains as RzJIS reference, since it was popular in Japan.

Type	Symbol of JIS B 0601-1994		Symbol of JIS B 0601-2001
Max. Height Roughness	Ry	→	Rz
Ten Points Mean Roughness	Rz	→	(RzJIS)
Arithmetical Mean Roughness	Ra	→	Ra

Heat Treatment

One of the ways to determine the hardness of steel is the heat treatment and it is classified to 3 types.





Heat Treatment Method

① Quenching (Tempering)	After heating to over 727°C, cool rapidly down to 550°C in water or oil.	Quenching makes steel hard because it cools down red-hot steel very rapidly in water or oil, but it may promote internal stress. In order to remove such internal stress, tempering is used. (After cooled down once, reheat it to 200°C~600°C)
② Normalizing	After heating to over 727°C, cool down rapidly to 600°C and then to normal temperature.	It miniaturizes the crystals. (Steel is also composed of small cells.) It is used to improve the mechanical character or machinability.
③ Annealing	After heating to over 727°C, cool down very slowly to 600°C, then to normal temperature.	It miniaturizes the crystals like the process of normalizing, but the crystal size is bigger than that of normalizing. It targets machinability improvement and distortion correction.

Hardness Value

Hardness	Reference Standard	Example	Explanation of Example
Brinell Hardness	JIS Z 2243:1992	250HB	Hardness Value : 250, Hardness Symbol : HB
		200~250HB	When the hardness has the range
Vickers Hardness	JIS Z 2244:1998	640HV	Hardness Value : 640, Hardness Symbol : HV
Rockwell Hardness	JIS Z 2245:1992	60HRC	Hardness Value : 60, Hardness Symbol : HRC
Shore Hardness	JIS Z 2246:1992	50HS	Hardness Value : 50, Hardness Symbol : HS

Vickers Hardness Conversion Chart

Vickers Hardness (HV)	Brinell Hardness 10mm Dia. Ball Load: 3000kgf (HB)		Rockwell Hardness[2]			Shore Hardness (HS)	Tensile Strength MPa[1]
	Standard Ball	Tungsten Carbide Ball	A Scale Load: 60kgf Diamond Point (HRA)	B Scale Load: 100kgf 1.60mm (1/16in) Ball (HRB)	C Scale Load: 150kgf Diamond Point (HRC)		
940	-	-	85.6	-	68.0	97	
920	-	-	85.3	-	67.5	96	
900	-	-	85.0	-	67.0	95	
880	-	(767)	84.7	-	66.4	93	
860	-	(757)	84.4	-	65.9	92	
840	-	(745)	84.1	-	65.3	91	
820	-	(733)	83.8	-	64.7	90	
800	-	(722)	83.4	-	64.0	88	
780	-	(710)	83.0	-	63.3	87	
760	-	(698)	82.6	-	62.5	86	
740	-	(684)	82.2	-	61.8	84	
720	-	(670)	81.8	-	61.0	83	
700	-	(656)	81.3	-	60.1	81	
690	-	(647)	81.1	-	59.7	-	
680	-	(638)	80.8	-	59.2	80	
670	-	630	80.6	-	58.8	-	
660	-	620	80.3	-	58.3	79	
650	-	611	80.0	-	57.8	-	
640	-	601	79.8	-	57.3	77	
630	-	591	79.5	-	56.8	-	
620	-	582	79.2	-	56.3	75	
610	-	573	78.9	-	55.7	-	
600	-	564	78.6	-	55.2	74	
590	-	554	78.4	-	54.7	-	2055
580	-	545	78.0	-	54.1	72	2020
570	-	535	77.8	-	53.6	-	1985
560	-	525	77.4	-	53.0	71	1950
550	505	517	77.0	-	52.3	-	1905
540	496	507	76.7	-	51.7	69	1860
530	488	497	76.4	-	51.1	-	1825
520	480	488	76.1	-	50.5	67	1795
510	473	479	75.7	-	49.8	-	1750
500	465	471	75.3	-	49.1	66	1705
490	456	460	74.9	-	48.4	-	1660
480	448	452	74.5	-	47.7	64	1620
470	441	442	74.1	-	46.9	-	1570
460	433	433	73.6	-	46.1	62	1530
450	425	425	73.3	-	45.3	-	1495
440	415	415	72.8	-	44.5	59	1460
430	405	405	72.3	-	43.6	-	1410
420	397	397	71.8	-	42.7	57	1370
410	388	388	71.4	-	41.8	-	1330
400	379	379	70.8	-	40.8	55	1290
390	369	369	70.3	-	39.8	-	1240
380	360	360	69.8	(110.0)	38.8	52	1205
370	350	350	69.2	-	37.7	-	1170
360	341	341	68.7	(109.0)	36.6	50	1130
350	331	331	68.1	-	35.5	-	1095
340	322	322	67.6	(108.0)	34.4	47	1070
330	313	313	67.0	-	33.3	-	1035
320	303	303	66.4	(107.0)	32.2	45	1005
310	294	294	65.8	-	31.0	-	980
300	284	284	65.2	(105.5)	29.8	42	950
295	280	280	64.8	-	29.2	-	935
290	275	275	64.5	(104.5)	28.5	41	915
285	270	270	64.2	-	27.8	-	905
280	265	265	63.8	(103.5)	27.1	40	890
275	261	261	63.5	-	26.4	-	875
270	256	256	63.1	(102.0)	25.6	38	855
265	252	252	62.7	-	24.8	-	840
260	247	247	62.4	(101.0)	24.0	37	825
255	243	243	62.0	-	23.1	-	805
250	238	238	61.6	99.5	22.2	36	795
245	233	233	61.2	-	21.3	-	780
240	228	228	60.7	98.1	20.3	34	765
230	219	219	-	96.7	(18.0)	33	730
220	209	209	-	95.0	(15.7)	32	695
210	200	200	-	93.4	(13.4)	30	670
200	190	190	-	91.5	(11.0)	29	635
190	181	181	-	89.5	(8.5)	28	605
180	171	171	-	87.1	(6.0)	26	580
170	162	162	-	85.0	(3.0)	25	545
160	152	152	-	81.7	(0.0)	24	515
150	143	143	-	78.7	-	22	490
140	133	133	-	75.0	-	21	455
130	124	124	-	71.2	-	20	425
120	114	114	-	66.7	-	-	390
110	105	105	-	62.3	-	-	-
100	95	95	-	56.2	-	-	-
95	90	90	-	52.0	-	-	-
90	86	86	-	48.0	-	-	-
85	81	81	-	41.0	-	-	-

- Extracted from JIS Handbook "Iron & Steel" (SAE J 417)

Note 1) 1MPa = 1N/mm²

2) Value in ( ) is not in practical use, but reference only

Metal

Class	Name of JIS Standard	Symbol
Structural Steel	Rolled Steel for Welded Structure	SM
	Re-Rolled Steel	SRB
	Rolled Steel for General Structure	SS
	Light Gauge Steel for General Structure	SSC
	Hot-Rolled Steel Plate, Sheet and Strip for Automobile Structural Use	SAPH
Steel Sheet	Cold-Rolled Steel Plate, Sheet and Strip	SPC
	Hot-Rolled Soft Steel Plate, Sheet and Strip	SPH
Steel Pipe	Carbon Steel Pipe for Ordinary Piping	SGP
	Carbon Steel Pipe for Boiler / Heat Exchanger	STB
	Seamless Steel Pipe for High Pressure Gas Cylinder	STH
	Carbon Steel Pipe for General Structural Use	STK
	Carbon Steel Pipe for Machine Structural Use	STKM
	Alloy Steel Pipe for Structural Use	STKS
	Stainless Steel Pipe for Machine Structural Use	SUS-TK
	Steel Square Pipe for General Structural Use	STKR
	Alloy Steel Pipe for Ordinary Piping	STPA
	Carbon Steel Pipe for Pressure Service	STPG
	Carbon Steel Pipe for High-Temperature Service	STPT
	Carbon Steel Pipe for High-Pressure Service	STS
	Stainless Steel Pipe for Ordinary Piping	SUS-TP
Steel for Machine Structural Use	Carbon Steel for Machine Structural Use	SxxC, SxxCK
	Aluminium Chromium Molybdenum Steel	SACM
	Chromium Molybdenum Steel	SCM
	Chromium Steel	SCr
	Nickel Chromium Steel	SNC
	Nickel Chromium Molybdenum Steel	SNCM
	Manganese Steel and Manganese Chromium Steel for Machine Structural Use	SMn, SMnC
Special Steel – Tool Steel	Carbon Tool Steel	SK
	Hollow Drill Steel	SKC
	Alloy Tool Steel	SKS, SKD, SKT
	High Speed Tool Steel	SKH
Special Steel – Special Steel	Free Cutting Carbon Steel	SUM
	High Carbon Chromium Bearing Steel	SUJ
	Spring Steel	SUP
Special Steel – Stainless Steel	Stainless Steel Bar	SUS-B
	Hot-Rolled Stainless Steel Plate, Sheet and Strip	SUS-HP, SUS-HS
	Cold-Rolled Stainless Steel Plate, Sheet and Strip	SUS-CP, SUS-CS
Special Steel – Heat Resistant Steel	Heat-Resisting Steel Bar	SUH-B, SUH-CB
	Heat-Resisting Steel Plate and Sheet	SUH-HP, SUH-CP
Special Steel – Super Alloy	Corrosion-Resisting and Heat-Resisting Superalloy Bar	NCF-B
	Corrosion-Resisting and Heat-Resisting Superalloy Plate and Sheet	NCF-P
Forged Steel	Carbon Steel Forging	SF
	Chromium Molybdenum Steel Forging	SFCM
	Nickel Chromium Molybdenum Steel Forging	SFNCM
Cast Iron	Gray Cast Iron	FC
	Spheroidal Graphite Cast Iron	FCD
	Blackheart Malleable Cast Iron	FCMB
	Whiteheart Malleable Cast Iron	FCMW
	Pearlitic Malleable Cast Iron	FCMP
Cast Steel	Carbon Cast Steel	SC
	High Tensile Strength Carbon Cast Steel & Low Alloy Cast Steel	SCC
	Stainless Cast Steel	SCS
	Heat-Resisting Cast Steel	SCH
	High Manganese Cast Steel	SCMnH
	Cast Steel for High Temperature and High Pressure Service	SCPH

Non-Ferrous Metal

Class	Name of JIS Standard	Symbol
Copper	Copper and Copper Alloy Sheet / Strip	CxxxxP CxxxxPP CxxxxR
	Copper and Copper Alloy Rod and Bar	CxxxxBD CxxxxBDS CxxxxBE
Aluminum Alloy and Aluminum Alloy Expanded Material	Aluminum and Al. Alloy Sheet / Strip	AxxxxP AxxxxPC
	Aluminum and Al. Alloy Rod, Bar, and Wire	AxxxxBE AxxxxBES AxxxxBD AxxxxBDS AxxxxW AxxxxWS
	Aluminum and Al. Alloy Extruded Shape	AxxxxS
	Aluminum and Al. Alloy Forging	AxxxxFD AxxxxFH
Magnesium Alloy Expanded Material	Magnesium Alloy Sheet and Plate	MP
	Magnesium Alloy Rod and Bar	MB
Nickel Alloy	Nickel Copper Alloy Sheet and Plate	NCuP
	Nickel Copper Alloy Rod and Bar	NCuB
Titanium Expanded Material	Titanium Rod and Bar	TB
Casting	Brass Casting	CAC20x
	High Strength Brass Casting	CAC30x
	Bronze Casting	CAC40x
	Phosphoric Bronze Casting	CAC50x
	Aluminum Bronze Casting	CAC70x
	Aluminum Alloy Casting	AC
	Magnesium Alloy Casting	MC
	Zinc Alloy Die Casting	ZDCx
	Aluminum Alloy Die Casting	ADC
	Magnesium Alloy Die Casting	MD
	White Metal	WJ

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Steel

CLASS	USA AISI / SAE	JAPAN JIS	CHINA GB	UK BS	GERMANY DIN	FRANCE NF	RUSSIA ГОСТ
CARBON STEEL FOR MACHINE STRUCTURAL USE	1010	S10C	08 10	040A10 045A10 045M10	C10E C10R	XC10	
	1012	S12C		040A12		XC12	
	1015	S15C	15	055M15	C15E C15R		
	1017	S17C				XC18	
	1020	S20C	20	070M20 C22 C22E C22R	C22 C22E C22R	C22 C22E C22R	
	1023	S22C					
	1025	S25C	25	C25 C25E C22R	C25 C25E C25R	C25 C25E C25R	
	1029	S28C					25Г
	1030	S30C	30	080A30 080M30 C30 C30E C30R	C30 C30E C30R	C30 C30E C30R	30Г
		S33C					30Г
	1035	S35C	35	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35Г
	1038	S38C					35Г
	1039 1040	S40C	40	080M40 C40 C40E C40R	C40 C40E C40R	C40 C40E C40R	40Г
	1042 1043	S43C		080A42			40Г
	1045 1046	S45C	45	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45Г
		S48C		080A47			45Г
	1049	S50C	50	080M50 C50 C50E C50R	C50 C50E C50R	C50 C50E C50R	50Г
	1050 1053	S53C					50Г
	1055	S55C	55	070M55 C55 C55E C55R	C55 C55E C55R	C55 C55E C55R	
	1059 1060	S58C	60	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R	60Г
		S09CK		045A10 045M10	C10E	XC10	
		S15CK	15F		C15E	XC12	
		S20CK				XC18	

Steel

CLASS	USA AISI / SAE	JAPAN JIS	CHINA GB	UK BS	GERMANY DIN	FRANCE NF	RUSSIA ГОСТ
NICKEL CHROMIUM STEEL		SNC236			36NiCr6		40XH
		SNC415	12CrNi2		14NiCr10		
		SNC631	30CrNi3		36NiCr10		30XH3A
		SNC815	12Cr2Ni4	655M13	15NiCr13		
		SNC836	37CrNi3		31NiCr14		
NICKEL CHROMIUM MOLYBDENUM STEEL	8615 8617 8620 8622	SNCM220	20CrNiMo	805A20 805M20 805A22 805M22	20NiCrMo2 20NiCrMoS2	20NCD 2	
	8637 8640	SNCM240			40NiCrMo2-2		
		SNCM415					
	4320	SNCM420	18CrNiMnMoA		17NiCrMo6-4		20XH2M (20XHM)
		SNCM431			30CrNiMo8		
	4340	SNCM439	40CrNiMoA		40NiCrMo6		
		SNCM447			34CrNiMo6		
		SNCM616					
		SNCM625					
		SNCM630					
		SNCM815					
CHROMIUM STEEL		SCr415	15Cr 15CrA		17Cr3 17CrS3		15X 15XA
	5120	SCr420	20Cr				20X
	5130 5132	SCr430	30Cr	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X
	5132	SCr435	35Cr	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X
	5140	SCr440	40Cr	530M40 41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
		SCr445	45Cr 50Cr				45X
CHROMIUM MOLYBDENUM STEEL		SCM415	15CrMo		15CrMo4		
		SCM418	20CrMo		18CrMo4 18CrMoS4		20XM
		SCM420		708M20	20CrMo5		20XM
		SCM421					
	4131	SCM430	30CrMo 30CrMoA				30XM 30XMA
		SCM432					
	4137	SCM435	35CrMo	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
	4140 4142	SCM440	42CrMo	708M40 709M40 42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	
	4145 4147	SCM445					
		SCM822					

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Steel

CLASS	USA AISI / SAE	JAPAN JIS	CHINA GB	UK BS	GERMANY DIN	FRANCE NF	RUSSIA ГОСТ
MANGANESE CHROMIUM STEEL MANGANESE STEEL	1522	SMn420	20Mn2	150M19	20Mn5		
	1534	SMn433	30Mn2 35Mn2	150M36	34Mn5		30Г2 35Г2
	1541	SMn438	40Mn2	150M36	36Mn5		35Г2 40Г2
	1541	SMn443	45Mn2				40Г2 45Г2
	5115	SMnC420	15CrMn		16MnCr5		
	5140	SMnC443	40CrMn				
STRUCTURAL STEEL WITH SPECIFIED HARDENABILITY BAND (H-SHAPE STEEL)	1522H	SMn420H					
		SMn433H					
	1541H	SMn438H					
	1541H	SMn443H					
		SMnC420H					
		SMnC443H					
		SCr415H	15CrH		17Cr3 17CrS3		15X
	5120H	SCr420H	20Cr1H		17Cr3		20X
	5130H 5132H	SCr430H		34Cr4 34CrS4	34Cr4 34CrS3	34Cr4 34CrS4	30X
	5135H	SCr435H		37Cr4 37CrS4	37Cr4 34CrS4	37Cr4 37CrS4	35X
	5140H	SCr440H	40CrH	41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
	4118H	SCN415H	15CrMoH		15CrMo5		
		SCM418H			18CrMo4 18CrMoS4		
	4118H	SCM420H	20CrMoH	708H20	18CrMo4		
	4135H 4137H	SCM435H		34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	
	4140H 4142H	SCM440H		42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	
	4145H 4147H	SCM445H					
		SCM822H					
		SNC415H					
		SNC631H					
		SNC815H	12Cr2Ni4H	655H13	15NiCr13		
	8617H 8620H 8622H	SNCM220H	20CrNiMoH	805H17 805H20 805H22	21NiCrMo2	20N CD 2	
	4320H	SNCM420H	20CrNi2MoH		20NiCrMoS6-4		

Steel

CLASS	USA		JAPAN	CHINA	UK	GERMANY	FRANCE	RUSSIA
	UNS	AISI	JIS	GB	BS	DIN	NF	ГОСТ
STAINLESS STEEL	S20100	201	SUS 201	1Cr17Mn6Ni5N			Z12CMN17-07Az	
	S20200	202	SUS 202	1Cr18Mn8Ni5N	284S16			12Х17Г9АН4
	S30100	301	SUS 301	1Cr18Mn10Ni5Mo3N 1Cr17Ni7	301S21	X12CrNi17 7	Z11CN17-08	07Х16Н6
			SUS 301L			X2CrNiN18-7		
			SUS 301J1			X12CrNi17 7		
	S30200	302	SUS 302	1Cr18Ni9	302S25		Z12CN18-09	12Х18Н9
	S30215	302B	SUS 302B					
	S30300	303	SUS 303	Y1Cr18Ni9	303S21	X10CrNiS18 9	Z8CNF18-09	
	S30323	303Se	SUS 303Se	Y1Cr18Ni9Se	303S41			12Х18Н10Е
	S30400	304	SUS 304	0Cr18Ni9	304S31	X5CrNi18 10	Z7CN18-09	08Х18Н10
	S30403	304L	SUS 304L	00Cr18Ni10	304S11	X2CrNi19 11	Z3CN19-11	03Х18Н11
	S30451	304N	SUS 304N1	0Cr18Ni9N			Z6CN19-09Az	
	S30452		SUS 304N2	0Cr19Ni10NbN				
	S30453	304LN	SUS 304LN	00Cr18Ni10N		X2CrNiN18 10	Z3CN18-10Az	
			SUS 304J1					
			SUS 304J2					
	S30431	S30431	SUS 304J3					
	S30500	305	SUS 305	1Cr18Ni12	305S19	X5CrNi18 12	Z8CN18-12	06Х18Н11
			SUS 305J1					
	S30908	309S	SUS 309S	0Cr23Ni13			Z10CN24-13	
	S31008	310S	SUS 310S	0Cr25Ni20	310S31		Z8CN25-20	10Х23Н18
	S31600	316	SUS 316	0Cr17Ni12Mo2	316S31	X5CrNiMo17 12 2	Z7CND17-12-02	
						X5CrNiMo17 13 3	Z6CND18-12-03	
	S31603	316L	SUS 316L	00Cr17Ni14Mo2	316S11	X2CrNiMo17 13 2	Z3CND17-12-02	
						X2CrNiMo17 14 3	Z3CND17-13-03	03Х17Н14М3
	S31651	316N	SUS 316N	0Cr17Ni12Mo2N				
	S31653	316LN	SUS 316LN	00Cr17Ni13Mo2N		X2CrNiMoN17 12 2	Z3CND17-11Az	
						X2CrNiMoN17 13 3	Z3CND17-12Az	
	S31635		SUS 316Ti			X6CrNiMoTi17 12 2	Z6CNDT17-12	08Х17Н13М2Т
			SUS 316J1	0Cr18Ni12Mo2Cu2				
			SUS 316J1L	00Cr18Ni14Mo2Cu2				
	S31700	317	SUS 317	0Cr19Ni13Mo3	317S16			
	S31703	317L	SUS 317L	00Cr19Ni13Mo3	317S12	X2CrNiMo18 16 4	Z3CND19-15-04	
	S31753		SUS 317LN				Z3CND19-14Az	
			SUS 317J1	0Cr18Ni16Mo5				
			SUS 317J2					
			SUS 317J3L					
	N08367		SUS 836L					
	N08904	N08904	SUS 890L		904S14		Z2NCDU25-20	
	S32100	321	SUS 321	1Cr18Ni9Ti 0Cr18Ni10Ti	321S31	X6CrNiTi18 10	Z6CNT18-10	08Х18Н10Т
	S34700	347	SUS 347	0Cr18Ni11Nb	347S31	X6CrNiNb18 10	Z6CNNb18-10	08Х18Н12Б
	S38400	384	SUS 384				Z6CN18-16	
	S30430	304Cu	SUS XM7	0Cr18Ni9Cu3	394S17		Z2CNU18-10	
	S38100		SUS XM15J1	0Cr18Ni13Si4			Z15CNS20-12	
	S32900	329	SUS 329J1	0Cr26Ni5Mo2				
	S39240	S31803	SUS 329J3L				Z3CNDU22-05Az	08Х21Н6М2Т
	S39275	S31260	SUS 329J4L				Z3CNDU25-07Az	

Steel

CLASS	USA		JAPAN	CHINA	UK	GERMANY	FRANCE	RUSSIA
	UNS	AISI	JIS	GB	BS	DIN	NF	ГОСТ
STAINLESS STEEL	S40500	405	SUS 405	0Cr13Al 0Cr13	405S17	X6CrAl13	Z8CA12	
			SUS 410L	00Cr12			Z3C14	
	S42900	429	SUS 429					
	S43000	430	SUS 430	1Cr17	430S17	X6Cr17	Z8C17	12X17
	S43020	430F	SUS 430F	Y1Cr17		X7CrMoS18	Z8CF17	
	S43035		SUS 430LX			X6CrTi17	Z4CT17	
			SUS 430J1L			X6CrNb17	Z4CNb17	
	S43400	434	SUS 434	1Cr17Mo	434S17	X6CrMo17 1	Z8CD17-01	
	S43600	436	SUS 436L					
			SUS 436J1L					
	S44400	444	SUS 444				Z3CDT18-02	
	S44700		SUS 447J1	00Cr30Mo2				
	S44627		SUS XM27	00Cr27Mo			Z1CD26-01	
	S40300	403	SUS 403	1Cr12				
	S41000	410	SUS 410	1Cr13	410S21	X10Cr13	Z13C13	
	S41008	410S	SUS 410S		403S17	X6Cr13	Z8C12	08X13
			SUS 410F2					
	S41025		SUS 410J1	1Cr13Mo 1Cr12Mo		X12CrS13		
	S41600	416	SUS 416	Y1Cr13	416S21		Z11CF13	
	S42000	420	SUS 420J1	2Cr13	420S29	X20Cr13	Z20C13	20X13
	S42000	420	SUS 420J2	3Cr13	420S37	X30Cr13	Z33C13	30X13
	S42020	420F	SUS 420F	Y3Cr13			Z30CF13	
			SUS 420F2					
			SUS 429J1					
	S43100	431	SUS 431	1Cr17Ni2	431S29	X20CrNi17 2	Z15CN16-02	20X17H2
	S44002	440A	SUS 440A	7Cr17			Z70C15	
	S44003	440B	SUS 440B	8Cr17				
	S44004	440C	SUS 440C	9Cr18 11Cr17 9Cr18Mo			Z100CD17	95X18
	S44020	S44020	SUS 440F	Y11Cr17				
	S17400	S17400	SUS 630	0Cr17Ni4CuNb		X5CrNiCuNb16-4	Z6CNU17-04	
	S17700	S17700	SUS 631	0Cr17Ni7Al		X7CrNiAl17 7	Z9CNA17-07	09X17H7 Ю
			SUS 632J1					

Representative Classification of Stainless Steel

Stainless Steel (Austenitic Related)

JIS	
SUS201	SUS309S
SUS202	SUS310S
SUS301	SUS316
SUS302	SUS316L
SUS302B	SUS316N
SUS303	SUS317
SUS303Se	SUS317L
SUS304	SUS321
SUS304L	SUS347
SUS304N1	SUS384
SUS304N2	SUSXM7
SUS305	SUSXM15J1
SUS308	

Stainless Steel (Ferritic Related)

JIS
SUS405
SUS429
SUS430
SUS430F
SUS434
SUSXM27

Stainless Steel (Martensitic Related)

JIS
SUS403
SUS410
SUS410S
SUS416
SUS420J1
SUS420F
SUS431
SUS440A
SUS440B
SUS440C
SUS440F

Stainless Steel (Precipitation Hardened Related)

JIS
SUS630
SUS631

Steel

CLASS	USA		JAPAN	CHINA	UK	GERMANY	FRANCE	RUSSIA
	UNS	AISI	JIS	GB	BS	DIN	NF	ГОСТ
HEAT RESISTING STEEL			SUH 31		331S42		Z35CNWS14-14	45Х14Н14В2М
			SUH 35		349S52		Z52CMN21-09Az	
	S63008		SUH 36	5Cr21Mn9Ni4N	349S54	X53CrMnNi21-9	Z55CMN21-09Az	55Х20 Г 9АН4
	S63017		SUH 37	2Cr21Ni12N	381S34			
			SUH 38					
	S30900	309	SUH 309	2Cr23Ni13	309S24		Z15CN24-13	
	S31000	310	SUH 310	2Cr25Ni20	310S24	CrNi2520	Z15CN25-20	20Х25Н20С2
	N08330	N08330	SUH 330	1Cr16Ni35			Z12NCS35-16	
	S66286		SUH 660	0Cr15Ni25Ti2MoAlVB			Z6NCTV25-20	
	R30155		SUH 661					
			SUH 21			CrAl1205		
	S40900	409	SUH 409		409S19	X6CrTi12	Z6CT12	
			SUH 409L				Z3CT12	
	S44600	446	SUH 446	2Cr25N			Z12C25	15Х28
	S65007		SUH 1	4Cr9Si2	401S45	X45CrSi9-3	Z45CS9	
			SUH 3	4Cr10Si2Mo			Z40CSD10	40Х10С2М
			SUH 4	8Cr20Si2Ni	443S65		Z80CSN20-02	
			SUH 11					40Х 9С2
			SUH 600	2Cr12MoVNbN				20Х12ВНМБФР
	S42200		SUH 616	2Cr12NiMoWV				

Representative Classification of Heat Resisting Steel

Heat Resisting Steel (Austenitic Related)

JIS
SUH31
SUH35
SUH36
SUH37
SUH38
SUH309
SUH310
SUH330
SUH660
SUH661

Heat Resisting Steel (Ferritic Related)

JIS
SUH21
SUH409
SUH446

Heat Resisting Steel (Martensitic Related)

JIS
SUH1
SUH3
SUH4
SUH11
SUH600
SUH616

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Steel

CLASS	USA AISI / SAE	JAPAN JIS	CHINA GB	UK BS	GERMANY DIN	FRANCE NF	RUSSIA ГОСТ
CARBON TOOL STEEL		SK140 (SK1)	T13			C140E3U	Y13
	W1-11$^{1}/_{2}$	SK120 (SK2)	T12			C120E3U	Y12
	W1-10	SK105 (SK3)	T11		C105W1	C105E2U	Y11
	W1-9	SK95 (SK4)	T10			C90E2U	Y10
	W1-8	SK85 (SK5)	T8Mn T9		C80W1	C90E2U C80E2U	Y8Г Y9
		SK75 (SK6)	T8		C80W1	C80E2U C70E2U	Y8
		SK65 (SK7)	T7		C70W2	C70E2U	Y7
HIGH SPEED TOOL STEEL	T1	SKH2	W18Cr4V	BT1		HS18-0-1	P18
	T4	SKH3	W18Cr4VCo5	BT4	S18-1-2-5	HS18-1-1-5	P18K5Ф2
	T5	SKH4	W18Cr4V2Co8	BT5		HS18-0-2-9	P18K5Ф
	T15	SKH10	W12Cr4V5Co5	BT15	S12-1-4-5	HS12-1-5-5	
	M2	SKH51	W6Mo5Cr4V2	BM2	S6-5-2	HS6-5-2	P6M5
	M3-1	SKH52	CW6Mo5Cr4V2 W6Mo5Cr4V3				P6M5Ф3
	M3-2	SKH53	CW6Mo5Cr4V3		S6-5-3	HS6-5-3	P6M5Ф3
	M4	SKH54		BM4		HS6-5-4	
	M35 M41	SKH55	W6Mo5Cr4V2Co5 W7Mo5Cr4V2Co5	BM35	S6-5-2-5	HS6-5-2-5HC	P6M5K5
	M36	SKH56					
		SKH57		BT42	S10-4-3-10	HS10-4-3-10	
	M7	SKH58	W2Mo9Cr4V2			HS2-9-2	
	M42	SKH59	W2Mo9Cr4VCo8	BM42	S2-10-1-8	HS2-9-1-8	
ALLOY TOOL STEEL	F2	SKS11					XB4
		SKS2			105WCr6	105WCr5	XBГ
		SKS21	W				
		SKS5					
	L6	SKS51					
		SKS7					
		SKS8	Cr06			C140E3UCr4	13X
	S1	SKS4	5CrW2Si 6CrW2Si				6XB2C 5XB2CФ
	S1	SKS41	4CrW2Si				4XB2C
	W2-9$^{1}/_{2}$	SKS43		BW2		100V2	
	W2-8	SKS44					
		SKS3	9CrWMn				9XBГ
		SKS31	CrWMn		105WCr6	105WCr5	XBГ
		SKS93					
		SKS94					
		SKS95	8MnSi				
	D3	SKD1	Cr12	BD3	X210Cr12	X200Cr12	X12
	D2	SKD10	Cr12Mo1V1		X153CrMoV12		X12MФ
	D2	SKD11	Cr12MoV	BD2	X153CrMoV12	X160CrMoV12	
	A2	SKD12	Cr5Mo1V	BA2		X100CrMoV5	
		SKD4				X32WCrV3	
	H21	SKD5	3Cr2W8V	BH21	X30WCrV9-3	X30WCrV9	
	H11	SKD6	4Cr5MoSiV	BH11	X38CrMoV51	X38CrMoV5	4X5MФC
	H13	SKD61	4Cr5MoSiV1	BH13	X40CrMoV51	X40CrMoV5	4X5MФ1C
	H12	SKD62		BH12		X35CrWMoV5	3X3M3Ф
	H10	SKD7	4Cr3Mo3SiV	BH10	X32CrMoV33	32CrMoV12-18	
	H19	SKD8		BH19			
		SKT3				55CrNiMoV4	
		SKT4	5CrNiMo	BH224 / 5	55NiCrMoV6	55NiCrMoV7	5XHM

Steel

CLASS	USA **AISI / SAE**	JAPAN **JIS**	CHINA **GB**	UK **BS**	GERMANY **DIN**	FRANCE **NF**	RUSSIA **ГОСТ**
SPRING STEEL	1075 1078	SUP3					75 80 85
		SUP6	55Si2Mn		56SiCr7	60Si7	60С2
	9260	SUP7	60Si2Mn 60Si2MnA		61SiCr7	60Si7	60С2Г
	5155	SUP9	55CrMnA		55Cr3	55Cr3	
	5160	SUP9A	60CrMnA		55Cr3	60Cr3	
	6150	SUP10	50CrVA	735A51, 735H51	50CrV4	51CrV4	ХФА50ХГФА
	51B60	SUP11A	60CrMnBA		51CrV4		50ХГР
	9254	SUP12		685A57, 685H57	54SiCr6	54SiCr6	
	4161	SUP13	60CrMnMoA	705A60, 705H60	60CrMn3-2	60CrMo4	
FREE CUTTING CARBON STEEL	1110	SUM11					
	1108	SUM12	Y12				
	1212	SUM21					
	1213	SUM22	Y15	(230M07)	9SMn28	S250	
	12L13	SUM22L	Y12Pb		9SMnPb28	S250Pb	
	1215	SUM23					
		SUM23L					
	12L14	SUM24L	Y15Pb		9SMnPb28	S250Pb	
		SUM25			9SMn36	S300	
	1117	SUM31			15S10		
		SUM31L					
		SUM32	Y20	210M15, 210A15		(13MF4)	
	1137	SUM41	Y30 Y35			(35MF6)	
	1141	SUM42	Y40Mn			(45MF6.1)	
	1144	SUM43		(226M44)		(45MF6.3)	
CARBON CHROMIUM BEARING STEEL	51100	SUJ1	GCr4				
	52100	SUJ2	GCr5		100Cr6	100Cr6	ШХ15
	ASTM A 485 Grade 1	SUJ3	GCr15SiMn				
		SUJ4	GCr15SiMo				
		SUJ5	GCr18Mo				

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Cast Iron

CLASS	USA AISI / SAE	JAPAN JIS	CHINA GB	UK BS	GERMANY DIN	FRANCE NF	RUSSIA ГОСТ
GRAY CAST IRON	NO.20	FC100	HT100	100			СУ10
	NO.30	FC150	HT150	150	GG15	FGL150	СУ15
	NO.35	FC200	HT200	200	GG20	FGL200	СУ20
	NO.45	FC250	HT250	250	GG25	FGL250	СУ25
	NO.50	FC300	HT300	300	GG30	FGL300	СУ30
	NO.60	FC350	HT350	350	GG35	FGL350	СУ35
					GG40	FGL400	СУ40
NODULAR CAST IRON	60-40-18	FCD400	QT400-18	400/17	GGG40	FGS370-17	ВУ40
	65-45-12	FCD450	QT450-10	420/12		FGS400-12	ВУ45
	70-50-05	FCD500	QT500-7	500/7	GGG50	FGS500-7	ВУ50
	80-60-03	FCD600	QT600-3	600/7	GGG60	FGS600-2	ВУ60
	100-70-03	FCD700	QT700-2	700/2	GGG70	FGS700-2	ВУ70
	120-90-02	FCD800	QT800-2	800/2	GGG80	FGS800-2	ВУ80
			QT900-2	900/2			ВУ100

Non-Ferrous Metal

CLASS	USA AISI / SAE	JAPAN JIS	CHINA GB	UK BS	GERMANY DIN	FRANCE NF	RUSSIA ГОСТ
ALUMINUM ALLOY	1199		1A99		A199.99R		A99
			1A97		A199.98R		A97
			1A95				A95
		A1080	1A80	1080(1A)	A199.90	1080A	A8
	1050	A1050	1A50	1050(1B)	A199.50	1050A	A5
	5052	A5052	5A02	NS4	AlMg2.5	5052	Amg
			5A03	NS5			AMg3
	5056	A5056	5A05	NB6	AlMg5		AMg5V
	5456	A5556	5A30	NG61		5957	
	2036	A2117	2A01		AlCu2.5Mg0.5	2117	D18
		A2017	2A11	HF15	AlCuMg1	2017S	D1
	2124	A2024	2A12		AlCuMg2	2024	D16AVTV
	2319		2B16				
		A2N01	2A80				AK4
	2218	A2018	2A90				AK2
	2014	A2014	2A14		AlCuSiMn	2014	AK8
	6061	A6061		6061		6061	
	7175	A7075	7A09		AlZnMgCu1.5	7075	V95P
ALUMINUM ALLOY CASTING	356.2	AC4C	ZAlSi7Mn	LM25	G-AlSi7Mg		
	413.2	AC3A	ZAlSi12	LM6	G-Al12	A-S12-Y4	AL2
	355.2		ZAlSi5Cu1Mg				AL5
	413.0	AC8A	ZAlSi2Cu2Mg1		G-Al12(Cu)		
			ZAlCu5Mn				AL19
	201.0		ZAlCu5MnCdVA				
	520.2		ZAlMg10	LM10	G-AlMg10	AG11	AL8
			ZAlMg5Si		G-AlMg5Si		AL13

CVD Coated Carbide (Turning)

• This table is Kyocera´s own estimation based on publications and is not authorized by companies mentioned in it.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P01	CA510 CA5505	JC110V	HG8010 HC5000 HG3305	UE6105 UE6005 UE6015	-	GC4305 GC4005 GC4205	TP0501 TP0500 TP1000	AC700G AC810P	T9005 T9105	KCP05B KCP05 KC9105	IC8150 IC9150
	P10	CA510 CA515 CA5505 CA5515	JC110V JC215V	GM10 GM20 GM8015 HG8010	MC6015 UE6105 UE6110 UE6005 UE6010 UE6020	CP2 CP5 CP7	GC4205 GC4015 GC3115 GC4215 GC4315	TP1501 TP1000 TP1500 TP100	AC700G AC2000 AC810P AC820P AC8015P AC8025P	T9005 T9105 T9015 T9115 T9215	KCK05 KCP10B KCP10 KC9010 KC9110	IC8150 IC9150 IC9250
	P20	CA025P CA525 CA5515 CA5525 CR9025	JC110V JC215V	GM20 GM8020 HG8025	MC6025 UC6010 UE6110 UE6020	CP2 CP5 CP7	GC4025 GC4215 GC4220 GC4225 GC4325	TP2501 TP2000 TP2500 TP200	AC2000 AC3000 AC820P AC830P AC8025P	T9015 T9115 T9025 T9125 T9225	KCP25B KCP25 KC9125 KC9225 KC9325	IC8250 IC9125 IC9250 IC9350
	P30	CA025P CA525 CA5525 CA530 CA5535 CR9025	JC215V JC325V	GM25 GM8035 HG8025	MC6025 UE6020 MC6035 UE6035 UH6400	-	GC4225 GC4230 GC4235 GC2135 GC4335	TP2501 TP3501 TP2500 TP2000 TP3500 TP200	AC3000 AC630M AC830P ACP100 AC8035P	T9125 T9035 T9135 T3130	KCP30B KCP30 KC9040 KC9140	IC635 IC8350 IC9350
	P40	CA530 CA5535	JC325V JC450V JC540V	GX30	MC6035 UE6035 UH6400	-	GC4035 GC4235 GC4240 GC4335	TP40	AC630M AC830P ACP100	T9035 T3130	KCP40B KCP40 KC9140 KC9240	IC635
M (Stainless Steel)	M10	CA6515	JC605X JC110V	GM10 HS9105	MC7015 US7020	CP2 CP5	GC2015 GC2220	TP1500 TP100	AC610M AC6020M	T9015 T9115	KCM15B KCM15 KC9010 KC9110 KC9210	IC8250 IC9250 IC9350 IC6015
	M20	CA6525	JC110V JC215V	GM8020 HG8025 HS9115	US7020 MC7025	CP2 CP5	GC1515 GC2015 GC2025 GC2220	TM2000 TP200	AC6020M AC6030M AC610M AC630M AC830P	T6020 T6120 T9115 T9125	KCM25B KCM25 KC9025 KC9125 KC9225	IC8350 IC9250 IC9350 IC6025
	M30	-	JC215V JC325V JC525X	GM25 GM8035	MC7025 US735	-	GC2040 GC235	TM4000 TP3501 TP300	AC6030M AC630M AC830P	T6030 T6130 T9125	KCM35B KCM35 KC9240	IC8350 IC9350 IC4050
	M40	-	JC525X	GX30	US735	-	-	TP40	-	-	KC9045 KC9245	IC635
K (Cast Iron)	K01	CA310 CA4505 CA5505	JC105V JC605W JC050W	HG3305 HG3315 HX3505 HX3515	MC5005 UC5105 UC5015	CP1	GC3205 GC3210	TK0501 TH1000 TK1001	AC405K AC410K AC300G AC4010K	T5105 T5010	KCPK05 KC9315 KCK05B KCK05	IC5005 IC428 IC9007 IC9150
	K10	CA310 CA315 CA4505 CA4515 CA5505	JC050W JC110V JC605W JC108W	GM8015 HX3515 HG8010 HG3315	UC5015 UC5105 UC5115 UE6010 MC5015	CP1 CP2 CP5	GC3205 GC3210 GC3215 GC3115	TK1000 TK2000 TK2001 MK1500	AC4010K AC410K AC415K AC700G AC4015K	T515 T5105 T5115 T5010	KC9110 KC9120 KC9315 KCK15B KCK15	IC5010 IC418 IC428 IC9015 IC9007
	K20	CA315 CA320 CA4515	JC110V JC215V JC108W JC605W	GM8020 HG8025	MC5015 MY5015 UE6010 UC5115 UE6110	CP2 CP5	GC4225 GC3215 GC3220 GC3225	TK2000 TX150 TP200	AC4015K AC420K AC700G AC820P	T515 T5115 T5125 T5020	KC9125 KC9320 KC9325 KCK20B KCK20	IC418 IC9015
	K30	CA320	JC215V	GM25	UE6110	-	GC3040 GC4335	TP2500 TP200	-	T5125 T9125	KCP25B KC9320	-

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PVD Coated Carbide (for Turning)

• This table is Kyocera´s own estimation based on publications and is not authorized by companies mentioned in it.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P01	PR1705	JC5003						ACZ150		KC5510	
	P10	PR1705 PR930 PR1025 PR1115 PR1215 PR1225 PR1725	JC5003 JC5030	CY15 CY150 IP2000	MS6015 VP10MF	VM1 TM1 TA1 TAS DT4 DM4	GC1025	CP200	ACZ150 ACZ310 AC520U	AH710	KC5010 KC5510 KU10T	IC507 IC807 IC907
	P20	PR930 PR1025 PR1115 PR1215 PR1225 PR1625 PR1725	JC5015 JC5030 JC5040	CY150 IP2000	MS6015 VP10RT VP15TF VP20MF UP20M VP20RT	QM1 VM1 TA1 TAS	GC1020 GC1025 GC4125 GC1125	CP250	ACZ310 ACZ330 AC520U	AH7025 AH710 AH725 AH730 SH725 SH730	KC5025 KC5525 KC7215 KC7315 KU25T	IC507 IC907 IC908
	P30	PR1025 PR1225 PR1535	JC5015 JC5040	CY250 CY9020 HC844 IP3000	VP10RT VP15TF VP20MF UP20M	ZM3 QM3 TAS	GC1125 GC1145 GC1115 GC1105	CP500	ACZ330 ACZ350 AC530U AC1030U	GH330 AH120 AH740 AH9030	KC7015 KC7020 KC7235 KU25T	IC328 IC928 IC3028
	P40	PR1535	JC5040	CY250 HC844		ZM3 QM3 TAS	GC1145 GC2145	CP600	ACZ350	AH140 AH740 J740	KC7030 KC7040 KC7140	IC328 IC3028
M (Stainless Steel)	M10	PR1025 PR1215 PR1225	JC5003	IP050S JP9105	VP10MF VP10RT	VM1 TM1 TA1	GC1005 GC1025 GC1105 GC15	TS2000 CP200 CP250	EH510Z ACZ150 AC510U	AH710	KC5010 KC5510 KC6005 KCU10	IC507 IC520 IC807 IC907
	M20	PR930 PR1025 PR1125 PR1215 PR1725 PR1225 PR1515	JC5015 JC5030 JC5040 JC8015 JC5118	IP100S GX30 JP9115	VP10RT VP15TF VP20MF UP20M VP20RT	ST4 QM1 VM1 TA1 TAS DT4 DM4	H5D6 GC1025 GC1115 GC4125 GC1125 GC30	TTP2050 TS2500 CP200 CP250 CP500	EH520Z ACZ150 ACZ310 AC520U AC1030U	AH630 AH725 AH730 GH330 GH730 SH725 SH730	KC5025 KC5525 KC7020 KC7025 KCU25	IC308 IC507 IC907 IC908 IC3028
	M30	PR1125 PR1535	JC5015 JC5030 JC5040 JC5118	CY250 CY9020	VP15TF VP20MF UP20M MP7035	ST4 ZM3 QM3 TAS	GC1020 GC2035 GC2030	CP500	ACZ330 ACZ350 AC530U AC6040M	AH6030 AH120 AH725	KC7030 KC7225	IC908 IC1008 IC1028 IC3028
	M40	PR1535	JC5118		MP7035	ZM3 QM3 TAS	GC2145 GC1145	CP600	AC6040M ACZ350	J740 AH140 AH645		IC228 IC928 IC328
K (Cast Iron)	K01		JC5003						EH10Z	AH110	KC5515	IC910
	K10	PR905 PR1215	JC5003 JC5015	CY100H CY10H	VP05RT	TA1 TM1	GC1010	TS2000 CP200	EH10Z EH510Z AC510U	GH110 AH110	KC5010 KC7210	IC807 IC910 IC507 IC908
	K20	PR905 PR1215	JC5015	IP2000 CY9020	VP10RT VP15TF VP20RT	QM1 TA1	GC1020 GC1120	TS2500 CP200 CP250	EH20Z ACZ310 AC520U AC530U AC1030U	AH120 AH725	KC5025 KC5525 KC7015 KC7215 KC7315	IC508 IC908
	K30				VP15TF VP20RT	QM3 TA3	GC1030	CP500	ACZ310		KC7225	IC508 IC908
S (Difficult-to-cut Materials)	S01	PR005S	JC5003		MP9005 VP05RT					AH8005 AH905		IC804 IC806
	S10	PR005S PR015S	JC5015 JC8015	JP9105	MP9005 MP9015 VP10RT		GC1105 GC1005 GC1025	CP200 TS2000	AC510U AC5015S	AH8015 AH905 SH730 AH110	KC5010 KC5510 KCU10 KCS10	IC807 IC808 IC907 IC908
	S20	PR015S PR1535	JC5015 JC8015	JP9115	MP9015 MT9015 VP20RT MP9025		GC1025 GC1125	CP250 TS2500	AC510U AC520U AC5025S	AH8015 AH120 AH725	KC5025 KC5525 KCU25	IC806 IC808 IC908
	S30	PR1535			MP9025		GC1125		AC520U	AH725		IC3028

Cermet (Turning)

• This table is Kyocera's own estimation based on publications and is not authorized by companies mentioned in it.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P01	TN610 PV710	LN10 CX50	CH350	AP25N VP25N NX1010	T3N T15 Q15	-	-	T110A T1000A	NS520 GT530 GT720 J530	KT1120 KT125 HTX	IC20N IC520N
	P10	TN610 TN620 TN6020 TN60 PV710 PV720 CCX	LN10 CX50 CX75 NIT PX75	CH350 CZ25	NX2525 AP25N VP25N	T15 C7Z Z15	CT5015 CT525	TP1020 CM CMP	T1500Z T2000Z T1200A T1500A	NS9530 NS520 GT9530 GT530 GT730 AT9530	KT315 KT175 HT2 KTP10	IC20N IC520N IC530N IC75T
	P20	CCX TN620 TN90 TN6020 PV720	CX50 CX75 CX90 NAT PX90	CH550 CH7030 CZ1025 CZ25	MP3025 NX2525 NX3035 AP25N VP45N	T15 C7X C7Z	CT525 CT530 GC1525	TP1020 C15M TP1030	T1200A T1500A T2000Z T2500Z T3000Z	NS9530 NS530/730 GT9530 GT530/730 AT9530	PS5 KT5020	IC20N IC520N IC530N IC75T IC30N
	P30	PV730	CX90 CX99 SUZ	-	NX4545 VP45N	N40 C7X	CT530 GC1525	TP1030	T3000Z T250A	NS740	-	IC75T IC30N
M (Stainless Steel)	M10	TN620 TN60 TN6020 PV720	LN10	CH350	NX2525 AP25N VP25N	T15 C7X C7Z Z15	CT5015 CT525	CM CMP	T110A T1000A T2000Z	NS520 J530	KT1120 KT315 KT125	IC20N IC520N
	M20	TN620 TN90 TN6020 PV720	CX50 CX75 PX75 NIT NAT	CH550 CH7030 CZ1025	NX2525 NX3025 AP25N VP25N	C7X C7Z Q15	CT530 GC1525	TP1020 C15M	T1500A T2000Z	NS530 NS730 GT530 GT730	KT175 HT2 PS5 KT5020	IC30N IC530N
	M30	PV730	CX75 CX90 PX90 CX99 SUZ	CZ25	NX4545	C7X	-	TP1030	T3000Z T250A	NS740	-	-
K (Cast Iron)	K01	PV7005 CCX	LN10	-	AP25N VP25N	T3N T15 Q15	-	-	T110A T1000A	NS520	KT1120	-
	K10	TN610 CCX PV710 PV7005	LN10	CH350	NX2525 AP25N VP25N	T15 C7X C7Z Z15	CT5015	-	T1200A T1500A T2000Z	NS530 NS730 GT530 GT730	KT315 HTX KTP10	-
	K20	-	NIT	CZ25	NX2525 AP25N VP25N	-	-	-	T3000Z	-	KT5020	-

Carbide

• Boldface grade shows PVD Coated Cermet.

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P10	-	SRT	WS10	STi10T	-	S1P	-	ST10P	TX10S	K2885	IC70
	P20	-	SRT DX30	EX35	STi20 UTi20T	-	SMA	S10M	ST20E	TX20 TX25	K125M	IC70 IC50M
	P30	-	SR30 DX30 DX35	EX35 EX40	UTi20T	-	SM30	S25M	A30N A30 ST30E	TX30 UX30	KMF	IC50M IC54
	P40	-	SR30 DX35	EX45	-	-	S6	S60M	ST40E	TX40	PVA	IC54
K (Cast Iron)	K01	-	KG03	WH02 WH05	HTi05T	-	H1P	-	H1 H2	TH03 KS05F	K68 K10	IC04
	K10	KW10 GW15	KG10 KT9	WH10	HTi10	KM1	H1P H10 HM	890	EH10 EH510	G1F TH10 H10T	KMI K8735 K313	IC20
	K20	GW25	CR1 KG20	WH20	HTi20T UTi20T	KM3	H13A	883 890 HX	G10E EH20 EH520	G2F KS15F KS20	KMF	IC20 IC10
	K30	-	KG30	-	-	-	-	883	G3 G10E	G3 UX30	THR	IC10 IC28
V (Wear and Shock Resistant Tool)	V40	-	G5 GD195	WH50	GTi30	-	-	-	G5	D40	-	-
	V50	VW50	MH3 MH4 GD174 GD201	WH60	GTi35 GTi40 GTi30S	-	-	-	G6	D50	-	-
	V60	-	MH5 MH7 MH8 GD206	WB60	GTi40S GTi50S	-	-	-	G7 G8	D60	-	-

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Coated Carbide (Milling / Drilling)

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Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P10	PR1225	JC5003 JC5030 JC8003 DH103	JP4105 JX1020 JP4005	F7010	-	GC1025 GC1010	-	ACP100	-	KC715M	-
	P20	PR1525 PR1225 PR1230 CA520D	DH108 DH110 DH115 JC8015 JC8118	JP4120 JS4045 JP4020 TB6020 JX1015 GX2140	MC7020 MP6120 F7030 UP20M MV1020	TM1 DT4 DM4	GC1130 GC1030 GC4220 GC4020 GC4030 GC4334	MP1500 T250M T25M T20M	ACP200 ACP2000 ACU2500	T313W AH725	KC522M KC525M KCPM20	IC330 IC250 IC520M IC950 IC5400 IC1008
	P30	PR1230 PR1535	JC6235 JC5015 JC5040 JC5240 JC8050 JC7550	CY250 CY9020 TB6045 JX1045 JM4060 GX2160	MP6130 F7030 VP15TF VP30RT	ZM3	GC1130 GC4040 GC4230 GC4330	MP2500 T250M T25M F25M F30M	AC230 ACP300 ACP3000	T3130 GH330 AH120 AH330 AH730 AH3135	KC994M KC725M KC792M KC530M KCPK30 KCPM40	IC330 IC328 IC635 IC830 IC908 IC928
	P40	-	JC7550 JC5040 JC7560	CY250 HC844 TB6060 JX1060	VP30RT	-	GC4040 GC4240 GC4340	MP3000 T350M T60M T25M	AC230 ACZ330 ACZ350	AH140	KC735M	IC635 IC928 IC4050
M (Stainless Steel)	M10	PR1225	DH108	CY9020 JX1020 JP4020	F7010	-	GC1025 GC1030	-	ACM100 ACM200 EH10Z	-	KC522M	-
	M20	PR1525 PR1225	JC730U JC835S JC8118 JC5015 JC5030 JC5040	PN215 CY150 TB6020 JX1015 CY250	MC7020 MH515 F7030 VP15TF VP20RT MP7030 MP7130	DT4 DM4	GC2030 S30T GC2334 GC2044	MS2050 MP2500 T250M T25M F20M F25M F30M	ACM200 ACP200 EH20Z ACU2500	GH330 AH330 AH120 AH130 AH725 AH3135	KC730M KC525M	IC380 IC908 IC928
	M30	CA6535 PR1535	JC835S JC8015 JC5015 JC5118 JC8050	JM4160 JM4060 TB6045 JX1045 GX2160	F7030 VP30RT MP7140	ZM3	GC1040 GC2040 S40T	T350M T250M F40M	ACM300 ACP300 ACZ350	T3130 AH130	KC994M KC725M KCPK30	IC380 IC328 IC330
	M40	-	JC7560	-	VP30RT	-	-	MM4500	ACZ350	AH140	-	IC830
K (Cast Iron)	K01	-	DH202 DH102	TB6005	-	-	-	MH1000	ACK100	AH110	-	IC5100 IC4100
	K10	PR1510 PR905 PR1210	DH103 JC8015 JC610 JC605W JC8118	JP4005 CY10H CY100H CY9020	MP8010 MC5020 VP10RT MV1020	-	GC1010 GC3220 K15W	MK1500 T150M F15M	ACK2000 ACK200 AC211 ACU2500	T1015 T1115 AH110 T1215	KCK15 KC915M	IC5100 IC4010 IC910 DT7150 IC810
	K20	CA420M PR905 PR1210 CA415D	JC605X JC610 JC5015 JC8015 JC8118	TH315 CY150 TB6020 JX1015	VP15TF VP20RT	-	GC1020 GC3020 K20W/K20D GC3330 GC3334	MP1500 T150M T250M MK2000 MK2050	EH20Z ACZ310 ACK300 ACK3000	AH120 AH725 T1215	KC520M KC920M KC925M KC992M	IC810 IC910 IC928
	K30	-	JC5080 JC6235	-	-	-	GC3040 GC4040	MK3000 T250M	-	GH130	KC930M	IC928
S (Heat-resistant Alloy)	S10	CA6535 PR1535 PR1210	DH202 DH102 DH103 JC7518	PCS08M PTH13S JS1025	MP9120 VP15TF	-	GC1030 GC1025 GC1010	MS2050	ACM100 ACM200 ACK300	-	KC510M	IC903 IC807 IC808 IC908
	S20	CA6535 PR1535 PR1210	JC8118 IC5015 JC8050 JC7560 JC7550	CY100H CY10H	MP9120 VP15TF MP9130 MP9030	-	GC1030 GC2030 S30T GC1130 GC4344	MP2050	ACU2500 ACM200	-	KC525M	IC903 IC807 IC808 IC908 IC830 IC928
	S30	PR1535	JC8050 JC7560	-	MP9140	-	GC2040 S40T	F40M	ACM300	-	KC725M KCSM40	IC328 IC330

Cermet (Milling)

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Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
P (Steel)	P10	TN60 TN620M PV60M	NIT CX75	CH550 MZ1000	NX2525	-	-	C15M	-	NS530 NS730	KT530M KT195M	-
	P20	TN620M TN100M TN60 PV60M	NAT CX75 CX90	CH570 CH7030	NX2525 MX3020	C7X C7Z	CT530	C15M MP1020	T2500A T250A T1500A	NS530 NS730 NS740	HT7 KT530M KT605M	IC30N
	P30	-	CX90 CX99 SC30	CH7035	NX4545 MX3030	-	-	-	T4500A	NS540	-	IC30N
M (Stainless Steel)	M10	TN60 TN620M PV60M	-	MZ1000	NX2525	-	-	C15M	-	-	-	-
	M20	TN620M TN100M TN60 PV60M	NIT CX75 NAT	CH550 CH570 CH7030	NX2525	-	CT530	C15M	T2500A T250A	NS530	KT7 KT530M KT605M	IC30N
	M30	-	CX75 CX90 CX99 SC30	-	NX4545	-	-	-	T4500A	NS740 N308	-	-
K (Cast Iron)	K01	-	LN10	-	-	-	-	-	-	-	-	-
	K10	PV60M	LN10 CX75	MZ1000 CH550	NX2525	-	-	-	-	-	-	IC30N
	K20	-	NIT	CH7030 CH7035	NX2525	-	-	-	-	-	-	-

Ceramic

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
K (Cast Iron)	K01	KA30 A65 KT66 PT600M CS7050 KS6015	-	NPC-H2 NPC-A2	-	SE1 HC1 HC2 HC5 HC6 HW2	CC620 CC650	-	NB90S NB90M WX120	TZ120	KW80 KY1615 AC5	IN11 IS6
	K10	KS6015 A65 KT66 A66N PT600M CS7050 KS6050	-	NX NXA Whiskal WIN	-	WA1 HC2 HC6 HC7	CC6090 CC6190 GC1690	-	WX120 NS260C	LX11 LX21	KYK10 KYK25 KB90 KY1320 KY3000 KY3400	IN420 IN22 IN23 IS80
	K20	KS6050	-	-	-	SX6 SX9 SP9	CC6090 CC6190 GC1690	-	WX120	WG300 FX105 CX710	KYK35 KY3400 KY3500	IS8
S (Difficult-to-cut Material)	S01	-	-	-	-		CC650	-	-	-	KY2100	-
	S10	CF1 KS6030 KS6040	CA200	Whiskal WIN	-	JX1 JP2 WA1 WA5 SX3 SX7 SX9	CC670 CC6060 CC6065 CC6160	-	WX120	WG300	KYS25 KY4300 KY1525 KY1540	IS25 IS9
	S20	-	-	-	-	JX3	CC6220 CC6230	-	WX120	-	KYS30	IS35 IW7
H (Hardened Material)	H01	A65 KT66 A66N PT600M	-	NPC-A2	-	HC4 HC7 ZC7	CC650 CC670 CC6050	-	NB100C	LX11 LX21	KY4400	-
	H10	A65 KT66 A66N PT600M	-	NPC-A2 Whiskal WIN	-	ZC7 WA1 WA5	CC670	-	-	WG300	KY4300	-

• Boldface grade shows PVD Coated Ceramic.

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CBN

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Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
K (Cast Iron)	K01	KBN475	JBN795	-	BC5110	B20 B22 B30	CB7525 CB50 CB7050	CBN050C CBN300P	BN500 BNC500	BX910 BX930 BX950	-	IB50 IB85
	K10	KBN60M KBN900	JBN330	BH200	MB710 MB5015 MB4020	B22 B23	CB50 CB7050	CBN20 CBN200 CBN300	BN600 BN700 BN7000	BX950 BXC90 BX470	KB1630 KB1345 KB9610	IB55 IB90
	K20	KBN900	-	BH250	MB4120 MBS140 BC5030	B16 B40	-	CBN350 CBN500 CBN600	BN7000 BNS800	BX950 BXC90 BX90S	KB9640	-
H (Hardened Material)	H01	KBN510 KBN05M KBN10M	DH102	-	BC8105 BC8110 MBC010 MB810	B24 B52 B5K	CB20	CBN050C CBN010 CBN10 CBN100	BN1000 BNX10 BNC100 BNC160 BNC2010	BXA30 BX310 BXC30 BXM10	KB1610	IB20H IB25HC IB50
	H10	KBN510 KBN525 KBN05M KBN10M KBN25M	JC6102 JC8003 JBN500 JBN300 JBN330	BH200	BC8120 MBC020 BC8020 MB8025 MB825	B24 B36 B54 B52 B5K	CB7015 CB7050 CB50 CB7105	CBN150 CBN060K CBN200 CBN160C	BNC160 BNX20 BN2000 BNC200 BNC2020	BXM10 BXA40 BX330 BX360 BXC50 BXA20	KBH10 KBH10B KB1615 KB1625 KB5610 KB9610	IB10HC IB50
	H20	KBN25M KBN35M KBN900	JC8003 JC5015 JBN245	BH250	BC8120 MBC020 BC8020 MB8025	B22 B36 B6K	CB7025 CB7525 CB7115	CBN350 CBN300P CBN400C CBN500 CH2540	BNX25 BN350 BNC300	BX380 BXC50 BXM20 BXA20	KBH20 KBH20B KB1340 KB5625 KB9640	IB55 IB25HA
	H30	KBN35M KBN900	JBN245	BH250	MB835 BC8130	B40 B6K	CB7125 CB7525 CB7135	CH3515	BNC300 BN350	BX380 BXC50 BXM20 BXA20	KB5630 KB9640	IB55 IB25HA
Stainless Steel	-	KBN65B KBN570 KBN65M KBN70M	JBN795 JBN500	-	MB4120 MB4020	-	-	CBN200	BN350 BN7000 BN7500	BX450 BX470 BX480	KB5630	IB05S IB10H IB10S

• Boldface grade shows PVD Coated CBN.

PCD (Diamond)

Classification		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Class	Symbol											
N (Non-ferrous Metals)	N01	KPD001	JDA30 JDA735	-	MD205	PD1	CD05 CD10	PCD05 PCD10	DA90 DA1000 DA2200	DX180 DX160	PD100 KD1400 KD1405	-
	N10	KPD001 KPD010 KPD230 KPD250	JDA40 JDA745	-	MD220	PD2	CD10	PCD10 PCD20	DA150 DA1000 DA2200	DX140	KD100 KD1400 KD1415	ID5
	N20	KPD001 KPD010 KPD230 KPD250	JDA10 JDA715	-	MD230	-	-	PCD30 PCD30M	DA1000 DA2200	DX110 DX120	KD1425	-

Molded Chipbreaker Cross Reference Table

Negative Inserts

• This table is Kyocera's own estimation based on publications and is not authorized by companies mentioned in it.

Cutting Range		Kyocera		Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
		General Chipbreaker	Chipbreaker for Gummy Material / Soft Steel										
Carbon Steel / Alloy Steel	Finishing (With Wiper Edge)	WF WP	-	-	-	SW	-	WL WF	W-FF2 W-MF2	SEW LUW	AFW FW	FW	WF
	Finishing - Medium (With Wiper Edge)	WE WQ	-	-	-	MW	-	WM WMX	W-M3 W-M5	GUW	ASW SW	MW	WG
	Finishing	DP GP PP	XF XP	F1 FA FT PF	BE BH FE	F FH FS FY PK FP	UL WM ZF1	XF QF	FF1	FP FB FE SP FA FL LU	TF 01 AS TSF	FF UF FS LF	F3P SF PF
	Finishing - Medium	HQ PQ CQ CJ VC VF	XQ	UA UT	AB B CE CT	SH C SA LP SY	WV WR	LC PF	FF2 MF2	SU EX SJ SX UJ SE	TS NS CB 11 17 27 ZF	K RP FN FM	NF SM
	Medium - Roughing	PG GS PS	XS	UR UB	AE DE AH	MV MP MA MH	Z5 ZW1	XM QM SM SMC PM PMC	M3 MF3	UA UG GE GU	AM DM NM TM ZM	MN	M3P TF PP
	Medium - Roughing High Feed Rate	PT GT	-	GC PQ	AR AY	GH RP	GS	MR XMR	M5 MR5 MR6	MU UX ME	TH 32Y 32 37	RP RN	R3P NR
	Roughing	Standard PH	-	GG LG GQ	RE	MT Standard	G	Standard 23 HM	MR7	MC MU MX UZ	31 33 F-K THS	PR MG	GN
	Roughing Single Sided High Feed Rate	PX	-	GS RM UC UP UD	H HX HE TE UE	HV HR HX HZ HL HM	-	QR PR HR	R4 R5 R6 R7 RR6 R57 RP	HG HP MP HF	TU TRS 57 65 TUS	RP RH RM RW	TNM NM
Stainless Steel	Finishing	MQ SQ	-	SF	BH MP	FS SH FJ LM LS	ZF1	MF	M1	SU EF	SF SS	FP	F3M VL F3S
	Medium - Roughing	MS MU TK SG SX	-	GP SZ	DE SE PV VI	MS MA GM MJ MM ES MH GH GJ RM RS	ZP WS	MM MMC MR XMR SM SMR SF SGF SMC MRR	MF1 MF3 A3 A5 M5 56 R8 RR9 MF4	EG EX MU UP EM	HMM SM SA S SH HRM HPF	P MP MS UP	TF PP M3M R3M
Cast Iron	Medium	KQ KG C Standard	-	-	AH VA VY	LK MF Standard	-	KF KM	-	UZ UX UJ	Standard 33 CF	FN	GN
	Roughing	KH GC ZS	-	-	-	GH RK	-	KR KRR	MR9	GZ	CM CH	RP UN	NR
Non-ferrous Metals	Medium - Roughing	AH	-	-	-	-	-	AL	95	AG	P	GP MS	PP

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Positive Inserts

Cutting Range		Kyocera		Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
		General Chipbreaker	Chipbreaker for Gummy Material / Soft Steel										
Carbon Steel / Alloy Steel	Minute D.O.C.	CF	-	-	-	-	-	-	-	-	01	-	-
	Finishing (with Wiper Edge)	WP	-	-	-	SW	-	WF WK	W-F1 W-F2	LUW SDW	SW	FW	WF
	Finishing	PF DP GP PP VF	XP	ASF	-	FV SQ FP SMG	AZ3 AMX AZ7	PF UF XF	FF1	FB GU FC FK FP LU	PF PSF 23	11 GF UF FP	PF SM
	Finishing - Medium ①	HQ	XQ	ACB FT	JE	MQ MV LP	AF1	PM UM SMC	F1 M3	LB SF SU SS	PS PSS 24	LF	14
	Finishing - Medium ②	GK	-	BM	JQ	Without Indication	QD CL	PF PMC XM	MF2 M5	US GU	-	-	F3P
	Medium	Standard	-	-	J	MP Standard	AM3	PR UR KM XR	F2	MU SC	PM	GM MP MR	Standard
Stainless Steel	Finishing	MQ	-	-	MP	FM FV SV LM LS MS	-	MF MMC SM MR	-	LU	PSS JS PF PSF PS PM	FW FP MW	PF WF F2M
Non-ferrous Metals	Finishing - Medium	AP AH	-	ALU	-	AZ	-	AL	AL	AG AW	AL	HP	AF AS

Positive Inserts (For Small Parts Machining)

Cutting Range		Kyocera	Dijet	Hitachi	Mitsubishi	NTK	Sandvik	Seco	Sumitomo	Tungaloy	Kennametal	Iscar
Carbon Steel / Alloy Steel	Minute D.O.C.	CF	-	-	-	-	-	-	-	01	-	-
	Finishing	PF CK GF SKS	ASF	JQ	FP FV SMG LS-P	AZ7 AMX ZR	PF XF	FF1	SI FC	PF	11 UF FP	PF SM
	Finishing - Medium	GQ SK	ACB FT	JE	LP AM MV	AM3 YL	PM XM	F1 MF2	SU	PS	LF	14
	Medium	GK	-	J	MP Standard	QD CL	PR	F2	SC	PM	MF MP	Standard
Stainless Steel	Finishing	MQ	-	MP	FM FV SV LM	-	MF	-	LU	JS PF PSF	FW FP MW	WF
Non-ferrous Metals	Finishing - Medium	AP AH	ALU	-	AZ	-	AL	AL	AG AW	AL	HP	AF AS

Cera-Notch Conversion Chart

Insert Style	Kyocera	Horizon	Tool-Flo	Kennametal	RTW	Valenite	Sandvik	Mitsubishi
Notch Style Grooving Insert								
Face Grooving	KCFP	HF	FLF	NF	-	-	TLF*	EF
ID/OD Grooving	KCG/KCGP	HG	FLG	NG	PG	VLG	TLG*	EG
ID/OD with Chipbreaker	KCGP MY	HG RK-LK	FLG CB	NG RK-LK	PG RK-LK	-	-	EG RK-LK
ID/OD with Positive Rake	KCGP	HGP	FLGP	NGP	-	VLGP	TLGP*	EGP
ID/OD Deep Grooving	KCGDP	HGD	FLGD	NGD	PGD	-	-	EGD
Full Nose Radius	KCRP	HR	FLR	NR	PR	VLR	TLR*	EGR
Full Nose Radius with Postive Rake	KCRP	HRP	FLRP	NRP	PRP	VLRP	TLRP*	-
Notch Style Threading Insert								
60° V Partial Profile	KCT	HT	FLT	NT	PT	VLT	TLT*	ET
60° V Fine Pitch Positive	KCTK	HTK	FLTK	NTK	PTK	VLTK	TLTK*	-
60° V Postive	KCTP	HTP	FLTP	NTP	PTP	VLTP	TLTP*	-

* Sandvik inserts require a Kyocera or industrial standard clamp due to different clamping system.

Milling Insert Part Number Cross Reference

• This table is Kyocera's own estimation based on publications and is not authorized by companies mentioned in it.

Kyocera ANSI	Kyocera ISO	Class	Applications	Hitachi	Mitsubishi	Sandvik	Sumitomo	Tungaloy	Iscar
SDMR42AUER-H SDKR42AUEN-S	**SDMR1203AUER-H SDKR1203AUEN-S**	M K	Steel	SDKR42TN	(SDNR1203AEEN-JS)		SDMR1203AEEN SDMR1203AETN	SDMR1203AETN-MJ SDKR1203AESR-MJ SDKR1203AETN-MJ SDKR1203AEPN-MS SDKR42ZSR-MJ SDKR42ZPN-MS	SDKR1203AUTR-HS SDKR1203AUN-76
SDKN42AUTN	**SDKN1203AUTN**	K		SDK42TN-C9	SDKN1203AEN SDKN1203AETN (SDNN1203AETN1)		SDKN42MT (SDNN1203AETN)	SDKN1203AETN-12 SDKN42ZTN	SDKN1203AETN
SDKN42AUFN	**SDKN1203AUFN**	K	Cast Iron	SDK42FN-C9			SDKN42M (SDNN1203AEEN)	SDKN1203AEFN-12 SDKN42ZFN	
			Non-Ferrous				SDKN42M	(SDCN1203AEFN-D) (SDCN42ZFN-DIA)	
SDKN53AUTN	**SDKN1504AUTN**	K	Steel	SDK53TN-C9	SDKN1504AEN SDKN1504AETN		SDKN53MT	SDKN1504AETN SDKN53ZTN	SDKN1504AETN
SEMR42AFER-H SEKR42AFEN-S	**SEMR1203AFER-H SEKR1203AFEN-S**	M K	Steel	SEKR42TN	(SEER1203AFEN-JS)	SEKR1203AZ-WM (SEER1203AZ-WL)	SEMR1203AFEN (SEER1203AFEN)	SEMR1203AFTN-MJ SEKR1203AFSR-MJ SEKR1203AFTN-MJ SEKR1203AFPN-MS	SEKR1203AFTR-HS SEKR1203AFR-HS SEKR1203AFN-76 SEKR1203AF-N-42
SEEN42AFTN	**SEEN1203AFTN**	E		SEE42TN-C9	SEEN1203AFTN1		SEEN42MT	SEEN1203AFTNCR-14	
SEKN42AFTN	**SEKN1203AFTN**	K		SEK42TN-C9	SEKN1203AFTN1 (SENN1203AFTN1)	SEKN1203AZ (SEMN1203AZ)	SEKN42MT (SENN1203AFTN)	SEKN1203AFTN SEKN1203AFTN-16 SEKN42AFTN SEKN42AFTN16	
SEKN42AFFN	**SEKN1203AFFN**	K	Cast Iron	SEK42FN-C9	(SEEN1203AFFN1)	SEKN1203AZ (SEMN1203AZ)	SEKN42M (SENN1203AFEN)	SEKN1203AFFN SEKN42AFFN	
SEEN42AFFN	**SEEN1203AFFN**	E	Non-Ferrous	SEE42FN-C9	(SECN1203AFFR1)				
SEKN42EFTR	**SEKN1203EFTR**	K	Steel	SEK42TR-G3	SEKN1203EFTR1	(SECN1203EER)		SEKN1203EFTR (SECN1203EFTR) (SEEN1203EFTR) (SECN42EFTRCR) (SEEN42EFTRCR)	
SEKN53AFTN	**SEKN1504AFTN**	K	Steel	SEK53TN-C9		SEKN1504AZ	SEKN53MT		SEKN1504AFTN
SPEN42EESR	**SPEN1203EESR**	E	Cast Iron	(SPK42FR-A3E)	SPEN42EFSR1 SPEN1203EESR1 SPEN1203EEER1 (SPNN1203EEER1)				
SPMR42EDER-H SPKR42EDER-S	**SPMR1203EDER-H SPKR1203EDER-S**	M K	Steel		(SPER1203EDER-JS)	SPKN1203EDR-WH		SPKR1203EDSR-MJ SPKR42SSR-MJ	SPKR1203EDR-76 SPKR1203EDTR-HS
SPCN42EDTR	**SPCN1203EDTR**	C			(SPEN1203EDR)	(SPAN1203EDR)	SPCH42TR-R	SPCN1203EDTR SPCN42STR	
SPKN42EDTR	**SPKN1203EDTR**	K		SPK42TR-A3	SPKN1203EDR	SPKN1203EDR	(SPCH42TR) (SPCH42TR-R)	SPKN1203EDTR SPKN42STR (SPEN1203EDTR) (SPEN42STR)	SPKN1203EDTR SPKN1203EDTR-42
SPKN42EDFR	**SPKN1203EDFR**	K	Cast Iron	SPK42FR-A3		SPKN1203EDR	(SPCH42R)	SPKN1203EDFR SPKN42SFR	SPKN1203EDFR
SPKN53EDTR	SPKN1504EDTR	K	Steel	SPK53TR-A3	SPKN1504EDR	SPKN1504EDR	(SPCH53TR-R)	SPKN1504EDTR SPKN53STR (SPCN1504EDTR) (SPCN53STR)	SPKN1504EDTR
SPKN53EDFR	SPKN1504EDFR	K	Cast Iron	SPK53FR-A3			(SPCH53R-R) (SPCH53TR-R)	SPKN1504EDFR SPKN53SFR	SPKN1504EDFR

- Tolerance is different for part numbers in ( ).
- Since edge shape of milling inserts is slightly different by each manufacturer, please adjust edges (Z axis direction) during operation.

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Milling Insert Part Number Cross Reference

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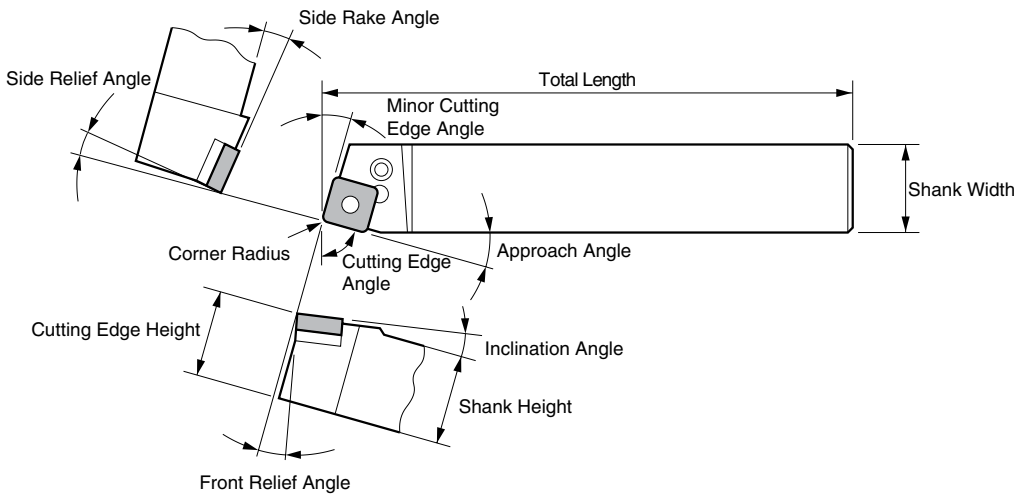
Kyocera ANSI	Kyocera ISO	Class	Applications	Hitachi	Mitsubishi	Sandvik	Sumitomo	Tungaloy	Iscar
SPCN42XPTR	**SPCN1203XPTR**	C	Steel	SPC42TR-A5				SPCN1203ZPTR SPCN42ZTR	
SPKN42XPTR	**SPKN1203XPTR**	K		SPK42TR-A5				SPKN1203ZPTR SPKN42ZTR (SPEN1203ZPTR) (SPEN42ZTR)	
SPKN42XPFR	**SPKN1203XPFR**	K	Cast Iron	SPK42FR-A5				SPKN1203ZPFR SPKN42ZFR	
SPKN53XETR	**SPKN1504XETR**	K	Steel		SPK53C2SR				
TPMR32PDER-H	**TPMR1603PDER-H**	M	Steel		(TPER1603PPER-JS)	(TPKN1603PPR-WH)			(TPKR1603PPTR-HS)
TPKN32PDTR	**TPKN1603PDTR**	K		TPK32TR-E0 TPK32TR-G0	TPKN1603PPR (TPEN1603PPR)	TPKN1603PPR	TPKN32TR		TPKN1603PPTR
TPKN32PDFR	**TPKN1603PDFR**	K	Cast Iron	TPK32FR-E0		TPKN1603PPR	TPKN32R		TPKN1603PPFR
TPMR43PDER-H **TPKR43PDER-S**	**TPMR2204PDER-H** **TPKR2204PDER-S**	M K	Steel		(TPER2204PDER-JS)	TPKN2204PDR-WH		TPMR2204PDSR-MJ TPKR2204PDSR-MJ TPKR43ZSR-MJ	TPKR2204PDTR-HS TPKR2204PD-R-76
TPKN43PDTR	**TPKN2204PDTR**	K		TPK43TR-E0 TPK43TR-G0	TPKN2204PDR (TPEN2204PDR)	TPKN2204PDR	(TPCH43TR)	TPKN2204PPTR TPKN43ZTR (TPCN2204PPTR) (TPCN43ZTR)	TPKN2204PDTR TPKN2204PDTR-42
TPKN43PDFR	**TPKN2204PDFR**	K	Cast Iron	TPK43FR-E0			(TPCH43R)	TPKN2204PPFR TPKN43ZFR (TPCN2204PPFR) (TPCN43ZFR) (TPEN2204PPTR-16) (TPEN43ZTR)	TPKN2204PDFR
TEMR32PTER-H	**TEMR1603PTER-H**	M	Steel		(TEER1603PEER-JS)			(TEKR1603PEPR-MS)	
TEKN32PTTR	**TEKN1603PTTR**	K		TEK32TR-G0 (TEE32TR-G0)	(TEEN1603PETR1)		TEKN32TR	(TECN1603PETR) (TEEN1603PETR) (TECN32ZTR) (TEEN32ZTR)	
TEKN32PTFR	**TEKN1603PTFR**	K	Cast Iron	TEK32FR-G0 (TEE32FR-G0)	(TEEN1603PEFR1)		TEKN32R	(TEEN1603PEFR) (TEEN32ZFR)	
TEEN32PTFR	**TEEN1603PTFR**	E	Non-Ferrous		(TECN1603PEFR1)		TEEN32R	(TECN1603PEFR-D) (TECN32ZFR-DIA)	
TEMR43PTER-H **TEKR43PTER-S**	**TEMR2204PTER-H** **TEKR2204PTER-S**	M K	Steel		(TEER2204PEER-JS)			TEKR2204PEPR-MS	
TEEN43PTTR	**TEEN2204PTTR**	E		TEE43TR-G0E (TEK43TR-G0E)	TEEN2204PETR1		TEEN43TR	TEEN2204PETR (TECN2204PETR) TEEN43ZTR (TECN43ZTR)	
TEKN43PTTR	**TEKN2204PTTR**	K		TEK43TR-G0E	TEKN2204PETR1		TEKN43TR	(TEEN2204PETR) (TECN2204PETR) (TEEN43ZTR) (TECN43ZTR)	
TEKN43PTFR	**TEKN2204PTFR**	K	Cast Iron	TEK43FR-G0E	(TEEN2204PEFR1)		TEKN43R	(TEEN2204PEFR) (TEEN43ZFR)	
			Non-Ferrous		(TECN2204PEFR1)		(TEEN43R)	(TECN2204PEFR-D) (TECN43ZFR-DIA)	
SNCN43XNTN	**SNCN1204XNTN**	C	Steel	SNC43TN-D5	SNC43B2S		(CSN43MT)	SNCN1204ZNTN SNCN43ZTN	
SNKN43XNTN	**SNKN1204XNTN**	K		SNK43TN-D5	SNK43B2S		(CSN43MT)	SNKN1204ZNTN SNKN43ZTN	
SNMF43XNTN	**SNMF1204XNTN**	M	Steel	(SNKF43TN-D5)	(SNKF43B2S)		(CSNB43MT)	(SNKF1204ZNTN) (SNKF43ZFN)	

- Tolerance is different for part numbers in ( ).
- Since edge shape of milling inserts is slightly different by each manufacturer, please adjust edges (Z axis direction) during operation.

Terms and Angles of Turning Toolholder



Function of Tool Angles

Tool Angle	Name	Function	Effect
Rake Angle	Side Rake Angle	• Affects cutting force, cutting heat, chip evacuation and tool life.	• If it is positive (+) angle, sharper cutting performance is obtained. (less cutting resistance, less edge strength) • Positive (+) angle is recommended for easy to machine workpieces or thin workpieces. • Smaller rake angle or negative (-) angle is recommended when a stronger edge is required like scale cutting or interrupted cutting.
	Inclination Angle		
Relief Angle	Front Relief Angle Side Relief Angle	• Prevents the tool's contact to the workpiece surface, except the cutting edge.	• When it is small, the cutting edge becomes strong, but the wear at relief faces may shorten the tool life.
Cutting Edge Angle	Cutting Edge Angle	• Affects chip control and the direction of cutting force.	• When it is large, chip thickness becomes thick and chip control improves.
	Approach Angle	• Affects chip control and the direction of cutting force.	• When it is large, chip thickness becomes thin and chip control worsens, but cutting force is dispersed and edge strength improves. • When it is small, chip control ability improves.
	Minor Cutting Edge Angle	• Prevents friction between cutting edge and work surface.	• When it is large, edge strength deteriorates.

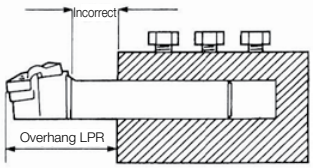
Toolholder Rigidity

1. Flexure of Toolholder

$$\delta = \frac{4 \times F \times L^3}{E \times b \times H^3} = \frac{4 \times k \times ap \times f \times L^3}{E \times b \times H^3}$$

Symbol	Name	Unit
δ (Delta)	Deflection	mm
b	Shank Width	mm
H	Shank Height	mm
E	Young ratio	N/mm^2
ap	Depth of Cut	mm
f	Feed Rate	mm/rev
k	Specific Cutting Force	N/mm^2
LPR	Overhang	mm
F	Cutting force	N

(F = k × ap × f)



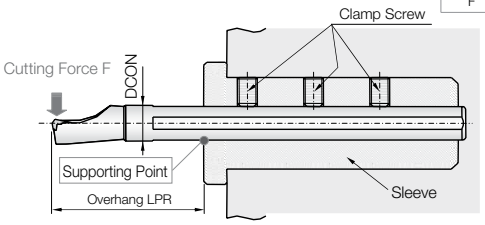
The flexural strength of toolholder will decrease by increasing of shank height by third root and will decrease of reducing over hang by third root.
Minimizing toolholder shank over hang as much as possible is important as well as shank's sectional square measure.

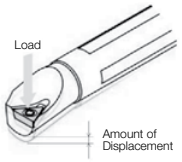
2. Flexure of Boring Bar

$$\delta = \frac{64 \times F \times (LPR)^3}{3 \times E \times \pi \times (DCON)^4} = \frac{64 \times k \times ap \times f \times (LPR)^3}{3 \times E \times \pi \times (DCON)^4}$$

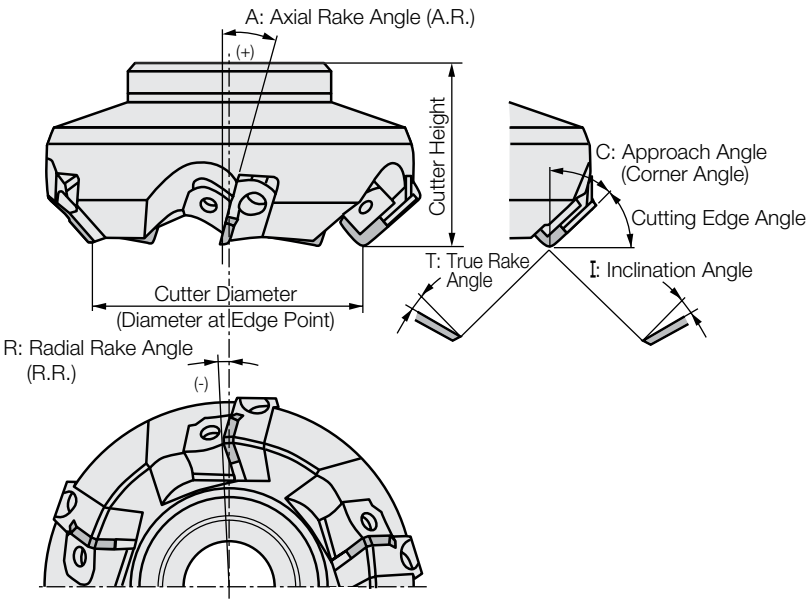
Symbol	Name	Unit
δ (Delta)	Deflection	mm
DCON	Shank Dia.	mm
E	Young ratio	N/mm^2
ap	Depth of Cut	mm
f	Feed Rate	mm/rev
k	Specific Cutting Force	N/mm^2
LPR	Overhang	mm
F	Cutting force	N

(F = k × ap × f)

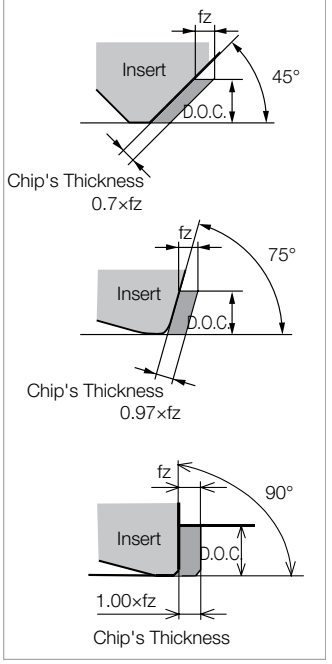




Terms and Angles of Milling Cutters



Lead Angle and Chip Thickness



Function of Tool Angles

Symbol	Name	Function	Effect
A	Axial Rake Angle (A.R.)	Controls chip flow direction and cutting force	When it is positive ··· Good cutting performance and less chip welding
R	Radial Rake Angle (R.R.)	Controls chip flow direction and cutting force	When it is negative ··· Good chip evacuation
C	Approach Angle	Controls chip thickness and chip flow direction	When it is large ··· Thinner chip thickness Lower cutting load
T	True Rake Angle	Actual rake angle	When it is positive ··· Good cutting performance and less chip welding, but lower edge strength When it is negative ··· Higher edge strength but easier to weld
I	Inclination Angle	Controls chip flow direction	When it is positive ··· Good chip evacuation Less cutting force Lower edge stability of the corner part

True Rake Calculation Formula : $\tan T = \tan R \times \cos C + \tan A \times \sin C$

Cutting Edge Inclination Angle Formula : $\tan I = \tan A \times \cos C - \tan R \times \sin C$

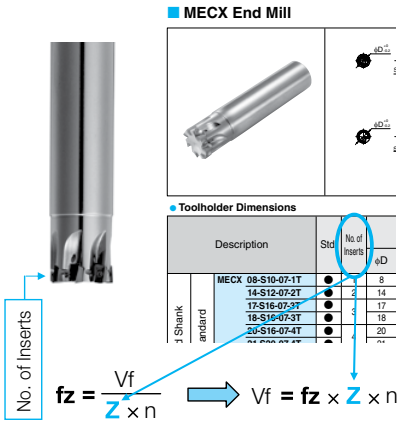
Number of Inserts (Z)

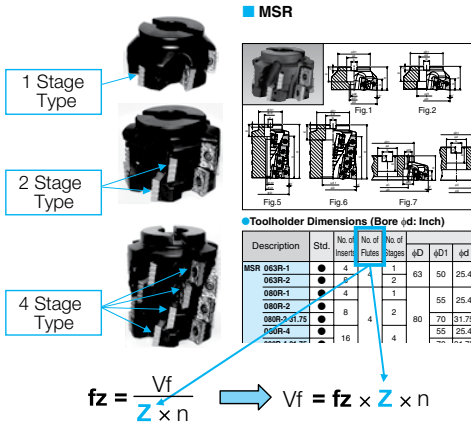
1) If there is one stage

If the number of stage is one, it is not indicated on the catalog. Please use "No. of inserts" of the catalogue for "Z" of the formula to calculate cutting conditions.

2) If the number of stages is more than two

If the number of stages is more than two, it is indicated on the catalog. Please use "No. of Flutes" of the catalogue for "Z" of the formula to calculate cutting conditions.





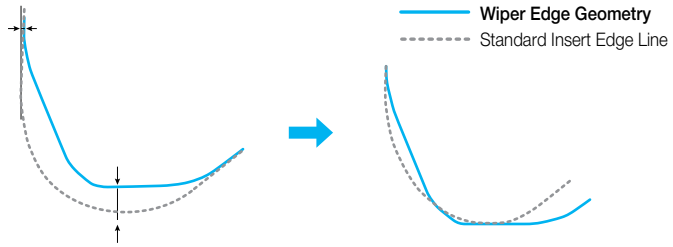
WF / WE Chipbreaker Edge Position Offset Adjustment

For D type and T type, cutting edge offsets are required.

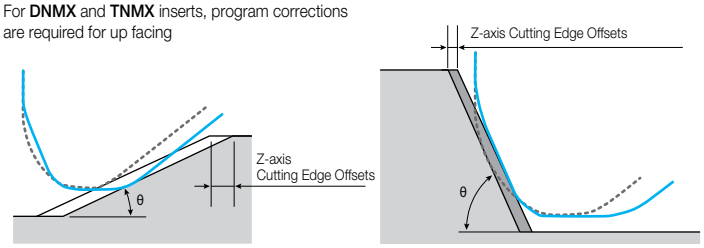
Cutting Edge Offsets (in)					
DNMX431WF DNMX441WF		**DNMX432WF DNMX442WF**		**DNMX433WF DNMX443WF**	
X-axis	Z-axis	X-axis	Z-axis	X-axis	Z-axis
0.0094	0.0008	0.0055	0.0004	0.0043	0.0004

Cutting Edge Offsets (in)					
TNMX331WF		**TNMX332WF**		**TNMX333WF**	
X-axis	Z-axis	X-axis	Z-axis	X-axis	Z-axis
0.0094	0.0004	0.0063	0.0000	0.0043	0.0000

For **DNMX** and **TNMX** inserts, cutting edge offsets are required



For **DNMX** and **TNMX** inserts, program corrections are required for up facing



DNMX43 Insert
DNMX44 Insert

Z-axis Cutting Edge Offsets (in)

Corner-R (RE) (in)	Ramping Angle θ					
	0°	5°	10°	15°	20°	25°
1/64	0.0000	-0.0134	-0.0138	-0.0142	-0.0142	-0.0142
1/32	0.0000	-0.0102	-0.0102	-0.0098	-0.0094	-0.0087
3/64	0.0000	-0.0059	-0.0067	-0.0063	-0.0059	-0.0059

Z-axis Cutting Edge Offsets (in)

Corner-R (RE) (in)	Up Facing Angle θ																		
	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
1/64	0.0000	-0.0008	-0.0012	-0.0012	-0.0016	-0.0020	-0.0024	-0.0028	-0.0031	-0.0035	-0.0039	-0.0043	-0.0047	-0.0039	-0.0031	-0.0024	-0.0016	-0.0008	0.0000
1/32	0.0000	0.0051	0.0047	0.0043	0.0035	0.0028	0.0020	0.0016	0.0008	0.0000	-0.0008	-0.0020	-0.0028	-0.0024	-0.0016	-0.0008	-0.0004	-0.0004	0.0000
3/64	0.0000	0.0142	0.0134	0.0122	0.0106	0.0094	0.0079	0.0063	0.0051	0.0035	0.0020	0.0000	-0.0016	-0.0016	-0.0012	-0.0008	-0.0004	-0.0004	0.0000

TNMX33 Insert

Z-axis Cutting Edge Offsets (in)

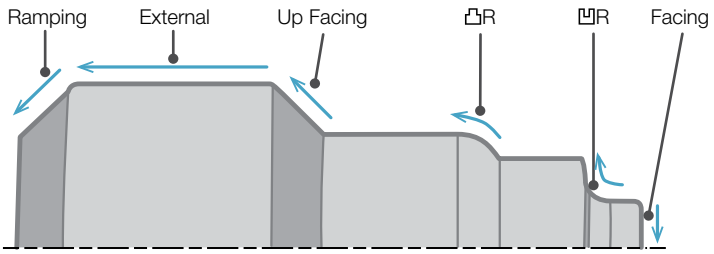
Corner-R (RE) (in)	Ramping Angle θ					
	0°	5°	10°	15°	20°	25°
1/64	0.0000					
1/32	0.0000					
3/64	0.0000					

Do not use TNMX33 insert for ramping

Z-axis Cutting Edge Offsets (in)

Corner-R (RE) (in)	Up Facing Angle θ																		
	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
1/64	0.0000	-0.0024	-0.0020	-0.0020	-0.0024	-0.0028	-0.0031	-0.0031	-0.0035	-0.0039	-0.0043	-0.0047	-0.0051	-0.0047	-0.0039	-0.0028	-0.0020	-0.0008	0.0000
1/32	0.0000	0.0043	0.0043	0.0039	0.0031	0.0024	0.0016	0.0008	0.0000	-0.0008	-0.0016	-0.0024	-0.0031	-0.0031	-0.0024	-0.0016	-0.0008	-0.0004	0.0000
3/64	0.0000	0.0134	0.0126	0.0114	0.0098	0.0087	0.0075	0.0059	0.0055	0.0031	0.0016	0.0000	-0.0020	-0.0020	-0.0012	-0.0004	0.0000	0.0000	0.0000

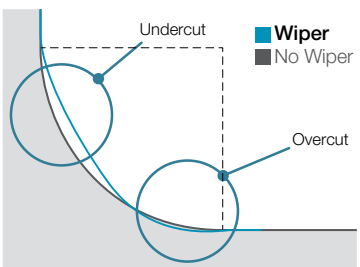
Caution (Finished Edge Line)



Application	Caution
External / Facing	Please check the applicable toolholder to confirm the lead angle matches the angle of the wiper.
Up Facing Ramping	For D type and T type inserts, Z-axis program corrections are required.
R • R	Do not use wiper inserts if a precise radial shape is needed.

Radius Cutting (Differences from Non-wiper Insert)

When machining a profile or radius on a workpiece, please note that DNMX and TNMX wiper inserts have some limitations.
Please refer to the list on the right for finished dimensions.



D Type Inserts

Unit: in

Nominal Corner R	Finished Dimension
0.016 (1/64)	R0.016 $^{+0.016}_{-0}$
0.032 (1/32)	R0.032 ±0.008
0.047 (3/64)	R0.047 $^{+0.012}_{-0.016}$

T Type Inserts

Unit: in

Nominal Corner R	Finished Dimension
0.016 (1/64)	R0.016 $^{+0.016}_{-0}$
0.032 (1/32)	R0.032 ±0.008
0.047 (3/64)	R0.047 $^{+0}_{-0.016}$

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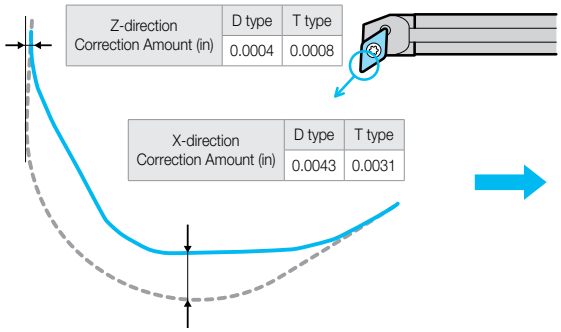
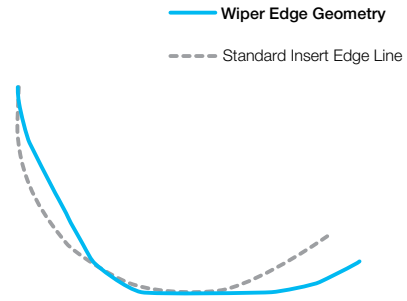
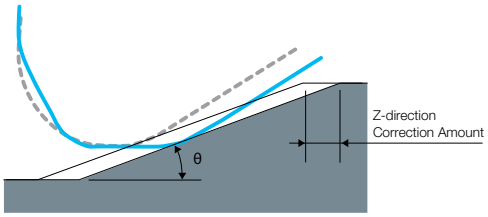
WP Chipbreaker Edge Position Offset Adjustment

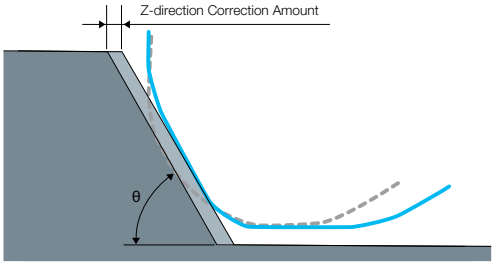
For D type and T type, cutting edge offsets are required.





For D type and T type, program corrections are required for ramping and profiling.





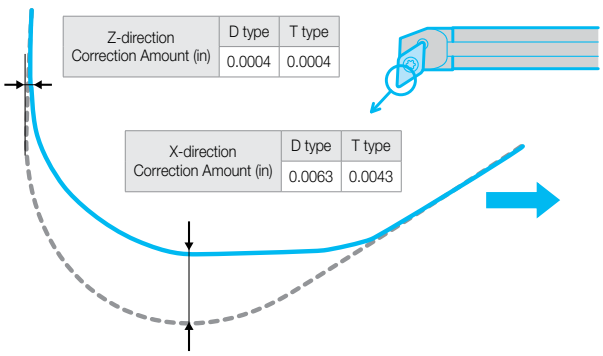
Ramping Angle θ	0°	5°	10°	15°	20°	25°
Z-direction Correction Amount (in) D type	0	-0.0055	-0.0059	-0.0063	-0.0063	-0.0067
Z-direction Correction Amount (in) T type	0	-0.0063	-0.0067	-0.0067	-0.0067	-

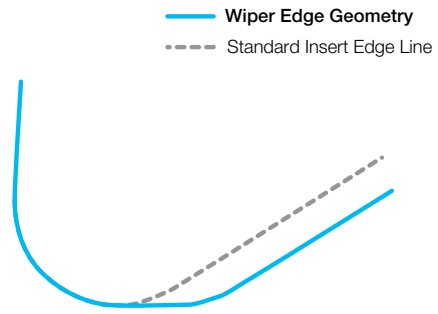
Profiling Angle θ	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
Z-direction Correction Amount (in) D type	0.0000	0.0028	0.0024	0.0016	0.0012	0.0008	0.0004	0.0000	-	-	-
Z-direction Correction Amount (in) T type	0.0000	0.0028	0.0024	0.0020	0.0020	0.0016	0.0012	0.0008	0.0004	0.0004	0.0000

Profiling Angle θ	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
Z-direction Correction Amount (in) D type	-0.0004	-0.0008	-0.0012	-0.0016	-0.0020	-0.0020	-0.0016	-0.0012	-0.0008	-0.0004	0.0000
Z-direction Correction Amount (in) T type	-	-	-	-0.0004	-0.0008	-0.0012	-0.0016	-0.0012	-0.0008	-0.0004	0.0000

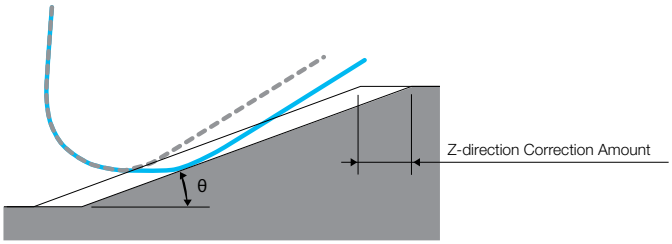
Handed Insert

For D type and T type, cutting edge offsets are required.



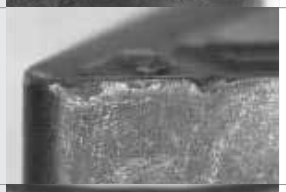
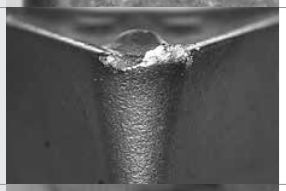


For D type and T type, program corrections are required for ramping.



Ramping Angle θ	0°	5°	10°	15°	20°	25°
Z-direction Correction Amount (in) D type	0	-0.0087	-0.0094	-0.0094	-0.0098	-0.0098
Z-direction Correction Amount (in) T type		-0.0094	-0.0094	-0.0098	-0.0094	-

Cutting Edges Figuration and Countermeasures

Typical Cutting Edge Figuration		Observation	Causes	Countermeasures
Nose Wear		• Deterioration of surface roughness and dimensional accuracy	• Too high Vc • End of tool life	• Reduce Vc • Change to higher wear resistant grade
Notching		• Burr formation • Cutting force increase	• Too high f and Vc	• Sharper cutting performance • Reduce Vc • Change to higher heat resistant grade
Crater Wear		• Chip control deterioration • Surface finish deterioration (peeled surface)	• Too high Vc	• Reduce Vc • Change to high speed type like Cermet or Al2O3 coated insert
Plastic Deformation		• Workpiece dimension's change • Crack at nose	• Too high cutting load • Inappropriate tool grade	• Change to harder grade • Reduce f and ap
Crack from Wear		• Surface finish's sudden deterioration • Workpiece dimension changes	• Too high Vc	• Reduce the pre-set tool life • Change to higher wear resistant grade
Chipping		• Cutting force increase • Surface roughness deterioration	• Too high f • Chattering • Lack of insert toughness	• Reduce f and ap • Change to more rigid toolholder • Change to tougher grade
Crack from Welding or Built-up Edge		• Surface finish deterioration • Cutting force increase	• Too low Vc	• Increase Vc • Improve sharp cutting performance (rake angle, chamfer)
Mechanical Fracture		• Sudden cracking • Unstable tool life	• Too high f and ap • Chattering	• Change to tougher grade • Enlarge chamfer • Enlarge Corner-R(r) • Change to more rigid toolholder
Fracture from Thermal Crack		• Cracking by heat cycle • Possible in interrupted cutting and milling	• Too high Vc and f	• Reduce f • Reduce Vc • Change to dry cutting
Flaking		• Possible in high-hardness material cutting • Possible in machining with chattering	• Lack of insert toughness • Lack of toolholder's rigidity	• Change to harder grade (TiC-base ceramic to CBN.) • Change to more rigid toolholder • Change edge preparation

Turning

Trouble	Trouble Item	Countermeasures: Check Item	Insert Grade: Change to Harder Grade	Insert Grade: Change to Tougher Grade	Insert Grade: Change to More Thermal Shock Resistant Grade	Insert Grade: Change to More Welding Resistant Grade	Cutting Conditions: Vc (Higher (Larger) ↑ Lower (Smaller) ↓)	Cutting Conditions: f (Higher (Larger) ↑ Lower (Smaller) ↓)	Cutting Conditions: D.O.C. (Higher (Larger) ↑ Lower (Smaller) ↓)	Cutting Conditions: Tool Path Review	Cutting Conditions: Coolant: Wet	Cutting Conditions: Coolant: Dry	Tool Geometry: Chipbreaker Review	Tool Geometry: Rake Angle (Larger ↑ Smaller ↓)	Tool Geometry: Corner-R (rε) (Larger ↑ Smaller ↓)	Tool Geometry: Approach Angle (Larger ↑ Smaller ↓)	Tool Geometry: Edge Strength / Honing (Larger ↑ Smaller ↓)	Tool Geometry: Change to Higher Tolerance (M→G)	Setting: Toolholder Rigidity	Setting: Workpiece / Tool Installation	Setting: Overhang Length	Machine: Power, Rigidity
Unstable Dimension	Unstable Workpiece Dimension	Unsuitable Insert Tolerance																●				
		Tool and Workpiece Evacuation											●	●↑	●↓	●↓			●	●	●	●
	Frequent Offset During Cutting	Flank Wear Increase	●												●↑							
		Unsuitable Cutting Conditions					●↓	●↑														
		Built-up Edge				●	●↑															
Surface Roughness	Poor Surface Roughness	Poor Cutting by Tool Wear	●			●	●↓				●		●	●↑	●↑		●↓	●				
		Chipping		●				●↓	●↓				●		●↑		●↑			●	●	●
		Welding, Built-up Edge				●	●↑				●		●	●↑			●↓	●				
		Unsuitable Cutting Conditions					●↑	●↓	●↓		●											
		Unsuitable Tool Geometry											●		●↑		●↓	●				
		Vibration, Chattering		●			●↓	●↓*1	●↓				●	●↑	●↓	●↓	●↓		●	●	●	●
Heat	Deterioration of Accuracy or Tool Life by Cutting Heat	Unsuitable Cutting Conditions					●↓	●↓	●↓		●											
		Unsuitable Tool Geometry	●										●	●↑			●↓					
Bur, Chipping	Burr	Unsuitable Cutting Conditions					●↓	●↑		●	●											
		Unsuitable Tool Geometry	●										●	●↑	●↓	●↓	●↓					
	Workpiece Chip Off	Unsuitable Cutting Conditions						●↓	●↓	●												
		Unsuitable Tool Geometry	●										●	●↑	●↑	●↑	●↓		●	●	●	●
	Scuffing	Unsuitable Cutting Conditions					●↑	●↓*2			●											
		Unsuitable Tool Geometry	●			●							●	●↑			●↓					
Edge Damage	Wear Increase at Relief Face, Rake Face	Flank Wear	●				●↓				●		●	●↑	●↑		●↓					
		Rake Face Wear	●				●↓	●↓	●↓		●		●	●↑		●↑						
	Notching	Notching				●	●↓				●											
	Chipping	Vibration, Chattering		●				●↓	●↓				●			●↑	●↑		●	●	●	●
	Crack	Unsuitable Tool Geometry		●	●			●↓	●↓				●		●↑	●↑	●↑		●	●	●	●
	Thermal Crack	Work Hardness, Unsuitable Cutting Conditions			●		●↓	●↓	●↓			●	●	●↑			●↓					
	Edge Nose Deformation	Edge Nose Deformation at Interrupted Cutting	●				●↓	●↓	●↓				●	●↓	●↑	●↑	●↑					
	Built-up Edge	Work Hardness, Unsuitable Cutting Conditions				●	●↑	●↑			●		●	●↑			●↓	●				
Chip Control	Long, Tangling Chips	Unsuitable Cutting Conditions					●↓*3	●↑	●↑	●		●										
		Unsuitable Tool Geometry											●		●↓	●↓						
	Chips scattering	Unsuitable Cutting Conditions						●↓	●↓			●										
		Unsuitable Tool Geometry											●		●↑	●↑						

*1) To prevent chattering, the higher f may be suitable.
*2) To prevent scuffing, the higher f may be suitable.
*3) When using X-chipbreaker insert for soft steel and low carbon steel, the higher Vc cuts chips short.

Milling

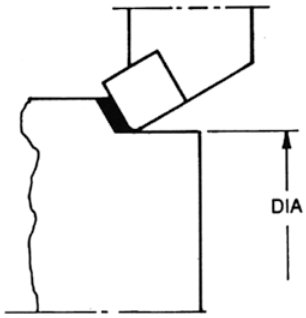
Problem	Problem Item	Countermeasures: Change to Harder Grade	Change to Tougher Grade	Change to More Thermal Shock Resistant Grade	Change to More Welding Resistant Grade	Vc (Higher (Larger) ↑ Lower (Smaller) ↓)	fz (Higher (Larger) ↑ Lower (Smaller) ↓)	D.O.C. (Higher (Larger) ↑ Lower (Smaller) ↓)	Tool Path Review	Coolant: Usage of Mist	Coolant: Dry	Insert with Chipbreaker	Relief Angle (Larger ↑ Smaller ↓)	Corner Angle (Larger ↑ Smaller ↓)	Approach Angle (Larger ↑ Smaller ↓)	Edge Strength / Honing (Larger ↑ Smaller ↓)	Number of Inserts (Larger ↑ Smaller ↓)	Chip Pocket (Larger ↑ Smaller ↓)	Wiper Edge (Relief Angle) Review	Insert Runout Check	Cutter Rigidity	Setting: Workpiece / Tool Installation	Setting: Overhang Length	Machine: Power, Rigidity
Edge Damage	Flank Wear Increase	Unsuitable Cutting Conditions									●													
		Unsuitable Tool Geometry	●											●		●			●					
	Rake Face Wear Increase	Unsuitable Cutting Conditions									●													
		Unsuitable Tool Geometry	●											●	●	●								
	Chipping, Cracking	Unsuitable Cutting Conditions								●	●													
		Unsuitable Tool Geometry		●										●	●	●			●	●	●	●	●	●
	Edge Breakage by Thermal Shock	Unsuitable Cutting Conditions										●												
		Unsuitable Tool Geometry			●									●		●								
	Built-up Edge	Unsuitable Cutting Conditions									●													
		Unsuitable Tool Geometry				●								●		●								
Cutting Accuracy	Poor Surface Finish	Unsuitable Cutting Conditions									●													
		Unsuitable Tool Geometry	●			●										●			●	●		●	●	●
	Burr Formation	Unsuitable Cutting Conditions								●	●													
		Unsuitable Tool Geometry												●	●	●			●					
	Workpiece Chip Off	Unsuitable Cutting Conditions									●													
		Unsuitable Tool Geometry												●	●	●	●		●					
	Poor Planeness / Parallelness	Tool and Workpiece Evacuation										*5 ●		●	●	●	●	●		●	●	●	●	●
Others	Heavy Chattering, Vibration	Unsuitable Cutting Conditions, Installation						*1 ●	*2 ●	*4 ●	●			●	●	●	●	●				●	●	●
	Damaging Chips	Unsuitable Cutting Conditions						*3 ●		●		*6 ●	●											
		Unsuitable Tool Geometry												●	●			●	●					

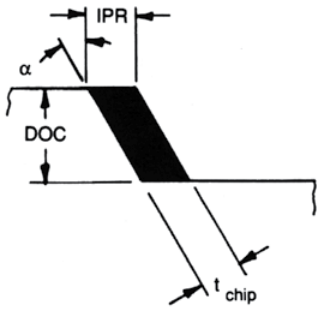
*1) To prevent chattering, the higher fz may be suitable.
*2) To prevent chattering, the larger ap may be suitable.
*3) Higher fz may be suitable.
*4) Down-cut method is recommended for helical end milling.
*5) If the surface is warped by cutting heat.
*6) Compressed air is recommended.

Drilling

Problem	Problem Item	Countermeasures	Insert Grade: Change to Harder Grade	Insert Grade: Change to Tougher Grade	Cutting Conditions: Vc (Higher (Larger) ↑ Lower (Smaller) ↓)	Cutting Conditions: f (Higher (Larger) ↑ Lower (Smaller) ↓)	Cutting Conditions: Coolant Discharge Condition	Tool Geometry: Chipbreaker Review	Tool Geometry: Inner Edge's Center Height Check (Core Dia. Check) (Larger ↑ Smaller ↓)	Tool Geometry: Tool Rigidity Improvement (Short Type)	Setting: Workpiece / Tool Installation	Setting: Insert Installation	Setting: Offset Check (Lathe Operation Only)	Setting: Adjustable Sleeve Usage	Machine: Power, Rigidity
Edge Damage	Unusual Wear	Unsuitable Cutting Speed (too high)	●		●↓										
		Unsuitable Cutting Speed (too low)		●	●↑										
		Unsuitable Coolant Discharge					●								
		Poor Rigidity of Machine / Workpiece									●				●
		Small Hole Dia.											●	●	
		Unsuitable Tool Grade	●												
	Inner Edge Cracking	No core, Too Small Core							●↑						
		Poor Rigidity of Machine / Workpiece								●	●				●
		Unstable Drilling Start				●↓									
		High Hardness Workpiece	●		●↓	●↓									
		Clogged Chips			●↑				●↓						
		Unstable Insert Installation										●			
	Outer Edge Cracking	Poor Rigidity of Machine / Workpiece									●				●
		Unstable Drilling Start				●↓									
		High Hardness Workpiece	●		●↓	●↓									
		Poor Chip Control		●	●↑										
		Unstable Insert Installation										●			
Toolholder, Others	Scratches on Tool Body	Poor Rigidity of Machine / Workpiece									●				●
		Inaccurate Tool Installment											●	●	
		Clogged Chips			●↑	●↓									
		Unstable Drilling Start				●↓									
	Poor Hole Dia. Accuracy / Surface Finish	Poor Rigidity of Machine / Workpiece									●				●
		Poor Rigidity of Toolholder								●		●			
		Inaccurate Tool Installment											*●	●	
		Clogged Chips			●↑	●↓			●↓						
		Large Core Dia.							●↓						
		Unstable Drilling Start				●↓									
		Unsuitable Coolant Discharge					●								
	Large Chattering / Vibration	Unsuitable Cutting Conditions, Installation			●↑	●↓				●	●				●
	Long Chips	Unsuitable Cutting Conditions			●↑										
		Unsuitable Chipbreaker						●							
	Machine Failure	Lack of Machine Power			●↓	●↓		●							●

Turning





Surface Speed per Minute

SFM= 0.262 × DIA × RPM

Revolutions per Minute

$$RPM = \frac{3.820 \times SFM}{DIA}$$

Feedrate (inches/minute)

IPM= IPR × RPM

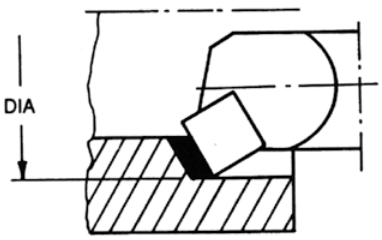
Chip Thinning for Non-Round Inserts (inches/revolution)

$$\text{Programmed IPR} = \frac{t_{chip\ Max}}{\cos 1}$$

Chip Thinning for Round Inserts (inches/revolution)

$$\text{Programmed IPR} = \frac{t_{chip\ Max}}{\sqrt{\frac{4ap}{ic} \cdot \left(\frac{2ap}{ic}\right)^2}}$$

Boring



Metal Removal Rate

Q= 12 × DOC × IPR × SFM (in^3/minute)

Horsepower Required at the Spindle

HPS= Q × UHP

Horsepower Required at the Motor

$$HPM = \frac{HPS}{EFF}$$

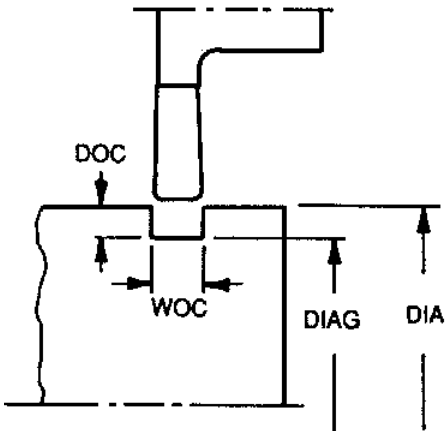
Time in Cut (seconds)

$$T = \frac{15.7 \times DIA \times LOC}{SFM \times IPR}$$

or

$$T = \frac{60 \times LOC}{IPM}$$

External Grooving



Surface Speed per Minute

SFM= 0.262 × DIA × RPM

Revolutions per Minute

$$RPM = \frac{3.820 \times SFM}{DIA}$$

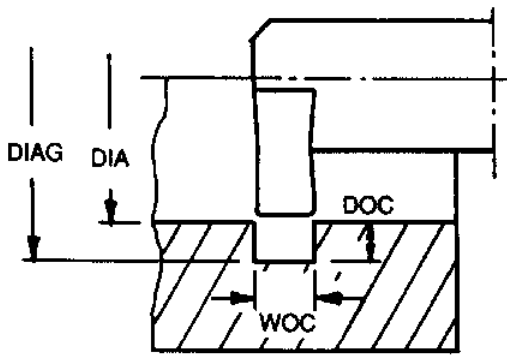
Feedrate (inches/minute)

IPM= IPR × RPM

Feedrate (inches/revolution)

$IPR = t_{chip}$

Internal Grooving



Metal Removal Rate

Q= 12 × WOC × IPR × SFM (cu.in/minute)

Horsepower Required at the Spindle

HPS= Q × UHP

Horsepower Required at the Motor

$$HPM = \frac{HPS}{EFF}$$

Time in Cut (seconds)

$$T = \frac{7.85 \times DOC \times (DIA + DIAG)}{SFM \times IPR}$$

or

$$T = \frac{60 \times LOC}{IPM}$$

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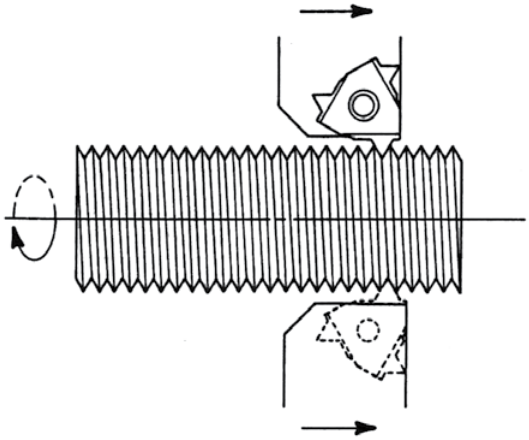
External Threading



Surface Speed per Minute

$$SFM = 0.262 \times DIA \times RPM$$

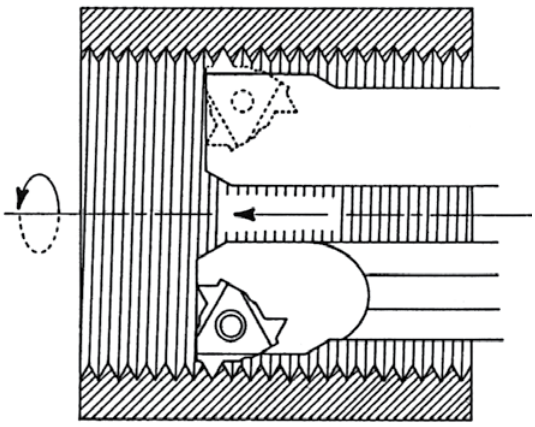
Revolutions per Minute

$$RPM = \frac{3.820 \times SFM}{DIA}$$

Feedrate (inches/minute)

$$IPM = IPR \times RPM$$

Internal Threading



Time in Cut (seconds)

$$T = \frac{60 \times LOC \times NO.\ OF\ PASSES}{IPR \times RPM}$$

Feedrate

Standard Threads

$$IPR = \frac{1}{TPI}$$

Metric Threads

$$IPR = \frac{P_{mm}}{25.4}$$

Definition of Terms

DIA = Diameter of the Workpiece (Inches)

DOC = Depth of Cut (Inches)

EFF = Machine Efficiency

f = Feedrate (See IPM and IPR)

HPM = Horsepower Required at the Motor

HPS = Horsepower Required at the Spindle

IPM = Feedrate (Inches per Minute)

IPR = Feedrate (Inches per Revolution)

IC = Insert inscribed circle (inches)

LOC = Length of Cut (Inches)

Q = Metal Removal Rate (Cubic Inches per Minute)

RPM = Revolutions per Minute

SFM = Surface Speed (Feet per Minute)

T = Time (in Seconds)

$t_{chip\ Max}$ = Maximum Recommended Chip Thickness (Inches)

UHP = Unit Horsepower Factor

1 = Lead Angle

Turning

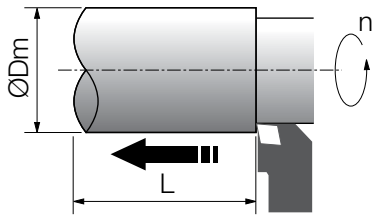
Cutting Speed

$$Vc = \frac{\pi \times Dm \times n}{1000}$$

Vc : Cutting Speed [m/min]

Dm : Workpiece Diameter [mm]

n : Spindle Revolution [min^{-1}]



Power Requirement

$$Pc = \frac{Ks \times Vc \times ap \times f}{6120 \times \eta}$$

$$P_{HP} = \frac{Ks \times Vc \times ap \times f}{4500 \times \eta}$$

Pc : Power Requirement [kW]

P_{HP} : Power Requirement (Horse Power) [HP]

Vc : Cutting Speed [m/min]

ap : Depth Of Cut [mm]

f : Feed Rate [mm/rev]

Ks : Specific Cutting Resistance [kgf/mm^{-2}]

η : Mechanical Efficiency (0.7 ~ 0.8)

Ks Figure	
Low Carbon Steel	190
Medium Carbon Steel	210
High Carbon Steel	240
Low Alloy Steel	190
High Alloy Steel	245
Cast Iron	93
Malleable Cast Iron	120
Bronze, Brass	70

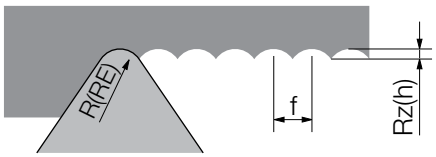
Surface Roughness

$$Rz=h = \frac{f2}{8 \times R(RE)} \times 1000$$

Rz=h : Theoretical Surface Roughness [µm]

f : Feed Rate [mm/rev]

R(RE) : Corner Radius of Insert [mm]



Chip Removal Volume

$$Q = Vc \times ap \times f$$

Q : Chip Removal Volume [cm^3/min]

Vc : Cutting Speed [m/min]

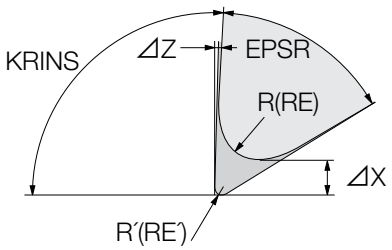
ap : Depth Of Cut [mm]

f : Feed Rate [mm/rev]

Edge Position Compensation

$$\Delta X = (R\text{-}R') \times \left\{ \frac{\cos(\frac{\alpha}{2} + (\beta - 90°))}{\sin\frac{\alpha}{2}} - 1 \right\}$$

$$\Delta Z = (R\text{-}R') \times \left\{ \frac{\sin(\frac{\alpha}{2} + (\beta - 90°))}{\sin\frac{\alpha}{2}} - 1 \right\}$$



ΔX : X-axis Direction Edge Position Compensation [mm]

ΔZ : Z-axis Direction Edge Position Compensation [mm]

R : Corner-R before Change [mm]

R´ : Corner-R before Change [mm]

EPSR : Insert Corner Angle [°]

KRINS : Toolholder's Cutting Edge Angle [°]

Toolholder Type	Insert Corner Angle (EPSR)	Cutting Edge Angle (KRINS)	ΔX	ΔZ
PCLN	80°	95°	0.100 x (R-R´)	0.100 x (R-R´)
PTGN	60°	91°	0.714 x (R-R´)	0.030 x (R-R´)
PDJN	55°	93°	0.866 x (R-R´)	0.099 x (R-R´)
PDHN	55°	107.5°	0.531 x (R-R´)	0.531 x (R-R´)
PVLN	35°	95°	2.072 x (R-R´)	0.273 x (R-R´)
PVPN	35°	117.5°	1.351 x (R-R´)	1.351 x (R-R´)
PSBN	90°	75°	0.225 x (R-R´)	-0.293 x (R-R´)

Example: Compensation when changing corner-R from 0.80 to 0.40, using PCLN type holder,

ΔX= 0.100 x (0.80 - 0.40) = 0.04 (mm)

ΔZ= 0.100 x (0.80 - 0.40) = 0.04 (mm)

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Turning (Cutting Time)

Cutting Time (External Turning Case 1: 1 Pass machining)

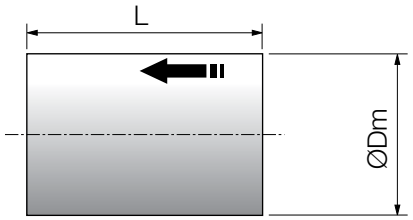
- At Constant Revolution

$$T = \frac{60 \times L}{f \times n}$$

- At Constant Cutting Speed

$$T = \frac{60 \times \pi \times L \times Dm}{1000 \times f \times Vc}$$

T : Cutting Time [second]
L : Cutting Length [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
Dm : Workpiece Diameter [mm]
Vc : Cutting Speed [m/min]



Cutting Time (External Turning Case 2: Multi-Pass machining)

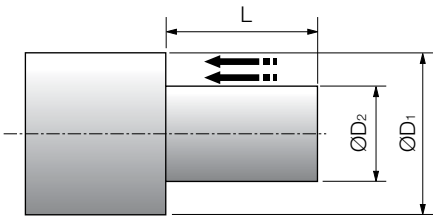
- At Constant Revolution

$$T = \frac{60 \times L}{f \times n} \times N$$

- At Constant Cutting Speed

$$T = \frac{60 \times \pi \times L \times (D_1 + D_2)}{2 \times 1000 \times f \times Vc} \times N$$

T : Cutting Time [second]
L : Cutting Length [mm]
ap : Depth Of Cut per Pass [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_2 : Min. Diameter of Workpiece [mm]
Vc : Cutting Speed [m/min]
N : Number of Passes = $(D_1 - D_2)/ap/2$ (if it is indivisible, obtain integer by rounding up one place of decimals.)



Cutting Time (Facing)

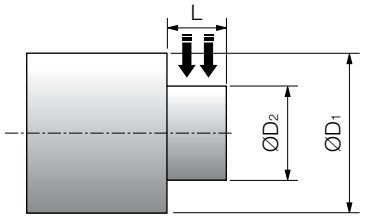
- At Constant Revolution

$$T = \frac{60 \times (D_1 - D_2)}{2 \times f \times n} \times N$$

- At Constant Cutting Speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_2 \times D_1 - D_2)}{4000 \times f \times Vc} \times N$$

T : Cutting Time [second]
T_1 : Machining Time before reaching Max. Spindle Revolution [second]
L : Cutting Length [mm]
ap : Depth Of Cut per Pass [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_2 : Min. Diameter of Workpiece [mm]
Vc : Cutting Speed [m/min]
N : Number of Passes = $(D_1 - D_2)/ap/2$ (if it is indivisible, obtain integer by rounding up one place of decimals.)



Cutting Time (Grooving)

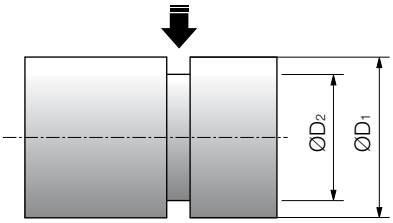
- At Constant Revolution

$$T = \frac{60 \times (D_1 - D_2)}{2 \times f \times n} \times N$$

- At Constant Cutting Speed

$$T_1 = \frac{60 \times \pi \times (D_1 + D_2) \times (D_1 - D_2)}{4000 \times f \times Vc}$$

T : Cutting Time [second]
T_1 : Machining Time before reaching Max. Spindle Revolution [second]
L : Cutting Length [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_2 : Min. Diameter of Workpiece [mm]
Vc : Cutting Speed [m/min]



Cutting Time (Cut-Off)

- At Constant Revolution

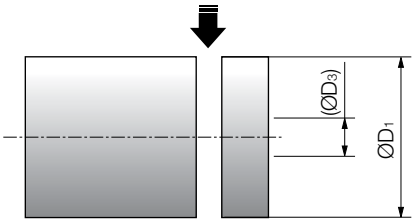
$$T = \frac{60 \times D_1}{2 \times f \times n}$$

- At Constant Cutting Speed

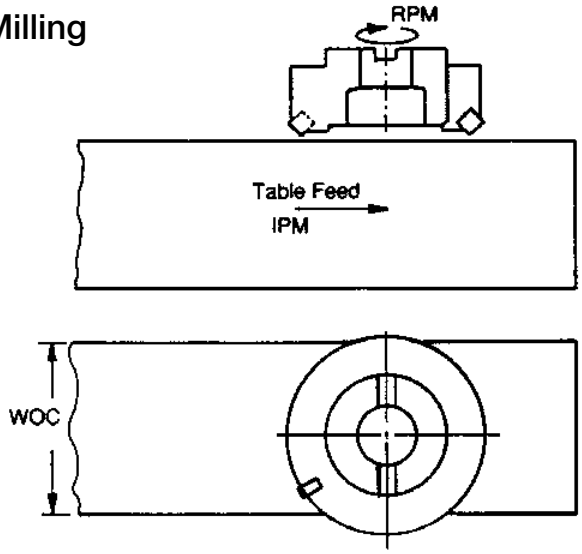
$$T_1 = \frac{60 \times \pi \times (D_1 + D_3) \times (D_1 - D_3)}{4000 \times f \times Vc}$$

$$T_3 = T_1 + \frac{60 \times D_3}{2 \times f \times N_{max}}$$

T : Cutting Time [second]
T_1 : Machining Time before reaching Max. Spindle Revolution [second]
T_3 : Machining Time when reaching Max. Spindle Revolution [second]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
n_{max} : Max. Spindle Revolution [min^{-1}]
D_1 : Max. Diameter of Workpiece [mm]
D_3 : Diameter when reaching Max. Spindle Revolution [mm]
Vc : Cutting Speed [m/min]



Milling



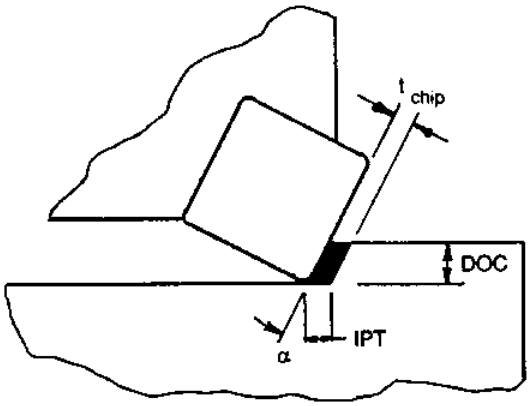


Table Feed with f_1 Compensation (inches/minute)
= IPT × N × RPM × f_1

Surface Speed per Minute

SFM = 0.262 × DIA × RPM

Revolutions per Minute

$$RPM = \frac{3.820 \times SFM}{DIA}$$

Feedrate (inches/minute)

IPM = IPT × N × RPM

Feedrate (inches/tooth)

$$\text{Programmed IPT} = \frac{t_{chip\ Max}}{\cos \alpha}$$

Radial Chip Thinning for 90° Cutters

$$f_1 = \frac{1/2 \left(\frac{Dia}{Ae}\right)}{\sqrt{\left(\frac{Dia}{Ae}\right)^{-1}}}$$

Metal Removal Rate

Q = WOC DOC × IPM (in/min)

Horsepower Required at the Spindle

HPS = Q × UHP

Horsepower Required at the Motor

HPM = HPS/EFF

Time in Cut (Seconds)

$$T = \frac{15.7 \times DIA \times LOC}{SFM \times IPR \times N}$$

or

$$T = \frac{60 \times LOC}{IPM}$$

Definition of Terms

DIA = Diameter of the Workpiece (Inches)
D.O.C. = Axial Depth of Cut (Inches)
EFF = Machine Efficiency
f = Feedrate (See IPM, IPR, and IPT)
HPM = Horsepower Required at the Motor (HP)
HPS = Horsepower Required at the Spindle (HP)
IPM = Feedrate (Inches per Minute)
IPR = Feedrate (Inches per Revolution)
IPT = Feedrate (Inches per Tooth)
f_1 = Cutter Compensation Factor
WOC = Width of Cut (Inches)
LOC = Length of Cut (Inches)
N = Number of Effective Teeth in Cutter
Q = Metal Removal Rate (Cubic Inches per Minute)
RPM = Revolutions per Minute
SFM = Surface Speed (Feet per Minute)
T = Time (in Seconds)
$t_{chip\ Max}$ = Maximum Recommended Chip Thickness (Inches)
UHP = Unit Horsepower Factor
α = Lead Angle

Milling

Cutting Speed

$$Vc = \frac{\pi \times DC \times n}{1{,}000}$$

Vc : Cutting Speed [m/min]
DC : Cutter Diameter [mm]
n : Spindle Revolution [min^{-1}]

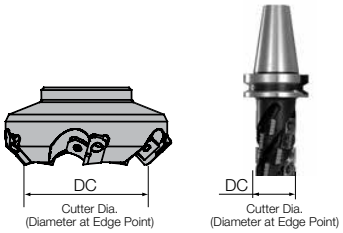
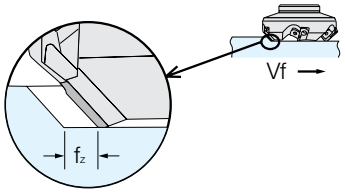


Table Feed & Feed per Tooth

$$Vc = \frac{Vf}{Z \times n}$$

fz : Feed per Tooth [mm/t]
Vf : Table Feed [mm/min]
Z : Number of Inserts
n : Spindle Revolution [min^{-1}]



Power Requirement

$$Pc = \frac{Ks \times Q}{6{,}120 \times \eta} = \frac{Ks \times ae \times Vf \times ap}{6{,}120{,}000 \times \eta}$$

$$= \frac{Ks \times ae \times fz \times Z \times N \times ap}{6{,}120{,}000 \times \eta}$$

Pc : Power Requirement [kW]
Vf : Power Requirement (Horse Power) [HP]
ae : Width of Cut [mm]
Vf : Table Feed [mm/min]
fz : Feed per Tooth [mm/t]
Z : Number of Inserts
n : Spindle Revolution [min^{-1}]
ap : Depth of Cut [mm]
Ks : Specific Cutting Force [kgf/mm^2]
η : Mechanical Efficiency (0.7~0.8)
Q : Chip Removal Volume [cm^3/min = cc/min]

Ks Figure	
Low Carbon Steel	190
Medium Carbon Steel	210
High Carbon Steel	240
Low Alloy Steel	190
High Alloy Steel	245
Cast Iron	93
Malleable Cast Iron	120
Bronze, Brass	70

Chip Removal Volume

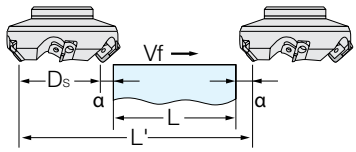
$$Q = \frac{ae \times Vf \times ap}{1{,}000} = \frac{ae \times fz \times Z \times n \times ap}{1{,}000}$$

Q : Chip Removal Volume [cm^3/min = cc/min]
ae : Width of Cut [mm]
Vf : Table Feed [mm/min]
fz : Feed per Tooth [mm/t]
Z : Number of Inserts
n : Spindle Revolution [min^{-1}]
ap : Depth of Cut [mm]

Cutting Time

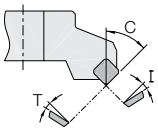
$$T = \frac{60 \times L'}{Vf} = \frac{60 \times L'}{fz \times Z \times n}$$

T : Cutting Time [seconds]
L' : Total Table Transfer Length [mm]
(= L + Ds + 2α)
L : Workpiece Length [mm]
Ds : Cutter Diameter [mm]
α : Idling Distance [mm]
Vf : Table Feed [mm/min]
fz : Feed per Tooth [mm/t]
Z : Number of Inserts
n : Spindle Revolution [min^{-1}]



True Rake Angle

$$\tan T = \tan R \times \cos C + \tan A \times \sin C$$



True Rake Angle

$$\tan I = \tan A \times \cos C - \tan R \times \sin C$$

A (GAMP) : Axial Rake Angle (A.R.) [°] (-90° < A < 90°)
R (GAMF) : Radial Rake Angle (R.R.) [°] (-90° < R < 90°)
C (KAPR) : Approach Angle [°] (0° < C < 90°)
T (GAMN) : True Rake Angle [°] (-90° < T < 90°)
I (GAMO) : Inclination Angle [°] (-90° < I < 90°)

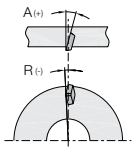
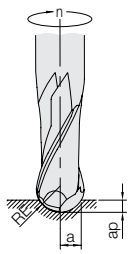


Table Feed & Feed per Tooth

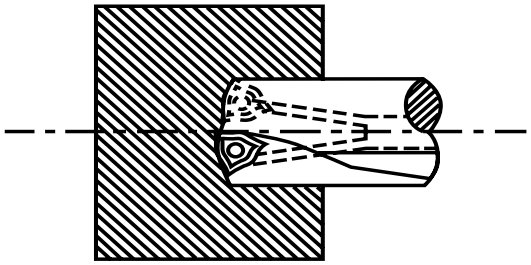
$$n = \frac{1{,}000 \times Va}{2 \times \pi \times \sqrt{a(2RE\text{-}ap)}}$$

n : Revolution [min^{-1}]
RE : Radius of Ball-Nose End Mill (Ball Part's Radius [mm])
ap : Depth of Cut [mm]
Va : Cutting Speed at Position a [m/min])

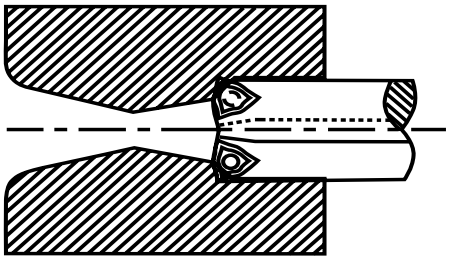


Drilling

DRILLING



CORE DRILLING



SURFACE SPEED PER MINUTE
SFM = 0.262 x DIA x RPM

REVOLUTIONS PER MINUTE
$$RPM = \frac{3.82 \times SFM}{DIA}$$

FEEDRATE (inches per minute)
IPM = IPR x RPM

FEEDRATE (inches per revolution)
IPR=IPT x N

METAL REMOVAL RATE (in^3 per minute)
DRILL: Q=3 x DIA x IPR x SFM
COREDRILL: Q=12 x DOC x IPR x SFM

HORSEPOWER REQUIRED AT THE SPINDLE
HPS = Q x UHP

HORSEPOWER REQUIRED AT THE MOTOR
$$HPM = \frac{HPS}{EFF}$$

TIME IN CUT
$$T = \frac{15.7 \times DIA \times LOC}{SFM \times IPR}$$

or

$$T = \frac{60 \times LOC}{IPM}$$

Definition of Terms

DIA = DIAMETER OF THE DRILL (INCHES)
DOC = DEPTH OF CUT (INCHES)
EFF = MACHINE EFFICIENCY
HPM = HORSEPOWER AT MOTOR
HPS = HORSEPOWER AT SPINDLE
IPM = FEEDRATE (INCHES PER MINUTE)
IPR = FEEDRATE (INCHES PER REVOLUTION)
IPT = CHIPLOAD (INCHES PER TOOTH)
LOC = LENGTH OF CUT (INCHES)
N = NUMBER OF EFFECTIVE FLUTES
N = 1 FOR DRILLS
N = 2 FOR COREDRILLS
Q = METAL REMOVAL RATE (CUBIC INCHES PER MINUTE)
RPM = REVOLUTIONS PER MINUTE
SFM = SURFACE SPEED (FEET PER MINUTE)
T = TIME (SECONDS)
UHP = UNIT HORSEPOWER (SEE TABLE BELOW)

UNIT HORSEPOWER FACTORS

Material	Hardness (BHN)	UHP Factor (HP/in3/min)	Material	Hardness (BHN)	UHP Factor (HP/in3/min)
Aluminum	---	0.25	1050	225	0.80
Brass	---	0.25	4140	275	0.70
Copper	---	0.30	52100	225	0.67
Gray Cast Iron	200	0.33	6150	375	1.30
Nodular Iron	225	0.54	Cast Steel	225	0.62
Inconel 700	330	1.10	Stainless Steel	225	0.73
1020	165	0.58			

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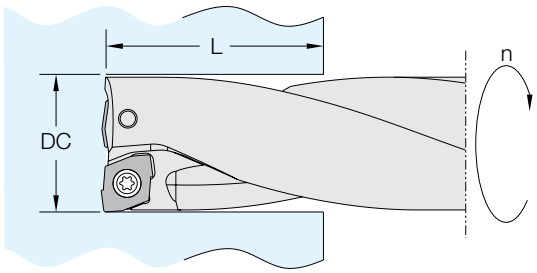
Drilling

Cutting Speed

$$Vc = \frac{\pi \times DC \times n}{1{,}000}$$

Vc : Cutting Speed [m/min]
DC : Drill Diameter [mm]
n : Spindle Revolution [min^{-1}]



Feed Rate

$$Vf = fz \times Z \times n$$

Vf : Table Feed [mm/min]
fz : Feed per Tooth [mm/t]
Z : Number of Inserts
n : Spindle Revolution [min^{-1}]

Cutting Time

$$T = \frac{60 \times L}{f \times n} = \frac{60 \times \pi \times DC \times L}{1{,}000 \times Vc \times f}$$

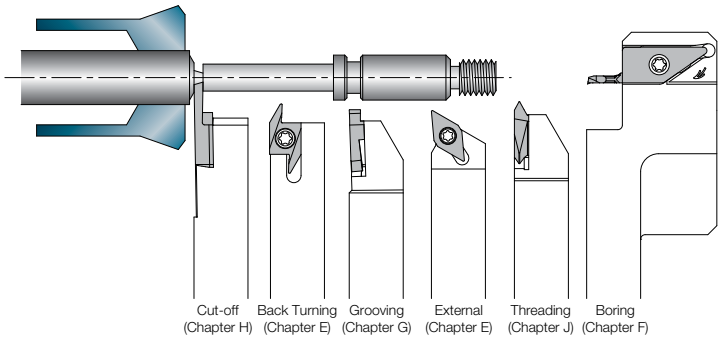
T : Cutting Time [second]
L : Drilling Depth [mm]
f : Feed Rate [mm/rev]
n : Spindle Revolution [min^{-1}]
DC : Drill Diameter [mm]
Vc : Cutting Speed [m/min]

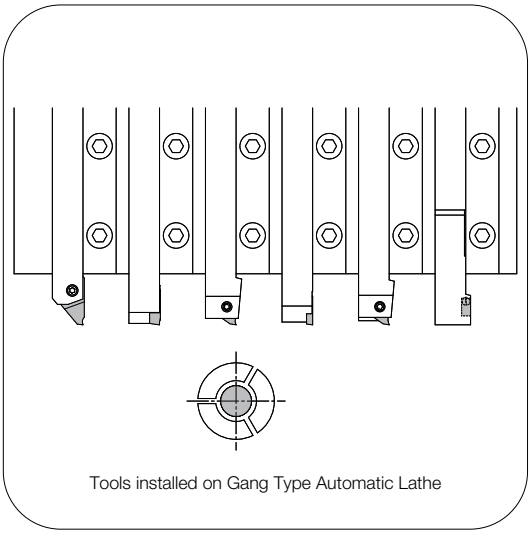
Power Requirement

$$Pc = \frac{DC}{20} \times \frac{Vc}{100} \times \left(1 + \left(\frac{2.5 \times f}{0.1}\right)\right)$$

Pc : Power Requirement [kW]
DC : Drill Diameter [mm]
Vc : Cutting Speed [m/min]
f : Feed Rate [mm/rev]

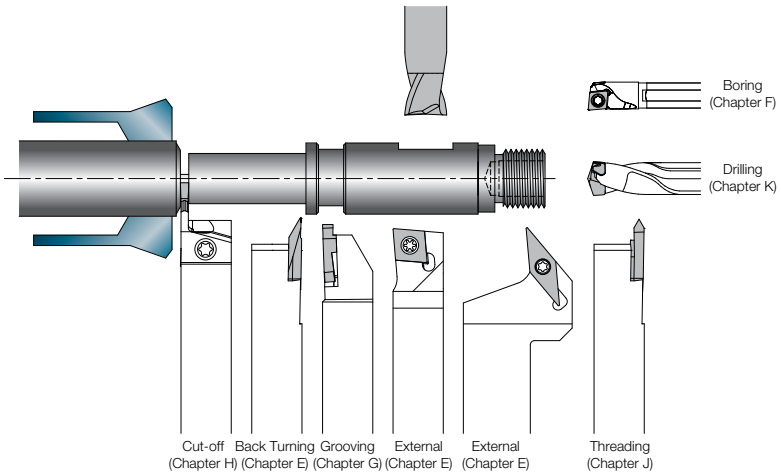
Tooling Example ① CNC Automatic Lathe (Gang Type)

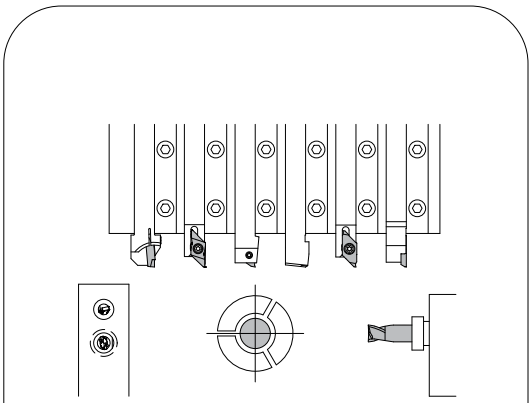




Tools installed on Gang Type Automatic Lathe

Tooling Example ② CNC Automatic Lathe (Gang Type)





Tools installed on Gang Tool Post + Milling Toolholders

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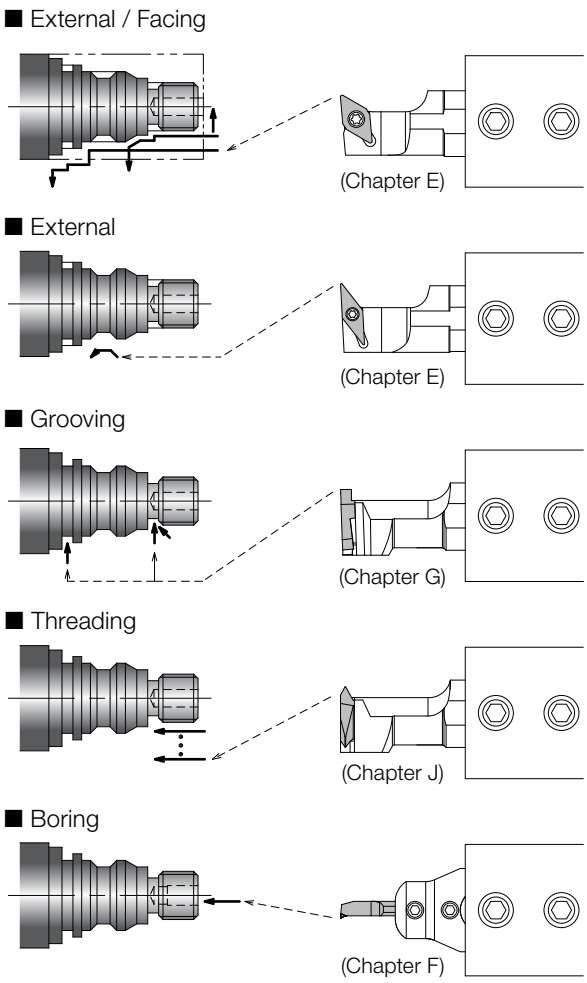
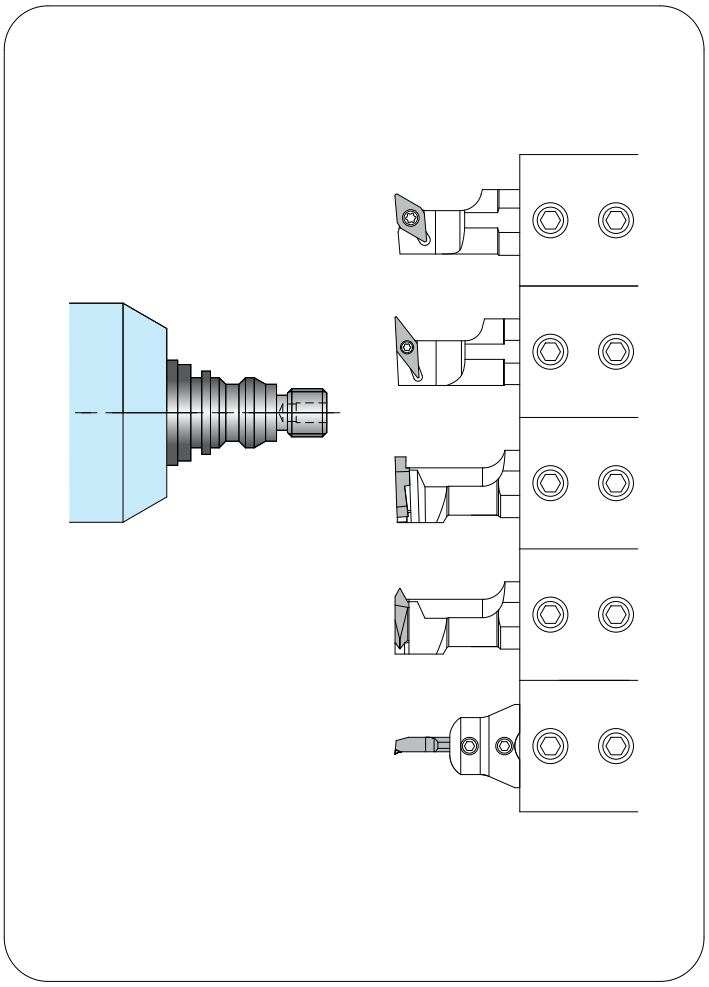
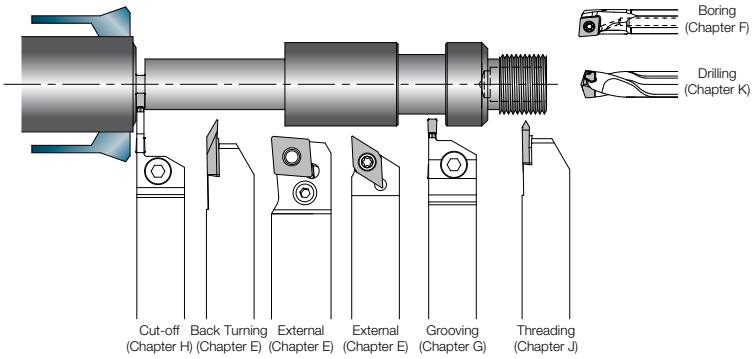
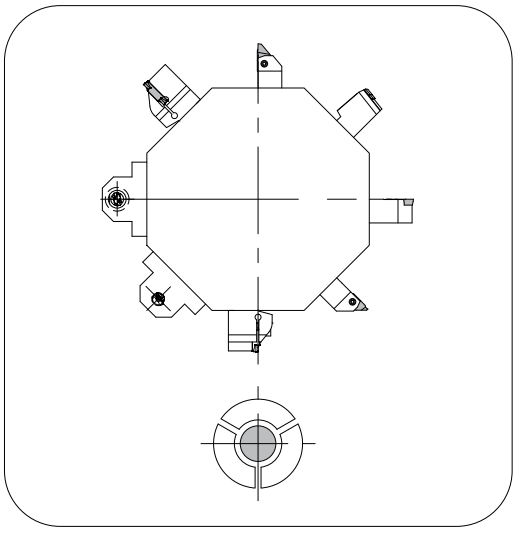
Tooling Example ③ CNC Automatic Lathe (Opposed Gang Type)





Tooling Example ④ CNC Automatic Lathe (Turret Type)





Automatic Lathe List by Manufacturer and Tooling Examples see page ➔ R66~R71

CITIZEN MACHINERY (Cincom Products)

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Diameter (Horizontal / Opposed)	Number of tools	Max. Cutting Dia.	Notes
A12/16	10 x 10 x 100	5			Ø19.05/Ø20	Ø12/Ø16	Ø12 / Ø16	-
A20	12(13) x 12(13) x 120 Cut-Off Toolholder : □16mm	6			Ø25.4	Ø20	Ø20	-
A20 VII	12(13) x 12(13) x 120 Cut-Off Toolholder : □16mm	6			Ø25.4	Ø20	Ø20	-
A32	16 x 16 x 150	6			Ø25.4	Ø32	Ø32	-
B12	10 x 10 x 100	5			Ø19.05/Ø20	Ø12	Ø12	-
B12E/B16E	10 x 10 x 120(60)	5			Ø19.05(Ø20OP)	Ø12/Ø16	Ø12 / Ø16	-
B20	12(13) x 12(13) x 120	6			Ø19.05/Ø20	Ø20	Ø20	-
BL12	10 x 10 x 60 ~ 120	5			Ø20(Ø19.05)	Ø12	Ø12	-
BL20/25	12(13) x 12(13) x 120	4 ~ 7			Ø20(Ø19.05)	Ø20/Ø25	Ø20 / Ø25	-
C12/16	10 x 10 x 120	6			Ø19.05	Ø12/Ø16	Ø12 / Ø16	-
C32	16 x 16 x 130	5			Ø25.4	Ø32	Ø32	-
D25	16 x 16 x 150 Cut-Off Toolholder : □19mm				Ø25.4	Ø25	Ø16	-
F10			10 x 10 x 60	10	Ø19.05	Ø10	Ø20	-
F12			10 x 10 x 60	10	Ø19.05	Ø12	Ø25	-
F16			10 x 10 x 60	10	Ø19.05	Ø16	Ø32	-
F20			16(19) x 16(13) x 90	10	Ø25.4	Ø20	Ø10	-
F25			16(19) x 16(13) x 90	10	Ø25.4	Ø25	Ø12	-
FL25			16 x 16 x 90	12		Ø25	Ø16	-
FL42			16 x 16 x 90	12		Ø42	Ø20	-
G32			16(19) x 16(19) x 90	10	-	Ø32	Ø25	-
K12/16	12(10) x 12(10) x 100	6(7)			Ø19.05/Ø20	Ø12/Ø16	Ø25	-
K12E/K16E	12 x 12 x 120	6			Ø19.05/Ø20	Ø12/Ø16	Ø42	-
L10	8 x 8 x 100 ~ 130	5			Ø15.875	Ø10	Ø32	-
L12	10 x 10 x 100	6			Ø19.05	Ø12	Ø12 / Ø16	-
L16	12(10) x 12(10) x 130	5			Ø19.05	Ø16	Ø12 / Ø16	-
L20,L20E	12 x 12 x 130 Cut-Off Toolholder : □16mm	5			Ø19.05	Ø20	Ø10	-
L20X,L220	12(13,16) x 12(13,16) x 120 Cut-Off Toolholder : □16mm	5 ~ 7			Ø19.05/Ø25	Ø20	Ø12	-
L25	16 x 16 x 130	5			Ø25.4	Ø25	Ø16	-
L32	16 x 16 x 130	5			Ø25.4	Ø32		-
M12	10 x 10 x 120	5	10 x 10 x 60	10+α	Ø19.05	Ø12		-
M16	10 x 10 x 120	5	10 x 10 x 60	10+α	Ø19.05	Ø16	Ø25	-
M20	16 x 16 x 130	5	16 x 16 x 90	10+α	Ø25.4	Ø20	Ø32	-
M32	16 x 16 x 130	5	16 x 16 x 90	10+α	Ø25.4	Ø32	Ø12	-
MC20	13 x 13 x 120	2 + 2 + 2			Ø19.05/Ø20.0	Ø20.0	Ø16	-
MSL12	10 x 10 x 120				-	Ø12	Ø20	-
R04	8 x 8 x 120	5			Ø15.875	Ø4	Ø32	-
R07	8 x 8 x 120	5			Ø15.875	Ø7	Ø16	-
RL01	10(8) x 10(8) x 90				Ø16(Ø20)	Ø10	Ø20	-
RL02	16 x 16 x 90				Ø20	Ø20	Ø20.0	-
RL21	10(12) x 10(12) x 90				Ø19.05	Ø35	Ø12	-

- This table is approved by machine manufacturers.
- Manufacturers are in no particular order.

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CITIZEN MACHINERY (Miyano Products)

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Diameter (Horizontal / Opposed)	Number of tools	Max. Cutting Dia.	Notes
ABX-51SY2			20 x 20 x 125(100)	24	Ø25	48	Ø51	
ABX-51SYY2			20 x 20 x 125(100)	24	Ø25	48	Ø51	
ABX-51TH5			20 x 20 x 125(100)	36	Ø25	72	Ø51	
ABX-51THY2			20 x 20 x 125(100)	36	Ø25	72	Ø51	
ABX-64SY2			20 x 20 x 125(100)	24	Ø25	48	Ø64	
ABX-64SYY2			20 x 20 x 125(100)	24	Ø25	48	Ø64	
ABX-64TH5			20 x 20 x 125(100)	36	Ø25	72	Ø64	
ABX-64THY2			20 x 20 x 125(100)	36	Ø25	72	Ø64	
BNA-34C			20 x 20 x 125(100)	8(16)	Ø25	24	Ø34	
BNA-34DHY			20 x 20 x 125(100)	14(22)	Ø25	27	Ø34	
BNA-34S			20 x 20 x 125(100)	8(16)	Ø25	24	Ø34	
BNA-42C/C2			20 x 20 x 125(100)	8(16)	Ø25	24	Ø42	
BNA-42DHY			20 x 20 x 125(100)	14(22)	Ø25	27	Ø42	
BNA-42DHY2			20 x 20 x 125(100)	14(22)	Ø25	27	Ø42	
BNA-42DHY3			20 x 20 x 125(100)	14(22)	Ø25	27	Ø42	
BNA-42GTY	20 x 20 x 125(100)	3	20 x 20 x 125(100)	8(16)	Ø25	24(7)	Ø42	
BNA-42MSY2			20 x 20 x 125(100)	8(16)	Ø25	24	Ø42	
BNA-42S/S2			20 x 20 x 125(100)	8(16)	Ø25	24	Ø42	
BNA-42C5/SY5			20 x 20 x 125(100)	12(24)	Ø25	24	Ø42	
BNC-42C7			20 x 20 x 125(100)	8(16)	Ø25	24	Ø42	
BND-51C2			20 x 20 x 125(100)	12	Ø25	24	Ø51	
BND-51S2			20 x 20 x 125(100)	12	Ø25	24	Ø51	
BND-51SY2			20 x 20 x 125(100)	12	Ø25	24	Ø51	
BNE-42S6			20 x 20 x 125(100)	24	Ø25	48	Ø42	
BNE-42SY6			20 x 20 x 125(100)	24	Ø25	48	Ø42	
BNE-51S6			20 x 20 x 125(100)	24	Ø25	48	Ø51	
BNE-51SY6			20 x 20 x 125(100)	24	Ø25	48	Ø51	
BNE-51MSY			20 x 20 x 125(100)	24	Ø25	48	Ø51	
BNJ-34S3/S5			20 x 20 x 125(100)	18	Ø25	30	Ø34	
BNJ-34SY3/SY5			20 x 20 x 125(100)	18	Ø25	30	Ø34	
BNJ-42S3/S5			20 x 20 x 125(100)	18	Ø25	30	Ø42	
BNJ-42S6			20 x 20 x 125(100)	20	Ø25	40	Ø42	
BNJ-42SY3/SY5			20 x 20 x 125(100)	18	Ø25	30	Ø42	
BNJ-42SY5			20 x 20 x 125(100)	18	Ø25	30	Ø42	
BNJ-42SY6			20 x 20 x 125(100)	20	Ø25	40	Ø42	
BNJ-51S3/S5			20 x 20 x 125(100)	18	Ø25	30	Ø51	
BNJ-51SY3/SY5			20 x 20 x 125(100)	18	Ø25	30	Ø51	
BNJ-51SY6			20 x 20 x 125(100)	20	Ø25	40	Ø51	
GN-3200	12(16) x 12(16) x 70 ~ 120	4 ~ 5			Ø20	4 ~ 5	Ø40	
GN-3200W	12(16) x 12(16) x 70 ~ 120	4 ~ 5			Ø20	4 ~ 5	Ø40	
GN-4200	12(16) x 12(16) x 70 ~ 120	7 ~ 8			Ø20	7 ~ 8	Ø40	
LX-06E2			20 x 20 x 125(100)	8	Ø32	8		6 inch power chuck
LX-06E3			20 x 20 x 125(100)	8	Ø32	8		6 inch power chuck
LX-08C			25 x 25 x 150	10	Ø40	10		8 inch power chuck
LX-08E2			25 x 25 x 150	8	Ø40	8		8 inch power chuck
LX-08E3			25 x 25 x 150	8	Ø40	8		8 inch power chuck
LX-08R			20 x 20 x 125(100)	10	Ø25	20		8 inch power chuck
LZ-01R2			20 x 20 x 125(100)	12	Ø25	24		8 inch power chuck
LZ-01RY2			20 x 20 x 125(100)	12	Ø25	24		8 inch power chuck
LZ-02R2			20 x 20 x 125(100)	10	Ø25	20		8 inch power chuck
LZ-02RY2			20 x 20 x 125(100)	10	Ø25	20		8 inch power chuck
RL01 III	10 x 10 x 70 ~ 120	2 ~ 3			Ø16	2 ~ 3	Ø10	
RL01 V	10 x 10 x 70 ~ 120	2 ~ 3			Ø16	2 ~ 3	Ø10	
RL03	12(16) x 12(16) x 70 ~ 120	4 ~ 5			Ø20	4 ~ 5	Ø40	
VC03	12(16) x 12(16) x 70 ~ 120	4 ~ 5			Ø20	4 ~ 5	Ø40	

* Number of tools shown in parentheses ( ) is the maximum number of toolholders mountable including Ø25 sleeves.

- This table is approved by machine manufacturers.
- Manufacturers are in no particular order.

STAR MICRONICS

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Diameter (Horizontal / Opposed)	Number of tools	Max. Cutting Dia.	Notes
ECAS-12	10×10×95~150	6			Ø22		Ø13	
ECAS-20	12×12×80~150	6			Ø22		Ø20	
	16×16×80~144							
ECAS-20T			16×16×60~78		Ø22 / Ø32		Ø20	
			16×16×80~88					
ECAS-32T			16×16×60~78	10	Ø22 / Ø32		Ø32	
			16×16×80~88	10				
JNC-10			8×8×65	6			Ø10	
JNC-16			10×10×80	6			Ø16	
JNC-25/32			10×10×78~120	10	Ø22		Ø25 / 32	
KJR-16B/25B			16×16×78	12/16	Ø22 / Ø32			
KNC-16/20			16×16×68	16	Ø22			
KNC-25II/32II			16×16×78	20	Ø22 / Ø32			
RNC-10	10×10×80~120	5			Ø22			
RNC-16	10×10×80~120	5			Ø22			
SA-16R	10×10×95~120	6			Ø22			
SB-16 (A/C/D/E)	12×12×95~130	5			Ø22 (Front & Rear) / (Ø22)	4/4		Only D/E for Back Clamp Sleeves
	12×12×95~130	6				4/4		
	10×10×95~130	6				4/4		
SB-12II (C/E)	12×12×95~130	6				4/4		Only E for Back Clamp Sleeves
SB-16II (C/E)	12×12×95~130	6				4/4		
	10×10×95~130	6				4/4		
SB-20 A/C/E	12×12×95~130	6				4/4		
SB-12R typeG	12×12×95~130	6				4/4	Ø13	
	10×10×95~130	7				4/4		
SB-16R/20R typeN	12×12×95~130	6				4/4	Ø16 / Ø23	
	10×10×95~130	7				4/4		
SB-16R/20R typeG	12×12×95~130	6				4/4	Ø16 / Ø23	
	10×10×95~130	7				4/4		
SC20	12×12×95~130	5			Ø22 / -	4		
	10×10×95~130	6				4/4		
SE-12B/16B	10×10×95~120	5			Ø22		Ø13 / 16	
SG-42			16×16×84~88		Ø22 / Ø32		Ø42	
			16×16×71~82					
			20×20×84~88					
SH-7	8×8×95~120	5			Ø22		Ø7	
SH-12/16	10×10×95~120	5			Ø22		Ø13 / 16	
SI-12/12C	10×10×80~130	6			Ø22		Ø13	
SR-10J	8×8×67~110 (Spacer is needed)	6			Ø16	4		
SR-20RII	12×12×100~135	6		4	Ø22	6/8	Ø23	Toolpost for 2 Toolholders (Deep Boring) on the Front Side
SR-20III	12×12×95~135	6			Ø22	6/8	Ø23	
SR-20IVtypeA	12×12×100~130	7			Ø22 (Front & Rear) / Ø22	6/8	Ø23	
SR-20IVtypeB	12×12×100~130	7			Ø22 (Front & Rear) / Ø22	6/8	Ø23	
SR-25J/32J	16×16×95~155	6		4	Ø22+Ø32 (Front & Rear) / Ø22		Ø32	
SW-12RII	10×10×95~115	7			Ø16(Front & Rear) / Ø22	4/8	Ø13	
ST-20			12×12×73~79		Ø22 / Ø32		Ø20	
			12×12×65~73(Cut-Off)					
			16×16×64~73					
			16×16×65~73(Cut-Off)					
ST-38			16×16×83~88		Ø22 / Ø32		Ø32 / Ø38	
			16×16×71~82					
			16×16×84~88(Cut-Off)					
			20×20×84~88					
			20×20×84~88(Cut-Off)					
SV-38R	16×16×105~135	4	16×16×84~88		Ø22 / Ø32	- / 8	Ø32 / Ø38	
	20×20×115~135(Cut-Off)	1	16×16×71~82					
			20×20×84~88					
SV-12/20	12×12×95~135	5	12×12×70~78		Ø22 / Ø32			
	16×16×95~135	4	16×16×65~70					
SV-32	16×16×95~135	4	16×16×60~78		Ø22 / Ø32			
			16×16×80~88					
SW-7	8×8×80~120	6					Ø7	

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- Manufacturers are in no particular order.

TSUGAMI

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Diameter (Horizontal / Opposed)	Number of tools	Max. Cutting Dia.	Notes
B0123-III	12×12×85	9	-	-	Ø20 / -	4 / -	Ø12	
B0124/125/126-III	12×12×85	9	-	-	Ø20 / Ø20	4 / 4	Ø12	
B0203-III	12×12×85	9	-	-	Ø20 / Ø20	4 / 4	Ø20	
B0204/205/206-III	12×12×85	9	-	-	Ø20 / Ø20	4 / 4	Ø20	
B020M-II	-	-	-	-	- / Ø20	- / 1	Ø20	
B0265/265B/266-II	16×16×100	12	-	-	Ø25 / Ø25	5 / 4	Ø26	
B0325/325B/326-II	16×16×100	12	-	-	Ø25 / Ø25	5 / 4	Ø32	
B0385/385L	20×20×125	8	-	-	Ø32 / Ø32	3 / 5	Ø38	
B038T	-	-	20×20×125	St.8	Ø32 / Ø25		Ø38	
B073/074-II	8×8×85	9			Ø20	4	Ø7	
BH20/BH20Z	12×12×85	4	12×12×85	St.12	Ø25 / Ø32		Ø20	
BH38	16×16×125	5	20×20×125	St.12	Ø25 / Ø32		Ø38.1	
BM163-III	12×12×85	9	-	-	Ø20 / -	4 / -	Ø16	
BM164/165-III	12×12×85	9	-	-	Ø20 / Ø20	4 / 4	Ø16	
C150/CH154	12×12×60~100	4~6	-	-	-		Ø80	
C180	12×12×60~100	4~6	-	-	-		Ø120	
C220/220T	12×12×60~100	6~8	-	-	-		Ø120	
C300-IV	16×16×100~130	6~10	-	-	-		Ø165	
C300H	16×16×100~130	6~10	-	-	-		Ø165	
P013	8×8×100~120	6	-	-	Ø16 / -	3 / -	Ø1	
P013-II	8×8×100~120	6	-	-	Ø16 / -	3 / -	Ø1	
P014	8×8×100~120	6	-	-	Ø16 / Ø16	3 / 3	Ø1	
P014-II	8×8×100~120	6	-	-	Ø16 / Ø16	3 / 3	Ø1	
P033	8×8×100~120	6	-	-	Ø16 / -	3 / -	Ø3	
P033-II	8×8×100~120	6	-	-	Ø16 / -	3 / -	Ø3	
P034	8×8×100~120	6	-	-	Ø16 / Ø16	3 / 3	Ø3	
P034-II	8×8×100~120	6	-	-	Ø16 / Ø16	3 / 3	Ø3	
S205/206/SS207	12×12×100	8	-	-	Ø22 / Ø20	5 / 4	Ø20	
SS26	16×16×100	7	-	-	Ø22 / Ø20	5 / 4	Ø26	
SS32/32L	16×16×100	7	-	-	Ø22 / Ø20	5 / 4	Ø32	
SS20M	-	-	-	-	- / Ø20	- / 1	Ø20	
SS267	16×16×100	7	-	-	Ø22 / Ø20	5 / 4	Ø26	
SS327	16×16×100	7	-	-	Ø22 / Ø20	5 / 4	Ø32	
MB25	-	-	20×20×90	2×St.8	Ø20 / Ø32	5 / 4	Ø25	
M42J/M42SD	-	-	20×20×125	St.12	Ø25 / Ø32		Ø42	
M50J/M50SY-III	-	-	20×20×100	St.12	Ø20 / Ø32		Ø51	
M06JC		-	20×20×125	St.8	Ø25		Ø220 / Ø42	
M06J		-	25×25×150	St.8	Ø32 / Ø40		Ø260 / Ø51	
M08J		-	25×25×150	St.8	Ø32 / Ø40		Ø280 / Ø65	
M06D		-	25×25×150	St.12	Ø40		Ø260 / Ø51	
M08D		-	25×25×150	St.12	Ø40		Ø280 / Ø65	
M06SD		-	25×25×150	St.12	Ø40		Ø260 / Ø51	
M08SD		-	25×25×150	St.12	Ø40		Ø280 / Ø65	
M06SY		-	25×25×150	St.12	Ø40		Ø260 / Ø51	
M08SY		-	25×25×150	St.12	Ø40		Ø280 / Ø65	
TMU1	20×20×100~125	1	20×20×125	St.16	Ø32 / Ø32		Ø38	
TMB2	20×20×100~125	1	20×20×125	St.16	Ø32 / Ø32		Ø51	
TMA8-IV	20×20×100~125	1			Ø32 / Ø32		Ø65	
TMA8J	20×20×100~125	1			Ø32 / Ø32		Ø65	
TMA8H	20×20×100~125	1			Ø32 / Ø32		Ø65	

- This table is approved by machine manufacturers.
- Manufacturers are in no particular order.

AMADA

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Diameter (Horizontal / Opposed)	Number of tools	Max. Cutting Dia.	Notes
G05	16×16				Ø20		Ø50×40	
G06	16×16				Ø20		Ø60×60	
G07	16×16				Ø20		Ø100×100	
G07M	20×20				Ø20		Ø100×100	
G07F	16×16				Ø20		Ø120×120	
GG5	16×16				Ø20		Ø50×40	
GS04	16×16				Ø20		Ø30×20	
J1			20×20	8	Ø25		Ø120×120	
J3			25×25	8	Ø32		Ø170	
J5			25×25	8	Ø32		Ø240	
JJ1			20×20	8	Ø32		Ø50×50	
JJ3			25×25	8	Ø32		Ø100×100	
JJ3M			25×25	12	Ø32		Ø100×100	
Ai8			20×20	8	Ø25		Ø50×50	
A12			16×16	12	Ø25		Ø80×50	
A18S			20×20	18	Ø25		Ø80×50	
AD12			16×16	9	Ø25		Ø80×50	
AD18S			20×20	15	Ø25		Ø80×50	
AA1			20×20	8	Ø25		Ø50×50	
Mi8			16×16	5	Ø20		Ø70×70	
S10			20×20	12	Ø25		Ø250×150	
V8G			20×20	15	Ø32		Ø220×450	
V10T			20×20	30(15×2)	Ø32		Ø250×450	

Nomura DS

Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Diameter (Horizontal / Opposed)	Number of tools	Max. Cutting Dia.	Notes
NN-10C	10×10×130	6			Ø17		Ø10	
NN-10CS	10×10×130	5			Ø17	4	Ø10	
NN-10SII	10×10×130	5			Ø23		Ø10	
NN-10SB5	10×10×130	5			Ø23		Ø13	
NN-10T	10×10×130	7			Ø23		Ø10	
NN-16HIII	12×12×130	6			Ø23		Ø16	
NN-16J	12.7×12.7×130	6			Ø23		Ø16	
NN-16SB5	10×10×130	5			Ø23		Ø16	
NN-16SB6 Type1	12.7×12.7×130	7			Ø17(Ø22)	4	Ø16	
NN-16SB6 Type2	12.7×12.7×130	5			Ø17(Ø22)	4	Ø16	
NN-16SB6 Type2.5	12.7×12.7×130	6			Ø17(Ø22)	5	Ø16	
NN-16SB6 Type3	12.7×12.7×130	5			Ø17(Ø22)	4	Ø16	
NN-16SB7	12.7×12.7×130	5			Ø16	4	Ø16	
NN-16UIII	12×12×130	5			Ø23		Ø16	
NN-16UB5	12×12×130	5			Ø23		Ø16	
NN-20CS	12.7×12.7×130	5(6)			Ø22	4	Ø20(Ø25)	
NN-20HIII	12×12×130	6			Ø23		Ø20	
NN-20J	12.7×12.7×130	6			Ø23		Ø20	
NN-20J2	12.7×12.7×130	6			Ø22	4	Ø20	
NN-20UIII	12×12×130	5			Ø23		Ø20	
NN-20U5	12.7×12.7×150	5(6)			Ø22	4	Ø20(Ø25)	
NN-20UB5	12×12×130	5			Ø23		Ø20	
NN-20UB7	12×12×130	6			Ø23		Ø20	
NN-20UB8	12.7×12.7×150	5(6)			Ø22	4	Ø20(Ø25)	
NN-20YB	12×12×130	8			Ø23		Ø20	
NN-25YB/32YB	16×16×130	8			Ø23 / Ø32		Ø25 / Ø32	
NN-32YB2	16×16×130	5			Ø22 / Ø32	4	Ø32	

- This table is approved by machine manufacturers.
- Manufacturers are in no particular order.

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Model	Toolholder Dimensions (Gang-Type)	Number of tools	Toolholder Dimensions (Turret-Type)	Number of tools	Sleeve Diameter (Horizontal / Opposed)	Number of tools	Max. Cutting Dia.	Notes
SANAX-6	12×12	5 (Max.)	-	5	Ø16	-	Ø15.0	-
SANAX-8	16×16	5 (Max.)	-	5	Ø25 / Ø30	-	Ø20.0	-
	12×12	7 (Max.)	-	5	Ø25 / Ø30	-	Ø20.0	-
SANAX-10	16×16	5 (Max.)	-	5	Ø25 / Ø30	-	Ø25.5	-
EBN-10EX	12×12	6 (Max.)	-	-	Ø20	-	Ø25.5	-
NUCBOY-8EX	12×12	6 (Max.)	-	-	Ø20	-	Ø20.0	-
NUCLET-10EX	16×16	10 (Max.)	-	-	Ø20	-	Ø25.5	-
NUCPAL-10EX	16×16	10 (Max.)	-	-	Ø20	-	Ø25.5	-

• This table is approved by machine manufacturers.
• Manufacturers are in no particular order.

List of Instruments and Applicable Small Tools and Toolholders

Models of Major Machine Tool Manufacturers				Applicable Toolholders
Manufacturer	Model (Automatic Lathe)	Toolholder Size	Total Length of Attached Toolholder (MAX)	
Citizen Machinery	A12,A16,B12,L12,M416,RL01,RL21	10×10	100	...1010F···
	K12,K16	12×12		...1212F···
	RL02	16×16		...1616H···
	B12E,B16E,BL12,C12,C16,$M_2$12,$M_2$16 $M_3$12,$M_3$16,MSL12	10×10	120	...1010JX···
	A20,A20VII,B20,BL20,BL25,K12E,K16E L20X,L220	12×12		...1212JX···
	L16,L20,L20E	12×12	130	...1212JX···
	C32,L25,L32,M20,$M_2$20,$M_2$32 $M_2$0,$M_3$32,$M_4$32	16×16		...1616JX···
Star Micronics	RNC-10,RNC-16,SA-16R,SE-12B/16B SH-12/16	10×10	120	...1010JX···
	SI-12,SI-12C	10×10	130	...1010JX···
	SB-16A,SB-16C,SB-16D,SC20	12×12	130	...1212JX···
	SR20RII,SR20III,SV12,SV20	12×12	135	...1212JX···
	SV32,SV32J,SV32JII	16×16		...1616JX···
	ECAS-12	10×10	150	...1010JX···
	ECAS-20	12×12		...1212JX···
	SR25J,SR32J	16×16		...1616JX···
Tsugami	B007	10×10	85	...1010F···
	B0,BA,BC,BH20,BM,BU12,BU20 BS12,BS18,BS20	12×12		...1212F···
	C004,C150,C180,C220	12×12	100	...1212F···
	BH38,BS26,BS32,BU26,BU38	16×16		...1616H···
Nomura DS	NN-10C,NN-10CS,NN-10SII NN-10SB5,NN-10SII,NN-10T,NN-16SB5	10×10	130	...1010JX···
	NN-16HIII,NN-16UB5,NN-16UIII,NN-16J NN-20HIII,NN-20UIII,NN-20UB5,NN-20YB	12×12		...1212JX···
	NN-25YB	16×16		...1616JX···

• Manufacturers are in no particular order.

Parts Compatibility of Lever Lock Toolholders

1) For better usability of lever lock toolholders, some levers, lock screws and shims are modified.

2) It is highly recommended to use only new parts. However, they are compatible with conventional parts and can be used together with them.

3) It is possible to use new parts only with a toolholder which has been in use.

4) When purchasing replacements, order them stating the new numbers.

5) Some of the shims remain unmodified.

Category	Ref. Page	Toolholder Description		Spare Parts					
				Lever		Lock Screw		Shim	
				New No.	Conventional	New No.	Conventional	New No.	Conventional
External Toolholders	D9	PCLNR/L	····-09	LL-1N	LL-1	LS-1N	LS-1	LC-32N	LC-32
			····-12	LL-2N	LL-2	LS-2N	LS-2	LC-42N	LC-42
			····-16	LL-5N	LL-5	LS-4N	LS-4	LC-53N	LC-53
	D13	PDJNR/L	····-11	LL-1DN	LL-1D	LS-1N	LS-1	LD-32N	LD-32
			····-15	LL-3N	LL-3	LS-2N	LS-2	LD-42	
	D15	PSBNR/L	····-09	LL-1N	LL-1	LS-1N	LS-1	LS-32	
			····-12	LL-2N	LL-2	LS-2N	LS-2	LS-42	
		PSKNR/L	····-09	LL-1N	LL-1	LS-1N	LS-1	LS-32	
			····-12	LL-2N	LL-2	LS-2N	LS-2	LS-42	
		PSSNR/L	····-09	LL-1N	LL-1	LS-1N	LS-1	LS-32	
			····-12	LL-2N	LL-2	LS-2N	LS-2	LS-42	
		PSDNN	····-09	LL-1N	LL-1	LS-1N	LS-1	LS-32	
			····-12	LL-2N	LL-2	LS-2N	LS-2	LS-42	
	D17	PTGNR/L	1212F-11	LL-03N	LL-03	LS-03N	LS-03	-	
			····-11	LL-03TN	LL-03T	LS-03SN	LS-03S	-	
			····-16	LL-1N	LL-1	LS-1N	LS-1	LT-32N	LT-32
			····-22	LL-2N	LL-2	LS-2N	LS-2	LT-42N	LT-42
		PTFNR/L	1212F-11	LL-03N	LL-03	LS-03N	LS-03	-	
			····-11	LL-03TN	LL-03T	LS-03SN	LS-03S	-	
			····-16	LL-1N	LL-1	LS-1N	LS-1	LT-32N	LT-32
			····-22	LL-2N	LL-2	LS-2N	LS-2	LT-42N	LT-42
	D23	PRGCR/L	····-12	LL-1CN	LL-1C	LS-1N	LS-1	LR-12C	
		PRXCR/L	····-12						
		PRGNR/L	····-09	LL-1N	LL-1	LS-1N	LS-1	LR-80	
			····-12	LL-2N	LL-2	LS-2N	LS-2	LR-81	
	D25	PWLNR/L	····-06	LL-1N	LL-1	LS-1N	LS-1	LW-32N	LW-32
			····-08	LL-2N	LL-2	LS-2N	LS-2	LW-42N	LW-42
Boring Bars	F86	□16M-	PCLNR/L 09-20	LL-03SN	LL-03S	LS-03SN	LS-03S	-	
		□20Q-	09-27	LL-1N	LL-1	LS-1SN	LS-1S	LC-32N	LC-32
		□25R-	09-32						
		····-	PCLNR/L 12···	LL-2N	LL-2	LS-2N	LS-2	LC-42NR/L	LC-42R/L
	F87	····-	PDUNR/L 11···	LL-1DN	LL-1D	LS-1SN	LS-1S	LD-32N	LD-32
	F93	····-	PTUNR/L 11···	LL-03TN	LL-03T	LS-03SN	LS-03S	-	
		S25R-	PTUNR/L 16-30	LL-03SN	LL-03S	LS-03SN	LS-03S	-	
		S32S-	16-40	LL-1N	LL-1	LS-1N	LS-1	LT-32N	LT-32
		S40T-	16-50						
	F94	□16M-	PWLNR/L 06-20	LL-03SN	LL-03S	LS-03SN	LS-03S	-	
		□20Q-	06-27	LL-1N	LL-1	LS-1SN	LS-1S	LW-32N	LW-32
		□25R-	06-32						
	F96	····-	PWLNR/L 08···	LL-2N	LL-2	LS-2N	LS-2	LW-42NR/L	LW-42R/L
Turning Mill	N15	T63H-	PCLNR/L -DX12	LL-2N	LL-2	LS-2N	LS-2	LC-42N	LC-42
		T63H-	PCMNN -□12						
		T63H-	PDJNR/L -DX15	LL-3N	LL-3	LS-2N	LS-2	LD-42	
	N16	T63H-	PDNNN -□15						
		T63H-	PTGNR/L -DX16	LL-1N	LL-1	LS-1N	LS-1	LT-32N	LT-32
	N17	T63H-	PWLNR/L -DX08	LL-2N	LL-2	LS-2N	LS-2	LW-42N	LW-42

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Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
Numeric			
○-○○/○○-	(○○K-)SET	M245	Toolholder (API Ring Groover)
○/○(○)-	SHCS-CB	K116	Toolholder (Drilling) Counterbore (SHCS-CB)
06IR	○○○○(○)	J17, J19	Insert (Threading)
08IR	○○○○(○)	J17, J19	Insert (Threading)
11IR	A○○	J17, J19	Insert (Threading)
11IR	○○BSPT	J13	Insert (Threading)
11IR	○○BSPT-TF	J13	Insert (Threading) / TF Series
11IR	○○BSPT-TQ	J13	Insert (Threading) / TQ Series
11IR℅	○○○ISO	J7	Insert (Threading)
11IR	○○○ISO-TF	J7	Insert (Threading) / TF Series
11IR	○○○ISO-TQ	J7	Insert (Threading) / TQ Series
11IR	○○○○○	J17, J19	Insert (Threading)
16ER	○○BSPT	J12	Insert (Threading)
16ER	○○BSPT-TF	J12	Insert (Threading) / TF Series
16ER	○○BSPT-TQ	J12	Insert (Threading) / TQ Series
16ER	○○(.○)NPT	J14	Insert (Threading)
16ER	○○UN	J8	Insert (Threading)
16ER	○○UN-TF	J8	Insert (Threading) / TF Series
16ER	○○UN-TQ	J8	Insert (Threading) / TQ Series
16ER	○○W	J10	Insert (Threading)
16ER	○○W-TF	J10	Insert (Threading) / TF Series
16ER	○○W-TQ	J10	Insert (Threading) / TQ Series
16E℅	○○○ISO	J6	Insert (Threading)
16ER	○○○ISO-TF	J6	Insert (Threading) / TF Series
16ER	○○○ISO-TQ	J6	Insert (Threading) / TQ Series
16ER	○○○TR	J18	Insert (Threading)
16ER	○○○○	J16, J18	Insert (Threading)
16ER	A○○	J16, J18	Insert (Threading)
16ER	AG○○	J16, J18	Insert (Threading)
16ER	G○○	J16, J18	Insert (Threading)
16ER	A○○-TF	J16, J18	Insert (Threading) / TF Series
16ER	A○○-TQ	J16	Insert (Threading) / TQ Series
16ER	AG○○-TF	J16, J18	Insert (Threading) / TF Series
16ER	AG○○-TQ	J16	Insert (Threading) / TQ Series
16ER	G○○-TF	J16	Insert (Threading) / TF Series
16ER	G○○-TQ	J16	Insert (Threading) / TQ Series
16IR	○○BSPT	J13	Insert (Threading)
16IR	○○BSPT-TF	J13	Insert (Threading) / TF Series
16IR	○○BSPT-TQ	J13	Insert (Threading) / TQ Series
16IR	○○(.○)NPT	J15, J35	Insert (Threading)
16IR	○○UN	J9	Insert (Threading)
16IR	○○UN-TF	J9	Insert (Threading) / TF Series
16IR	○○UN-TQ	J9	Insert (Threading) / TQ Series
16IR	○○W	J11	Insert (Threading)
16IR	○○W-TF	J11	Insert (Threading) / TF Series
16IR	○○W-TQ	J11	Insert (Threading) / TQ Series
16IR℅	○○○ISO	J7	Insert (Threading)
16IR	○○○ISO-TF	J7	Insert (Threading) / TF Series
16IR	○○○ISO-TQ	J7	Insert (Threading) / TQ Series
16IR	○○○TR	J19	Insert (Threading)
16IR	○○○○(○)	J17, J19	Insert (Threading)
16IR	A○○	J17, J19	Insert (Threading)
16IR	AG○○	J17, J19	Insert (Threading)
16IR	G○○	J17, J19	Insert (Threading)
22ER	N○○	J16, J18	Insert (Threading)
22ER	○○UN	J8	Insert (Threading)
22ER	○○○ISO	J6	Insert (Threading)
22ER	○○○TR	J18	Insert (Threading)
22IR	N○○	J17, J19	Insert (Threading)
22IR	○○UN	J9	Insert (Threading)
22IR	○○○ISO	J7	Insert (Threading)
22IR	○○○TR	J19	Insert (Threading)
556C℅		P9	Spare Parts (Shim)
A			
A○○□-	DCLN℅○	F85	Boring Bars (Double Clamp)
A○○□-	DCLN℅○○-○○	F85	Boring Bars (Double Clamp)
A○○□-	DDUN℅○	F88	Boring Bars (Double Clamp)
A○○□-	DDUN℅○○-○○	F88	Boring Bars (Double Clamp)
A○○□-	DSKN℅○○-○○	F91	Boring Bars (Double Clamp)
A○○□-	DTFN℅○○-○○	F92	Boring Bars (Double Clamp)
A○○□-	DWLN℅○	F95	Boring Bars (Double Clamp)
A○○□-	DWLN℅○○-○○	F95	Boring Bars (Double Clamp)
A○○□-	KKC℅-○	G85, J24	Toolholder (Cera-Notch Grooving / Threading)
A○○□-	PCLN℅○	F86	Boring Bars
A○○□-	PCLN℅○○-○○	F86	Boring Bars
A○○□-	PDUN℅○	F87	Boring Bars
A○○□-	PDUN℅○○-○○	F87	Boring Bars
A○○□-	PTUN℅○○-○○	F93	Boring Bars
A○○□-	PWLN℅○○-○○	F94	Boring Bars
A○○□-	SCLC℅○	F47	Boring Bars (General Purpose)
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A○○□-	SCLC℅○○-○○AE	F45	Boring Bars (Dynamic Bar)
A○○□-	SCLC℅○E	F47	Boring Bars (General Purpose)
A○○□-	SCLP℅○(.○)AE	F49	Boring Bars (Dynamic Bar)
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A○○□-	SDQC℅○AE	F54	Boring Bars (Dynamic Bar)
A○○□-	SDQC℅○○-○○AE	F54	Boring Bars (Dynamic Bar)
A○○□-	SDUC℅○AE	F53	Boring Bars (Dynamic Bar)
A○○□-	SDUC℅○○-○○AE	F53	Boring Bars (Dynamic Bar)
A○○□-	SDZC℅○○-○○AE	F55	Boring Bars (Dynamic Bar)
A○○□-	STLB℅○.○AE	F61	Boring Bars (Dynamic Bar)
A○○□-	STLC℅○○-○○AE	F59	Boring Bars (Dynamic Bar)
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A○○□-	SVJB℅○AE	F66	Boring Bars (Dynamic Bar)
A○○□-	SVJB℅○○-○○AE	F66	Boring Bars (Dynamic Bar)

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Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
A○○□-	SVJC℀○○-○○AE	F66	Boring Bars (Dynamic Bar)
A○○□-	SVJP℀○○-○○AE	F66	Boring Bars (Dynamic Bar)
A○○□-	SVPB℀○AE	F68	Boring Bars (Dynamic Bar)
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A○○□-	SVZC℀○.○AE	F71	Boring Bars (Dynamic Bar)
A○○□-	SVZC℀○○-○○AE	F71	Boring Bars (Dynamic Bar)
A○○□-	SWUB℀○.○AE	F75	Boring Bars (Dynamic Bar)
A○○□-	SWUB℀○○-○○AE	F75	Boring Bars (Dynamic Bar)
A○○□-	SWUP℀○AE	F75	Boring Bars (Dynamic Bar)
A○○□-	SWUP℀○○-○○AE	F75	Boring Bars (Dynamic Bar)
AABSR	○(○)-○○□(□)F	E19	Toolholder (Back Turning)
AABSR	○○○○□(□)-○○F	E19	Toolholder (Back Turning)
AABWR	○(○)-○○□(□)F	E20, E21	Toolholder (Back Turning)
AABWR	○○○○□(□)-○○F	E20, E21	Toolholder (Back Turning)
ABS	○○R○○○○	B102, E19	Insert (Back Turning)
ABS	○○R○○○○M	B102, E19	Insert (Back Turning)
ABW	○○R○○○○	B102, E20, E21	Insert (Back Turning)
ABW	○○R○○○○M	B102, E20, E21	Insert (Back Turning)
ACLC℀	○(○)-○□(□)FF	E24	Toolholder (Turning)
ACLC℀	○○○○□(□)-○○FF	E24	Toolholder (Turning)
AD○○□		F84	Boring Bars (AD Bar Adaptor)
ADJC℀	○(○)-○□□FF	E26	Toolholder (Turning)
ADJC℀	○○○○□□-○○FF	E26	Toolholder (Turning)
AJ-519TR		P2	Spare Parts (Adjustment Screw)
AJ-6X38		P2	Spare Parts (Screw)
AJ-8X44-9.5		P2	Spare Parts (Screw)
AJ-10X46		P2	Spare Parts (Screw)
APET	○○○○PDFR	M29, M159, M247	Insert (Milling) FM-AL / EM-AL / CM-AL
APET	○○○○○○	M29, M159, M247	Insert (Milling) FM-AL / EM-AL / CM-AL
API-RG-○	BT○○	M245	Body Part (API Ring Groovers)
API-RG-○	CV○○	M245	Body Part (API Ring Groovers)
API-RG-○	DIN-○○○○○	M245	Body Part (API Ring Groovers)
APKT	○○○○(○○)PDER-V	M22, M160	Insert (Milling) MAP
APMT	○○○○○○E℀-NB○	M22, M131~M133	Insert (Milling) MSR
APMT	○○○○○○ER-NB○P	M22, M131~M133	Insert (Milling) MSR
ASL	○○○○○-○○○	K96	Adjustable Sleeve (Drilling) for MAGIC DRILL (DRV / DRZ / DRX)
AVJB℀	○-○□(□)FF	E34	Toolholder (Turning)
AVJB℀	○○○○□(□)-○○FF	E34	Toolholder (Turning)
B			
BB-G1/8		D11, G33	Piping Banjo Bolt
BB-M10X1.5		D11, G33	Piping Banjo Bolt
BCS	-○	P15	Spare Parts (Clamp Set)
BDGT	○○T○○○FR	M30	Insert (Milling)
BDGT	○○(□)○○○(○)FR-JA	M22, M68-M73	Insert (Milling) MEC
BDGT	○○T○○○FR-LE	M30	Insert (Milling)
BDMT	○○(□)○○○(○)ER-JS	M22, M68-M73, M80, M81, M105	Insert (Milling) MEC / MECX / MECHT
BDMT	○○(□)○○○(○)ER-JT	M22, M23, M68-M73, M80, M81	Insert (Milling) MEC / MECX
BDMT	○○(□)○○○(○)ER-N○	M23, M96~M99	Insert (Milling) MECH
BDMT	○○(□)○○○(○)FR	M30	Insert (Milling)
BGIAR	○○-○	G82	Blade (Grooving)
BH3X6		P2	Spare Parts (Screw)
BH3X12		P2	Spare Parts (Screw)
BH6X10TR		P2	Spare Parts (Screw)
BH6X25		P2	Spare Parts (Screw)
BH8X30		P2	Spare Parts (Screw)
BT30K-	M○○-○○	M88	Arbor Attachment
BT40K-	M○○-○○	M88	Arbor Attachment
BX	○○○-SET	M245	Cartridge Set (API Ring Groover)
BX	○○○-R-SET	M245	Cartridge Set (API Ring Groover)
C			
C○○□-	SCLC℀○(.○)	F47	Boring Bars (General Purpose)
C○○□-	SCLC℀○○-○○AN	F45	Boring Bars (Dynamic Bar)
C○○○□-	SCLCR○○-○○○EZ	F27	Boring Bars (EZ Bar PLUS)
C○○○□-	SCLCR○○-○○○EZP	F27	Boring Bars (EZ Bar PLUS)
C○○□-	SCLP℀○(.○)	F51	Boring Bars (General Purpose)
C○○□-	SJLC℀○○-○○○	F58	Boring Bars
C○○□-	SJZC℀○○-○○○	F58	Boring Bars
C○○□-	STLB℀○○-○○A	F61	Boring Bars (Dynamic Bar)
C○○□-	STLB℀○○-○○AN	F61	Boring Bars (Dynamic Bar)
C○○○□-	STLBR○○-○○○EZP	F28	Boring Bars (EZ Bar PLUS)
C○○○□-	STLPR○○-○○○EZP	F28	Boring Bars (EZ Bar PLUS)
C○○□-	STXB℀○○-○○○	F65	Boring Bars
C○○□-	STXP℀○○-○○	F65	Boring Bars
C○○□-	STZB℀○○-○○○	F65	Boring Bars
C○○○□-	SWUB℀○.○	F77	Boring Bars (General Purpose)
C○○○○□-	SWUB℀○.○	F77	Boring Bars (General Purpose)
C○○□-	SWUB℀○○-○○AN	F75	Boring Bars (Dynamic Bar)
C○○○□-	SWUBR○○-○○○EZP	F29	Boring Bars (EZ Bar PLUS)
C08R		P17	Spare Parts (Clamp)
C09N		P17	Spare Parts (Clamp)
C17R		P17	Spare Parts (Clamp)
C20R		P17	Spare Parts (Clamp)
C25R		P17	Spare Parts (Clamp)
CB-11		P18	Spare Parts (Chipbreaker)
CB-12		P18	Spare Parts (Chipbreaker)
CB-13		P18	Spare Parts (Chipbreaker)
CB-14		P18	Spare Parts (Chipbreaker)
CB-15		P18	Spare Parts (Chipbreaker)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number	Page	Description
CB-16	P18	Spare Parts (Chipbreaker)
CB-17	P18	Spare Parts (Chipbreaker)
CB-51	P18	Spare Parts (Chipbreaker)
CB-S3220	P18	Spare Parts (Chipbreaker)
CB-S4220	P18	Spare Parts (Chipbreaker)
CBSN℞ ○○○○□-○○	D38	Toolholder (Turning)
CBSN℞ ○○○○B-12-A20	F80	Boring Bar (for Bearing Machining)
CB-T2212	P18	Spare Parts (Chipbreaker)
CB-T3220	P18	Spare Parts (Chipbreaker)
CC-125-MFAH	P21	Spare Parts (Coolant Cover)
CC-160-MFAH	P21	Spare Parts (Coolant Cover)
CC-200-MFAH	P21	Spare Parts (Coolant Cover)
CC-250-MFAH	P21	Spare Parts (Coolant Cover)
CC-315-MFAH	P21	Spare Parts (Coolant Cover)
CCET ○○○○○F℞-USF	B57	Insert (Turning)
CCET ○○○○(○)(○)MF℞-J	B59	Insert (Turning)
CCET ○○○○(○)(○)MF℞-U	B57	Insert (Turning)
CCET ○○○○○(○)MF℞-USF	B57	Insert (Turning)
CCET ○○○○○(○)(○)M℞-F	B56	Insert (Turning)
CCET ○○○○○(○)(○)M℞-FSF	B55	Insert (Turning)
CCET ○○○○(○)M℞-P	B57	Insert (Turning)
CCET ○○○○○(○)℞-FSF	B55	Insert (Turning)
CCGT ○○○○(○)	B54	Insert (Turning)
CCGT ○○○○AH	B60	Insert (Turning)
CCGT ○○○○(○)AP	B60	Insert (Turning)
CCGT ○○○○(○)E℞-U	B59	Insert (Turning)
CCGT ○○○○○F℞-U	B58	Insert (Turning)
CCGT ○○○○(○)M	B54	Insert (Turning)
CCGT ○○○○○○M-CF	B53	Insert (Turning)
CCGT ○○○○(○)ME℞-U	B59	Insert (Turning)
CCGT ○○○○(○)(○)MF	B55	Insert (Turning)
CCGT ○○○○(○)MF-GF	B53	Insert (Turning)
CCGT ○○○○(○)MF-GQ	B53	Insert (Turning)
CCGT ○○○○(○)MFP-GF	B53	Insert (Turning)
CCGT ○○○○(○)MFP-GQ	B54	Insert (Turning)
CCGT ○○○○(○)(○)MFP-PF	B53	Insert (Turning)
CCGT ○○○○(○)MFP-SK	B53	Insert (Turning)
CCGT ○○○○(○)(○)MFP-SKS	B53	Insert (Turning)
CCGT ○○○○(○)(○)MF℞-U	B58	Insert (Turning)
CCGT ○○○○○○MP-CF	B53	Insert (Turning)
CCGT ○○○○(○)MP-CK	B53	Insert (Turning)
CCGT ○○○○○(○)(○)M℞-F	B56	Insert (Turning)
CCGT ○○○(○)(○)℞-A3	B60	Insert (Turning)
CCGT ○○○○○(○)(○)℞-F	B56	Insert (Turning)
CCGW ○○○○(○)(○)	B60, C24	Insert (Turning)
CCGW ○○○○(○)(○)NE	C24	Insert (Turning)
CCGW ○○○○(○)(○)SE	C24	Insert (Turning)
CCLN℞ ○○○○□-○○	D26	Toolholder (Turning)
CCLN℞ ○○○○□-○○A	D32	Toolholder (Turning)

Part Number	Page	Description
CCMT ○○○○(○)	B54, C24	Insert (Turning)
CCMT ○○○○(○)APD	C24	Insert (Turning)
CCMT ○○○(○)(○)GK	B54	Insert (Turning)
CCMT ○○○○(○)HQ	B54	Insert (Turning)
CCMT ○○○○MQ	B55	Insert (Turning)
CCMT ○○○○(○)NE	C24	Insert (Turning)
CCMT ○○○○(○)PP	B54	Insert (Turning)
CCMT ○○○○(○)SE	C24	Insert (Turning)
CCMT ○○○○(○)WP	B54	Insert (Turning)
CCMW ○○○○MEF	C14	Insert (Turning)
CCMW ○○○○S○○○○○MES	C14	Insert (Turning)
CCMW ○○○○(○)(○)S○○○○○SET	C14	Insert (Turning)
CCMW ○○○○(○)T○○○○○ME	C14	Insert (Turning)
CCMW ○○○○(○)(○)T○○○○○SE	C14	Insert (Turning)
CCMW ○○○○S○○○○○MET	C14	Insert (Turning)
CCN-5	H47	Coolant Piping
CCRN℞ ○○○○□-○○A	D32	Toolholder (Turning)
CD -○○○○(-C)	K110	Toolholder (Drilling) Coremaster Coredrill (CD)
CD -○○○○-LC	K111	Toolholder (Drilling) Coremaster Coredrill (CD-LC)
CD -○○○○-XL	K111	Toolholder (Drilling) Coremaster Coredrill (CD-XL)
CDJN℞ ○○○○□-○○	D27	Toolholder (Turning)
CE-010	P15	Spare Parts (Clamp Set)
CE-020	P15	Spare Parts (Clamp Set)
CE-030	P15	Spare Parts (Clamp Set)
CE-030A	P15	Spare Parts (Clamp Set)
CE-040	P15	Spare Parts (Clamp Set)
CE-111	P17	Spare Parts (Clamp)
CE-121	P17	Spare Parts (Clamp)
CE-131	P17	Spare Parts (Clamp)
CE-141	P17	Spare Parts (Clamp)
CE-220	P15	Spare Parts (Clamp Set)
CE-320	P15	Spare Parts (Clamp Set)
CE-360S	P15	Spare Parts (Clamp Set)
CE-410	P15	Spare Parts (Clamp Set)
CE-430	P15	Spare Parts (Clamp Set)
CELN℞ ○○○○□-○○	D27	Toolholder (Turning)
CEM ○○○○-○W(-7.5)	M161	End Mill (CEM)
CGA-3℞	P17	Spare Parts (Clamp)
CGA-4℞	P17	Spare Parts (Clamp)
CGA-5℞	P17	Spare Parts (Clamp)
CGB℞	P17	Spare Parts (Clamp)
CGH-1℞	P17	Spare Parts (Clamp)
CGH-2℞	P17	Spare Parts (Clamp)
CGH-3℞	P17	Spare Parts (Clamp)
CGIA-3R	P17	Spare Parts (Clamp)
CGIA-4R	P17	Spare Parts (Clamp)
CGIA-5R	P17	Spare Parts (Clamp)
CH0503-45	K61	Insert (Drilling) DRV MAGIC DRILL

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Part Numbers in Alphanumeric Order

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Part Number	Page	Description
CH-20R	P17	Spare Parts (Clamp)
CIN□□ ○○○○S-○○	J22	Toolholder (Threading)
CL63-1	P21	Spare Parts (Coolant Pipe)
CL100-1	P21	Spare Parts (Coolant Pipe)
CM ○○○○-○○(.○)	M247	End Mill (Chamfering)
CM ○○○○-○○-○○	M247	End Mill (Chamfering)
CM ○○○○-○○-AL	M247	End Mill (Chamfering)
CNGA ○○○	B21	Insert (Turning)
CNGA ○○○MEF	C6	Insert (Turning)
CNGA ○○○ME4	C6	Insert (Turning)
CNGA ○○○S○○○○○	B106	Insert (Turning)
CNGA ○○○(○)S○○○○○ME	C6	Insert (Turning)
CNGA ○○○S○○○○○MEH	C6	Insert (Turning)
CNGA ○○○S○○○○○MEP	C6	Insert (Turning)
CNGA ○○○S○○○○○MET	C6	Insert (Turning)
CNGA ○○○S○○○○○MEW	C6	Insert (Turning)
CNGA ○○○S○○○○○SE	C7	Insert (Turning)
CNGA ○○○S○○○○○SET	C7	Insert (Turning)
CNGA ○○○T○○○○○	B106	Insert (Turning)
CNGA ○○○T○○○○○AA	B106	Insert (Turning)
CNGA ○○○T○○○○○ME	C6	Insert (Turning)
CNGG ○○○AH	B22	Insert (Turning)
CNGG ○○○FP-TK	B19	Insert (Turning)
CNGG ○○○HQ	B16	Insert (Turning)
CNGG ○○○(○)MFP-SK	B19	Insert (Turning)
CNGG ○○○(○)MU	B20	Insert (Turning)
CNGG ○○○□□	B22	Insert (Turning)
CNGG ○○○F□□	B22	Insert (Turning)
CNGG ○○○□□-25R	B22	Insert (Turning)
CNGG ○○○□□-A3	B22	Insert (Turning)
CNGG ○○○(○)□□-S	B22	Insert (Turning)
CNGG ○○○TK	B19	Insert (Turning)
CNGG ○○○Z	B22	Insert (Turning)
CNGM ○○○ME-HD	C7	Insert (Turning)
CNGM ○○○ME-HH	C7	Insert (Turning)
CNGM ○○○ME-HL	C7	Insert (Turning)
CNGM ○○○S○○○○○BB○	C7	Insert (Turning)
CNG ○○○T○○○○○AA	B106	Insert (Turning)
CNG ○○○T○○○○○	B106	Insert (Turning)
CNGU ○○○○(○)MER-U	B50	Insert (Turning)
CNGU ○○○○(○)(○)MFR-F	B50	Insert (Turning)
CNGU ○○○○(○)(○)MFR-U	B50	Insert (Turning)
CNGU ○○○○○MF-SK	B50	Insert (Turning)
CNGU ○○○○○MFP-SK	B50	Insert (Turning)
CNGX ○○○T○○○○○	B106	Insert (Turning)
CNM ○○○	C19	Insert (Turning)
CNM ○○○T○○○○○	B106	Insert (Turning)
CNMA ○○○	B21	Insert (Turning)
CNMA ○○○T○○○○○AA	B106	Insert (Turning)

Part Number	Page	Description
CNMG ○○○	B18	Insert (Turning)
CNMG ○○○AH	B22	Insert (Turning)
CNMG ○○○C	B21	Insert (Turning)
CNMG ○○○CJ	B17	Insert (Turning)
CNMG ○○○CQ	B17	Insert (Turning)
CNMG ○○○GC	B21	Insert (Turning)
CNMG ○○○(○)GP	B16	Insert (Turning)
CNMG ○○○GS	B17	Insert (Turning)
CNMG ○○○GT	B18	Insert (Turning)
CNMG ○○○HQ	B16	Insert (Turning)
CNMG ○○○HS	B17	Insert (Turning)
CNMG ○○○KG	B21	Insert (Turning)
CNMG ○○○KH	B21	Insert (Turning)
CNMG ○○○KQ	B21	Insert (Turning)
CNMG ○○○MQ	B20	Insert (Turning)
CNMG ○○○MS	B20	Insert (Turning)
CNMG ○○○MU	B20	Insert (Turning)
CNMG ○○○PG	B17	Insert (Turning)
CNMG ○○○PH	B18	Insert (Turning)
CNMG ○○○(○)PP	B16	Insert (Turning)
CNMG ○○○PQ	B16	Insert (Turning)
CNMG ○○○PS	B17	Insert (Turning)
CNMG ○○○PT	B18	Insert (Turning)
CNMG ○○○SG	B20	Insert (Turning)
CNMG ○○○SQ	B20	Insert (Turning)
CNMG ○○○TK	B19	Insert (Turning)
CNMG ○○○TN-V	B17	Insert (Turning)
CNMG ○○○WE	B16	Insert (Turning)
CNMG ○○○WF	B16	Insert (Turning)
CNMG ○○○WP	B16	Insert (Turning)
CNMG ○○○WQ	B16	Insert (Turning)
CNMG ○○○XF	B19	Insert (Turning)
CNMG ○○○XP	B19	Insert (Turning)
CNMG ○○○XQ	B19	Insert (Turning)
CNMG ○○○XS	B19	Insert (Turning)
CNMG ○○○ZS	B21	Insert (Turning)
CNMM ○○○(○)M	C23	Insert (Turning)
CNMM ○○○(○)M-NE	C23	Insert (Turning)
CNMM ○○○(○)M-SE	C23	Insert (Turning)
CNMM ○○○PX	B19	Insert (Turning)
CNMM ○○X□□-SX	B21	Insert (Turning)
CNMU ○○○○(○)E-GK	B50	Insert (Turning)
CP-2D	P18	Spare Parts (Clamp)
CP-2D-□□-JCT	P18	Spare Parts (Clamp)
CP-3D	P18	Spare Parts (Clamp)
CP-3D-□□-JCT	P18	Spare Parts (Clamp)
CP-4D-□□-JCT	P18	Spare Parts (Clamp)
CP-5D	P18	Spare Parts (Clamp)
CP-5D-JCT	P18	Spare Parts (Clamp)

Part Numbers in Alphanumeric Order

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Part Number	Page	Description
CP-8TE	P18	Spare Parts (Clamp)
CP-8W	P18	Spare Parts (Clamp)
CP8X15TL	P2	Spare Parts (Screw)
CP8X23TL	P2	Spare Parts (Screw)
CPGB ○○○S○○○○○MES	C14	Insert (Turning)
CPGB ○○○(○)(○)S○○○○○MET	C14	Insert (Turning)
CPGB ○○○(○)(○)S○○○○○SET	C14	Insert (Turning)
CPGB ○○○(○)(○)T○○○○○ME	C14	Insert (Turning)
CPGB ○○○(○)(○)(○)T○○○○○SE	C14	Insert (Turning)
CPGT ○○○○(○)	B60	Insert (Turning)
CPMB ○○○(○)(○)(○)	B61	Insert (Turning)
CPMH ○○○(○)(○)(○)	B61, C25	Insert (Turning)
CPMH ○○○(○)(○)HQ	B61	Insert (Turning)
CPMH ○○○(○)(○)(○)NE	C25	Insert (Turning)
CPMH ○○○(○)(○)R/L-Y	B61	Insert (Turning)
CPMH ○○○(○)SE	C25	Insert (Turning)
CPMT ○○○(○)(○)GP	B61	Insert (Turning)
CPMT ○○○(○)(○)(○)PP	B61	Insert (Turning)
CPMT ○○○(○)(○)XP	B61	Insert (Turning)
CPMT ○○○XQ	B61	Insert (Turning)
CP-RCR/L	P15	Spare Parts (Clamp Set)
CPS-1	P16	Spare Parts (Clamp Set)
CPS-2	P16	Spare Parts (Clamp Set)
CPS-2P	P16	Spare Parts (Clamp Set)
CPS-2S	P16	Spare Parts (Clamp Set)
CPS-2TR	P16	Spare Parts (Clamp Set)
CPS-3	P16	Spare Parts (Clamp Set)
CPS-4V	P16	Spare Parts (Clamp Set)
CPS-5E	P16	Spare Parts (Clamp Set)
CPS-5F	P16	Spare Parts (Clamp Set)
CPS-5R/L	P16	Spare Parts (Clamp Set)
CPS-5S	P16	Spare Parts (Clamp Set)
CPS-5V	P16	Spare Parts (Clamp Set)
CPS-6F	P16	Spare Parts (Clamp Set)
CPS-6M	P16	Spare Parts (Clamp Set)
CPS-6S	P16	Spare Parts (Clamp Set)
CPS-6V	P16	Spare Parts (Clamp Set)
CPS-8V	P16	Spare Parts (Clamp Set)
CP-ST-R1/8	H15	Coolant Coupler
CRDCN ○○-○	D31	Toolholder (Turning)
CRDNN ○○-○□	D31	Toolholder (Turning)
CRDNN ○○○○□-○○	D31	Toolholder (Turning)
CRDNN ○○○○□-○○A	D33	Toolholder (Turning)
CRSNR/L ○○○○□-○○	D31	Toolholder (Turning)
CRSNR/L ○○○○□-○○A	D33	Toolholder (Turning)
CS ○○-○○○	K117	Toolholder (Drilling) Countersink (CS)
CS-3D-TR	P2	Spare Parts (Screw)
CSDNN ○○○○□-○○	D29	Toolholder (Turning)
CSDNN ○○○○□-○○A	D35	Toolholder (Turning)

Part Number	Page	Description
CSKNR/L ○○○○□-○○	D29	Toolholder (Turning)
CSKNR ○○○○□-○○A	D34	Toolholder (Turning)
CS-NR/L ○○○○□-○○	D29	Toolholder (Turning)
CSRNR/L ○○-○□	D29	Toolholder (Turning)
CSRNR/L ○○○○□-○○	D29	Toolholder (Turning)
CSRNR/L ○○○○□-○○A	D34	Toolholder (Turning)
CSSNR/L ○○-○□	D29	Toolholder (Turning)
CSSNR/L ○○○○□-○○	D29	Toolholder (Turning)
CSSNR/L ○○○○□-○○A	D35	Toolholder (Turning)
CSYNR/L ○○○○□-○○	D29	Toolholder (Turning)
CSYNR/L ○○○○□-○○A	D34	Toolholder (Turning)
CT○○T○ -45A	K31	Chamfer Insert (Drilling) DRC MAGIC DRILL
CT○○T○ -45DA	K20	Chamfer Insert (Drilling) DRA MAGIC DRILL
CTDPR ○○CA○○	N25	Toolholder (Cartridge)
CTEPR ○○CA○○	N25	Toolholder (Cartridge)
CTFPR ○○CA○○	N25	Toolholder (Cartridge)
CTJNR/L ○○-○□	D30	Toolholder (Turning)
CTJNR/L ○○○○□-○○	D30	Toolholder (Turning)
CTJNR/L ○○○○□-○○A	D36	Toolholder (Turning)
CTUNR/L ○○○○□-○○	D30	Toolholder (Turning)
CTUNR/L ○○○○□-○○A	D36	Toolholder (Turning)
D		
DA ○○○○M-FTP	K8	Insert (Drilling)
DA ○○○○M-GM	K6	Insert (Drilling)
DA ○○○○M-KM	K7	Insert (Drilling)
DB ○○○R○○	G55	Insert (Grooving)
DB ○○○□(□□)T00420	G55	Insert (Grooving)
DC ○○○○M-SC	K24~K26	Insert (Drilling) DRC MAGIC DRILL
DC-42	P9	Spare Parts (Shim)
DC-44	P9	Spare Parts (Shim)
DC-44-C	P9	Spare Parts (Shim)
DCET ○○○○○FR/L-JSF	B70	Insert (Turning)
DCET ○○○○○FR/L-USF	B68	Insert (Turning)
DCET ○○○○(○)(○)MFR/L-J	B70	Insert (Turning)
DCET ○○○○○MFR/L-JSF	B70	Insert (Turning)
DCET ○○○○(○)(○)MFR/L-U	B68	Insert (Turning)
DCET ○○○○○(○)MFR/L-USF	B68	Insert (Turning)
DCET ○○○○(○)(○)MR/L-F	B66	Insert (Turning)
DCET ○○○○(○)(○)MR/L-FSF	B66	Insert (Turning)
DCET ○○○○(○)R/L-FSF	B66	Insert (Turning)
DCGT ○○○○(○)	B64	Insert (Turning)
DCGT ○○○○AH	B71	Insert (Turning)
DCGT ○○○○(○)AP	B71	Insert (Turning)
DCGT ○○○○○CF	B62	Insert (Turning)
DCGT ○○○○○CK	B62	Insert (Turning)
DCGT ○○○○(○)ER/L-J	B71	Insert (Turning)
DCGT ○○○○(○)ER/L-U	B69	Insert (Turning)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
DCGT	○○○○(○)F℅-J	B70	Insert (Turning)
DCGT	○○○○○F℅-U	B68	Insert (Turning)
DCGT	○○○○(○)FN-Z	B64	Insert (Turning)
DCGT	○○○○(○)M	B64	Insert (Turning)
DCGT	○○○○○M-CF	B62	Insert (Turning)
DCGT	○○○○○M-CK	B62	Insert (Turning)
DCGT	○○○○(○)ME℅-J	B71	Insert (Turning)
DCGT	○○○○(○)ME℅-U	B69	Insert (Turning)
DCGT	○○○○(○)(○)MF	B64	Insert (Turning)
DCGT	○○○○(○)MF-GF	B62	Insert (Turning)
DCGT	○○○○(○)MF-GQ	B63	Insert (Turning)
DCGT	○○○○(○)MFP-GF	B62	Insert (Turning)
DCGT	○○○○(○)MFP-GQ	B63	Insert (Turning)
DCGT	○○○○(○)MFP-SK	B62	Insert (Turning)
DCGT	○○○○(○)(○)MFP-SKS	B62	Insert (Turning)
DCGT	○○○○(○)(○)MF℅-J	B70	Insert (Turning)
DCGT	○○○○(○)(○)MF℅-U	B69	Insert (Turning)
DCGT	○○○○○MP-CF	B62	Insert (Turning)
DCGT	○○○○○MP-CK	B63	Insert (Turning)
DCGT	○○○○(○)(○)M℅-F	B67	Insert (Turning)
DCGT	○○○○(○)℅-A3	B71	Insert (Turning)
DCGT	○○○○(○)℅-F	B67	Insert (Turning)
DCGT	○○○○(○)℅-FS	B67	Insert (Turning)
DCGW	○○○○(○)	B71	Insert (Turning)
DCLN℅	○○-○□	D8	Toolholder (Turning)
DCLN℅	○○-○□JCT	D8	Toolholder (Turning)
DCLN℅	○○○○□-○○	D8	Toolholder (Turning)
DCLN℅	○○○○□-○○JCT	D8	Toolholder (Turning)
DCMT	○○○○(○)	C25	Insert (Turning)
DCMT	○○○○(○)APD	C25	Insert (Turning)
DCMT	○○○○CQ	M29, M246	Insert (Milling) / API Insert (Ring Grooving)
DCMT	○○○○(○)GK	B64	Insert (Turning)
DCMT	○○○○(○)GP	B63	Insert (Turning)
DCMT	○○○○(○)HQ	B64, M29, M246	Insert (Turning/Milling) / API Insert (Ring Grooving)
DCMT	○○○○(○)MQ	B65	Insert (Turning)
DCMT	○○○○(○)NE	C25	Insert (Turning)
DCMT	○○○○(○)PP	B63	Insert (Turning)
DCMT	○○○○(○)℅-NE	C25	Insert (Turning)
DCMT	○○○○(○)SE	C25	Insert (Turning)
DCMT	○○○○(○)XP	B65	Insert (Turning)
DCMT	○○○○XQ	B65	Insert (Turning)
DCMW	○○○○MEF	C15	Insert (Turning)
DCMW	○○○○(○) S○○○○○MES	C15	Insert (Turning)
DCMW	○○○○(○) S○○○○○MET	C15	Insert (Turning)
DCMW	○○○○S○○○○○SET	C15	Insert (Turning)
DCMW	○○○○(○)T○○○○○ME	C15	Insert (Turning)
DCMW	○○○○(○)T○○○○○SE	C15	Insert (Turning)
DCMX	○○○○(○)WP	B63	Insert (Turning)
DCMX	○○○○℅-WP	B63	Insert (Turning)
DD-42		P9	Spare Parts (Shim)
DD-42-16		P9	Spare Parts (Shim)
DD-43		P9	Spare Parts (Shim)
DD-44		P9	Spare Parts (Shim)
DDJN℅	○○-○□	D12	Toolholder (Turning)
DDJN℅	○○-○□JCT	D12	Toolholder (Turning)
DDJN℅	○○○○□-○○○○	D12	Toolholder (Turning)
DDJN℅	○○○○M-○○JCT	D12	Toolholder (Turning)
DDHN℅	○○○○□-○○○○	D12	Toolholder (Turning)
DMC	○○○	M138	End Mill (DMC)
DMC	○○○H	M140	End Mill (DMC-H)
DMC	○○○SX	M139	End Mill (DMC-SX)
DMC	○○○SXT	M139	End Mill (DMC-SX)
DMC	○○○SX-○○○	M139	End Mill
DMC	○○○-S○○	M138	End Mill (DMC)
DN10		P21	Spare Parts (Nozzle)
DN20		P21	Spare Parts (Nozzle)
DNG	○○○S○○○○○	B107	Insert (Turning)
DNG	○○○T○○○○○	B107	Insert (Turning)
DNG	○○○T○○○○○AA	B107	Insert (Turning)
DNGA	○○○MEF	C8	Insert (Turning)
DNGA	○○○ME4	C8	Insert (Turning)
DNGA	○○○S○○○○○	B107	Insert (Turning)
DNGA	○○○(○)S○○○○○ME	C8	Insert (Turning)
DNGA	○○○S○○○○○MEH	C8	Insert (Turning)
DNGA	○○○S○○○○○MEP	C8	Insert (Turning)
DNGA	○○○S○○○○○MET	C8	Insert (Turning)
DNGA	○○○(○)S○○○○○SE	C9	Insert (Turning)
DNGA	○○○T○○○○○	B107	Insert (Turning)
DNGA	○○○T○○○○○AA	B107	Insert (Turning)
DNGA	○○○T○○○○○ME	C8	Insert (Turning)
DNGG	○○○AH	B30	Insert (Turning)
DNGG	○○○FP-TK	B27	Insert (Turning)
DNGG	○○○(○)MFP-SK	B27	Insert (Turning)
DNGG	○○○℅	B30	Insert (Turning)
DNGG	○○○℅-A3	B30	Insert (Turning)
DNGG	○○○(○)℅-S	B30	Insert (Turning)
DNGG	○○○TK	B27	Insert (Turning)
DNGM	○○○ME-HD	C9	Insert (Turning)
DNGM	○○○ME-HH	C9	Insert (Turning)
DNGM	○○○ME-HL	C9	Insert (Turning)
DNGM	○○○S○○○○○BB○	C9	Insert (Turning)
DNGU	○○○○(○)MER-U	B51	Insert (Turning)
DNGU	○○○○(○)MFP-SK	B51	Insert (Turning)
DNGU	○○○○(○)(○)MFR-F	B51	Insert (Turning)
DNGU	○○○○(○)(○)MFR-U	B51	Insert (Turning)
DNGU	○○○○(○)MF-SK	B51	Insert (Turning)
DNGX	○○○T○○○○○	B107	Insert (Turning)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
DNMA	○○○	B30	Insert (Turning)
DNMG	○○○	B26	Insert (Turning)
DNMG	○○○AH	B30	Insert (Turning)
DNMG	○○○C	B29	Insert (Turning)
DNMG	○○○CJ	B24	Insert (Turning)
DNMG	○○○CQ	B24	Insert (Turning)
DNMG	○○○GC	B29	Insert (Turning)
DNMG	○○○(○)GP	B23	Insert (Turning)
DNMG	○○○GS	B24	Insert (Turning)
DNMG	○○○GT	B25	Insert (Turning)
DNMG	○○○(○)HQ	B24	Insert (Turning)
DNMG	○○○HS	B25	Insert (Turning)
DNMG	○○○KG	B29	Insert (Turning)
DNMG	○○○KH	B29	Insert (Turning)
DNMG	○○○KQ	B29	Insert (Turning)
DNMG	○○○MQ	B27	Insert (Turning)
DNMG	○○○MS	B28	Insert (Turning)
DNMG	○○○MU	B28	Insert (Turning)
DNMG	○○○PG	B25	Insert (Turning)
DNMG	○○○PH	B26	Insert (Turning)
DNMG	○○○(○)PP	B23	Insert (Turning)
DNMG	○○○PQ	B23	Insert (Turning)
DNMG	○○○PS	B25	Insert (Turning)
DNMG	○○○PT	B25	Insert (Turning)
DNMG	○○○(○)R-LD	B27	Insert (Turning)
DNMG	○○○SG	B28	Insert (Turning)
DNMG	○○○SQ	B28	Insert (Turning)
DNMG	○○○TK	B27	Insert (Turning)
DNMG	○○○TN-V	B24	Insert (Turning)
DNMG	○○○XF	B26	Insert (Turning)
DNMG	○○○XP	B26	Insert (Turning)
DNMG	○○○XQ	B26	Insert (Turning)
DNMG	○○○XS	B26	Insert (Turning)
DNMG	○○○ZS	B29	Insert (Turning)
DNMM	○○○(○)M	C23	Insert (Turning)
DNMM	○○○(○)M-NE	C23	Insert (Turning)
DNMM	○○○(○)M-SE	C23	Insert (Turning)
DNMM	○○○PX	B26	Insert (Turning)
DNMP	○○○TK	B24	Insert (Turning)
DNMU	○○○○(○)E-GK	B51	Insert (Turning)
DNMX	○○○WF	B23	Insert (Turning)
DPET	○○○○○F℞-USF	B72	Insert (Turning)
DPET	○○○○○MF℞-USF	B72	Insert (Turning)
DPET	○○○○○M℞-FSF	B72	Insert (Turning)
DPET	○○○○○℞-FSF	B72	Insert (Turning)
DR	○○-○○(□)	M201	Spare Parts (Drive-Ring)
DR	○○○○-○○○○(□)	M200	Spare Parts (Drive-Ring)
DR	-○○○○	K103~K107	Toolholder (Drilling) HOLESHOT Drill (DR)
DR	-○○○○-X1	K106~K107	Toolholder (Drilling) HOLESHOT Drill (DR)
DR	-○○○○-X3N	K103~K107	Toolholder (Drilling) HOLESHOT Drill (DR)
DS	○○○	K66	Insert (Drilling) DRS MAGIC DRILL
DRV	CH○○	K60	Chamfering Attachment DRV MAGIC DRILL
DS-42		P9	Spare Parts (Shim)
DS-44		P9	Spare Parts (Shim)
DSBN℞	○○○○□-○○	D14	Toolholder (Turning)
DT-7		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DT-8		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DT-10		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DT-15		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DT-20		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DT-25		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DT-32		P9	Spare Parts (Shim)
DT-42		P9	Spare Parts (Shim)
DTGN℞	○○○○□-○○	D16	Toolholder (Turning)
DTM-6		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DTM-7		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DTM-8		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DTM-10		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DTM-15		P19	Spare Parts (Torx Wrench / Screwdriver Type)
DTP-6		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DTP-7		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DTP-9		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DTP-15		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DTP-20		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DTPM-8		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DTPM-10		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DTPM-15		P19	Spare Parts (Torx Plus Wrench / Screwdriver Type)
DV-33		P9	Spare Parts (Shim)
DVJN℞	○○-○□	D20	Toolholder (Turning)
DVLN℞	○○○○□-○○	D20	Toolholder (Turning)
DVPN℞	○○-○□	D20	Toolholder (Turning)
DVPN℞	○○○○□-○○	D20	Toolholder (Turning)
DW-42		P9	Spare Parts (Shim)
DW-44		P9	Spare Parts (Shim)
DWLN℞	○○-○□	D24	Toolholder (Turning)
DWLN℞	○○○○□-○○	D24	Toolholder (Turning)
DWLN℞	○○-○□JCT	D24	Toolholder (Turning)
DWLN℞	○○○○□-○○JCT	D24	Toolholder (Turning)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
DVVNN	○○-○□	D20	Toolholder (Turning)
DVVNN	○○○○□-○○	D20	Toolholder (Turning)
E			
E○○□-	SCLC%○A	F45	Boring Bars (Dynamic Bar)
E○○□-	SCLC%○A-○/○	F45	Boring Bars (Dynamic Bar)
E○○□-	SCLC%○○-○○A	F45	Boring Bars (Dynamic Bar)
E○○□-	SCLC%○○-○○A-○/○	F45	Boring Bars (Dynamic Bar)
E○○□-	SCLC%○○-○○AN	F45	Boring Bars (Dynamic Bar)
E○○□-	SCLC%○○-○○AN-○/○	F45	Boring Bars (Dynamic Bar)
E○○□-	SCLP%○○-○○A	F49	Boring Bars (Dynamic Bar)
E○○□-	SCLP%○○-○○A-○/○	F49	Boring Bars (Dynamic Bar)
E○○□-	SCLP%○○-○○AN	F49	Boring Bars (Dynamic Bar)
E○○□-	SCLP%○○-○○AN-○/○	F49	Boring Bars (Dynamic Bar)
E○○□-	SDQC%○A	F54	Boring Bars (Dynamic Bar)
E○○□-	SDQC%○A-○/○	F54	Boring Bars (Dynamic Bar)
E○○□-	SDQC%○○-○○A	F54	Boring Bars (Dynamic Bar)
E○○□-	SDQC%○○-○○A-○/○	F54	Boring Bars (Dynamic Bar)
E○○□-	SDUC%○A	F53	Boring Bars (Dynamic Bar)
E○○□-	SDUC%○A-○/○	F53	Boring Bars (Dynamic Bar)
E○○□-	SDUC%○○-○○A	F53	Boring Bars (Dynamic Bar)
E○○□-	SDUC%○○-○○A-○/○	F53	Boring Bars (Dynamic Bar)
E○○□-	SDZC%○○-○○A	F55	Boring Bars (Dynamic Bar)
E○○□-	STLP%○○-○○A	F61	Boring Bars (Dynamic Bar)
E○○□-	STLP%○○-○○A-○/○	F61	Boring Bars (Dynamic Bar)
E○○□-	STLP%○○-○○AN	F61	Boring Bars (Dynamic Bar)
E○○□-	STLP%○○-○○AN-○/○	F61	Boring Bars (Dynamic Bar)
E○○□-	SVPB%○○-○○A	F68	Boring Bars (Dynamic Bar)
E○○□-	SVPC%○○-○○A	F68	Boring Bars (Dynamic Bar)
E○○□-	SVUB%○○-○○A	F71	Boring Bars (Dynamic Bar)
E○○□-	SVUC%○○-○○A	F71	Boring Bars (Dynamic Bar)
E○○□-	SWUB%○○-○○AN	F75	Boring Bars (Dynamic Bar)
E○○□-	SWUB%○○-○○AN-○/○	F75	Boring Bars (Dynamic Bar)
E○○□-	SWUP%○○-○○A	F75	Boring Bars (Dynamic Bar)
E○○□-	SWUP%○○-○○A-○/○	F75	Boring Bars (Dynamic Bar)
EGT	16-1	G54	Toolholder (External Grooving)
EM	○○○○	M156	End Mill
EM	○○○○-○○	M156	End Mill
EM	○○○○-○○-3F	M156	End Mill
EM	○○○○-○○○S	M156	End Mill
EM	○○○○-○.○	M156	End Mill (Extended Length)
EM	○○○○-AL	M159	End Mill (for Aluminum Machining)
EM	○○○○-○.○○(○)-AL	M159	End Mill (for Aluminum Machining)
EM	○○○○-3F	M156	End Mill
EM	○○○○-○○○○-LE	M157	End Mill (Long Edge)
ENG	○○○T○○○○○	B107	Insert (Turning)
ENG	○○○T○○○○○AA	B107	Insert (Turning)
ENET	○○○○PAER-□	M146	Insert (Milling) MFAH
EZBFR	○○○○○○-○○○	F23	EZ Bars (Boring)
EZBR	○○○○○○-○○○NB	C21, C33, F21	EZ Bars (Boring)
EZB%L	○○○○○○HP-○○○F	F18	EZ Bars (Boring)
EZB%L	○○○○○○HP-○○○H	F18	EZ Bars (Boring)
EZBR	○○○○○○HP-○○○H-LT	F19	EZ Bars (Boring)
EZBR	○○○○○○ST-○○○F	F20	EZ Bars (Boring)
EZBR	○○○○○○ST-○○○H	F20	EZ Bars (Boring)
EZBTR	○○○○○○-○○○	F26	EZ Bars (Back Boring)
EZFG%L	○○○○○○-○○○	G90	EZ Bars (Internal Face Grooving)
EZG%L	○○○○○○-○○○	G59	EZ Bars (Internal Grooving)
EZG%L	○○○○○○-○○○S	G59	EZ Bars (Internal Grooving)
EZTR	○○○○○○-○○-○○○	J32	EZ Bars (Internal Threading)
EZH	○○○○○(.○)CT-○○○	F30, F31, F100, G60, G91, J33	Sleeve
EZH	○○○○○(.○)HP-○○○	F32, F33, F100, G60, G91, J33	Sleeve
EZH	○○○○○(.○)ST-○○○	F34, F100, G60, G91, J33	Sleeve
EZVBR	○○○○○○-○○○	F24	EZ Bars (Boring / Internal Facing / Internal Profiling)
F			
FGG%L	○○○○-○○	G45	Insert (Grooving)
FH-2		P19	Spare Parts (Hexagon Wrench / Flag Type)
FH-2.5		P19	Spare Parts (Hexagon Wrench / Flag Type)
FM	○○○○-90RH	M158	Face Mill (Fixed Pocket)
FM	○○○○-90AL-(125)	M159	Face Mill (Fixed Pocket)
FM	AL-○○○○-90-○	M159	Face Mill (Fixed Pocket)
FMM	○○-○○	G135	Insert (Grooving)
FMN	○	G135	Insert (Grooving)
FT-6		P19	Spare Parts (Torx Wrench / Flag Type)
FT-7		P19	Spare Parts (Torx Wrench / Flag Type)
FT-8		P19	Spare Parts (Torx Wrench / Flag Type)
FT-10		P19	Spare Parts (Torx Wrench / Flag Type)
FT-15		P19	Spare Parts (Torx Wrench / Flag Type)
FTK	○	G137	Insert (Face Grooving)
FTP-5		P19	Spare Parts (Torx Plus Wrench / Flag Type)
FTP-6		P19	Spare Parts (Torx Plus Wrench / Flag Type)
FTP-7		P19	Spare Parts (Torx Wrench / Flag Type)
G			
GA	○○	G53	Insert (Grooving)
GBA	○○%○○○MY(N)	G7	Insert (Grooving)
GBA	○○%○○○N	G6	Insert (Grooving)
GBA	○○%○○○R	G7	Insert (Grooving)
GBA	○○%○○○-(○○○)	C20, C30, G8, G11	Insert (Grooving)
GBA	○○%○○○-○○○F	G9	Insert (Grooving)
GBA	○○%○○○-○○○GM	G9	Insert (Grooving)
GBA	○○%○○○-○○○MY	G9	Insert (Grooving)
GBA	○○%○○○-○○○R	G10	Insert (Grooving)
GBA	○○%○○○-○○○RF	G10	Insert (Grooving)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
GBF	○○R○○○-○○○	G16	Insert (Grooving)
GBF	○○R○○○-○○○GL	G16	Insert (Grooving)
GC	○○R○○○-○○○	G64	Insert (Grooving)
GDFM	○○○○N-○○○DM	G97	Insert (Face)
GDFM	○○○○N-○○○GH	G97	Insert (Face Grooving)
GDFM	○○○○N-○○○GM	G97	Insert (Face Grooving)
GDFM	○○○○N-○○○R-CM	G97	Insert (Face Grooving)
GDFMS	○○○○N-○○○DM	G97	Insert (Face Grooving)
GDG	○○○○N-○○○GS	G26	Insert (Grooving)
GDG	○○○○N-○○○PG	H20	Insert (Cut-Off)
GDG	○○○○R-○○○PG-○○D	H20	Insert (Cut-Off)
GDGS	○○○○N-○○○NB	C20, C31, G27	Insert (Grooving)
GDM	○○○○N-○○○GL	G26	Insert (Grooving)
GDM	○○○○N-○○○GM	G26	Insert (Grooving)
GDM	○○○○N-○○○GMI	G79	Insert (Grooving)
GDM	○○○○N-○○○PF	H20	Insert (Cut-Off)
GDM	○○○○N-○○○PH	G26, H21	Insert (Grooving / Cut-Off)
GDM	○○○○N-○○○PM	H21	Insert (Cut-Off)
GDM	○○○○N-○○○PQ	H20	Insert (Cut-Off)
GDM	○○○○N-○○○R-CM	G26, G79	Insert (Grooving)
GDM	○○○○R-○○○PF-○○D	H20	Insert (Cut-Off)
GDM	○○○○R-○○○PM-○D	H21	Insert (Cut-Off)
GDM	○○○○R-○○○PQ-○○D	H20	Insert (Cut-Off)
GDMS	○○○○N-○○○GM	G26	Insert (Grooving)
GDMS	○○○○N-○○○PH	G26, H21	Insert (Grooving / Cut-Off)
GDMS	○○○○N-○○○PM	H21	Insert (Cut-Off)
GDMS	○○○○R-○○○PM-○D	H21	Insert (Cut-Off)
GER	○○○-○○○R	G68	Insert (Grooving)
GER	○○○-○○○□□	G66, G67	Insert (Grooving)
GFVR	○○○○□-○○○(○)□	G126	Toolholder (Face Grooving)
GFVSR	○○-H□	G128	Toolholder (Face Grooving)
GFVSR	○○○○□-H□	G130	Toolholder (Face Grooving)
GFVSR	○○○○□-○○AA	G124	Toolholder (Face Grooving)
GFVSR	○○-○○○(○)□	G129	Toolholder (Face Grooving)
GFVSR	○○○○□-○○○(○)□	G130	Toolholder (Face Grooving)
GFVTR	○○-H□	G128	Toolholder (Face Grooving)
GFVTR	○○○○□-H□	G130	Toolholder (Face Grooving)
GFVTR	○○○○□-○○AA	G124	Toolholder (Face Grooving)
GFVTR	○○-○○○(○)□	G129	Toolholder (Face Grooving)
GFVTR	○○○○□-○○○(○)□	G130	Toolholder (Face Grooving)
GG	○○○-○○T00320	G54	Insert (Grooving)
GH	○○○○(○)-○○	B115, G53, G80	Insert (Grooving)
GHU	○○-○○	G53, G80	Insert (Grooving)
GIA	○○	G82	Insert (Grooving)
GIFVR	○○○○B-○○○□	G138	Toolholder (Face Grooving)
GIVR	○○○○-○□(□)	G75	Toolholder (Grooving)
GMG	○○○○-○○MG	G81	Insert (Grooving / Previous Description)
GMG	○○○○-○○(○)MG	G44, G81, G135	Insert (Grooving)
GMG	○○○○-○○○MS	G44	Insert (Grooving)
GMG	○○○○-○○○R	G44, G81	Insert (Grooving)
GMG	○○○○-○○○RU	G44	Insert (Grooving)
GMGA	○○○○-○○R	G81	Insert (Grooving / Previous Description)
GMGA	○○○○-○○○R	G45, G81, G135	Insert (Grooving)
GMGW	○○○○-○○R	C31, G56	Insert (Grooving)
GMGW	○○○○-○○R-HR	C31, G56	Insert (Grooving)
GMM	3014-04	G45	Insert (Grooving)
GMM	3014-15R	G45	Insert (Grooving)
GMM	3014-15RU	G45	Insert (Grooving)
GMM	○○○○-MT	G46, H34	Insert (Grooving)
GMM	○○○○-NB	G46, H34	Insert (Grooving)
GMM	○○○○R-MT-15D	G46, H34	Insert (Grooving)
GMM	○○○○R-TK-8D	G46, H34	Insert (Grooving)
GMM	○○○○R-TMR-6D	H34	Insert (Grooving)
GMM	○○○○-TK	G46, H34	Insert (Grooving)
GMM	○○○○-TMR	H34	Insert (Grooving)
GMM	○○○○-○○	G81	Insert (Grooving / Previous Description)
GMM	○○○○-○○V	G83	Insert (Grooving / Previous Description)
GMM	○○○○-○○VR	G83	Insert (Grooving / Previous Description)
GMM	○○○○-○○○MS	G44	Insert (Grooving)
GMM	○○○○-○○○MW	G44, G81, G135	Insert (Grooving)
GMM	○○○○-○○○R	G44	Insert (Grooving)
GMM	○○○○-○○○V	G83	Insert (Grooving)
GMM	○○○○-○○○VR	G83	Insert (Grooving)
GMN	○(.○)	C20, C30, G46, G47, H34	Insert (Grooving)
GMN	○-TK	G46, H34	Insert (Grooving)
GMR	○-TK-8D	G46, H34	Insert (Grooving)
GMR	○(.○)-○(○)D	G46, H34	Insert (Grooving)
GOMT	○○(□)○○○(○)ER-D	M23, M195	Insert (Milling) MEY
GP-1(N)		P21	Spare Parts (Plug)
GP-2(N)		P21	Spare Parts (Plug)
GS-50		P2	Spare Parts (Screw)
GVR	○○-○○○	G73	Insert (Grooving / Previous Description)
GVR	○○○□R	G73	Insert (Grooving / Previous Description)
GVR	○○○□(□)	C30	Insert (Grooving / Previous Description)
GVR	○○○-○○○□(□)	C30, G73, M255	Insert (Grooving)
GVFR	○○○□	C30, G73	Insert (Grooving / Previous Description)
GVFR	○○○AA	G125	Insert (Grooving / Previous Description)
GVFR	○○○-○○○AA	G125	Insert (Grooving)
GVFR	○○○-○○○□	C30, G132, M256	Insert (Grooving)
GVFR	○○○-○○○□R	G132	Insert (Grooving)
H			
HA○○	PCLNR 12-○○	F81	Boring Bar (AD Bar Interchangeable Head)
HA○○	PDUNR 15-○○	F82	Boring Bar (AD Bar Interchangeable Head)

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Part Numbers in Alphanumeric Order

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Part Number	Page	Description
HA○○ PTFN□16-○○	F82	Boring Bar (AD Bar Interchangeable Head)
HA○○ SCLC□09-○○	F83	Boring Bar (AD Bar Interchangeable Head)
HA○○ SDUC□11-○○	F83	Boring Bar (AD Bar Interchangeable Head)
HCLN□ ○○-○□	D26	Toolholder (Turning)
HF16X40HA	P2	Spare Parts (Screw with Coolant Hole)
HF16X40S	P2	Spare Parts (Screw)
HF16X44HC	P21	Spare Parts (Screw with Coolant Hole)
HF16X48HC	P21	Spare Parts (Screw with Coolant Hole)
HF20X53H	P2	Spare Parts (Screw)
HF20X53HA	P2	Spare Parts (Screw with Coolant Hole)
HF24X60H	P2	Spare Parts (Screw)
HF24X60HA	P2	Spare Parts (Screw with Coolant Hole)
HH1/2-1.25	P2	Spare Parts (Arbor / Mounting Bolt)
HH1/2-1.25H	P2	Spare Parts (Arbor / Mounting Bolt)
HH1/4-0.75	P2	Spare Parts (Arbor / Mounting Bolt)
HH3/4-2.3	P2	Spare Parts (Arbor / Mounting Bolt)
HH3/4-2.3H	P2	Spare Parts (Arbor / Mounting Bolt)
HH3/8-1.25	P2	Spare Parts (Arbor / Mounting Bolt)
HH3/8-1.25H	P2	Spare Parts (Arbor / Mounting Bolt)
HH3/8-1.5	P2	Spare Parts (Arbor / Mounting Bolt)
HH3X6	P3	Spare Parts (Screw)
HH3X12	P3	Spare Parts (Screw)
HH4X12	P4	Spare Parts (Screw)
HH4X16	P3	Spare Parts (Screw)
HH5X15	P3	Spare Parts (Screw)
HH5X16	P3	Spare Parts (Screw)
HH5X20	P3	Spare Parts (Screw)
HH5X25	P3	Spare Parts (Screw)
HH5X30	P3	Spare Parts (Screw)
HH6X12	P3	Spare Parts (Screw)
HH6X16	P3	Spare Parts (Screw)
HH6X16A	P3	Spare Parts (Screw)
HH6X18	P3	Spare Parts (Clamp Screw)
HH6X18A	P3	Spare Parts (Screw)
HH6X20	P3	Spare Parts (Screw)
HH6X25	P3	Spare Parts (Screw)
HH6X30	P3	Spare Parts (Screw)
HH8X20	P3	Spare Parts (Clamp Screw)
HH8X25	P3	Spare Parts (Screw)
HH8X25H	P4	Spare Parts (Screw)
HH10X25	P3	Spare Parts (Screw)
HH10X30	P3	Spare Parts (Screw)
HH10X30H	P4	Spare Parts (Screw)
HH10X30M	P3	Spare Parts (Screw)
HH10X30S	P3	Spare Parts (Screw)
HH10X35	P3	Spare Parts (Screw)
HH10X35HK	P4	Spare Parts (Screw)
HH10X40	P3	Spare Parts (Screw)
HH12X25	P3	Spare Parts (Screw)
HH12X35	P3	Spare Parts (Screw)
HH12X35H	P4	Spare Parts (Screw)
HH12x35HC	P21	Spare Parts (Screw with Coolant Hole)
HH12X35HK	P4	Spare Parts (Screw)
HH12X35M	P3	Spare Parts (Screw)
HH12X40	P3	Spare Parts (Screw)
HH12X55	P3	Spare Parts (Screw)
HH12X65	P3	Spare Parts (Screw)
HH12X80	P3	Spare Parts (Screw)
HH12X85	P3	Spare Parts (Screw)
HH12X100	P3	Spare Parts (Screw)
HH12X110	P3	Spare Parts (Screw)
HH12X120	P3	Spare Parts (Screw)
HH12X130	P3	Spare Parts (Screw)
HH12X140	P3	Spare Parts (Screw)
HH12X150	P3	Spare Parts (Screw)
HH16X35	P3	Spare Parts (Screw)
HH16X40	P3	Spare Parts (Screw)
HH16X45	P3	Spare Parts (Screw)
HH16X52H	P4	Spare Parts (Screw)
HH16X65	P3	Spare Parts (Screw)
HH16X90	P3	Spare Parts (Screw)
HH16X110	P3	Spare Parts (Screw)
HH16X130	P3	Spare Parts (Screw)
HH20X40	P3	Spare Parts (Screw)
HH20X53	P3	Spare Parts (Screw)
HH20X55	P3	Spare Parts (Screw)
HH20X75	P3	Spare Parts (Screw)
HH20X90	P3	Spare Parts (Screw)
HH20X110	P3	Spare Parts (Screw)
HH20X120	P3	Spare Parts (Screw)
HH20X140	P3	Spare Parts (Screw)
HH20X150	P3	Spare Parts (Screw)
HH20X170	P3	Spare Parts (Screw)
HH24X40	P3	Spare Parts (Screw)
HH24X60	P3	Spare Parts (Screw)
HH24X75	P3	Spare Parts (Screw)
HH24X90	P3	Spare Parts (Screw)
HH24X110	P3	Spare Parts (Screw)
HH24X120	P3	Spare Parts (Screw)
HH24X140	P3	Spare Parts (Screw)
HH24X150	P3	Spare Parts (Screw)
HH24X170	P3	Spare Parts (Screw)

Part Numbers in Alphanumeric Order

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Part Number	Page	Description
HRSN®L ○○-○□	D31	Toolholder (Turning)
HS3X4	P4	Spare Parts (Screw)
HS3X4P	P4	Spare Parts (Screw)
HS3X8	P4	Spare Parts (Screw)
HS3X12	P4	Spare Parts (Screw)
HS3X16	P4	Spare Parts (Screw)
HS4X4	P4	Spare Parts (Screw)
HS4X4P	P4	Spare Parts (Screw)
HS5X5	P4	Spare Parts (Screw)
HS6X4		Spare Parts (Balance Screw)
HS6X4P	P4	Spare Parts (Screw)
HS6X6	P4	Spare Parts (Screw)
HS6X8T	P4	Spare Parts (Screw)
HS6X14	P4	Spare Parts (Screw)
HS6X22	P4	Spare Parts (Screw)
HS8X10	P4	Spare Parts (Screw)
HS8X12	P4	Spare Parts (Screw)
HS10X10	P4	Spare Parts (Screw)
HS10X16	P4	Spare Parts (Screw)
HS12X12	P4	Spare Parts (Screw)
HS12X16	P4	Spare Parts (Screw)
HS12X18	P4	Spare Parts (Screw)
HS12X20	P4	Spare Parts (Screw)
HS12X25	P4	Spare Parts (Screw)
HS12X30	P4	Spare Parts (Screw)
HS12X35	P4	Spare Parts (Screw)
HS16X12	P4	Spare Parts (Screw)
HS16X18	P4	Spare Parts (Screw)
HS16X20	P4	Spare Parts (Screw)
HS-2524TRP	P4	Spare Parts (Clamp Screw)
HS-2534TRP	P4	Spare Parts (Clamp Screw)
HS-3048TRP	P4	Spare Parts (Clamp Screw)
HS-4067TRP	P4	Spare Parts (Clamp Screw)
HS-AN-AN- ○○○	D11, G33, H47	Spare Parts (Hose)
HSB4X8®L	P4	Spare Parts (Screw)
HS-G1/8-G1/8- ○○○	H15	Coolant Hose
HSDNN ○○-○□	D29	Toolholder (Turning)
HSRN®L ○○-○□	D29	Toolholder (Turning)
HS-ST-AN- ○○○	D11, G33, H47	Spare Parts (Hose)
HS-ST-ST- ○○○	D11, G33, H47	Spare Parts (Hose)
I		
J		
J-10X1.5-UNF3/8	D11, G33	Spare Parts (Joint)
JCET ○○○○○(○)M®L-F	B73	Insert (Turning)
JCET ○○○○○(○)M®L-FSF	B73	Insert (Turning)
JCET ○○○○○(○)®L-FSF	B73	Insert (Turning)
JCGT ○○○○○(○)M®L-F	B73	Insert (Turning)
JCGT ○○○○○(○)®L-F	B73	Insert (Turning)
J-G1/8-UNF3/8	D11, G33, H47	Piping Joint
J-M10X1.5-UNF3/8	H47	Piping Joint
JOMT ○○(□)○○○(○)ER-D	M23, M195	Insert (Milling) MEY
J-ST-NPT1/8-G1/8	H15	Coolant Joint
J-ST-NPT1/8-RC1/8	H15	Coolant Joint
J-ST-R1/4-G1/8	H15	Coolant Joint
J-ST-R1/4-RC1/8	H15	Coolant Joint
J-ST-R1/8-G1/8	H15	Coolant Joint
J-ST-R1/8-RC1/8	H15	Coolant Joint
K		
KDB®L 16-1	G55	Toolholder (External Grooving)
KCFP ○○○○®L	G133	Insert (Cera-Notch Grooving / Threading)
KCG ○○○○®L	G42, G84	Insert (Cera-Notch Grooving / Threading)
KCGDP ○○○○®L	G42, G84	Insert (Cera-Notch Grooving / Threading)
KCGP ○○○○®L	G42, G84	Insert (Cera-Notch Grooving / Threading)
KCGT ○○○○○○FR-AL	M15, M153	Insert (Milling) MEAS
KCRP ○○○○®L	G42, G84	Insert (Cera-Notch Grooving / Threading)
KCT ○®L	J24	Insert (Cera-Notch Grooving / Threading)
KCTP ○®L	J24	Insert (Cera-Notch Grooving / Threading)
KCTK ○®L	J24	Insert (Cera-Notch Grooving / Threading)
KFMS®L ○○-○-○○○○(○)(○)	G134, G135	Toolholder (Face Grooving)
KFMS®L ○○○○□○○(○)○○(○)-8	G136	Toolholder (Face Grooving)
KFMS®L ○○○○□○○(○)○○(○)-○	G134, G135	Toolholder (Face Grooving)
KFTB®L ○○○○○(○)-○S	G137	Blade (Face Grooving)
KGA®L ○○○○□-○	G53	Toolholder (Grooving)
KGBA®L ○○-○	G12	Toolholder (Grooving)
KGBA®L ○○-○-○○	G12	Toolholder (Grooving)
KGBA®L ○○○○□-○○	G12	Toolholder (Grooving)
KGBA®L ○○○○□-○○JCT	G13	Toolholder (Grooving)
KGBA®L ○○○○□22-○○	G12	Toolholder (Grooving)
KGBA®L ○○○○□22-○○JCT	G13	Toolholder (Grooving)
KGBA®L ○○○○□22-○○T5	G12	Toolholder (Grooving)
KGBAS®L ○○-○	G12	Toolholder (Grooving)
KGBAS®L ○○-○-○○	G12	Toolholder (Grooving)
KGBAS®L ○○○○□-○○	G12	Toolholder (Grooving)
KGBAS®L ○○○○□22-○○	G12	Toolholder (Grooving)
KGBAS®L ○○○○□22-○○T5	G12	Toolholder (Grooving)
KGBF®L ○○○○JX-○○F	G17	Toolholder (Grooving)
KGBFR ○○○○□-○○FJCT	G19	Toolholder (Grooving)
KGBFS®L ○○○○JX-○○F	G18	Toolholder (Grooving)
KGD®L ○○-C	G34, G37, G100~G104, H30	Toolholder Body (Grooving / Cut-Off)
KGD®L ○T○○-C	G34, G35, G36, G37, H30, H31	Blade (Grooving / Cut-Off)
KGD®L ○○○○-C	G35, G37, G105~G109, H31	Toolholder Body (Grooving / Cut-Off)
KGD®L ○(○)-○(.○)□□	G28, H22	Toolholder (Grooving / Cut-Off)
KGD®L ○○-○D○○□□	G28, H22	Toolholder (Grooving / Cut-Off)
KGD®L ○○○○□(□)-○(.○)	G28, H22	Toolholder (Grooving / Cut-Off)

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Part Number	Page	Description
KGD®/ ○○○○□(□)-○(.○)D○○	G28, H22	Toolholder (Grooving / Cut-Off)
KGD®/ ○○-○T○○	G30, H26	Toolholder (Grooving / Cut-Off)
KGD®/ ○○-○T○○(.○)JCT	G32, H29	Toolholder (Grooving / Cut-Off)
KGD®/ ○○○○□-○(.○)JCT	G29, H25	Toolholder (Grooving / Cut-Off)
KGD®/ ○○○○□-○T○○JCT	G32, H29	Toolholder (Grooving / Cut-Off)
KGD®/ ○○○○□(□)-○(.○)T○○	G31, H27	Toolholder (Grooving / Cut-Off)
KGD®/ ○○X-○T○○S	G34, H30	Toolholder (Grooving / Cut-Off)
KGD®/ ○○○○X-○T○○S	G35, H31	Toolholder (Grooving / Cut-Off)
KGDF®/ -○○(○)-○□-C	G100~G109, G111~G120, G121	Blade (Face Grooving)
KGDF®/ ○○○○X○○(○)-○□S	G105~G108	Toolholder (Face Grooving)
KGDF®/ ○○○○○○(○)-○B-Z	G110	Toolholder (Face Grooving)
KGDIR ○○B-○	G79	Toolholder (Internal Grooving)
KGDI®/ ○○○○B-○	G79	Toolholder (Internal Grooving)
KGDS®/ ○○-C	G36, G37, G111~G115	Toolholder (Grooving)
KGDS®/ ○○○○-C	G36, G37, G116~G120	Toolholder (Grooving)
KGDS®/ ○○○○JX-○(.○)B	H23	Toolholder (Cut-Off)
KGDS®/ ○○○○X-○T○○S	G36	Toolholder (Grooving)
KGH®/ ○○○○□-○(○)	G52	Toolholder (Grooving)
KGHS®/ ○○○○□-○	G52	Toolholder (Grooving)
KGIAR ○○H	G82	Toolholder (Grooving / Toolholder Body)
KGIAR ○○○○B-○	G82	Toolholder (Grooving)
KGM®/ ○-○-○	G48, H36	Toolholder (Grooving / Cut-Off)
KGM®/ ○○-○	G48, H36	Toolholder (Grooving / Cut-Off)
KGM®/ ○○○○□(□)-○(.○)	G48, H36	Toolholder (Grooving / Cut-Off)
KGM®/ ○○○○□-○(.○)-○○(○)	G48	Toolholder (Grooving / Cut-Off)
KGM®/ ○○-○T	G49, H37	Toolholder (Grooving / Cut-Off)
KGM®/ ○○○○□-○T○○	G49, H37	Toolholder (Grooving / Cut-Off)
KGMM®/ ○○○○□-○	G50	Toolholder (Grooving)
KGMS®/ ○○○○□-○	G50	Toolholder (Grooving)
KGMU®/ ○○○○□	G51	Toolholder (Grooving)
KGMW®/ ○○○○□-○	G56	Toolholder (Grooving)
KIGBA®/ ○○-○	G76	Toolholder (Grooving)
KIGBA®/ ○○○○-○○	G76	Toolholder (Grooving)
KIGHR ○○○○B-○	G80	Toolholder (Grooving)
KIGM®/ ○○○○B-○	G81	Toolholder (Grooving)
KIGM®/ ○○B-○V	G83	Toolholder (Grooving)
KIGMUR ○○○○B-○	G81	Toolholder (Grooving)
KITG®/ ○○○○T-○○	J31	Toolholder (Grooving / Threading)
KKC®/ ○(○)-○□(□)	G43, J24	Toolholder (Cera-Notch Grooving / Threading)
KKC®/ ○○○○□-○-○○○F	G43, J24	Toolholder (Cera-Notch Grooving / Threading)
KKCE®/ ○○-○□	G133	Toolholder (Cera-Notch Face Grooving)
KNMX ○○○○○○®/(-□)	B31	Insert (Turning)
KPC○-DCLN ®/○○○○○-○○□	N3	Polygon Shank Holder (Turning)
KPC○-DDHN ®/○○○○○-○○□	N4	Polygon Shank Holder (Turning)
KPC○-DDJN ®/○○○○○-○○□	N4	Polygon Shank Holder (Turning)
KPC○-DTGN ®/○○○○○-○○□	N5	Polygon Shank Holder (Turning)
KPC○-DVLN ®/○○○○○-○○□	N5	Polygon Shank Holder (Turning)
KPC○-DVPN ®/○○○○○-○○□	N6	Polygon Shank Holder (Turning)
KPC○-DVVN N○○○○○-○○□	N6	Polygon Shank Holder (Turning)
KPC○-DWLN ®/○○○○○-○○□	N7	Polygon Shank Holder (Turning)
KPC○-KGBA ®/○○○○○-○○(○○)	N10	Polygon Shank Holder (Shallow Grooving)
KPC○-KGD ®/○○○○○-○○T○	N9	Polygon Shank Holder (Grooving / Cut-Off)
KPC○-KTN ®/○○○○○-○○□	N11	Polygon Shank Holder (Threading)
KPC○-SVJB ®/○○○○○-○○□	N8	Polygon Shank Holder (Turning)
KPC○-SVVB N○○○○○-○○□	N7	Polygon Shank Holder (Turning)
KPKB ○○-○	H43	Blade (Cut-Off)
KPKB ○○-○JCT	H43	Blade (Cut-Off)
KPKTB ○○-○(○)JCT	H44	Block (Cut-Off)
KPS-42	P9	Spare Parts (Shim)
KPT-32	P9	Spare Parts (Shim)
KPT-42	P9	Spare Parts (Shim)
KQC ○○	N22	Toolholder (KQC Quick Change Adapter)
KSTB SR○○/○○ CCET○○○	E48	Sub-Spindle Tools
KSTB SR○○□ CCET○○○	E48	Sub-Spindle Tools
KSTB SR○○/○○ DCET○○○	E48	Sub-Spindle Tools
KSTB SR○○□ DCET○○○	E48	Sub-Spindle Tools
KSTB SR○○/○○ VBET○○○	E48	Sub-Spindle Tools
KSTB SR○○□ VBET○○○	E48	Sub-Spindle Tools
KSTB SR○○/○○ TGF○○	E49	Sub-Spindle Tools
KSTB SR○○□ TGF○○	E49	Sub-Spindle Tools
KSTB SR○○/○○ TT○○	E49	Sub-Spindle Tools
KSTB SR○○□ TT○○	E49	Sub-Spindle Tools
KTGF®/ ○○○○□-○○	G20	Toolholder (Grooving)
KTGF®/ ○○○○□(□)-○○F	G20	Toolholder (Grooving)
KTGF®/ ○(○)-○JXF	G20	Toolholder (Grooving)
KTKB ○○-○S	H49	Blade (Cut-Off)
KTKB ○○-○SS	H49	Blade (Cut-Off)
KTKB®/ ○○-○S	H49	Blade (Cut-Off)
KTKFL ○○(.○)-○○□□	H8, J26	Toolholder (Back Turning / Cut-Off / Threading)
KTKFL ○○○○□□-○○	H8, J26	Toolholder (Back Turning / Cut-Off / Threading)
KTKF®/ ○(○)(.○)-○○□□	E12, H8, J26	Toolholder (Back Turning / Cut-Off / Threading)
KTKF®/ ○○(.○)-○○□□JCT	H13	Toolholder (Cut-Off)
KTKF®/ ○○○○□(□)-○○	E12, H8, J26	Toolholder (Back Turning / Cut-Off / Threading)
KTKF®/ ○○○○□(□)-○○S□	H10	Toolholder (Cut-Off)
KTKF®/ ○○○○□□-○○-Y	E14, H16	Toolholder (Back Turning / Cut-Off / Threading)
KTKF®/ ○○○○□-○○JCT	H13	Toolholder (Cut-Off)
KTKFS®/ ○-○○□□	H18	Toolholder (Cut-Off)
KTKFS®/ ○○○○□-○○A/B	H18	Toolholder (Cut-Off)
KTKH®/ ○○-○S	H51	Toolholder (Cut-Off)
KTKH®/ ○-○(.○)-○S	H50	Toolholder (Cut-Off)
KTKH®/ ○○○○□-○S	H51	Toolholder (Cut-Off)
KTKH®/ ○○○○□-○T○○S	H51	Toolholder (Cut-Off)
KTKTB ○○(.○)-○○	H44	Block (Cut-Off)

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Part Number	Page	Description
KTKTBF ○○-○○	H44	Block (Cut-Off)
KTN□□ ○○-○	J20	Toolholder (Threading)
KTN□□ ○○○○□-○○	J20	Toolholder (Threading)
KTN□□ ○○○○□□-○○F	J20	Toolholder (Threading)
KTNR ○○-○○JCT	J21	Toolholder (Threading)
KTNR ○○○○□-○○JCT	J21	Toolholder (Threading)
KTNSR ○○○○□-○○	J20	Toolholder (Threading)
KTT□□ ○○○○□-○○	J30	Toolholder (Threading)
KTTXR ○(○)-○□□F	J28	Toolholder (Threading)
KTTXR ○○○○□(□)-○○F	J28	Toolholder (Threading)
KVN-32	P10	Spare Parts (Shim)
L		
LC-4K		Spare Parts (Shim)
LC-32	P10	Spare Parts (Shim)
LC-32N	P10	Spare Parts (Shim)
LC-42	P10	Spare Parts (Shim)
LC-42□□	P10	Spare Parts (Shim)
LC-42N	P10	Spare Parts (Shim)
LC-42N-C	P10	Spare Parts (Shim)
LC-42N□□	P10	Spare Parts (Shim)
LC-42N-20	P10	Spare Parts (Shim)
LC-42N□□-20	P10	Spare Parts (Shim)
LC-4K	P10	Spare Parts (Shim)
LC-53	P10	Spare Parts (Shim)
LC-53N	P10	Spare Parts (Shim)
LC-53N-C	P10	Spare Parts (Shim)
LC-63	P10	Spare Parts (Shim)
LC-63-C	P10	Spare Parts (Shim)
LCMT ○○○○○○-GH-E	K42	Insert (Drilling) DRV MAGIC DRILL
LCMT ○○○○○○-GH-I	K43	Insert (Drilling) DRV MAGIC DRILL
LCMT ○○○○○○-GM-E	K42	Insert (Drilling) DRV MAGIC DRILL
LCMT ○○○○○○-GM-I	K43	Insert (Drilling) DRV MAGIC DRILL
LCMT ○○○○○○-SM-E	K42	Insert (Drilling) DRV MAGIC DRILL
LCMT ○○○○○○-SM-I	K43	Insert (Drilling) DRV MAGIC DRILL
LD-4K	P10	Spare Parts (Shim)
LD-4K43	P10	Spare Parts (Shim)
LD-32	P10	Spare Parts (Shim)
LD-32N	P10	Spare Parts (Shim)
LD-42	P10	Spare Parts (Shim)
LD-42-20	P10	Spare Parts (Shim)
LD-43	P10	Spare Parts (Shim)
LD-43-20	P10	Spare Parts (Shim)
LGBA-16□□S	P16	Spare Parts (Clamp Set)
LGBA-22□□S	P16	Spare Parts (Clamp Set)
LL-03	P8	Spare Parts (Lock Pin)
LL-03N	P8	Spare Parts (Lock Pin)
LL-03S	P8	Spare Parts (Lock Pin)
LL-03SN	P8	Spare Parts (Lock Pin)
LL-03T	P8	Spare Parts (Lock Pin)
LL-03TN	P8	Spare Parts (Lock Pin)
LL-05C	P8	Spare Parts (Lock Pin)
LL-1	P8	Spare Parts (Lock Pin)
LL-1C	P8	Spare Parts (Lock Pin)
LL-1CN	P8	Spare Parts (Lock Pin)
LL-1D	P8	Spare Parts (Lock Pin)
LL-1DN	P8	Spare Parts (Lock Pin)
LL-1K	P8	Spare Parts (Lock Pin)
LL-1N	P8	Spare Parts (Lock Pin)
LL-2	P8	Spare Parts (Lock Pin)
LL-2C	P8	Spare Parts (Lock Pin)
LL-2K	P8	Spare Parts (Lock Pin)
LL-2N	P8	Spare Parts (Lock Pin)
LL-3	P8	Spare Parts (Lock Pin)
LL-3K	P8	Spare Parts (Lock Pin)
LL-3N	P8	Spare Parts (Lock Pin)
LL-4	P8	Spare Parts (Lock Pin)
LL-5	P8	Spare Parts (Lock Pin)
LL-5N	P8	Spare Parts (Lock Pin)
LL-6	P8	Spare Parts (Lock Pin)
LNEU ○○○○-○○(-○)	M206	Insert (Milling) MSTB
LNEU ○○○○-○○S(-○)	M206	Insert (Milling) MSTB
LNGX ○○○○○○	M15, M193	Insert (Milling) MFF
LNGX ○○○○○○R-TT	M15, M193	Insert (Milling) MFF
LNU ○○○○T○○○○○○○○A	B114	Insert (Turning)
LOGU ○○○○○○ER-GH	M15, M179	Insert (Milling) MFH
LOGU ○○○○○○ER-GM	M15, M44, M123, M179	Insert (Milling) MFLN / MFH
LOGU ○○○○PAER-GM	M15, M123	Insert (Milling) MFLN
LOGT ○○○○○○FR-AM	M16, M64	Insert (Milling) MEW
LOMU ○○○○○○ER-GH	M16, M64, M94	Insert (Milling) MEW / MEWH
LOMU ○○○○○○ER-GM	M16, M64, M94	Insert (Milling) MEW / MEWH
LOMU ○○○○○○ER-SM	M16, M64, M94	Insert (Milling) MEW / MEWH
LP-2S	P8	Spare Parts (Lock Pin)
LP-6S	P8	Spare Parts (Lock Pin)
LPA-11	P8	Spare Parts (Anchor Pin)
LPA-13	P8	Spare Parts (Anchor Pin)
LPA-17	P8	Spare Parts (Anchor Pin)
LPF-11	P8	Spare Parts (Anchor Pin)
LPF-13	P8	Spare Parts (Anchor Pin)
LPF-17	P8	Spare Parts (Anchor Pin)
LPF-1113	P8	Spare Parts (Anchor Pin)
LPF-1117	P8	Spare Parts (Anchor Pin)
LPGT ○○○○○○ER-GM	M16, M185	Insert (Milling) MFH
LR-10C	P10	Spare Parts (Shim)
LR-12C	P10	Spare Parts (Shim)
LR-16C	P10	Spare Parts (Shim)
LR-80	P10	Spare Parts (Shim)
LR-81	P10	Spare Parts (Shim)
LS-03	P4	Spare Parts (Lock Screw)

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Part Number	Page	Description
LS-03S	P4	Spare Parts (Lock Screw)
LS-03N	P4	Spare Parts (Lock Screw)
LS-03SN	P4	Spare Parts (Lock Screw)
LS-05	P4	Spare Parts (Lock Screw)
LS-1	P5	Spare Parts (Lock Screw)
LS-1N	P5	Spare Parts (Lock Screw)
LS-1P	P5	Spare Parts (Lock Screw)
LS-1S	P5	Spare Parts (Lock Screw)
LS-1SN	P5	Spare Parts (Lock Screw)
LS-1T	P5	Spare Parts (Lock Screw)
LS-2	P5	Spare Parts (Lock Screw)
LS-2N	P5	Spare Parts (Lock Screw)
LS-2P	P5	Spare Parts (Lock Screw)
LS-3	P5	Spare Parts (Lock Screw)
LS-3P	P5	Spare Parts (Lock Screw)
LS-4	P5	Spare Parts (Lock Screw)
LS-4N	P5	Spare Parts (Lock Screw)
LS-5	P5	Spare Parts (Lock Screw)
LS-11	P5	Spare Parts (Lock Screw)
LS-15	P5	Spare Parts (Lock Screw)
LS-32	P10	Spare Parts (Shim)
LS-42	P10	Spare Parts (Shim)
LSD-445R	P14	Spare Parts (Cartridge)
LSE-445R	P14	Spare Parts (Cartridge)
LSO-445R	P14	Spare Parts (Cartridge)
LSP-1	P8	Spare Parts (Shim Pin)
LSP-2	P8	Spare Parts (Shim Pin)
LSP-2K	P8	Spare Parts (Shim Pin)
LSP-3	P8	Spare Parts (Shim Pin)
LSP-3K	P8	Spare Parts (Shim Pin)
LSP-4	P8	Spare Parts (Shim Pin)
LSP-415R	P14	Spare Parts (Cartridge)
LT-3K	P11	Spare Parts (Shim)
LT-32	P11	Spare Parts (Shim)
LT-32N	P11	Spare Parts (Shim)
LT-32N-20	P11	Spare Parts (Shim)
LT-42	P11	Spare Parts (Shim)
LT-42N	P11	Spare Parts (Shim)
LT-42N-20	P11	Spare Parts (Shim)
LTE-490R	P14	Spare Parts (Cartridge)
LTK-5	P20	Spare Parts (Wrench)
LTP-10	P19	Spare Parts (Torx Plus Wrench / L-shaped Type)
LTP-15	P19	Spare Parts (Torx Plus Wrench / L-shaped Type)
LTW-8SS	P19	Spare Parts (Torx Wrench / L-shaped Type)
LTW-10S	P19	Spare Parts (Torx Wrench / L-shaped Type)
LTW-10SS	P19	Spare Parts (Torx Wrench / L-shaped Type)
LTW-15S	P19	Spare Parts (Torx Wrench / L-shaped Type)
LTW-20	P19	Spare Parts (Torx Wrench / L-shaped Type)
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LW-2.5	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
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LW-5	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
LW-6	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
LW-8	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
LW-10	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
LW-14	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
LW-17	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
LW-19	P19	Spare Parts (Hexagon Wrench / L-shaped Type)
LW-32	P11	Spare Parts (Shim)
LW-32N	P11	Spare Parts (Shim)
LW-42	P11	Spare Parts (Shim)
LW-42N	P11	Spare Parts (Shim)
M		
M○(○)- SHCS-CB	K116	Toolholder (Drilling) Counterbore (SHCS-CB)
M3X8	P5	Spare Parts (Screw)
M3X12	P5	Spare Parts (Screw)
M4X10	P5	Spare Parts (Screw)
MAP-2216	P14	Spare Parts (Cartridge)
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MBE -○○○○.○○○(○)	F15	Extended Reach Internal Diameter Profile Boring Bar
MBE -○○○○L○○○(○)	F15	Extended Reach Internal Profile Micro Boring Bar
MBS -○○○○.○○○(○)	F14	Standard Length Internal Profile Micro Boring Bar
MBS -○○○○L○○○(○)	F14	Standard Length Internal Diameter Profile Boring Bar
MCLN□□ ○○-○□	D8	Toolholder (Turning)
MCSE ○○○	M248	End Mill (Chamfering)
MCSE ○○○-○○D	M248	End Mill (Chamfering)
MDJN□□ ○○-○□	D13	Toolholder (Turning)
MEAS ○○○○-S○○○○-○○-○T	M152	End Mill (for Aluminum Machining)
MEAS ○○○○S○○○○○○○T○○○	M152	End Mill (for Aluminum Machining)
MEAS ○○-S○○-○○-○T	M152	End Mill (for Aluminum Machining)
MEAS ○○-S○○-○○-○T-○○○	M152	End Mill (for Aluminum Machining)
MEAS ○○○○R-○○-○T	M152	Face Mill (for Aluminum Machining)

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MEC	○○○○-S○○○-○○	M68	End Mill (MEC)
MEC	○○○○-S○○○-○○T	M68	End Mill (MEC)
MEC	○○○○-S○○○-○.○-○○	M68	End Mill (MEC)
MEC	○○○○-S○○○-○.○-○○T	M68	End Mill (MEC)
MEC	○○-M○○-○○(T)-○T	M73	Modular Head End Mill (MEC)
MEC	○○-S○○-○○	M69, M70	End Mill (MEC)
MEC	○○-S○○-○○T	M69, M70	End Mill (MEC)
MEC	○○-S○○-○○○-○○	M70	End Mill (MEC)
MEC	○○-S○○-○○○-○○-○	M70	End Mill (MEC)
MEC	○○-S○○-○○○-○○T	M69, M70	End Mill (MEC)
MEC	○○-S○○-○○○-○○T-○	M69, M70	End Mill (MEC)
MEC	○○○○R-○○(T)-○T(N)	M71	Face Mill (MEC)
MEC	○○○R-○○-○(○)T(N)	M72	Face Mill (MEC)
MEC	○○○R-○○-○(○)T-M(N)	M72	Face Mill (MEC)
MEC	○○○R-○○-○(○)(□)	M72	Face Mill (MEC)
MECH	○○○○-W○○○(○)-○○-○-○T	M96	End Mill (MECH)
MECH	○○○-S○○-○○-○-○T	M96	End Mill (MECH)
MECH	○○○○R-○○-○-○T	M97	Shell Mill (MECH)
MECH	○○○R-○○-○-○T	M97	Shell Mill (MECH)
MECH	○○○R-○○-○-○T-M	M97	Shell Mill (MECH)
MECH	○○○R○○-○-○T-BT○○	M97	End Mill (MECH)
MECH	○○○R○○-○T-BT○○-A	M98	End Mill (MECH)
MECH	○○○R○○-○T-BT○○SA	M98	End Mill (MECH)
MECH	○○○R○○-○T-F	M99	Front Mill Attachment (MECH)
MECHT	○○R-○○-○○(○○)-○-○T-M	M105	Shell Mill (MECHT)
MECHT	○○-S○○-○○-○-○T	M105	End Mill (MECHT)
MECX(L)	○○○○-S○○○-○○-○T	M80	End Mill (MECX)
MECX	○○-S○○-○○-○T	M80	End Mill (MECX)
MECX	○○-S○○-○○○-○○-○T	M80	End Mill (MECX)
MECX	○○○○R-○○-○(○)T	M81	Face Mill (MECX)
MECX	○○○R-○○-○(○)T-M	M81	Face Mill (MECX)
MEF	○○-S○○	M250	End Mill (Countersinking)
METS	○○-S○○	M252	End Mill (T-Slotting)
METS	○○-S○○-H	M252	End Mill (T-Slotting)
MEV	○○○○-W○○○-○○-○T	M86	End Mill (MEV)
MEV	○○○○-S○○○-○-○○-○T	M86	End Mill (MEV)
MEV	○○-M○○-○○-○T	M88	Modular Head End Mill (MEV)
MEV	○○-S○○-○○-○T	M86	End Mill (MEV)
MEV	○○-S○○-○○-○○○-○T	M86	End Mill (MEV)
MEV	○○○○R-○○-○T	M87	Face Mill (MEV)
MEV	○○○R-○○-○T-M	M87	Face Mill (MEV)
MEW	○○-M○○-○○-○T	M64	Modular Head End Mill (MEW)
MEW	○○-S○○-○○-○T	M61	End Mill (MEW)
MEW	○○-S○○-○○-○○○-○T	M61	End Mill (MEW)
MEW	○○-W○○-○○-○T	M61	End Mill (MEW)
MEW	○○○○R-○○-○T	M62	Face Mill (MEW)
MEW	○○○R-○○-○T(-M)	M63	Face Mill (MEW)
MEW	○○○○-S○○○-○-○○-○T	M60	End Mill (MEW)
MEW	○○○○-W○○○-○○-○T	M60	End Mill (MEW)
MEW	○○○○-W○○○-○(○○)-○○-○T	M60	End Mill (MEW)
MEWH	○○○R-○○-○-○T-M	M94	Shell Mill (MEWH)
MEWH	○○○-S○○-○○-○-○T	M93	End Mill (MEWH)
MEWH	○○○○R-○○-○-○T	M94	Shell Mill (MEWH)
MEWH	○○○○-W○○○-○○-○-○T	M93	End Mill (MEWH)
MEY	○○○○-S○○○-HG	M194	End Mill (Multi-functional)
MEY	○○-S○○	M194	End Mill (Multi-functional)
MEY	○○-S○○-○○○	M194	End Mill (Multi-functional)
MEY	○○-S○○-○○○H	M194	End Mill (Multi-functional)
MEZ	○○-S○○G	M196	End Mill (Multi-functional)
MEZ	○○-S○○-○○○G	M196	End Mill (Multi-functional)
MEZ	○○-S○○-○○○HG	M196	End Mill (Multi-functional)
MFAH	○○○RA-○(○)T-M(○○)-SF	M144	Face Mill (MFAH)
MFAH	○○○RA-○(○)T(-○○○)-SF	M144	Face Mill (MFAH)
MFAH	○○○RS-○(○)T-M-SF	M145	Face Mill (MFAH)
MFAH	○○○RS-○(○)T-SF	M145	Face Mill (MFAH)
MFF	○○○R-SF	M192	Face Mill (MFF)
MFF	○○○R-M-SF	M192	Face Mill (MFF)
MFH	○○○○-M○○-○○-○T	M179, M185	Modular Head End Mill (MFH)
MFH	○○○○-W○○-○○-○T(○○)	M167, M176	End Mill (MFH)
MFH	○○○○-W○○○-○○-○T-○	M176	End Mill (MFH)
MFH	○○○○R-○○-○T(-○○○○)	M164, M178	Face Mill (MFH)
MFH	○○○R-○○-○T(-M)	M165, M178	Face Mill (MFH)
MFH	○○○R-○○-○T-○○M	M165	Face Mill (MFH)
MFH	○○○○-S○○○-○○-○T(○○)	M167, M176, M184	End Mill (MFH)
MFH	○○○○-S○○○-○○-○T-○(○)	M167, M176, M184	End Mill (MFH)
MFH	○○-M○○-○○-○T	M170, M179, M185	Modular Head End Mill (MFH)
MFH	○○-S○○-○○-○T	M168, M169, M177, M184	End Mill (MFH)
MFH	○○-S○○-○○-○T-○○○	M168, M177	End Mill (MFH)
MFH	○○-W○○-○○-○T	M168, M177, M184	End Mill (MFH)
MFK	○○○(○)R-○○-○(○)T	M48, M49	Face Mill (MFK)
MFK	○○○R-○○-○(○)T-M	M49	Face Mill (MFK)
MFK	○○○R-○○-○(○)T-M-SF	M50	Face Mill (MFK)
MFK	○○○(○)R-○○-○(○)T-SF	M50	Face Mill (MFK)
MFLN	45○○○○○R-○(○)T	M42	Face Mill (MFLN45)
MFLN	45○○○○○R-○(○)T-M	M42	Face Mill (MFLN45)
MFLN	70○○○○○R-○(○)T	M43	Face Mill (MFLN70)
MFLN	70○○○○○R-○(○)T-M	M43	Face Mill (MFLN70)
MFLN	90○○○○○R-○(○)T	M122	Face Mill (MFLN90)
MFLN	90○○○○○R-○(○)T-M	M122	Face Mill (MFLN90)
MFPN-45		P11	Spare Parts (Shim)
MFPN	45○○○○(○)R-○(○)T	M31	Face Mill (MFPN45)
MFPN	45○○○R-○(○)T	M32	Face Mill (MFPN45)
MFPN	45○○○R-○(○)T-M	M32	Face Mill (MFPN45)
MFPN	45○○○R-S32-○T	M33	End Mill (MFPN45)
MFPN	45○○○○R-W125-○T	M33	End Mill (MFPN45)
MFPN	66○○○R-○(○)T-G	M37	Face Mill (MFPN66)
MFPN	66○○○R-○(○)T-M-G	M37	Face Mill (MFPN66)

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Part Number		Page	Description
MFPN	66○○○R-S32-○T-G	M38	End Mill (MFPN66)
MFSN	88○○○R-○(○)T-G	M119	Face Mill (MFSN)
MFSN	88○○○R-○(○)T-M-G	M119	Face Mill (MFSN)
MFSN	88○○○R-S32-○T-G	M120	End Mill (MFSN)
MFWN-90		P11	Spare Parts (Shim)
MFWN	90○○○○(○)R-○(○)T	M108	Face Mill (MFWN)
MFWN	90○○○○R-W125-○T	M111	End Mill (MFWN)
MFWN	90○○○R-○(○)T(-M)	M109	Face Mill (MFWN)
MFWN	90○○○R-05-○(○)T(-M)	M114	Face Mill (MFWN)
MFWN	90○○○R-S○○-○T	M111	End Mill (MFWN)
MFWN	90○○○R-S○○-05-○T	M115	End Mill (MFWN)
MGI	○○○○-1□(□)	M254	End Mill (Grooving for M/C)
MOF	45○○○R-○○-○(○)T	M52	Face Mill (MOF45)
MOF	45○○○R-○○-○(○)T-M	M52	Face Mill (MOF45)
MRF	○○-S○○	M224	End Mill (Ball-Nose)
MRF	○○-S○○-○○○	M224	End Mill (Ball-Nose)
MRFW	○○-S○○	M224	End Mill (Ball-Nose)
MRFW	○○-S○○-○○○	M224	End Mill (Ball-Nose)
MRW	○○○○-S○○○-○○-○T-○(○)	M230	End Mill (MRW)
MRW	○○○○-W○○○-○○-○T	M230	End Mill (MRW)
MRW	○○○○R-○○-○(○)T	M228	Face Mill (MRW)
MRW	○○○R-○○-○(○)T	M229	Face Mill (MRW)
MRW	○○○R-○○-○(○)T-M	M229	Face Mill (MRW)
MRW	○○-S○○-○○-○T	M231	End Mill (MRW)
MRW	○○-S○○-○○-○T-○○○	M231	End Mill (MRW)
MRW	○○-W○○-○○-○T	M231	End Mill (MRW)
MRX	○○○○-S○○○-○○-○T-○(○)	M237	End Mill (MRX)
MRX	○○○○-W○○○-○○-○T	M237	End Mill (MRX)
MRX	○○○○R-○○-○T	M235	Face Mill (MRX)
MRX	○○○R-○○-○T	M236	Face Mill (MRX)
MRX	○○○R-○○-○T-M	M236	Face Mill (MRX)
MRX	○○-M○○-○○-○T	M239	Modular Head End Mill (MRX)
MRX	○○-S○○-○○-○T	M238	End Mill (MRX)
MRX	○○-S○○-○○-○T-○○○	M238	End Mill (MRX)
MRX	○○-W○○-○○-○T	M238	End Mill (MRX)
MSD-42		P11	Spare Parts (Shim)
MSE-4215		P11	Spare Parts (Shim)
MSE-4245		P11	Spare Parts (Shim)
MSE-4245S		P11	Spare Parts (Shim)
MSO-4T245		P11	Spare Parts (Shim)
MSO-5200		P11	Spare Parts (Shim)
MSP-42		P11	Spare Parts (Shim)
MSR	○○○○R-○	M131	Face Mill (MSR)
MSR	○○○○R-○-1.5ID	M131	Face Mill (MSR)
MSR	○○○R-○	M132	Face Mill (MSR)
MSR	○○○R-○M	M132	Face Mill (MSR)
MSR	○○○R-○-31.75	M132	Face Mill (MSR)
MSR	○○○R-BT50-○	M133	Face Mill (Integral Arbor Type)
MSRS	15○○○(○)(○)R-○(○)T	M54	Face Mill (MSRS15)
MSRS	15○○○R-○(○)T-M	M55	Face Mill (MSRS15)
MSRS	90○○○○(○)R-○-○(○)T	M126	Face Mill (MSRS90)
MSRS	90○○○R-○-○(○)T	M127	Face Mill (MSRS90)
MSRS	90○○○R-○-○(○)T-M	M127	Face Mill (MSRS90)
MSSN®L	○○-○□	D14	Toolholder (Turning)
MSTA	○○(○)□○○-○(○)T	M200~M201	Slot Mill
MSTA	○○□○○○-○(○)T	M200~M201	Slot Mill
MSTB	○○(○)□□○○○○-○T	M204~M205	Slot Mill
MSTB	○○○○□□○○○-○T	M204~M205	Slot Mill
MSTC	○○○□□○○○-○○○-○○	M210~M215	Slot Mill
MSTC	○○○□□○○○○-○○-○(○)T	M210~M215	Slot Mill
MTE-42		P11	Spare Parts (Shim)
MTGN®L	○○-○□	D16	Toolholder (Turning)
MTP	90-○○○-○○(○)W	M137	End Mill (MTP90)
MTP	90-○○○-R○	M137	End Mill (MTP90)
MVG	○○○○	M256	End Mill (Ring Grooving for M/C)
MVJN®L	○○-○□	D21	Toolholder (Turning)
MVLN®L	○○○○□-○○	D21	Toolholder (Turning)
MVN-32		P11	Spare Parts (Shim)
MVVNN	○○-○□	D21	Toolholder (Turning)
MVVNN	○○○○□-○○	D21	Toolholder (Turning)
MWLN®L	○○-○□	D24	Toolholder (Turning)
N			
NDCT	○○○TRX	M24, M139, M140	Insert (Milling) DMC-SX / DMC-H
NDCT	○○○□□	M24, M138, M139, M161	Insert (Milling) DMC / DMC-SX, CEM
NDCT	○○○(□)(□)-B	M24, M161	Insert (Milling) CEM
NDCW	○○○○FRX	M30, M140	Insert (Milling) DMC-H
NDCW	○○○○FRX-NE	M30, M140	Insert (Milling) DMC-H
NDCW	○○○(□)RX	M24, M139, M140, M161	Insert (Milling) DMC-SX / DMC-H / CEM
NDCW	○○○(○)TR	M24, M139, M161	Insert (Milling) DMC-SX / CEM
NDMM	○○(□)○○○ER-N○	M24	Insert (Milling)
NDMM	○○(□)○○○ER-T	M24	Insert (Milling)
NDMM	○○○ER-SP	M24, M138, M139, M140, M161	Insert (Milling) DMC / DMC-SX / DMC-H / CEM
NDMT	○○(□)○○○(○)ER-D	M24	Insert (Milling)
NDMT	○○(□)○○○(○)ER-DH	M24	Insert (Milling)
NEMT	○○(□)○○○(○)ER-D	M24	Insert (Milling)
NEMT	○○(□)○○○(○)ER-DH	M24	Insert (Milling)
O			
OFMR	○○○○○○EN-GT	M25	Insert (Milling)
OFMR	○○○○○○EN-SH	M25, M52	Insert (Milling)
OFMT	○○○○○○EN-GT	M25, M52	Insert (Milling)
OFMT	○○○○○○E□-SH	M25, M52	Insert (Milling)
P			
P-03		P8	Spare Parts (Shim Pin)
P-03S		P8	Spare Parts (Shim Pin)
PC-1		P21	Spare Parts (Punch)
PC-2		P21	Spare Parts (Punch)

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Part Number		Page	Description
PCLN®/L	○○-○□	D9	Toolholder (Turning)
PCLN®/L	○○○○□-○○	D9	Toolholder (Turning)
PCLNR	○○○○□□-○○FF	E46	Toolholder (Double Sided Tooling)
PD-42		P12	Spare Parts (Shim)
PDHN®/L	○○○○□-○○	D13	Toolholder (Turning)
PDJN®/L	○○-○□	D13	Toolholder (Turning)
PDJN®/L	○○○○□-○○	D13	Toolholder (Turning)
PDJN®/L	○○○○-○○U	D13	Toolholder (Turning)
PH	○○-○MM	F102	Sleeve (for Micro-Bars)
PH	○○○○-○○	F102	Sleeve (for Micro-Bars)
PKM	○○N-○○○PH	H42	Insert (Cut-Off)
PKM	○○N-○○○PM	H42	Insert (Cut-Off)
PKM	○○®/L-○○○PM-6D	H42	Insert (Cut-Off)
PNEA	○○○○XNTN-T01020	M17, M50	Insert (Milling) MFK
PNEG	○○○○XNEN-GL	M17, M50	Insert (Milling) MFK
PNEG	○○○○XNER-W	M17, M50	Insert (Milling) MFK
PNEG	○○○○XNTR-T00515(W)	M17, M50	Insert (Milling) MFK
PNEU	○○○○ANEL-GL	M18, M38	Insert (Milling) MFPN45
PNEU	○○○○ANER-GL	M18, M38	Insert (Milling) MFPN45
PNEU	○○○○ANER-W	M18, M38	Insert (Milling) MFPN45
PNMG	○○○○XNEN-GH	M17, M50	Insert (Milling) MFK
PNMG	○○○○XNEN-GM	M17, M50	Insert (Milling) MFK
PNMU	○○○○ANER-GH	M18, M38	Insert (Milling) MFPN45
PNMU	○○○○ANEL-GM	M18, M38	Insert (Milling) MFPN45
PNMU	○○○○ANER-GM	M18, M38	Insert (Milling) MFPN45
PNMU	○○○○ANER-SM	M18, M38	Insert (Milling) MFPN45
PNMU	○○○○XNER-GH	M18, M38	Insert (Milling) MFPN66
PNMU	○○○○XNER-GM	M18, M38	Insert (Milling) MFPN66
PNMU	○○○○XNER-SM	M18, M38	Insert (Milling) MFPN66
PP-4		P8	Spare Parts (Lock Pin)
PRGC®/L	○○-○○□□	D23	Toolholder (Turning)
PRGC®/L	○○○○□-○○	D23	Toolholder (Turning)
PRGC®/L	○○○○□-○○BE	D37	Toolholder (Turning)
PRGC®/L	○○○○□-○○BF	D37	Toolholder (Turning)
PRGN®/L	○○○○□-○○	D23	Toolholder (Turning)
PRXC®/L	○○-○○□□	D23	Toolholder (Turning)
PRXC®/L	○○○○□-○○	D23	Toolholder (Turning)
PSBN®/L	○○○○□-○○	D15	Toolholder (Turning)
PSDNN	○○○○□-○○	D15	Toolholder (Turning)
PSKNR	○○CA○○	N24	Toolholder (Cartridge)
PSKN®/L	○○○○□-○○	D15	Toolholder (Turning)
PSSNR	○○CA○○	N24	Toolholder (Cartridge)
PSSN®/L	○○○○□-○○	D15	Toolholder (Turning)
P-ST-RC1/8		H15	Coolant Coupler
PSYNR	○○CA○○	N24	Toolholder (Cartridge)
PTFNR	○○CA○○	N24	Toolholder (Cartridge)
PTFN®/L	○○-○□	D17	Toolholder (Turning)
PTFN®/L	○○○○□-○○	D17	Toolholder (Turning)
PTGNR	○○CA○○	N24	Toolholder (Cartridge)
PTGN®/L	○○-○□	D17	Toolholder (Turning)
PTGN®/L	○○○○□-○○	D17	Toolholder (Turning)
PTLNR	○○○○□□-○○FF	E47	Toolholder (for Small Double-Sided Tools)
PTTNR	○○CA○○	N24	Toolholder (Cartridge)
PVLN®/L	○○○○□-○○Q	D22	Toolholder (Turning)
PVPN®/L	○○○○□-○○Q	D22	Toolholder (Turning)
PVVNN	○○○○□-○○Q	D22	Toolholder (Turning)
PWLN®/L	○○-○□	D25	Toolholder (Turning)
PWLN®/L	○○○○□-○○	D25	Toolholder (Turning)
Q			
R			
R	○○-(R)(-SET)	M245	Cartridge Set (API Ring Groover)
R	○○-SET	M245	Cartridge Set (API Ring Groover)
RBG	○○K○○○○○	B114	Insert (Turning)
RCGX	○○○○M0-AQ	B74	Insert (Turning)
RCGX	○○E○○○	B114	Insert (Turning)
RCGX	○○○H○○○T○○○○○	B114	Insert (Turning)
RCGX	○○(○)S○○○○○	B114	Insert (Turning)
RCGX	○○(○)T○○○○○	B114	Insert (Turning)
RCGX	○○○T○○○○○○○○AA	B114	Insert (Turning)
RCMA	○○(○)T○○○○○○○○AA	B114	Insert (Turning)
RCMT	○○○○M0-BB	B103	Insert (Turning)
RCMT	○○SH	B74	Insert (Turning)
RCMT	○○SR	B74	Insert (Turning)
RCMX	○○○○M0	B74	Insert (Turning)
RDFG	○○FR	M25, M225	Insert (Milling) MRF / MRFW
RDGT	○○○○M0ER-GM	M19, M235~M239	Insert (Milling) MRX
RDGT	○○○○M0ER-SM	M19, M235~M239	Insert (Milling) MRX
RDHX	○○(□)○(○)M0T	M25	Insert (Milling)
RDMT	○○(□)○M0-H	M25	Insert (Milling)
RDMT	○○○○M0EN-GH	M19, M235~M239	Insert (Milling) MRX
RDMT	○○○○M0ER-GM	M19, M235~M239	Insert (Milling) MRX
RNG	○○E○○○	B108	Insert (Turning)
RNG	○○K○○○○○	B108	Insert (Turning)
RNG	○○S○○○○○	B108	Insert (Turning)
RNG	○○T○○○○○	B108	Insert (Turning)
RNG	○○T○○○○○AA	B108	Insert (Turning)
RNM	○○	C19	Insert (Turning)
RNMG	○○	B31	Insert (Turning)
ROMU	○○○○M0ER-GH	M19, M228~M231	Insert (Milling) MRW
ROMU	○○○○M0ER-GM	M19, M228~M231	Insert (Milling) MRW
ROMU	○○○○M0ER-SM	M19, M228~M231	Insert (Milling) MRW
RPG	○○E○○○	B113	Insert (Turning)
RPG	○○T○○○○○	B113	Insert (Turning)
RPGT	○○(□)○(○)M0ER-GM	M19, M235~M239	Insert (Milling) MRX
RPGT	○○(□)○(○)M0ER-SM	M19, M235~M239	Insert (Milling) MRX
RPGX	○○E○○○	B114	Insert (Turning)
RPGX	○○T○○○○○	B114	Insert (Turning)

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RPMT	○○○○M0-BB	B103	Insert (Turning)
RPMT	○○(□)○(○)M0EN-GH	M19, M235~M239	Insert (Milling) MRX
RPMT	○○(□)○(○)M0ER-GM	M19, M235~M239	Insert (Milling) MRX
RPMT	○○○○M0-H	M25	Insert (Milling)
RPMW	○○○○M0TN	M19, M235~M239	Insert (Milling) MRX
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S○○-	CH○○-DRA	K20	Toolholder (Drilling) DRA MAGIC DRILL Chamfering Attachment
S○○-	DRS○○○○○	K67	Toolholder (Drilling) DRS MAGIC DRILL
S○○(○)-	DRV○○○M-○-○○	K45~K58	Toolholder (Drilling) DRV MAGIC DRILL
S○○(○)-	DRX○○○(○)M-○-○○	K85~K92	Toolholder (Drilling) DRX MAGIC DRILL
S○○(○)-	DRZ○○○○(○○)(○)(○)-○○(□)	K68~K80	Toolholder (Drilling) DRZ MAGIC DRILL
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S○○□-	CELNR○○-○○	F97	Boring Bars
S○○□-	CSKPR○○-○○	F78	Boring Bars
S○○□-	CTUN%○○-○○A	F98	Boring Bars
S○○□-	CTUP%○	F79	Boring Bars
S○○□-	CTUP%○○-○○	F79	Boring Bars
S○○(.○)□-	KTGFL16	G21	Sleeve Holder (Grooving)
S○○(.○)□-	KTTXL16	J28	Sleeve Holder (Threading)
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S○○□-	PCLN%○○-○○	F86	Boring Bars
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S○○□-	PDUN%○○-○○	F87, F89	Boring Bars
S○○□-	PDZN%○○-○○	F89	Boring Bars
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S○○□-	PWLN%○○-○○	F94, F96	Boring Bars
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S○○□-	SCLC%○○-○○A	F45	Boring Bars (Dynamic Bar)
S○○□-	SCLC%○	F47	Boring Bars (General Purpose)
S○○□-	SCLC%○(.○)E	F47	Boring Bars (General Purpose)
S○○□-	SCLC%○○-○○AE	F45	Boring Bars (Dynamic Bar)
S○○○□-	SCLCR○○-○○○EZ	F27	Boring Bars (EZ Bar PLUS)
S○○○□-	SCLCR○○-○○○EZP	F27	Boring Bars (EZ Bar PLUS)
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S○○□-	STWP%○○-○○	F64, J37	Toolholder (Boring / Threading)
S○○□-	STWP%○○-○○E	F64, J37	Toolholder (Boring / Threading)
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SCLC℀ ○○○○□(□)-○○FF	E24	Toolholder (Turning)
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SCMT ○○○○○○-GH-I	K43	Insert (Drilling) DRV MAGIC DRILL
SCMT ○○○○○○-GM-E	K42	Insert (Drilling) DRV MAGIC DRILL
SCMT ○○○○○○-GM-I	K43	Insert (Drilling) DRV MAGIC DRILL
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SDKR ○○AUEN-S	M12	Insert (Milling)
SDKW ○○○○AESN	M26	Insert (Milling)
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SDLC% ○○○○□(□)-○○FF	E30	Toolholder (Turning)
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SDNCN ○○○○□(□)-○○	E31	Toolholder (Turning)
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SIGE% ○○EH	G69	Toolholder (Grooving)
SIGE% ○○○○□-EH	G69	Toolholder (Grooving)
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SI-GIV% ○○-○○	G75	Toolholder (Grooving)
SIN% ○○○○S-○○	J22	Toolholder (Threading)
SIN% ○○○○S-○○E	J22	Toolholder (Threading)
SJS- ○	F104	Coolant Joint
SL- ○(.○-○○)	F103	Sleeve (for Boring Bar)
SLT ○○-○○□□□	M202	Insert (Slot Mill MSTA)
SNCN ○○XNTN	M13	Insert (Milling)
SNG ○○○S○○○○	B109	Insert (Turning)
SNG ○○○T○○○○	B109, B110	Insert (Turning)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number	Page	Description
SNG ○○○TO○○○○○AA	B109	Insert (Turning)
SNGA ○○○	B35	Insert (Turning)
SNGA ○○○MEF	C10	Insert (Turning)
SNGA ○○○S○○○○○	B109	Insert (Turning)
SNGA ○○○S○○○○○ME	C10	Insert (Turning)
SNGA ○○○S○○○○○MEH	C10	Insert (Turning)
SNGA ○○○S○○○○○MEP	C10	Insert (Turning)
SNGA ○○○S○○○○○MET	C10	Insert (Turning)
SNGA ○○○TO○○○○	B109	Insert (Turning)
SNGA ○○○TO○○○○AA	B109	Insert (Turning)
SNGA ○○○TO○○○○ME	C10	Insert (Turning)
SNGG ○○○□-25R	B35	Insert (Turning)
SNGG ○○○□-B/C	B35	Insert (Turning)
SNGX ○○○TO○○○○	B110	Insert (Turning)
SNKN ○○XNTN	M13	Insert (Milling)
SNM ○○○	B35, C19, M13	Insert (Turning / Milling)
SNM ○○○TO○○○○	B110	Insert (Turning)
SNMA ○○○	B35	Insert (Turning)
SNMA ○○○TO○○○○AA	B109	Insert (Turning)
SNMF ○○○○○○-21	B103, F80	Insert (Turning)
SNMF ○○XNTN	M13	Insert (Milling)
SNMG ○○○	B32	Insert (Turning)
SNMG ○○○C	B34	Insert (Turning)
SNMG ○○○(○)GC	B34	Insert (Turning)
SNMG ○○○HQ	B32	Insert (Turning)
SNMG ○○○HS	B32	Insert (Turning)
SNMG ○○○KG	B34	Insert (Turning)
SNMG ○○○KH	B34	Insert (Turning)
SNMG ○○○MQ	B34	Insert (Turning)
SNMG ○○○MS	B34	Insert (Turning)
SNMG ○○○MU	B34	Insert (Turning)
SNMG ○○○PG	B32	Insert (Turning)
SNMG ○○○PH	B33	Insert (Turning)
SNMG ○○○PQ	B32	Insert (Turning)
SNMG ○○○PS	B32	Insert (Turning)
SNMG ○○○PT	B32	Insert (Turning)
SNMG ○○○□-C	B35	Insert (Turning)
SNMG ○○○SG	B34	Insert (Turning)
SNMG ○○○XP	B33	Insert (Turning)
SNMG ○○○XQ	B33	Insert (Turning)
SNMG ○○○XS	B33	Insert (Turning)
SNMG ○○○ZS	B34	Insert (Turning)
SNMM ○○○PX	B33	Insert (Turning)
SNMU ○○○○○○EN-GH	M19, M120	Insert (Milling) MFSN
SNMU ○○○○○○EN-GM	M19, M120	Insert (Milling) MFSN
SNMU ○○○○○○EN-SM	M19, M120	Insert (Milling) MFSN
SOKN 13T3AXFN	M12	Insert (Milling)
SOKN 13T3AXFN-NE	M30	Insert (Milling)
SOKN 13T3AXTN	M12	Insert (Milling)

Part Number	Page	Description
SOKR 13T3AXEN-J	M12	Insert (Milling)
SOMT ○○○○AXEN-J	M26	Insert (Milling)
SOMT ○○○○○○ER-FL	M20, M171	Insert (Milling) MFH
SOMT ○○○○○○ER-GH	M20, M171	Insert (Milling) MFH
SOMT ○○○○○○ER-GM	M20, M171	Insert (Milling) MFH
SOMT ○○○○○○ER-LD	M20, M171	Insert (Milling) MFH
SOMW ○○○○AXFN	M26	Insert (Milling)
SOMW ○○○○AXTN	M26	Insert (Milling)
SP-2D	P20	Spare Parts (Spring)
SP-3D	P20	Spare Parts (Spring)
SP-5	P20	Spare Parts (Spring)
SP-5D	P20	Spare Parts (Spring)
SP-6	P20	Spare Parts (Spring)
SP-8	P20	Spare Parts (Spring)
SP3X4	P7	Spare Parts (Screw)
SP3X6	P7	Spare Parts (Screw)
SP3X8	P7	Spare Parts (Screw)
SP3X10	P7	Spare Parts (Screw)
SP4X9	P7	Spare Parts (Screw)
SP8X35	P7	Spare Parts (Screw)
SP-129	P12	Spare Parts (Shim)
SP-130A	P12	Spare Parts (Shim)
SP-141	P12	Spare Parts (Shim)
SP-141P	P13	Spare Parts (Shim)
SP-143	P12	Spare Parts (Shim)
SP-143P	P13	Spare Parts (Shim)
SP-148	P12	Spare Parts (Shim)
SP-162	P12	Spare Parts (Shim)
SP-210A	P13	Spare Parts (Shim)
SP-219	P12	Spare Parts (Shim)
SP-221	P12	Spare Parts (Shim)
SP-223	P12	Spare Parts (Shim)
SP-230P	P13	Spare Parts (Shim)
SP-341P	P13	Spare Parts (Shim)
SP-342	P12	Spare Parts (Shim)
SP-420A	P13	Spare Parts (Shim)
SP-429	P12	Spare Parts (Shim)
SP-441	P12	Spare Parts (Shim)
SP-441P	P13	Spare Parts (Shim)
SP-443	P12	Spare Parts (Shim)
SP-443P	P13	Spare Parts (Shim)
SP-454	P12	Spare Parts (Shim)
SP-521	P12	Spare Parts (Shim)
SP-521P	P13	Spare Parts (Shim)
SP-523	P12	Spare Parts (Shim)
SP-523P	P13	Spare Parts (Shim)
SP-541	P12	Spare Parts (Shim)
SP-543	P12	Spare Parts (Shim)
SP-826	P12	Spare Parts (Shim)

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Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
SP-829		P12	Spare Parts (Shim)
SP-841		P12	Spare Parts (Shim)
SP-843		P12	Spare Parts (Shim)
SP-849		P12	Spare Parts (Shim)
SP-861		P12	Spare Parts (Shim)
SPCN	○○EDTR	M13	Insert (Milling)
SPCN	○○EETR1	M13	Insert (Milling)
SPCN	○○XPTR	M13	Insert (Milling)
SPCT	○○T○○○□□-□□	M218	Insert (Milling) MSTC
SPCT	○○T○○○□%-□□	M218	Insert (Milling) MSTC
SPEN	○○EEER	M13	Insert (Milling)
SPEN	○○EESR	M13	Insert (Milling)
SPET	○○T○○○□%-□□	M218	Insert (Milling) MSTC
SPG	○○○	B75, C29, M13	Insert (Turning / Milling)
SPG	○○○NE	C29	Insert (Turning / Milling)
SPG	○○○T○○○○○AA	B113	Insert (Turning)
SPG	○○○T○○○○○	B113	Insert (Turning)
SPGH	○○○%	B75	Insert (Turning)
SPGR	○○○%	B75	Insert (Turning)
SPKN	○○EDER	M13	Insert (Milling)
SPKN	○○EDFR	M13	Insert (Milling)
SPKN	○○EDT%	M13	Insert (Milling)
SPKN	○○XETR	M13	Insert (Milling)
SPKN	○○XPFR	M13	Insert (Milling)
SPKN	○○XPTR	M13	Insert (Milling)
SPKR	○○EDER-S	M13	Insert (Milling)
SPM	○○○	B75, M13	Insert (Turning / Milling)
SPMR	○○○	B75	Insert (Turning / Milling)
SPMR	○○○G	B75	Insert (Turning / Milling)
SPMR	○○EDER-H	M13	Insert (Milling)
SPMT	○○○○EDER-NB○	M27, M56	Insert (Milling) MSRS15
SPMT	○○○○EDER-NB○P	M27, M56	Insert (Milling) MSRS15
SPMT	○○○○EDER-V	M27, M56	Insert (Milling) MSRS15
SPMT	○○○○EDS%-NB○T	M27, M56	Insert (Milling) MSRS15
SPMT	○○○○○○EN-NB○	M28, M126~M127	Insert (Milling) MSRS90
SPMT	○○○○○○EN-NB○P	M28, M126~M127	Insert (Milling) MSRS90
SPMT	○○○○○○EN-V	M28, M126~M127	Insert (Milling) MSRS90
SPMT	○○○○○○E-Z	M28, M250	Insert (Milling) MEF
SP-RC		P14	Spare Parts (Shim)
SPW-6045		P7	Spare Parts (Screw)
SPW-7050		P7	Spare Parts (Screw)
SRCP%	○○○○B-○○-A○○	F80	Boring Bar (for Bearing Machining)
SS-4N		P7	Spare Parts (Shim Screw)
SS○○(○○)-	DRA○○○M-○(.○)	K11, K12, K16, K17	Toolholder (Drilling) DRA MAGIC DRILL
SS○○-	DRC○○○M-○	K27~K29	Toolholder (Drilling) DRC MAGIC DRILL
STDER	○○CA○○	N26	Toolholder (Cartridge)
STDPR	○○CA○○	N26	Toolholder (Cartridge)
STEER	○○CA○○	N26	Toolholder (Cartridge)

Part Number		Page	Description
STEPR	○○CA○○	N26	Toolholder (Cartridge)
STFER	○○CA○○	N26	Toolholder (Cartridge)
STFPR	○○CA○○	N26	Toolholder (Cartridge)
STGC%	○-○(.○)□	E33	Toolholder (Turning)
STGC%	○○○○□-○○	E33	Toolholder (Turning)
STGP%	○○○○□-○○	E33	Toolholder (Turning)
STLNR	○(○)-○.○□F	E45	Toolholder (for Small Double-Sided Tools)
STLNR	○○○○□-○○FF	E45	Toolholder (for Small Double-Sided Tools)
STVP%	○○-○	J23	Toolholder (Threading)
STWL	○○○○□-15	G94	Toolholder (for Twin Bars)
STWR	○○○○□-15	F42	Toolholder (for Twin Bars)
STWSR	○○○○□(□)-15T	F43, G95	Toolholder (for Twin Bars)
SV-60136R		P7	Spare Parts (Screw)
SV-60136TR		P7	Spare Parts (Screw)
SVJB%	○(○)-○□(□)	E34, E35	Toolholder (Turning)
SVJB%	○○○○□-○○	E35	Toolholder (Turning)
SVJB%	○(○)-○□□FF	E34	Toolholder (Turning)
SVJB%	○○○○□□-○○FF	E34	Toolholder (Turning)
SVJB%	○○○○□-○○(N)	E35	Toolholder (Turning)
SVJBR	○○(.○)-○FFJCT	E34	Toolholder (Turning)
SVJBR	○○○○□-○○FFJCT	E34	Toolholder (Turning)
SVJC%	○○○○□(□)-○○FF	E37	Toolholder (Turning)
SVJP%	○(○)-○□□FF	E39	Toolholder (Turning)
SVJP%	○○○○□(□)-○○FF	E39	Toolholder (Turning)
SVJPR	○○○○□-○○FFJCT	E39	Toolholder (Turning)
SVLC%	○○○○□(□)-○○FF	E37	Toolholder (Turning)
SVLP%	○(○)-○(○)□□FF	E39	Toolholder (Turning)
SVLP%	○○○○□(□)-○○FF	E39	Toolholder (Turning)
SVLPR	○○(.○)-○□□-FO	E23	Toolholder (Goose-neck Holder)
SVLPR	○○○○□□-○○-F○○	E23	Toolholder (Goose-neck Holder)
SVNR	○○○○□-12	F38	Toolholder (for Swiss IQ Bars / Discontinued Description)
SVNR	○○○○□-12N	F38	Toolholder (for Swiss IQ Bars)
SVN-32		P14	Spare Parts (Shim)
SVN-32N		P14	Spare Parts (Shim)
SVN-32S		P14	Spare Parts (Shim)
SVNSR	○(○)-12-○○	F38	Toolholder (for Swiss IQ Bars)
SVNSR	○○○○□-12-○○	F38	Toolholder (for Swiss IQ Bars / Discontinued Description)
SVNSR	○○○○□-12-○○N	F38	Toolholder (for Swiss IQ Bars)
SVNSR	○○○○□-12-○○XN	F41	Toolholder (for Swiss IQ Bars)
SVPB%	○○○○□(□)-○○	E35	Toolholder (Turning)
SVPB%	○○○○□-○○N	E35	Toolholder (Turning)
SVPCR	○○○○□(□)-○○FF	E38	Toolholder (Turning)
SVPPR	○(○)-○(○)□□FF	E40	Toolholder (Turning)
SVPPR	○○○○□(□)-○○FF	E40	Toolholder (Turning)
SVVBN	○(○)-○□□	E36	Toolholder (Turning)
SVVBN	○○○○□(□)-○○	E36	Toolholder (Turning)
SVVBN	○○○○□-○○N	E36	Toolholder (Turning)
SVVCN	○○○○□□-○○	E38	Toolholder (Turning)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number		Page	Description
T			
T63H-	C○○-○○(○)	N20	Toolholder (HSK Tooling)
T63H-	KGBA□-16	N19	Grooving (HSK Tooling)
T63H-	KGBA□-22-○○	N19	Grooving (HSK Tooling)
T63H-	KTNR-○○	N19	Threading (HSK Tooling)
T63H-	N○○-○○(○)	N20	Toolholder (HSK Tooling)
T63H-	PCLN□-DX12	N15	Toolholder (HSK Tooling)
T63H-	PCMNN-□12	N15	Toolholder (HSK Tooling)
T63H-	PDJN□-DX15	N15	Toolholder (HSK Tooling)
T63H-	PDNNN-□15	N16	Toolholder (HSK Tooling)
T63H-	PTGN□-DX16	N16	Toolholder (HSK Tooling)
T63H-	PWLN□-DX08	N17	Toolholder (HSK Tooling)
T63H-	S2020R-105T	N14	Toolholder (HSK Tooling)
T63H-	S2525-○○(○)F	N14	Toolholder (HSK Tooling)
T63H-	S2525□-○○○	N13	Toolholder (HSK Tooling)
T63H-	SVLB□-DX16N	N18	Toolholder (HSK Tooling)
T63H-	SVVBN-□16N	N18	Toolholder (HSK Tooling)
T63H-	WTENN-□16	N16	Toolholder (HSK Tooling)
T63H-	WWMNN-□08	N17	Toolholder (HSK Tooling)
T100H-	C○○-○○(○)	N20	Toolholder (HSK Tooling)
T100H-	N○○-○○(○)	N20	Toolholder (HSK Tooling)
T100H-	S2525-○○○F	N14	Toolholder (HSK Tooling)
T100H-	S2525R-○○○T	N14	Toolholder (HSK Tooling)
T100H-	S2525□-○○○	N14	Toolholder (HSK Tooling)
TBET	○○○○(○)(○)M□	B76	Insert (Turning)
TBG	○○○○F	C18	Insert (Turning)
TBG	○○○○(○)T○○○○○AA	B113	Insert (Turning)
TBG	○○○○(○)T○○○○○	C18	Insert (Turning)
TBGT	○○○○○CF	B76	Insert (Turning)
TBGT	○○○○(○)(○)M□	B76	Insert (Turning)
TBGT	○○○○○M-CF	B76	Insert (Turning)
TBGT	○○○○(○)MFP-PF	B76	Insert (Turning)
TBGT	○○○○○MP-CF	B76	Insert (Turning)
TBGT	○○○○(○)□	B76	Insert (Turning)
TBGW	○○○○(○)	B76, C26	Insert (Turning)
TBGW	○○○○(○)NE	C26	Insert (Turning)
TBMT	○○○○(○)	C26	Insert (Turning)
TBMT	○○○○(○)DP	B76	Insert (Turning)
TBMT	○○○○(○)NE	C26	Insert (Turning)
TCET	○○○○(○)(○)F□-USF	B77	Insert (Turning)
TCET	○○○○MF□-USF	B77	Insert (Turning)
TCG	○○○○(○)	B79	Insert (Turning)
TCG	○○○(○)(○)T○○○○○	B113	Insert (Turning)
TCGR	○○○○(○)□-F	B79	Insert (Turning)
TCGT	○○○(○)(○)(○)E□-U	B78	Insert (Turning)
TCGT	○○○○(○)(○)F□-U	B78	Insert (Turning)
TCGT	○○○(○)(○)(○)ME□-U	B78	Insert (Turning)
TCGT	○○○(○)(○)(○)(○)MF□-U	B78	Insert (Turning)
TCGT	○○○○(○)□	B79	Insert (Turning)
TCGT	○○○(○)□-A3	B79	Insert (Turning)
TCGW	○○○(○)(○)(○)	B79, C26	Insert (Turning)
TCGW	○○○(○)NE	C26	Insert (Turning)
TCGW	○○○(○)SE	C26	Insert (Turning)
TCMT	○○○○(○)(○)	C26	Insert (Turning)
TCMT	○○○○○HP	K113, K116	Insert (Drilling) Counterbore
TCMT	○○○○(○)(○)HQ	B77, K116, K117	Insert (Turning/Drilling) Counterbore/Countersink
TCMT	○○○(○)(○)(○)NE	C26	Insert (Turning)
TCMT	○○○(○)SE	C26	Insert (Turning)
TCMX	○○○○(○)WP	B77	Insert (Turning)
TEEN	○○PTFR	M30	Insert (Milling)
TEEN	○○PTFR-NE	M30	Insert (Milling)
TEEN	○○PTTR	M14	Insert (Milling)
TEKN	○○PTFR	M14, M30	Insert (Milling)
TEKN	○○PTFR-NE	M30	Insert (Milling)
TEKN	○○PTTR	M14	Insert (Milling)
TEKR	○○PTER-S	M14	Insert (Milling)
TEMR	○○PTER-H	M14	Insert (Milling)
TEMT	○○○○○○-AQ	M28	Insert (Milling)
TGF	○○□○○○-○○○	C30, G21	Insert (Grooving)
TGF	○○□○○○N	G21	Insert (Grooving)
TH-4		P20	Spare Parts (Hexagon Wrench / T-shaped Type)
TH8X15		P7	Spare Parts (Screw)
TKN	○(.○)	H48	Insert (Cut-Off)
TKN	○(.○)-P	H48	Insert (Cut-Off)
TK□	○(.○)	H48	Insert (Cut-Off)
TK□	○(.○)-P	H48	Insert (Cut-Off)
TKF	○○R○○○-AGT	C32. E18	Insert (Grooving / Turning)
TKF	○○□○○○-AS	C32, E18	Insert (Grooving / Turning)
TKF	○○□○○○-GTP	B101, E13	Insert (Grooving / Turning)
TKF	○○□○○○-NB(○.○)	C32. E18, H6, H7	Insert (Grooving / Turning)
TKF	○○□○○○-NB-○○DR	H6, H7	Insert (Cut-Off)
TKF	○○□○○○-S	H6, H7	Insert (Cut-Off)
TKF	○○□○○○-S-○○DR	H6, H7	Insert (Cut-Off)
TKF	○○□○○○-T	H6, H7	Insert (Cut-Off)
TKF	○○□○○○-T-○○DR	H6, H7	Insert (Cut-Off)
TKFB	○○L○○○○○MR	B100, E13	Insert (Back Turning)
TKFB	○○R○○○○○-GQ	B100, E13	Insert (Back Turning)
TKFB	○○R○○○○○P-GQ	B100, E13	Insert (Back Turning)
TKFB	○○R○○○○○M	B100, E13	Insert (Back Turning)
TKFS	○○□○○○-S	H19	Insert (Cut-Off)
TKFT	12□○○○○(○)	J26	Insert (Threading)
TN-32		P14	Spare Parts (Shim)
TN-43		P14	Spare Parts (Shim)
TNEG	○○○(○)□-SSF	B42	Insert (Turning)
TNG	○○○S○○○○○	B111	Insert (Turning)
TNG	○○○T○○○○○	B111	Insert (Turning)
TNG	○○○T○○○○○AA	B111	Insert (Turning)
TNGA	○○○	B40	Insert (Turning)

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

Part Number	Page	Description
TNGA ○○○MEF	C10	Insert (Turning)
TNGA ○○○ME6	C10	Insert (Turning)
TNGA ○○○S○○○○○	B111	Insert (Turning)
TNGA ○○○(○)S○○○○○ME	C11	Insert (Turning)
TNGA ○○○S○○○○○MEH	C11	Insert (Turning)
TNGA ○○○S○○○○○MEP	C10	Insert (Turning)
TNGA ○○○S○○○○○MET	C11	Insert (Turning)
TNGA ○○○(○)S○○○○○SE	C11	Insert (Turning)
TNGA ○○○S○○○○○SET	C11	Insert (Turning)
TNGA ○○○T○○○○○	B111	Insert (Turning)
TNGA ○○○T○○○○○AA	B111	Insert (Turning)
TNGA ○○○T○○○○○ME	C11	Insert (Turning)
TNGG ○○○AH	B41	Insert (Turning)
TNGG ○○○FP-TK	B39	Insert (Turning)
TNGG ○○○(○)MFP-SK	B38	Insert (Turning)
TNGG ○○○TK	B39	Insert (Turning)
TNGG ○○○(○)%	B43	Insert (Turning)
TNGG ○○○%-25R	B43	Insert (Turning)
TNGG ○○○%-A3	B41	Insert (Turning)
TNGG ○○○(○)%-B	B42	Insert (Turning)
TNGG ○○○(○)%-C	B43	Insert (Turning)
TNGG ○○○(○)%-S	B42	Insert (Turning)
TNGM ○○○S○○○○○BB○	C11	Insert (Turning)
TNGU ○○○○(○)MER-U	B52	Insert (Turning)
TNGU ○○○○(○)(○)MFR-F	B52	Insert (Turning)
TNGU ○○○○(○)(○)MFR-U	B52	Insert (Turning)
TNM ○○○	C19	Insert (Turning)
TNMA ○○○	B40	Insert (Turning)
TNMC ○○NV○○○○○	J23	Insert (Threading)
TNMG ○○○	B37	Insert (Turning)
TNMG ○○○AH	B41	Insert (Turning)
TNMG ○○○C	B40	Insert (Turning)
TNMG ○○○CQ	B36	Insert (Turning)
TNMG ○○○GC	B40	Insert (Turning)
TNMG ○○○(○)GP	B36	Insert (Turning)
TNMG ○○○GS	B36	Insert (Turning)
TNMG ○○○GT	B37	Insert (Turning)
TNMG ○○○HQ	B36	Insert (Turning)
TNMG ○○○HS	B37	Insert (Turning)
TNMG ○○○KG	B40	Insert (Turning)
TNMG ○○○KH	B40	Insert (Turning)
TNMG ○○○KQ	B40	Insert (Turning)
TNMG ○○○MQ	B39	Insert (Turning)
TNMG ○○○MS	B39	Insert (Turning)
TNMG ○○○MU	B39	Insert (Turning)
TNMG ○○○PG	B36	Insert (Turning)
TNMG ○○○PH	B37	Insert (Turning)
TNMG ○○(○)(○)PP	B36	Insert (Turning)
TNMG ○○○PQ	B36	Insert (Turning)

Part Number	Page	Description
TNMG ○○○PS	B37	Insert (Turning)
TNMG ○○○PT	B37	Insert (Turning)
TNMG ○○○%-C	B43	Insert (Turning)
TNMG ○○○(○)R-LD	B38	Insert (Turning)
TNMG ○○○SG	B39	Insert (Turning)
TNMG ○○○%-ST	B39	Insert (Turning)
TNMG ○○○TK	B39	Insert (Turning)
TNMG ○○○XF	B38	Insert (Turning)
TNMG ○○○XP	B38	Insert (Turning)
TNMG ○○○XQ	B38	Insert (Turning)
TNMG ○○○XS	B38	Insert (Turning)
TNMG ○○○ZS	B40	Insert (Turning)
TNMM ○○○(○)M	C23	Insert (Turning)
TNMM ○○○(○)M-NE	C23	Insert (Turning)
TNMM ○○○(○)M-SE	C23	Insert (Turning)
TNMM ○○○PX	B38	Insert (Turning)
TNMX ○○○WF	B36	Insert (Turning)
TNW-32	P14	Spare Parts (Shim)
TOMT ○○○○○○ER-GM	M20, M87	Insert (Milling) MEV
TOMT ○○○○○○ER-SM	M20, M87	Insert (Milling) MEV
TP ○○○	B85	Insert (Turning)
TPC 32P4R	M14	Insert (Milling)
TPEH ○○○(○)(○)(○)M%-P	B85	Insert (Turning)
TPET ○○○○(○)(○)F%-USF	B86	Insert (Turning)
TPET ○○○○(○)(○)MF%-USF	B86	Insert (Turning)
TPET ○○○○(○)(○)M%-FSF	B85	Insert (Turning)
TPET ○○○○(○)(○)%-FSF	B85	Insert (Turning)
TPG ○○○(○)(○)(○)	B88, C29, M14, M30, M137	Insert (Turning / Milling)
TPG ○○○NE	C29	Insert (Turning / Milling)
TPG ○○○(○)SE	C29	Insert (Turning / Milling)
TPG ○○○S○○○○○SET	C18	Insert (Turning)
TPG ○○○(○)(○)T○○○○○	B113	Insert (Turning)
TPG ○○○(○)(○)T○○○○○AA	B113	Insert (Turning)
TPG ○○○(○)T○○○○○ME	C18	Insert (Turning)
TPG ○○○(○)T○○○○○SE	C18	Insert (Turning)
TPGB ○○○(○)(○)(○)	B86, C27, J37	Insert (Turning / Threading)
TPGB ○○○MEF	C16	Insert (Turning)
TPGB ○○○(○)(○)(○)NE	C27	Insert (Turning)
TPGB ○○○(○)(○)(○)SE	C26	Insert (Turning)
TPGB ○○○S○○○○○MES	C16	Insert (Turning)
TPGB ○○○(○)S○○○○○MET	C16	Insert (Turning)
TPGB ○○○(○)(○)(○)S○○○○○SET	C16	Insert (Turning)
TPGB ○○○(○)T○○○○○ME	C16	Insert (Turning)
TPGB ○○○(○)(○)(○)T○○○○○SE	C16	Insert (Turning)
TPGH ○○○(○)(○)(○)M%	B83	Insert (Turning)
TPGH ○○○(○)M%-H	B84	Insert (Turning)
TPGH ○○○(○)(○)(○)%	B82	Insert (Turning)
TPGH ○○○(○)(○)(○)%-H	B84	Insert (Turning)
TPGR ○○○(○)%-A/B/C	B88	Insert (Turning)

Part Numbers in Alphanumeric Order

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Part Number		Page	Description
TPGR	○○○○○(○)□-F	B87	Insert (Turning)
TPGT	○○○(○)AP	B86	Insert (Turning)
TPGT	○○○○○○CF	B80	Insert (Turning)
TPGT	○○○○○○M-CF	B80	Insert (Turning)
TPGT	○○○○○(○)MFP-PF	B80	Insert (Turning)
TPGT	○○○○○○MP-CF	B80	Insert (Turning)
TPGW	○○○S○○○○○MET	C16	Insert (Turning)
TPGW	○○○T○○○○○ME	C16	Insert (Turning)
TPGW	○○○T○○○○○SE	C16	Insert (Turning)
TPK	○○PDFR	M14, M137	Insert (Milling) MTP90
TPK	○○PDTR	M14, M137	Insert (Milling) MTP90
TPKR	○○PDER-S	M14, M137	Insert (Milling) MTP90
TPM	○○○	B88, M14, M137	Insert (Turning / Milling)
TPMH	○○○(○)(○)(○)	C27	Insert (Turning)
TPMH	○○○(○)(○)(○)NE	C27	Insert (Turning)
TPMH	○○○(○)(○)(○)SE	C27	Insert (Turning)
TPMR	○○○	B87	Insert (Turning)
TPMR	○○○DP	B87	Insert (Turning)
TPMR	○○○(○)(○)(○)G	B87	Insert (Turning)
TPMR	○○○GP	B87	Insert (Turning)
TPMR	○○○HQ	B87	Insert (Turning)
TPMR	○○PDER-H	M14, M137	Insert (Milling) MTP90
TPMT	○○○(○)APD	C27	Insert (Turning)
TPMT	○○○(○)(○)(○)GP	B81	Insert (Turning)
TPMT	○○○(○)(○)(○)HQ	B81	Insert (Turning)
TPMT	○○○(○)(○)(○)PP	B80	Insert (Turning)
TPMT	○○○(○)(○)XP	B81	Insert (Turning)
TPMT	○○○XQ	B81	Insert (Turning)
TPMX	○○○(○)(○)(○)WP	B80	Insert (Turning)
TPMX	○○○□-WP	B80	Insert (Turning)
TS-3S		P8	Spare Parts (Lock Pin)
TT-15		P20	Spare Parts (Torx Wrench / T-shaped Type)
TT-25		P20	Spare Parts (Torx Wrench / T-shaped Type)
TT-25L		P20	Spare Parts (Torx Wrench / T-shaped Type)
TT-30		P20	Spare Parts (Torx Wrench / T-shaped Type)
TT	43ER○○○M	J30	Insert (Threading)
TT	○○□○○○○	J30, J31	Insert (Threading)
TTC-20		P20	Spare Parts (Torx Wrench / T-shaped Type)
TTC-25		P20	Spare Parts (Torx Wrench / T-shaped Type)
TTP-20		P20	Spare Parts (Torx Plus Wrench / T-shaped Type)
TTW-15		P20	Spare Parts (Torx Wrench / T-shaped Type)
TTX	32R○○○○(○)	J29	Insert (Threading)
TTX	32R○○○○(○)S	J29	Insert (Threading)
TWBR	○○○○○-○○○	F42	Twin Bars (Boring)
TWBTR	○○○○○-○○○	F43	Twin Bars (Boring)
TWFGL	○○○	G94	Twin Bars (Face Grooving)
TWFGTR	○○○	G95	Twin Bars (Face Grooving)
U			
V			
VBET	○○○○(○)M□-F	B90	Insert (Turning)
VBET	○○○○(○)M□-FSF	B89	Insert (Turning)
VBET	○○○(○)□-FSF	B89	Insert (Turning)
VBET	○○○(○)(○)M□-Y	B90	Insert (Turning)
VBGT	○○○(○)FN-Z	B90	Insert (Turning)
VBGT	○○○○(○)M□-F	B90	Insert (Turning)
VBGT	○○○(○)(○)M□-Y	B91	Insert (Turning)
VBGT	○○○○□-F	B90	Insert (Turning)
VBGT	○○○(○)□-Y	B91	Insert (Turning)
VBGW	○○○MEF	C17	Insert (Turning)
VBGW	○○○S○○○○○MES	C17	Insert (Turning)
VBGW	○○○(○)S○○○○○MET	C17	Insert (Turning)
VBGW	○○○S○○○○○SET	C17	Insert (Turning)
VBGW	○○○(○)T○○○○○ME	C17	Insert (Turning)
VBGW	○○○(○)T○○○○○SE	C17	Insert (Turning)
VBMT	○○○(○)(○)	C28	Insert (Turning)
VBMT	○○○GP	B89	Insert (Turning)
VBMT	○○○HQ	B89	Insert (Turning)
VBMT	○○○(○)NE	C28	Insert (Turning)
VBMT	○○○(○)PP	B89	Insert (Turning)
VBMT	○○○(○)SE	C28	Insert (Turning)
VBMT	○○○(○)VF	B89	Insert (Turning)
VCET	○○○(○)M□-F	B93	Insert (Turning)
VCET	○○○(○)(○)M□-Y	B93	Insert (Turning)
VCGT	○○○	B93	Insert (Turning)
VCGT	○○○AH	B93	Insert (Turning)
VCGT	○○○AP	B93	Insert (Turning)
VCGT	○○○□-A3	B93	Insert (Turning)
VCGT	○○○(○)FN-Z	B93	Insert (Turning)
VCGT	○○○○MFP-GF	B92	Insert (Turning)
VCGT	○○○○MP-CF	B92	Insert (Turning)
VCGT	○○○(○)MFP-SKS	B92	Insert (Turning)
VCGW	○○○○○(○)S○○○○○MET	C17	Insert (Turning)
VCGW	○○○○○S○○○○○SET	C17	Insert (Turning)
VCGW	○○○○○(○)T○○○○○ME	C17	Insert (Turning)
VCGW	○○○○○(○)T○○○○○SE	C17	Insert (Turning)
VCMT	○○○○○(○)	C28	Insert (Turning)
VCMT	○○○(○)(○)(○)HQ	B92, M29, M246	Insert (Turning/Milling) / API Insert (Ring Grooving)
VCMT	○○○○○(○)NE	C28	Insert (Turning)
VCMT	○○○(○)(○)(○)PP	B92	Insert (Turning)
VCMT	○○○○○(○)SE	C28	Insert (Turning)
VCMT	○○○○○(○)VF	B92	Insert (Turning)
VNBR	○○○○-○○(○)	F37	Swiss IQ Bars (Boring)
VNBR	○○○○-○○(○)NB	C34, F37	Swiss IQ Bars (Boring)
VNBR	○○○○(○○)-○○(○)S	F36	Swiss IQ Bars (Boring)

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Part Number		Page	Description
VNBTR	○○○○-○○(○)	F37	Swiss IQ Bars (Boring)
VNBXR	○○○○(○)-○○(○)S	F40	Swiss IQ Bars (Boring)
VNFGR	○○○○-○○	G92	Swiss IQ Bars (Face Grooving)
VNFGR	○○○○-○○NB	C34, G92	Swiss IQ Bars (Face Grooving)
VNGA	○○○	B45	Insert (Turning)
VNGA	○○○MEF	C12	Insert (Turning)
VNGA	○○○ME4	C12	Insert (Turning)
VNGA	○○○S○○○○○	B112	Insert (Turning)
VNGA	○○○(○)S○○○○○ME	C12	Insert (Turning)
VNGA	○○○S○○○○○MEH	C12	Insert (Turning)
VNGA	○○○S○○○○○MEP	C12	Insert (Turning)
VNGA	○○○S○○○○○MET	C12	Insert (Turning)
VNGA	○○○(○)S○○○○○SE	C12	Insert (Turning)
VNGA	○○○S○○○○○SET	C12	Insert (Turning)
VNGA	○○○T○○○○○	B112	Insert (Turning)
VNGA	○○○T○○○○○AA	B112	Insert (Turning)
VNGA	○○○T○○○○○ME	C12	Insert (Turning)
VNGG	○○○MFP-SK	B44	Insert (Turning)
VNGG	○○○○MU	B45	Insert (Turning)
VNGG	○○○(○)M-SK	B44	Insert (Turning)
VNGG	○○○(○)%	B45	Insert (Turning)
VNGR	○○○○-○○	G61	Swiss IQ Bars (Grooving)
VNGR	○○○○-○○NB	C34, G61	Swiss IQ Bars (Grooving)
VNMA	○○○T○○○○○AA	B112	Insert (Turning)
VNMG	○○○	B44	Insert (Turning)
VNMG	○○○(○)GP	B44	Insert (Turning)
VNMG	○○○HQ	B44	Insert (Turning)
VNMG	○○○KG	B45	Insert (Turning)
VNMG	○○○KH	B45	Insert (Turning)
VNMG	○○○MQ	B45	Insert (Turning)
VNMG	○○○MS	B45	Insert (Turning)
VNMG	○○○MU	B45	Insert (Turning)
VNMG	○○○(○)PP	B44	Insert (Turning)
VNMG	○○○PQ	B44	Insert (Turning)
VNMG	○○○%VC	B44	Insert (Turning)
VNMG	○○○SG	B45	Insert (Turning)
VNMG	○○○TN-V	B44	Insert (Turning)
VNMG	○○○VF	B44	Insert (Turning)
VNMM	○○○(○)M	C23	Insert (Turning)
VNMM	○○○(○)M-NE	C23	Insert (Turning)
VNMM	○○○(○)M-SE	C23	Insert (Turning)
VNTR	○○○-○○	J36	Swiss IQ Bars (Threading)
VPET	○○○○(○)(○)F%-USF	B96	Insert (Turning)
VPET	○○○○(○)(○)M%-F	B95	Insert (Turning)
VPET	○○○○(○)(○)M%-FSF	B95	Insert (Turning)
VPET	○○○○(○)MF%-J	B96	Insert (Turning)
VPET	○○○○(○)(○)MF%-U	B96	Insert (Turning)
VPET	○○○○(○)(○)MF%-USF	B96	Insert (Turning)
VPET	○○○○(○)(○)%-FSF	B95	Insert (Turning)
VPGT	○○○○CF	B94	Insert (Turning)
VPGT	○○○○(○)(○)CK	B94	Insert (Turning)
VPGT	○○○○M-CF	B94	Insert (Turning)
VPGT	○○○○(○)(○)M-CK	B94	Insert (Turning)
VPGT	○○○○MF-GF	B94	Insert (Turning)
VPGT	○○○○MFP-GF	B94	Insert (Turning)
VPGT	○○○○MP-CF	B94	Insert (Turning)
VPGT	○○○○(○)(○)MP-CK	B94	Insert (Turning)
W			
W-6		P20	Spare Parts (Washer)
W6-14		P20	Spare Parts (Washer)
W6X17		P7	Spare Parts (Screw)
W6X18		P7	Spare Parts (Screw)
W6X18N		P7	Spare Parts (Screw)
W6X20		P7	Spare Parts (Screw)
W-8		P20	Spare Parts (Washer)
W8X16		P7	Spare Parts (Screw)
W8X18		P7	Spare Parts (Screw)
W8X21		P7	Spare Parts (Screw)
W10X31		P4, P7	Spare Parts (Screw)
WB-5		P20	Spare Parts (Washer)
WB-6		P20	Spare Parts (Washer)
WB-8		P20	Spare Parts (Washer)
WBET	○○○○(○)(○)M%-F	B97	Insert (Turning)
WBET	○○○○○(○)M%-P	B98	Insert (Turning)
WBGT	○○○○○(○)MFP%-PF	B97	Insert (Turning)
WBGT	○○○○○M%-CF	B97	Insert (Turning)
WBGT	○○○○MP%-CF	B97	Insert (Turning)
WBGT	○○○○(○)(○)M%-F	B98	Insert (Turning)
WBGT	○○○○(○)(○)%-F	B98	Insert (Turning)
WBGW	○○○○(○)(○)%	B98	Insert (Turning)
WBGW	○○○○(○)(○)S○○○○○%-SET	C18	Insert (Turning)
WBGW	○○○○(○)T○○○○○%-SE	C18	Insert (Turning)
WBMT	○○○○(○)(○)L	C29	Insert (Turning)
WBMT	○○○○○(○)L-SE	C29	Insert (Turning)
WBMT	○○○○(○)(○)%-DP	B97	Insert (Turning)
WCMX	(S)○○○○○(○)-M1(A)	K103	Insert (Drilling) HOLESHOT Drill (DR) / Coremaster Coredrill
WCMX	○○(□)○○○-M1(A)	K103, K109	Insert (Drilling) HOLESHOT Drill (DR) / Coremaster Coredrill
WCS-1N		P16	Spare Parts (Clamp Set)
WCS-8		P16	Spare Parts (Clamp Set)
WDRC○(○)		K35	Spare Parts (Wrench)
WN-1		P21	Spare Parts (Shim Nut)
WNEU	○○○○○○EN-GL	M21	Insert (Milling)
WNGA	○○○MEF	C13	Insert (Turning)
WNGA	○○○S○○○○○ME	C13	Insert (Turning)
WNGA	○○○S○○○○○MET	C13	Insert (Turning)
WNGA	○○○T○○○○○ME	C13	Insert (Turning)
WNGA	○○○T○○○○○AA	B112	Insert (Turning)

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Part Number		Page	Description
WNGA	○○○T○○○○○	B112	Insert (Turning)
WNGG	○○○AH	B49	Insert (Turning)
WNGG	○○○TK	B48	Insert (Turning)
WNGG	○○○R/L	B49	Insert (Turning)
WNGG	○○○(○)R/L-S	B49	Insert (Turning)
WNGT	○○○○○○FN-AM	M21, M111	Insert (Milling) MFWN
WNMA	○○○	B49	Insert (Turning)
WNMG	○○○	B47	Insert (Turning)
WNMG	○○○C	B49	Insert (Turning)
WNMG	○○○CJ	B47	Insert (Turning)
WNMG	○○○CQ	B47	Insert (Turning)
WNMG	○○○GC	B49	Insert (Turning)
WNMG	○○○GP	B46	Insert (Turning)
WNMG	○○○GS	B47	Insert (Turning)
WNMG	○○○GT	B47	Insert (Turning)
WNMG	○○○(○)HQ	B46	Insert (Turning)
WNMG	○○○HS	B47	Insert (Turning)
WNMG	○○○HT	B47	Insert (Turning)
WNMG	○○○KG	B49	Insert (Turning)
WNMG	○○○KH	B49	Insert (Turning)
WNMG	○○○KQ	B49	Insert (Turning)
WNMG	○○○MQ	B48	Insert (Turning)
WNMG	○○○MS	B48	Insert (Turning)
WNMG	○○○MU	B48	Insert (Turning)
WNMG	○○○PG	B47	Insert (Turning)
WNMG	○○○PH	B48	Insert (Turning)
WNMG	○○○(○)PP	B46	Insert (Turning)
WNMG	○○○PQ	B46	Insert (Turning)
WNMG	○○○PS	B47	Insert (Turning)
WNMG	○○○PT	B47	Insert (Turning)
WNMG	○○○SG	B48	Insert (Turning)
WNMG	○○○TK	B48	Insert (Turning)
WNMG	○○○WE	B46	Insert (Turning)
WNMG	○○○WF	B46	Insert (Turning)
WNMG	○○○WP	B46	Insert (Turning)
WNMG	○○○WQ	B46	Insert (Turning)
WNMG	○○○XP	B48	Insert (Turning)
WNMG	○○○XQ	B48	Insert (Turning)
WNMG	○○○XS	B48	Insert (Turning)
WNMG	○○○ZS	B49	Insert (Turning)
WNMM	○○○(○)M	C23	Insert (Turning)
WNMM	○○○(○)M-NE	C23	Insert (Turning)
WNMM	○○○(○)M-SE	C23	Insert (Turning)
WNMU	○○○○○○EN-GH	M21, M111, M116	Insert (Milling) MFWN
WNMU	○○○○○○EN-GM	M21, M111, M116	Insert (Milling) MFWN
WNMU	○○○○○○EN-SM	M21, M111, M116	Insert (Milling) MFWN
WP-1S		P8	Spare Parts (Shim Pin)
WP5X11		P8	Spare Parts (Shim Pin)
WP5X15		P8	Spare Parts (Shim Pin)
WPGT	○○○(○)M R/L-Y	B99	Insert (Turning)
WPGT	○○○(○)(○)R/L-Y	B99	Insert (Turning)
WPGW	○○○(○)(○)	B99	Insert (Turning)
WPMT	○○○○○	C29	Insert (Turning)
WPMT	○○○(○)GP	B99	Insert (Turning)
WPMT	○○○(○)(○)HQ	B99	Insert (Turning)
WPMT	○○○○○NE	C29	Insert (Turning)
WPMT	○○○○○SE	C29	Insert (Turning)
WS-10		D11, G33, H47	Spare Parts (Washer)
WSP-1		P20	Spare Parts (Spacer)
WTENN	○○○○□-○○N	D18	Toolholder (Turning)
WTJNR/L	○○-○□	D18	Toolholder (Turning)
WTJNR/L	○○○○□-○○N	D18	Toolholder (Turning)
WTKNR/L	○○-○□	D18	Toolholder (Turning)
WTKNR/L	○○○○□-○○N	D18	Toolholder (Turning)
WTN-33		P14	Spare Parts (Shim)
WTN-33-20		P14	Spare Parts (Shim)
WWLNR/L	○○○○□-○○	D25	Toolholder (Turning)
WWN-42		P14	Spare Parts (Shim)
WWP-42		P14	Spare Parts (Shim)
WWP-42-16		P14	Spare Parts (Shim)
X			
XNS610		P7	Spare Parts (Mounting Screw)
XPMT	○○○○○○	M29, M156, M247	Insert (Milling) EM / CM
XPMT	○○T○○○	M29, M156~M158, M247	Insert (Milling) EM / FM90 / CM
Y			
Z			
ZCMT	○○○○○○	K66	Insert (Drilling) DRZ MAGIC DRILL
ZCMT	○○○○○○SP	K66	Insert (Drilling) DRZ MAGIC DRILL
ZCMT	○○○○○○SU	K66	Insert (Drilling) DRZ MAGIC DRILL
ZXMT	○○○○○○GH	K83	Insert (Drilling) DRX MAGIC DRILL
ZXMT	○○○○○○GH-E	K83	Insert (Drilling) DRX MAGIC DRILL
ZXMT	○○○○○○GM	K83	Insert (Drilling) DRX MAGIC DRILL
ZXMT	○○○○○○GM-E	K83	Insert (Drilling) DRX MAGIC DRILL
ZXMT	○○○○○○GM-I	K83	Insert (Drilling) DRX MAGIC DRILL
ZXMT	○○○○○○SM	K83	Insert (Drilling) DRX MAGIC DRILL
ZXMT	○○○○○○SM-E	K83	Insert (Drilling) DRX MAGIC DRILL

Part Numbers in Alphanumeric Order

○ : NUMBER □ : LETTER

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