DIA EDGE
TOOL NEWS
2018.12 Update
B210A

Tools for Small Part Machining

Series Expansion

MITSUBISHI MATERIALS CORPORATION

PVD Coated Cemented Carbide Grade for Carbon Steels

MS6015

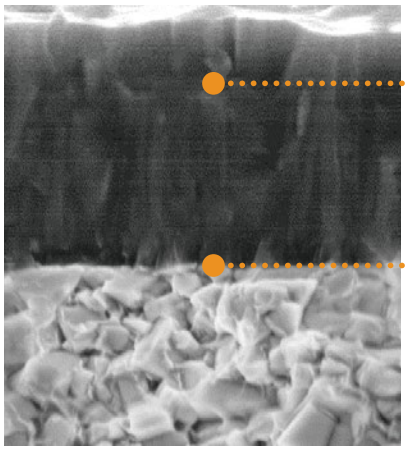
Designed for performance in irons, carbon steels, and free cutting steels.

Features 1

A fine grain carbide substrare and a new PVD coating that greatly improves wear resistance.

	MS6015	Conventional
Coating	TiCN Multilayer	TiAlN
Hardness (HV)	3000	2800
Wear Coefficient (Carbon Steels)	Low	High
Base Material Hardness (HRA)	92.0	92.0
T.R.S (GPa)	2.0	2.0

Ti-C-N Multilayer Coating



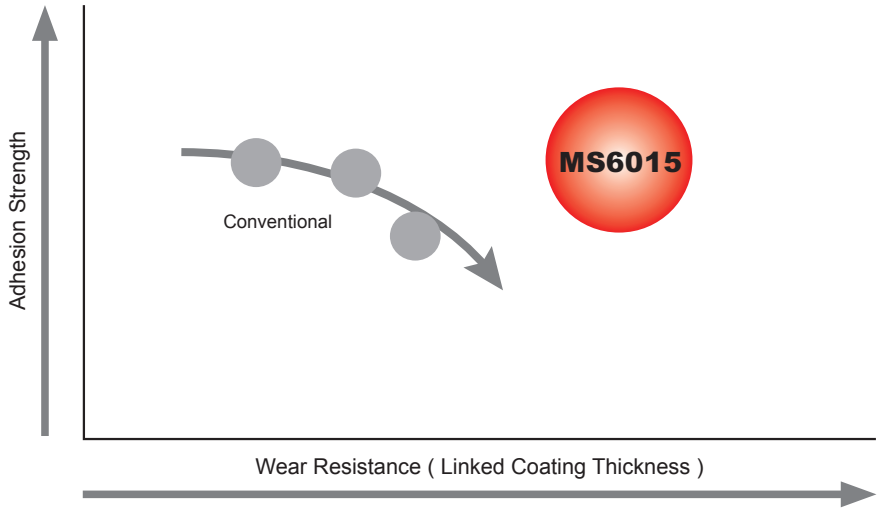
Superior wear and welding resistance and demonstrating the best possible results for carbon steels.

Minute multilayers remarkably improve welding.

Extremely smooth PVD coating meens exellent chip evacuation resulting in good wall surface finish and long tool life.

Optimizing the Laminated Structure

Optimizing the laminated structure enables the thickening of coating which leads to significant wear resistance.



Features 2

Set the corner radius to a minus tolerance.

Order Number		
DCGT32.5 **0.5 M** RSN	→	0.5M R.007 inch (R.006 – R.008 inch)
DCGT32.5 **1 M** SMG	→	1M R.015 inch (R.014 – R.016 inch)

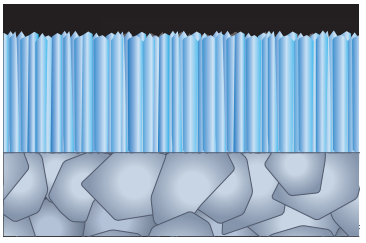
Light Cutting **LS-P** Breaker

Surface treatment before coating drastically improves welding resistance extending tool life.

By flattening the substrate surface, the coating particles crystals form straighty, leading to stable cutting and welding prevention.

*Graphical Representation.

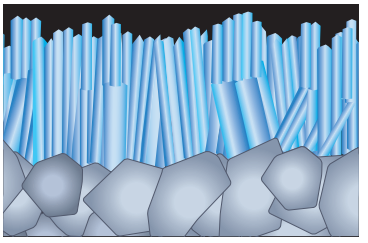
LS-P Breaker



Flat Substrate Surface

Coating layer forms straighty.
Coating surface is smooth and prevents welding.

Conventional



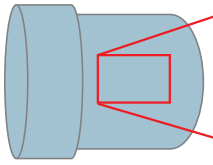
Uneven Substrate Surface

Coating layer forms irregularly.
Low cutting performance due to voids and defects.

Cutting Performance

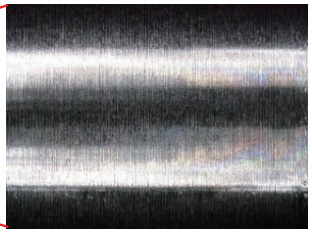
Surface Roughness in Soft Magnetic Iron Cutting

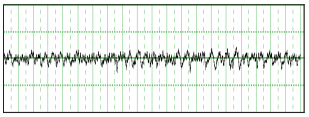
High quality worked surface preventing cloudiness.



Cutting Time ≒ 9 min

MS6015+LS-P

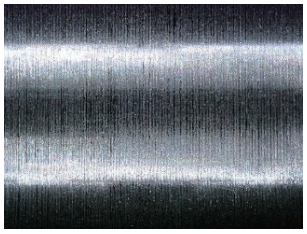


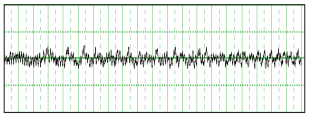


Rz=145.118 µ-inch

Glossy Surface

Conventional A

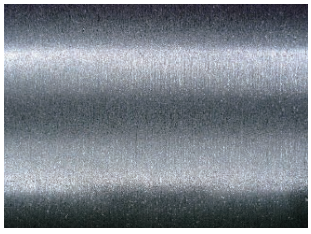


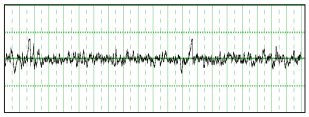


Rz=147.087 µ-inch

Streaks

Conventional B





Rz=178.898 µ-inch

Cloudy Surface

<Cutting Conditions>

Workpiece Material	: ELCH2	Feed per Rev.	: f=.001 IPR
Insert	: DCGT32.50.5MLS-P	Depth of Cut	: ap=.020 inch
Grade	: MS6015	Cutting Mode	: Wet Cutting (Water-insoluble)
Cutting Speed	: vc=330 SFM	Machine	: Swiss Style Lathes

Pressed Insert for Back Turning

SMB Breaker

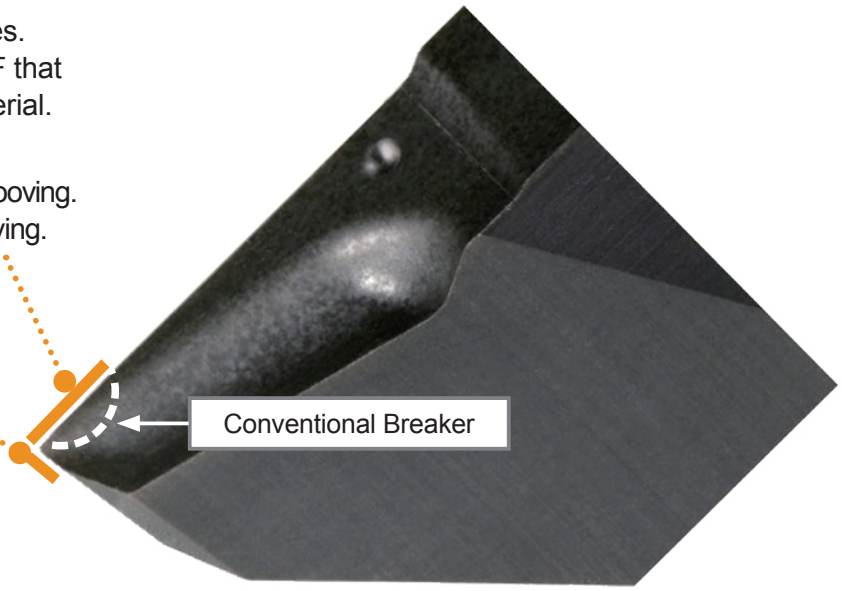
Outstanding surface finish in back turning applications from a pressed geometry.

Features

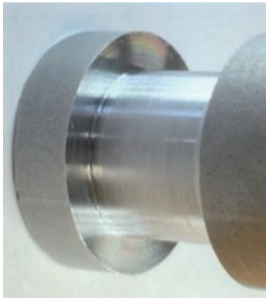
Eliminates the need for rough and finish passes.
Achieves a stable tool life by adopting VP15TF that can be used for many types of workpiece material.

Prevents the biting of the chip at end face when grooving.
Geometry stabilizes insert when plunging of grooving.

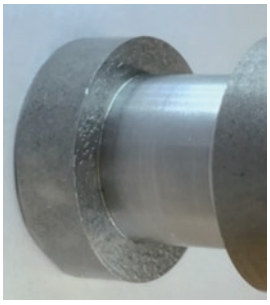
Good surface finish from wiper geometry.



SMB Breaker



Conventional (Ground Type)



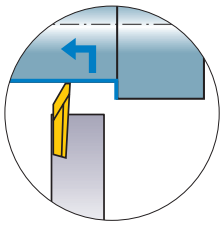
Set the Corner Radius to a Minus Tolerance
01M : R.0031" 02M : .0071"

<Cutting Conditions>

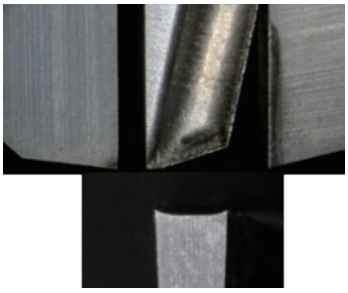
Workpiece Material	: Low Carbon Steels
Inserts	: BTAT723501MR-SMB
Grade	: VP15TF
Cutting Speed	: vc=330 SFM
Depth of Cut	: ap=.098 inch
Feed (Grooving)	: f=.0012 IPR
Feed (External)	: f=.0016 IPR
Cutting Mode	: Wet Cutting (Water-soluble)
Machine	: Swiss Style Lathes

Cutting Performance

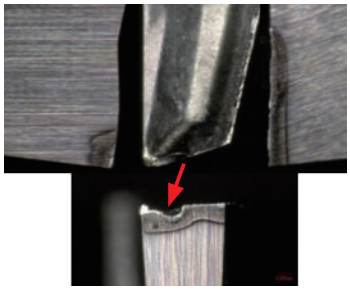
Superior wear resistance compared to ground inserts - even in difficult workpiece materials such as AISI 304SS.



SMB Breaker



Conventional (Ground Type)

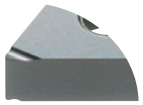
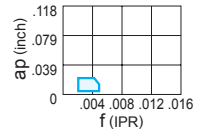
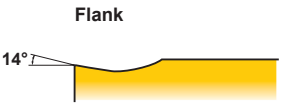


<Cutting Conditions>

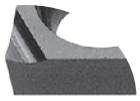
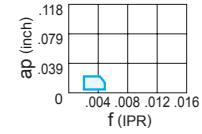
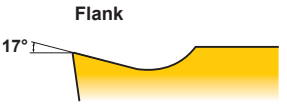
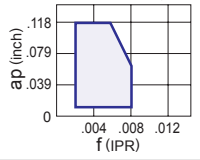
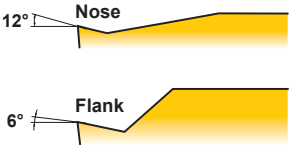
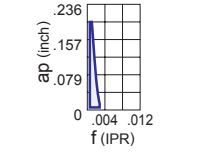
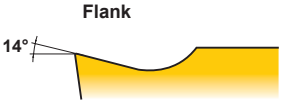
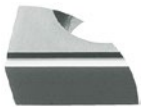
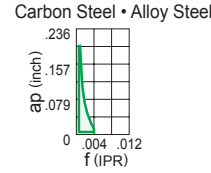
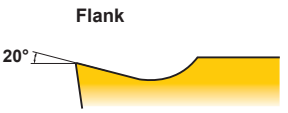
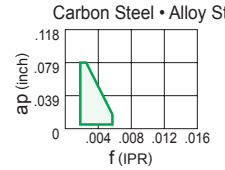
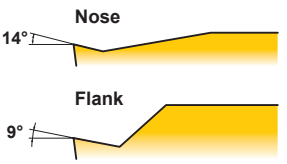
Workpiece Material	: AISI 304
Inserts	: BTAT723501MR-SMB
Grade	: VP15TF
Cutting Speed	: vc=195 SFM
Depth of Cut	: ap=.098 inch
Feed (Grooving)	: f=.0008 IPR
Feed (External)	: f=.0016 IPR
Number of Workpieces	: 100 pieces
Cutting Mode	: Wet Cutting (Water-insoluble)
Machine	: Swiss Style Lathes

Breaker System

Negative Inserts

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	G	**R/L-FS** 	**Precise Finishing** Double-sided chip breaker. A narrow lead chip breaker for good chip control. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  

Positive Inserts

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	G	**R/L-F** 	**Finish Cutting of Swiss Style Lathes** Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  
Light Cutting	G	**LS-P** 	**Light Cutting of Swiss Style Lathes** Designed with parallel cutting edges. Achieves stable chip control over a wide range from low to medium depths of cut. Surface treatment before coating drastically improves welding resistance extending tool life.	Carbon Steel • Alloy Steel  
	G	**R/L-SS** 	**Light Cutting of Swiss Style Lathes** The parallel chip breaker. Excellent chip control at low feed rates.	Carbon Steel • Alloy Steel  
Medium Cutting	G	**R/L-SN** 	**Medium Cutting of Swiss Style Lathes** The parallel chip breaker. Excellent chip control at low to medium feed rates.	Carbon Steel • Alloy Steel  
	G	**SMG** 	**Medium Cutting of Swiss Style Lathes** 3D molded chip breaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning.	Carbon Steel • Alloy Steel  

Recommended Cutting Conditions

(inch)

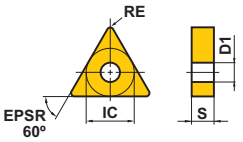
	Workpiece Material	Grade	Cutting Speed **vc** (SFM)	Feed **f** (IPR)
P	Carbon Steels · Alloy Steels	**MS6015**	330 (165—490)	.0031 (.0004—.0059)
	Pure Irons · Free Cutting Steels		490 (165—820)	.0031 (.0004—.0059)
M	Stainless Steels	**MS6015**	260 (165—395)	.0024 (.0008—.0039)

MS6015

Negative Inserts (With Hole)

G Class

TNGG



Finish		
R/L-FS		
		

RE : Set the corner radius to a minus tolerance.

(inch)

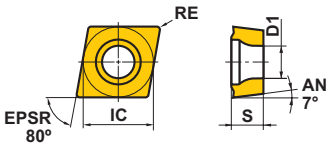
Order Number	Cutting Area	Stock MS6015		IC	S	RE	D1
NEW **TNGG330.5RFS**	F	●		.375	.187	.008	.150
NEW **TNGG330.5LFS**	F	●		.375	.187	.008	.150
NEW **TNGG331RFS**	F	●		.375	.187	.016	.150
NEW **TNGG331LFS**	F	●		.375	.187	.016	.150
NEW **TNGG332RFS**	F	●		.375	.187	.031	.150
NEW **TNGG332LFS**	F	●		.375	.187	.031	.150

● : Inventory maintained.

7° Positive Inserts (With Hole)

G Class

CCGH
CCGT



Finish	Light	Light
R/L-F	LS-P	R/L-SS
		
Medium	**Medium**	
R/L-SN	SMG	
		

RE : Set the corner radius to a minus tolerance.

(inch)

Order Number	Cutting Area	Stock MS6015	Stock	IC	S	RE	D1
NEW **CCGH21.50.5MRF**	F	●		.250	.094	.008	.110
NEW **CCGH21.50.5MLF**	F	●		.250	.094	.008	.110
NEW **CCGH21.51MRF**	F	●		.250	.094	.016	.110
NEW **CCGH21.51MLF**	F	●		.250	.094	.016	.110
NEW **CCGT03S101MR-F**	F	●		.141*	.055	.004	.079
NEW **CCGT03S101ML-F**	F	●		.141*	.055	.004	.079
NEW **CCGT03S102MR-F**	F	●		.141*	.055	.008	.079
NEW **CCGT03S102ML-F**	F	●		.141*	.055	.008	.079
NEW **CCGT03S104MR-F**	F	●		.141*	.055	.016	.079
NEW **CCGT03S104ML-F**	F	●		.141*	.055	.016	.079
NEW **CCGT04T001MR-F**	F	●		.172*	.070	.004	.094
NEW **CCGT04T001ML-F**	F	●		.172*	.070	.004	.094
NEW **CCGT04T002MR-F**	F	●		.172*	.070	.008	.094
NEW **CCGT04T002ML-F**	F	●		.172*	.070	.008	.094
NEW **CCGT04T004MR-F**	F	●		.172*	.070	.016	.094
NEW **CCGT04T004ML-F**	F	●		.172*	.070	.016	.094
NEW **CCGT21.50.2MLS-P**	L	●		.250	.094	.004	.110
NEW **CCGT21.50.5MLS-P**	L	●		.250	.094	.008	.110
NEW **CCGT32.50.2MLS-P**	L	●		.375	.156	.004	.173
NEW **CCGT32.50.5MLS-P**	L	●		.375	.156	.008	.173
NEW **CCGT32.51MLS-P**	L	●		.375	.156	.016	.173
CCGT21.50.2MRSS	L	●		.250	.094	.004	.110
NEW **CCGT21.50.2MLSS**	L	●		.250	.094	.004	.110
CCGT21.50.5MRSS	L	●		.250	.094	.008	.110
NEW **CCGT21.50.5MLSS**	L	●		.250	.094	.008	.110
CCGT32.50.2MRSS	L	●		.375	.156	.004	.173
NEW **CCGT32.50.2MLSS**	L	●		.375	.156	.004	.173
CCGT32.50.5MRSS	L	●		.375	.156	.008	.173
NEW **CCGT32.50.5MLSS**	L	●		.375	.156	.008	.173
CCGT32.51MRSS	L	●		.375	.156	.016	.173
NEW **CCGT32.51MLSS**	L	●		.375	.156	.016	.173

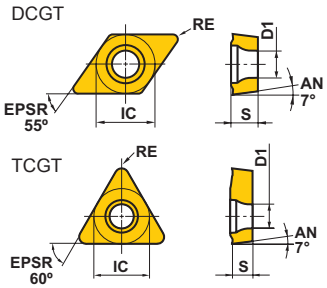
Order Number	Cutting Area	Stock MS6015	Stock	IC	S	RE	D1
CCGT21.50.2MRSN	M	●		.250	.094	.004	.110
NEW **CCGT21.50.2MLSN**	M	●		.250	.094	.004	.110
CCGT21.50.5MRSN	M	●		.250	.094	.008	.110
NEW **CCGT21.50.5MLSN**	M	●		.250	.094	.008	.110
CCGT32.50.2MRSN	M	●		.375	.156	.004	.173
NEW **CCGT32.50.2MLSN**	M	●		.375	.156	.004	.173
CCGT32.50.5MRSN	M	●		.375	.156	.008	.173
NEW **CCGT32.50.5MLSN**	M	●		.375	.156	.008	.173
CCGT32.51MRSN	M	●		.375	.156	.016	.173
NEW **CCGT32.51MLSN**	M	●		.375	.156	.016	.173
CCGT21.50.2MSMG	M	●		.250	.094	.004	.110
CCGT21.50.5MSMG	M	●		.250	.094	.008	.110
CCGT21.51MSMG	M	●		.250	.094	.016	.110
CCGT32.50.2MSMG	M	●		.375	.156	.004	.173
CCGT32.50.5MSMG	M	●		.375	.156	.008	.173
CCGT32.51MSMG	M	●		.375	.156	.016	.173

* Diameter of inscribed circle is non-ISO standard. (For SCLC type)

MS6015

7° Positive Inserts (With Hole)

G Class



Light	Light	Medium	Medium
LS-P	R/L-SS	R/L-SN	SMG
			
Finish			
R/L-F			
			

RE : Set the corner radius to a minus tolerance.

(inch)

	Order Number	Cutting Area	Stock MS6015		IC	S	RE	D1
NEW	DCGT21.50.2MLS-P	L	●		.250	.094	.004	.110
NEW	DCGT21.50.5MLS-P	L	●		.250	.094	.008	.110
NEW	DCGT21.51MLS-P	L	●		.250	.094	.016	.110
NEW	DCGT32.50.2MLS-P	L	●		.375	.156	.004	.173
NEW	DCGT32.50.5MLS-P	L	●		.375	.156	.008	.173
NEW	DCGT32.51MLS-P	L	●		.375	.156	.016	.173
	DCGT21.50.2MRSS	L	●		.250	.094	.004	.110
NEW	DCGT21.50.2MLSS	L	●		.250	.094	.004	.110
	DCGT21.50.5MRSS	L	●		.250	.094	.008	.110
NEW	DCGT21.50.5MLSS	L	●		.250	.094	.008	.110
	DCGT32.50.2MRSS	L	●		.375	.156	.004	.173
NEW	DCGT32.50.2MLSS	L	●		.375	.156	.004	.173
	DCGT32.50.5MRSS	L	●		.375	.156	.008	.173
NEW	DCGT32.50.5MLSS	L	●		.375	.156	.008	.173
	DCGT32.51MRSS	L	●		.375	.156	.016	.173
NEW	DCGT32.51MLSS	L	●		.375	.156	.016	.173
	DCGT21.50.2MRSN	M	●		.250	.094	.004	.110
NEW	DCGT21.50.2MLSN	M	●		.250	.094	.004	.110
	DCGT21.50.5MRSN	M	●		.250	.094	.008	.110
NEW	DCGT21.50.5MLSN	M	●		.250	.094	.008	.110
	DCGT32.50.2MRSN	M	●		.375	.156	.004	.173
NEW	DCGT32.50.2MLSN	M	●		.375	.156	.004	.173
	DCGT32.50.5MRSN	M	●		.375	.156	.008	.173
NEW	DCGT32.50.5MLSN	M	●		.375	.156	.008	.173
	DCGT32.51MRSN	M	●		.375	.156	.016	.173
NEW	DCGT32.51MLSN	M	●		.375	.156	.016	.173
	DCGT21.50.2MSMG	M	●		.250	.094	.004	.110
	DCGT21.50.5MSMG	M	●		.250	.094	.008	.110
	DCGT21.51MSMG	M	●		.250	.094	.016	.110
	DCGT32.50.2MSMG	M	●		.375	.156	.004	.173
	DCGT32.50.5MSMG	M	●		.375	.156	.008	.173
	DCGT32.51MSMG	M	●		.375	.156	.016	.173

	Order Number	Cutting Area	Stock MS6015		IC	S	RE	D1
NEW	TCGT1.210.2MRF	F	●		.156	.063	.004	.091
NEW	TCGT1.210.2MLF	F	●		.156	.063	.004	.091
NEW	TCGT1.210.5MRF	F	●		.156	.063	.008	.091
NEW	TCGT1.210.5MLF	F	●		.156	.063	.008	.091
NEW	TCGT1.211MRF	F	●		.156	.063	.016	.091
NEW	TCGT1.211MLF	F	●		.156	.063	.016	.091

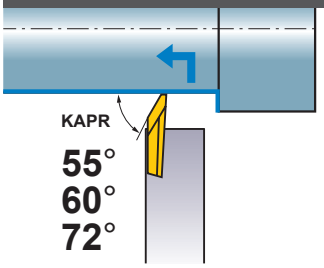
● : Inventory maintained.

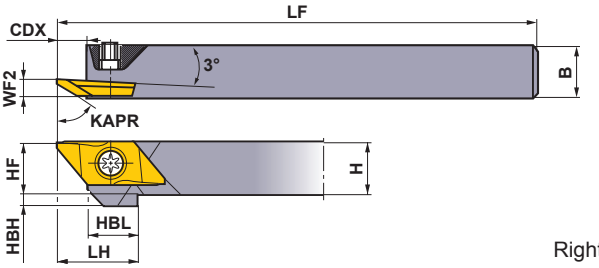
Memo

External Back Turning

Inch Standard

BTAH





Right hand tool holder shown.

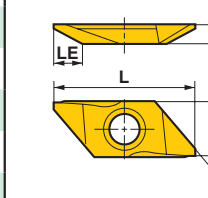
Order Number	Stock		Insert Type		Dimensions (inch)									*	
	R	L			H	B	LF	LH	HF	WF2	HBH	HBL	CDX	Clamp Screw	Wrench
BTAHR/L-062	●	●	BTAT	5528□□R/L-B	.375	.375	4.724	.591	.375	.138	.125	.374	.217	NS402W	NKY15S
BTAHR/L-082	●	●		6035□□R/L-B 605000RX	.500	.500	4.724	.591	.500	.138	—	.374	.217	NS403W	NKY15S
BTAHR/L-102	●			7235□□R-SMB	.625	.625	4.724	.591	.625	.138	—	.374	.217	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.
Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).
∗ Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

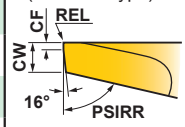
Inserts

(inch)

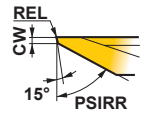
Order Number	Hand	Coated		Dimensions							LE*	Geometry
		VP15TF	MS6015 NEW	PSIRR/L*	REL	CF	L	W1	CW	S		
NEW **BTAT7235V5R-SMB**	R	●		72°	.002	.012	.787	.315	.055	.098	.138	With Breaker
NEW **BTAT723501MR-SMB**	R	●		72°	.003	.012	.787	.315	.055	.098	.138	
NEW **BTAT723502MR-SMB**	R	●		72°	.007	.012	.787	.315	.055	.098	.138	
BTAT552800R-B	R	●	●	55°	.000	.000	.787	.315	.020	.098	.110	
BTAT552800L-B	L	●		55°	.000	.000	.787	.315	.020	.098	.110	
BTAT552801R-B	R	●	●	55°	.004	.000	.787	.315	.020	.098	.110	
BTAT552801L-B	L	●		55°	.004	.000	.787	.315	.020	.098	.110	
BTAT603500R-B	R	●	●	60°	.000	.000	.787	.315	.020	.098	.138	
BTAT603500L-B	L	●		60°	.000	.000	.787	.315	.020	.098	.138	
NEW **BTAT603501MR-B**	R		●	60°	.003	.000	.787	.315	.020	.098	.138	
BTAT603501R-B	R	●	●	60°	.004	.000	.787	.315	.020	.098	.138	
BTAT603501L-B	L	●		60°	.004	.000	.787	.315	.020	.098	.138	
BTAT605000RX	R	●		60°	.000	.000	.787	.315	.049	.098	.197	Without Breaker



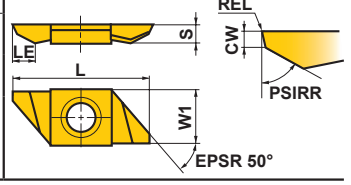
SMB Type (Pressed Type)



B Type (Ground Type)



Right hand insert shown.

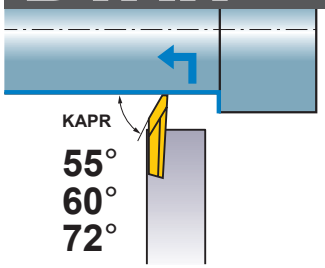


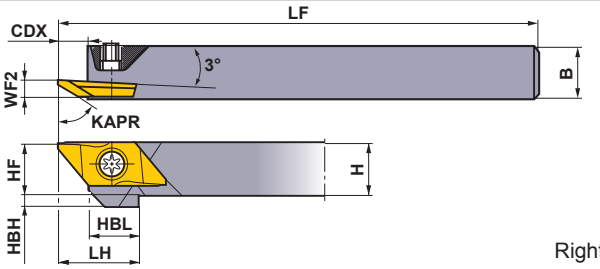
∗ Numeric value set insert on holder.

CUTTING CONDITIONS ➤ P11

● : Inventory maintained. (5 inserts in one case)

BTAH





Right hand tool holder shown.

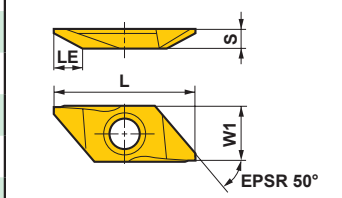
Order Number	Stock R	Stock L	Insert Type		Dimensions (mm) H	B	LF	LH	HF	WF2	HBH	HBL	CDX	* Clamp Screw	Wrench
BTAHR/L0810-50	●	●	BTAT	5528○○R/L-B	8	10	120	15	8	3.5	4	9.5	5.5	NS402W	NKY15S
BTAHR/L1010-50	●	●		6035○○R/L-B	10	10	120	15	10	3.5	2	9.5	5.5	NS402W	NKY15S
BTAHR/L1212-50	●	●		605000RX	12	12	120	15	12	3.5	—	9.5	5.5	NS403W	NKY15S
BTAHR/L1616-50	●			7235○○R-SMB	16	16	120	15	16	3.5	—	9.5	5.5	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.
Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).
∗ Clamp Torque (N • m) : NS402W=1.0, NS403W=1.0

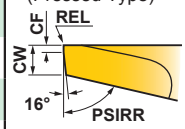
Inserts

(mm)

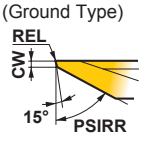
Order Number	Hand	Coated VP15TF	Coated MS6015 (NEW)	PSIRR/L*	Dimensions REL	CF	L	W1	CW	S	LE*	Geometry
NEW **BTAT7235V5R-SMB**	R	●		72°	0.05	0.3	20	8	1.4	2.5	3.5	With Breaker
NEW **BTAT723501MR-SMB**	R	●		72°	0.08	0.3	20	8	1.4	2.5	3.5	
NEW **BTAT723502MR-SMB**	R	●		72°	0.18	0.3	20	8	1.4	2.5	3.5	
BTAT552800R-B	R	●	●	55°	0	0	20	8	0.5	2.5	2.8	
BTAT552800L-B	L	●		55°	0	0	20	8	0.5	2.5	2.8	
BTAT552801R-B	R	●	●	55°	0.1	0	20	8	0.5	2.5	2.8	
BTAT552801L-B	L	●		55°	0.1	0	20	8	0.5	2.5	2.8	
BTAT603500R-B	R	●	●	60°	0	0	20	8	0.5	2.5	3.5	
BTAT603500L-B	L	●		60°	0	0	20	8	0.5	2.5	3.5	
NEW **BTAT603501MR-B**	R		●	60°	0.08	0	20	8	0.5	2.5	3.5	
BTAT603501R-B	R	●	●	60°	0.1	0	20	8	0.5	2.5	3.5	
BTAT603501L-B	L	●		60°	0.1	0	20	8	0.5	2.5	3.5	
BTAT605000RX	R	●		60°	0	0	20	8	1.25	2.5	5.0	Without Breaker



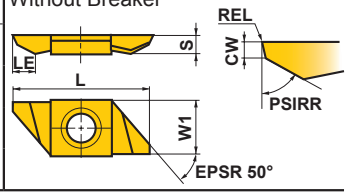
SMB Type (Pressed Type)



B Type (Ground Type)



Right hand insert shown.



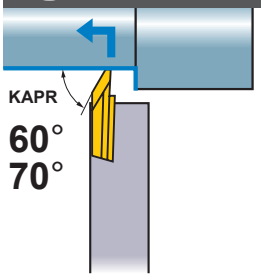
∗ Numeric value set insert on holder.

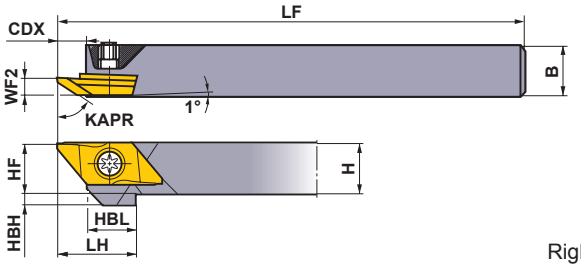
CUTTING CONDITIONS ➤ P12

External Back Turning

Inch Standard

CTBH





Right hand tool holder shown.

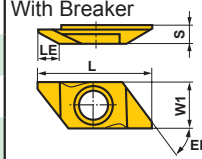
Order Number	Stock		Insert Type		Dimensions (inch)									*	
	R	L			H	B	LF	LH	HF	WF2	HBH	HBL	CDX	Clamp Screw	Wrench
CTBHR/L-062	●	●	BTBT	60450○R/L-B	.375	.375	4.724	.768	.375	.133	.125	.472	.295	NS402W	NKY15S
CTBHR/L-082	●	●		606000R/L	.500	.500	4.724	.768	.500	.133	—	.472	.295	NS403W	NKY15S
CTBHR/L-102	●	●		7055○○R-SMB	.625	.625	4.724	.768	.625	.133	—	.472	.295	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.
Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).
* Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

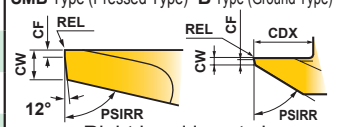
Inserts

(inch)

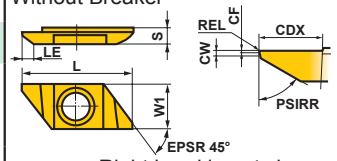
Order Number	Hand	Coated		Dimensions								LE*	Geometry
		VP15TF	MS6015 (NEW)	PSIRR/L*	REL	CF	L	W1	CW	S	CDX		
NEW **BTBT7055V5R-SMB**	R	●		70°	.002	.012	.984	.370	.053	.138	.256	.217	With Breaker
NEW **BTBT705501MR-SMB**	R	●		70°	.003	.012	.984	.370	.053	.138	.256	.217	
NEW **BTBT705502MR-SMB**	R	●		70°	.007	.012	.984	.370	.053	.138	.256	.217	
BTBT604500R-B	R	●	●	60°	.000	.008	.984	.370	.028	.138	.217	.177	
BTBT604500L-B	L	●		60°	.000	.008	.984	.370	.028	.138	.217	.177	
NEW **BTBT604501MR-B**	R		●	60°	.003	.012	.984	.370	.028	.138	.217	.177	
BTBT604501R-B	R	●	●	60°	.004	.012	.984	.370	.028	.138	.217	.177	
BTBT604501L-B	L	●		60°	.004	.012	.984	.370	.028	.138	.217	.177	
BTBT606000R	R	●		60°	.000	.008	.984	.370	.028	.138	.276	.236	Without Breaker
BTBT606000L	L	●		60°	.000	.008	.984	.370	.028	.138	.276	.236	



SMB Type (Pressed Type) **B** Type (Ground Type)



Right hand insert shown.



Right hand insert shown.

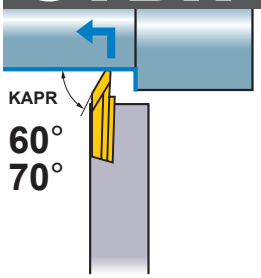
* Numeric value set insert on holder.

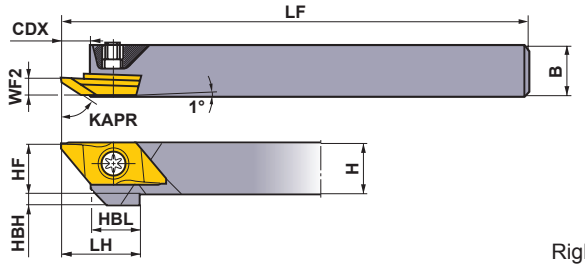
Recommended Cutting Conditions

	Workpiece Material	Grade	Cutting Speed **vc** (SFM)	Feed **f** (IPR)
P	Carbon Steels · Alloy Steels	**VP15TF**	165—490	.0004—.006
	Free Cutting Steels	**MS6015**	100—590	.0004—.006
M	Stainless Steels	**VP15TF**	165—395	.0008—.004
N	Non-Ferrous Metals	**MS6015**	230—755	.0012—.006

● : **Inventory maintained. (5 inserts in one case)**

CTBH





Right hand tool holder shown.

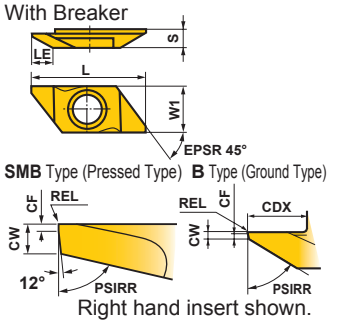
Order Number	Stock		Insert Type		Dimensions (mm)									*	
	R	L			H	B	LF	LH	HF	WF2	HBH	HBL	CDX	Clamp Screw	Wrench
CTBHR/L1010-160	●	●	BTBT	60450○R/L-B	10	10	120	19.5	10	3.4	2	12	7.5	NS402W	NKY15S
CTBHR/L1212-160	●	●		606000R/L	12	12	120	19.5	12	3.4	—	12	7.5	NS403W	NKY15S
CTBHR/L1616-160	●	●		7055○○R-SMB	16	16	120	19.5	16	3.4	—	12	7.5	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.
Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).
∗ Clamp Torque (N • m) : NS402W=1.0, NS403W=1.0

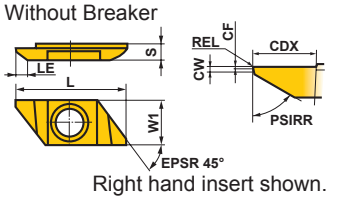
Inserts

(mm)

Order Number	Hand	Coated		Dimensions								LE*	Geometry
		VP15TF	MS6015 (NEW)	PSIRR/L*	REL	CF	L	W1	CW	S	CDX		
NEW **BTBT7055V5R-SMB**	R	●		70°	0.05	0.3	25	9.4	1.35	3.5	6.5	5.5	With Breaker
NEW **BTBT705501MR-SMB**	R	●		70°	0.08	0.3	25	9.4	1.35	3.5	6.5	5.5	
NEW **BTBT705502MR-SMB**	R	●		70°	0.18	0.3	25	9.4	1.35	3.5	6.5	5.5	
BTBT604500R-B	R	●	●	60°	0	0.2	25	9.4	0.7	3.5	5.5	4.5	
BTBT604500L-B	L	●		60°	0	0.2	25	9.4	0.7	3.5	5.5	4.5	
NEW **BTBT604501MR-B**	R		●	60°	0.08	0.3	25	9.4	0.7	3.5	5.5	4.5	
BTBT604501R-B	R	●	●	60°	0.1	0.3	25	9.4	0.7	3.5	5.5	4.5	
BTBT604501L-B	L	●		60°	0.1	0.3	25	9.4	0.7	3.5	5.5	4.5	
BTBT606000R	R	●		60°	0	0.2	25	9.4	0.7	3.5	7	6.0	Without Breaker
BTBT606000L	L	●		60°	0	0.2	25	9.4	0.7	3.5	7	6.0	



Right hand insert shown.



Right hand insert shown.

∗ Numeric value set insert on holder.

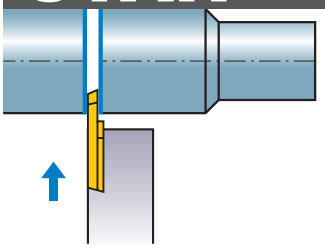
Recommended Cutting Conditions

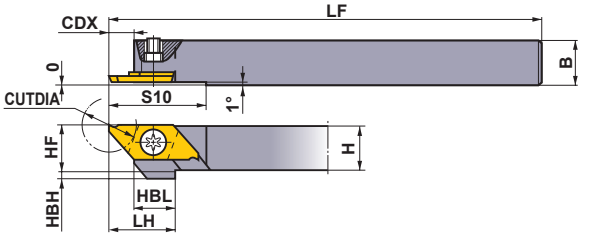
Workpiece Material		Properties	Grade	Cutting Speed **vc** (m/min)	Feed **f** (mm/rev)
P	Carbon Steels · Alloy Steels	180HB—280HB	**VP15TF**	100 (50—150)	0.08 (0.01—0.15)
	Free Cutting Steels	—	**MS6015**	110 (30—180)	0.08 (0.01—0.15)
M	Stainless Steels	≤200HB	**VP15TF**	80 (50—120)	0.06 (0.02—0.1)
N	Non-Ferrous Metals	—	**MS6015**	150 (70—230)	0.09 (0.03—0.15)

External Cutting Off

Inch Standard

CTAH



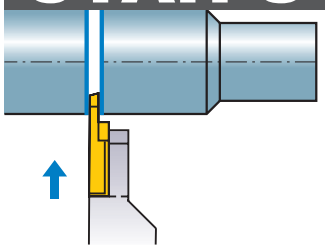


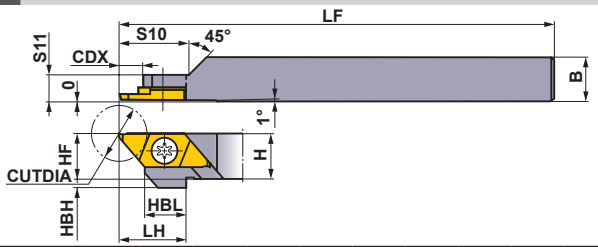
Right hand tool holder shown.

Order Number	Stock		Insert Type		Dimensions (inch)									CUTDIA (inch)	*2	
	R	L			H	B	HF	LF	LH	CDX	HBH	HBL	S10		Clamp Screw	Wrench
CTAHR/L-062	●	●	CTAT	○○○○	.375	.375	.375	4.724	.591	.217	.125	.374	.866	.472 (.315)*1	NS402W	NKY15S
CTAHR/L-082	●	●		○○○○	.500	.500	.500	4.724	.591	.217	—	.374	.866		NS402W	NKY15S
CTAHR/L-102	●	●		○○○○	.625	.625	.625	4.724	.591	.217	—	.374	.866		NS403W	NKY15S

*1 When the width of cutting off (CW) is .028inch.
*2 Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

CTAH-S





Right hand tool holder only.

Order Number	Stock	Insert Type		Dimensions (inch)										CUTDIA (inch)	*2	
	R			H	B	HF	LF	LH	CDX	HBH	HBL	S10	S11		Clamp Screw	Wrench
CTAHR-062S	●	CTAT	○○○○	.375	.375	.375	3.150	.591	.217	.125	.374	.630	.217	.472 (.315)*1	NS401	NKY25R
CTAHR-082S	●		○○○○	.500	.500	.500	3.150	.591	.217	—	.374	.630	.217		NS401	NKY25R

*1 When the width of cutting off (CW) is .028inch.
*2 Clamp Torque (lbf-in) : NS401=31

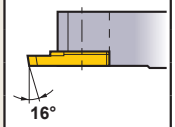
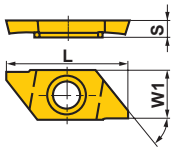
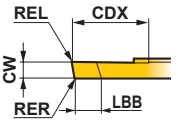
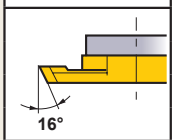
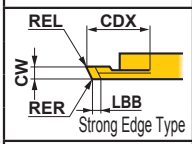
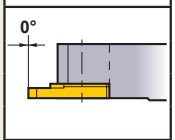
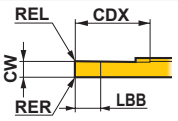
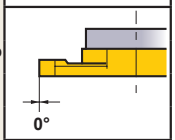
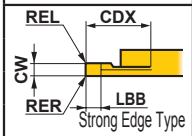
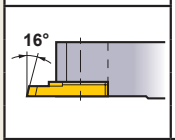
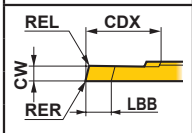
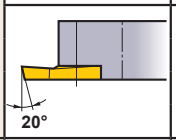
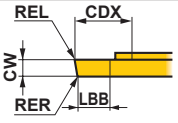
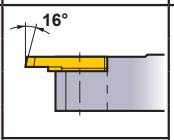
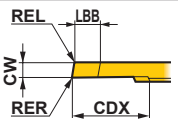
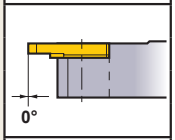
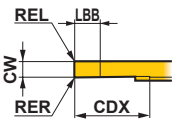
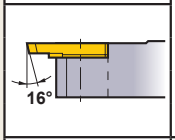
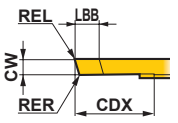
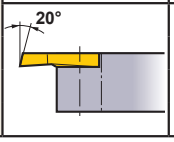
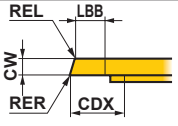
Recommended Cutting Conditions

	Workpiece Material	Grade	Cutting Speed **vc** (SFM)	Feed **f** (IPR)
P	Carbon Steels · Alloy Steels	**VP15TF**	165—490	.0008—.0035
	Free Cutting Steels	**MS6015**	100—590	.0004—.0035
M	Stainless Steels	**VP15TF**	165—395	.0008—.0019
N	Non-Ferrous Metals	**MS6015**	230—755	.0012—.0043

● : Inventory maintained. (5 inserts in one case)

Inserts

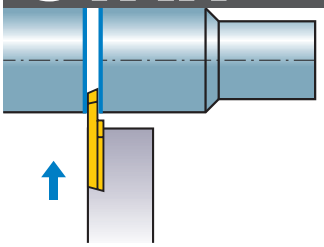
(inch)

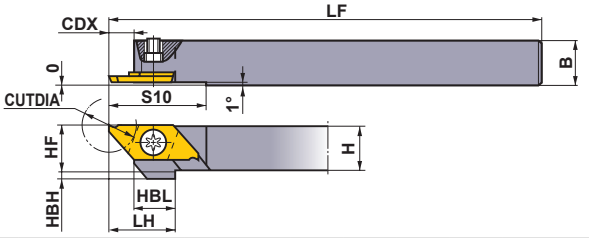
Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated VP15TF	Coated MS6015 (NEW)	CW	CDX	RER/L	L	W1	S	LBB	* CUTDIA
Right Hand (R)		With Breaker			**CTAT07080V5RR-B**	R	●		.028	.177	.002	.787	.315	.098	.059	.315
					CTAT10120V5RR-B	R	●	●	.039	.264	.002	.787	.315	.098	.059	.472
					CTAT15120V5RR-B	R	●	●	.059	.264	.002	.787	.315	.098	.059	.472
					CTAT20120V5RR-B	R	●	●	.079	.264	.002	.787	.315	.098	.059	.472
					**CTAT15120V5RR-BX**	R	●		.059	.264	.002	.787	.315	.098	.059	.472
					CTAT20120V5RR-BX	R	●		.079	.264	.002	.787	.315	.098	.059	.472
					**CTAT10120V5RN-B**	N	●	●	.039	.264	.002	.787	.315	.098	.059	.472
					CTAT15120V5RN-B	N	●	●	.059	.264	.002	.787	.315	.098	.059	.472
					CTAT20120V5RN-B	N	●	●	.079	.264	.002	.787	.315	.098	.059	.472
					**CTAT15120V5RN-BX**	N	●		.059	.264	.002	.787	.315	.098	.059	.472
					CTAT20120V5RN-BX	N	●		.079	.264	.002	.787	.315	.098	.059	.472
					**CTAT10110V5RL-B**	L	●		.039	.264	.002	.787	.315	.098	.059	.433
					CTAT15110V5RL-B	L	●		.059	.264	.002	.787	.315	.098	.059	.433
					CTAT20110V5RL-B	L	●		.079	.264	.002	.787	.315	.098	.059	.433
		Without Breaker			**CTAT1012000RR**	R	●	●	.039	.264	.000	.787	.315	.098	.138	.472
					CTAT1512000RR	R	●	●	.059	.264	.000	.787	.315	.098	.138	.472
					CTAT2012000RR	R	●	●	.079	.264	.000	.787	.315	.098	.138	.472
Left Hand (L)		With Breaker			**CTAT07080V5LL-B**	L	●		.028	.177	.002	.787	.315	.098	.059	.315
					CTAT10120V5LL-B	L	●		.039	.264	.002	.787	.315	.098	.059	.472
					CTAT15120V5LL-B	L	●		.059	.264	.002	.787	.315	.098	.059	.472
					CTAT20120V5LL-B	L	●		.079	.264	.002	.787	.315	.098	.059	.472
					**CTAT10120V5LN-B**	N	●	●	.039	.264	.002	.787	.315	.098	.059	.472
					CTAT15120V5LN-B	N	●	●	.059	.264	.002	.787	.315	.098	.059	.472
					CTAT20120V5LN-B	N	●	●	.079	.264	.002	.787	.315	.098	.059	.472
					**CTAT10110V5LR-B**	R	●	●	.039	.264	.002	.787	.315	.098	.059	.433
					CTAT15110V5LR-B	R	●	●	.059	.264	.002	.787	.315	.098	.059	.433
					CTAT20110V5LR-B	R	●	●	.079	.264	.002	.787	.315	.098	.059	.433
		Without Breaker	Right hand insert shown.		**CTAT1012000LL**	L	●		.039	.264	.000	.787	.315	.098	.138	.472
					CTAT1512000LL	L	●		.059	.264	.000	.787	.315	.098	.138	.472
					CTAT2012000LL	L	●		.079	.264	.000	.787	.315	.098	.138	.472

* CUTDIA : Max. Cut Off Diameter

External Cutting Off

CTAH



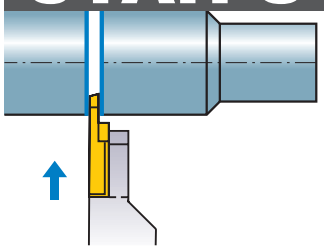


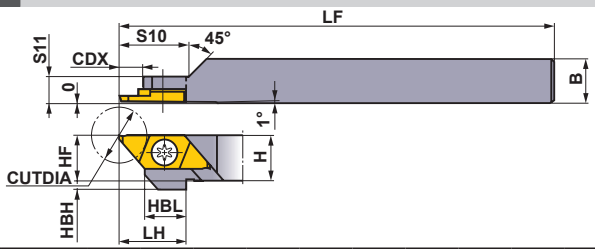
Right hand tool holder shown.

Order Number	Stock R	Stock L	Insert Type		Dimensions (mm) H	B	HF	LF	LH	CDX	HBH	HBL	S10	CUTDIA (mm)	*2 Clamp Screw	Wrench
CTAHR/L0810-120	●	●	CTAT	○○○○	8	10	8	120	15	5.5	4	9.5	22	12 (8)*1	NS402W	NKY15S
CTAHR/L1010-120	●	●		○○○○	10	10	10	120	15	5.5	2	9.5	22		NS402W	NKY15S
CTAHR/L1212-120	●	●		○○○○	12	12	12	120	15	5.5	—	9.5	22		NS403W	NKY15S
CTAHR/L1616-120	●	●		○○○○	16	16	16	120	15	5.5	—	9.5	22		NS403W	NKY15S

*1 When the width of cutting off (CW) is 0.7mm.
*2 Clamp Torque (N • m) : NS402W=1.0, NS403W=1.0

CTAH-S





Right hand tool holder only.

Order Number	Stock R	Insert Type		Dimensions (mm) H	B	HF	LF	LH	CDX	HBH	HBL	S10	S11	CUTDIA (mm)	*2 Clamp Screw	Wrench
CTAHR1010-120S	●	CTAT	○○○○	10	10	10	80	15	16	2	9.5	16	5.5	12 (8)*1	NS401	NKY25R

*1 When the width of cutting off (CW) is 0.7mm.
*2 Clamp Torque (N • m) : NS401=3.5

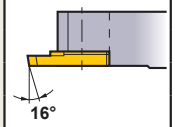
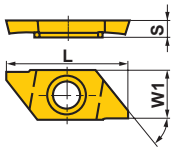
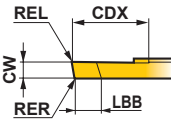
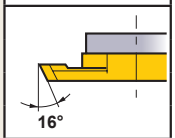
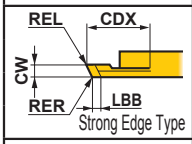
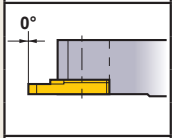
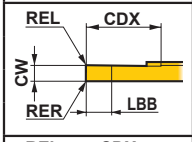
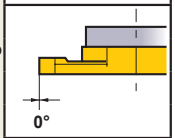
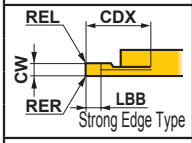
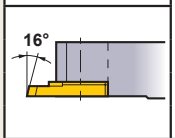
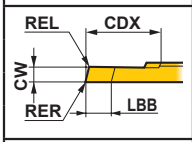
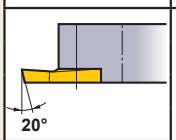
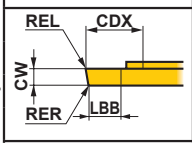
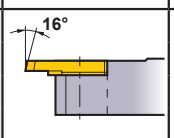
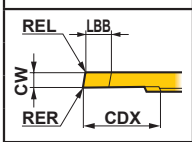
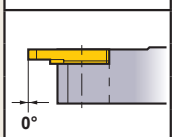
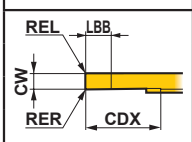
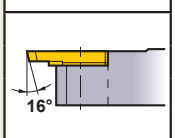
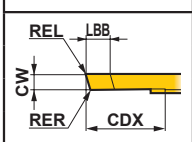
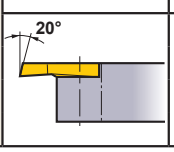
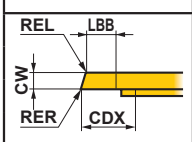
Recommended Cutting Conditions

	Workpiece Material	Properties	Grade	Cutting Speed **vc** (m/min)	Feed **f** (mm/rev)
P	Carbon Steels · Alloy Steels	180HB–280HB	**VP15TF**	100 (50–150)	0.05 (0.02–0.09)
P	Free Cutting Steels	–	**MS6015**	110 (30–180)	0.05 (0.01–0.09)
M	Stainless Steels	≤200HB	**VP15TF**	80 (50–120)	0.03 (0.02–0.05)
N	Non-Ferrous Metals	–	**MS6015**	150 (70–230)	0.07 (0.03–0.11)

● : Inventory maintained. (5 inserts in one case)

Inserts

(mm)

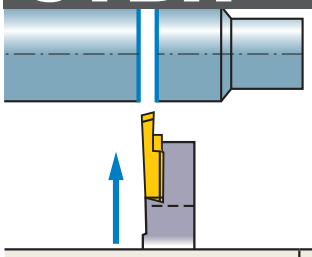
Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated VP15TF	Coated MS6015 (NEW)	CW	CDX	RER/L	L	W1	S	LBB	* CUTDIA
Right Hand (R)		With Breaker			**CTAT07080V5RR-B**	R	●		0.7	4.5	0.05	20	8	2.5	1.5	8
					CTAT10120V5RR-B	R	●	●	1.0	6.7	0.05	20	8	2.5	1.5	12
					CTAT15120V5RR-B	R	●	●	1.5	6.7	0.05	20	8	2.5	1.5	12
					CTAT20120V5RR-B	R	●	●	2.0	6.7	0.05	20	8	2.5	1.5	12
					**CTAT15120V5RR-BX**	R	●		1.5	6.7	0.05	20	8	2.5	1.5	12
					CTAT20120V5RR-BX	R	●		2.0	6.7	0.05	20	8	2.5	1.5	12
					**CTAT10120V5RN-B**	N	●	●	1.0	6.7	0.05	20	8	2.5	1.5	12
					CTAT15120V5RN-B	N	●	●	1.5	6.7	0.05	20	8	2.5	1.5	12
					CTAT20120V5RN-B	N	●	●	2.0	6.7	0.05	20	8	2.5	1.5	12
					**CTAT15120V5RN-BX**	N	●		1.5	6.7	0.05	20	8	2.5	1.5	12
					CTAT20120V5RN-BX	N	●		2.0	6.7	0.05	20	8	2.5	1.5	12
					**CTAT10110V5RL-B**	L	●		1.0	6.7	0.05	20	8	2.5	1.5	11
					CTAT15110V5RL-B	L	●		1.5	6.7	0.05	20	8	2.5	1.5	11
					CTAT20110V5RL-B	L	●		2.0	6.7	0.05	20	8	2.5	1.5	11
		Without Breaker			**CTAT1012000RR**	R	●	●	1.0	6.7	0	20	8	2.5	3.5	12
					CTAT1512000RR	R	●	●	1.5	6.7	0	20	8	2.5	3.5	12
					CTAT2012000RR	R	●	●	2.0	6.7	0	20	8	2.5	3.5	12
Left Hand (L)		With Breaker			**CTAT07080V5LL-B**	L	●		0.7	4.5	0.05	20	8	2.5	1.5	8
					CTAT10120V5LL-B	L	●		1.0	6.7	0	20	8	2.5	1.5	12
					CTAT15120V5LL-B	L	●		1.5	6.7	0	20	8	2.5	1.5	12
					CTAT20120V5LL-B	L	●		2.0	6.7	0	20	8	2.5	1.5	12
					**CTAT10120V5LN-B**	N	●	●	1.0	6.7	0.05	20	8	2.5	1.5	12
					CTAT15120V5LN-B	N	●	●	1.5	6.7	0.05	20	8	2.5	1.5	12
					CTAT20120V5LN-B	N	●	●	2.0	6.7	0.05	20	8	2.5	1.5	12
					**CTAT10110V5LR-B**	R	●	●	1.0	6.7	0.05	20	8	2.5	1.5	11
					CTAT15110V5LR-B	R	●	●	1.5	6.7	0.05	20	8	2.5	1.5	11
					CTAT20110V5LR-B	R	●	●	2.0	6.7	0.05	20	8	2.5	1.5	11
		Without Breaker	Right hand insert shown.		**CTAT1012000LL**	L	●		1.0	6.7	0	20	8	2.5	3.5	12
					CTAT1512000LL	L	●		1.5	6.7	0	20	8	2.5	3.5	12
					CTAT2012000LL	L	●		2.0	6.7	0	20	8	2.5	3.5	12

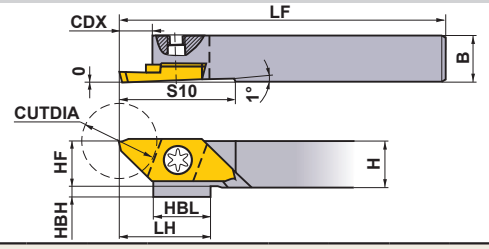
* CUTDIA : Max. Cut Off Diameter

External Cutting Off

Inch Standard

CTBH





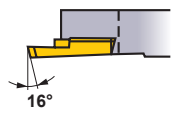
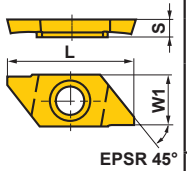
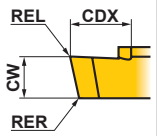
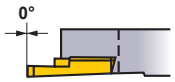
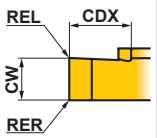
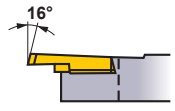
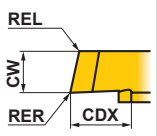
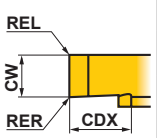
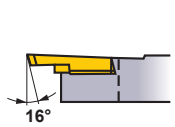
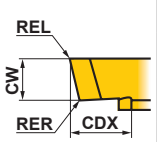
Right hand tool holder shown.

Order Number	Stock R	Stock L	Insert Type		Dimensions (inch) H	B	HF	LF	LH	CDX	HBH	HBL	S10	CUTDIA (inch)	* Clamp Screw	Wrench
CTBHR/L-062	●	●	CTBT	○○○○	.375	.375	.375	4.724	.768	.295	.125	.374	.984	.630	NS402W	NKY15S
CTBHR/L-082	●	●		○○○○	.500	.500	.500	4.724	.768	.295	—	.374	.984	.630	NS403W	NKY15S
CTBHR/L-102	●	●		○○○○	.625	.625	.625	4.724	.768	.295	—	.374	.984	.630	NS403W	NKY15S

* Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

Inserts

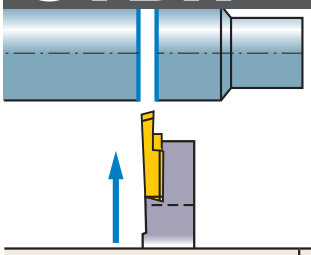
(inch)

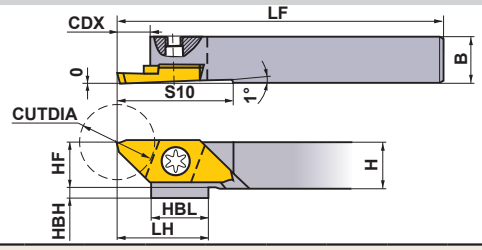
Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated VP15TF	Coated MS6015 NEW	Dimensions CW	CDX	RER/L	L	W1	S	CUTDIA
Right Hand (R)		With Breaker			**CTBT15160V5RR-B**	R	●	●	.059	.362	.002	.984	.370	.138	.630
					CTBT20160V5RR-B	R	●	●	.079	.362	.002	.984	.370	.138	.630
					**CTBT20160V5RN-B**	N	●	●	.079	.362	.002	.984	.370	.138	.630
Left Hand (L)					**CTBT20160V5LL-B**	L	●		.079	.362	.002	.984	.370	.138	.630
					**CTBT20160V5LN-B**	N	●		.079	.362	.002	.984	.370	.138	.630
			Right hand insert shown.		**CTBT20145V5LR-B**	R	●	●	.079	.362	.002	.984	.370	.138	.571

CUTTING CONDITIONS ➤ P13

● : Inventory maintained. (5 inserts in one case)

CTBH





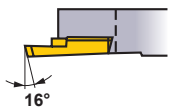
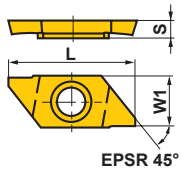
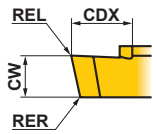
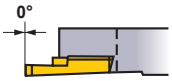
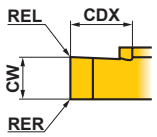
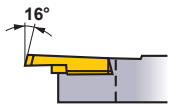
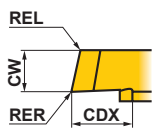
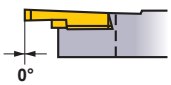
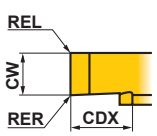
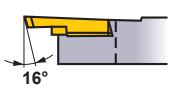
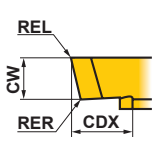
Right hand tool holder shown.

Order Number	Stock R	Stock L	Insert Type		Dimensions (mm) H	B	HF	LF	LH	CDX	HBH	HBL	S10	CUTDIA (mm)	* Clamp Screw	Wrench
CTBHR/L1010-160	●	●	CTBT	○○○○	10	10	10	120	19.5	7.5	2	9.5	25	16	NS402W	NKY15S
CTBHR/L1212-160	●	●		○○○○	12	12	12	120	19.5	7.5	—	9.5	25	16	NS403W	NKY15S
CTBHR/L1616-160	●	●		○○○○	16	16	16	120	19.5	7.5	—	9.5	25	16	NS403W	NKY15S

* Clamp Torque (N • m) : NS402W=1.0, NS403W=1.0

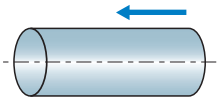
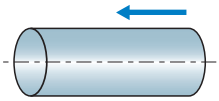
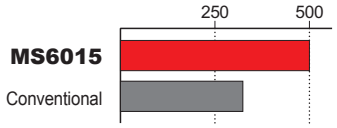
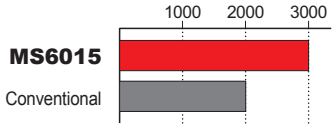
Inserts

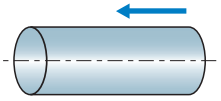
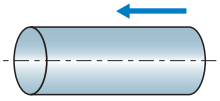
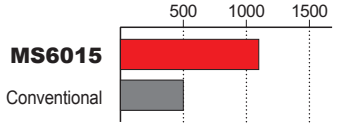
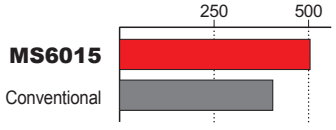
(mm)

Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated VP15TF	Coated MS6015 (NEW)	Dimensions CW	CDX	RER/L	L	W1	S	CUTDIA
Right Hand (R)		With Breaker			**CTBT15160V5RR-B**	R	●	●	1.5	9.2	0.05	25	9.4	3.5	16
					CTBT20160V5RR-B	R	●	●	2.0	9.2	0.05	25	9.4	3.5	16
					**CTBT20160V5RN-B**	N	●	●	2.0	9.2	0.05	25	9.4	3.5	16
Left Hand (L)					**CTBT20160V5LL-B**	L	●		2.0	9.2	0.05	25	9.4	3.5	16
					**CTBT20160V5LN-B**	N	●	●	2.0	9.2	0.05	25	9.4	3.5	16
			Right hand insert shown.		**CTBT20145V5LR-B**	R	●	●	2.0	9.2	0.05	25	9.4	3.5	14.5

CUTTING CONDITIONS ➤ P15

Application Example

Insert (Grade)		DCGT32.50.5MSMG (MS6015)	DCGT32.50.2MRSN (MS6015)
Workpiece		Iron-based Soft Magnetic Material (ELCH2) 	Free Cutting Steel (AISI 12L14) 
Cutting Conditions	Cutting Speed **vc** (SFM)	645 (4500min-1)	410 (5000min-1)
	Feed per Rev. **f** (IPR)	.004	.002
	Depth of Cut **ap** (inch)	.004	.012
Cutting Mode		Wet Cutting (Water-insoluble)	Wet Cutting (Water-insoluble)
Machine		Swiss Style Lathes	Swiss Style Lathes
Results		Number of Workpieces (pcs. /corner) 250 500 **MS6015** Conventional  An excellent finished surface and 1.4X longer life compared with conventional product. Stable SMG breaker and chip discharge management.	Number of Workpieces (pcs. /corner) 1000 2000 3000 **MS6015** Conventional  MS6015 has minimal welding and maintains secure dimensional accuracy.

Insert (Grade)		DCGT32.50.5MRSN (MS6015)	DCGT32.50.5MSMG (MS6015)
Workpiece		Carbon Steel (AISI 1045) 	Mild Steel (AISI 1015) 
Cutting Conditions	Cutting Speed **vc** (SFM)	370 (3000min-1)	330 (1300min-1)
	Feed per Rev. **f** (IPR)	.001	.005
	Depth of Cut **ap** (inch)	.039	.051
Cutting Mode		Wet Cutting (Water-insoluble)	Wet Cutting (Water-insoluble)
Machine		Swiss Style Lathes	Swiss Style Lathes
Results		Number of Workpieces (pcs. /corner) 500 1000 1500 **MS6015** Conventional  MS6015 has superior wear resistance and achieves 2X longer life compared with conventional product.	Number of Workpieces (pcs. /corner) 250 500 **MS6015** Conventional  MS6015 has superior welding resistance and achieves 1.3X longer life compared with conventional product.

For your safety
●Don't touch breakers and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching inserts or spare parts, please use the attached wrench or driver. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc.

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