

**We Make it Simple.**

**NEW**  
**TECHNOLOGY**



**LAMINA**  
TECHNOLOGIES

Inserts



Face Mills



End Mills



Turning



Boring



Indexable Drills



Boring Tools



Toolholders



**Attacking Heat & Vibration is in Our DNA.**

**2014**

## Nexus Face Mills



**ShrinkMILL Face Mills**

About ShrinkMILL.....28

90° Face Mill & ShrinkMILL.....30

45° Face Mill & ShrinkMILL.....31

**Negative Cast Iron Cutter**

Decagon Cutter.....32

**Positive Round Button Cutter . 33**

**High Feed Face Mills & ShrinkMILLS**

Negative Cutter.....34

Positive Cutter.....35

**Precision Face Mill Arbors**

CAT.....36

BT.....38

HSK.....39

**Arbor Screws**

Standard & CoolBLAST.....40

## Nexus End Mills



**PowerLOC Indexable End Mills**

About PowerLOC.....42

Indexable End Mills.....44

PowerLOC Indexable End Mills.....45

**High Feed End Mills**

Positive End Mills.....46

Negative End Mills.....47

PowerLOC Negative End Mills.....48

**PowerLOC Adapter**

PowerLOC Adapters.....49

**PowerLOC Toolholders**.....49

**ShrinkLOC Toolholders**.....50

**LAMINA TECHNOLOGIES** Simplify

**HIGH-PERFORMANCE**

**Milling Inserts..... 51-140**

SNKX High Feed, 8-edge.....52

Aluminum Milling Inserts.....141-147

**Complimentary Trial Offer on Inserts..... 6**

**See our Package Pricing on**

**Face Mills + Inserts..... 12**

**End Mills + Inserts..... 13**

**SNKX High Feed Insert + Cutter .. 14**

**LAMINA TECHNOLOGIES**

**Technical Data..... 15**

**FAQ..... 26**

## Turning & Boring

### Negative Turning Tools

MCLNR/L & MDJNR/L .....	149
MVJNR/L & MWLNR/L .....	150
MTJNR/L .....	151

### Negative Boring Bars

PCLNR/L & PDUNR/L .....	152
PVUNR/L & PWLNR/L .....	153

### Positive Turning Tools

SCLCR/L, STGCR/L, SDJCR/L .....	154
---------------------------------	-----

### Positive Boring Bars

SCLCR/L, SDUCR/L .....	155
STFCR/L .....	156



**LAMINA**  
TECHNOLOGIES

**HIGH-PERFORMANCE**

**Turning & Boring Inserts .. 157-263**

Aluminum Turning Inserts .. 264-275

Simplify 

## Drilling

<b>Drilling .....</b>	<b>276</b>
4WD Indexable Drills .....	278
Drill Inserts .....	279

### Miscellaneous

Retention Knobs .....	330
Master Hardware List .....	333

## Boring Tools

### BohrSTAR Boring Kits

Ranges from 0.314" to 8.27" .....	289
-----------------------------------	-----

### Pinzbohr Modular Tools

About Modular System .....	295
Choosing a Boring Head .....	297
Pinzbohr Tool Selection Guide .....	298
Boring Bars .....	299
Boring Bar Heads .....	301
Rough Heads .....	302
Finish Heads .....	306

Cartridges .....	310
------------------	-----

### Boring Head Toolholders

CAT, BT, HSK .....	311
Weldon & R8 Holders .....	318
Large Head Holders .....	319

### Extensions & Reducers

Extensions .....	321
Reducers & Chamfering Heads .....	322

<b>Modular Toolholders .....</b>	<b>323</b>
----------------------------------	------------

<b>Spare Parts .....</b>	<b>325</b>
--------------------------	------------

<b>Part Number Index .....</b>	<b>334</b>
<b>Product Description Index .....</b>	<b>343</b>



**N***exus is a new company*, with new products and new ways of simplifying and solving the complex problems manufacturing professionals are faced with every day.

As you read through this catalog, be ready to *“adjust your thinking”* because from the spindle down, we offer innovative products that out-perform the “status quo” industry standard products. Once you try Nexus’ patented new technologies you’ll say to yourself:

---

***Why didn't somebody come up with this before?***

---

An important part of how “We make it simple” is the support we offer you, our customer. Everyone on the Nexus team is here to support your needs and make sure you are 100% satisfied with our products. We have specialists available to answer your questions via phone or email from 8:00 am until 6:00 pm, Monday through Friday, E.S.T. Please give us a call today, we are ready to earn your business.

Sincerely,

***The Nexus Team***

(877) 616-6016 or (317) 803-8045

*info@nexustool.com*

For more information call Toll Free: (877) 616-6016 or (317) 803-8045 • Fax: (317) 803-8046

Contact us by email: *info@nexustool.com* • Website: *www.techniksusa.com/nexus*

Office Hours: M-F, 8:00 am - 6:00 pm E.S.T. • Nexus Inc., 9930 E. 56th St., Indianapolis, IN 46236



**Patented Technologies**

Simplify



**Lamina PVD inserts**

- patented PVD formula
- increase productivity
- reduce insert costs!



**ShrinkMILL Face Mills**

- eliminate T.I.R.
- run faster & smoother
- extend insert life



**PowerLOC End Mills**

- square shank eliminates slippage
- turns collet chucks into powerful milling chucks
- greater accuracy improves cut and extends insert life



**Pinzbohr Boring Tools**

- range .315" to 19.685"
- unbeatable accuracy and repeatability
- boring kits also available (range .314" to 8.27")

**With Nexus you get:**

- Innovative products that simply work better to provide outstanding performance and extend cutting tool life.
- Live phone support (877) 616-6016, or (317) 803-8045, 8:00 am – 6:00 pm E.S.T.
- Fast, friendly responses to your quote requests.
- Orders ship the same day they are received! (ground orders received by 2:00 pm, or expedited orders received by 5:00 pm)
- Each order is checked 4 times before shipping (99.9% average shipping accuracy)
- 100% satisfaction guarantee on all products!
- Factory support before, during, & after the sale!
- 24/7 access to request a quote, view detailed product information, or order catalogs, on the web ([www.technikusa.com/nexus](http://www.technikusa.com/nexus))
- Receive special offers and product information by opt-in email.

**...turn the page to learn how  
"We make it simple"**





## Machining is a complex world.

It is easy to be side-tracked by products that look good on paper, but don't provide the 3 simple basics you have-to-have, in order to maximize productivity and profits. These are:

***.0001" runout • maximum rigidity • extended tool life***

***.0001" runout:*** requires that the spindle mouth is true, and the toolholders and cutter bodies are manufactured to the highest possible accuracy standards. Any inaccuracy in the toolholder assembly is multiplied at the tool tip. This is called ***Stacking of Tolerances*** and is a major cause of lost productivity. According to a study by Guhring, ***every .0001" of runout reduces tool life by 10%***. Poor runout has a negative impact on consumable costs.

***Maximum rigidity:*** requires toolholders and cutter bodies that are manufactured from H3 tool steel so they don't flex under heavy side load while cutting. Flexing causes high runout, which in turn causes poor cutting and high wear on the cutting tool.

***Extended tool life:*** is only achieved when your spindle, tool holders and cutter bodies are providing maximum rigidity and minimum possible runout, and your insert is high-quality, long-lasting PVD like our Lamina LT grade inserts.

***Every .0001" runout = 10% less tool life***

*\* Source: Guhring*



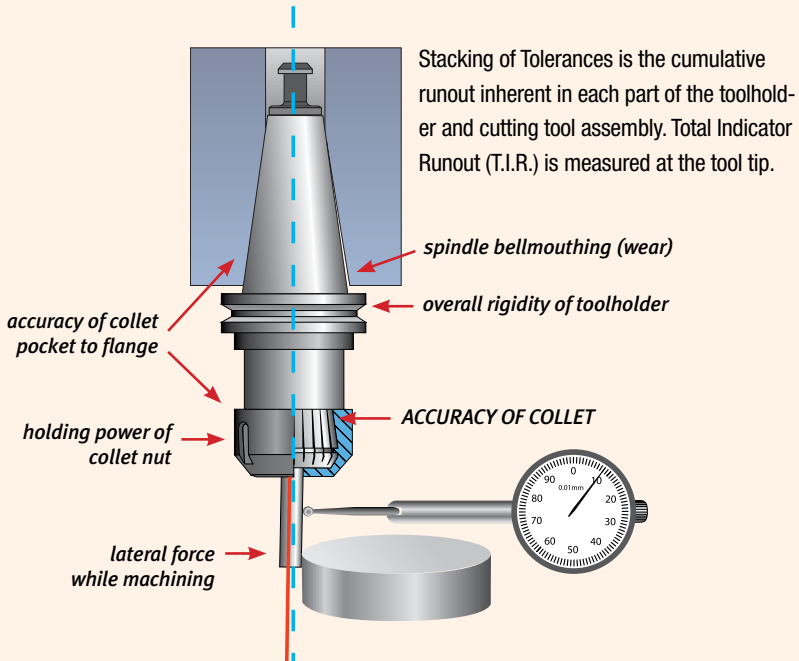
## We Make it Simple.

Because our patented tooling solutions virtually eliminate the "stacking tolerance" problem from the machining process, new levels of machining efficiency are possible. This means you can run the same insert longer, and in different materials, effectively reducing the number of tool changes and increasing your overall productivity.

Simplify



## What is Stacking of Tolerances?



Looking for great deals? See our special offers on pages 12-14!

# Featuring Patented Lamina Inserts



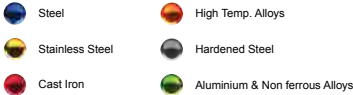
**HIGH-PERFORMANCE**  
**3x the Thickness of Conventional PVD!**

## High-Performance Breakthrough!

Patented advances in PVD composition, coating and manufacturing processes developed by Swiss experts provide unprecedented performance in multiple materials.



**MILLING** **TURNING** **BORING**



Instead of struggling with dozens of insert choices, trying to find a "right" choice every time you setup a new job, with our inserts you simply load the workpiece and run the tool at our suggested starting parameters for your material.

It's that simple!

## No Risk Trial

Let us give you a sample insert for testing purposes on your machine, cutting your stock, so you can see the improvement *Nexus inserts* makes on your productivity. We guarantee you will not be disappointed. Call (877) 616-6016 to request a trial.



## We Make it Simple.

- Stock only a few insert types
- Reduce set up time
- Maximize machine time

- Machine most materials with only one grade!
- Lamina LT grade inserts increase productivity and save you money.
- Now you can reduce your inventory to just a few types of inserts.



Go from this...



...to this.

Call us to set up a free trial on your machine (877) 616-6016



# New Inserts for Turning & High-Feed



High Performance Milling



High Performance Turning



High Performance in Aluminum

## Magia Turning & Boring

LT1000 grade raises the bar on PVD performance.

Magia inserts feature a new PVD formula developed by our partner Lamina in Switzerland over a 10 year period. It is both thicker and tougher than conventional industry inserts you have likely been using.

NEW NX and NN Chipbreakers



Very low flank wear and plastic deformation minimizes offsets

LT1000 PVD 14 microns thick increases insert life

Exceptional performance in High-Temp alloys

# LT1000



Designed to achieve the same feed per tooth as bigger inserts

Excellent for near-to-shape work-pieces



More cutting edges per corner creates higher productivity

High stability reduces vibration

## SNKX High-Feed

8-cornered, negative rake insert with positive geometry optimized for use in steels, cast irons, and hardened materials.

# 8

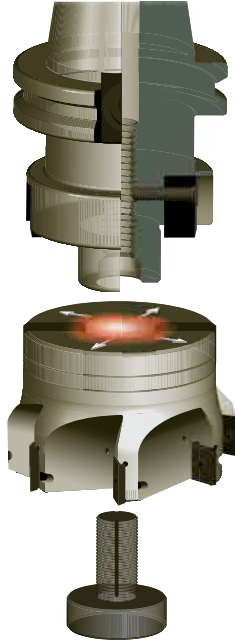
See our SNKX Special Promotion on page 14

# ShrinkMILL for Unbeatable Performance



ShrinkMILL eliminates 1/3 of T.I.R., which reduces vibration and allows faster feeds & speeds.

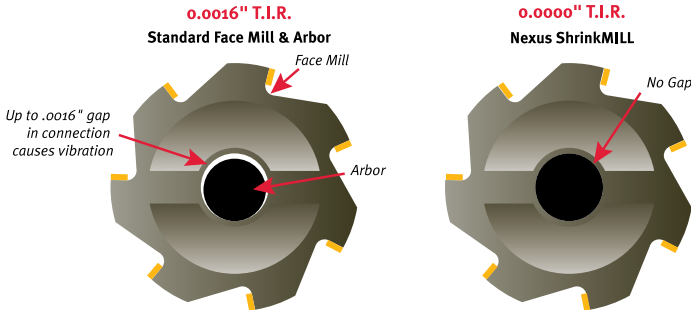
Use ShrinkMILL technology to increase parts per day and extend insert life.



## Features

- The holding power and rigidity of ShrinkFIT in a face mill
- Improves T.I.R to allow Adaptive Machining used with LT inserts

## ID/OD Tolerance in Face Mills



See our deals on ShrinkMILL on pg 12

# PowerLOC Eliminates Tool Slippage



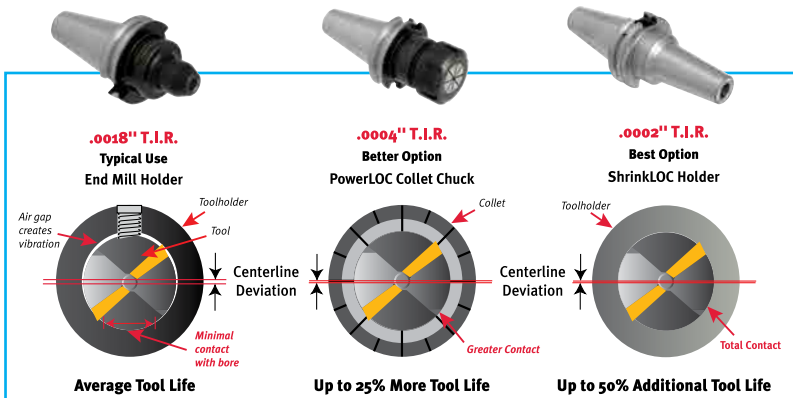
PowerLOC end mills eliminate tool slippage. Use PowerLOC technology to increase productivity and reduce costs.



Eliminate Tool Slippage  
in Collet Chucks!

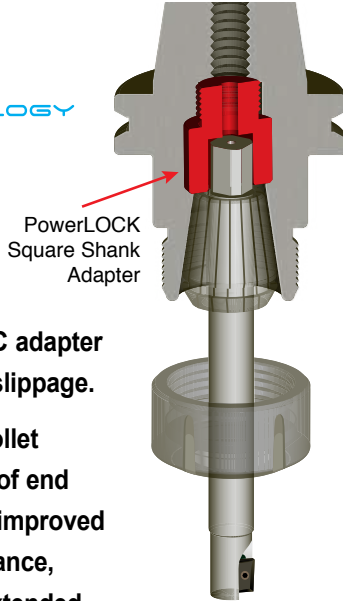
## Features

- PowerLOC connection works with ShrinkMILL holders or Techniks ER collet chucks
- Eliminate the need for expensive milling chucks



Special offers on indexable end mills begin page 13

# PowerLOC Adapter for Collet Chucks



Eliminate Tool Slippage  
in Collet Chucks!

**PLSS PowerLOC adapter eliminates tool slippage.**

**Use Techniks collet chucks instead of end mill holders for improved cutting performance, accuracy and extended tool life.**

## Features

- PowerLOC connection turns Techniks collet chucks into powerful milling chucks
- Use with PowerCOAT nut for increased holding power and best T.I.R.

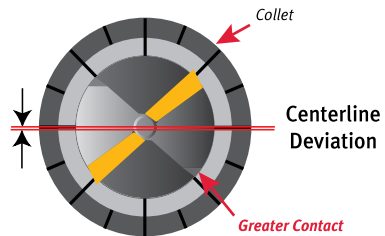


PLSS adapter screws into Techniks collet chucks to receive PowerLOC end mill.

**.0004" T.I.R.**

**Better Option**

**PowerLOC Collet Chuck**



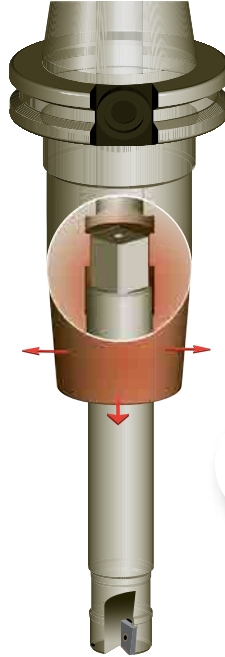
**Up to 25% More Tool Life**

**See our deals on Face Mills on pg 12**

# ShrinkLOC Holders for Best Tool Life



ShrinkLOC toolholders eliminate tool slippage. Use ShrinkLOC technology to reduce scrap and maximize insert life.



## Features

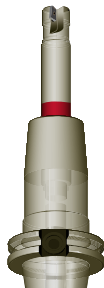
- PowerLOC connection plus ShrinkFIT holding power
- For best results use with Lamina LT grade inserts



## How ShrinkLOC Holders Prevent Tool Slippage

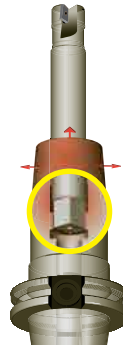
### PROBLEM

Spinning the shank under heavy load conditions causes tool slippage (red)



### SOLUTION

ShrinkLOC square drive (yellow) locks the tool shank and the toolholder making it impossible for the tool to spin, even under the heaviest loads.



Special offers on indexable end mills begin page 13

# Package Pricing on Face Mills & Inserts

## SNKX High-Feed Inserts & Complimentary Face Mill or End Mill

Special Package Deal - Limited Time Offer!

We're excited about our new, 8-cornered negative rake insert. This new-design high feed insert is optimized for use in steels, cast irons, and hardened materials.

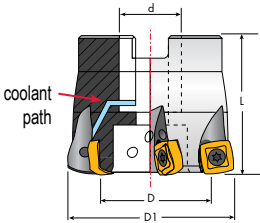
Now we've come up with a great way for you to try them on your spindle, and you get a Nexus **high-feed face mill or end mill free** just for trying. (offer expires 8/29/2014)

**Free high-feed face mill or end mill!**



### How it Works

- Select your free face mill or end mill from the tables below
- Order 10 SNKX (Part No. 2502115) inserts for each pocket from your Nexus Distributor (shown in green below)



**SNKX LT30 – Negative Rake with 8 Cutting Edges (order 10 for each pocket)**

- 8 cutting edges
- achieves same feed rates as larger inserts



### High-Performance Insert - 8 Cutting Edges

Part No.	Description	Grade	Radius	Material
2502115	SNKX09T3-HF	LT 30	.165"	P-K-II

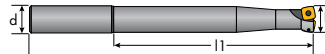
P = steel, K = cast iron, H = hardened material

### High Feed Face Mills – Coolant-Thru

Order No.	Face Mill	Description	D	Pockets	Inserts Req	d	H	Ap	$\alpha^\circ$	Screw	Wrench
NP-24	9202123	HF-2.00-.750C-4SN9	2.00	4	40	0.75	1.57	0.040	1°	6811264	9355444
NP-25	9212124	HF-2.50-.075C-5SN9	2.50	4	40	0.75	1.57	0.040	.75°	6811264	9355444
NP-26	9353123	HF-3.00-1.00C-6SN9	3.00	6	60	1.00	1.57	0.040	.5°	6811264	9355444
NP-27	9474123	HF-4.00-1.25C-7SN9	4.00	7	70	1.25	2.00	0.040	.25°	6811264	9355444

### Indexable High-Feed End Mills – Coolant-Thru

Order No.	End Mill	Description	D	Pockets	Inserts Req	d	L	l1	Ap	$\alpha^\circ$	Screw	Wrench
NP-28	6602118	HFEM-1.00-1.00CW-5.00-3SN9	1.00	3	30	1.00	5.00	2.36	.039	3.5°	6811264	9355444
NP-29	6602117	HFEM-1.00-1.00CW-8.00-3SN9	1.00	3	30	1.00	8.00	3.94	.039	3.5°	6811264	9355444
NP-30	6702119	HFEM-1.25-1.25CW-5.00-4SN9	1.25	4	40	1.25	5.00	2.36	.039	2°	6811264	9355444
NP-31	6702120	HFEM-1.25-1.25CW-8.00-3SN9	1.25	3	30	1.25	8.00	3.94	.039	2°	6811264	9355444



Call us today to place your order 877-616-6016 or 317-803-8045  
 To locate your local distributor call or email: [info@nexustool.com](mailto:info@nexustool.com)  
 Fax: 877-776-9994      [www.nexustool.com](http://www.nexustool.com)

**Same Day Shipping Until 5:00 pm EST**

# Package Pricing on End Mills & Inserts

## KX High-Feed Inserts & Complimentary Face Mill or End Mill

Special Package Deal - Limited Time Offer!

Be excited about our new, 8-cornered positive rake insert. This new-design high insert is optimized for use in steels, irons, and hardened materials.

We've come up with a great way for to try them on your spindle, and you get **plus high-feed face mill or end mill free** for trying. (offer expires 8/29/2014)

### How it Works

Select your free face mill or end mill from the tables below

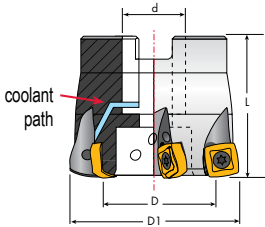
Order 10 SNKX (Part No. 2502115) inserts for each pocket from your Nexus Distributor (shown in green below)

**Free high-feed face mill or end mill!**



**SNKX LT30 – Negative Rake with 8 Cutting Edges (order 10 for each pocket)**

- 8 cutting edges
- achieves same feed rates as larger inserts



### High-Performance Insert - 8 Cutting Edges

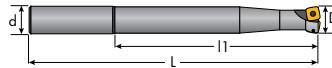
Part No.	Description	Grade	Radius	Material
2502115	SNKX09T3-HF	LT 30	.165"	P-K-H

P = steel, K = cast iron, H = hardened material

### Free Face Mills – Coolant-Thru

No.	Face Mill	Description	D	Pockets	Inserts Req	d	H	Ap	$\alpha^\circ$	Screw	Wrench
9202123	HF-2.00-.750C-4SN9	2.00	4	40	0.75	1.57	0.040	1°	6811264	9355444	
9212124	HF-2.50-.075C-5SN9	2.50	4	40	0.75	1.57	0.040	75°	6811264	9355444	
9353123	HF-3.00-1.00C-6SN9	3.00	6	60	1.00	1.57	0.040	5°	6811264	9355444	
9474123	HF-4.00-1.25C-7SN9	4.00	7	70	1.25	2.00	0.040	25°	6811264	9355444	

### Free High-Feed End Mills – Coolant-Thru



No.	End Mill	Description	D	Pockets	Inserts Req	d	L	l	Ap	$\alpha^\circ$	Screw	Wrench
6602118	HFEM-1.00-1.00CW-5.00-3SN9	1.00	3	30	1.00	5.00	2.36	.039	3.5°	6811264	9355444	
6602117	HFEM-1.00-1.00CW-8.00-3SN9	1.00	3	30	1.00	8.00	3.94	.039	3.5°	6811264	9355444	
6702119	HFEM-1.25-1.25CW-5.00-4SN9	1.25	4	40	1.25	5.00	2.36	.039	2°	6811264	9355444	
6702120	HFEM-1.25-1.25CW-8.00-3SN9	1.25	3	30	1.25	8.00	3.94	.039	2°	6811264	9355444	

Call us today to place your order 877-616-6016 or 317-803-8045  
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 Fax: 877-776-9994      [www.nexustool.com](http://www.nexustool.com)

**Same Day Shipping Until 5:00 pm EST**



# SNKX High-Feed Insert & Cutter Promo

## SNKX High-Feed Inserts & Complimentary Face Mill or End Mill

Special Package Deal - Limited Time Offer!

We're excited about our new, 8-cornered negative rake insert. This new-design high feed insert is optimized for use in steels, cast irons, and hardened materials.

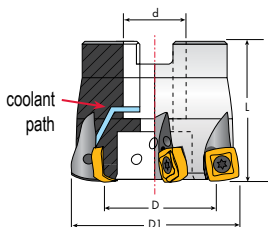
Now we've come up with a great way for you to try them on your spindle, and you get a Nexus **high-feed face mill or end mill free** just for trying. (offer expires 8/29/2014)

**Free high-feed  
face mill  
or end mill!**



### How it Works

- Select your free face mill or end mill from the tables below
- Order 10 SNKX (Part No. 2502115) inserts for each pocket from your Nexus Distributor (shown in green below)



**NEW!**



**SNKX LT30 – Negative Rake  
with 8 Cutting Edges  
(order 10 for each pocket)**

- 8 cutting edges
- achieves same feed rates as larger inserts



### High-Performance Insert - 8 Cutting Edges

Part No.	Description	Grade	Radius	Material
2502115	SNKX09T3-HF	LT 30	.165"	P-K-H

P = steel, K = cast iron, H = hardened material

### High Feed Face Mills – Coolant-Thru

Order No.	Face Mill	Description	D	Pockets	Inserts Req	d	H	Ap	$\alpha^\circ$	Screw	Wrench
NP-24	9202123	HF-2.00-.750C-4SN9	2.00	4	40	0.75	1.57	0.040	1°	6811264	9355444
NP-25	9212124	HF-2.50-.075C-5SN9	2.50	4	40	0.75	1.57	0.040	.75°	6811264	9355444
NP-26	9353123	HF-3.00-1.00C-6SN9	3.00	6	60	1.00	1.57	0.040	.5°	6811264	9355444
NP-27	9474123	HF-4.00-1.25C-7SN9	4.00	7	70	1.25	2.00	0.040	.25°	6811264	9355444

### Indexable High-Feed End Mills – Coolant-Thru



Order No.	End Mill	Description	D	Pockets	Inserts Req	d	L	l1	Ap	$\alpha^\circ$	Screw	Wrench
NP-28	6602118	HFEM-1.00-1.00CW-5.00-3SN9	1.00	3	30	1.00	5.00	2.36	.039	3.5°	6811264	9355444
NP-29	6602117	HFEM-1.00-1.00CW-8.00-3SN9	1.00	3	30	1.00	8.00	3.94	.039	3.5°	6811264	9355444
NP-30	6702119	HFEM-1.25-1.25CW-5.00-4SN9	1.25	4	40	1.25	5.00	2.36	.039	2°	6811264	9355444
NP-31	6702120	HFEM-1.25-1.25CW-8.00-3SN9	1.25	3	30	1.25	8.00	3.94	.039	2°	6811264	9355444

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To locate your local distributor call or email: [info@nexustool.com](mailto:info@nexustool.com)

Fax: 877-776-9994 [www.nexustool.com](http://www.nexustool.com)

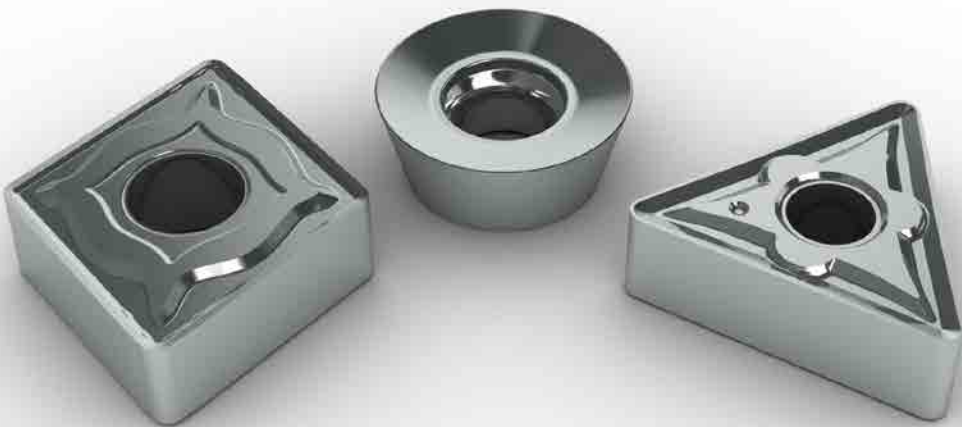
Same Day Shipping Until 5:00 pm EST





**LAMINA**  
TECHNOLOGIES

# TECHNICAL DATA



As a new user of the revolutionary Lamina Multi-Mat™ (Multi-Material) inserts, we would like to propose to you the short machining guide below to ensure your satisfaction from our products. The cutting conditions are Lamina Technologies guidelines for optimal machining. However, our inserts can work in a wider range of cutting conditions to meet special machining needs.

### Turning Tips



Check the condition of the tool holder (Insert seat, shim, lever, screw) and check if the insert is well seated and clamped.



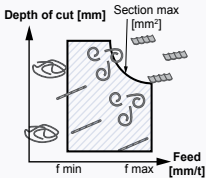
Check the stability of the machine. The tool overhang should be as short as possible.



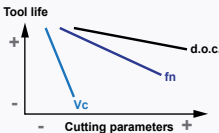
If there are interrupted cuts or passes with short lengths of cut, dry operation is recommended to avoid thermal shocks. For heavy interrupted cuts, feed rate should be reduced.

$$\text{Feed} \times \text{d.o.c.} = A_{\text{max}}$$

Respect maximum chip section area for each insert.  $A_{\text{max}} = \text{feed} \times \text{d.o.c.}$



For higher productivity and better chip control in roughing, work close to the recommended  $A_{\text{max}}$  value.



Cutting Speed has the greatest influence in tool life. For high productivity and long tool life increase firstly d.o.c. and feed rate.

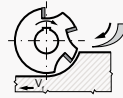
### Milling Tips



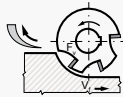
Check the condition of the tool holder (Insert seat, screw, etc.) and check if the insert is well seated and clamped.



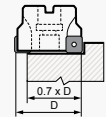
Check the stability of the machine. The tool overhang should be as short as possible.



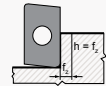
**Climb Milling**  
Usually this is the recommended direction. Tool life about 40% longer than conventional.



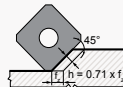
**Conventional Milling**  
Recommended only for:  
• Old machines with backlash in the table transmission.  
• Flame cut, forged and cast workpieces.  
• Thin workpieces (in order to reduce vibration).



For face milling the width of cut ( $a_e$ ) should be about 70% of the cutter diameter, in order to achieve better chip formation and longer tool life. For limited engagement conditions, it is necessary to increase feed per tooth.



$K = 90^\circ$  Approach angle  
High radial forces / Low axial forces.  
Recommended:  
• When  $90^\circ$  wall is needed  
• For unstable conditions  
• For slender workpieces.



$K = 45^\circ$  Approach angle  
Identical radial and axial forces. High productivity  
→  $f_t = 1.41 \times h$   
Recommended:  
• When overhang is long (lower vibration tendency).  
• For face milling (1<sup>st</sup> choice)



**Round inserts:**  
Roughing and general purposes. Strongest cutting edge.

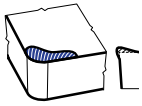




# Lamina Materials Groups

Material Group	Gr. N°	VDI Group	Material Examples*	Description	Be careful with	
Steel	Non-alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	<b>Non-alloyed Steel</b> • <b>Composition</b> > Fe-C alloy (usually 0.1 to 0.6% of carbon). • <b>Characteristics</b> > Good machinability and high cutting speeds can be applied. When it has less than 0.25% of carbon can be very sticky, requiring positive rake and small land inserts.	Built-up edge Crater
		2	3			
		6				
	Low alloyed	2	4,6	42CrMo4, S150, CH60, 4140, 4340, 100Cr6	<b>Alloyed Steel</b> • <b>Composition</b> > Fe-C alloy (maximum 2.1% of carbon) with additives like Cr, Mo, V, Ni, Mn, Co, W, etc. • <b>Characteristics</b> > The variation of the amount of alloying elements and different heat treatments control features such as mechanical resistance and machinability. It's important to follow the cutting speeds recommended according to the hardness of the steel, since it influences a lot the temperature of the cut, chemical and adhesive wears. <b>High alloyed Steel</b> have more than 5% of alloying elements.	Built-up edge Crater
		5,7	8			
		10				
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	<b>High alloyed Steel</b> have more than 5% of alloying elements.	Crater
		10	11			
		11				
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	• <b>Composition</b> > Alloyed Steel with more than 11% of Chrom(Cr). • <b>Characteristics</b> > Stainless steel does not stain, corrode, or rust as easily as ordinary steel. Usually they are difficult to machine, because of it's narrow range of cutting speeds. If the cutting speed is too low, the material sticks in the cutting edge, if it's too high, the high quantity of additives pro-duces abrasive wears in the cutting edge.	Built-up edge Notch wear
		14	14	X2CrNi123-4, S31500		
	Duplex	5	14	410, X6Cr17, 17-4 PH, 430	• <b>Composition</b> > Fe-C alloy with 2.1 to 5% of carbon. It can be alloyed with Si, P, Mn and Ni. • <b>Characteristics</b> > Grey cast iron tends to be brittle, and malleable cast irons usually have a more ductile but less homogeneous microstructure. Reinforced cutting edges will perform the best, and high productivity can be achieved by using high feeds.	Notch wear Crater
		14				
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	• <b>Composition</b> > Fe-C alloy with 2.1 to 5% of carbon. It can be alloyed with Si, P, Mn and Ni. • <b>Characteristics</b> > Grey cast iron tends to be brittle, and malleable cast irons usually have a more ductile but less homogeneous microstructure. Reinforced cutting edges will perform the best, and high productivity can be achieved by using high feeds.	Crater
		13				
Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, No30B	• <b>Composition</b> > Fe-C alloy with 2.1 to 5% of carbon. It can be alloyed with Si, P, Mn and Ni. • <b>Characteristics</b> > Grey cast iron tends to be brittle, and malleable cast irons usually have a more ductile but less homogeneous microstructure. Reinforced cutting edges will perform the best, and high productivity can be achieved by using high feeds.	Flank wear Crater Mechanical cracks
		15	16			
		16				
	Malleable & Nodular	8	17,19	GG40, GGG70, 50005	• <b>Composition</b> > Fe-C alloy with 2.1 to 5% of carbon. It can be alloyed with Si, P, Mn and Ni. • <b>Characteristics</b> > Grey cast iron tends to be brittle, and malleable cast irons usually have a more ductile but less homogeneous microstructure. Reinforced cutting edges will perform the best, and high productivity can be achieved by using high feeds.	Flank wear Crater Mechanical cracks
		17,19	18,20			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	<b>Composition</b> > Iron (Fe) based, Nickel (Ni) based or Cobalt (Co) based alloys and Titanium alloys. <b>Characteristics</b> > High Temperature alloys and Titanium provide excellent mechanical strength resistance, as well as corrosion and oxidation resistance. Relatively low cutting speed is recommended due to their poor thermal conductivity.	Notch wear Crater
		33	34	Inconel 700 Stellite 21		
		36	37	TiAl6V4 T40		
	Ti based	10	36	TiAl6V4 T40	<b>Composition</b> > Iron (Fe) based, Nickel (Ni) based or Cobalt (Co) based alloys and Titanium alloys. <b>Characteristics</b> > High Temperature alloys and Titanium provide excellent mechanical strength resistance, as well as corrosion and oxidation resistance. Relatively low cutting speed is recommended due to their poor thermal conductivity.	Notch wear Crater
		37				
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	This group includes hardened and tempered steel up to 55 HRC, chilled and white cast iron up to 55 HRC. Machining success depends largely on clamping system rigidity, as cutting forces and power consumption are high. Finishing represents the majority of the operations for this materials group.	Crater
		38	40	Ni-Hard 2		
	Chilled Cast Iron	40	Ni-Hard 2			
	White Cast Iron	41	G-X300CrMo15			
NF	Al (>-8%Si)	12	25	AlSi12	Non-ferrous and soft materials (less than 130HB of hardness). Most common: Aluminum <b>Composition</b> > Al alloys. It can be alloyed with Cu, Zn, Mg, Mn and Si. <b>Characteristics</b> > Aluminium is widely used due to its low density and relatively good strength/weight ratio. When machining it tends to have long chips and built up edge. A highly positive cutting edge together with low friction coating are supposed to control the chips and reduce built up edge.	Built-up edge
		13	21, 22 23, 24	Si < 4 % 4% < Si < 8 %		
	Cooper Alloys	14	28,27,28	CuZn30		
		29	Fiber Plastics			
	Non-Metallic	15	30	Hard Rubber		
-		-	Graphite			

# Machining Trouble Shooting for Turning & Milling



**Built-up Edge**  
(Adhesive Wear)

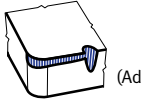


**Problem**

The workpiece material is welded to the cutting edge, usually due to temperatures that are too low.

**Solution**

- Increase cutting speed
- Increase feed
- Use more positive geometry



**Notch Wear**  
(Adhesive/Mechanical Wear)

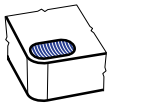


**Problem**

The result of adhesive or mechanical action: chipping or localized wear at the depth-of-cut line.

**Solution**

- Use more positive geometry
- Reduce feed
- Vary depth-of-cut



**Crater**  
(Chemical Wear)

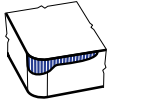


**Problem**

Occurs on the rake surface, normally the result of the combination of a diffusion and abrasion wear mechanism.

**Solution**

- Decrease cutting speed
- Check coolant direction
- Use more positive geometry



**Flank Wear**  
(Abrasive Wear)

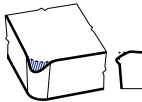


**Problem**

Abrasive wear mechanism occurs on the cutting edge's flank. Not common in Nexus inserts.

**Solution**

- Decrease cutting speed
- Check coolant direction



**Plastic Deformation**  
(Thermal Wear)

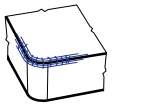


**Problem**

Caused by cutting forces and temperatures that are too high. Not common in Nexus inserts.

**Solution**

- Decrease cutting speed
- Decrease feed rate



**Thermal Cracks**  
(Thermal Wear)

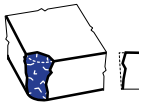


**Problem**

Small cracks – normally at 90° to the cutting edge – caused by temperature variations.

**Solution**

- Stabilize the temperature
- Shut off coolant



**Breakage**  
(Mechanical Wear)



**Problem**

Most of the breakages happen because the wear development is not seen in time.

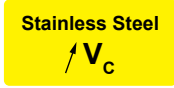
**Solution**

- Check the toolholder
- Check the tool overhang
- Check the Amax
- Decrease feed and Vc
- Use a more robust insert
- Check the run out

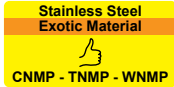
**Questions?**  
**Call us for support: (877) 616-6016**

# MACHINING RECOMMENDATION GUIDE

In order to assist you and to obtain the best productivity using our cutting tools, we enclose these relevant comments and tips. Each comment is symbolized by an icon and the relevant icons appear for each insert.



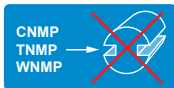
In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.



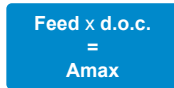
In machining Stainless Steel or Exotic materials, P geometry inserts (CNMP, TNMP, WNMP), are recommended as first choice.



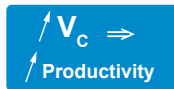
In machining Exotic materials, it is important to verify cutting conditions of the specific insert.



P geometry inserts (CNMP, TNMP, WNMP) are not recommended when machining with interrupted cut.



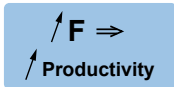
It is important to verify and respect  $A_{max}$ , which is the maximum chip section. Feed x d.o.c. must be lower than the number noted as  $A_{max}$ .



To increase machining productivity, it is recommended to increase speed ( $V_c$ ) while respecting chip size calculation.



Appropriate for boring operation.



To increase productivity, it is recommended to increase feed ( $f$ ) and respect cutting speed.




When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.

# Lamina insert designation (based on ANSI and ISO norms)

## 1. Insert shape

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>G</b>	<b>H</b>	<b>K</b>	<b>L</b>
<b>M</b>	<b>O</b>	<b>P</b>	<b>R</b>
<b>S</b>	<b>T</b>	<b>V</b>	<b>W</b>

## 2. Clearance angle

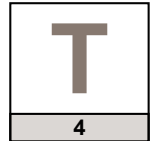
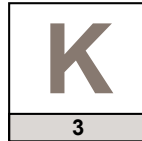
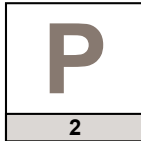
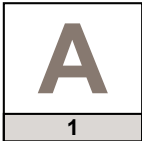
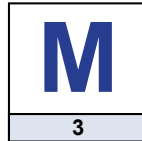
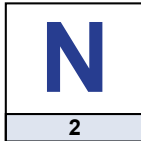
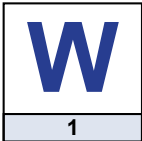


Letter Symbol	$\alpha$
<b>A</b>	3°
<b>B</b>	5°
<b>C</b>	7°
<b>D</b>	15°
<b>E</b>	20°
<b>F</b>	25°
<b>G</b>	30°
<b>N</b>	0°
<b>P</b>	11°
<b>O</b>	Special

## 3. Tolerance Class

Symbol	D	M	S
<b>A</b>	± 0.0010	± 0.0002	± 0.001
<b>C</b>	± 0.0010	± 0.0005	± 0.001
<b>E</b>	± 0.0010	± 0.0010	± 0.001
<b>F</b>	± 0.0005	± 0.0002	± 0.001
<b>G</b>	± 0.0010	± 0.0010	± 0.005
<b>H</b>	± 0.0005	± 0.0005	± 0.001
<b>J*</b>	± 0.002-0.006	± 0.0002	± 0.001
<b>K*</b>	± 0.002-0.006	± 0.0005	± 0.001
<b>L*</b>	± 0.002-0.006	± 0.0010	± 0.001
<b>M*</b>	± 0.002-0.006	± 0.003-0.008	± 0.005
<b>N*</b>	± 0.002-0.006	± 0.003-0.008	± 0.001
<b>U*</b>	± 0.003-0.010	± 0.005-0.015	± 0.005

\*Depending on the insert size (For exact tolerance see insert pag)



## 6. Insert thickness

Symbol	Inch	
	ISO	ANSI
01	1	1/16
T1	1.2	5/64
02	1.5	3/32
03	2	1/8
T3	2.5	5/32
04	3	3/16
05	3.5	7/32
06	4	1/4
07	5	5/16
09	6	3/8

## 7. Insert corner radius

Symbol	Corner radius (in)		1 <sup>st</sup> letter (Milling)
	ISO	ANSI	
01	0	<b>0.004</b>	A = 45°
02	0.5	<b>0.008</b>	D = 60°
04	1	<b>0.016</b>	E = 75°
08	2	<b>0.032</b>	F = 85°
12	3	<b>0.047</b>	P = 90°
16	4	<b>0.063</b>	Z = other
20	5	<b>0.079</b>	
24	6	<b>0.095</b>	
28	7	<b>0.109</b>	
32	8	<b>0.125</b>	
00	-	Round insert (in)	
M0	-	Round insert (mm)	





4. Fixing and chip breaker types

Type	Symbol	Type	Symbol
A		N	
B		P	
F		R	
G		T	
H		W	
M		X	Special design

5. Cutting Edge Length

I.C.			C	D	R	S	T	V	W
Symbol	Inch	mm							
1.2	.156	1.2	S4	04	03	03	06		
1.5	.187	1.5	04	05	04	04	08	08	S3
1.8	.219	1.8	05	06	05	05	09	09	03
2	.250	2	06	07	06	06	11	11	04
2.5	.313	2.5	08	09	07	07	13	13	05
3	.375	3	09	11	09	09	16	16	06
4	.500	4	12	15	12	12	22	22	08
5	.625	5	16	19	15	15	27	27	10
6	.750	6	19	23	19	19	33	33	13
8	1.000	8	25	31	25	25	44	44	17
08	.315	08			08				
10	.394	10			10				
12	.472	12			12				
16	.630	16			16				

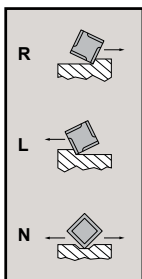
<b>4</b>	<b>3</b>	<b>2</b>			<b>NN</b>
5	6	7	8	9	10
<b>16</b>	<b>04</b>	<b>PD</b>	<b>T</b>	<b>R</b>	
5	6	7	8	9	10

8. Edge preparation

	F
	E
	T
	S

Optional information

9. Cutting direction



Optional information

10. Internal Designation

**e.g. Application (Milling)**  
**45** = 45° Approach angle  
**90** = 90° Approach angle  
**HF** = High Feed

Optional information

**e.g. Chip breaker (Turning)**  
**NN** = General purposes  
**NM** = Roughing operations  
**NX** = General purposes Magia  
**PP** = All purposes grooving  
**ALU** = Non Ferrous Materious

Optional information

# TECHNICAL FORMULAS

## Definition

## Formula

<p><b>Inches Per Tooth (IPT or Chip Load)</b> The thickness of material that is removed by one tooth in one complete revolution.</p>	
<p><b>Inches Per Revolution (IPR)</b> The linear distance that a tool advances in one complete revolution.</p>	$IPR = IPT \times \text{NUMBER OF TEETH}$
<p><b>Inches Per Minute (IPM)</b> The linear distance, in inches, that the tool advances in one minute.</p>	$IPM = IPR \times RPM$
<p><b>Surface Feet Per Minute (SFPM)</b> The linear distance, in feet, that the cutting edge of the tool travels in one minute.</p>	$SFPM = \frac{RPM \times DIA}{3.82}$
<p><b>Revolutions Per Minute (RPM)</b> The number of times a tool rotates 360° in one minute.</p>	$RPM = \frac{SFPM \times 3.82}{DIA}$
<p><b>Meters Per Minute (M/MIN)</b> The linear distance, in meters, that the cutting edge of the tool travels in one minute.</p>	$M/M = RPM \times .003 \times DIA$
<p><b>Convert Millimeters to Inches</b></p>	$INCHES = \frac{MM}{25.4}$
<p><b>Convert Meters Per Minute to Surface Feet Per Minute</b></p>	$SFPM = M/M \times 3.3$
<p><b>Convert Surface Feet Per Minute to Meters Per Minute</b></p>	$MM = \frac{SFPM}{3.3}$
<p><b>Depth Of Cut (DOC)</b> The amount of material removed, in thickness, by one pass of the cutting tool.</p>	
<p><b>Metal Removal Rate ("Q" or IN<sup>3</sup>/MIN).</b> The amount of cubic inches of material removed in one minute.</p>	$Q = DOC \times IPR \times 12 \text{ — Turning}$ $Q = DOC \times WOC \times IPM \text{ — Milling}$
<p><b>Balancing Feed and DOC</b> A given value provided by Lamina that allows an end user to balance feed rate and depth of cut.</p>	$AMAX = DOC \times IPR$



## Have a Competitor's Cutter Body? You Can Still Use Nexus Inserts!

INSERT DESCRIPTION	EDP NO.	FITS IN COMPETITORS' CUTTER BODY
ADKT1505PDTR-LT30	1506065	Iscar
AOMT123608PETR-LT30	3153311	Mitsubishi
APGT1003PDER-ALU-LT05	1506501	Iscar
APGT1604PDER-ALU-LT05	1506505	Kenn, Kor, Ing, Seco, Stell
APKT 100304 PDTR LT30	3154422	Iscar
APKT 100312 PDTR LT30	3154433	Iscar
APKT 100332 PDTR LT30	3154444	Iscar
APKT 100340 PDTR LT30	3154455	Iscar
APKT1003PDTR-LT30	3154411	Iscar
APKT160424ER-LT30	1500300	Kenn, Kor, Ing, Seco, Stell
APKT1604PDTR-LT30	1506073	Kenn, Kor, Ing, Seco, Stell
APKT1604PDTR-LT30-NEW	1506075	Kenn, Kor, Ing, Seco, Stell
APKT1705PETR-LT30	1506077	Ing, Taegutec
APMT0903PDTR-LT30	3153317	Walter
APMT1135PDTR-LT30	3153321	Mitsubishi
APMT1604PDTR-LT30	3151134	Kenn, Kor, Ing, Seco, Stell
APMT160408PDTR-LT30	3153325	Kenn, Kor, Ing, Seco, Stell
KNUX160405R11-LT10	3164420	Kenn
LDMT1504PDTR-LT30	3161989	Iscar, OTM, Ceratizit
ODMT0504ZZTR-LT30	3954406	Seco
ODMT060508TN-LT30	3954411	Seco, Walter
ODMW060508TN-LT30	3954415	Seco, Walter
OFER070405TN-LT30	3954421	Iscar, Seco
OFMT050405TR-LT30	3954441	Seco, Iscar
OFMT05T305TN-LT30	3954431	Seco, Iscar
OFMT070405TN-LT30	3954435	Iscar, Seco
RCMT0602MO-LT10	3355511	Kenn

Continues...

INSERT DESCRIPTION	EDP NO.	FITS IN COMPETITORS' CUTTER BODY
RCMT0602MO-LT1000	3351914	Kenn
RCMT0803MO-LT10	3355516	Seco, Walter
RCMT0803MO-LT1000	3351915	ISO Turning
RCMT10T3MO-LT10	3355521	ISO Turning
RCMT10T3MO-LT1000	3351916	ISO Turning
RCMT1204MO-LT10	3355525	ISO Turning
RCMT1204MO-LT1000	3351917	ISO Turning
RDMT0602MO-LT30	3355528	Kenn
RDMT0803MO-LT30	3355531	Seco, Walter
RDMT1003MO-LT30	3355533	Kenn
RDMT10T3MO-LT30	3355536	Kenn, Seco, Walter
RDMT1204MO-LT30	3355541	Walter
RDMT12T3MO-LT30	3355543	Kenn
RDMW10T3MO-LT30	3355546	Walter
RDMW1204MO-LT30	3355548	Walter
RDMX10T3MO-LT30	3351552	Walter
RDMX1204MO-LT30	3355549	Walter
SDKT1204AETN-LT30	3254411	Walter
SEGT1204AFEN-ALU-LT05	2506509	Sandvik, Kenn
SEKN42AFTN-LT30	3254415	Iscar, Seco, Sand, Walt, Kenn
SEKN43AFTN-LT30	3254417	Iscar, Seco, Sand, Walt, Kenn
SEKN53AFTN-LT30	3254421	Iscar, Seco, Sand, Walt, Kenn
SEKR1203AFTN-LT30	3254431	Iscar, Seco, Sand, Walt, Kenn
SEKR43AFTN-LT30	3254433	Sandvik
SEKT1204AFTN-LT30	3254435	Iscar, Sandvik, Walter
SEKT12T3AGSN-LT30	2506169	Sandvik
SNKX1607-45-LT30	2502205	Ing, Iscar
SPKN42EDTR-LT30	3263336	ISO Milling
SPKN43EDTR-LT30	3263341	ISO Milling
SPKN53EDTR-LT30	3266029	ISO Milling

INSERT DESCRIPTION	EDP NO.	FITS IN COMPETITORS' CUTTER BODY
SPKR42EDTR-LT30	3253346	ISO Milling
SPKR43EDTR-LT30	3263351	ISO Milling
SPMT12T308-LT30	3263347	Sandvik
WCMX030208R53	3441111	Sandvik
WCMX040208NN	3441121	Sandvik
WCMX050308NN	3441125	Sandvik
WCMX06T308NN	3441131	Sandvik
WCMX080412NN	3441135	Sandvik
XDLT0904HF-LT30	2503095	Stell High Feed
XDLT1205HF-LT30	2503096	Stell High Feed

**FAQ**

**Is it true that Lamina inserts can be used with any type of working material?**

Lamina inserts have been tested in countless applications around the world, and are suitable for practically any type of Turning or Milling metal cutting operation.

It is noteworthy that, while Lamina inserts will work in Aluminum production jobs in Aluminum frequently require tailored designed chip-control optimization.

Please refer to Lamina Alu-Line.

**What speeds and feeds should Lamina inserts be run at?**

In this catalog, specific recommendations are provided for each individual insert, indicating the speeds and feeds that are required for most of the material groups. In order to achieve the maximum advantage from Lamina's grade technology it is important to always run the inserts according to the recommended conditions. In general, the best results are normally achieved at the high range of the recommended cutting speeds.

**What can we expect regarding the quality and consistency of Lamina inserts?**

Due to Lamina's unique production methods and Quality Control procedures, you can expect inserts with much higher accuracy and consistency than you have been accustomed up to now: insert-to-insert, box-to-box and batch-to-batch. This advantage improves the unattended operation of your machines.

**What percentage of my tooling requirements can Lamina supply?**

In most regular shops Lamina's insert program will add about 80% of all inserts needed for CNC machines up to 20 Hp. The insert program covers a full range of standard turning and milling operations from Semi-Roughing to Super-Finishing.

**Will the performance of Lamina grades be better than the specialized and dedicated grades available from the market?**

Lamina has extensive know-how in sub-micron powder technology as well as in state of the art PVD coating. This know-how combined with unique chip breaker geometry and the in-depth application understanding, enabled Lamina to offer the Multi-Mat Concept; a simple concept of using one insert to work on many materials. The same insert can be used on the next job and the job after and so on, replacing the hundreds of specialized and confusing insert choices that are common in our industry.

**In machine shops that run Lamina inserts, what do they find as the biggest benefits?**

- Time saving- ability to always have the right insert available for any job. This reduces the number of setups and idle time.
- Cost saving- 80% reduction in insert inventory, ordering and stocking cost.

**Are Lamina inserts coated the same as other PVD inserts?**

Lamina's state of the art PVD coating has significant differences compared to other suppliers. Our coating process produces thicker and stronger coating – with better adhesion, higher performance and longer tool life.

**What about turning tool holders and boring bars?**

Lamina's ANSI / ISO standard turning inserts are designed to fit all industrial standard turning tools and boring bars, using the tool holders you have in your stock.

**In turning, when should I use the \_NMP style inserts rather than the \_NMG style inserts?**

Most customers find that High-Positive \_NMP style inserts (CNMP, TNMP and WNMP) deliver the best results in sticky materials, such as 316 Stainless Steel, Inconel, and Titanium (high heat and corrosion resistant properties). This is achieved by our unique combination of our grades and geometry.

**How does the 4 corners Alu-line perform in Low Silicon Aluminum?**

Our Alu-line insert's geometry is specially designed for Aluminum with low Silicon content, creating chips that break instead of curl. The inserts are also coated and treated to reduce friction achieving unbeatable performance and tool life.

**When should I use Star line?**

Star line inserts are a good cost for positive turning inserts. Our Star Line inserts offer 3 cutting corners for the VBMT, CCMT, DCMT, and TCMT shapes instead of 2. Moreover, all the inserts can be mounted on the same tool holder.

# Milling

## Nexus High-Performance Face Mills



**NEW  
TECHNOLOGY**

### **Nexus ShrinkMILLs**

Accuracy and rigidity of ShrinkFIT applied to a face mill



### **Cast Iron Mill**

Cast iron cutter with 10 cutting edges producing lower cost per corner



### **High Feed Mills**

Higher feed rates than standard face mills

Attacking Heat & Vibration is in Our DNA.

# ShrinkMILL For Best Performance



We're Making a Better Connection Between the Cutting Tool and Spindle.



Make more parts per day  
and increase your profit margin!

## Problem

- ❶ Poor I.D./O.D. tolerance between face mill and face mill arbor
- ❷ This causes high T.I.R. (runout) and high vibration while cutting.
- ❸ High T.I.R. also causes premature wear on the arbor, causing even more vibration

## Solution

- ❶ ShrinkMILL perfects the connection between face mill and arbor with ShrinkFIT technology
- ❷ We reduce the diameter of the face mill I.D. so it can be ShrinkFIT to a Techniks arbor for the most rigid, powerful, and accurate connection in the industry
- ❸ Our face mills and arbors are made of the same H13 tool steel as our regular ShrinkFIT holders so you get the same outstanding performance and insert life

## Benefits

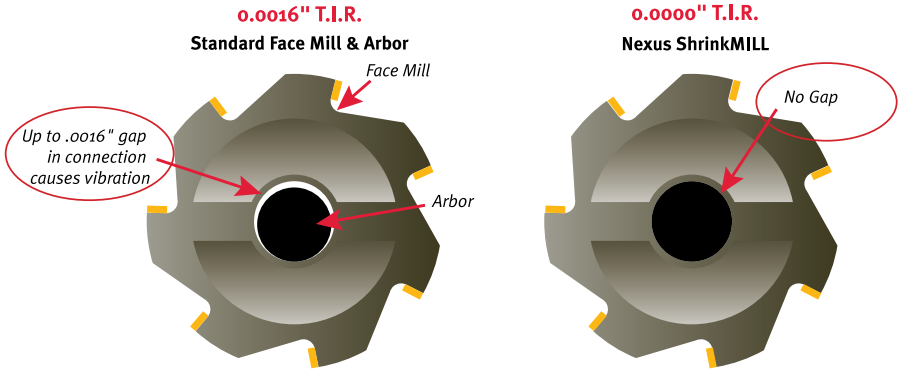
- ❶ Better surface finish
- ❷ Less scrap due to less premature failure of inserts
- ❸ Increased productivity

# Nexus ShrinkMILL

## A Perfect Connection



### ID/OD Tolerance in Face Mills

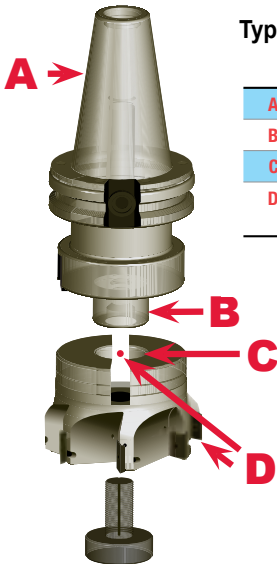


ShrinkMILL Makes a Perfect Connection Between the Face Mill and Arbor

ShrinkMILL Eliminates 1/3 of all T.I.R.

T.I.R. Causes Vibration. Vibration Causes Poor Cutting and Premature Failure in Inserts.

### Stacking of Tolerances – Face Mill Arbor Assembly



Typical 1" ID Face Mill Assembly

<b>A</b>	Taper to arbor T.I.R.	Toolholder =	0.0002"
<b>B</b>	OD tolerance	Arbor =	-0.0008"
<b>C</b>	ID tolerance	Face Mill ID =	+0.0008"
<b>D</b>	ID to insert OD (including insert tolerance)	Face Mill ID/OD =	±0.003"
<b>Total Tolerance =</b>			<b>0.0048" T.I.R.</b>

ShrinkMILL eliminates T.I.R. which reduces vibration and allows faster feeds & speeds, increasing parts per day, and reduces premature failure of inserts.

Use ShrinkMILL to reduce scrap—which is money!

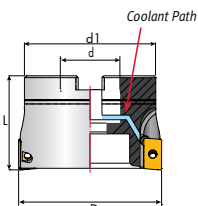
# Nexus 90° Face Mill (FM) & ShrinkMILL (SFM)



Takes AP\_\_1604 Inserts

### Features & Benefits

- H6 bore tolerance — 38% more accurate than standard face mills
- Less vibration
- Longer insert life



### 90° 16mm Face Mill (FM) Coolant Thru

Part No.	Description	Inserts	D	d	Z	d1	L
2621234	FM90-2.00C-.750-4-16	AP__1604	2.00	0.75	4	1.69	1.57
2621244	FM90-2.00C-.750-5-16	AP__1604	2.00	0.75	5	1.69	1.57
2631235	FM90-3.00C-1.25-6-16	AP__1604	3.00	1.25	6	2.76	1.97
2641236	FM90-4.00C-1.25-7-16	AP__1604	4.00	1.25	7	2.76	1.97
2651237	FM90-5.00C-1.50-8-16	AP__1604	5.00	1.50	8	3.82	2.48

Toolholders on page 36.



Takes AP\_\_1604 Inserts

### Features

- The holding power and rigidity of ShrinkFIT applied to a face mill
- Coolant-thru tool

### Benefits

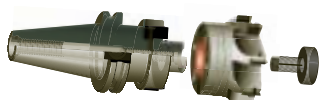
- Longer tool life or increased feed rates
- Better surface finish due to increased rigidity
- Longer insert life



### 90° ShrinkMILL (SFM) Coolant Thru

Part No.	Description	Inserts	D	d	Z	d1	L
2321234	SFM90-2.00C-.750-4-16	AP__1604	2.00	0.75	4	1.69	1.57
2331235	SFM90-3.00C-1.25-6-16	AP__1604	3.00	1.25	6	2.76	1.97
2341236	SFM90-4.00C-1.25-7-16	AP__1604	4.00	1.25	7	2.76	1.97
2351237	SFM90-5.00C-1.50-8-16	AP__1604	5.00	1.50	8	3.82	2.48

Use ShrinkMILLS with Toolholders on page 36.



### Product Information

- Comes in 2", 3", 4", 5" Diameters
- Takes Insert APKT1604 for most materials and APGT1604 and APEX1604PDFRFO1-5005-HP for aluminum (2 corners)
- Made of H13
- \* Coolant Thru Capability
- Can be Used in All Materials

\* To run coolant thru, face mills require Coolant Arbor Screws sold separately. See page 40.

Insert Screw	Wrench
9319345	9355555

### Product Information

- Comes in 2", 3", 4", 5" Diameters
- ShrinkMILLS Lower T.I.R. for Longer Insert Life and Better Finish
- Takes Insert APKT1604 for Most Materials and APGT1604 and APEX1604PDFRFO1-5005-HP for Aluminum (2 corners)
- Made of H13
- \* Coolant Thru Capability
- All ShrinkMILLS are Used with Standard Face Mill Arbors
- Can be used in all materials.

\* To run coolant thru, face mills require Coolant Arbor Screws sold separately. See page 40.



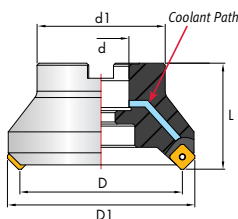
# Nexus 45° Face Mill FM & ShrinkMILL (SFM)



Takes SE\_12T3 and SE\_13T3 Inserts

## Features & Benefits

- H6 bore tolerance — 38% more accurate than standard face mills
- Less vibration
- Longer insert life



## 45° Face Mill (FM) Coolant Thru

Part No.	Description	Inserts	D	d	D1	Z	d1	L
2521234	FM45-2.00C-.750-4-13	SE_12T3	2.00	0.75	2.48	4	1.69	1.57
2531235	FM45-3.00C-1.25-6-13	SE_12T3	3.00	1.25	3.66	6	2.75	1.97
2541236	FM45-4.00C-1.25-7-13	SE_12T3	4.00	1.25	4.49	7	2.75	1.97
2551237	FM45-5.00C-1.50-8-13	SE_12T3	5.00	1.50	5.43	8	3.82	2.48

Toolholders on page 36.



Takes SE\_12T3 and SE\_13T3 Inserts



## Features

- Accuracy and rigidity of ShrinkFIT applied to a face mill
- Coolant-thru tool

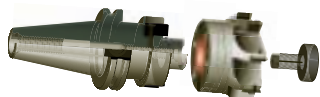
## Benefits

- Faster metal removal rates
- Better surface finish due to increased rigidity
- Longer insert life

## 45° ShrinkMILL (SFM) Coolant Thru

Part No.	Description	Inserts	D	d	D1	Z	d1	L
2421234	SFM45-2.00C-.750-4-13	SE_12T3	2.00	0.75	2.48	4	1.69	1.57
2431235	SFM45-3.00C-1.25-6-13	SE_12T3	3.00	1.25	3.66	6	2.76	1.97
2441236	SFM45-4.00C-1.25-7-13	SE_12T3	4.00	1.25	4.49	7	2.76	1.97
2451237	SFM45-5.00C-1.50-8-13	SE_12T3	5.00	1.50	5.43	8	3.82	2.48

Use ShrinkMILLS with Toolholders on page 36.



## Product Information

- Comes in 2", 3", 4", 5" Diameters
- Takes Insert SEKT12T3AGTN-LT30 for Most Materials and SEET13T3LH for Aluminum (4 corners)
- Made of H13
- \* Coolant Thru Capability
- Can be Used in All Materials
- \* To run coolant thru, face mills require Coolant Arbor Screws sold separately. See page 40.

Insert Screw	Wrench
9318345	9355555

## Product Information

- Comes in 2", 3", 4", 5" Diameters
- ShrinkMILLS Lower T.I.R. for Longer Insert Life and Better Finish
- Takes Insert SEKT12T3AGTN-LT30 for Most Materials and SEET13T3LH for Aluminum (4 corners)
- Made of H13
- \* Coolant Thru Capability
- All ShrinkMILLS are Used with Standard Face Mill Arbors
- Can be used in all materials.
- \* To run coolant thru, face mills require Coolant Arbor Screws sold separately. See page 40.

All Nexus products are backed by our 100% satisfaction guarantee.

# Nexus Negative Cast Iron Milling Cutter



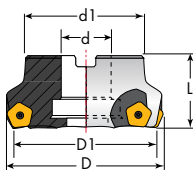
Takes PNEG1105 Inserts

### Features & Benefits

- Negative pentagon insert designed for cast iron
- 10 cutting edges produce lower cost per corner

### Product Information

- Comes in 3", 4", 5", 6" Diameters
- Takes Negative Insert PNEG110512R (10 corners)
- Primarily used in Cast Iron, but can be used in other materials.



### Decagon Cutter

Part	Description	Inserts	D	d	D1	Z	d1	L	Insert Screw	Wrench
2139910	PN11-3.00-1.00-08	PNEG1105	3.00	1.00	2.87	8	2.36	2.00	9319345	9355555
2149920	PN11-4.00-1.25-10	PNEG1105	4.00	1.25	3.93	10	3.16	2.00	9319345	9355555
2159930	PN11-5.00-1.50-12	PNEG1105	5.00	1.50	4.90	12	3.94	2.50	9319345	9355555
2169940	PN11-6.00-1.50-14	PNEG1105	6.00	1.50	5.80	14	4.53	2.50	9319345	9355555

Toolholders starting on page 36.



PNEG inserts on page 86.

### PNEG 11MM Inserts

Part No.	Description	Grade	Radius	Operation	Material
3959999	PNEG110512R-CM	152	0.047	General	K

P = steel, M = stainless, K = cast iron, S = high temp alloys, H = hardened material, N = aluminum & alloys

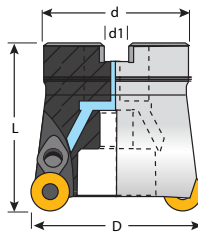
# Nexus Positive Round Button Cutter Face Mill



Takes RDM\_1204 inserts

## Features

- Excels in profile and copy milling
- Great for roughing operations
- Great for pockets and 3D surfaces
- Number of indexes depend on D.O.C.



## Product Information

- Comes in 2" and 3"
- Shrink and standard versions
- Coolant-thru
- Made of H13
- 3 geometries to choose from (RDMT, RDMW, RDMX)
- Runs in all materials

## Round Button Cutter Coolant-Thru

Part No.	Description	Insert	D	d	d1	ap	Z	$\alpha^\circ$	L
2825635	RD12-2.00-.750C-4	RD__1204	2.00	0.75	1.69	0.250	4	5°	1.97
2835640	RD12-3.00-1.00C-5	RD__1204	2.50	0.75	2.19	0.250	5	3°	1.97

$\alpha^\circ$  = Ramp Angle. Toolholders on page 36.

## Shrink Fit Round Button Cutter Coolant-Thru

Part No.	Description	Insert	D	d	d1	ap	Z	$\alpha^\circ$	L
2825650	SFRD12-2.00-.750C-4	RD__1204	2.00	0.75	1.69	0.250	4	5°	1.97
2835645	SFRD12-3.00-1.00C-5	RD__1204	3.00	1.00	2.19	0.250	5	3°	1.97

$\alpha^\circ$  = Ramp Angle. Toolholders on page 36.



Takes RDM1204 insert



Takes RDMW1204 insert



Takes RDMX1204 insert

RDM\_1204 inserts start on page 87.

## RDM\_1204 Inserts

Part No.	Description	Grade	Radius	Operation	Screw	Clamp	Wrench	Clamp Screw	Clamp Screw Wrench	Material
3355541	RDMT 1204	LT30	-	*	9311311	9344999	9355555	6811299	9355666	P-M-K-S-H
3355548	RDMW 1204	LT30	-	*	9311311	9344999	9355555	6811299	9355666	P-M-K-S-H
3355549	RDMX 1204	LT30	-	*	9311311	9344999	9355555	6811299	9355666	P-M-K-S-H

P = steel, M = stainless, K = cast iron, S = high temp alloys, H = hardened material

\* Pocket Milling, Copying, Facing

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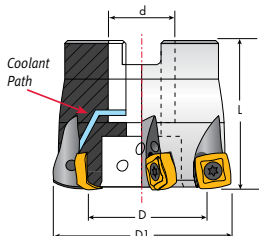
# Nexus Negative High Feed Face Mills & ShrinkMILLS



Use with SNKX Inserts

### Features

- Great for profile and copy milling
- Excels in plunge milling
- Great for roughing operations on pockets and 3D surfaces
- SFM—high productivity (more cutting edges per insert)



### Product Information

- Comes in 2", 2-1/2", 3", 4" Diameters
- Takes Insert SNKX09T3HF-LT30 (8 corners)
- Made of H13
- \* Coolant Thru Capability
- Only Run in Steel, Cast Iron,
- All ShrinkMILLS are Used with Standard Face Mill Arbors (see page 36) and Hardened Materials

\* To run coolant thru, face mills require Coolant Arbor Screws sold separately. See page 40.

### High Feed Face Mills Coolant-Thru

Part No.	Description	D	d	L	Z	Insert	Ap	$\alpha^\circ$	Screw	Wrench
9202123	HF-2.00-.750C-4SN9	2.00	0.75	1.57	4	SNKX09T3	0.040	1°	6811264	9355444
9212124	HF-2.50-.750C-5SN9	2.50	0.75	1.57	4	SNKX09T3	0.040	.75°	6811264	9355444
9353123	HF-3.00-1.00C-6SN9	3.00	1.00	1.57	6	SNKX09T3	0.040	.5°	6811264	9355444
9474123	HF-4.00-1.25C-7SN9	4.00	1.25	2.00	7	SNKX09T3	0.040	.25°	6811264	9355444

Ramp Angle ( $\alpha^\circ$ ) N/A.



Use with SNKX Inserts

### ShrinkMILL High Feed Face Mills Coolant Thru

Part No.	Description	D	d	L	Z	Insert	Ap	$\alpha^\circ$	Screw	Wrench
9223123	SHF-2.00-.750C-4SN9	2.00	0.75	1.570	4	SNKX09T3	0.040	1°	6811264	9355444
9233124	SHF-2.50-.750C-5SN9	2.50	0.75	1.570	4	SNKX09T3	0.040	.75°	6811264	9355444
9363123	SHF-3.00-1.00C-6SN9	3.00	1.00	1.57	6	SNKX09T3	0.040	.5°	6811264	9355444
9484123	SHF-4.00-1.25C-7SN9	4.00	1.25	2.00	7	SNKX09T3	0.040	.25°	6811264	9355444

Use ShrinkMILLS with Tool-holders on page 36.



### SNKX High-Feed Insert with Positive Geometry

Part No.	Description	Grade	Programming Radius	Operation	Material
2502115	SNKX09T3-HF	LT 30	.165"	Roughing	P-K-H

P = steel, K = cast iron H = hardened material SNKX on page 118.

# Nexus Positive High Feed Face Mills



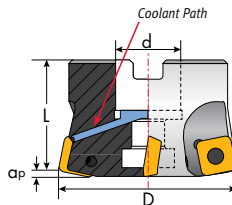
Takes SDMT Inserts

## Features & Benefits

- Higher feed rates than standard face mills
- Less radial cutting forces
- Reduces spindle wear

## Product Information

- Comes in 2", 2-1/2", and 3" diameters
- 2" and 2-1/2" Take Insert SDMT09T312 (4 corners)
- 3" Takes Insert SDMT120412 (4 corners)



## Tetrad Coolant-Thru

Part No.	Description	D	d	D1	ap	Z	$\alpha^\circ$	d1	L
2928860	HFM-2.00-0.75-SD09-04	2.00	0.75	1.52	0.055	4	1.5	1.78	2.00
2928865	HFM-2.50-0.75-SD09-05	2.50	0.75	1.97	0.055	5	1.5	1.97	2.00
2938870	HFM-3.00-1.25-SD12-05	3.00	1.25	2.35	0.071	5	1.5	2.75	2.50

$\alpha^\circ$  = Ramp Angle **Toolholders on page 36.**

## Hardware (page 333)

Insert Screw	Clamp Screw	Clamp	Insert Wrench	Clamp Wrench
9317446	9318347	9344454	9355444	9355555
9318547	9318347	9344454	9355555	9355555



SDMT on page 107.

## SDMT 09 & 12 Inserts

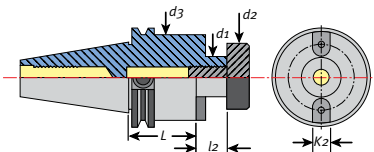
Part No.	Description	Grade	Programming Radius	Radius	Operation	Material
3253310	SDMT09T312-DM	202	.098	0.047	General	P-K-H
3253320	SDMT120412-DM	202	.157	0.047	General	P-K-H

P = steel, M = stainless, K = cast iron, S = high temp alloys, H = hardened material, N = aluminum & alloys

# CAT40 Precision Face Mill Arbors



CoolBLAST arbor screw provides coolant path. page 40.



## Features

- Compatible with all coolant-thru face mills
- H6 arbor tolerance for less chatter and better tool life
- Each arbor lab certified for accuracy
- Taper ground to AT<sub>3</sub> tolerance or better

## Benefits

- Better rigidity and reduced vibration
- Improved performance at high metal removal rates and when machining at extended lengths

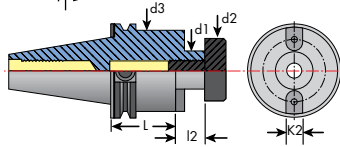
## CAT40 Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
22711	CAT40 x FMA 3/4" - 1.37"	1.37"	.69"	3/4"	.88"	1.69"	.31"
22711-4	CAT40 x FMA 3/4" - 4.0"	4"	.69"	3/4"	.88"	1.69"	.31"
22711-6	CAT40 x FMA 3/4" - 6.0"	6"	.69"	3/4"	.88"	1.69"	.31"
22715	CAT40 x FMA 1-1/4" - 2.21"	2.21"	.69"	1-1/4"	1.5"	2.75"	.5"
22715-4	CAT40 x FMA 1-1/4" - 4.0"	4"	.69"	1-1/4"	1.5"	2.75"	.5"
22715-6	CAT40 x FMA 1-1/4" - 6.0"	6"	.69"	1-1/4"	1.5"	3."	.5"
22717	CAT40 x FMA 1-1/2" - 2.21"	2.21"	.94"	1-1/2"	1.88"	3.8"	.63"
22717-4	CAT40 x FMA 1-1/2" - 4"	4"	.94"	1-1/2"	1.88"	3.8"	.63"

## CAT40 DualDRIVE Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
72711	CAT40 x FMA 3/4" - 1.37" DualDRIVE	1.37"	.69"	3/4"	.88"	1.69"	.31"
72711-4	CAT40 x FMA 3/4" - 4" DualDRIVE	4"	.69"	3/4"	.88"	1.69"	.31"
72711-6	CAT40 x FMA 3/4" - 6" DualDRIVE	6"	.69"	3/4"	.88"	1.69"	.31"
72715	CAT40 x FMA 1-1/4" - 2.21" DualDRIVE	2.21"	.69"	1-1/4"	1.5"	2.75"	.5"
72715-4	CAT40 x FMA 1-1/4" - 4" DualDRIVE	4"	.69"	1-1/4"	1.5"	2.75"	.5"
72715-6	CAT40 x FMA 1-1/4" - 6" DualDRIVE	6"	.69"	1-1/4"	1.5"	3"	.5"
72717	CAT40 x FMA 1-1/2" - 2.21" DualDRIVE	2.21"	.94"	1-1/2"	1.88"	3.8"	.63"
72717-4	CAT40 x FMA 1-1/2" - 4" DualDRIVE	4"	.94"	1-1/2"	1.88"	3.8"	.63"

# CAT50 Precision Face Mill Arbors

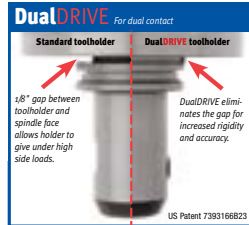


## Features

- Compatible with all coolant-thru face mills
- H6 arbor tolerance for less chatter and better tool life
- Each arbor lab certified for accuracy
- Taper ground to AT<sub>3</sub> tolerance or better



See an on-machine DualDRIVE demonstration vs. standard toolholders: [www.technikususa.com/videos2008/DD](http://www.technikususa.com/videos2008/DD)



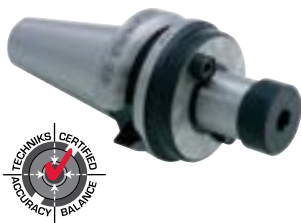
## CAT50 Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
22721	CAT50 x FMA 3/4" - 1.5"	1.5"	.69"	3/4"	.88"	2.75"	.31"
22721-3.5	CAT50 x FMA 3/4" - 3.5"	3.5"	.69"	3/4"	.88"	1.69"	.31"
22721-5.5	CAT50 x FMA 3/4" - 5.5"	5.5"	.69"	3/4"	.88"	1.69"	.31"
22721-8	CAT50 x FMA 3/4" - 8"	8"	.69"	3/4"	.88"	1.69"	.31"
22721-10	CAT50 x FMA 3/4" - 10"	10"	.69"	3/4"	.88"	1.69"	.31"
22725	CAT50 x FMA 1-1/4" - 1.50"	1.5"	.69"	1-1/4"	1.5"	2.75"	.5"
22725-3.5	CAT50 x FMA 1-1/4" - 3.5"	3.5"	.69"	1-1/4"	1.5"	2.75"	.5"
22725-6	CAT50 x FMA 1-1/4" - 6.0"	6"	.69"	1-1/4"	1.5"	2.75"	.5"
22725-8	CAT50 x FMA 1-1/4" - 8.0"	8"	.69"	1-1/4"	1.5"	2.75"	.5"
22727	CAT50 x FMA 1-1/2" - 2.4"	2.4"	.94"	1-1/2"	1.88"	3.8"	.63"
22727-4	CAT50 x FMA 1-1/2" - 4.0"	4"	.94"	1-1/2"	1.88"	3.8"	.63"
22727-6	CAT50 x FMA 1-1/2" - 6.0"	6"	.94"	1-1/2"	1.88"	3.8"	.63"
22727-8	CAT50 x FMA 1-1/2" - 8.0"	8"	.94"	1-1/2"	1.88"	3.8"	.63"

## CAT50 DualDRIVE Face Mill Arbors

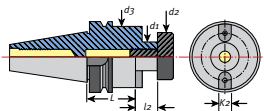
Part No.	Description	L	l2	d1	d2	d3	K2
72721	CAT50 x FMA 3/4" - 1.5" DualDRIVE	1.5"	.69"	3/4"	.88"	2.75"	.31"
72721-3.5	CAT50 x FMA 3/4" - 3.5" DualDRIVE	3.5"	.69"	3/4"	.88"	1.69"	.31"
72721-5.5	CAT50 x FMA 3/4" - 5.5" DualDRIVE	5.5"	.69"	3/4"	.88"	1.69"	.31"
72725	CAT50 x FMA 1-1/4" - 1.5" DualDRIVE	1.5"	.69"	1-1/4"	1.5"	2.75"	.5"
72725-3.5	CAT50 x FMA 1-1/4" - 3.5" DualDRIVE	3.5"	.69"	1-1/4"	1.5"	2.75"	.5"
72725-6	CAT50 x FMA 1-1/4" - 6" DualDRIVE	6"	.69"	1-1/4"	1.5"	2.75"	.5"
72727	CAT50 x FMA 1-1/2" - 2.4" DualDRIVE	2.4"	.94"	1-1/2"	1.88"	3.8"	.63"
72727-4	CAT50 x FMA 1-1/2" - 4" DualDRIVE	4"	.94"	1-1/2"	1.88"	3.8"	.63"
72727-6	CAT50 x FMA 1-1/2" - 6" DualDRIVE	6"	.94"	1-1/2"	1.88"	3.8"	.63"
72727-8	CAT50 x FMA 1-1/2" - 8" DualDRIVE	8"	.94"	1-1/2"	1.88"	3.8"	.63"

# BT30, BT40 & BT50 Precision Face Mill Arbors



## Features

- H6 arbor tolerance for less chatter and better tool life
- Each arbor lab certified for accuracy
- Taper ground to AT<sub>3</sub> tolerance for maximum spindle contact



## BT40, BT50 Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
16615-3/4	BT40 x 3/4" FMA - 1"	1.0"	.69"	3/4"	.88"	1.69"	.313"
16615-4	BT40 x 3/4" FMA - 4.0"	4"	.69"	3/4"	.88"	1.69"	.313"
16615-6	BT40 x 3/4" FMA - 6.0"	6"	.69"	3/4"	.88"	1.69"	.313"
16620	BT40 x 1-1/4" FMA - 1.77"	1.77"	.69"	1-1/4"	1.5"	2.75"	.5"
16620-4	BT40 x 1-1/4" FMA - 4"	4"	.69"	1-1/4"	1.5"	2.75"	.5"
16626	BT40 x 1-1/2" FMA - 2.36"	2.36"	.94"	1-1/2"	1.88"	3.8"	.625"
16639	BT50, 1.0" FMA - 1.77"	1.77"	.79"	1.0"	1.19"	1.97"	.375"
16639-3	BT50, 1.0" FMA - 3"	3"	.79"	1.0"	1.19"	1.97"	.375"
16642	BT50, 1-1/4" FMA - 1.77"	1.77"	.87"	1-1/4"	1.5"	2.34"	.5"
16645	BT50, 1-1/2" FMA - 1.77"	1.77"	.94"	1-1/2"	1.88"	3.8"	.625"
16646	BT50, 1-1/2" FMA - 75mm	75mm	.94"	1-1/2"	1.88"	3.8"	.625"
16646105	BT50, 1-1/2" FMA - 105mm	105mm	.94"	1-1/2"	1.88"	3.8"	.625"
16646150	BT50, 1-1/2" FMA - 150mm	150mm	.94"	1-1/2"	1.88"	3.8"	.625"

## BT30 Precision Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
16611	BT30 x 3/4" FMA - 1.18"	1.18"	.69"	3/4"	.88"	1.66"	.313"
16614	BT30 x 1-1/4" FMA - 1.77"	1.77"	.87"	1-1/4"	1.5"	2.37"	.5"



## Features

- Compatible with all coolant-thru face mills
- H6 arbor tolerance for less chatter and better tool life
- Use with your existing dual contact spindles

## Benefits

- Better rigidity and reduced vibration (chatter)
- Improved performance at high metal removal rates and when machining at extended lengths
- Provides the benefits of dual-contact machining on standard spindles too!

## BT30 DualDRIVE Face Mill Arbors

Part No.	Description d1 - l1	L	l2	d1	d2	d3	K2
66610	BT30 x DualDRIVE FMA 3/4" - 2"	2"	.69"	3/4"	.88"	1.66"	.313"



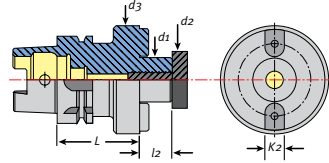
# HSK63A, 100A Precision Face Mill Arbors



Order standard and CoolBLAST arbor screws. See page 40.

## Features

- Compatible with all coolant-thru face mills
- H6 arbor tolerance for less chatter and better tool life
- Each arbor lab certified for accuracy



## HSK63A Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
93500	HSK63A 3/4" FMA - 2"	2"	.687"	3/4"	.875"	1.69"	.313"
93502	HSK63A 1-1/4" FMA - 2.75"	2.75"	.687"	1-1/4"	1.5"	2.75"	.5"

## HSK63A Extended Length Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
93510	HSK63A 3/4" FMA - 4"	4"	.687"	3/4"	.875"	1.69"	.313"
93530	HSK63A 1-1/4" FMA - 4"	4"	.687"	1-1/4"	1.5"	2.75"	.5"

## HSK100A Face Mill Arbors

Part No.	Description	L	l2	d1	d2	d3	K2
95901	HSK100 A 3/4" FMA - 2"	2"	.69"	3/4"	.88"	1.69"	.31"
95905	HSK100 A 1-1/4" FMA - 2-1/2"	2-1/2"	.69"	1-1/4"	1.5"	2.75"	.5"
95907	HSK100 A 1-1/2" FMA - 2-1/2"	2-1/2"	.94"	1-1/2"	1.88"	3.8"	.63"

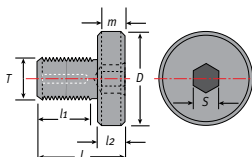
# CoolBLAST & Standard Face Mill Arbor Screws



CoolBLAST arbor screw provides coolant path.

## Features

- Compatible with all coolant thru face mills
- Works with all Techniks face mill arbors
- For coolant up to 1,500 PSI



## CAT, BT, and HSK CoolBLAST Coolant Arbor Screws

Part No.	Description	Style	Size	D	L	I1	I2	T	S	m
WFC1-0.5-1.5	CoolBLAST arbor screw 1/2"	B	1/2"	5/8"	1.875"	1.5"	.34"	1/4"-28UNF	3/16"	.157"
WFC1-0.75-1.5	CoolBLAST arbor screw 3/4"	B	3/4"	7/8"	1.875"	1.5"	.37"	3/8"-24UNF	1/4"	.197"
9851125	CAS-A-0.75 smaller "D"	A	3/4"	5/8"	1.375"	1.0"	.36"	3/8-24 UNF	1/4"	.37"
WFC1-1-1.75	CoolBLAST arbor screw 1.0"	B	1.0"	1-3/16"	2.125"	1.75"	.37"	1/2"-20UNF	5/16"	.197"
9851135	CAS-A-1.00 smaller "D"	A	1.0"	1.180"	1.375"	1.0"	.38"	1/2-20UNF	5/16"	.37"
WFC1-1.25-1.75	CoolBLAST arbor screw 1-1/4"	B	1-1/4"	1-1/2"	2.25"	1.75"	.5"	5/8"-18UNF	5/16"	.236"
WFC1-1.5-1.75	CoolBLAST arbor screw 1-1/2"	B	1-1/2"	1-7/8"	2.25"	1.75"	.5"	3/4"-16UNF	3/8"	.276"
WFC1-2-2	CoolBLAST arbor screw 2.0"	B	2"	2-1/2"	2.5"	2.00"	.5"	1.0"-14UNF	1/2"	.354"
WFC1-2.5-2.25	CoolBLAST arbor screw 2-1/2"	B	2-1/2"	3-1/8"	2.5"	2.25"	.5"	1.0"-14UNF	1/2"	.354"

## CAT, BT, and HSK Standard Arbor Screws

Part No.	Description	Arbor Size	D	L	I1	I2	T	S	m
WF0.5-1.5	FMA screw 1/2"	1/2"	5/8"	1.875"	1.5"	.34"	1/4"-28UNF	3/16"	.157"
WF0.75-1.5	FMA screw 3/4"	3/4"	7/8"	1.875"	1.5"	.37"	3/8"-24UNF	1/4"	.197"
WF1-1.75	FMA screw 1.0"	1.0"	1-3/16"	2.125"	1.75"	.37"	1/2"-20UNF	5/16"	.197"
WF1.25-1.75	FMA screw 1-1/4"	1-1/4"	1-1/2"	2.25"	1.75"	.5"	5/8"-18UNF	5/16"	.236"
WF1.5-1.75	FMA screw 1-1/2"	1-1/2"	1-7/8"	2.25"	1.75"	.5"	3/4"-16UNF	3/8"	.276"
WF2-2-2	FMA screw 2.0"	2"	2-1/2"	2.5"	2.00"	.5"	1.0"-14UNF	1/2"	.354"
WF2.5-2.25	FMA screw 2-1/2"	2-1/2"	3-1/8"	2.5"	2.25"	.5"	1.0"-14UNF	1/2"	.354"

# Milling

## PowerLOC Indexable End Mills

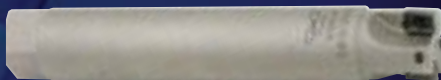
We're Making a Better Connection Between the Cutting Tool and Spindle.

- *Much better accuracy*
- *Better balance*
- *Positively grips the tool shank*



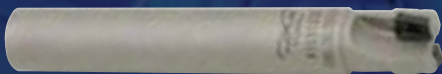
### Square Shank Adapter

Use with Techniks ER Chucks to turn them into PowerLOC Milling Holders.



Innovative

### Indexable End Mills



Positive High-Feed



90° Square Shoulder  
Positive High-Feed



Negative High-Feed

Attacking Heat & Vibration is in Our DNA.

# PowerLOC End Mills



## Problem

- 1 Inaccuracy of indexable end mill shanks
- 2 Slippage (axial tool movement)
- 3 Inability to remove the steel tool shanks from high technology ShrinkFIT chucks

## Solution

- 1 Develop a shank that works with collet chucks and ShrinkFIT holders
- 2 Reduced diameter for ShrinkFIT Technology
- 3 Develop a square on the back of the shank to eliminate any tool pressure slippage

## Advantages & Benefits

- Extend tool life or increase feed rates
- Use indexable end mills in the two most accurate toolholders—Collet Chucks and ShrinkFIT



We're Making a Better Connection  
Between the Cutting Tool and Spindle.

## PowerLOC Square Shank End Mill



Eliminate Tool Slippage  
in Collet Chucks!



# PowerLOC Eliminates Slippage



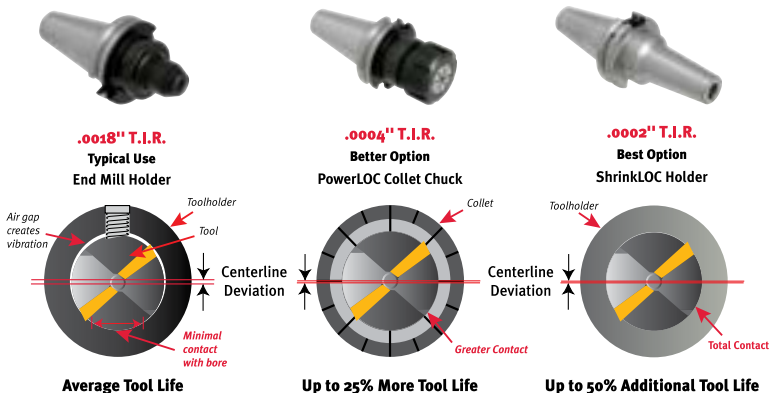
**PowerLOC end mills eliminates tool slippage. Use PowerLOC technology to increase productivity and reduce costs.**



Eliminate Tool Slippage  
in Collet Chucks!

## Features

- PowerLOC connection works with ShrinkMILL holders or Techniks ER collet chucks
- Eliminate the need for expensive milling chucks

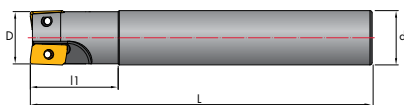


All Nexus products are backed by our 100% satisfaction guarantee.

# Nexus Indexable End Mills (IEM90)



Takes AP\_1003 & AP\_1604 Inserts



## Benefits

- H13 tool steel provides a more rigid tool for less deflection in the cut, and extended tool life
- H6 shank tolerance provides 38% better T.I.R. to improve accuracy and extend insert life

## Product Information

- Available in 1/2", 5/8", 3/4", 1" Diameters
- Take Insert APKT1003 and APLX1003 for Most Materials-APGT1003 for Aluminum (2 corners)
- Made of H13 Tool Steel
- Coolant and Non-coolant Versions
- Also Comes in 1", 1-1/4", 1-1/2"
- Takes Insert APKT1604 for Most Materials and APGT1604 for Aluminum (2 corners)
- Made of H13 Tool Steel
- Coolant and Non-coolant Versions
- 1" Version has Weldon Shank
- Can be Used in all materials.

## Indexable End Mills (IEM90) – Coolant Thru

Part No.	Description	Insert	D	d	L	Z	I1	$\alpha^\circ$	Screw	Wrench
1632234	IEM90-.500-.500C-4.00-1-10	AP_1003	.500	.500	4.00	1	0.787	32°	9316446	9355333
1642235	IEM90-.625-.625C-5.00-2-1	AP_1003	.625	.625	5.00	2	0.984	5°	9316446	9355333
1652236	IEM90-.750-.750C-5.00-2-10	AP_1003	.750	.750	5.00	2	0.984	7.5°	9316446	9355333
1652336	IEM90-.750-.750CW-3.50-3-10	AP_1003	.750	.750	3.50	3	1.00	5°	9316446	9355333
1662237	IEM90-1.00-1.00C-6.00-3-10	AP_1003	1.00	1.00	6.00	3	0.984	5°	9316446	9355333
1662250	IEM90-1.00-1.00CW-3.50-2-16	AP_1604	1.00	1.00	3.50	2	1.250	90°	9319345	9355555
1672238	IEM90-1.25-1.25C-6.00-3-16	AP_1604	1.25	1.25	6.00	3	1.772	3°	9319345	9355555
1682239	IEM90-1.50-1.25C-6.00-4-16	AP_1604	1.50	1.25	6.00	4	1.772	2.7°	9319345	9355555

## Indexable End Mills (IEM90)

Part No.	Description	Insert	D	d	L	Z	I1	$\alpha^\circ$	Screw	Wrench
1631234	IEM90-.500-.500-4.00-1-10	AP_1003	.500	.500	4.00	1	0.787	32°	9316446	9355333
1641235	IEM90-.625-.625-5.00-2-10	AP_1003	.625	.625	5.00	2	0.984	5°	9316446	9355333
1651236	IEM90-.750-.750-5.00-2-10	AP_1003	.750	.750	5.00	2	0.984	7.5°	9316446	9355333
1652336	IEM90-.750-.750-3.50-3-10	AP_1003	.750	.750	3.50	3	1.250	90°	9316446	9355333
1661237	IEM90-1.00-1.00-6.00-3-10	AP_1003	1.00	1.00	6.00	3	0.984	5°	9316446	9355333
1676238	IEM90-1.25-1.25-6.00-3-16	AP_1604	1.25	1.25	6.00	3	1.772	3°	9319345	9355555
1686239	IEM90-1.50-1.25-6.00-4-16	AP_1604	1.50	1.25	6.00	4	1.772	2.7°	9319345	9355555

W=Weldon Flat  $\alpha^\circ$  = Ramp Angle

# PowerLOC Indexable End Mills



Takes AP\_\_1003 &  
AP\_\_1604 Inserts

## Features

- Much better accuracy
- Better balance
- Positively grips the tool shank

## Benefits

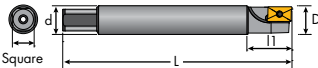
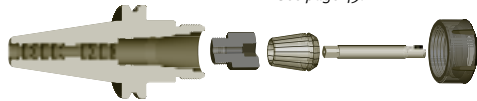
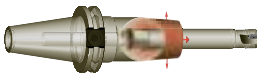
- Extend cutting tool life and increase feed rates
- Lower tooling cost
- Eliminates the need for milling chucks and end mill holders

## How PowerLOC End Mills Reduce Scrap to Save Money

- PowerLOC Square Drive eliminates tool slippage issues for more accurate cutting, especially under heavy loads.
- Overall better balance, greater rigidity, and accuracy (.0002" T.I.R.) of the toolholder and end mill reduces wear on cutting inserts, extending life.
- Longer insert life = less down time for tool changes, and make more parts per insert.

## Product Information

- Comes in 1/2", 3/4", 1" Diameters
- Square on Shank for Positive Lock and Zero Slipping
- Takes Insert APKT1003 and APLX1003 for most Materials APTG1003 for Aluminum (2 corners)
- Made of H13 Tool Steel
- Coolant and non-coolant Versions
- Must be used with (PLSS) Power-Loc Square Shank Adapters. See page 49.
- Can be Used in All Materials



Used with either a ShrinkLOC holder or a PowerLOC collet chuck, you get all the performance benefits – PLUS – you don't have to invest in a milling chuck!

## End Mills (PLIM) Coolant Thru and Non-Coolant

Insert	Insert Screw	Wrench
AP__1003	9316446	9355333
AP__1604	9319345	9355555

Part No.	Description	No. of Inserts	Coolant Thru	Collet Size	D	d	L	I1	Square	$\alpha^\circ$
1633345	PLIM.500-.500C-4.00-1-10	1	*	ER32 or ER40	.500	.500	4.00	0.79	0.380	32°
1655345	PLIM.750-.750C-5.00-2-10	2	*	ER32 or ER40	.750	.750	5.00	0.98	0.563	7.5°
1666350	PLIM1.00-1.00C-3.50-2-16	2	*	ER40	1.00	1.00	3.50	1.25	.750	5°
1666345	PLIM1.00-1.00C-6.00-3-10	3	*	ER40	1.00	1.00	6.00	0.98	0.750	5°
1632345	PLIM.500-.500-4.00-1-10	1		ER32 or ER40	.500	.500	4.00	0.79	0.380	32°
1654345	PLIM.750-.750-5.00-2-10	2		ER32 or ER40	.750	.750	5.00	0.98	0.563	7.5°
1665345	PLIM1.00-1.00-6.00-3-10	3		ER40	1.00	1.00	6.00	0.98	0.750	5°

$\alpha^\circ$  = Ramp Angle

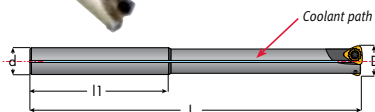
# Nexus Positive High Feed Indexable End Mills



Takes WPGT Inserts

### Features & Benefits

- Higher feed rates than standard end mills
- Less radial cutting forces
- Reduces spindle wear



### Positive High Feed Indexable End Mills - Coolant Thru

Part No.	Description	D	d	L	Z	I1	Ap	$\alpha^\circ$
1658810	HFEM-0.75-0.75-7.00-WP05-02	0.75	0.75	5.00	2	3.25	0.06	6.5°

### Product Information

- Comes in 3/4", 1", 1-1/4", 1-1/2"
- 3/4" Takes Insert WPGT050335 (3 corners)
- 1" and 1-1/4" Take Insert SDMT09T312 (4 corners)
- 1-1/4" and 1-1/2" Take Insert SDMT120412 (4 corners)
- All Versions are Coolant Thru
- Can Be Used in all Materials



Takes SDMT Inserts

Use in a ShrinkFIT holder to increase tool life up to 50%.

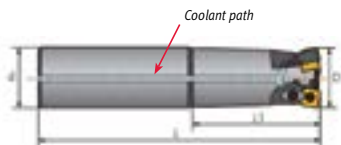
ShrinkFIT holders can be found on page 50.

End mill holders can be found on page 49.

Insert	Insert Screw	Wrench
SDMT09T	9317446	9355444
SDMT12T	9318547	9355555

Insert Insert Screw Wrench

WPGT0503	9317446	9355444
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### Positive High Feed Indexable End Mills - Coolant Thru

Part No.	Description	D	d	L	Z	I1	Ap	$\alpha^\circ$	Screw	Wrench
1668820	HFEM-1.00-1.00-5.50-SD09-02	1.00	1.00	5.50	2	3.25	0.06	7.5°	6811264	9355444
1668822	HFEM-1.00-1.00-7.00-SD09-02	1.00	1.00	7.00	2	3.25	0.06	7.5°	6811264	9355444
1678830	HFEM-1.25-1.25-8.00-SD09-03	1.25	1.25	8.00	3	3.25	0.06	4.5°	6811264	9355444
1678840	HFEM-1.25-1.25-8.00-SD12-02	1.25	1.25	8.00	2	3.25	0.07	9°	6811264	9355444
1688850	HFEM-1.50-1.50-8.00-SD12-03	1.50	1.50	8.00	3	3.25	0.07	6°	6811264	9355444

$\alpha^\circ$  = ramp angle



# Nexus Negative High Feed Indexable End Mills



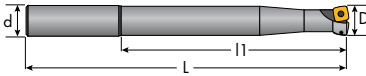
Takes SNKX09T Inserts

## Features

- 8 corners
- Runs in steel, cast iron & hardened materials

## Benefits

- Less inventory = lower cost
- Higher productivity and lower cost per corner



## Product Information

- Comes in 1" and 1-1/4"
- Each Size has 5" Length of Cut
- Each Size has 8" Length of Cut
- Takes Insert SNKX09T3HF-LT30 (8 corners)
- Made of H13 Tool Steel
- Coolant Thru
- Weldon Shanks
- Only Run in Steel, Cast Iron, and Hardened Materials

## Indexable High-Feed End Mills – Coolant Thru

Part No.	Description	D	d	L	Z	Insert	l1	Ap	$\alpha^\circ$	Screw	Wrench
6602118	HFEM-1.00-1.00CW-5.00-3SN9	1.00	1.00	5.00	3	SNKX09T3	2.36	.039	3.5°	6811264	9355444
6602117	HFEM-1.00-1.00CW-8.00-3SN9	1.00	1.00	8.00	3	SNKX09T3	3.94	.039	3.5°	6811264	9355444
6702119	HFEM-1.25-1.25CW-5.00-4SN9	1.25	1.25	5.00	4	SNKX09T3	2.36	.039	2°	6811264	9355444
6702120	HFEM-1.25-1.25CW-8.00-3SN9	1.25	1.25	8.00	3	SNKX09T3	3.94	.039	2°	6811264	9355444

W=Weldon. Z = number of inserts.  $\alpha^\circ$  = Ramp Angle



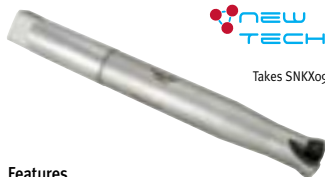
## Benefits

- 8 cutting edges per insert!
- Axial cutting forces reduce spindle wear
- Achieves same feed rates as larger inserts
- Excellent for dry machining of moulds and dies

## SNKX High-Feed Insert with Positive Geometry

Part No.	Description	Grade	Programming Radius	Operation	Material
2502115	SNKX09T3-HF	LT 30	.165"	Roughing	P-K-H

# PowerLOC Negative High Feed End Mills



Takes SNKX09T Inserts

### Features

- PowerLOC Square Shank
- Takes 8 cornered inserts
- Cost per corner cut in half
- Runs in steel, cast iron & hardened materials

Used with either a ShrinkLOC holder or a PowerLOC collet chuck, you get all the performance benefits – PLUS – you don't have to invest in a milling chuck! See page 50.



### Benefits

- Eliminate costly milling chucks
- Reduce Scrap
- No tool slippage
- Eliminate inaccurate end mill holders that cause chatter and short tool life
- Faster feed rates
- Extend insert life up to 2X



### Product Information

- Comes in 1" and 1-1/4"
- Each Size has 5" Length of Cut
- Each Size has 8" Length of Cut
- Square on Shank for Positive Lock and Zero Slipping
- Takes Insert SNKX09T3HF-LT30 (8 corners)
- Made of H13 Tool Steel
- Coolant Thru
- **Must be used with (PLSS) PowerLOC Square Shank Adapters. See page 49.**
- Only Run in Steel, Cast Iron, and Hardened Materials

### PowerLOC Coolant Thru High-Feed End Mills

Part No.	Description	D	d	L	Z	Insert	l1	Ap	α°	Screw	Wrench
6612118	PLHF-1.00-1.00C-5.00-3SN9	1.00	1.00	5.00	3	SNKX09T3	2.36	.039	3.5°	6811264	9355444
6612117	PLHF-1.00-1.00C-8.00-3SN9	1.00	1.00	8.00	3	SNKX09T3	3.94	.039	3.5°	6811264	9355444
6712119	PLHF-1.25-1.25C-5.00-4SN9	1.25	1.25	5.00	4	SNKX09T3	1.20	.039	2°	6811264	9355444
6712120	PLHF-1.25-1.25C-8.00-3SN9	1.25	1.25	8.00	3	SNKX09T3	1.20	.039	2°	6811264	9355444



### Benefits

- 8 cutting edges per insert!
- Axial cutting forces reduce spindle wear
- Achieves same feed rates as larger inserts
- Excellent for dry machining of moulds and dies

### SNKX High-Feed Insert with Positive Geometry

Part No.	Description	Grade	Programming Radius	Operation	Material
2502115	SNKX09T3-HF	LT 30	.165"	Roughing	P-K-H

# ER Chuck Adapters for PowerLOC End Mills

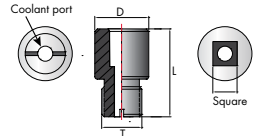
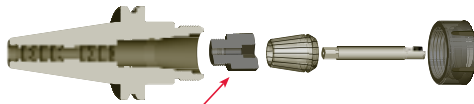


## Turn ER Chucks into Milling Chucks

PowerLOC Square Shank Adapters turn our standard collet chucks into milling holders capable of performing heavier milling jobs than you ever thought possible.

## Features

- Eliminate costly milling chucks
- PowerLOC Eliminates Slippage
- Low T.I.R. extends tool life
- Available CAT<sub>40</sub>, CAT<sub>50</sub>



PowerLOC Adapter

## PowerLOC Straight Shank Adapters (PLSS) Coolant-Thru

Part No.	Description	Collet	L	D	Square	Tool Shank	T=Thread
9398765	PLSS.500xM16	ER32	1.380	.850	0.380	.500	M16x2.0
9397764	PLSS.750xM16	ER32	1.380	.850	0.563	.750	M16x2.0
9396764	PLSS.500xM20	ER40	1.97	1.280	0.380	.500	M20x2.0
9396763	PLSS.750xM20	ER40	1.97	1.280	0.563	.750	M20x2.0
9396762	PLSS1.00xM20	ER40	1.97	1.280	0.750	1.00	M20x2.0
9396766	PLSS1.25xM24	ER50	1.59	1.35	.763	1.25	M24X2.0



Use PLSS adapters with PowerLOC end mills and ER collet chucks (see tables below)  
Additional toolholder lengths available  
Purchase collet separately

## PowerLOC CAT<sub>40</sub> ER Toolholders

Part No.	Descriptions	Collet Size	L	D	Max. Shank	Wrench	Thread
22253	CAT40-ER-32-2.76	ER32	2.76	1.97	.788	9904616	M16X2.0
22255	CAT40-ER-32-4	ER32	4	1.97	.788	9904616	M16X2.0
22261	CAT40-ER-40-3.15	ER40	3.15	2.48	1.023	9904617	M120X2.0

## PowerLOC CAT<sub>50</sub> ER Toolholders

Part No.	Description	Collet	L	D	Max. Shank	Wrench	Thread
22311	CAT50-ER-32-4	ER32	4	1.97	.788	9904616	M16X2.0
22313	CAT50-ER-32-6	ER32	6	1.97	.788	9904616	M16X2.0
22321	CAT50-ER-40-4	ER40	4	2.48	1.023	9904617	M20X2.0

All Nexus products are backed by our 100% satisfaction guarantee.



# ShrinkLOC Holders for PowerLOC End Mills



**We're Making a Better Connection Between the Cutting Tool and Spindle.**

## How ShrinkLOC Holders Prevent Tool Slippage

### PROBLEM



Spinning the shank under heavy load conditions causes tool slippage (red)

### SOLUTION



ShrinkLOC square drive (yellow) locks the tool shank and the toolholder making it impossible for the tool to spin, even under the heaviest loads.

See page 49 for more information.

## Features

- PowerLOC indexable endmill ready
- Works with standard shank cutters too!
- Balanced to 25,000 RPMs
- Max. T.I.R. .0001"

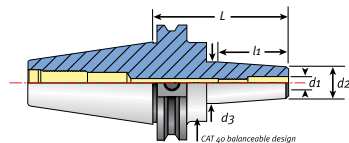
## Benefits

- Eliminates costly milling chucks
- Prevents tool slippage
- Reduces Scrap
- Extends indexable insert life up to 50%



See page 45 for PowerLOC (PLIM) end mills.

Use ShrinkLOC holders with PowerLOC endmills to get all the benefits of PowerLOC, PLUS the accuracy and rigidity of ShrinkFIT for maximum performance out of the PowerLOC (PLIM) endmill.



## CAT40 ShrinkLOC Holders

Part No.	Description	Use with PLIM	d1	L	d2	I1	I.D. Square
7189027	CAT40-SL.500-3.75	1632345	0.500	3.75	1.10	2.37	.380
7189036	CAT40-SL.750-4.00	1654345	0.750	4.00	1.42	2.62	.563
7189042	CAT40-SL1.00-4.00	1665345	1.00	4.00	1.81	2.62	.750

## CAT50 ShrinkLOC Holders

Part No.	Description	Use with PLIM	d1	L	d2	I1	I.D. Square
7189060	CAT50-SL.500-3.94	1632345	0.500	3.94	1.10	2.56	.380
7189064	CAT50-SL.750-4.13	1654345	0.750	4.13	1.42	2.76	.563
7189068	CAT50-SL.00-4.13	1665345	1.00	4.13	1.81	2.76	.750

# Milling Inserts

## Nexus High-Performance Milling Inserts

LT 30 Multi-Mat™ Milling

LT 05 Alu-Turning

### The Concept



- High-performance in different materials – same as solid carbide tools
- Eliminate insert guesswork
- Flexible — 1 grade across most materials

- Minimize changeover and set up time
- Much less inventory to buy and manage
- Always have the right insert available

### Innovative Technology Let Us Prove it to You!

## Simplify



The old way



The Lamina way

- Breakthroughs in honing and coating technologies
- Thickest PVD coating in the industry
- Freedom from the cycle of “new grade” announcements

Attacking Heat & Vibration is in Our DNA.



Milling  
ADKT  
AOMT  
APKT  
APMT  
LDMT  
ODMT  
ODMW  
OFER  
OFMT  
PNEG  
RDMT  
RDMW  
RDMX  
SDKT  
SDKX  
SDMT  
SEKN  
SEKR  
SEKT  
SNKX  
SPKN  
SPKR  
SPMT  
SPG  
TPKN  
TPKR  
TPUN  
WPGT  
APET  
APEX  
APGT  
SEET  
SEGT

# SNKX High Feed Cutter Inserts

**NEW TECHNOLOGY**

Excellent for near-to-shape workpieces



Designed to achieve the same feed per tooth as bigger inserts



**LAMINA**  
TECHNOLOGY

**HIGH-PERFORMANCE**  
3x the Thickness of Conventional PVD!

More cutting edges per corner creates higher productivity

High stability reduces vibration

## The Power of 8!

Milling with 8 Cutting Edges

**We're excited** about our new, 8-cornered negative rake insert with positive geometry. This new-design, high feed insert is optimized for use in steels, cast irons, and hardened materials.

See our special high-feed promotion for this insert on page 4.



### Features

- Great for profile and copy milling
- Excels in plunge milling
- Great for roughing operations on pockets and 3D surfaces
- High productivity (more cutting edges per corner)

### Benefits

- 8 cutting edges
- Long tool life
- Excellent for dry machining of moulds and dies
- Superior toughness & wear resistances

Part No.	Description	Grade	Programming Radius	Operation	Material
2502115	SNK09T3-HF	LT 30	.165	Roughing	P-K-H

P = steel, K = cast iron, H = hardened material



# Insert Grade Descriptions



**LT 05**

PVD Coated with Chromium Nitride. Great for aluminum ←6% silicon and titanium

**LT 30 Milling**

A sub-micro grain substrate with a very thick high-pulse PVD coating with better adhesion than normal coatings. It can be run in all materials including aluminum

**101**

**Uncoated Ultra Micro-grain Carbide**

Used mostly for the general machining of aluminum  
Can be used in all non-ferrous materials and high temperature alloys

**202**

**PVD Coated Grade**

Ultra-fine grain substrate provides excellent resistance to plastic deformation  
NANO-TiAlN Coated  
Used for wide range of general milling applications in a variety of materials

**351**

**CVD Coated Grade**

Very tough substrate with high wear-resistance  
Multi-coating contains TiCN, Al<sub>2</sub>O<sub>3</sub>, and TiN  
Used for rough milling of steel, stainless steel and cast iron

**GH05**

**Uncoated ultra micro-grain carbide**

A very sharp, high-polished geometry used in the general and finish machining of aluminum

**WSK10**

**Uncoated ultra micro-grain carbide**

A very sharp, high-polished geometry used in the general and finish machining of aluminum

- ADKT
- AOMT
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDMW
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN
- SPKR
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT



# MULTI-MAT™

The Lamina Multi-Mat™ LT 30 Grade for Milling  
can machine most materials with  
**ONLY ONE GRADE**



Steel



Stainless Steel



Cast Iron



High Temp. Alloys



Hardened Steel



Aluminium & Non ferrous Alloys



True Multi-Mat™ inserts for real productivity





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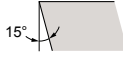
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**K**

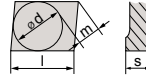
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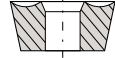
Shape



Clearance Angle



Tolerance  
 d ± 0.002  
 m ± 0.005  
 s ± 0.001



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
1506065	ADKT 1505 PDTR	LT 30	0.512	0.222	0.038	Right	●

- Stocking
- Non-stocking

**Face Milling Insert with 90° Lead Angle**

Multi purpose 90° Milling insert. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.

**F** ⇒  
 ↑ Productivity

**Coolant**

1, 2, 3, 4	No
7, 8, 11	No
10, 12	Yes
5, 6, 9	Yes

**Stainless Steel**

↗ V<sub>C</sub>



- ADKT
- AOMT
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDMW
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN
- SPKR
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

All Nexus products are backed by our 100% satisfaction guarantee.



## ADKT 1505 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters											
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>									
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.551	0.007	0.013	620	980	0.157	0.009	820								
		2	2	1045, 1060,	190 HB										0.551	0.013	980	720				
		3	3	28Mn6	250 HB										0.551	0.013	820	650				
	Low alloyed	2	6	6	42CrMo4, St50,	180 HB	0.020	0.551	0.006	0.010	490	780	0.157	0.008	650							
			4.6	4.6	CK60, 4140, 4340,	230 HB										0.551	0.010	490	680	0.008	590	
			5.7	5.7	100Cr6	290 HB										0.551	0.009	420	620	0.007	490	
			8	8		350 HB										0.551	0.009	420	550	0.007	450	
	High alloyed	3	10	10	X40CrMoV5,	220 HB	0.020	0.394	0.005	0.009	290	490	0.118	0.007	420							
			10	10	H13, M42, D3,	280 HB										0.394	0.009	290	420	0.007	390	
			11	11	S6-5-2, 12N19	320 HB										0.394	0.007	190	360	0.006	320	
			11	11		350 HB										0.394	0.007	190	290	0.006	260	
Stainless Steel	Austenitic	4	14	14	304, 316,	180 HB	0.020	0.551	0.006	0.010	620	820	0.157	0.008	720							
			14	14	X5CrNi18-9	240 HB										0.551	0.005	0.009	520	680		
	Duplex	5	14	14	X2CrNiN23-4,	290 HB	0.020	0.394	0.005	0.007	220	390	0.118	0.006	320							
			14	14	S31500	310 HB										0.394	0.007	220	390			
	Ferritic & Martensitic	6	12	12	410, X6Cr17,	200 HB	0.020	0.551	0.006	0.010	490	680	0.157	0.008	620							
			13	13	17-4 PH, 430	42 HRC										0.394	0.008	290	490	0.118	0.006	420
Cast Iron	Grey	7	15	15	GG20, GG40,	150 HB	0.020	0.551	0.007	0.013	490	720	0.157	0.009	590							
			15	15	EN-GJL-250,	200 HB										0.551	0.013	620	520			
			16	16	Nu30B	250 HB										0.551	0.013	620	520			
	Malleable & Nodular	8	17,19	17,19	GGG40, GGG70,	150 HB	0.020	0.551	0.006	0.011	320	590	0.157	0.008	490							
			17,19	17,19	50005	200 HB										0.551	0.011	490	420			
			18,20	18,20		250 HB										0.551	0.011	490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	31,32	Incoloy 800	240 HB	0.020	0.394	0.005	0.007	80	140	0.118	0.006	90							
			33	33	Inconel 700	250 HB										0.394	0.007	140	90			
			34	34	Stellite 21	350 HB										0.394	0.007	140	90			
	Ti based	10	36	36	TiAl6V4	-	0.020	0.394	0.005	0.008	130	210	0.118	0.007	180							
			37	37	T40	-										0.394	0.007	90	180	0.006	130	
Hardened Mat.	Steel	11	38	38	X100CrMo13,	45 HRC	0.020	0.197	0.004	0.007	130	260	0.079	0.006	190							
			38	38	440C,	50 HRC										0.118	0.006	130	220	0.059	0.005	180
			38	38	G-X260NiCr42	55 HRC										0.059	0.006	190	0.039	0.005	160	
			40	40	Ni-Hard 2	400 HB										0.020	0.157	0.004	0.007	130	260	0.059
	White Cast Iron	41	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.006	90	190	0.039	0.005	130								
Ni	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.551	0.007	0.013	650	1310	0.157	0.010	910								



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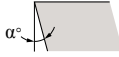
**O**

**M**

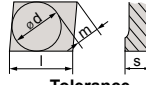
**T**



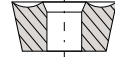
Shape



Clearance Angle  
 $\alpha$  = Special



Tolerance  
d  $\pm$  0.002  
m  $\pm$  0.003  
s  $\pm$  0.005



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3153311	AOMT 123608 PETR	LT 30	0.409	0.143	0.031	Right	●

- Stocking
- Non-stocking

**Face Milling Insert with 90° Lead Angle**

Multi purpose 90° Milling insert. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Ramping down Milling operations.

**Application Guide**



Machine Recommendations  
Guide. Details on page 19.

**F**  $\Rightarrow$   
Productivity

**Coolant**  
1, 2, 3, 4 No  
7, 8, 11 No  
10, 12 Yes  
5, 6, 9 Yes

**Stainless Steel**  
 $V_c$



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- ADKT
- AOMT**
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDMW
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN
- SPKR
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

## AOMT 123608 PETR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.433	0.005	0.009	620	0.079	0.006	820				
		2	1045, 1060,	190 HB	0.009								980	720			
		3	28Mn6	250 HB	0.009								820	650			
	Low alloyed	2	6	180 HB	0.020	0.433	0.004	0.007	490	780	0.079	0.005	650				
		4,6	42CrMo4, St50,	230 HB									0.007	490	680		
		5,7	Ck60, 4140, 4340,	280 HB									0.006	420	620		
		8	100Cr6	350 HB									0.006	420	550		
	High alloyed	3	10	220 HB	0.020	0.309	0.003	0.006	290	490	0.059	0.005	420				
		10	X40CrMoV5,	280 HB									0.006	290	420		
		11	H13, M42, D3,	320 HB									0.005	190	360		
		11	S6-5-2, 12Ni19	350 HB									0.005	190	290		
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.433	0.004	0.007	620	0.079	0.005	720				
		14	X5CrNi18-9	240 HB	0.433								0.003	0.006	520	680	
	Duplex	5	14	X2CrNiMo23-4,	290 HB	0.020	0.309	0.003	0.005	220	0.059	0.004	320				
		14	S31500	310 HB	0.309								0.005	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.433	0.004	0.007	490	0.079	0.005	620				
		13	17-4 PH, 430	42 HRC	0.006								290	490	0.059	0.004	420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.433	0.005	0.009	490	0.079	0.006	650				
		15	EN-GJL-250,	200 HB	0.009								620	590			
	16	No30B	250 HB	0.433	0.009								620	520			
Malleable & Nodular	8	17,19	150 HB	0.020	0.433	0.004	0.008	320	590	0.079	0.005	590					
	17,19	GGG40, GGG70,	200 HB									0.008	490	420			
18,20	50005	250 HB	0.433									0.008	490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.309	0.003	0.005	80	0.059	0.004	100				
		33	Inconel 700	250 HB	0.309								0.005	140	90		
		34	Stellite 21	350 HB	0.309								0.005	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.309	0.003	0.006	130	0.059	0.005	180				
		37	T40	-	0.309								0.005	90	180	0.004	130
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.093	0.003	0.004	130	0.039	0.004	190				
		38	440C,	50 HRC	0.046								0.004	190	0.020	0.003	180
		38	G-X260NiCr42	55 HRC	0.046								0.004	190	0.020	0.003	160
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.124	0.003	0.005	130	260	0.030	0.004	160				
		41	G-X300CrMo15	55 HRC	0.020	0.046	0.003	0.004	90	190	0.020	0.003	130				
White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.046	0.003	0.004	90	190	0.020	0.003	130					
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.433	0.005	0.009	650	1310	0.079	0.006	910				



**A**

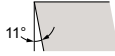
**P**

**K**

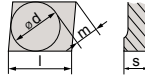
**T**



Shape

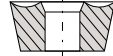


Clearance Angle



Tolerance

d ± 0.002  
m ± 0.005  
s ± 0.001



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3154422	APKT 100304 PDTR	LT 30	0.409	0.138	0.016	Right	●
3154411	APKT 1003 PDTR	LT 30	0.409	0.138	0.031	Right	●
3154433	APKT 100312 PDTR	LT 30	0.409	0.138	0.047	Right	●
3154444	APKT 100332 PDTR <sup>1</sup>	LT 30	0.409	0.138	0.126	Right	●
3154455	APKT 100340 PDTR <sup>1</sup>	LT 30	0.409	0.138	0.157	Right	●
<sup>1</sup> Replacing APLX 100332 and APLX 100340 respectively; no change in cutter bodies							
1506075	APKT 1604 PDTR-NEW	LT 30	0.606	0.187	0.031	Right	●
1500300	APKT 160424 ER	LT 30	0.606	0.187	0.094	Right	●
1506077	APKT 1705 PETR	LT 30	0.646	0.205	0.031	Right	●

**Face Milling Insert with 90° Lead Angle**

- Stocking
- Non-stocking

Machine Recommendations Guide. Details on page 19.

**F** ⇒  
↑  
Productivity

1, 2, 3, 4 No  
7, 8, 11 No  
10, 12 Yes  
Coolant 5, 6, 9 Yes

**Stainless Steel**  
↑  
V<sub>C</sub>



- ADKT
- AOMT
- APKT**
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDWM
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN
- SPKR
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

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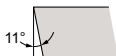




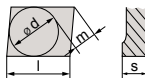
**A P K T**



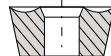
Shape



Clearance Angle



**Tolerance**  
 $d \pm 0.002$   
 $m \pm 0.005$   
 $s \pm 0.001$



Fixing  
Chip breaker

**Application Guide**



Slotting



Shoulder Milling



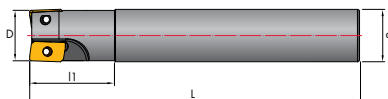
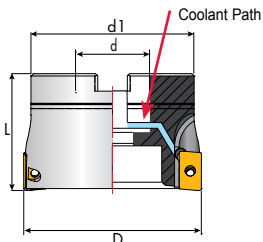
Facing

Multi purpose 90° Milling insert. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

**Face Milling Insert with 90° Lead Angle**

Face Mill for APKT. See page 30.

End Mill for APKT. See page 44.



**PowerLOC End Mill for AP\_\_ 1003. See page 45.**



## APKT 1003 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.353	0.005	0.010	620	1080	0.079	0.007	820					
		2	2	1045, 1060,	190 HB										0.353	0.010	980	720	
		3	3	29Mn6	250 HB														0.353
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.353	0.004	0.008	490	780	0.079	0.006	650					
		4,6	4		230 HB										0.353	0.008	490	680	590
		5,7	5		280 HB														
		8	8		350 HB										0.353	0.007	420	550	450
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.252	0.003	0.007	290	490	0.059	0.005	420					
		10	10		280 HB										0.252	0.007	290	420	390
		11	11		320 HB														
		11	11		350 HB										0.252	0.006	190	290	260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.353	0.004	0.008	620	820	0.079	0.006	720					
		14	14	X5CrNi18-9	240 HB										0.353	0.003	0.007	520	680
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.252	0.003	0.006	220	420	0.059	0.005	320					
		14	14	310 HB	0.252										0.006	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,		200 HB	0.020	0.353	0.004	0.008	490	680	0.079	0.006				620	
		13	13	17-4 PH, 430	42 HRC	0.252									0.006	290	490		0.059
Cast Iron	Grey	7	15	GG20, GG40,	150 HB		0.020	0.353	0.005	0.010	490	780	0.079	0.007				650	
		15	15	EN-GJL-250, No30B	200 HB	0.353									0.010	720	590		
		16	16	250 HB	0.353														0.010
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005		150 HB	0.020	0.353	0.004	0.009	320	590	0.079	0.006	490				
		17,19	17		200 HB	0.353										0.009	490	420	
		18,20	18		250 HB														0.353
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.252	0.003	0.006	80	140	0.059	0.005	100					
		33	33	Inconel 700	250 HB										0.252	0.006	140	90	
		34	34	Stellite 21	350 HB														0.252
	Ti based	10	36	TiAl6V4	-	0.020	0.252	0.003	0.006	130	210	0.059	0.005	180					
37		37	T40	-	0.252										0.006	90	180		
Hardened Mat.	Steel	11	38	X100CrMo13,		45 HRC	0.020	0.076	0.003	0.006	130	260	0.039	0.004				190	
		38	38	440C,	50 HRC	0.005									190	0.030	0.004		180
		38	38	G-X260NiCr42	55 HRC														
	Chilled Cast Iron	40	40	Ni-Hard 2	400 HB	0.020	0.101	0.003	0.006	130	260	0.030	0.004	160					
		White Cast Iron	41	41	G-X300CrMo15	55 HRC	0.020	0.038	0.003	0.005	90	190	0.020	0.003	130				
HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.353	0.005	0.010	650	1310	0.079	0.007	910					

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

LAMINA  
TOOLS

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a Quintec Company

## APKT 100304 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters											
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>									
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.353	0.004	0.008	620	1080	0.079	0.006	820								
		2	2	1045, 1060,	190 HB										0.353	0.008	820	720				
		3	3	28Mn6	250 HB																	
	Low alloyed	2	6	6	42CrMo4, St50,	180 HB	0.020	0.353	0.004	0.006	490	780	0.079	0.005	650							
			4,6	4,6	Ck60, 4140, 4340,	230 HB										0.353	0.005	620	590			
			5,7	5,7	100Cr6	280 HB																
			8	8		350 HB										0.353	0.005	420	550	0.004	450	
	High alloyed	3	10	10	X40CrMoV5,	220 HB	0.020	0.252	0.003	0.005	290	490	0.059	0.004	420							
			10	10	H13, MA2, D3,	280 HB										0.252	0.004	190	360	390		
			11	11	S6-5-2, 12Ni19	320 HB																
			11	11		350 HB										0.252	0.004	190	290	260		
Stainless Steel	Austenitic	4	14	14	304, 316,	180 HB	0.020	0.353	0.004	0.006	620	820	0.079	0.005	720							
			14	14	X5CrNi18-9	240 HB																
	Duplex	5	14	14	X2CrNiN23-4,	290 HB	0.020	0.252	0.003	0.004	220	420	0.059	0.004	320							
			14	14	S31500	310 HB										0.252	0.004	390	290			
	Ferritic & Martensitic	6	12	12	410, X6Cr17,	200 HB	0.020	0.353	0.004	0.006	490	680	0.079	0.005	620							
			13	13	17-4 PH, 430	42 HRc										0.252	0.005	290	490	0.059	0.004	420
Cast Iron	Grey	7	15	15	GG20, GG40,	150 HB	0.020	0.353	0.004	0.008	490	780	0.079	0.006	650							
			15	15	EN-GJL-250,	200 HB										0.353	0.008	620	590			
			16	16	No30B	250 HB																
	Malleable & Nodular	8	17,19	17,19	GGG40, GGG70,	150 HB	0.020	0.353	0.004	0.007	320	590	0.079	0.005	490							
			17,19	17,19	50005	200 HB																
			18,20	18,20		250 HB										0.353	0.007	490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	31,32	Incoloy 800	240 HB	0.020	0.252	0.003	0.004	80	140	0.059	0.004	100							
			33	33	Inconel 700	250 HB										0.252	0.004	140	90			
			34	34	Stellite 21	350 HB																
	Ti based	10	36	36	TiAl6V4	-	0.020	0.252	0.003	0.005	130	210	0.059	0.004	180							
			37	37	T40	-										0.252	0.004	90	180	130		
Hardened Mat.	Steel	11	38	38	X100CrMo13,	45 HRc	0.020	0.126	0.002	0.004	130	220	0.039	0.003	190							
			38	38	440C,	50 HRc										0.076	0.038	190	220	0.030	0.003	180
			38	38	G-X260NiCr42	55 HRc																
	Chilled Cast Iron	11	40	40	Ni-Hard 2	400 HB	0.020	0.101	0.002	0.004	130	260	0.030	0.003	160							
			41	41	G-X300CrMo15	55 HRc	0.020	0.038	0.002	0.003	90	190	0.020	0.003	130							
White Cast Iron	41	41																				
Al (>8%Si)	12	25		AISI12	130 HB	0.020	0.353	0.004	0.008	650	1310	0.079	0.006	910								



## APKT 100312 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.353	0.005	0.011	620	1080	0.079	0.008	820						
		2	2	1045, 1060,	190 HB										0.353	0.011	980	720		
		3	3	28Mn6	250 HB										0.353	0.011	820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.353	0.004	0.009	490	780	0.079	0.007	650						
			4,6		230 HB										0.353	0.009	490	680	590	
			5,7		280 HB										0.353	0.008	420	620	490	
			8		350 HB										0.353	0.008	420	550	450	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.252	0.003	0.008	290	490	0.059	0.006	260						
					10										280 HB	0.252	0.008	290	420	390
					11										320 HB	0.252	0.006	190	360	320
					11										350 HB	0.252	0.006	190	290	260
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.353	0.004	0.009	620	820	0.079	0.007	720							
		14		240 HB										0.353	0.003	0.008	520	680	620	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.020	0.252	0.003	0.006	220	420	0.059	0.006	320							
		14		310 HB										0.252	0.006	390	290			
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.353	0.004	0.009	490	680	0.079	0.007	620							
		13		42 HRc										0.252	0.007	290	490	0.059	0.006	420
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.353	0.005	0.011	490	720	0.079	0.008	590							
		15		200 HB										0.353	0.011	620	520			
		16		250 HB										0.353	0.011	620	520			
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.353	0.004	0.010	320	590	0.079	0.007	490							
		17,19		200 HB										0.353	0.010	490	420			
		18,20		250 HB										0.353	0.010	490	420			
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.020	0.252	0.003	0.006	80	140	0.059	0.006	100							
		33		Inconel 700										250 HB	0.252	0.006	140	90		
		34		Stellite 21										350 HB	0.252	0.006	140	90		
	Ti based	10	TiAl6V4 T40	-	0.020	0.252	0.003	0.007	130	210	0.059	0.006	180							
		37		-										0.252	0.006	90	180			
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.126	0.003	0.006	130	260	0.039	0.005	190							
		38		50 HRc										0.076	0.006	220	0.030	0.005	180	
		38		55 HRc										0.038	0.005	190	0.020	0.004	160	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.101	0.003	0.006	130	260	0.030	0.005	160							
		41	G-X300CrMo15	55 HRc	0.020	0.038	0.003	0.005	90	190	0.020	0.004	130							
	HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.353	0.005	0.011	650	1310	0.079	0.009	910					

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

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TPKN

TPKR

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## APKT 100332 PDTR LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.353	0.005	0.011	620	0.039	0.011	820
		2	1045, 1060,	190 HB	720								
		3	28Mn6	250 HB	650								
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.353	0.004	0.009	490	0.039	0.010	650
		4,6	Ck60, 4140, 4340,	230 HB	590								
		5,7	100Cr6	280 HB	490								
		8		350 HB	450								
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.252	0.003	0.008	290	0.039	0.009	420
		10	H13, M42, D3,	280 HB	390								
		11	S6-5-2, 12W19	320 HB	320								
		11		350 HB	260								
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.353	0.003	0.008	520	0.039	0.010	820
		14	X5CrNi18-9	240 HB	680								
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.252	0.003	0.006	220	0.039	0.008	420
		14	S31500	310 HB	390								
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.353	0.004	0.009	490	0.039	0.010	620
		13	17-4 PH, 430	42 HRc	490								
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.353	0.005	0.011	490	0.039	0.011	780
		15	EN-GJL-250,	200 HB	720								
		16	No30B	250 HB	620								
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.353	0.004	0.010	320	0.039	0.010	650
		17,19	50005	200 HB	590								
		18,20		250 HB	490								
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.252	0.003	0.006	80	0.039	0.008	140
		33	Inconel 700	250 HB	140								
		34	Stellite 21	350 HB	140								
	Ti based	10	36	TiAl6V4	-	0.020	0.252	0.003	0.007	130	0.039	0.009	210
		37	T40	-	180								
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.016	0.076	0.003	0.006	130	0.028	0.006
38			440C,	50 HRc	180								
38			G-X260NiCr42	55 HRc	160								
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.016	0.101	0.003	0.006	130	0.028	0.007	160	
White Cast Iron		41	G-X300CrMo15	55 HRc	0.016	0.038	0.003	0.005	90	0.028	0.006	130	
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.353	0.005	0.011	650	0.039	0.012	910	

## APKT 100340 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.353	0.005	0.018	620	1080	0.039	0.014	820
		2	1045, 1060,	190 HB	720									
		3	28Mn6	250 HB	650									
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.353	0.004	0.014	490	780	0.039	0.012	650
		4,6	Ck60, 4140, 4340,	230 HB	590									
		5,7	100Cr6	280 HB	490									
		8		350 HB	450									
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.252	0.003	0.013	290	490	0.039	0.011	420
		10	H13, M42, D3,	280 HB	390									
		11	S6-5-2, 12N19	320 HB	320									
		11		350 HB	260									
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.353	0.004	0.014	620	820	0.039	0.012	720
		14	X5CrNi18-9	240 HB	620									
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.252	0.003	0.010	220	420	0.039	0.009	320
		14	S31500	310 HB	290									
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.353	0.004	0.014	490	680	0.039	0.012	620
		13	17-4 PH, 430	42 HRc	420									
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.353	0.005	0.018	490	720	0.039	0.014	650
		15	EN-GJL-250,	200 HB	590									
		16	No30B	250 HB	520									
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.353	0.004	0.016	320	590	0.039	0.012	590
		17,19	50005	200 HB	490									
		18,20		250 HB	420									
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.252	0.003	0.010	80	140	0.039	0.009	100
		33	Inconel 700	250 HB	90									
		34	Stellite 21	350 HB	90									
	Ti based	10	36	TiAl6V4	-	0.020	0.252	0.003	0.011	130	210	0.039	0.011	180
37	T40	-	180											
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.016	0.076	0.003	0.009	130	220	0.028	0.008	190
		38	440C,	50 HRc	180									
		38	G-X260NiCr42	55 HRc	160									
	Chilled Cast Iron	40		Ni-Hard 2	400 HB	0.016	0.101	0.003	0.010	130	260	0.028	0.008	160
	White Cast Iron	41		G-X300CrMo15	55 HRc	0.016	0.038	0.003	0.008	90	190	0.028	0.007	130
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.353	0.005	0.018	650	1310	0.039	0.015	910	

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## APKT 1604 PDTR LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.590	0.007	0.013	620	1080	0.157	0.009	820				
		2	1045, 1060,	190 HB	720													
		3	28Mn6	250 HB	650													
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.590	0.006	0.010	490	780	0.157	0.008	650				
		4,6	230 HB		590													
		5,7	280 HB		0.009									420	620	0.007	490	
		8	350 HB		0.009									420	550	0.007	450	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.422	0.005	0.009	290	490	0.118	0.007	420				
		10	280 HB		0.009									290	420	0.007	390	
		11	320 HB		0.007									190	360	0.006	320	
		11	350 HB		0.007									190	290	0.006	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.590	0.006	0.010	620	820	0.157	0.008	720				
		14	X5CrNi18-9	240 HB	0.005									0.009	520	680	620	
	Duplex	5	14	X2CrNi23-4, S31500	290 HB	0.020	0.422	0.005	0.007	220	420	0.118	0.006	320				
		14	310 HB	0.007	390									290				
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.590	0.006	0.010	490	680	0.157	0.008	620				
		13	17-4 PH, 430	42 HRC	0.008									290	490	0.118	0.006	420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.590	0.007	0.013	490	720	0.157	0.009	650				
		15	EN-GJL-250, No30B	200 HB	0.013									490	720	590		
		16	250 HB	0.013	620									520				
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.020	0.590	0.006	0.011	320	590	0.157	0.008	590				
		17,19	200 HB		0.011									490	490	490		
		18,20	250 HB		0.011									490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.422	0.005	0.007	80	140	0.118	0.006	100				
		33	Inconel 700	250 HB	0.007									140	90			
		34	Stellite 21	350 HB	0.007									140	90			
	Ti based	10	36	TiAl6V4	-	0.020	0.422	0.005	0.008	130	210	0.118	0.007	180				
		37	T40	-	0.007									90	180	0.006	130	
	Hardened Mat.	Steel	11	38	X100CrMo13, 440C,	45 HRc	0.020	0.126	0.004	0.006	130	260	0.079	0.006	190			
38			G-X260NiCr42	50 HRc	0.006	190									220	0.059	0.005	180
38			55 HRc	0.006	190	0.039									0.005	160		
Chilled Cast Iron		41	40	Ni-Hard 2	400 HB	0.020	0.169	0.004	0.007	130	260	0.059	0.006	160				
		41	G-X300CrMo15	55 HRc	0.020	0.063	0.004	0.006	90	190	0.039	0.005	130					
White Cast Iron		41	41	G-X300CrMo15	55 HRc	0.020	0.063	0.004	0.006	90	190	0.039	0.005	130				
HP	Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.590	0.007	0.013	650	1310	0.157	0.010	910				

## APKT 160424 ER LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.590	0.007	0.013	620	0.197	0.009	820				
		2	1045, 1060,	190 HB	0.013								980	720			
		3	28Mn6	250 HB	0.590								0.013	820	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.590	0.006	0.010	490	0.197	0.008	650				
		4,6	Ck60, 4140, 4340,	230 HB	0.009								420	620	590		
		5,7	100Cr6	280 HB	0.009								420	550	450		
		8		350 HB	0.590								0.009	290	490	0.007	420
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.422	0.005	0.009	290	0.148	0.007	390				
		10	H13, M42, D3,	280 HB	0.422								190	360	320		
		11	S6-5-2, 12Ni19	320 HB	0.422								0.007	190	290	0.006	320
		11		350 HB	0.422								0.007	190	290	0.006	260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.590	0.005	0.010	620	0.197	0.008	780				
		14	X5CrNi18-9	240 HB	0.590								0.005	0.009	520	680	620
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.422	0.005	0.007	220	0.148	0.006	320				
		14	S31500	310 HB	0.422								0.007	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.590	0.006	0.010	490	0.197	0.008	620				
		13	17-4 PH, 430	42 HRc	0.422								0.008	290	490	0.148	0.006
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.590	0.007	0.013	490	0.197	0.009	650				
		15	EN-GJL-250,	200 HB	0.590								0.013	720	590		
		16	No30B	250 HB	0.590								0.013	620	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.590	0.006	0.011	320	0.197	0.008	590				
		17,19	50005	200 HB	0.590								0.011	590	490		
		18,20		250 HB	0.590								0.011	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.422	0.005	0.007	80	0.148	0.006	100				
		33	Inconel 700	250 HB	0.422								0.007	140	90		
		34	Stellite 21	350 HB	0.422								0.007	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.422	0.005	0.008	130	0.148	0.007	180				
		37	T40	-	0.422								0.007	90	180	0.008	130
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.126	0.004	0.006	130	0.074	0.005	180				
		38	440C,	50 HRc	0.063								0.006	190	0.049	0.005	160
		38	G-X260NiCr42	55 HRc	0.063								0.006	190	0.049	0.005	160
	Chilled Cast Iron	41	40	Ni-Hard 2	400 HB	0.020	0.169	0.004	0.007	130	0.260	0.074	0.006	160			
		41	41	G-X300CrMo15	55 HRc	0.020	0.063	0.004	0.006	90	0.190	0.049	0.005	130			
	HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.590	0.007	0.013	650	1310	0.197	0.010	910		

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## APKT 1705 PETR LT 30

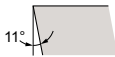
Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.590	0.007	0.016	620	980	0.157	0.011	820					
		2	1045, 1060,	190 HB	0.590										0.016	490	720		
		3	23Mn6	250 HB														0.590	0.016
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.590	0.006	0.012	490	680	0.157	0.009	650					
		4,6	Ck60, 4140, 4340,	230 HB	0.590										0.011	420	620		
		5,7	100Cr6	280 HB														0.590	0.011
		8		350 HB	0.590										0.011	420	450		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.422	0.005	0.011	290	490	0.118	0.009	420					
		10	H13, M42, D3,	280 HB	0.422										0.009	190	360		
		11	S6-5-2, 12N19	320 HB														0.422	0.009
		11		350 HB	0.422										0.009	190	260		
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.590	0.006	0.012	620	820	0.157	0.009	720					
		14	X5CrNi18-9	240 HB	0.590										0.005	0.011	520	680	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.422	0.005	0.009	220	420	0.118	0.008	320					
		14	S31500	310 HB	0.422										0.009	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.590	0.006	0.012	490	680	0.157	0.009	620					
		13	17-4 PH, 430	42 HRC	0.422										0.010	290	490	0.118	0.008
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.590	0.007	0.016	490	720	0.157	0.011	650					
		15	EN-GJL-250,	200 HB	0.590										0.016	620	520		
		16	No30B	250 HB															
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.590	0.006	0.014	320	590	0.157	0.009	590					
		17,19	50005	200 HB	0.590										0.014	490	420		
		18,20		250 HB														0.590	0.014
High Temp Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.422	0.005	0.009	80	140	0.118	0.008	100					
		33	Inconel 700	250 HB	0.422										0.009	140	90		
		34	Stellite 21	350 HB														0.422	0.009
	Ti based	10	36	TiAl6V4	-	0.020	0.422	0.005	0.010	130	210	0.118	0.009	180					
		37	T40	-	0.422										0.009	90	180	0.008	130
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.126	0.004	0.008	130	220	0.059	0.006	160				
38			440C,	50 HRC	0.063	0.007										190	0.039	0.006	160
38			G-X260NiCr42	55 HRC															
Chilled Cast Iron		41	40	Ni-Hard 2	400 HB	0.020	0.169	0.004	0.009	130	260	0.059	0.007	160					
		41	41	G-X300CrMo15	55 HRC	0.020	0.063	0.004	0.007	90	190	0.039	0.006	130					
White Cast Iron		42	25	AlSi12	130 HB	0.020	0.590	0.007	0.016	650	1310	0.157	0.012	910					



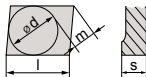
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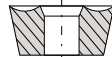
Shape



Clearance Angle



Tolerance  
 d ± 0.002  
 m ± 0.003  
 s ± 0.005



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3153317	APMT 0903 PDTR	LT 30	0.375	0.125	0.016	Right	●
3153321	APMT 1135 PDTR	LT 30	0.374	0.139	0.028	Right	●
3151134	APMT 1604 PDTR	LT 30	0.625	0.187	0.026	Right	○
3153325	APMT 160408 PDTR	LT 30	0.625	0.187	0.031	Right	●

- Stocking
- Non-stocking

### Face Milling Insert with 90° Lead Angle

Multi purpose 90° Milling insert. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

### Application Guide



Machine Recommendations  
 Guide. Details on page 19.

**F** ⇒  
 ↗ Productivity

**Coolant**  
 1, 2, 3, 4 No  
 7, 8, 11 No  
 10, 12 Yes  
 5, 6, 9 Yes

**Stainless Steel**  
 ↗ V<sub>C</sub>



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 SDKX  
 SDMT  
 SEKN  
 SEKR  
 SEKT  
 SNKX  
 SPKN  
 SPKR  
 SPMT  
 SPG  
 TPKN  
 TPKR  
 TPUN  
 WPGT  
 APET  
 APEX  
 APGT  
 SEET  
 SEGT

## APMT 0903 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.314	0.004	0.008	620	980	0.079	0.006	820				
		2	1045, 1060,	190 HB	0.314										0.008	980	720	
		3	28Mn6	250 HB	0.314										0.008	820	650	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.314	0.004	0.006	490	780	0.079	0.005	650				
		4,6	230 HB	0.314	0.006										490	680		
		5,7	Ck60, 4140, 4340,	280 HB	0.314										0.005	420	620	
		8	100Cr6	350 HB	0.314										0.005	420	550	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.314	0.003	0.005	290	490	0.059	0.004	420				
		10	H13, M42, D3,	280 HB	0.224										0.005	290	420	
		11	S6-5-2, 12N19	320 HB	0.224										0.004	190	360	
		11	350 HB	0.224	0.004										190	290	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.314	0.004	0.006	620	820	0.079	0.005	720				
		14	X5CrNi18-9	240 HB	0.314										0.003	0.005	520	680
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.224	0.003	0.004	220	420	0.059	0.004	320				
		14	S31500	310 HB	0.224										0.004	390	290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.314	0.004	0.006	490	680	0.079	0.005	620				
		13	17-4 PH, 430	42 HRc	0.224										0.005	290	490	0.059
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.314	0.004	0.008	490	720	0.079	0.006	590				
		15	EN-GJL-250,	200 HB	0.314										0.008	620	520	
		16	Ng30B	250 HB														
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.314	0.004	0.007	320	590	0.079	0.005	490				
		17,19	50005	200 HB	0.314										0.007	490	420	
		18,20	250 HB	0.314	0.007										490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.224	0.003	0.004	80	140	0.059	0.004	90				
		33	Inconel 700	250 HB	0.224										0.004	140	90	
		34	Stellite 21	350 HB	0.224										0.004	140	90	
	Ti based	10	36	TiAl6V4	-	0.020	0.224	0.003	0.005	130	210	0.059	0.004	180				
		37	T40	-	0.224										0.004	90	180	
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.067	0.002	0.004	130	220	0.030	0.003	180			
38			440C,	50 HRc	0.047	0.003										190	0.020	160
38			G-X260NiCr42	55 HRc														
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.090	0.002	0.004	130	260	0.030	0.003	160					
		41	G-X300CrMo15	55 HRc	0.020	0.047	0.002	0.003	90	190	0.020	0.003	130					
White Cast Iron																		
NE	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.314	0.004	0.008	650	1310	0.079	0.006	910				



## APMT 1135 PDTR LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters					
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.394	0.005	0.009	620	980	0.079	0.006	820		
		2	2	1045, 1060,	190 HB		0.394		0.009					980	720	
		3	3	28Mn6	250 HB		0.394		0.009					820	650	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.004	0.004	0.007	490	680	0.079	0.005	650		
		4,6	4,6	Ck60, 4140, 4340,	230 HB				0.394					0.006	420	590
		5,7	5,7	100Cr6	280 HB				0.394					0.006	620	490
		8	8		350 HB				0.394					0.006	550	450
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.003	0.003	0.006	290	490	0.059	0.005	420		
		10	10	H13, M42, D3,	280 HB				0.281					0.006	420	390
		11	11	S6-5-2, 12Mn19	320 HB				0.281					0.005	360	320
		11	11		350 HB				0.281					0.005	290	260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.004	0.007	620	820	0.079	0.005	720			
		14	14	X5CrNi18-9	240 HB				0.394				0.006	680	620	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.003	0.005	220	420	0.059	0.004	320			
		14	14	S31500	310 HB				0.281				0.005	390	290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.004	0.007	490	680	0.079	0.005	620			
		13	13	17-4 PH, 430	42 HRc				0.281				0.006	490	420	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.005	0.009	490	720	0.079	0.006	650			
		15	15	EN-GJL-250,	200 HB				0.394				0.009	720	590	
		16	16	Ne30B	250 HB				0.394				0.009	620	520	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.004	0.008	650	590	0.079	0.005	490			
		17,19	17,19	50005	200 HB				0.394				0.008	490	420	
		18,20	18,20		250 HB				0.394				0.008	140	100	
	High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.003	0.005	80	140	0.059	0.004	90		
			33	33	Inconel 700	250 HB				0.281				0.005	140	90
			34	34	Stellite 21	350 HB				0.281				0.005	140	90
		Ti based	10	36	TiAl6V4	-	0.020	0.003	0.006	130	210	0.059	0.005	180		
37			37	T40	-	0.281				0.005				90	180	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.003	0.004	130	220	0.030	0.003	180			
		38	38	440C,	50 HRc				0.084				0.004	190	160	
		38	38	G-X260NiCr42	55 HRc				0.042				0.004	190	160	
	Chilled Cast Iron	11	40	Ni-Hard 2	400 HB	0.020	0.113	0.003	130	260	0.030	0.004	160			
		41	41	G-X300CrMo15	55 HRc	0.020	0.042	0.003	90	190	0.020	0.003	130			
NI (>8%Si)	12	25	AlSi12	130 HB	0.020	0.394	0.005	0.009	650	1310	0.079	0.006	910			

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

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# APMT 1604 PDTR & APMT 160408 LT 30

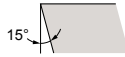
Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/Tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.590	0.006	0.012	620	1080	0.157	0.008	820					
		2	1045, 1060,	190 HB	0.012										980	720			
		3	28Mn6	250 HB													0.590	0.012	820
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.590	0.005	0.008	490	780	0.157	0.006	450					
		4,6	Ck60, 4140, 4340,	230 HB	0.590										490	680			
		5,7	100Cr6	280 HB													0.590	420	620
		8		350 HB	0.590										420	550			
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.422	0.004	0.008	290	490	0.118	0.006	420					
		10	H13, M42, D3,	280 HB	0.422										190	360	260		
		11	S6-5-2, 12N19	320 HB														0.422	190
		11		350 HB	0.422										190	290			
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.590	0.005	0.009	620	820	0.157	0.007	420					
		14	X5CrNi18-9	240 HB	0.590										0.004	0.008	520	680	
	Duplex	5	14	X2CrNiN23-4,		290 HB	0.020	0.422	0.004	0.007	220	420	0.118	0.006					290
		14	S31500	310 HB	0.422	0.007									390				
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.590	0.005	0.009	490	680	0.157	0.007	620					
		13	17-4 PH, 430	42 HRC	0.422										0.007	290	490	0.118	0.006
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.590	0.006	0.012	490	720	0.157	0.008	590					
		15	EN-GJL-250,	200 HB	0.590										0.012	620			
		16	No30B	250 HB															
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.590	0.005	0.010	320	590	0.157	0.007	490					
		17,19	50005	200 HB	0.590										0.010	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.422	0.004	0.007	80	140	0.118	0.006	90					
		33	Inconel 700	250 HB	0.422										0.007	140			
		34	Stellite 21	350 HB													0.422	0.007	140
	Ti based	10	36	TiAl6V4	-	0.020	0.422	0.004	0.007	130	210	0.118	0.006	180					
		37	T40	-	0.422										0.007	90	180		
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.126	0.004	0.006	130	220	0.059	0.005	180				
38			440C,	50 HRC	0.063	0.005										190	0.039	0.004	160
38			G-X260NiCr42	55 HRC															
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.169	0.004	0.007	130	260	0.059	0.005	160						
White Cast Iron		41	G-X300CrMo15	55 HRC	0.020	0.063	0.004	0.005	90	190	0.039	0.004	130						
NI	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.590	0.006	0.012	650	1310	0.157	0.009	910					



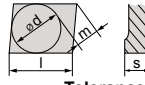
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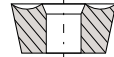
Shape



Clearance Angle



Tolerance  
 d ± 0.002  
 m ± 0.003  
 s ± 0.005



Fixing  
 Chip breaker

ADKT  
 AOMT  
 APKT  
 APMT  
**LDMT**

ODMT  
 ODMW  
 OFER  
 OFMT  
 PNEG  
 RDMT  
 RDMW  
 RDMX

SDKT  
 SDKX  
 SDMT  
 SEKN

SEKR  
 SEKT  
 SNKX

SPKN  
 SPKR  
 SPMT  
 SPG

TPKN  
 TPKR  
 TPUN

WPGT  
 APET  
 APEX

APGT  
 SEET  
 SEGT

Part No.	Description	Grade	l	s	r	Direction	Stock
3161989	LDMT 1504 PDTR	LT 30	0.575	0.187	0.029	Right	o

Availability is subject to special agreement

- Stocking
- Non-stocking

**Face Milling Insert with 90° Lead Angle**

Multi purpose 90° Milling insert. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.

↑ **F** ⇒  
 ↑ **Productivity**

1, 2, 3, 4 No  
 7, 8, 11 No  
 10, 12 Yes  
 Coolant 5, 6, 9 Yes

**Stainless Steel**  
 ↑ **V<sub>c</sub>**



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## LDMT 1504 PDTR LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.551	0.007	0.013	620	1080	0.157	0.009	820				
		2	1045, 1060,	190 HB	0.013										980	720		
		3	28Mn6	250 HB	0.551										0.013	820	650	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.551	0.006	0.010	490	780	0.157	0.008	650				
		4.6	CK60, 4140, 4340,	230 HB	0.010										490	680		
		5.7	100Cr6	280 HB	0.009										420	620		
		8		350 HB	0.009										420	550		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.394	0.005	0.009	290	490	0.118	0.007	420				
		10	H13, M42, D3,	280 HB	0.009										290	420		
		11	S6-5-2, 12N19	320 HB	0.007										190	360		
		11		350 HB	0.394										0.007	190	290	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.551	0.006	0.010	620	820	0.157	0.008	720				
		14	X5CrNi18-9	240 HB	0.005										0.009	520	680	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.394	0.005	0.007	220	420	0.118	0.006	320				
		14	S31500	310 HB	0.394										0.007	390	290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.551	0.006	0.010	490	680	0.157	0.008	620				
		13	17-4 PH, 430	42 HRc	0.394										0.008	290	490	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.551	0.007	0.013	490	720	0.157	0.009	590				
		15	EN-GJL-250,	200 HB	0.013										620	520		
		16	Nc30B	250 HB	0.551										0.013	620		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.551	0.006	0.011	320	590	0.157	0.008	490				
		17,19	50005	200 HB	0.011										490	420		
		18,20		250 HB	0.551										0.011	140	100	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.394	0.005	0.007	80	140	0.118	0.006	90				
		33	Inconel 700	250 HB	0.394										0.007	140	90	
		34	Stellite 21	350 HB	0.394										0.007	140		
	Ti based	10	36	TiAl6V4	-	0.020	0.394	0.005	0.008	130	210	0.118	0.007	180				
		37	T40	-	0.394										0.007	90	180	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.118	0.004	0.006	130	220	0.059	0.005	180				
		38	440C,	50 HRc	0.006										190	0.039	0.005	160
		38	G-X260NiCr42	55 HRc	0.059										0.006	90	190	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.157	0.004	0.007	130	260	0.059	0.006	160					
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.006	90	190	0.039	0.005	130					
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.551	0.007	0.013	650	1310	0.157	0.010	910				



O

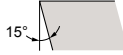
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M

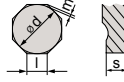
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Shape

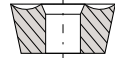


Clearance Angle



Tolerance

s ± 0.005  
For l = 05, d ± 0.003 m ± 0.005  
For l = 06, d ± 0.004 m ± 0.006



Fixing Chip breaker

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

Part No.	Description	Grade	l	s	r	Direction	Stock
3954406	<b>ODMT 0504 ZZTR</b>	LT 30	0.207	0.187	0.031	Right	●
3954411	<b>ODMT 060508 TN</b>	LT 30	0.259	0.219	0.031	Right	●

- Stocking
- Non-stocking

### Face Milling Insert with 45° Lead Angle

Multi purpose 45° Milling insert with 8 cutting edges.  
Suitable for Roughing to Finishing-Face Milling, Plunging and Ramping down operations.

#### Application Guide



Machine Recommendations Guide. Details on page 19.

**F** ⇒  
↑ Productivity

**Coolant**

1, 2, 3, 4	No
7, 8, 11	No
10, 12	Yes
5, 6, 9	Yes

**Stainless Steel**

↑ **V<sub>C</sub>**



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## ODMT 0504 ZZTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.138	0.009	0.020	1080	0.099	0.014	820			
		2		190 HB		0.138		0.020	620			980	720		
		3		250 HB		0.138		0.020	820			820	650		
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.138	0.007	0.016	490	0.099	0.013	650			
		4,6		230 HB		0.138		0.016	490			680	590		
		5,7		280 HB		0.138		0.014	420			620	490		
		8		350 HB		0.138		0.014	420			550	450		
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.098	0.006	0.014	290	0.074	0.011	420			
		10		280 HB		0.098		0.014	290			420	390		
		11		320 HB		0.098		0.011	190			360	320		
		11		350 HB		0.098		0.011	190			290	260		
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.138	0.007	0.014	620	820	0.099	0.011	720		
		14		240 HB		0.138	0.006	0.013	520	680			620		
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.000	0.098	0.006	0.011	220	420	0.074	0.010	320		
		14		310 HB		0.098		0.011	390	290					
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.138	0.007	0.014	490	680	0.099	0.011	620		
		13		42 HRc		0.098		0.013	290	490			0.074	0.010	420
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.138	0.009	0.020	490	0.099	0.014	650			
		15		200 HB		0.138		0.020	620			590			
		16		250 HB		0.138		0.020	620			520			
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.138	0.007	0.018	320	0.099	0.013	590			
		17,19, 18,20		200 HB		0.138		0.018	490			490	420		
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.020	0.098	0.006	0.011	80	0.074	0.010	100			
		33		250 HB		0.098		0.011	140			90			
		34		350 HB		0.098		0.011	140			90			
	Ti based	10	TiAl6V4, T40	-	0.020	0.098	0.006	0.013	130	0.074	0.011	180			
		36		-		0.098		0.011	90			180	0.010	130	
		37		-		0.098		0.011	90			180	0.010	130	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.016	0.049	0.005	0.011	130	0.037	0.008	180			
		38		50 HRc		0.030		0.010	130			220	0.037	0.008	180
		38		55 HRc		0.015		0.009	190			0.025	0.008	160	
	Chilled Cast Iron White Cast Iron	40	Ni-Hard 2	400 HB	0.016	0.039	0.005	0.011	130	260	0.037	0.009	160		
		41	G-X300CrMo15	55 HRc	0.016	0.015	0.005	0.009	90	190	0.025	0.008	130		
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.138	0.009	0.020	650	1310	0.099	0.016	910		

## ODMT 060508 TN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.157	0.009	0.021	620	980	0.099	0.015	720					
		2	1045, 1060,	190 HB	0.157										0.021	820	650		
		3	28Mn6	250 HB															
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.157	0.007	0.017	490	780	0.099	0.013	850					
		4,6	Ck60, 4140, 4340,	230 HB	0.015										490	680	0.013	590	
		5,7	100Cr6	280 HB															0.015
		8		350 HB	0.015										420	550	0.012	450	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.112	0.006	0.015	290	490	0.074	0.012	420					
		10	H13, M42, D3,	280 HB	0.012										290	420	0.012	390	
		11	S6-5-2, 12Ni19	320 HB															0.012
		11		350 HB	0.012										190	290	0.011	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.157	0.007	0.015	620	820	0.099	0.012	720					
		14	X5CrNi18-9	240 HB	0.157										0.006	0.013	520	680	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.112	0.006	0.012	220	420	0.074	0.011	320					
		14	S31500	310 HB	0.112										0.012	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.157	0.007	0.015	490	680	0.099	0.012	620					
		13	17-4 PH, 430	42 HRC	0.112										0.013	290	490	0.074	0.011
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.157	0.009	0.021	490	720	0.099	0.015	590					
		15	EN-GJL-250,	200 HB	0.157										0.021	620	520		
		16	No30B	250 HB															
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.157	0.007	0.019	320	590	0.099	0.013	490					
		17,19	50005	200 HB	0.157										0.019	490	420		
		18,20		250 HB														0.157	0.019
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.112	0.006	0.012	80	140	0.074	0.011	90					
		33	Inconel 700	250 HB	0.112										0.012	140	90		
		34	Stellite 21	350 HB															
	Ti based	10	36	TiAl6V4	-	0.020	0.112	0.006	0.013	130	210	0.074	0.012	180					
		37	T40	-	0.112										0.012	90	180	0.011	130
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.016	0.056	0.005	0.012	130	220	0.037	0.009	180				
38			440C,	50 HRC	0.034	0.011										190	0.025	0.008	160
38			G-X260NiCr42	55 HRC															
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.016	0.045	0.005	0.012	130	260	0.037	0.009	160						
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.016	0.017	0.005	0.009	90	190	0.025	0.008	130					
WC	Al (>8%Si)	12	25	AIS12	130 HB	0.020	0.157	0.009	0.021	650	1310	0.099	0.017	910					

ADKT

AOMT

APKT

APMT

LDMT

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ODMW

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SDKT

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O

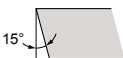
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M

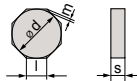
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Shape

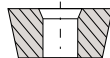


Clearance Angle



Tolerance

d ± 0.004  
m ± 0.006  
s ± 0.005



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3954415	ODMW 060508 TN	LT 30	0.259	0.219	0.031	Right	●

● Stocking

Face Milling Insert with 45° Lead Angle

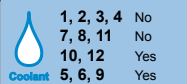
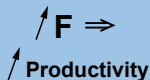
○ Non-stocking

Multi purpose 45° Milling insert with 8 cutting edges and flat rake surface. Designed for materials that generate short chips. Suitable for Roughing to Finishing - Face Milling, Plunging and Ramping down operations.

Application Guide



Machine Recommendations Guide. Details on page 19.





## ODMW 060508 TN LT 30

Material Group	Cr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.157	0.009	0.023	620	1080	0.118	0.016	820	
		2	2	1045, 1060,	190 HB									720	
		3	3	20Mn6	250 HB									650	
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.157	0.007	0.018	490	780	0.118	0.014	650	
			4,6		230 HB									590	
			5,7		280 HB									490	
			8		350 HB									450	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.112	0.006	0.016	290	490	0.089	0.013	420	
					10									280 HB	390
					11									320 HB	320
					11									350 HB	260
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.157	0.009	0.023	490	780	0.118	0.016	650		
				200 HB									590		
				250 HB									520		
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.020	0.157	0.007	0.020	320	590	0.118	0.014	590	
					200 HB									490	
					250 HB									420	
					250 HB									420	
Hardmet. Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.016	0.034	0.005	0.013	130	220	0.059	0.010	190		
				50 HRc									180		
				55 HRc									160		
	Chilled Cast Iron White Cast Iron	41	G-X300CrMo15	400 HB	0.016	0.045	0.005	0.013	130	260	0.044	0.010	160		
				55 HRc									130		

ADKT

AOMT

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APMT

LDMT

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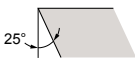




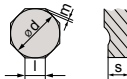
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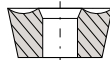
Shape



Clearance Angle



Tolerance  
 d ± 0.001  
 m ± 0.001  
 s ± 0.001



Fixing  
 Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3954421	<b>OFER 070405 TN</b>	<b>LT 30</b>	0.268	0.187	0.031	Right	●

- Stocking
- Non-stocking

## Face Milling Insert with 45° Lead Angle

Multi purpose 45° Milling insert with 8 cutting edges and flat rake surface.  
 Suitable for Roughing to Finishing-Face Milling,  
 Plunging and Ramping down operations.

### Application Guide



Machine Recommendations  
 Guide. Details on page 19.



↑ **F** ⇒  
 ↑ **Productivity**

↓ **Coolant**  
 1, 2, 3, 4 No  
 7, 8, 11 No  
 10, 12 Yes  
 5, 6, 9 Yes

**Stainless Steel**  
 ↑ **V<sub>c</sub>**

## OFER 070405 TN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.176	0.009	0.020	620	0.117	0.014	820					
		2	2	1045, 1060,	190 HB								720					
		3	3	28Mn6	250 HB								650					
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.176	0.007	0.016	490	0.117	0.011	0.013	650				
		4,6	4		230 HB									590				
		5,7	5		280 HB									490	680	0.011	0.011	490
		8	8		350 HB									420	620	0.011	0.011	450
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.126	0.006	0.014	290	0.087	0.011	0.010	420				
		10	10		280 HB									390				
		11	11		320 HB									190	360	0.010	0.010	320
		11	11		350 HB									190	290	0.010	0.010	260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.176	0.007	0.014	620	0.117	0.011	820					
		14	14	X5CrNi18-9	240 HB								680	0.011	0.011	620		
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.126	0.006	0.011	220	0.087	0.010	320					
		14	14		310 HB								0.126	0.011	390	0.010	290	
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.126	0.007	0.014	490	0.117	0.011	0.011	620				
		13	13		42 HRC									0.126	0.013	290	490	0.087
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.176	0.009	0.020	490	0.117	0.014	650					
		15	15	EN-GJL-250, No30B	200 HB								720	590				
		16	16	250 HB	0.176								0.020	620	520			
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.020	0.176	0.007	0.018	320	0.117	0.013	590					
		17,19	17,19		200 HB								0.176	0.018	490	420		
		18,20	18,20		250 HB								0.176	0.018	140	100		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.126	0.006	0.011	80	0.087	0.010	90					
		33	33	Inconel 700	250 HB								0.126	0.011	140	90		
		34	34	Stellite 21	350 HB								0.126	0.011	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.126	0.006	0.013	130	0.087	0.011	180					
37	37	T40	-	0.126	0.011								90	180				
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.016	0.038	0.005	0.010	130	0.044	0.008	180					
		38	38	440C,	50 HRC								0.038	0.010	190	160		
		38	38	G-X260NiCr42	55 HRC								0.038	0.009	190	0.029	0.008	160
	Chilled Cast Iron	41	41	Ni-Hard 2	400 HB	0.016	0.050	0.005	0.011	130	0.260	0.044	0.009	160				
	White Cast Iron	41	41	G-X300CrMo15	55 HRC	0.016	0.019	0.005	0.009	90	0.190	0.029	0.008	130				
NI	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.176	0.009	0.020	650	1310	0.117	0.016	910				

ADKT

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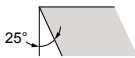
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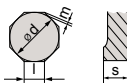
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Shape

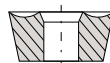


Clearance Angle



Tolerance

s ± 0.005  
For l = 05, d ± 0.003 m ± 0.005  
For l = 07, d ± 0.004 m ± 0.006



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3954431	OFMT 05T305 TN	LT 30	0.207	0.156	0.031	Right	●
3954441	OFMT 050405 TR	LT 30	0.217	0.187	0.021	Right	●
3954435	OFMT 070405 TN	LT 30	0.268	0.187	0.020	Right	●

Face Milling Insert with 45° Lead Angle

- Stocking
- Non-stocking

Multi purpose 45° Milling insert with 8 cutting edges and flat rake surface. Suitable for Roughing to Finishing-Face Milling, Plunging and Ramping down operations.

Application Guide



Machine Recommendations Guide. Details on page 19.



↑ F ⇒  
↑ Productivity

1, 2, 3, 4 No  
7, 8, 11 No  
10, 12 Yes  
Coolant 5, 6, 9 Yes

Stainless Steel  
↑ V<sub>C</sub>

## OFMT 05T305 TN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters													
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>											
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.138	0.009	0.020	620	0.099	0.014	820											
		2	1045, 1060,	190 HB	0.020									0.138	0.009	0.020	620	0.099	0.014	720				
		3	28Mn6	250 HB																	0.020	0.138	0.009	0.020
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.138	0.007	0.016	490	0.099	0.013	650											
		4,6	230 HB	0.016	490									680	0.099	0.013	590							
		5,7	Ck60, 4140, 4340,															280 HB	0.014	420	620	0.099	0.011	490
		8	100Cr6															350 HB						
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.098	0.006	0.014	290	0.074	0.011	420											
		10	280 HB	0.009	290									420	0.074	0.011	390							
		11	H13, M42, D3,															320 HB	0.009	190	360	0.074	0.010	320
		11	S6-5-2, 12Ni19															350 HB						
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.138	0.007	0.014	620	0.099	0.011	720											
		14	X5CrNi18-9	240 HB	0.020									0.098	0.006	0.013	520	0.099	0.011	620				
	Duplex	5	14	X2CrNiN23-4,		290 HB	0.020	0.098	0.006	0.011	220	0.074	0.010								320			
		14	S31500	310 HB	0.020	0.098								0.007	0.011	390	0.074	0.010	290					
	Ferritic & Martensitic	6	12	410, X6Cr17,			200 HB	0.020	0.138	0.007	0.014	490	0.099							0.011	620			
		13	17-4 PH, 430	42 HRC	0.020	0.098	0.007							0.013	290	490	0.074	0.010	420					
Cast Iron	Grey	7	15	GG20, GG40,				150 HB	0.020	0.138	0.009	0.020	490							0.099	0.014	650		
		15	EN-GJL-250,	200 HB	0.020	0.138	0.009	0.020						490	0.099	0.014	590							
		16	No30B	250 HB														0.020	0.138				0.009	0.020
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.138	0.007	0.018	320	0.099	0.013	490											
		17,19	50005	200 HB	0.020									0.138	0.007	0.018	320	0.099	0.013	490				
		18,20	250 HB	0.020																	0.138	0.007	0.018	320
High Temp. Alloys	Fe, Ni & Co based	9	31,32		Incoloy 800	240 HB	0.020	0.098	0.006	0.011	80	0.074	0.010	100										
		33	Inconel 700	250 HB	0.020	0.098									0.006	0.011	80	0.074	0.010	90				
		34	Stellite 21	350 HB																	0.020	0.098	0.006	0.011
	Ti based	10	36	TiAl6V4	-	0.020	0.098	0.006	0.013	130	0.074	0.011	180											
		37	T40	-	0.020									0.098	0.006	0.011	90	180	0.074	0.010	130			
		38	-	-																		0.020	0.098	0.006
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.016	0.030	0.005	0.010	130	0.037	0.008	180											
		38	440C,	50 HRC	0.016									0.030	0.005	0.010	130	0.037	0.008	180				
		38	G-X260NiCr42	55 HRC																	0.016	0.030	0.005	0.010
	Chilled Cast Iron White Cast Iron	41	Ni-Hard 2	400 HB	0.016	0.030	0.005	0.011	130	260	0.037	0.009	160											
		41	G-X300CrMo15	55 HRC										0.016	0.030	0.005	0.011	130	260	0.037	0.009	160		
DIFF	Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.138	0.009	0.020	650	1310	0.099	0.016										910	

ADKT

AOMT

APKT

APMT

LDMT

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PNEG

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SEGT

All Nexus products are backed  
by our 100% satisfaction guarantee.



## OFMT 050405 TR LT 30

Material Group	Cr. #*	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.138	0.009	0.020	620	1080	0.099	0.014	820				
		2	1045, 1060,	190 HB	0.020									980	720			
		3	28Mn6	250 HB	0.138									0.020	820	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.138	0.007	0.016	490	780	0.099	0.013	650				
		4,6	Ck60, 4140, 4340,	230 HB	0.016									490	680	590		
		5,7	100Cr6	280 HB	0.138									0.014	420	620	490	
		8		350 HB	0.138									0.014	420	550	450	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.098	0.006	0.014	290	490	0.074	0.011	420				
		10	H13, M42, D3,	280 HB	0.098									0.014	290	420	390	
		11	S6-5-2, 12N19	320 HB	0.098									0.011	190	360	320	
		11		350 HB	0.098									0.011	190	290	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.138	0.007	0.014	620	820	0.099	0.011	720				
		14	X5CrNi18-9	240 HB	0.138									0.006	0.013	520	680	620
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.098	0.006	0.011	220	420	0.074	0.010	320				
		14	S31500	310 HB	0.098									0.011	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.138	0.007	0.014	490	680	0.099	0.011	620				
		13	17-4 PH, 430	42 HRc	0.098									0.013	290	490	0.074	0.010
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.138	0.009	0.020	490	720	0.099	0.014	650				
		15	EN-GJL-250,	200 HB	0.138									0.020	620	590		
		16	No30B	250 HB	0.138									0.020	620	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.138	0.007	0.018	320	590	0.099	0.013	590				
		17,19	50005	200 HB	0.138									0.018	490	490	490	
		18,20		250 HB	0.138									0.018	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.098	0.006	0.011	80	140	0.074	0.010	100				
		33	Inconel 700	250 HB	0.098									0.011	140	90		
		34	Stellite 21	350 HB	0.098									0.011	140	90		
	Ti based	10	36	TAiBV4	-	0.020	0.098	0.006	0.013	130	210	0.074	0.011	180				
		37	T40	-	0.098									0.011	90	180	130	
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.016	0.030	0.005	0.010	130	220	0.037	0.008	180			
38			440C,	50 HRc	0.015	0.009									190	0.025	0.008	160
38			G-X260NiCr42	55 HRc	0.039	0.005									0.011	130	260	0.037
Chilled Cast Iron		41	40	Ni-Hard 2	400 HB	0.016	0.039	0.005	0.011	130	260	0.037	0.009	160				
White Cast Iron		41	41	G-X300CrMo15	55 HRc	0.016	0.015	0.005	0.009	90	190	0.025	0.008	130				
NI (>8%Si)	12	25	AIS12	130 HB	0.020	0.138	0.009	0.020	650	1310	0.099	0.016	910					

## OFMT 070405 TN LT 30

Material Group	Br. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/both]		V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.176	0.009	0.020	820	980	0.117	0.014	820					
		2	2	1045, 1060,	190 HB										0.176	0.020	820		
		3	3	28Mn6	250 HB														
	Low alloyed	2	4,6	6	42CrMo4, St50,	180 HB	0.020	0.176	0.007	0.016	490	780	0.117	0.013	650				
			5,7	7	Ck60, 4140, 4340,	230 HB										0.176	0.014	420	620
			8	8	100Cr6	280 HB													
			8	8		350 HB													
	High alloyed	3	10	10	X40CrMoV5,	220 HB	0.020	0.126	0.006	0.014	290	490	0.087	0.011	420				
			10	10	H13, M42, D3,	280 HB										0.126	0.011	190	360
			11	11	S6-5-2, 12Ni19	320 HB													
			11	11		350 HB													
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.176	0.007	0.014	620	820	0.117	0.011	720					
		14	14	X5CrNi18-9	240 HB														
	Duplex	5	14	14	X2CrNiN23-4,	290 HB	0.020	0.126	0.006	0.011	220	420	0.087	0.010	320				
			14	14	S31500	310 HB													
	Ferritic & Martensitic	6	12	12	410, X6Cr17,	200 HB	0.020	0.126	0.007	0.014	490	680	0.117	0.011	620				
			13	13	17-4 PH, 430	42 HRC													
Cast Iron	Grey	7	15	15	GG20, GG40,	150 HB	0.020	0.176	0.009	0.020	490	720	0.117	0.014	650				
			15	15	EN-GJL-250,	200 HB										0.176	0.020	620	
			16	16	No30B	250 HB													
	Malleable & Nodular	8	17,19	8	GGG40, GGG70,	150 HB	0.020	0.176	0.007	0.018	320	590	0.117	0.013	490				
			17,19	17,19	50005	200 HB													
			18,20	18,20		250 HB													
			18,20	18,20		250 HB													
High Temp. Alloys	Fe, Ni & Co based	9	31,32	9	Incoloy 800	240 HB	0.020	0.126	0.006	0.011	140	140	0.087	0.010	100				
			33	33	Inconel 700	250 HB										0.126	0.011	80	140
			34	34	Stellite 21	350 HB													
	Ti based	10	36	36	TiAl6V4	-	0.020	0.126	0.006	0.013	130	210	0.087	0.011	180				
			37	37	T40	-										0.126	0.011	90	180
			37	37		-													
Hardened Mat.	Steel	11	38	38	X100CrMo13,	45 HRC	0.016	0.063	0.005	0.011	130	220	0.058	0.009	190				
			38	38	440C,	50 HRC										0.038	0.010	190	
			38	38	G-X260NiCr42	55 HRC													
	Chilled Cast Iron	11	40	40	Ni-Hard 2	400 HB	0.016	0.050	0.005	0.011	130	260	0.044	0.009	160				
			41	41	G-X300CrMo15	55 HRC													
White Cast Iron	41	41	G-X300CrMo15	55 HRC	0.016	0.019	0.005	0.009	90	190	0.029	0.008	130						
Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.176	0.009	0.020	650	1310	0.117	0.016	910						

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



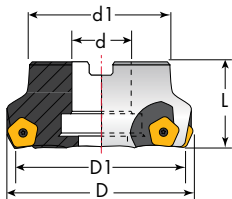


# P N E G

Part No.	Description	Grade	l	s	r	Direction	Stock
3959999	<b>PNEG 110512 R CM</b>	152	0.213	0.219	0.047	Right	●

**Cast Iron Cutter for PNEG 1105. See page 32.**

- Stocking
- Non-stocking



### Application Guide

**See the back of the box for speeds and feeds.**

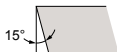




**R D M T**



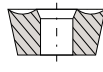
Shape



Clearance Angle



**Tolerance**  
 $s \pm 0.005$   
 For  $l = 06/08/10$ ,  $d \pm 0.002$   
 For  $l = 12$ ,  $d \pm 0.003$

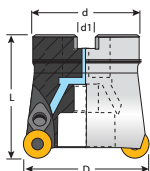


**Fixing Chip breaker**

Part No.	Description	Grade	l	s	r	Direction	Stock
3355528	<b>RDMT 0602 M0</b>	<b>LT 30</b>	0.236	0.094	-	Neutral	●
3351882	<b>RDMT 0702 M0</b>	<b>LT 30</b>	0.276	0.094	-	Neutral	○
3355531	<b>RDMT 0803 M0</b>	<b>LT 30</b>	0.315	0.125	-	Neutral	●
3355533	<b>RDMT 1003 M0</b>	<b>LT 30</b>	0.394	0.125	-	Neutral	●
3355536	<b>RDMT 10T3 M0</b>	<b>LT 30</b>	0.394	0.156	-	Neutral	●
3355543	<b>RDMT 12T3 M0</b>	<b>LT 30</b>	0.472	0.156	-	Neutral	●
3355541	<b>RDMT 1204 M0</b>	<b>LT 30</b>	0.472	0.187	-	Neutral	●
3351881	<b>RDMT 1604 M0</b>	<b>LT 30</b>	0.630	0.187	-	Neutral	○

● Stocking ○ Non-stocking

**Face Mill for RDMT.**  
 See page 33.



**Application Guide**

**Surfacing Insert Lead angle 90°**



Multi purpose Round insert. Suitable for Roughing to Semi-Finishing Copying of 3D surfaces and Face Milling operations.

**Face Milling Insert with 90° Lead Angle**

Machine Recommendations Guide. Details on page 19.

↑ **F** ⇒  
 ↑ **Productivity**

**Coolant**

1, 2, 3, 4	No
7, 8, 11	No
10, 12	Yes
5, 6, 9	Yes

**Stainless Steel**

⚡ **V<sub>c</sub>**



ADKT  
 AOMT  
 APKT  
 APMT  
 LDMT  
 ODMT  
 ODMW  
 OFER  
 OFMT  
**PNEG**  
**RDMT**  
 RDMW  
 RDMX  
 SDKT  
 SDKX  
 SDMT  
 SEKN  
 SEKR  
 SEKT  
 SNKX  
 SPKN  
 SPKR  
 SPMT  
 SPG  
 TPKN  
 TPKR  
 TPUN  
 WPGT  
 APET  
 APEX  
 APGT  
 SEET  
 SEGT

## RDMT 0602 M0 LT 30

Material Group	Cr. #*	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters																	
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>															
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.061	0.007	0.019	620	1080	0.031	0.011	820														
		2	2	1045, 1060,	190 HB										0.061	0.019	980	0.031	0.011	720								
		3	3	28Mn6	250 HB																0.061	0.019	820	0.031	0.011	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.061	0.006	0.015	490	780	0.031	0.010	650														
		4,6	4	Ck60, 4140, 4340,	230 HB										0.061	0.013	420	620	0.031	0.010	590							
		5,7	5	100Cr6	280 HB																	0.061	0.013	420	550	0.031	0.009	490
		8	8		350 HB																							
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.043	0.005	0.013	290	490	0.024	0.009	420														
		10	10	H13, M42, D3,	280 HB										0.043	0.011	190	360	0.024	0.009	390							
		11	11	S6-5-2, 12N19	320 HB																	0.043	0.011	190	290	0.024	0.008	320
		11	11		350 HB																							
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.061	0.006	0.015	620	820	0.031	0.010	720														
		14	14	X5CrNi18-9	240 HB										0.061	0.005	0.013	520	680	0.031	0.010	620						
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.048	0.005	0.011	220	420	0.024	0.008	320														
		14	14	S31500	310 HB										0.048	0.011	390	0.024	0.008	290								
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.061	0.006	0.015	490	680	0.031	0.010	620														
		13	13	17-4 PH, 430	42 HRc										0.048	0.012	290	490	0.024	0.008	420							
	Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.061	0.007	0.019	490	720	0.031	0.011								590						
			15	15	EN-GJL-250,	200 HB									0.061	0.019	620	0.031	0.011	520								
16			16	No30B	250 HB	0.061															0.017		650	0.031	0.011	590		
Malleable & Nodular		8	17,19	GGG40, GGG70,	150 HB		0.020	0.061	0.006	0.017	320	590	0.031	0.010	490													
		17,19	17,19	50005	200 HB	0.061										0.017	490	0.031	0.010	420								
		18,20	18,20		250 HB																0.061	0.017	490	0.031	0.010	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.048	0.005	0.011	80	140	0.024	0.008	100														
		33	33	Inconel 700	250 HB										0.048	0.011	140	0.024	0.008	90								
		34	34	Stellite 21	350 HB																0.048	0.011	140	0.024	0.008	90		
	Ti based	10	36	TAiBV4	-	0.020	0.048	0.005	0.012	130	210	0.024	0.009	180														
		37	37	T40	-										0.048	0.011	90	180	0.024	0.008	130							
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.012	0.022	0.004	0.011	130	220	0.012	0.006								180						
38			38	440C,	50 HRc	0.015									0.008	190	0.010	0.006	160									
38			38	G-X260NiCr42	55 HRc															0.012	0.017		0.004	0.011	130	260	0.012	0.007
Chilled Cast Iron		40	40	Ni-Hard 2	400 HB	0.012	0.015	0.004	0.008	90	190	0.010	0.006	130														
White Cast Iron		41	41	G-X300CrMo15	55 HRc										0.012	0.015	0.004	0.008	90	190	0.010	0.006	130					
NI (>8%Si)	12	25	AIS12	130 HB	0.020	0.061	0.007	0.019	650	1310	0.031	0.012	910															

## RDMT 0702 M0 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters										
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>								
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.072	0.007	0.021	620	1080	0.031	0.013	820							
		2	2	1045, 1060,	190 HB										0.072	0.021	980	0.031	0.013	720	
		3	3	29Mn6	250 HB																0.072
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.072	0.006	0.017	490	780	0.031	0.011	600							
		4,6	4	Ck60, 4140, 4340,	230 HB										0.072	0.017	490	680	0.031	0.011	590
		5,7	5	100Cr6	280 HB																
		8	8		350 HB										0.072	0.015	420	550	0.031	0.010	450
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.051	0.005	0.015	290	490	0.024	0.010	420							
		10	10	H13, M42, D3,	280 HB										0.051	0.015	290	420	0.024	0.010	390
		11	11	S6-5-2, 12Ni19	320 HB																
		11	11		350 HB										0.051	0.012	190	290	0.024	0.009	260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.072	0.006	0.017	620	820	0.031	0.011	720							
		14	14	X5CrNi18-9	240 HB										0.072	0.005	0.015	520	680	0.031	0.000
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.056	0.005	0.012	220	420	0.024	0.009	320							
		14	14	S31500	310 HB										0.056	0.012	390	0.024	0.009	290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.072	0.006	0.017	490	680	0.031	0.011	620							
		13	13	17-4 PH, 430	42 HRc										0.056	0.013	290	490	0.000	0.009	420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.072	0.007	0.021	490	780	0.031	0.013	650							
		15	15	EN-GJL-250,	200 HB										0.072	0.021	490	720	0.031	0.013	590
		16	16	No30B	250 HB																
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.072	0.006	0.019	320	590	0.031	0.011	490							
		17,19	17,19	50005	200 HB										0.072	0.019	490	590	0.031	0.011	490
		18,20	18,20		250 HB																
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.056	0.005	0.012	80	140	0.024	0.009	100							
		33	33	Inconel 700	250 HB										0.056	0.012	140	0.024	0.009	90	
		34	34	Stellite 21	350 HB																0.056
	Ti based	10	36	TA18V4	-	0.020	0.056	0.005	0.013	130	210	0.024	0.010	180							
		37	37	T40	-										0.056	0.012	90	180	0.024	0.009	130
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.012	0.020	0.004	0.011	130	220	0.012	0.007							
38			38	440C,	50 HRc	0.018									0.009	190	0.010	0.007	160		
38			38	G-X260NiCr42	55 HRc															0.012	0.020
Chilled Cast Iron		41	41	Ni-Hard 2	400 HB	0.012	0.018	0.004	0.009	90	190	0.010	0.007	130							
		41	41	G-X300CrMo15	55 HRc										0.012	0.018	0.004	0.009	90	190	0.010
Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.072	0.007	0.021	650	1310	0.031	0.014	910								

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



## RDMT 0803 MO LT 30

	Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters						
						min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.077	0.007	0.023	620	980	0.031	0.014	820				
		2	190 HB		0.077									0.023	820			
		3	250 HB		0.077									0.023	820			
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.077	0.006	0.018	490	780	0.031	0.012	650				
			4,6		230 HB									0.077	0.018	490	680	
			5,7		280 HB									0.077	0.016	420	620	
			8		350 HB									0.077	0.016	420	550	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.055	0.005	0.016	290	490	0.024	0.011	420				
			10		280 HB									0.055	0.016	290	420	
			11		320 HB									0.055	0.013	190	360	
			11		350 HB									0.055	0.013	180	290	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.077	0.006	0.018	620	820	0.031	0.012	720					
		14		240 HB									0.077	0.005	0.016	520	680	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.020	0.061	0.005	0.013	220	420	0.024	0.009	320					
		14		310 HB									0.061	0.013	390			
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.077	0.006	0.018	490	690	0.031	0.012	620					
				13									42 HRc	0.061	0.014	290	490	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.077	0.007	0.023	490	720	0.031	0.014	650					
		15		200 HB									0.077	0.023	620			
		16		250 HB									0.077	0.023	620			
High Temp. Alloys	Malleable & Nodular	8	GGG40, GGG70, 50005	17,19	0.020	0.077	0.006	0.020	320	590	0.031	0.012	590					
		17,19		200 HB									0.077	0.020	490			
		18,20		250 HB									0.077	0.020	490			
	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.061	0.005	0.013	80	140	0.024	0.009	100				
33					Inconel 700									0.061	0.013	140		
34					Stellite 21									0.061	0.013	140		
Ti based		10	36,37	TiAl6V4, T40	-	0.020	0.061	0.005	0.014	130	210	0.024	0.011	180				
					-									0.061	0.013	90	180	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260N/Cr42	45 HRc	0.012	0.028	0.004	0.013	130	260	0.016	0.008	190					
				50 HRc									0.022	0.011	220	0.012	0.008	180
				55 HRc									0.019	0.010	190	0.010	0.007	160
	Chilled Cast Iron	41	Ni-Hard 2	400 HB	0.012	0.022	0.004	0.013	130	260	0.012	0.008	160					
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.012	0.019	0.004	0.010	90	190	0.010	0.007	130					
NP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.077	0.007	0.023	650	1310	0.031	0.015	910				

## RDMT 1003 M0 LT 30

	Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters						
						min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.099	0.007	0.025	620	980	0.039	0.014	820				
		2	190 HB		0.099									0.025	820	720		
		3	250 HB		0.099									0.025	820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.099	0.006	0.020	490	780	0.039	0.012	650				
		4,6	230 HB		0.099									0.020	490	680	590	
		5,7	280 HB		0.099									0.017	420	620	490	
		8	350 HB		0.099									0.017	420	550	450	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.071	0.005	0.017	290	490	0.030	0.011	420				
		10	280 HB		0.071									0.017	290	420	390	
		11	320 HB		0.071									0.014	190	360	320	
		11	350 HB		0.071									0.014	180	290	260	
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.020	0.099	0.006	0.020	620	820	0.039	0.012	720				
		14	240 HB		0.099									0.005	0.017	520	680	620
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.078	0.005	0.014	220	420	0.030	0.009	320				
		14	310 HB		0.078									0.014	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.099	0.006	0.020	490	680	0.039	0.012	620				
		13	42 HRC		0.078									0.016	290	490	0.030	0.009
Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.099	0.007	0.025	490	720	0.039	0.014	650				
		16	200 HB		0.099									0.025	620	590		
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.020	0.099	0.006	0.022	320	590	0.039	0.012	590				
		17,19	200 HB		0.099									0.022	490	490		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.078	0.005	0.014	80	140	0.030	0.009	100				
		33	Inconel 700		250 HB									0.078	0.014	140	90	
		34	Stellite 21		350 HB									0.078	0.014	140	90	
	Ti based	10	36	TiAl6V4	-	0.020	0.078	0.005	0.016	130	210	0.030	0.011	180				
		37	T40		-									0.014	90	180	0.009	130
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260N/Cr42	45 HRC	0.012	0.035	0.004	0.014	130	260	0.020	0.008	190				
		38	50 HRC		0.028									0.013	220	0.015	0.008	180
		38	55 HRC		0.025									0.011	190	0.010	0.007	160
	Chilled Cast Iron	41	40	Ni-Hard 2	400 HB	0.012	0.028	0.004	0.014	130	260	0.015	0.008	160				
		41	55 HRC		0.012									0.025	0.004	0.011	90	190
White Cast Iron	41	41	G-X300CrMo15	55 HRC	0.012	0.025	0.004	0.011	90	190	0.010	0.007	130					
Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.099	0.007	0.025	650	1310	0.039	0.015	910					

ADKT

AOMT

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OFMT

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RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

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SPKN

SPKR

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TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

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## RDMT 1204 M0 LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.119	0.010	0.029	620	1080	0.052	0.014	820				
		2	1045, 1060,	190 HB	0.029									980	720			
		3	28Mn6	250 HB	0.119									0.029	820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.119	0.008	0.023	490	780	0.052	0.012	650				
		4,6	230 HB		0.023									490	680	590		
		5,7	280 HB		0.020									420	620	490		
		8	350 HB		0.119									0.020	420	550	450	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.085	0.007	0.020	290	490	0.039	0.011	420				
		10	280 HB		0.020									290	420	390		
		11	320 HB		0.085									0.016	190	360	320	
		11	350 HB		0.085									0.016	190	290	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.119	0.008	0.023	620	820	0.052	0.012	720				
		14	X5CrNi18-9	240 HB	0.007									0.020	520	680	620	
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.093	0.007	0.016	220	420	0.039	0.009	320				
		14	310 HB	0.093	0.016									390	290			
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.119	0.008	0.023	490	680	0.052	0.012	620				
		13	17-4 PH, 430	42 HRc	0.093									0.018	290	490	0.039	0.009
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.119	0.010	0.029	490	780	0.052	0.014	650				
		15	EN-GJL-250, No30B	200 HB	0.119									0.029	720	590		
		16	250 HB	0.119	0.029									620	520			
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.020	0.119	0.008	0.025	320	590	0.052	0.012	590				
		17,19	200 HB	0.025	490									420				
		18,20	250 HB	0.119	0.025									490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.093	0.007	0.016	80	140	0.039	0.009	100				
		33	Inconel 700	250 HB	0.093									0.016	140	90		
		34	Stellite 21	350 HB	0.093									0.016	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.093	0.007	0.018	130	210	0.039	0.011	180				
		37	T40	-	0.093									0.016	90	180	0.009	130
Hardened Mat.	Steel	11	38	X100CrMo13, 440C,	45 HRc	0.012	0.034	0.006	0.014	130	260	0.026	0.008	190				
		38	G-X260NiCr42	50 HRc	0.030									0.014	220	0.019	0.008	180
		38	55 HRc	0.030	0.013									190	0.013	0.007	160	
	Chilled Cast Iron	41	40	Ni-Hard 2	400 HB	0.012	0.034	0.006	0.016	130	260	0.019	0.008	160				
		41	G-X300CrMo15	55 HRc	0.012	0.030	0.006	0.013	90	190	0.013	0.007	130					
White Cast Iron	41	41	G-X300CrMo15	55 HRc	0.012	0.030	0.006	0.013	90	190	0.013	0.007	130					
HP	Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.119	0.010	0.029	650	1310	0.052	0.015	910				

## RDMT 10T3 M0 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.099	0.007	0.025	620	1080	0.039	0.014	820				
		2	1045, 1060,	190 HB	0.099									0.025	980	720		
		3	28Mn6	250 HB	0.099									0.025	820	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.099	0.006	0.020	490	780	0.039	0.012	650				
		4,6	Ck60, 4140, 4340,		230 HB									0.099	0.020	490	680	590
		5,7	100Cr6		280 HB									0.099	0.017	420	620	490
		8	350 HB		0.099									0.017	420	550	450	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.071	0.005	0.017	290	490	0.030	0.011	420				
		10	H13, M42, D3,		280 HB									0.071	0.017	290	420	390
		11	S6-5-2, 12Ni19		320 HB									0.071	0.014	190	360	320
		11	350 HB		0.071									0.014	190	290	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.099	0.005	0.017	520	680	0.039	0.012	720				
		14	X5CrNi18-9	240 HB	0.099									0.017	520	680	620	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.078	0.005	0.014	220	420	0.030	0.009	320				
		14	S31500	310 HB	0.078									0.014	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.099	0.006	0.020	490	680	0.039	0.012	620				
		13	17-4 PH, 430	42 HRc	0.078									0.016	290	490	420	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.099	0.007	0.025	490	780	0.039	0.014	650				
		15	EN-GJL-250,	200 HB	0.099									0.025	720	590		
		16	No30B	250 HB	0.099									0.025	620	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.099	0.006	0.022	320	590	0.039	0.012	590				
		17,19	50005	200 HB	0.099									0.022	490	490		
		18,20	250 HB	0.099	0.022									490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.078	0.005	0.014	80	140	0.030	0.009	100				
		33	Inconel 700	250 HB	0.078									0.014	140	90		
		34	Stellite 21	350 HB	0.078									0.014	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.078	0.005	0.016	130	210	0.030	0.011	180				
		37	T40	-	0.078									0.014	90	180	130	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.012	0.028	0.004	0.013	130	260	0.020	0.008	190				
		38	440C,	50 HRc	0.028									0.013	220	0.015	0.008	180
		38	G-X260NiCr42	55 HRc	0.025									0.011	190	0.010	0.007	160
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.012	0.028	0.004	0.014	130	260	0.015	0.008	160					
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.012	0.025	0.004	0.011	90	190	0.010	0.007	130				
HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.099	0.007	0.025	650	1310	0.039	0.015	910				

ADKT  
AOMT  
APKT  
APMT  
LDMT  
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ODMW  
OFER  
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PNEG  
RDMT  
RDMW  
RDMX  
SDKT  
SDKX  
SDMT  
SEKN  
SEKR  
SEKT  
SNKX  
SPKN  
SPKR

SPMT  
SPG  
TPKN  
TPKR  
TPUN  
WPGT

APET  
APEX  
APGT  
SEET  
SEGT



## RDMT 12T3 M0 LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.119	0.010	0.029	620	1080	0.052	0.014	820				
		2	1045, 1060,	190 HB	0.119									0.029	980	720		
		3	28Mn6	250 HB	0.119									0.029	820	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.119	0.008	0.023	490	780	0.052	0.012	650				
		4,6	230 HB	0.023	490									680	590			
		5,7	Ck60, 4140, 4340,	280 HB	0.020									420	620	490		
		8	100Cr6	350 HB	0.020									420	550	450		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.085	0.007	0.020	290	490	0.039	0.011	420				
		10	H13, M42, D3,	280 HB	0.085									290	420	390		
		11	S6-5-2, 12Ni19	320 HB	0.085									190	360	320		
		11	350 HB	0.085	190									290	260			
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.119	0.008	0.023	620	820	0.052	0.012	720				
		14	X5CrNi18-9	240 HB	0.020									520	680	620		
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.093	0.007	0.016	220	420	0.039	0.009	320				
		14	S31500	310 HB	0.093									0.016	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.119	0.008	0.023	490	680	0.052	0.012	620				
		13	17-4 PH, 430	42 HRc	0.093									0.018	290	490	0.039	0.009
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.119	0.010	0.029	490	780	0.052	0.014	650				
		15	EN-GJL-250,	200 HB	0.119									0.029	720	590		
		16	No30B	250 HB	0.119									0.029	620	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.119	0.008	0.025	320	590	0.052	0.012	590				
		17,19	50005	200 HB	0.025									490	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.093	0.007	0.016	80	140	0.039	0.009	100				
		33	Inconel 700	250 HB	0.093									0.016	140	90		
		34	Stellite 21	350 HB	0.093									0.016	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.093	0.007	0.018	130	210	0.039	0.011	180				
		37	T40	-	0.093									0.016	90	180	0.009	130
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.012	0.034	0.006	0.014	130	260	0.026	0.008	190			
38			440C,	50 HRc	0.034	0.014									220	0.019	0.008	180
38			G-X260NiCr42	55 HRc	0.030	0.013									190	0.013	0.007	160
Chilled Cast Iron		41	40	Ni-Hard 2	400 HB	0.012	0.034	0.006	0.016	130	260	0.019	0.008	160				
		41	41	G-X300CrMo15	55 HRc	0.012	0.030	0.006	0.013	90	190	0.013	0.007	130				
HT	Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.119	0.010	0.029	650	1310	0.052	0.015	910				



## RDMT 1604 M0 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.157	0.010	0.039	620	1080	0.079	0.014	820					
		2	2	1045, 1060,	190 HB									0.157	0.039	980	720		
		3	3	28Mn6	250 HB									0.157	0.039	820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.157	0.038	0.031	490	780	0.079	0.011	650					
			4,6		230 HB									0.157	0.031	490	680	590	
			5,7		280 HB									0.157	0.027	420	620	490	
			8		350 HB									0.157	0.027	420	550	450	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.112	0.007	0.027	290	490	0.059	0.011	420					
					10									280 HB	0.112	0.027	290	420	390
					11									320 HB	0.112	0.022	190	360	320
					11									350 HB	0.112	0.022	190	290	260
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.157	0.008	0.031	620	820	0.079	0.012	720						
				240 HB									0.157	0.007	0.027	520	680	620	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.020	0.123	0.007	0.022	220	420	0.059	0.009	320						
				310 HB									0.123	0.022	390	290			
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.157	0.008	0.031	490	680	0.079	0.012	620						
				42 HRc									0.123	0.025	290	490	0.059	0.009	420
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.157	0.010	0.039	490	780	0.079	0.014	650						
				200 HB									0.157	0.039	720	590			
				250 HB									0.157	0.039	620	520			
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.157	0.008	0.035	320	650	0.079	0.012	590						
				200 HB									0.157	0.035	590	490			
				250 HB									0.157	0.035	490	420			
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.020	0.123	0.007	0.022	80	140	0.059	0.009	100						
				250 HB									0.123	0.022	140	90			
				350 HB									0.123	0.022	140	90			
	Ti based	10	TiAl6V4 T40	-	0.020	0.123	0.007	0.025	130	210	0.059	0.011	180						
				-									0.123	0.022	90	180			
				-									0.123	0.022	90	180			
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.016	0.045	0.006	0.020	130	260	0.039	0.008	190						
				50 HRc									0.045	0.020	220	0.030	0.008	180	
				55 HRc									0.039	0.017	190	0.020	0.007	160	
	Chilled Cast Iron	41	Ni-Hard 2	400 HB	0.016	0.045	0.006	0.022	130	260	0.030	0.008	160						
				41									G-X300CrMo15	55 HRc	0.016	0.039	0.006	0.017	90
	HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.157	0.010	0.039	650	1310	0.079	0.015	910				

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

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SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT





**R**

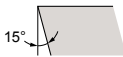
**D**

**M**

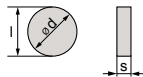
**W**



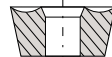
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $s \pm 0.005$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3355546	RDMW 10T3 M0	LT 30	-	0.156	-	Neutral	●
3355548	RDMW 1204 M0	LT 30	-	0.187	-	Neutral	●

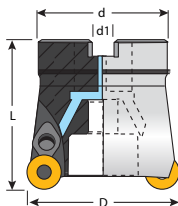
● Stocking

○ Non-stocking

**Face Milling Insert with 90° Lead Angle**

Multi purpose Round insert with flat rake surface, designed for Hard materials.  
 Suitable for Roughing to Semi-Finishing Copying of 3D surfaces  
 and Face Milling operations.

**Face Mill for RDMT.  
 See page 33.**



**Application Guide**



Machine Recommendations  
 Guide. Details on page 19.



**F** ⇒  
 ⚡ Productivity

**Coolant**  
 1, 2, 3, 4 No  
 7, 8, 11 No  
 10, 12 Yes  
 5, 6, 9 Yes

**Stainless Steel**  
 ⚡ V<sub>c</sub>

## RDMW 10T3 M0 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters					
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.099	0.007	0.028	620	1080	0.039	0.015	820			
		190 HB		0.099									0.028	980	720	
		250 HB		0.099									0.028	820	650	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.099	0.006	0.022	490	780	0.039	0.013	650			
		230 HB		0.099									0.022	490	590	
		280 HB		0.099									0.019	420	620	490
		350 HB		0.099									0.019	420	550	450
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.071	0.005	0.019	290	490	0.030	0.012	420			
		280 HB		0.071									0.019	290	420	390
		320 HB		0.071									0.016	190	360	320
		350 HB		0.071									0.016	190	290	260
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.099	0.007	0.028	490	780	0.039	0.015	650			
		200 HB		0.099									0.028	720	590	
		250 HB		0.099									0.028	620	520	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.099	0.006	0.024	320	650	0.039	0.013	590			
		200 HB		0.099									0.024	590	490	
		250 HB		0.099									0.024	490	420	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.012	0.035	0.004	0.016	130	260	0.020	0.009	190			
		50 HRC		0.028									0.014	220	180	
		55 HRC		0.025									0.012	190	160	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.012	0.028	0.004	0.016	130	260	0.015	0.009	160			
		41	G-X300Cr/Mu15	55 HRC	0.012	0.025	0.004	0.012	90	190	0.010	0.008	130			

ADKT  
AOMT  
APKT  
APMT  
LDMT  
ODMT  
ODMW  
OFER  
OFMT  
PNEG  
RDMT  
**RDMW**  
RDMX  
SDKT  
SDKX  
SDMT  
SEKN  
SEKR  
SEKT  
SNKX  
SPKN  
SPKR  
SPMT  
SPG  
TPKN  
TPKR  
TPUN  
WPGT  
APET  
APEX  
APGT  
SEET  
SEGT

# RDMW 1204 M0 LT 30

Material Group	Cr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.119	0.007	0.029	620	1080	0.052	0.015	820
		190 HB		720									
		250 HB		650									
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.119	0.006	0.023	490	780	0.052	0.013	650
		230 HB		590									
		280 HB		490									
		350 HB		450									
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.085	0.005	0.020	290	490	0.039	0.012	420
		280 HB		390									
		320 HB		320									
		350 HB		260									
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.119	0.007	0.029	490	780	0.052	0.015	650
		200 HB		590									
		250 HB		520									
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.119	0.006	0.025	320	590	0.052	0.013	590
		200 HB		490									
		250 HB		420									
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.012	0.034	0.004	0.016	130	220	0.026	0.009	190
				50 HRc									180
				55 HRc									160
	Chilled Cast Iron	41	Ni-Hard 2	400 HB	0.012	0.034	0.004	0.016	130	260	0.019	0.009	160
				55 HRc									130

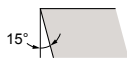




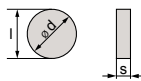
**R D M X**



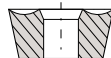
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $s \pm 0.005$



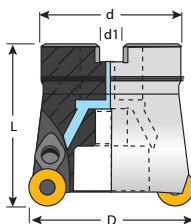
Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3351552	RDMX 10T3 M0	LT 30	0.394	0.156	-	Neutral	○
3355549	RDMX 1204 M0	LT 30	0.472	0.187	-	Neutral	●

Face Milling Insert with 90° Lead Angle

- Stocking
- Non-stocking

Face Mill for RDMT.  
See page 33.



Multi purpose Round insert. Suitable for Roughing to Semi-Finishing Copying of 3D surfaces and Face Milling operations.

Application Guide



Pocket Milling



Copying



Facing

Machine Recommendations Guide. Details on page 19.

↑ **F** ⇒  
↑ **Productivity**

1, 2, 3, 4 No  
7, 8, 11 No  
10, 12 Yes  
Coolant 5, 6, 9 Yes

**Stainless Steel**  
↑ **V<sub>C</sub>**



## RDMX 10T3 M0 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.099	0.007	0.025	620	1080	0.039	0.014	820						
		2	2	1045, 1060,	190 HB										0.099	0.025	980	720		
		3	3	28Mn6	250 HB														0.099	0.025
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.099	0.006	0.020	490	780	0.039	0.012	650						
		4,6	4,6		230 HB										0.099	0.020	680	590		
		5,7	5,7		280 HB														0.099	0.017
		8	8		350 HB										0.099	0.017	550	450		
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.071	0.005	0.017	290	490	0.030	0.011	420						
		10	10		280 HB										0.071	0.017	420	390		
		11	11		320 HB														0.071	0.014
		11	11		350 HB										0.071	0.014	290	260		
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.099	0.006	620	820	0.039	0.012	720							
		14	14	X5CrNi18-9	240 HB									0.099	0.005	520	680			
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.078	0.005	0.014	220	420	0.030	0.009					320		
		14	14	310 HB	0.078									0.014	390	290				
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430		200 HB	0.020	0.099	0.006	0.020	490	680	0.039				0.012	620		
		13	13	42 HRc	0.078	0.016								290	490	0.030			0.009	420
Cast Iron	Grey	7	15	GG20, GG40,			150 HB	0.020	0.099	0.007	0.025	490	720				0.039	0.014		
		15	15	EN-GJL-250, No30B	200 HB	0.099	0.025							620	520					
		16	16	250 HB	0.099											0.022			650	590
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005		150 HB	0.020	0.099	0.006	0.022	320	590	0.039	0.012	490					
		17,19	17,19		200 HB	0.099										0.022	490	420		
		18,20	18,20		250 HB														0.099	0.022
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.078	0.005	0.014	80	140	0.030	0.009	90						
		33	33	Inconel 700	250 HB										0.078	0.014	140	90		
		34	34	Stellite 21	350 HB														0.078	0.014
	Ti based	10	36	TiAl6V4 T40	-	0.020	0.078	0.005	0.016	130	210	0.030	0.011	180						
		37	37		-										0.078	0.014	90	180	0.009	130
Hardened Mat.	Steel	11	38	X100CrMo13, 440C,	45 HRc	0.012	0.028	0.004	0.013	130	220	0.015	0.008	180						
		38	38	G-X260NiCr42	50 HRc										0.025	0.011	190	0.010	0.007	160
		38	38	55 HRc																
	Chilled Cast Iron	40	40	Ni-Hard 2	400 HB	0.012	0.028	0.004	0.014	130	260	0.015	0.008	160						
	White Cast Iron	41	41	G-X300CrMo15	55 HRc	0.012	0.025	0.004	0.011	90	190	0.010	0.007	130						
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.099	0.007	0.025	650	1310	0.039	0.015	910						

## RDMX 1204 M0 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.119	0.010	0.029	620	0.052	0.014	820							
		2	2	1045, 1060,	190 HB									0.119	0.029	820	720			
		3	3	28Mn6	250 HB													0.119	0.029	820
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.119	0.008	0.023	490	0.052	0.012	650							
		4,6	230 HB		0.023									490	680	0.012	590			
		5,7	290 HB		0.020									420	620	0.011	490			
		8	350 HB		0.119									0.020	420	550	0.011	450		
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.007	0.085	0.020	290	0.039	0.011	390							
		10	280 HB		0.085									190	360	0.009	320			
		11	320 HB		0.085									190	290	0.009	260			
		11	350 HB		0.085									190	290	0.009	260			
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.119	0.008	0.023	620	0.052	0.012	720							
		14	14	X5CrNi18-9	240 HB									0.007	0.020	520	680	0.011	420	
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.093	0.007	0.016	220	0.039	0.009	320							
		14	14	310 HB	0.093									0.016	390	290				
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.119	0.008	0.023	490	0.052	0.012	620							
		13	13	17-4 PH, 430	42 HRC									0.093	0.018	290	490	0.039	0.009	420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.119	0.010	0.029	490	0.052	0.014	590							
		15	15	EN-GJL-250, No30B	200 HB									0.119	0.029	490	720	520		
		16	16	250 HB	0.119									0.029	620	650				
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.020	0.119	0.008	0.025	320	0.052	0.012	490							
		17,19	200 HB		0.025									490	420					
		18,20	250 HB		0.119									0.025	490	420				
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.093	0.007	0.016	80	0.039	0.009	100							
		33	33	Inconel 700	250 HB									0.093	0.016	140	90			
		34	34	Stellite 21	350 HB									0.093	0.016	140	90			
	Ti based	10	36	TA16V4	-	0.020	0.093	0.007	0.018	130	0.039	0.011	180							
37	37	T40	-	0.093	0.016									90	180	0.009	130			
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.012	0.034	0.006	0.014	130	0.019	0.008	180							
		38	38	440C,	50 HRC									0.034	0.006	0.014	220	0.019	0.008	180
		38	38	G-X260NiCr42	55 HRC									0.030	0.013	190	0.013	0.007	160	
	Chilled Cast Iron	40	40	Ni-Hard 2	400 HB	0.012	0.034	0.006	0.016	130	0.019	0.008	160							
	White Cast Iron	41	41	G-X300CrMo15	55 HRC	0.012	0.030	0.006	0.013	90	0.013	0.007	130							
NI (>8%Si)	12	25	AlSi12	130 HB	0.020	0.119	0.010	0.029	650	0.052	0.015	910								

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



**S**

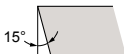
**D**

**K**

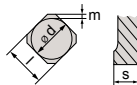
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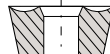
Shape



Clearance Angle



**Tolerance**  
 d ± 0.003  
 m ± 0.0005  
 s ± 0.0001



**Fixing Chip breaker**

Part No.	Description	Grade	l	s	r	Direction	Stock
3254411	<b>SDKT 1204 AETN</b>	<b>LT 30</b>	0.500	0.187	-	Neutral	●

- Stocking
- Non-stocking

### Face Milling Insert with 45° Lead Angle

Multi purpose 45° Milling insert, designed for high depths of cut. Suitable for Roughing to Finishing-Face Milling, Plunging and Ramping down Milling operations.

#### Application Guide



Machine Recommendations Guide. Details on page 19.



**F** ⇒  
 ↗  
**Productivity**

**Coolant**  
 1, 2, 3, 4 No  
 7, 8, 11 No  
 10, 12 Yes  
 5, 6, 9 Yes

**Stainless Steel**  
 ↗  
**V<sub>C</sub>**



## SDKT 1204 AETN LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.021	620	0.118	0.015	820				
		2	1045, 1060,	190 HB	0.021									980	720		
		3	23Mn6	250 HB	0.021									820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.276	0.006	0.016	490	0.118	0.013	650				
		4,6	230 HB		0.016									490	590		
		5,7	280 HB		0.014									420	490		
		8	350 HB		0.014									420	450		
	High alloyed	3	10	X40CrMoV5, H13, MA2, D3, S6-5-2, 12Ni19	220 HB	0.020	0.197	0.005	0.014	290	0.089	0.012	420				
		10	280 HB		0.014									290	390		
		11	320 HB		0.012									190	360		
		11	350 HB		0.012									190	290	0.011	260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.014	290	0.118	0.012	720				
		14	X5CrNi18-9	240 HB	0.276									0.005	0.013	520	680
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.197	0.005	0.012	220	0.089	0.011	320				
		14	310 HB	0.197	0.012									390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.276	0.006	0.012	490	0.118	0.012	620				
		13	42 HRc	0.197	0.012									290	490	0.089	0.011
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.021	490	0.118	0.015	650				
		15	EN-GJL-250, No30B	200 HB	0.276									0.021	720	590	
		16	250 HB	0.276	0.021									620	520		
	Malleable & Nodular	8	17,19	GG40, GGG70, 50005	150 HB	0.020	0.276	0.006	0.018	320	0.118	0.013	590				
		17,19	200 HB	0.018	590									490			
18,20	250 HB	0.276	0.018	490	420												
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.012	80	0.089	0.011	100				
		33	Inconel 700	250 HB	0.197									0.012	140	90	
		34	Stellite 21	350 HB	0.197									0.012	140	90	
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.013	130	0.089	0.012	180				
37	T40	-	0.197	0.012	90									180	0.011	130	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.069	0.004	0.010	130	0.059	0.009	190				
		38	440C,	50 HRc	0.010									220	0.044	0.009	180
		38	G-X260NiCr42	55 HRc	0.059									0.009	190	0.030	0.008
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.012	130	260	0.044	0.009	160				
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.009	90	190	0.030	0.008	130				
Al (>8%Si)	12	25	AIS12	130 HB	0.020	0.276	0.007	0.021	650	1310	0.118	0.017	910				

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT





# S D K X

Part No.	Description	Grade	l	s	r	Pr. R.	Direction	Stock
2503095	SDKX 0904 HF	LT 30	0.375	0.187	0.031	0.031	Neutral	●
2503096	SDKX 1205 HF	LT 30	0.500	0.219	0.031	0.031	Neutral	●

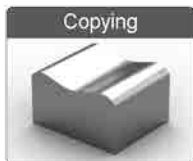
● Stocking

○ Non-stocking

**Face Mills coming early 2014.  
End Mills coming late 2014.**

Pr. R. = Programming Radius

## Application Guide



## SDKX 0904 HF LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters										
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>								
Steel	Non-alloyed	1	C35, Ck45,	125 HB	0.020	0.059	0.012	0.079	620	980	0.059	0.071	820								
		2	1020, 1045,	190 HB										0.059	0.079	820					
		3	1060, 28Mn6	250 HB																	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.055	0.012	490	780	0.055	0.067	650								
		4,6	Ck60, 4140,	230 HB	0.055									0.071	680						
		5,7	4340, 100Cr6	280 HB												0.055	0.071	620			
		8		350 HB																	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.051	0.012	290	490	0.051	0.059	420								
		10	H13, M42, D3,	280 HB	0.051									0.063	420						
		11	S6-5-2, 12Ni19	320 HB												0.051	0.063	360			
		11		350 HB																	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.047	0.012	620	820	0.047	0.047	720								
		14	X5CrNi18-9	240 HB																	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.035	0.012	220	420	0.035	0.031	290								
		14	S31500	310 HB																	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.047	0.012	0.039	490	680	0.047	0.035	620							
		13	17-4 PH, 430	42 HRC																	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.059	0.012	0.079	780	0.059	0.071	650								
		15	EN-GJL-250,	200 HB	0.059									0.079	620						
		16	No30B	250 HB																	
High Temp. Alloys	Malleable & Nodular	8	8	GGG40, GGG70,	150 HB	0.020	0.059	0.012	320	590	0.059	0.063	490								
		8	50005	200 HB	0.059									0.071	140						
		8		250 HB																	
High Temp. Alloys	Fe, Ni & Co based	9	33	Incoloy 800	240 HB	0.020	0.051	0.012	80	140	0.051	0.024	90								
		33	Inconel 700	250 HB	0.051									0.031	140						
		34	Stellite 21	350 HB																	
	Ti based	10	36	TiAl6V4	-	0.020	0.051	0.012	130	210	0.051	0.024	180								
37		Ti40	-	0.051	0.028									90							
Hardened Mat.	Steel	11	38			X100CrMo13,	45 HRC	0.012	0.039	0.012	130	220	0.039		0.035	180					
		38	440C,	50 HRC	0.039	0.031	190														
		38	G-X260NiCr42	55 HRC																	
		40	Ni-Hard 2	400 HB	0.012	0.039	0.012							0.031			130	260	0.039	0.031	160
		41	G-X300CrMo15	55 HRC																	
HF	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.059	0.012	0.071	650	1310	0.059	0.063	910							

ADKT

AOMT

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LDMT

ODMT

ODMW

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OFMT

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RDMT

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SDKT

SDKX

SDMT

SEKN

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SEKT

SNKX

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SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



# SDKX 1205 HF LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters																										
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>																								
Steel	Non-alloyed	1	C35, Ck45,	125 HB	0.020	0.098	0.012	0.118	620	980	0.098	0.102	720																								
		2	1020, 1045,	190 HB										0.098	0.118	820	0.098	0.102	650																		
		3	1060, 28Mn6	250 HB																																	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.087	0.110	490	780	0.087	0.094	590																								
		4,6	Ck60, 4140,	230 HB	0.087									0.110	420	620	0.087	490																			
		5,7	4340, 100Cr6	280 HB															0.087	0.110	420	550	0.087	450													
		8		350 HB																																	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.079	0.102	290	490	0.079	0.079	420																								
		10	H13, M42, D3,	280 HB	0.079									0.098	290	420	0.079	390																			
		11	S6-5-2, 12Ni19	320 HB															0.079	0.098	190	360	0.071	320													
		11		350 HB																					0.079	0.098	190	290	0.071	260							
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.079	0.012	0.059	620	820	0.079	0.047	720																							
		14	X5CrNi18-9	240 HB	0.079										0.012	0.059	520	680	0.079	0.047	620																
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.079	0.012	0.039	220	420	0.079	0.031	320																							
		14	S31500	310 HB	0.079										0.012	0.039	220	390	0.079	0.031	290																
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.079	0.012	0.047	490	680	0.079	0.031	620																							
		13	17-4 PH, 430	42 HRC	0.079										0.012	0.039	290	490	0.079	0.028	420																
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.098	0.012	0.118	490	720	0.098	0.102	590																							
		15	EN-GJL-250,	200 HB	0.098										0.118	620	520	0.098	0.102	520																	
		16	No30B	250 HB																																	
	Malleable & Nodular	8	11,11	GGG40, GGG70,	150 HB	0.020	0.098	0.012	0.098	320	590	0.098	0.079	490																							
11,11		50005	200 HB	0.098	0.012										0.098	320	590	0.098	0.079	490																	
High Temp. Alloys	Fe, Ni & Co based	9	33	Incoloy 800	240 HB	0.020	0.059	0.012	0.035	80	140	0.059	0.028	90																							
		33	Inconel 700	250 HB	0.059										0.035	130	210	0.059	0.024	180																	
		34	Stellite 21	350 HB																	0.059	0.035	90	180	0.059	0.024	130										
	Ti based	10	36	TiAl6V4	-	0.020	0.059	0.012	0.031	130	210	0.059	0.024	180																							
		37	T40	-	0.059										0.012	0.031	90	180	0.059	0.024	130																
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.012	0.047	0.012	0.047	130	220	0.047	0.039	180																						
38			440C,	50 HRC	0.039	0.039										190	0.039	0.035	160																		
38			G-X260NiCr42	55 HRC																0.012	0.047	0.012	0.035	130	260	0.047	0.031	160									
40			Ni-Hard 2	400 HB																									0.012	0.047	0.012	0.035	130	260	0.047	0.031	160
41			G-X300CrMo15	55 HRC																									0.012	0.039	0.012	0.035	90	190	0.039	0.031	130
NI	AI (>8%Si)	12	25	AlSi12	130 HB	0.020	0.118	0.012	0.079	650	1310	0.098	0.063	910																							





S D M T

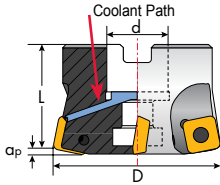
- ADKT
- AOMT
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RD MW
- RDMX
- SDKT
- SDKX
- SDMT**
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN
- SPKR
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

Part No.	Description	Grade	l	s	r	Direction	Pr. R.	Stock
3253310	SDMT 09T312 DM	202	0.375	0.156	0.047	Neutral	0.098	●
3253320	SDMT 120412 DM	202	0.500	0.187	0.047	Neutral	0.157	●

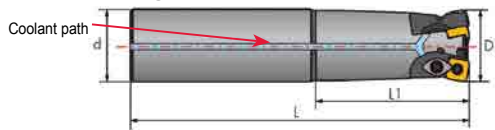
**High Feed Face Mill for SDMT 09T312 & 120412. See page 35.**

- Stocking
- Non-stocking

Pr. R. = Programming Radius



**High Feed Indexable End Mill for SDMT. See page 46.**



**Application Guide**

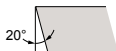
**See the back of the box for speeds and feeds.**



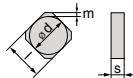
**S E K N**



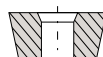
Shape



Clearance Angle



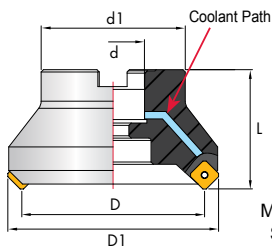
**Tolerance**  
 $m \pm 0.0005$   
 $s \pm 0.001$   
 For  $l = 12$ ,  $d \pm 0.003$   
 For  $l = 15$ ,  $d \pm 0.004$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3254415	<b>SEKN 42 AFTN (ANSI)</b> <b>SEKN 1203 AFTN (ISO)</b>	LT 30	0.500	0.125	-	Neutral	•
3254417	<b>SEKN 43 AFTN (ANSI)</b> <b>SEKN 1204 AFTN (ISO)</b>	LT 30	0.500	0.187	-	Neutral	•
3254421	<b>SEKN 53 AFTN (ANSI)</b> <b>SEKN 1504 AFTN (ISO)</b>	LT 30	0.625	0.187	-	Neutral	•

- Stocking
- Non-stocking



**Face Mill for SEKN. See page 31.**

**Face Milling Insert with 45° Lead Angle**

Multi purpose 45° Milling insert, designed for high depths of cut. Suitable for Roughing to Finishing-Face Milling, Plunging and Ramping down Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.



**F** ⇒  
Productivity

**Coolant**

1, 2, 3, 4	No
7, 8, 11	No
10, 12	Yes
5, 6, 9	Yes

**Stainless Steel**

↗ **V<sub>C</sub>**

## SEKN 1203 AFTN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.018	620	1080	0.118	0.013	820				
		2	1045, 1060,	190 HB	0.276									0.018	980	720		
		3	28Mn6	250 HB	0.276									0.018	820	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.276	0.006	0.014	490	780	0.118	0.012	650				
		4,6	Ck60, 4140, 4340,	230 HB	0.276									0.014	490	680	0.012	590
		5,7	100Cr6	280 HB	0.276									0.013	420	620	0.010	490
		8		350 HB	0.276									0.013	420	550	0.010	450
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.197	0.005	0.013	290	490	0.089	0.009	390				
		10	H13, M42, D3,	280 HB	0.197									0.010	190	360	0.009	320
		11	S6-5-2, 12Ni19	320 HB	0.197									0.010	190	290	0.009	260
		11		350 HB	0.197									0.010	190	290	0.009	260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.013	620	820	0.118	0.010	720				
		14	X5CrNi18-9	240 HB	0.276									0.005	0.011	520	680	620
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.197	0.005	0.010	220	420	0.089	0.009	320				
		14	S31500	310 HB	0.197									0.010	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.276	0.006	0.013	490	680	0.118	0.010	620				
		13	17-4 PH, 430	42 HRc	0.197									0.010	290	490	0.089	0.009
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.018	490	720	0.118	0.013	650				
		15	EN-GJL-250,	200 HB	0.276									0.018	620	590		
		16	No30B	250 HB	0.276									0.018	620	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.016	320	590	0.118	0.012	590				
		17,19	50005	200 HB	0.276									0.016	490	490		
		18,20		250 HB	0.276									0.016	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.010	80	140	0.089	0.009	100				
		33	Inconel 700	250 HB	0.197									0.010	140	90		
		34	Stellite 21	350 HB	0.197									0.010	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.011	130	210	0.089	0.010	180				
		37	T40	-	0.197									0.010	90	180	0.009	130
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.069	0.004	0.009	130	260	0.059	0.008	190				
		38	440C,	50 HRc	0.009									0.008	180			
		38	G-X260NiCr42	55 HRc	0.009									0.008	160			
	Chilled Cast Iron	40		Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.008	160				
		41		G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	90	190	0.030	0.007	130				
	HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.276	0.007	0.018	650	1310	0.118	0.015	910			

ADKT

AOMT

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LDMT

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SEET

SEGT

# SEKN 1204 AFTN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.018	620	1080	0.118	0.013	820
		2	1045, 1060,	190 HB	720									
		3	28Mn6	250 HB	650									
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.276	0.006	0.014	490	780	0.118	0.012	650
		4,6	Ck60, 4140, 4340,	230 HB	590									
		5,7	100Cr6	280 HB	490									
		8		350 HB	450									
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.197	0.005	0.013	290	490	0.089	0.010	420
		10	H13, M42, D3,	280 HB	390									
		11	S6-5-2, 12Ni19	320 HB	320									
		11		350 HB	290									
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.013	620	820	0.118	0.010	720
		14	X5CrNi18-9	240 HB	620									
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.197	0.005	0.010	220	420	0.089	0.009	320
		14	S31500	310 HB	290									
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.276	0.006	0.013	490	680	0.118	0.010	620
		13	17-4 PH, 430	42 HRC	290									
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.018	490	720	0.118	0.013	650
		16	EN-GJL-250,	200 HB	590									
		16	No30B	250 HB	520									
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.016	320	590	0.118	0.012	590
		17,19	50005	200 HB	490									
		18,20		250 HB	420									
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.010	80	140	0.089	0.009	100
		33	Inconel 700	250 HB	140									
		34	Stellite 21	350 HB	140									
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.011	130	210	0.089	0.010	180
		37	T40	-	90									
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.069	0.004	0.009	130	260	0.059	0.008
38			440C,	50 HRC	180									
38			G-X260NiCr42	55 HRC	160									
Chilled Cast Iron		40		Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.008	160
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	90	190	0.030	0.007	130
HP		Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.276	0.007	0.018	650	1310	0.118	0.015





## SEKN 1504 AFTN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.353	0.007	0.020	620	980	0.157	0.014	820	
		190 HB		720										
		250 HB		650										
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.353	0.006	0.015	490	780	0.157	0.013	650	
		230 HB		590										
		280 HB		490										
		350 HB		450										
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.252	0.005	0.013	290	490	0.118	0.011	420	
		280 HB		390										
		320 HB		320										
		350 HB		260										
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.353	0.006	0.013	620	820	0.157	0.011	720	
		240 HB		620										
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.020	0.252	0.005	0.011	220	420	0.118	0.010	320	
		310 HB		290										
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.353	0.006	0.013	490	680	0.157	0.011	620	
		42 HRc		420										
	Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.353	0.007	0.020	490	720	0.157	0.014	650
			200 HB		590									
			250 HB		520									
		Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.353	0.006	0.017	320	590	0.157	0.013	590
200 HB			490											
250 HB			420											
High Temp./Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.020	0.252	0.005	0.011	140	140	0.118	0.010	100	
		250 HB		90										
		350 HB		90										
	Ti based	10	TiAl6V4, T40	-	0.020	0.252	0.005	0.012	130	210	0.118	0.011	180	
				130										
				130										
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.076	0.004	0.010	130	220	0.059	0.008	180	
		50 HRc		180										
		55 HRc		160										
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.101	0.004	0.011	130	260	0.059	0.009	160	
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.063	0.004	0.009	90	190	0.039	0.008	130
HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.353	0.007	0.020	650	1310	0.157	0.016	910

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

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TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

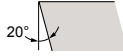




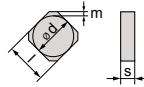
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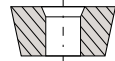
Shape



Clearance Angle



**Tolerance**  
 $d \pm 0.003$   
 $m \pm 0.0005$   
 $s \pm 0.0001$



**Insert Type**  
 Clamping  
 Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3254431	<b>SEKR 42 AFTN (ANSI)</b> <b>SEKR 1203 AFTN (ISO)</b>	LT 30	0.500	0.125	-	Neutral	•
3254433	<b>SEKR 43 AFTN (ANSI)</b> <b>SEKR 1204 AFTN (ISO)</b>	LT 30	0.500	0.187	-	Neutral	•

**Face Milling Insert with 45° Lead Angle**

- Stocking
- Non-stocking

Multi purpose 45° Milling insert, designed for high depths of cut and materials that generate long chips. Suitable for Roughing to Finishing-Face, Planing and Ramping down Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.



**F** ⇒  
 ↑  
**Productivity**

**Coolant**  
 1, 2, 3, 4 No  
 7, 8, 11 No  
 10, 12 Yes  
 5, 6, 9 Yes

**Stainless Steel**  
 ↑  
**V<sub>C</sub>**

## SEKR 1203 AFTN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.018	620	1080	0.118	0.013	820				
		2	1045, 1060,	190 HB	0.276									0.018	980	720		
		3	28Mn6	250 HB	0.276									0.018	820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.276	0.006	0.014	490	780	0.118	0.012	650				
		4,6	230 HB		0.276									0.014	490	680	590	
		5,7	280 HB		0.276									0.013	420	620	490	
		8	350 HB		0.276									0.013	420	550	450	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.197	0.005	0.013	290	490	0.089	0.010	420				
		10	280 HB		0.197									0.013	290	420	390	
		11	320 HB		0.197									0.010	190	360	320	
		11	350 HB		0.197									0.010	190	290	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.013	620	820	0.118	0.010	720				
		14	X5CrNi18-9	240 HB	0.276									0.005	0.011	520	680	620
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.020	0.197	0.005	0.010	220	420	0.089	0.009	320				
		14	310 HB	0.197	0.010									390	290			
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.276	0.006	0.013	490	680	0.118	0.010	620				
		13	42 HRc	0.197	0.010									290	490	0.089	0.009	420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.018	490	720	0.118	0.013	650				
		15	EN-GJL-250, No30B	200 HB	0.276									0.018	490	720	590	
		16	250 HB	0.276	0.018									620	520			
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.020	0.276	0.006	0.016	320	590	0.118	0.012	590				
		17,19	200 HB	0.276	0.016									490	490	490		
		18,20	250 HB	0.276	0.016									490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.010	80	140	0.089	0.009	100				
		33	Inconel 700	250 HB	0.197									0.010	140	90		
		34	Stellite 21	350 HB	0.197									0.010	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.011	130	210	0.089	0.010	180				
		37	T40	-	0.197									0.010	90	180	0.009	130
Hardened Mat.	Steel	11	38	X100CrMo13, 440C,	45 HRc	0.020	0.069	0.004	0.009	130	260	0.059	0.008	190				
		38	G-X260NiCr42	50 HRc	0.069									0.009	220	0.044	0.008	180
		38	55 HRc	0.059	0.008									190	0.030	0.007	160	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.008	160					
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	90	190	0.030	0.007	130				
	HP	Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.276	0.007	0.018	650	1310	0.118	0.015	910			

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

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SEKT

SNKX

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SEET

SEGT



## SEKR 1204 AFTN LT 30

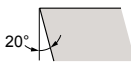
Material Group	Cr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.018	620	1080	0.118	0.013	820				
		2	1045, 1060,	190 HB	0.276									0.018	980	720		
		3	28Mn6	250 HB	0.276									0.018	820	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.276	0.006	0.014	490	780	0.118	0.012	650				
		4,6	Ck60, 4140, 4340,	230 HB	0.276									0.014	490	680	590	
		5,7	100Cr6	280 HB	0.276									0.013	420	620	490	
		8		350 HB	0.276									0.013	420	550	450	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.197	0.005	0.013	290	490	0.089	0.010	420				
		10	H13, M42, D3,	280 HB	0.197									0.013	290	420	390	
		11	S6-5-2, 12Ni19	320 HB	0.197									0.010	190	360	320	
		11		350 HB	0.197									0.010	190	290	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.013	620	820	0.118	0.010	720				
		14	X5CrNi18-9	240 HB	0.276									0.005	0.011	520	680	620
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.197	0.005	0.010	220	420	0.089	0.009	320				
		14	S31500	310 HB	0.197									0.010	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.276	0.006	0.013	490	680	0.118	0.010	620				
		13	17-4 PH, 430	42 HRC	0.197									0.010	290	490	0.089	0.009
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.018	490	780	0.118	0.013	650				
		15	EN-GJL-250,	200 HB	0.276									0.018	720	590		
		16	No30B	250 HB	0.276									0.018	620	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.016	320	590	0.118	0.012	590				
		17,19	50005	200 HB	0.276									0.016	490	490		
		18,20		250 HB	0.276									0.016	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.010	80	140	0.089	0.009	100				
		33	Inconel 700	250 HB	0.197									0.010	140	90		
		34	Stellite 21	350 HB	0.197									0.010	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.011	130	210	0.089	0.010	180				
		37	T40	-	0.197									0.010	90	180		
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.069	0.004	0.009	130	260	0.059	0.008	190			
38			440C,	50 HRC	0.069	0.009									220	0.044	0.008	180
38			G-X260NiCr42	55 HRC	0.059	0.008									190	0.030	0.007	160
Chilled Cast Iron		40		Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.008	160				
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	90	190	0.030	0.007	130				
HP		Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.276	0.007	0.018	650	1310	0.118	0.015	910			



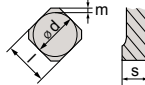
**S E K T**



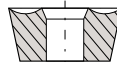
Shape



Clearance Angle



Tolerance  
 $d \pm 0.003$   
 $m \pm 0.0005$   
 $s \pm 0.0001$



Fixing  
 Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
2506169	SEKT 12T3 AGSN	LT 30	0.528	0.156	-	Neutral	●
3254435	SEKT 1204 AFTN	LT 30		0.187	-	Neutral	●

**Face Milling Insert with 90° Lead Angle**

- Stocking
- Non-stocking

Multi purpose 45° Milling insert, designed for high depths of cut. Suitable for Roughing to Finishing-Face, Plunging and Ramping down Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.

**F** ⇒  
 ↗  
**Productivity**

**Coolant**  
 1, 2, 3, 4 No  
 7, 8, 11 No  
 10, 12 Yes  
 5, 6, 9 Yes

**Stainless Steel**  
 ↗  
**V<sub>c</sub>**



All Nexus products are backed by our 100% satisfaction guarantee.



- ADKT
- AOMT
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDMW
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT**
- SNKX
- SPKN
- SPKR
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

## SEKT 12T3 AGSN LT 30

Material Group	Cr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.018	620	1080	0.118	0.013	820
		2	1045, 1060,	190 HB	980									720
		3	28Mn6	250 HB	820									650
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.276	0.006	0.014	490	780	0.118	0.012	650
		4,6	Ck60, 4140, 4340,	230 HB	680									590
		5,7	100Cr6	280 HB	620									490
		8		350 HB	550									450
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.197	0.005	0.013	290	490	0.089	0.010	420
		10	H13, M42, D3,	280 HB	420									390
		11	S6-5-2, 12Ni19	320 HB	360									320
		11		350 HB	290									260
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.013	620	820	0.118	0.010	720
		14	X5CrNi18-9	240 HB	680									620
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.197	0.005	0.010	220	420	0.089	0.009	320
		14	S31500	310 HB	390									290
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.276	0.006	0.013	490	680	0.118	0.010	620
		13	17-4 PH, 430	42 HRC	490									420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.018	490	720	0.118	0.013	650
		16	EN-GJL-250,	200 HB	620									590
		16	No30B	250 HB	620									520
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.016	320	590	0.118	0.012	590
		17,19	50005	200 HB	490									490
		18,20		250 HB	490									420
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.010	80	140	0.089	0.009	100
		33	Inconel 700	250 HB	140									90
		34	Stellite 21	350 HB	140									90
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.011	130	210	0.089	0.010	180
		37	T40	-	180									130
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.069	0.004	0.009	130	260	0.059	0.008
38			440C,	50 HRC	190	180								
38			G-X260NiCr42	55 HRC	190	160								
Chilled Cast Iron		40		Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.008	160
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	90	190	0.030	0.007	130
HP	Al (>8%Si)	12	25	AISI12	130 HB	0.020	0.276	0.007	0.018	650	1310	0.118	0.015	910

## SEKT 1204 AFTN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.018	620	1080	0.118	0.013	820				
		2	1045, 1060,	190 HB	0.018									980	720			
		3	28Mn6	250 HB	0.018									820	650			
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.276	0.006	0.014	490	780	0.118	0.012	850				
		4,6	Ck60, 4140, 4340,	230 HB	0.014									680	590			
		5,7	100Cr6	280 HB	0.013									420	620	0.010	490	
		8		350 HB	0.013									420	550	0.010	450	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.197	0.005	0.013	290	490	0.089	0.010	420				
		10	H13, M42, D3,	280 HB	0.013									290	420	0.010	390	
		11	S6-5-2, 12Ni19	320 HB	0.010									190	360	0.009	320	
		11		350 HB	0.010									190	290	0.009	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.013	620	820	0.118	0.010	720				
		14	X5CrNi18-9	240 HB	0.276									0.005	0.011	520	680	
	Duplex	5	14	X2CrNiMo23-4,	290 HB	0.020	0.197	0.005	0.010	220	420	0.089	0.009	320				
		14	S31500	310 HB	0.197									0.010	390	290		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.276	0.006	0.013	490	680	0.118	0.010	620				
		13	17-4 PH, 430	42 HRC	0.197									0.010	290	490	0.089	0.009
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.018	490	780	0.118	0.013	650				
		15	EN-GJL-250,	200 HB	0.276									0.018	620	590		
		16	No30B	250 HB	0.276									0.018	620	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.016	320	590	0.118	0.012	490				
		17,19	50005	200 HB	0.276									0.016	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.010	80	140	0.089	0.009	100				
		33	Inconel 700	250 HB	0.197									0.010	140	90		
		34	Stellite 21	350 HB	0.197									0.010	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.011	130	210	0.089	0.010	180				
		37	T40	-	0.010									90	180	0.009	130	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.069	0.004	0.009	130	260	0.059	0.008	190				
		38	440C,	50 HRC	0.009									130	220	0.044	0.008	180
		38	G-X260NiCr42	55 HRC	0.059									0.008	190	0.030	0.007	160
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.008	160					
		41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	90	190	0.030	0.007	130					
White Cast Iron																		
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.276	0.007	0.018	650	1310	0.118	0.015	910					

ADKT  
AOMT  
APKT  
APMT  
LDMT  
ODMT  
ODMW  
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RDMW  
RDMX  
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SDKX  
SDMT  
SEKN  
SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

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TPKR

TPUN

WPGT

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SEET

SEGT





09T3-HF

1607-45°

**S**

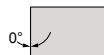
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**K**

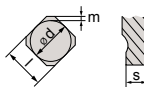
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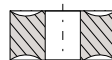
Shape



Clearance Angle



Tolerance  
 $d \pm 0.0002$   
 $m \pm 0.0005$   
 $s \pm 0.0001$



Fixing Chip breaker

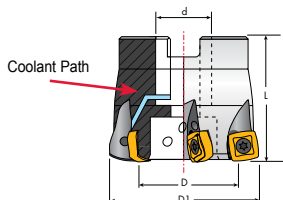
Part No.	Description	Grade	l	s	r	Direction	Pr. R.	Stock
2502115	SNKX 09T3-HF	LT 30		0.146	-	Right	0.165	●
2502205	SNKX 1607-45°	LT 30	0.658	0.269	-	Right	0.165	●

● Stocking

○ Non-stocking

Face Mill for SNKX 09T3. See page 34.

Pr. R. = Programming Radius



High Feed Indexable End mill for SNKX 09T3. See page 47.

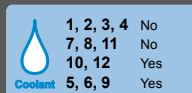
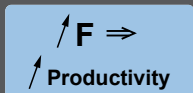


Cutter bodies for SNKX 1607 coming early 2014.

Exclusive and unique design insert with 8 cutting edges for High Feed. Suitable for Roughing to Semi-Finishing Copying of 3D surfaces and Face Milling operations.



Machine Recommendations Guide. Details on page 19.





## SNKX 09T3-HF LT 30

Material Group	Cr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.004	0.039	0.011	0.083	620	1080	0.022	0.043	820					
		190 HB		0.039									0.077	980	720			
		250 HB		0.039									0.059	820	650			
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.004	0.039	0.010	0.077	490	780	0.020	0.039	650					
		230 HB		0.039									0.010	0.067	490	680	590	
		280 HB		0.039									0.009	0.063	420	620	490	
		350 HB		0.039									0.009	0.059	420	550	450	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.004	0.008	0.067	0.094	290	490	0.020	0.035	420					
		280 HB		0.039									0.063	290	420	0.020	0.035	390
		320 HB		0.031									0.059	190	360	0.016	0.031	320
		350 HB		0.031									0.055	190	290	0.016	0.031	260
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.004	0.039	0.008	0.094	490	780	0.024	0.043	650					
		200 HB		0.039									0.094	720	590			
		250 HB		0.039									0.094	620	520			
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.004	0.039	0.008	0.071	320	590	0.020	0.039	490					
		200 HB		0.039									0.071	490	420			
		250 HB		0.039									0.071	490	420			
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.004	0.024	0.006	0.043	130	260	0.016	0.028	190					
		50 HRc		0.020									0.039	220	0.012	0.026	180	
		55 HRc		0.016									0.035	190	0.012	0.024	160	
	Chilled Cast Iron White Cast Iron	40	Ni-Hard 2	400 HB	0.004	0.024	0.006	0.043	130	260	0.016	0.028	160					
		41	G-X300CrMo15	55 HRc	0.004	0.016	0.006	0.035	90	190	0.012	0.024	130					

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



## SNKX 1607-45° LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Optimal cutting conditions							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.256	0.006	0.023	620	0.157	0.018	820					
		2	1045, 1060,	190 HB	0.256									0.023	980	720		
		3	28Mn6	250 HB													0.256	0.023
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.256	0.006	0.020	490	0.157	0.016	650					
		4,6	230 HB	0.256	0.020									490	680	590		
		5,7	Ck60, 4140, 4340,														280 HB	0.256
		8	100Cr6	350 HB	0.256									0.017	420	550	0.014	
	High alloyed	3	10	X40CrMoV5,		220 HB	0.020	0.256	0.004	0.017	290	0.118	0.014					420
		10	280 HB	0.256	0.017	290								420	0.014	390		
		11	H13, M42, D3,														320 HB	
		11	S6-5-2, 12Ni19	350 HB	0.256	0.014								190	290	0.013	260	
Stainless Steel	Austenitic	4	14	304, 316,			180 HB	0.020	0.256	0.006	0.017	620	0.157					0.013
		14	X5CrNi18-9	240 HB	0.256	0.004	0.016							520	680	0.118	0.012	
	Duplex	5	14	X2CrNiN23-4,				290 HB	0.020	0.197	0.004	0.014	220					0.118
		14	S31500	310 HB	0.197	0.014	390											
	Ferritic & Martensitic	6	12	410, X6Cr17,				200 HB	0.020	0.256	0.006	0.017	490	0.157	0.013	620		
		13	17-4 PH, 430	42 HRC	0.198	0.016	290	490									0.118	0.012
Cast Iron	Grey	7	15	GG20, GG40,					150 HB	0.020	0.256	0.007	0.023	490	0.157	0.018		
		15	EN-GJL-250,	200 HB	0.256	0.023	720	590										
		16	No30B	250 HB					0.256								0.023	620
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.256	0.006		0.020	320	0.157	0.016	590				
		17,19	50005	200 HB	0.256				0.020						490	420		
		18,20	250 HB	0.256													0.020	140
High Temp. Alloys	Fe, Ni & Co based	9	31,32		Incoloy 800	240 HB	0.020	0.197	0.004	0.014	80	0.118	0.012	100				
		33	Inconel 700	250 HB	0.197	0.014									140			
		34	Stellite 21	350 HB												0.197	0.014	140
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.004	0.016	130	0.118	0.013	180					
		37	T40	-	0.197									0.014	90	180		
	Hardened Mat.	Steel	11	38		X100CrMo13,	45 HRC	0.016	0.119	0.004	0.013	130	0.059				0.010	180
38			440C,	50 HRC	0.059	0.011	190							0.039	0.009	160		
38			G-X260NiCr42	55 HRC														
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.016	0.119	0.004	0.014	130	260	0.059	0.011	160					
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.016	0.059	0.004	0.011	90	190	0.039	0.009	130				
Al (>8%Si)		12	25	AISI12	130 HB	0.020	0.256	0.007	0.024	650	1310	0.157	0.020	910				

Cutter bodies coming early 2014.



**S**

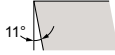
**P**

**K**

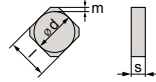
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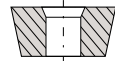
Shape



Clearance Angle



Tolerance  
 $m \pm 0.0005$   $s \pm 0.001$   
 For  $l = 12$ ,  $d \pm 0.003$   
 For  $l = 15$ ,  $d \pm 0.004$



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3263336	<b>SPKN 42 EDTR (ANSI)</b> <b>SPKN 1203 EDTR (ISO)</b>	LT 30	0.500	0.125	-	Right	○
3263341	<b>SPKN 43 EDTR (ANSI)</b> <b>SPKN 1204 EDTR (ISO)</b>	LT 30	0.500	0.187	-	Right	○
3266029	<b>SPKN 53 EDTR (ANSI)</b> <b>SPKN 1504 EDTR (ISO)</b>	LT 30	0.625	0.187	-	Right	○

● Stocking  
 ○ Non-stocking

**Face Mill Insert with 75° Lead Angle**

Square inserts with 75° lead angle, designed for High depths of cut. Suitable for Roughing to Finishing-Face Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.

**F** ⇒  
 ↑  
**Productivity**

**1, 2, 3, 4** No  
**7, 8, 11** No  
**10, 12** Yes  
**5, 6, 9** Yes

Coolant



- ADKT
- AOMT
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDMW
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN**
- SPKR
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

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## SPKN 1203 EDTR LT 30

Material Group	Cr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.276	0.007	0.017	620	1080	0.118	0.012	820
		190 HB		720									
		250 HB		650									
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.276	0.006	0.013	490	780	0.118	0.010	650
		230 HB		590									
		280 HB		490									
		350 HB		450									
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.197	0.005	0.012	290	490	0.089	0.009	420
		280 HB		390									
		320 HB		320									
		350 HB		260									
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.276	0.007	0.017	490	0.118	0.012	650	
		200 HB		590									
		250 HB		520									
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.276	0.006	0.015	320	590	0.118	0.010	590
		200 HB		490									
		250 HB		420									
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.069	0.004	0.010	130	220	0.044	0.007	190
		50 HRc		180									
		55 HRc		160									
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.007	160
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.007	90	190	0.030	0.006

## SPKN 1204 EDTR LT 30

Material Group	Cr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.276	0.007	0.017	620	1080	0.118	0.012	820				
		190 HB		0.276									0.017	980	720		
		250 HB		0.276									0.017	820	650		
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.276	0.006	0.013	490	780	0.118	0.010	0.009	650			
		230 HB		0.276										0.013	490	680	590
		280 HB		0.276										0.012	420	620	490
		350 HB		0.276										0.012	420	550	450
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.197	0.005	0.012	290	490	0.089	0.009	0.008	420			
		280 HB		0.197										0.012	290	420	390
		320 HB		0.197										0.010	190	360	320
		350 HB		0.197										0.010	190	290	260
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.276	0.007	0.017	490	780	0.118	0.012	650				
		200 HB		0.276									0.017	720	590		
		250 HB		0.276									0.017	620	520		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.276	0.006	0.015	320	650	0.118	0.010	0.009	590			
		200 HB		0.276										0.015	590	490	
		250 HB		0.276										0.015	490	420	
Hardmet. Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.069	0.004	0.010	130	220	0.059	0.007	0.007	190			
		50 HRc		0.069										0.009	190	180	
		55 HRc		0.069										0.007	190	160	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	130	260	0.044	0.007	0.007	160			
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.007	90	190	0.030	0.006	0.006	130		

ADKT

AOMT

APKT

APMT

LDMT

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ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

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TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

LAMINA  
TECHNOLOGICAL

# SPKN 1504 EDTR LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.356	0.007	0.017	620	980	0.157	0.012	820						
		2	2	1045, 1060,	190 HB										0.356	0.017	980	720		
		3	3	28Mn6	250 HB										0.356	0.017	820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.356	0.006	0.013	490	780	0.157	0.010	650						
			4,6		230 HB										0.356	0.013	490	680		
			5,7		280 HB										0.356	0.012	420	620		
			8		350 HB										0.356	0.012	420	550		
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.254	0.005	0.012	290	490	0.118	0.009	420						
			10		280 HB										0.254	0.010	190	360		
			11		320 HB										0.254	0.010	190	290		
			11		350 HB										0.254	0.010	190	290		
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.356	0.007	0.017	490	720	0.157	0.012	650							
		15		200 HB										0.356	0.017	720	590			
		16		250 HB										0.356	0.017	620	520			
	Malleable & Nodular	8	GGG40, GGG70, 50005	17,19	150 HB	0.020	0.356	0.006	0.015	320	590	0.157	0.010	590						
				17,19	200 HB										0.356	0.015	490	490		
				18,20	250 HB										0.356	0.015	490	420		
	Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260N/Cr42	38	45 HRc	0.020	0.089	0.004	0.010	130	220	0.059	0.007	190					
38					50 HRc	0.076										0.007	190	0.039	0.006	160
38					55 HRc	0.076										0.007	190	0.039	0.006	160
Chilled Cast Iron White Cast Iron		41	G-X300CrMo15	40	400 HB	0.020	0.102	0.004	0.010	130	260	0.059	0.007	160						
				41	55 HRc	0.020	0.076	0.004	0.007	90	190	0.039	0.006	130						



**S**

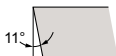
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**K**

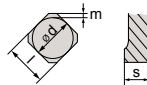
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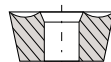
Shape



Clearance Angle



Tolerance  
 d ± 0.003  
 m ± 0.0005  
 s ± 0.001



Fixing  
 Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3263336	SPKR 42 EDTR (ANSI) SPKR 1203 EDTR (ISO)	LT 30	0.500	0.125	-	Right	●
3263341	SPKR 43 EDTR (ANSI) SPKR 1204 EDTR (ISO)	LT 30	0.500	0.187	-	Right	●

- Stocking
- Non-stocking

### Face Mill Insert with 75° Lead Angle

Square inserts, with 75° lead angle designed for high depths of cut and materials that generate long chips. Suitable for Roughing to Finishing-Face Milling operations.

#### Application Guide



Machine Recommendations Guide. Details on page 19.

**F** ⇒  
 ↑  
**Productivity**

**1, 2, 3, 4** No  
**7, 8, 11** No  
**10, 12** Yes  
**5, 6, 9** Yes

Coolant



- ADKT
- AOMT
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDMW
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN
- SPKR**
- SPMT
- SPG
- TPKN
- TPKR
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

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## SPKR 1203 EDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/rev]		V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.015	620	1080	0.118	0.010	820						
		2	2	1045, 1060,	190 HB									0.276	0.015	980	720			
		3	3	28Mn6	250 HB									0.276	0.015	820	650			
	Low alloyed	2	6	6	42CrMo4, St50,	180 HB	0.020	0.276	0.006	0.012	490	780	0.118	0.009	650					
			4,6	4,6	Ck60, 4140, 4340,	230 HB									0.276	0.012	490	680	0.009	590
			5,7	5,7	100Cr6	280 HB									0.276	0.010	420	620	0.008	490
			8	8		350 HB									0.276	0.010	420	550	0.008	450
	High alloyed	3	10	10	X40CrMoV5,	220 HB	0.020	0.197	0.005	0.010	290	490	0.089	0.007	420					
			10	10	H13, M42, D3,	280 HB									0.197	0.010	290	420	0.008	390
			11	11	S6-5-2, 12N19	320 HB									0.197	0.009	190	360	0.007	320
			11	11		350 HB		0.197		0.009	190	290		0.007	260					
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.010	620	820	0.118	0.008	720						
		14	14	X5CrNi18-9	240 HB									0.276	0.005	0.009	520	680	620	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.197	0.005	0.009	220	420	0.089	0.007	320						
		14	14	S31500	310 HB									0.197	0.009	390	290			
	Ferritic & Martensitic	6	12	12	410, X6Cr17,	200 HB	0.020	0.276	0.006	0.010	490	680	0.118	0.008	620					
			13	13	17-4 PH, 430	42 HRC									0.197	0.009	290	490	0.089	0.007
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.015	490	720	0.118	0.010	650						
		15	15	EN-GJL-250,	200 HB									0.276	0.015	490	720	0.118	0.010	590
		16	16	No30B	250 HB									0.276	0.015	620	520			
	Malleable & Nodular	8	17,19	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.013	320	590	0.118	0.009	490					
			17,19	17,19	50005	200 HB									0.276	0.013	490	420		
			18,20	18,20		250 HB									0.276	0.013	490	420		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.009	80	140	0.089	0.007	100					
			33	33	Inconel 700	250 HB									0.197	0.009	140	90		
			34	34	Stellite 21	350 HB									0.197	0.009	140	90		
	Ti based	10	36	36	TiAl6V4	-	0.020	0.197	0.005	0.009	130	210	0.089	0.008	180					
			37	37	T40	-									0.197	0.009	90	180	0.007	130
Hardened Mat.	Steel	11	38	38	X100CrMo13,	45 HRC	0.020	0.069	0.004	0.008	130	220	0.044	0.006	180					
			38	38	440C,	50 HRC									0.069	0.007	190	0.030	0.005	160
			38	38	G-X260NiCr42	55 HRC									0.059	0.007	190	0.030	0.005	160
	Chilled Cast Iron	11	40	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.009	130	260	0.044	0.006	160					
			41	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.007	90	190	0.030	0.005	130					
White Cast Iron																				
Al (>8%Si)	12	25		AIS12	130 HB	0.020	0.276	0.007	0.015	650	1310	0.118	0.011	910						



## SPKR 1204 EDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters												
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>										
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.007	0.015	620	1080	0.118	0.010	820									
		2	1045, 1060,	190 HB	0.015										820	980	720						
		3	28Mn6	250 HB														0.276	0.015	820	650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.276	0.006	0.012	490	780	0.118	0.009	650									
		4,6	230 HB	0.010	420										620	590							
		5,7	Ck60, 4140, 4340,														280 HB	0.010	420	550	0.008	490	
		8	100Cr6														350 HB						0.276
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.197	0.005	0.010	290	490	0.089	0.008	420									
		10	280 HB	0.009	190										360	0.007	320						
		11	H13, M42, D3,															320 HB	0.009	190	290	0.007	260
		11	S6-5-2, 12Ni19															350 HB					
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.006	0.010	620	820	0.118	0.008	720									
		14	X5CrNi18-9	240 HB	0.276										0.005	0.009	520	680					
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.197	0.005	0.009	220	420	0.089	0.007	320									
		14	S31500	310 HB	0.197										0.009	390	290						
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.276	0.006	0.010	490	680	0.118	0.008	620									
		13	17-4 PH, 430	42 HRc	0.197										0.009	290	490	0.089	0.007	420			
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.007	0.015	490	780	0.118	0.010	650									
		15	EN-GJL-250,	200 HB	0.015										620	590	0.118	0.009	490				
	16	No30B	250 HB	0.276		0.015	620	520															
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.013	320	650	0.118	0.009	490									
17,19		50005	200 HB	0.013	490										420								
18,20		250 HB	0.276													0.013	490						
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.197	0.005	0.009	80	140	0.089	0.007	100									
		33	Inconel 700	250 HB	0.009										140	90	180						
		34	Stellite 21	350 HB														0.197	0.009	140	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.197	0.005	0.009	130	210	0.089	0.008	180									
		37	T40	-	0.197										0.009	90	180						
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.069	0.004	0.008	130	220	0.059	0.006	190									
		38	440C,	50 HRc	0.007										190	0.030	0.005	160					
		38	G-X260NiCr42	55 HRc															0.069	0.007	190	160	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.009	130	260	0.044	0.006	160										
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.007	90	190	0.030	0.005	130										
HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.276	0.007	0.015	650	1310	0.118	0.011	910									

ADKT

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APMT

LDMT

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ODMW

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SNKX

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by our 100% satisfaction guarantee.



127





**S**

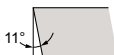
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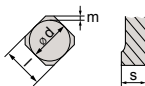
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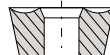
Shape



Clearance Angle



Tolerance  
 d ± 0.003  
 m ± 0.005  
 s ± 0.005



Fixing  
 Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3263347	SPMT12T308	LT 30	0.523	0.156	0.031	Right	•

**Face Mill Insert with 90° Lead Angle**

- Stocking
- Non-stocking

Multi purpose 90° Milling insert with 4 cutting edges. Suitable for Roughing to Finishing-Slotting, shoulder and Face Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.



**F** ⇒  
 ↑  
**Productivity**

**Coolant**

1, 2, 3, 4	No
7, 8, 11	No
10, 12	Yes
5, 6, 9	Yes

## SPMT 12T308 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.356	0.005	0.011	620	1080	0.118	0.007	820
		190 HB		720									
		250 HB		650									
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.356	0.004	0.009	490	780	0.118	0.006	850
		230 HB		590									
		280 HB		490									
		350 HB		450									
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.254	0.003	0.008	290	490	0.089	0.005	420
		280 HB		390									
		320 HB		320									
		350 HB		280									
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.356	0.004	0.009	620	820	0.118	0.006	720
		240 HB		620									
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.020	0.254	0.003	0.006	220	420	0.089	0.005	320
		310 HB		290									
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.356	0.004	0.009	490	680	0.118	0.006	620
		42 HRC		420									
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.356	0.005	0.011	490	780	0.118	0.007	650
		200 HB		590									
		250 HB		520									
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.356	0.004	0.010	320	590	0.118	0.006	590
		200 HB		490									
		250 HB		420									
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.020	0.254	0.003	0.006	80	140	0.089	0.005	100
		250 HB		90									
		350 HB		90									
	Ti based	10	TiAl6V4, T40	-	0.020	0.254	0.003	0.007	130	210	0.089	0.006	180
		-		130									
		-		180									
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.020	0.076	0.003	0.006	130	220	0.044	0.004	190
		50 HRC		180									
		55 HRC		160									
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.102	0.003	0.006	130	260	0.044	0.004	160
		41		G-X300CrMo15									55 HRC
W/C	Al (>8%Si)	12	AIS12	130 HB	0.020	0.356	0.005	0.011	650	1310	0.118	0.008	910

ADKT  
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SDKX  
SDMT  
SEKN  
SEKR  
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LAMINA  
TOOLS



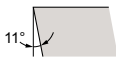
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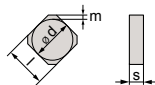
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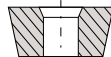
Shape



Clearance Angle



Tolerance  
 $d \pm 0.005$   
 $m \pm 0.008$   
 $s \pm 0.005$



Fixing  
 Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3263333	<b>SPG 422 (ANSI)</b> <b>SPUN 120308 (ISO)</b>	<b>LT 30</b>	0.500	0.125	0.031	Neutral	●

- Stocking
- Non-stocking

Multi purpose Square insert with corner radius and a flat rake surface.  
 Use for Face Milling. Roughing to Finishing

**Application Guide**



Machine Recommendations  
 Guide Details on page 19.



**F** ⇒  
 ↑  
**Productivity**

**1, 2, 3, 4** No  
**7, 8, 11** No  
**10, 12** Yes  
**5, 6, 9** Yes

Coolant

## SPG 422 LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/Tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters					
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 20Mn6	125 HB	0.020	0.276	0.007	0.014	620	1080	0.118	0.010	820			
		190 HB		0.276									0.014	980	720	
		250 HB		0.276									0.014	820	650	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.276	0.006	0.011	490	780	0.118	0.009	0.008	650		
		230 HB		0.276										0.011	490	590
		280 HB		0.276										0.010	420	490
		350 HB		0.276										0.010	420	450
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.197	0.005	0.010	290	490	0.089	0.008	0.007	420		
		280 HB		0.197										0.010	290	390
		320 HB		0.197										0.008	190	320
		350 HB		0.197										0.008	190	260
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No308	150 HB	0.020	0.276	0.007	0.014	490	780	0.118	0.010	650			
		200 HB		0.276									0.014	720	590	
		250 HB		0.276									0.014	620	520	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.276	0.006	0.013	320	590	0.118	0.009	0.006	590		
		200 HB		0.276										0.013	490	490
		250 HB		0.276										0.013	490	420
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.020	0.069	0.004	0.007	130	220	0.044	0.006	190			
		50 HRC		0.059									0.006	190	160	
		55 HRC		0.059									0.006	190	160	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.008	130	260	0.044	0.006	160			
	White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.006	90	190	0.030	0.005	130			

ADKT

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SDKX

SDMT

SEKN

SEKR

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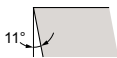




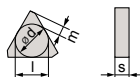
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Shape

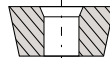


Clearance Angle



Tolerance

$m \pm 0.013$   $s \pm 0.0005$   
 For  $l = 16$ ,  $d \pm 0.002$   
 For  $l = 22$ ,  $d \pm 0.003$



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3567741	TPKN 32 PDTR (ANSI) TPKN 1603 PDTR (ISO)	LT 30	0.650	0.125	-	Right	●
3567745	TPKN 43 PDTR (ANSI) TPKN 2204 PDTR (ISO)	LT 30	0.866	0.187	-	Right	●

- Stocking
- Non-stocking

Multipurpose 90° Milling insert with 3 cutting edges. Use for Slotting, Shoulder Milling and Face Milling. Roughing to Finishing.

**Application Guide**



Machine Recommendations Guide. Details on page 19.



**F** ⇒  
↑  
**Productivity**

**1, 2, 3, 4** No  
**7, 8, 11** No  
**10, 12** Yes  
**5, 6, 9** Yes

## TPKN 1603 PDTR LT 30

Material Group	Cr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.474	0.006	0.011	620	1080	0.118	0.008	820						
		2		190 HB										0.474	0.011	980	720		
		3		250 HB										0.474	0.011	820	650		
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.474	0.005	0.008	490	780	0.118	0.007	650						
		4,6		230 HB										0.474	0.008	490	680		
		5,7		280 HB										0.474	0.007	420	620		
		8		350 HB										0.474	0.007	420	550		
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.339	0.004	0.007	290	490	0.089	0.006	420						
		10		280 HB										0.339	0.007	290	420		
		11		320 HB										0.339	0.006	190	360		
		11		350 HB										0.339	0.006	190	290		
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.474	0.006	0.011	490	780	0.118	0.008	650						
		15		200 HB										0.474	0.011	720	590		
		16		250 HB										0.474	0.011	620	520		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.474	0.005	0.009	320	590	0.118	0.007	490						
		17,19		200 HB										0.474	0.009	490	420		
		18,20		250 HB										0.474	0.009	490	420		
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.119	0.003	0.006	130	220	0.059	0.005	190						
		38		50 HRc										0.119	0.005	190	0.044	0.004	180
		38		55 HRc										0.102	0.005	190	0.030	0.004	160
	Chilled Cast Iron White Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.135	0.003	0.006	130	260	0.044	0.005	160						
		41	G-X300CrMo15	55 HRc	0.020	0.102	0.003	0.005	90	190	0.030	0.004	130						

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



# TPKN 2204 PDTR LT 30

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.708	0.006	0.011	620	1080	0.157	0.008	820
		2		190 HB	0.000	0.708	0.000	0.011	0	980			720
		3		250 HB	0.000	0.708	0.000	0.011	0	820			650
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.708	0.005	0.008	490	780	0.157	0.007	650
		4,6		230 HB	0.000	0.708	0.000	0.008	490	680			590
		5,7		280 HB	0.000	0.708	0.000	0.007	420	620			490
		8		350 HB	0.000	0.708	0.000	0.007	420	550			450
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.506	0.004	0.007	290	490	0.118	0.006	420
		10		280 HB	0.000	0.506	0.000	0.007	290	420			390
		11		320 HB	0.000	0.506	0.000	0.006	190	360			320
		11		350 HB	0.000	0.506	0.000	0.006	190	290			260
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.708	0.006	0.011	490	780	0.157	0.008	650
		15		200 HB	0.000	0.708	0.000	0.011	0	720			590
		16		250 HB	0.000	0.708	0.000	0.011	0	620			520
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.708	0.005	0.009	320	650	0.157	0.007	590
		17,19		200 HB	0.000	0.708	0.000	0.009	0	590			490
		18,20		250 HB	0.000	0.708	0.000	0.009	0	490			420
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260N/Cr42	45 HRc	0.020	0.253	0.004	0.006	130	260	0.079	0.005	190
		38		50 HRc	0.000	0.177	0.000	0.005	0	220	0.059	0.004	180
		38		55 HRc	0.000	0.152	0.000	0.005	0	190	0.039	0.004	160
	Chilled Cast Iron White Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.202	0.004	0.006	130	260	0.059	0.005	160
		41	G-X300CrMo15	55 HRc	0.020	0.152	0.004	0.005	90	190	0.039	0.004	130

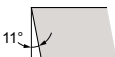




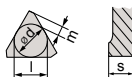
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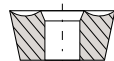
Shape



Clearance Angle



Tolerance  
 $m \pm 0.0005$   $s \pm 0.001$   
 For  $l = 16$ ,  $d \pm 0.002$   
 For  $l = 22$ ,  $d \pm 0.003$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3567751	TPKR 323 PDTR (ANSI) TPKR 1603 PDTR (ISO)	LT 30	0.650	0.125	-	Right	●
3567755	TPKR 43 PDTR (ANSI) TPKR 2204 PDTR (ISO)	LT 30	0.866	0.187	-	Right	●

- Stocking
- Non-stocking

Multi purpose 90° Milling insert with 3 cutting edges, designed for materials that generate long chips. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.

**F** ⇒  
↑  
Productivity

**Coolant**

1, 2, 3, 4	No
7, 8, 11	No
10, 12	Yes
5, 6, 9	Yes



All Nexus products are backed by our 100% satisfaction guarantee.



- ADKT
- AOMT
- APKT
- APMT
- LDMT
- ODMT
- ODMW
- OFER
- OFMT
- PNEG
- RDMT
- RDMW
- RDMX
- SDKT
- SDKX
- SDMT
- SEKN
- SEKR
- SEKT
- SNKX
- SPKN
- SPKR
- SPMT
- SPG
- TPKN
- TPKR**
- TPUN
- WPGT
- APET
- APEX
- APGT
- SEET
- SEGT

## TPKR 1603 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.474	0.006	0.009	620	0.118	0.007	820							
		2	2	1045, 1060,	190 HB									0.474	0.009	990	720			
		3	3	28Mn6	250 HB									0.474	0.009	820	650			
	Low alloyed	2	6	6	42CrMo4, St50,	180 HB	0.020	0.474	0.005	0.007	490	0.118	0.006	650						
			4,6	4,6	Ck60, 4140, 4340,	230 HB									0.474	0.006	490	680	0.006	590
			5,7	5,7	100Cr6	280 HB									0.474	0.006	420	620	0.005	490
			8	8		350 HB									0.474	0.006	420	550	0.005	450
	High alloyed	3	10	10	X40CrMoV5,	220 HB	0.020	0.339	0.004	0.006	290	0.089	0.005	420						
			10	10	H13, M42, D3,	280 HB									0.339	0.005	290	420	390	
			11	11	S6-5-2, 12Ni19	320 HB									0.339	0.005	190	360	320	
			11	11		350 HB									0.339	0.005	190	290	260	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.474	0.005	0.006	620	0.118	0.005	720							
		14	14	X5CrNi18-9	240 HB									0.474	0.004	0.006	520	680	620	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.339	0.004	0.005	220	0.089	0.005	320							
		14	14	S31500	310 HB									0.339	0.005	390	290			
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.474	0.005	0.006	490	0.118	0.005	620							
		13	13	17-4 PH, 430	42 HRC									0.339	0.005	290	490	0.089	420	
Cast Iron	Grey	7	15	GG20, G640,	150 HB	0.020	0.474	0.006	0.009	490	0.118	0.007	650							
		15	15	EN-GJL-250,	200 HB									0.474	0.009	720	590			
		16	16	No30B	250 HB									0.474	0.009	620	520			
	Malleable & Nodular	8	17,19	GG40, GGG70,	150 HB	0.020	0.474	0.005	0.008	320	0.118	0.006	590							
		17,19	17,19	50006	200 HB									0.474	0.008	590	490			
		18,20	18,20		250 HB									0.474	0.008	490	420			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.339	0.004	0.005	80	0.089	0.005	100							
		33	33	Inconel 700	250 HB									0.339	0.005	140	90			
		34	34	Stellite 21	350 HB									0.339	0.005	140	90			
	Ti based	10	36	TiAl6V4	-	0.020	0.339	0.004	0.006	130	0.089	0.005	180							
37	37	T40	-	0.339	0.005									90	180					
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.119	0.004	0.004	130	0.059	0.004	190							
		38	38	440C,	50 HRC									0.119	0.004	220	0.044	0.004	180	
		38	38	G-X260NiCr42	55 HRC									0.102	0.004	190	0.030	0.003	160	
	Chilled Cast Iron	11	40	Ni-Hard 2	400 HB	0.020	0.135	0.004	0.005	130	0.260	0.044	0.004	160						
		41	41	G-X300CrMo15	55 HRC										0.102	0.004	90	0.030	0.003	130
	White Cast Iron	12	25	AlSi12	130 HB	0.020	0.474	0.006	0.009	650	1310	0.118	0.007	910						

## TPKR 2204 PDTR LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.708	0.009	1080	0.157	0.007	820					
		2	1045, 1060,	190 HB	0.006							0.009	620	980	720		
		3	28Mn6	250 HB	0.708							0.009	820	650			
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.708	0.005	490	0.157	0.005	650					
		4,6	Ck60, 4140, 4340,	230 HB	0.007							490	680	590			
		5,7	100Cr6	280 HB	0.708							0.006	420	620	490		
		8		350 HB	0.708							0.006	420	550	450		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.506	0.004	290	0.118	0.005	490					
		10	H13, M42, D3,	280 HB	0.006							290	420	390			
		11	S6-9-2, 12Ni19	320 HB	0.506							0.005	190	360	320		
		11		350 HB	0.506							0.005	190	290	280		
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.708	0.005	620	0.157	0.005	420					
		14	X5CrNi18-9	240 HB	0.004							0.006	520	680	620		
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.506	0.004	220	0.118	0.005	420					
		14	S31500	310 HB	0.506							0.005	390	290			
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.708	0.005	490	0.157	0.005	620					
		13	17-4 PH, 430	42 HRc	0.506							0.005	290	490	420		
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.708	0.006	490	0.157	0.007	650					
		15	EN-GJL-250,	200 HB	0.708							0.009	720	590			
		16	No30B	250 HB	0.708							0.009	620	520			
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.708	0.005	320	0.157	0.006	590					
		17,19	50005	200 HB	0.008							0.008	590	490			
		18,20		250 HB	0.708							0.008	490	420			
High Temp Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.506	0.004	80	0.118	0.005	140					
		33	Inconel 700	250 HB	0.506							0.005	140	100			
		34	Stellite 21	350 HB	0.506							0.005	140	90			
	Ti based	10	36	TiAl6V4	-	0.020	0.506	0.004	130	0.118	0.005	210					
		37	T40	-	0.506							0.005	90	180			
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.253	0.004	130	0.079	0.004	190				
38			440C,	50 HRc	0.177	0.004							0.004	220	0.059	0.004	180
38			G-X260NiCr42	55 HRc	0.152	0.004							190	0.039	0.003	160	
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.202	0.004	0.005	130	0.260	0.059	0.004	160				
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.152	0.004	0.004	90	0.190	0.039	0.003	130			
Al (>8%Si)		12	25	AISI12	130 HB	0.020	0.708	0.006	0.009	650	1310	0.157	0.007	910			

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

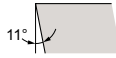




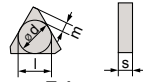
**T P U N**



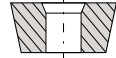
Shape



Clearance Angle



Tolerance  
 d ± 0.003  
 m ± 0.005  
 s ± 0.005



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3567761	<b>TPUN 322 (ANSI)</b>	<b>LT 30</b>	0.650	0.125	0.031	Right	●
	<b>TPUN 160308 (ISO)</b>						

- Stocking
- Non-stocking

Multi purpose 90° Milling insert with 3 cutting edges and corner radius.  
 Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

**Application Guide**



Machine Recommendations Guide. Details on page 19.



**F** ⇒  
 ↑  
**Productivity**

**1, 2, 3, 4** No  
**7, 8, 11** No  
**10, 12** Yes  
**5, 6, 9** Yes

## TPUN 160308 LT 30

Material Group	Cr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
Sheet	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.474	0.006	0.011	620	1080	0.118	0.008	820				
		2	2	1045, 1060,	190 HB									0.011	980	720		
		3	3	28Mn6	250 HB									0.011	820	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.474	0.005	0.008	490	780	0.118	0.007	650				
			4,6		230 HB									0.008	680	590		
			5,7		280 HB									0.007	420	620	0.006	490
			8		350 HB									0.007	420	550	0.006	450
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.339	0.004	0.007	290	490	0.089	0.006	420				
			10		280 HB									0.007	290	420	0.006	390
			11		320 HB									0.006	190	360	0.005	320
			11		350 HB									0.006	190	290	0.005	260
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.474	0.006	0.011	490	780	0.118	0.008	650					
		15		200 HB									0.011	720	590			
		16		250 HB									0.011	620	520			
	Malleable & Nodular	8	GGG40, GGG70, 50D05	150 HB	0.020	0.474	0.005	0.009	320	590	0.118	0.007	590					
				17,19									200 HB	0.009	490	420		
				18,20									250 HB	0.009	490	420		
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.119	0.003	0.006	130	220	0.059	0.005	190					
				50 HRc									0.005	190	0.044	0.004	180	
				55 HRc									0.005	190	0.030	0.004	160	
	Chilled Cast Iron White Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.135	0.003	0.006	130	260	0.044	0.005	160					
				41									G-X300CrMo15	55 HRc	0.020	0.102	0.003	0.005

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT

LAMINA  
TECHNOLOGICAL



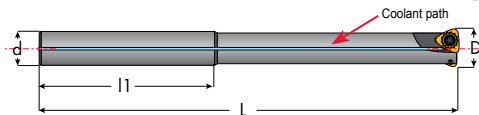
# W P G T

Part No.	Description	Grade	l	s	r	Direction	Stock
3451112	WPGT 050315 ZSR HF	351	0.197	0.138	0.059	Neutral	●

HP = High Polish

- Stocking
- Non-stocking

**High Feed Indexable End Mill for WPGT. See page 46.**

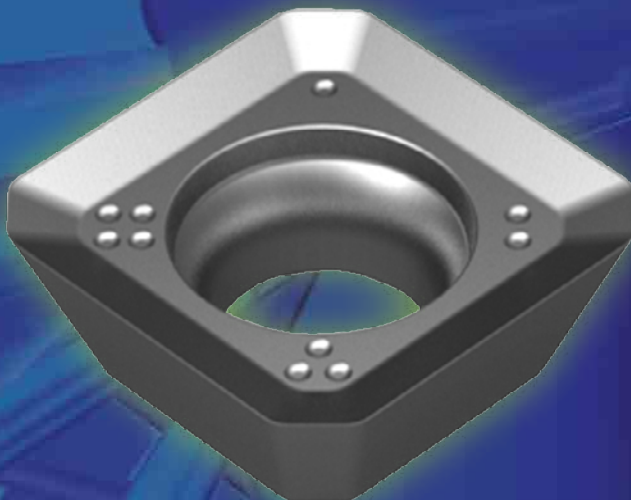


### Application Guide

**See the back of the box for speeds and feeds.**

# Alu-Milling Inserts

## LT 05 Alu-Milling



Attacking Heat & Vibration is in Our DNA.



ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



**A P E T**



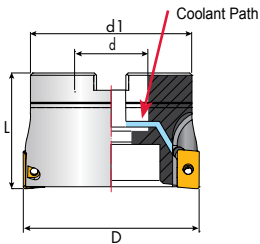
**A P E X**

Part No.	Description	Grade	l	s	r	Direction	Stock
3151232	<b>APET 160402 LH</b>	<b>101</b>	0.704	0.227	0.008	Neutral	●
3151236	<b>APEX 100304 PDFR F01 HP</b>	<b>5005</b>	0.393	0.125	0.016	Right	●
3151239	<b>APEX 1604 PDFR F01 HP</b>	<b>GH05</b>	0.704	0.227	Sharp	Right	●

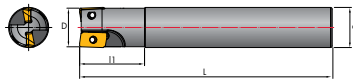
● Stocking

○ Non-stocking

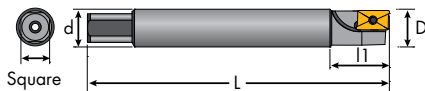
Face Mill for AP\_\_\_. See page 30.



End Mill for AP\_\_\_. See page 44.



PowerLOC End Mill for AP\_\_ 1003. See page 45.



**Application Guide**

See the back of the box for speed and feed information.







**A**

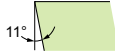
**P**

**G**

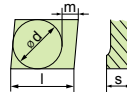
**T**



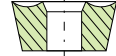
Shape



Clearance Angle



Tolerance  
 $d \pm 0.001$   
 $m \pm 0.001$   
 $s \pm 0.005$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
1506501	APGT 1003 PDER ALU	LT 05	0.409	0.136	0.022	Right	●
1506505	APGT 1604 PDER ALU	LT 05	0.606	0.187	0.037	Right	●

- Stocking
- Non-stocking

**Face Milling Insert with 90° Lead Angle**

**For cutter bodies, see page 30, page 44, and page 50.**

Highly positive inserts with a unique coating and 90° lead angle for Aluminium. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

**Application Guide**



ADKT  
 AOMT  
 APKT  
 APMT  
 LDMT  
 ODMT  
 ODMW  
 OFER  
 OFMT  
 PNEG  
 RDMT  
 RDMW  
 RDMX  
 SDKT  
 SDKX  
 SDMT  
 SEKN  
 SEKR  
 SEKT  
 SNKX  
 SPKN  
 SPKR  
 SPMT  
 SPG  
 TPKN  
 TPKR  
 TPUN  
 WPGT  
 APET  
 APEX  
 APTG  
 SEET  
 SEGT



# APGT 1003 PDER ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/Tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>	
NF	Al (<8%Si)	13	21, 22	Si < 4 %	60 HB	0.012	0.354	0.005	0.008	1320	3960	0.118	0.006	1650
			23, 24	4% < Si < 8 %	100 HB		0.354	0.004	0.007	825	1980			1320
	Cooper Alloys	14	26,27,28	CuZn30	100 HB	0.012	0.354	0.004	0.007	330	2640	0.118	0.006	990
			29	Fiber Plastics	-									0.354
	Non-Metallic	15	30	Hard Rubber	-	0.012	0.354	0.005	0.008	264	990	0.118	0.005	495
-				Graphite	-									0.354
H.T.A.	Ti based Alloys	10	36	Ti 1	-	0.012	0.197	0.003	0.008	115.5	198	0.079	0.005	148.5
			37	TiAl 6 V4	-		0.197		0.006	92.4	148.5			115.5

# APGT 1604 PDER ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/Tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>	
NF	Al (<8%Si)	13	21, 22	Si < 4 %	60 HB	0.020	0.591	0.006	0.013	1320	3960	0.157	0.006	1650
			23, 24	4% < Si < 8 %	100 HB		0.591	0.005	0.011	825	1980			1320
	Cooper Alloys	14	26,27,28	CuZn30	100 HB	0.020	0.591	0.005	0.011	330	2640	0.157	0.006	990
			29	Fiber Plastics	-									0.591
	Non-Metallic	15	30	Hard Rubber	-	0.020	0.591	0.006	0.013	264	990	0.157	0.005	495
-				Graphite	-									0.591
H.T.A.	Ti based Alloys	10	36	Ti 1	-	0.020	0.591	0.004	0.013	115.5	198	0.157	0.005	148.5
			37	TiAl 6 V4	-		0.591		0.009	92.4	148.5			115.5



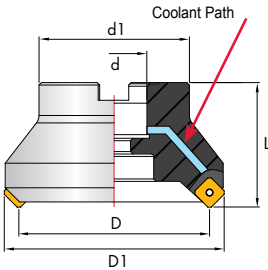
# SEET

ADKT  
 AOMT  
 APKT  
 APMT  
 LDMT  
 ODMT  
 ODMW  
 OFER  
 OFMT  
 PNEG  
 RDMT  
 RDMW  
 RDMX  
 SDKT  
 SDKX  
 SDMT  
 SEKN  
 SEKR  
 SEKT  
 SNKX  
 SPKN  
 SPKR  
 SPMT  
 SPG  
 TPKN  
 TPKR  
 TPUN  
 WPGT  
 APET  
 APEX  
 APGT  
 SEET  
 SEGT

Part No.	Description	Grade	l	s	r	Direction	Stock
3251239	SEET 13T3 HP	WSK10	0.528	0.158	Chamfer	Neutral	●

**Face Mill for SEET. See page 31.**

- Stocking
- Non-stocking
- HP = High Polish

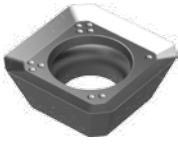


**Fits in cutter bodies that take the 12T3 insert.**

### Application Guide

**See the back of the box for speeds and feeds.**

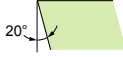




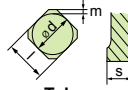
# SEGT



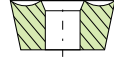
Shape



Clearance Angle



Tolerance  
 $d \pm 0.001$   
 $m \pm 0.001$   
 $s \pm 0.005$



Fixing  
 Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
2506509	SEGT 1204 AFEN ALU	LT 05	0.500	0.187	-	Neutral	●

## Face Milling Insert with 45° Lead Angle

- Stocking
- Non-stocking

Highly positive inserts with a unique coating and 90° lead angle for Aluminium. Suitable for Roughing to Finishing-Slotting, Shoulder and Face Milling operations.

### Application Guide



# SEGT 1204 AFEN ALU LT 05

Material Group	Gr. No.	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/tooth]		V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>					
NF	13	21, 22 23, 24	Si < 4 %	60 HB	0.012	0.354	0.005	0.014	1320	3960	0.118	0.010	1650					
			4% < Si < 8 %	100 HB		0.354	0.004	0.014	825	1980			1320					
	Cooper Alloys	14	26, 27, 28	CuZn30	100 HB	0.012	0.354	0.004	0.014	330	2640	0.118	0.010	990				
				Fiber Plastics	-									0.354	0.005	0.014	264	1650
Non-Metallic	15	29 30	Hard Rubber	-	0.012	0.354	0.005	0.014	264	990	0.118	0.008	495					
			Graphite	-									0.354	0.005	0.014	330	660	495
			Ti based Alloys	10									36 37	Ti 1 TiAl 6 V4	- -	0.012 0.197	0.197 0.003	0.014 0.011

ADKT

AOMT

APKT

APMT

LDMT

ODMT

ODMW

OFER

OFMT

PNEG

RDMT

RDMW

RDMX

SDKT

SDKX

SDMT

SEKN

SEKR

SEKT

SNKX

SPKN

SPKR

SPMT

SPG

TPKN

TPKR

TPUN

WPGT

APET

APEX

APGT

SEET

SEGT



All Nexus products are backed  
by our 100% satisfaction guarantee.



147

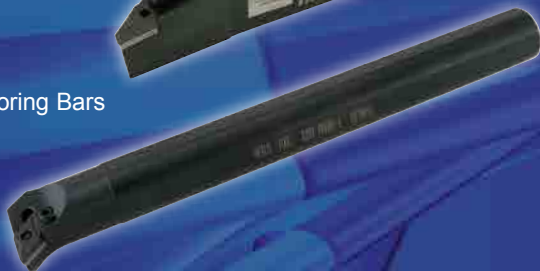
# Turning & Boring

## Nexus Turning & Boring Tools

Negative Toolholders



Negative Boring Bars



Positive Toolholders

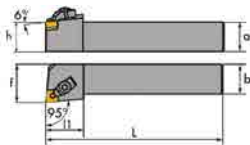
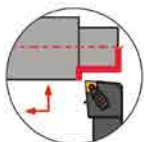


Positive Boring Bars



Attacking Heat & Vibration is in Our DNA.

# Negative Turning Toolholders



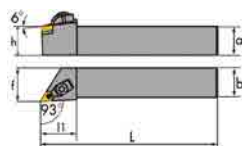
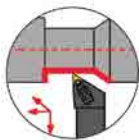
right hand shown - see table for left hand

## Product Information

- Left and Right Hand Holders
- Takes CN\_43\_ Inserts (4 Corners)
- 95° Lead Angle
- 1" Square shanks
- For turning and facing operations.
- Uses Two-Sided Inserts

## MCLNR/L95° turning facing

Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8669911	MCLNR-16-4D	1.00	1.00	6.00	1.25	1.25	CN_43_	9344888	9333111	9344111	9344666	9322121
8669912	MCLNL-16-4D	1.00	1.00	6.00	1.25	1.25	CN_43_	9344888	9333111	9344111	9344666	9322121



right hand shown - see table for left hand

## Product Information

- Left and Right Hand Holders
- 16-3D Takes DN\_33\_ Inserts
- 16-4D Takes DN\_43\_ Inserts (4 Corners)
- 93° Lead Angle
- 1" Square Shanks
- For profiling and turning operations.
- Uses Two-Sided Inserts

## MDJNR/L93° profile turning

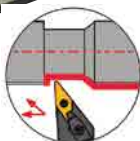
Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8679923	MDJNR16-3D	1.00	1.00	6.00	1.25	1.25	DN_33_	9344888	9333225	9344111	9344555	9322121
8679924	MDJNL16-3D	1.00	1.00	6.00	1.25	1.25	DN_33_	9344888	9333225	9344111	9344555	9322121
8679921	MDJNR-16-4D	1.00	1.00	6.00	1.50	1.25	DN_43_	9344888	9344888	93344222	9344777	9322121
8679922	MDJNL-16-4D	1.00	1.00	6.00	1.50	1.25	DN_43_	9344888	9344888	93344222	9344777	9322121



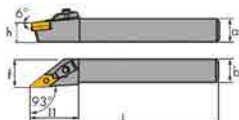
**HIGH-PERFORMANCE**  
3x the Thickness of Conventional PVD!



# Negative Turning Toolholders



profile turning



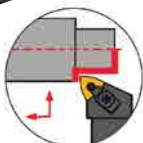
right hand shown - see table for left hand

## Product Information

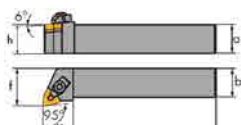
- Left and Right Hand Holders
- Takes VN\_33\_ Inserts (4 Corners)
- 93° Lead Angle
- 1" Square Shanks
- For profiling and turning operations.
- Uses Two-Sided Inserts

### MVJNR/L 93°

Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8689931	MVJNR-16-3D	1.00	1.00	6.00	1.77	1.25	VN_33_	9344888	9333666	9344333	9344555	9322121
8689932	MVJNL-16-3D	1.00	1.00	6.00	1.77	1.25	VN_33_	9344888	9333666	9344333	9344555	9322121



turning & facing



right hand shown - see table for left hand

## Product Information

- Left and Right Hand Holders
- Takes WN\_43\_ Inserts (6 Corners)
- 95° Lead Angle
- 1" Square Shanks
- For turning and facing operations
- Uses Two-Sided Inserts

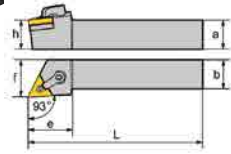
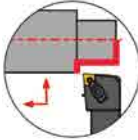
### MWLNR/L 95°

Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8649941	MWLNR-16-4D	1.00	1.00	6.00	1.38	1.25	WN_43_	9344888	9333888	9344111	9344666	9322121
8649942	MWLNL-16-4D	1.00	1.00	6.00	1.38	1.25	WN_43_	9344888	9333888	9344111	9344666	9322121





# Negative Turning Toolholders



right hand shown - see table for left hand

## Product Information

- Left and Right Hand Holders
- 163D Takes TN\_\_33\_Inserts
- 16-4D Takes TN\_\_43\_Inserts
- 93° Lead Angle
- 1" Square Shanks
- For Turning and Facing Operations.
- Uses Two-Sided Inserts

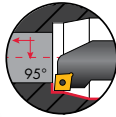
## MTJNR/L95°

turning facing

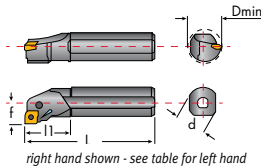
Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8699911	MTJNR16-3D	1.00	1.00	6.00	1.25	1.25	TN__33_	9344888	9333889	9344111	9344555	9322121
8699915	MTJNL16-3D	1.00	1.00	6.00	1.25	1.25	TN__33_	9344888	9333889	9344111	9344555	9322121
8699921	MTJNR16-4D	1.00	1.00	6.00	1.42	1.25	TN__43_	9344888	9333889	9344222	9344666	9322121
8699925	MTJNL16-4D	1.00	1.00	6.00	1.42	1.25	TN__43_	9344888	9333889	9344222	9344666	9322121



# Negative Boring Bars – Coolant-Thru



boring & facing



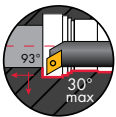
right hand shown - see table for left hand

## Product Information

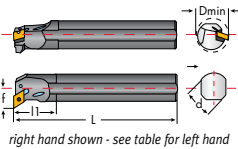
- Comes in 1", 1-1/4", 1-1/2" Diameter Shanks
- Left and Right Hand Bars
- Takes CN\_43\_ Inserts (4 Corners)
- 95° Lead Angle
- 'P' Style Clamping and Coolant Thru for Better Chip Evacuation
- Used for Boring and Facing
- Uses Two-Sided Inserts

### PCLNR/L 95°

Part No.	Description	d	Dmin	L	l1	f	Insert	Shim	Shim Pin	Lever	Lock Screw	Wrench
8168811	A16T-PCLNR-4	1.00	1.280	12	1.570	0.640	CN_43_	-	-	9335333	9345222	9322116
8168821	A16T-PCLNL-4	1.00	1.400	12	1.570	0.640	CN_43_	-	-	9335333	9345222	9322116
8168812	A20T-PCLNR-4	1.25	1.460	12	1.970	0.77	CN_43_	9333252	9333999	9335222	9345333	9322121
8168822	A20T-PCLNL-4	1.25	1.530	12	1.570	0.77	CN_43_	9333252	9333999	9335222	9345333	9322121
8168813	A24U-PCLNR-4	1.50	1.760	14	2.360	0.890	CN_43_	9333252	9333999	9335222	9345333	9322121
8168823	A24U-PCLNL-4	1.50	1.760	14	2.360	0.890	CN_43_	9333252	9333999	9335222	9345333	9322121



profile boring



right hand shown - see table for left hand

## Product Information

- Comes in 1", 1-1/4", 1-1/2" Diameter Shanks
- Left and Right Hand Bars
- A16T-PDUNR/L -3 Takes DN\_33\_ Inserts (4 Corners)
- A20T-PDUNR/L-4 and A24U-PDUNR/L Take DN\_43\_ Inserts (4 Corners)
- 93° Lead Angle
- 'P' Style Clamping and Coolant Thru for Better Chip Evacuation
- Used for Profile Boring (30° Max)
- Uses Two-Sided Inserts

### PDUNR/L 93°

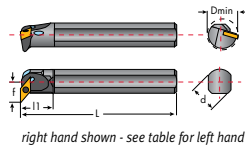
Part No.	Description	d	Dmin	L	l1	f	Insert	Shim	Shim Pin	Lever	Lock Screw	Wrench
8178831	A16T-PDUNR-3	1.00	1.300	12	1.380	0.750	DN_33_	-	-	9335111	9345111	9322111
8178841	A16T-PDUNL-3	1.00	1.300	12	1.380	0.750	DN_33_	-	-	9335111	9345111	9322111
8178832	A20T-PDUNR-4	1.25	1.700	12	1.970	1.000	DN_43_	9333353	9333999	9335222	9345333	9322121
8178842	A20T-PDUNL-4	1.25	1.700	12	1.970	1.000	DN_43_	9333353	9333999	9335222	9345333	9322121
8178833	A24U-PDUNR-4	1.50	2.000	14	1.970	1.13	DN_43_	9333353	9333999	9335222	9345333	9322121
8178843	A24U-PDUNL-4	1.50	2.000	14	1.970	1.13	DN_43_	9333353	9333999	9335222	9345333	9322121



# Negative Boring Bars – Coolant-Thru



profile boring



## Product Information

- Comes in 1" and 1-1/4" Diameter Shanks
- Left and Right Hand Bars
- Takes VN\_33\_ Inserts (4 Corners)
- 93° Lead Angle
- 'P' Style Clamping and Coolant Thru for Better Chip Evacuation
- Used for Profile Boring (50° Max)
- Uses Two-Sided Inserts

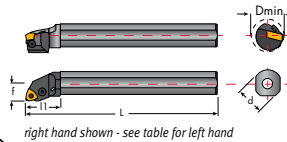
## PVUNR/L 93°

Part No.	Description	d	Dmin	L	l1	f	Insert	Lever	Lock Screw	Wrench
8188851	A16T-PVUNR-3	1.00	1.500	12	1.380	0.800	VN_33_	9335111	9345111	9322111
8188861	A16T-PVUNL-3	1.00	1.500	12	1.380	0.800	VN_33_	9335111	9345111	9322111
8188852	A20T-PVUNR-3	1.25	2.250	12	1.570	1.13	VN_33_	9335111	9345111	9322111
8188862	A20T-PVUNL-3	1.25	2.250	12	1.570	1.13	VN_33_	9335111	9345111	9322111



boring &amp; facing

Simplify



## Product Information

- Comes in 1", 1-1/4", 1-1/2" Diameter Shanks
- Left and Right Hand Bars
- Takes WN\_43\_ Inserts (6 Corners)
- 95° Lead Angle
- 'P' Style Clamping and Coolant Thru for Better Chip Evacuation
- Used for Boring and Facing
- Uses Two-Sided Inserts

## PWNL/L 95°

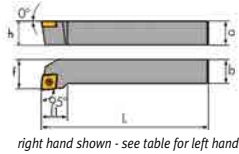
Part No.	Description	d	Dmin	L	l1	f	Insert	Shim	Shim Pin	Lever	Lock Screw	Wrench
8148871	A16T-PWNL-4	1.00	1.300	12	1.770	0.750	WN_43_	-	-	9335333	9345222	9322116
8188881	A16T-PWNL-4	1.00	1.300	12	1.770	0.750	WN_43_	-	-	9335333	9345222	9322116
8148872	A20T-PWNL-4	1.25	1.700	12	1.970	1.000	WN_43_	9333757	9333999	9335222	9345333	9322121
8188882	A20T-PWNL-4	1.25	1.700	12	1.970	1.000	WN_43_	9333757	9333999	9335222	9345333	9322121
8188873	A24U-PWNL-4	1.50	2.000	14	2.360	1.000	WN_43_	9333757	9333999	9335222	9345333	9322121
8188883	A24U-PWNL-4	1.50	2.000	14	2.360	1.000	WN_43_	9333757	9333999	9335222	9345333	9322121



# Nexus Positive Turning Toolholders



turning &amp; facing



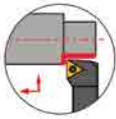
right hand shown - see table for left hand

## SCLCR/L 95°

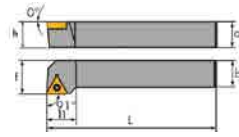
Part No.	Description	a=h	b	L	II	f	Insert	Screw	Shim	Shim Screw	Wrench
8665511	SCLCR-08-3J	0.500	0.500	3.500	0.630	0.630	CC__32.5_	9317446	-	-	9355555
8665522	SCLCL-08-3J	0.500	0.500	3.500	0.630	0.630	CC__32.5_	9317446	-	-	9355555
8665533	SCLCR-12-4C	0.750	0.750	5.000	1.000	1.000	CC__43_	9319446	9333222	9319648	9355555
8665544	SCLCL-12-4C	0.750	0.750	5.000	1.000	1.000	CC__43_	9319446	9333222	9319648	9355555

### Product Information

- Comes in 1/2" and 3/4" Shanks
- Left and Right Hand Holders
- SCLCR/L-08-3J Takes CC\_\_32.5\_ Inserts (2 Corners)
- SCLCR/L-12-4C Takes CC\_\_43\_ Inserts (2 Corners)
- 95° Lead Angle
- Screw Clamping
- Used for turning and facing operations
- Uses Only One Side of Insert



turning &amp; facing



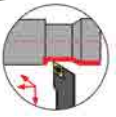
right hand shown - see table for left hand

## STGCR/L 91°

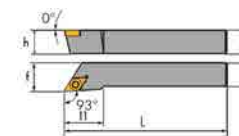
Part No.	Description	a=h	b	L	II	f	Insert	Screw	Shim	Shim Screw	Wrench
8655512	STGCR-08-2J	0.500	0.500	3.500	0.550	0.630	TC__21.5_	9318547	-	-	9355222
8655523	STGCL-08-2J	0.500	0.500	3.500	0.550	0.630	TC__21.5_	9318547	-	-	9355222
8655534	STGCR-12-3C	0.750	0.750	5.000	0.830	1.000	TC__32.5_	9318446	9333555	9319547	9355555
8655545	STGCL-12-3C	0.750	0.750	5.000	0.830	1.000	TC__32.5_	9318446	9333555	9319547	9322126

### Product Information

- Comes in 1/2" and 3/4" Shanks
- Left and Right Hand Holders
- STGCR/L-08-2J Takes TC\_\_21.5\_ Inserts (3 Corners)
- STGCR/L-12-3C Takes TC\_\_32.5\_ Inserts (3 Corners)
- 91° Lead Angle
- Screw Clamping
- Used for turning and facing operations
- Uses Only One Side of Insert



profile turning



right hand shown - see table for left hand

## SDJCR/L 93°

Part No.	Description	a=h	b	L	II	f	Insert	Screw	Shim	Shim Screw	Wrench
8675555	SDJCR-08-2J	0.500	0.500	3.500	0.600	0.630	DC__21.5_	9318547	*	*	9355222
8675566	SDJCL-08-2J	0.500	0.500	3.500	0.600	0.630	DC__21.5_	9318547	*	*	9355222
8675577	SDJCR-12-3C	0.750	0.750	5.000	0.950	1.000	DC__32.5_	9318446	9333333	9319547	9355555
8675588	SDJCL-12-3C	0.750	0.750	5.000	0.950	1.000	DC__32.5_	9318446	9333333	9319547	9322126

### Product Information

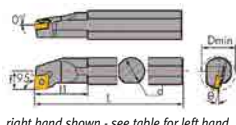
- Comes in 1/2" and 3/4" Shanks
- Left and Right Hand Holders
- SDJCR/L-08-2J Takes DC\_\_21.5\_ Inserts (2 Corners)
- SDJCR/L-12-3C Takes DC\_\_32.5\_ Inserts (2 Corners)
- 93° Lead Angle
- Screw Clamping
- Used for profile turning
- Uses Only One Side of Insert



# Nexus Positive Boring Bars – Coolant-Thru



boring &amp; facing



right hand shown - see table for left hand

## Product Information

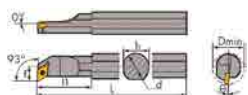
- Comes in 3/8", 1/2", 5/8", and 3/4" Diameter Shanks
- Left and Right Hand Bars
- A06H-SCLCR/L-2 and A08K-SCLCR/L-2 Take CC\_21.5\_ Inserts (2 Corners)
- A10M-SCLCR/L-3 and A12Q-SCLCR/L-3 Take CC\_32.5\_ Inserts (2 Corners)
- 95° Lead Angle
- Screw Clamping and Coolant Thru for Better Chip Evacuation
- Used for Boring and Facing
- Uses only One Side of Insert

## SCLCR/L 95°

Part No.	Description	d	Dmin	L	l1	f	Insert	Screw	Wrench
8167711	A06H-SCLCR-2	0.375	0.472	4.00	0.551	0.236	CC_21.5_	9311455	9355222
8167722	A06H-SCLCL-2	0.375	0.472	4.00	0.551	0.236	CC_21.5_	9311455	9355222
8167733	A08K-SCLCR-2	0.500	0.630	5.00	0.984	0.354	CC_21.5_	9311455	9355222
8167744	A08K-SCLCL-2	0.500	0.630	5.00	0.984	0.354	CC_21.5_	9311455	9355222
8167755	A10M-SCLCR-3	0.625	0.787	6.00	1.280	0.433	CC_32.5_	9317446	9355555
8167766	A10M-SCLCL-3	0.625	0.787	6.00	1.280	0.433	CC_32.5_	9317446	9355555
8167777	A12Q-SCLCR-3	0.750	0.984	7.00	1.496	0.512	CC_32.5_	9317446	9355555
8167788	A12Q-SCLCL-3	0.750	0.984	7.00	1.496	0.512	CC_32.5_	9317446	9355555



profile boring



right hand shown - see table for left hand

## Product Information

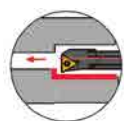
- Comes in 3/8", 1/2", 5/8", and 3/4" Diameter Shanks
- Left and Right Hand Bars
- A06H-SDUCR/L-2, A08K-SDUCR/L-2, and A10M-SDUCR/L-2 all Take DC\_21.5\_ Inserts (2 Corners)
- A12Q-SDUCR/L-3 Takes DC\_32.5\_ Inserts (2 Corners)
- 93° Lead Angle
- Screw Clamping and Coolant Thru for Better Chip Evacuation
- Used for Profile Boring (30° Max)
- Uses only One Side of Insert

## SDUCR/L 93°

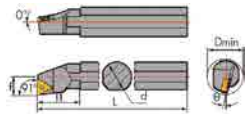
Part No.	Description	d	Dmin	L	l1	f	Insert	Screw	Wrench
8177711	A06H-SDUCR-2	0.375	0.512	4.00	-	0.276	DC_21.5_	9311455	9355222
8177722	A06H-SDUCL-2	0.375	0.512	4.00	-	0.276	DC_21.5_	9311455	9355222
8177733	A08K-SDUCR-2	0.500	0.625	5.00	0.866	0.354	DC_21.5_	9316547	9355222
8177744	A08K-SDUCL-2	0.500	0.625	5.00	0.866	0.354	DC_21.5_	9316547	9355222
8177755	A10M-SDUCR-2	0.625	0.787	6.00	1.063	0.433	DC_21.5_	9316547	9355222
8177766	A10M-SDUCL-2	0.625	0.787	6.00	1.063	0.433	DC_21.5_	9316547	9355222
8177777	A12Q-SDUCR-3	0.750	0.984	7.00	1.575	0.512	DC_32.5_	6811259	9355555
8177788	A12Q-SDUCL-3	0.750	0.984	7.00	1.575	0.512	DC_32.5_	6811259	9355555



# Nexus Positive Boring Bars – Coolant-Thru



boring & facing



right hand shown

**Product Information**

- Comes in 1/2", 5/8", and 3/4" Diameter Shanks
- Right Hand Bars Only
- All Take TC\_21.5\_ Inserts (2 Corners)
- 91° Lead Angle
- Screw Clamping and Coolant Thru for Better Chip Evacuation
- Used for Boring and Facing
- Uses Only One Side of Insert

**STFCR/L 91°**

Part No.	Description	d	Dmin	L	l1	f	Insert	Screw	Wrench
8157711	A08K-STFCR-2	0.500	0.630	5.00	1.024	0.354	TC_21.5_	9316547	9355555
8157722	A10M-STFCR-2	0.625	0.787	6.00	1.181	0.434	TC_21.5_	9316547	9355555
8157733	A12Q-STFCR-2	0.750	0.984	7.00	1.417	0.512	TC_21.5_	9316547	9355555



**Turning Tips**

- The cutting conditions are Nexus Tool guidelines for optimal machining, however our inserts can work in a wider range of cutting conditions to meet special machining needs.
- According to our recommended cutting conditions, A-max should be used for optimum results.
- When machining stainless steel, make sure your speed is over the minimum requirement. Stainless steel can be gummy. Running it too slowly can cause gaulding (weldment of the chip to the insert).
- Coolant recommendations:  
Use coolant with materials from groups 6, 7, 8, 9, 10, 11, 12. Do not use coolant with materials from groups 1, 2, 4. Use coolant with materials from groups 3, 5 – depending on the application.
- Always verify that the toolholder and shim are in good condition (not damaged).
- If chips are too long, we recommend increasing feed rate.
- If chips are not controlled (vary in shape and size), we recommend increasing feed rate and reducing depth of cut.
- For the internal boring operations, the toolholder should be as short as possible and shank as big as possible.
- In the case of chatter, we recommend reducing cutting speed, and increasing feed rate.
- Reduce the feed rate for heavy interrupted cuts.



Same Day Shipping Until 5:00 pm EST.  
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# Turning & Boring Inserts

LT 10 Multi-Mat™ Turning

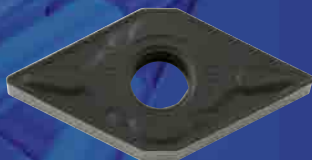
LT 1000 Multi-Mat™ Magia Turning

LT 05 Alu-Turning



**LAMINA**  
TECHNOLOGIES

HIGH-PERFORMANCE



High-Performance Inserts



Inserts for  
Aluminum

Attacking Heat & Vibration is in Our DNA.

**NEUS**  
CUTTING  
TOOLS  
© Quintec Company

Turning

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

DRILLING

SPMG

WCMX

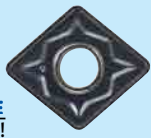
# Magia Turning & Boring Inserts



**We are proud to introduce you to Magia PVD inserts. The new Magia (LT1000) grade raises the bar on performance.**



**HIGH-PERFORMANCE**  
3x the Thickness of Conventional PVD!

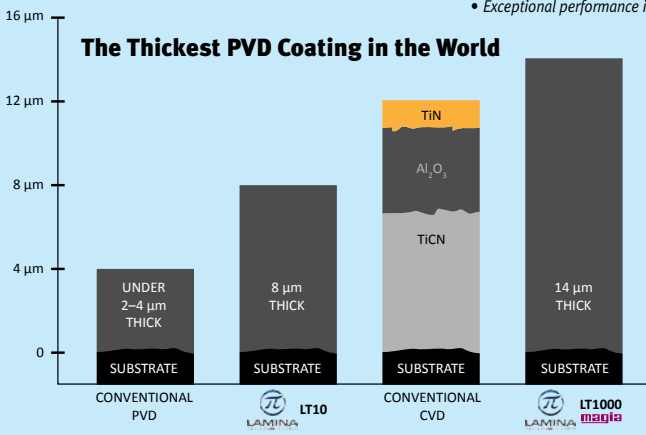


### Why it Works

Magia inserts feature a new PVD formula developed by our partner Lamina in Switzerland over a 10 year period. It is both thicker and tougher than conventional industry inserts you have been using.

### Features

- Ultra-thick, patented PVD coating dramatically increases tool life
- Very low flank wear and plastic deformation minimize or eliminate offsets
- Advanced high-performance grade offers ultimate versatility
- Exceptional performance in High Temp Alloys





# MULTI-MAT™

Turning

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

The Lamina **Multi-Mat™ LT 10 & 1000 Grade**  
for Turning & Boring can machine most materials with  
**ONLY ONE GRADE**



Steel



Stainless Steel



Cast Iron



High Temp. Alloys



Hardened Steel



Aluminium & Non ferrous Alloys

True Multi-Mat™ Inserts  
For Real Productivity



All Nexus products are backed  
by our 100% satisfaction guarantee.



159

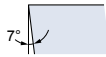
DRILLING

SPMG

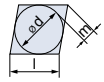
WCMX

**C**

Shape

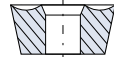
**C**

Clearance Angle

**M**

Tolerance

$s \pm 0.005$   
 For  $l = 06/09, d \pm 0.002 \text{ m} \pm 0.003$   
 For  $l = 12, d \pm 0.003 \text{ m} \pm 0.005$

**T**Fixing  
Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
3663311	CCMT 2(1.5)0 HF	251		0.252	0.094	0.008	●
3664411	CCMT 2(1.5)1 NN	LT 10		0.254	0.094	0.016	●
3668011	CCMT 2(1.5)1 NN	LT 1000	magia	0.254	0.094	0.016	●
3663399	CCMT 2(1.5)2 HM	251		0.252	0.094	0.031	●
3663344	CCMT 3(2.5)0 HF	251		0.382	0.156	0.008	●
3664413	CCMT 3(2.5)1 NN	LT 10		0.381	0.156	0.016	●
3668021	CCMT 3(2.5)1 NN	LT 1000	magia	0.381	0.156	0.016	●
3664416	CCMT 3(2.5)2 NN	LT 10		0.381	0.156	0.036	●
3668026	CCMT 3(2.5)2 NN	LT 1000	magia	0.381	0.156	0.036	●
3664419	CCMT 3(2.5)2 WM	LT 10		0.381	0.156	0.036	*
3664422	CCMT 431 NN	LT 1000	magia	0.508	0.187	0.016	○
3664421	CCMT 431 NN	LT 10		0.508	0.187	0.016	●
3664427	CCMT 432 NN	LT 1000	magia	0.508	0.187	0.036	○
3664425	CCMT 432 NN	LT 10		0.508	0.187	0.036	●
3664429	CCMT 433 NN	LT 1000	magia	0.508	0.187	0.047	○
3631083	CCMT 433 NN	LT 10		0.508	0.187	0.047	●

\* Discontinued when stock's depleted ● Stocking ○ Non-stocking

### NN All purpose Chipbreaker

80° Diamond shape inserts, with positive chipbreaker geometry. Very popular and useful for Boring even of small diameters, Facing and external Turning operations.



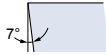


**C**



Shape

**C**



Clearance Angle

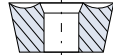
**M**



Tolerance

s ± 0.005  
For l = 06/09, d ± 0.002 m ± 0.003  
For l = 12, d ± 0.003 m ± 0.005

**T**



Fixing  
Chip breaker

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

DRILLING

SPMG

WCMX

**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut
CCMT 2(1.5)0 HF	See the back of the box.		
CCMT 2(1.5)1 NN	😊	😐	😞
CCMT 2(1.5)2 HM	See the back of the box.		
CCMT 3(2.5)0 HF	See the back of the box.		
CCMT 3(2.5)1 NN	😊	😐	😞
CCMT 3(2.5)2 NN	😐	😊	😐
CCMT 3(2.5)2 WM	See the back of the box.		
CCMT 431 NN	😊	😐	😞
CCMT 432 NN	😐	😊	😐
CCMT 433 NN	😞	😐	😊

😊 = Good  
😐 = Acceptable  
😞 = Not recommended

**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
fn = 0.003 - 0.008 inch/rev

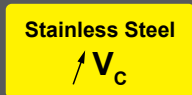
**Medium:**

d.o.c. = 0.028 - 0.177 inch  
fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
fn = 0.014 - 0.028 inch/rev

Machine Recommendations Guide. Details on page 19.



All Nexus products are backed by our 100% satisfaction guarantee.



# CCMT 2(1.5)1 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB		0.083		0.008	0.0006		1080		980	
		2	1045, 1060,	190 HB	0.008	0.069	0.003	0.007	0.0005	590	910	0.039	0.007	850
		3	28Mn6	250 HB		0.069		0.007	0.0005		820			780
	Low alloyed	2	42CrMo4, St50,	180 HB		0.069		0.007	0.0005		910			850
		4,6	Ck60, 4140, 4340,	230 HB	0.008	0.069	0.003	0.007	0.0005	390	820	0.039	0.006	780
		5,7	100Cr6	280 HB		0.055		0.006	0.0004		680			650
		8		350 HB		0.055		0.006	0.0003		590			590
	High alloyed	3	X40CrMoV5,	220 HB		0.069		0.006	0.0004		620			590
		10	H13, M42, D3,	280 HB	0.008	0.069	0.003	0.005	0.0004	220	490	0.039	0.005	450
		11	S6-5-2, 12Mn19	320 HB		0.055		0.005	0.0003		420			390
		11		350 HB		0.055		0.005	0.0002		360			360
Stainless Steel	Austenitic	4	304, 316,	180 HB	0.008	0.069	0.003	0.006	0.0003	550	880	0.039	0.005	850
		14	X5CrNi18-9	240 HB		0.069		0.006	0.0002	520	720			680
	Duplex	5	X2CrNiN23-4,	290 HB	0.008	0.055	0.003	0.005	0.0002	260	490	0.039	0.005	450
		14	S31500	310 HB		0.055		0.005		220	450			450
	Ferritic & Martensitic	6	410, X6Cr17,	200 HB	0.008	0.069	0.003	0.006	0.0003	550	820	0.039	0.006	780
		13	17-4 PH, 430	42 HRc		0.055		0.005	0.0002	390	620		0.005	590
Cast Iron	Grey	7	GG20, GG40,	150 HB		0.083		0.007		550	820		780	
		15	EN-GJL-250,	200 HB	0.008	0.083	0.002	0.007	0.0006	520	750	0.039	0.007	720
		16	No30B	250 HB		0.083		0.007		490	680			650
	Malleable & Nodular	8	GGG40, GGG70,	150 HB		0.069		0.006	0.0005		820			780
		17,19	50005	200 HB	0.008	0.069	0.002	0.006	0.0004	390	750	0.039	0.006	720
		18,20		250 HB		0.069		0.006	0.0004		620			590
	High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB		0.055		0.005		80	160		130
			33	Inconel 700	250 HB	0.008	0.055	0.003	0.005	0.0002	80	160	0.039	0.005
34			Stellite 21	350 HB		0.055		0.005		70	140			110
Ti based		10	TiAl6V4	-	0.008	0.055	0.003	0.005	0.0003	140	210	0.039	0.006	190
		37	T40	-		0.055		0.005	0.0002	110	190		0.005	160
Hardened Mat.	Steel	11	X100CrMo13,	45 HRc		0.050		0.004	0.0002	160	320	0.030	0.004	290
		38	440C,	50 HRc	0.008	0.041	0.001	0.003	0.0002	130	290	0.024	0.004	260
		38	G-X260N/Cr42	55 HRc		0.039		0.003	0.0001	130	260	0.020	0.003	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002	130	190	0.024	0.004	160
		41	G-X300CrMo15	55 HRc	0.008	0.039	0.001	0.003	0.0001	90	160	0.020	0.003	130
White Cast Iron														
Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.110	0.003	0.010	0.0007	650	1310	0.039	0.008	1140



# CCMT 3(2.5)1 NN LT 10 & LT 1000

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.008	0.118	0.004	0.009	0.0009	590	1080	0.079	0.007	980					
		2		190 HB		0.098		0.009	0.0008		910			850					
		3		250 HB		0.098		0.008	0.0007		820			780					
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.008	0.098	0.004	0.008	0.0008	390	910	0.079	0.006	850				
		4,6		230 HB												0.008	0.0007	820	780
		5,7		260 HB												0.007	0.0006	680	650
		8		350 HB												0.007	0.0006	590	590
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.008	0.098	0.004	0.007	0.0006	220	620	0.079	0.005	450				
		10		280 HB												0.006	0.0006	490	390
		11		290 HB												0.007	0.0005	420	390
		11		350 HB												0.006	0.0004	360	360
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850					
		14		240 HB												0.007	0.0004	520	720
	Duplex	5	14 X2CrNiNi23-4, S31500	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450					
		14		310 HB												0.006	0.0004	220	450
	Ferritic & Martensitic	6	12 410, X9Cr17, 17-4 PH, 430	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	0.005	780				
		13		42 HRc													0.007	0.0004	390
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.008	0.118	0.003	0.008	0.0009	520	750	0.079	0.007	720					
		15		200 HB												0.008	0.0009	490	680
		16		250 HB												0.118	0.008	0.0009	490
	Malleable & Nodular	8	17,19 GG640, GGG70, 50005	150 HB	0.008	0.098	0.003	0.007	0.0007	390	720	0.079	0.006	720					
		17,19		200 HB												0.007	0.0006	650	590
		18,20		250 HB												0.098	0.007	0.0006	620
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0005	80	160	0.079	0.005	130					
		33		250 HB												0.006	0.0004	80	160
		34		350 HB												0.079	0.006	70	140
	Ti based	10	36 TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190					
		37		T40												0.006	0.0004	110	190
				-												0.079	0.006	0.0004	110
Hardened Mat.	Steel	11	38 X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290					
		38		50 HRc												0.004	0.0003	130	290
		38		55 HRc												0.055	0.004	0.0002	130
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160					
		White Cast Iron	41	G-X300CrMo15	65 HRc	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130				
Al	Al C-8%Si	12	25 AISI12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140					

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DRILLING

SPMG

WCMX



# CCMT 3(2.5)2 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.157	0.008	0.020	0.0025	590	1080	0.118	0.012	780				
		2	190 HB	0.157		0.020		0.0025						910	720			
		3	250 HB	0.157		0.018		0.0021						820	650			
	Low alloyed	2	6 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.157	0.008	0.018	0.0017	390	910	0.118	0.011	650				
		4,6	230 HB	0.126		0.008		0.018						0.0017	820	590		
		5,7	280 HB	0.126		0.007		0.016						0.0017	680	490		
		8	350 HB	0.110		0.007		0.016						0.0014	590	320		
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.126	0.007	0.016	0.0017	220	620	0.098	0.011	450				
		11	280 HB	0.126		0.016		0.0017						490	390			
		10	320 HB	0.094		0.014		0.0011						420	320			
		11	350 HB	0.094		0.014		0.0011						360	290			
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.020	0.157	0.008	0.016	0.0017	550	880	0.118	0.012	650				
		14	240 HB	0.157		0.016		0.0014						520	720	590		
	Duplex	5	14 X2CrNiNi23-4, S31500	290 HB	0.020	0.126	0.007	0.014	0.0011	260	490	0.098	0.010	320				
		14	310 HB	0.126		0.014		220						450	290			
	Ferritic & Martensitic	6	12 410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.157	0.009	0.016	0.0014	550	820	0.118	0.011	620				
		13	42 HRc	0.126		0.016		390						620	420			
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.157	0.006	0.024	0.0028	550	820	0.118	0.012	650				
		15	200 HB	0.157		0.024		0.0025						520	750	590		
		16	250 HB	0.157		0.022		0.0025						490	690	520		
	Malleable & Nodular	8	17,19 GG640, GGG70, 50005	150 HB	0.020	0.157	0.006	0.020	0.0021	390	750	0.118	0.011	520				
		17,19	200 HB	0.157		0.020		0.0018						620	450			
		18,20	250 HB	0.157		0.020		0.0017						620	450			
High Temp. Alloys	Fe, Ni & Co based	9	31,32 IncoInoy 800	240 HB	0.020	0.094	0.008	0.014	0.0010	80	140	0.079	0.010	100				
		33	Inconel 700	250 HB		0.094		0.014						80	140	90		
		34	Stellite 21	350 HB		0.094		0.014						70	130	90		
	Ti based	10	36 TiAl6V4	-	0.020	0.126	0.008	0.016	0.0011	140	210	0.079	0.012	180				
		37	T40	-		0.094		0.014						0.0010	110	180	140	
		38	X100CrMo13, 440C, G-X260NiCr42	45 HRc		0.079		0.012						0.0008	160	320	0.079	0.009
Hardened Mat.	Steel	11	38 440C, G-X260NiCr42	50 HRc	0.020	0.063	0.004	0.010	0.0006	130	290	0.059	0.007	220				
		38	55 HRc	0.047		0.008		0.0004						130	260	0.039	0.006	190
		40	Ni-Hard 2	400 HB		0.020		0.063						0.004	0.010	0.0006	130	190
	Chilled Cast Iron	41	G-X300CrMo15	65 HRc	0.020	0.047	0.004	0.008	0.0004	90	160	0.039	0.005	130				
White Cast Iron	40	G-X300CrMo15	65 HRc	0.020	0.047	0.004	0.008	0.0004	90	160	0.039	0.005	130					
Al (c-8%Si)	12	25 AlSi12	130 HB	0.020	0.169	0.008	0.024	0.0025	650	1310	0.118	0.014	910					



# CCMT 431 NN LT 10 & LT 1000

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB		0.118		0.009	0.0009		1080		980			
		2		190 HB	0.008	0.098	0.004	0.009	0.0008	590	910	0.079	0.007	850		
		3		250 HB		0.098		0.008	0.0007		820			780		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB		0.098		0.008	0.0008		910		850		
			4,6		230 HB	0.008	0.098	0.004	0.008	0.0007	390	820	0.079	0.006	780	
			5,7		280 HB		0.079		0.007	0.0006		680		650		
			8		350 HB		0.079		0.007	0.0006		590		590		
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB		0.098		0.007	0.0006		620		590		
			11		280 HB	0.008	0.098	0.004	0.006	0.0006	220	490	0.079	0.005	450	
			10		320 HB		0.079		0.006	0.0005		420		390		
			11		350 HB		0.079		0.006	0.0004		360		360		
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850	
			14		240 HB		0.098		0.007	0.0004	520	720		680		
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450	
			14		310 HB		0.079		0.006		220	450		450		
	Ferritic & Martensitic	6	12	410, X8Cr17, 17-4 PH, 430	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780	
			13		42 HRc		0.079		0.006	0.0004	390	620		0.005	590	
Cast Iron	Gray	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	780	
			16		200 HB		0.118		0.008	0.0009	520	750		720		
			16		250 HB		0.118		0.008	0.0009	490	680		650		
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.008	0.098	0.003	0.007	0.0007		820		780		
			17,19		200 HB		0.098		0.007	0.0006	390	750	0.079	0.006	720	
			18,20		250 HB		0.098		0.007	0.0006		620		590		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB		0.079		0.006		80	160		130		
			33	Inconel 700	250 HB	0.008	0.079	0.004	0.006	0.0004		80	160	0.079	0.005	130
			34	Stellite 21	350 HB		0.079		0.006			70	140		110	
	Ti based	10	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190	
		37	T40	-		0.079		0.006	0.0004	110	190		0.005	160		
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290	
			38		50 HRc		0.059	0.002	0.004	0.0003	130	290	0.047	0.004	260	
			38		55 HRc		0.055		0.004	0.0002	130	260	0.039	0.003	220	
	Chilled Cast Iron	11	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160	
		41	G-X300CrMo15	55 HRc	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130		
NE	Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140	

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DRILLING

SPMG

WCMX



# CCMT 432 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.197	0.008	0.020	0.0028	590	910	0.118	0.014	780		
		Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.020	0.197	0.008	0.018	0.0019	390	910	0.118	0.013	650	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB 280 HB 320 HB 350 HB	0.020	0.157	0.007	0.016	0.0019	220	490	0.098	0.012	390
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.014	620
				Duplex	5	X2CrNiN23-4, S31500	290 HB 310 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011
		Ferritic & Martensitic	6		410, X8Cr17, 17-4 PH, 430, No30B	200 HB 42 HRc	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620
	Cast Iron		Gray	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.024	0.0028	520	750	0.118	0.014	590
		Malleable & Nodular		8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520
				High Temp. Alloys	9	Incoloy 800, Inconel 700, Stellite 21	240 HB 250 HB 350 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011
		Ti based	10		TiAl6V4, T40	- -	0.020	0.157	0.008	0.016	0.0012	140	210	0.079	0.013	180
			Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.020	0.098	0.004	0.012	0.0009	160	320	0.079	0.010
Chilled Cast Iron	11	Ni-Hard 2			400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160	
	White Cast Iron	41			G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	130
WF	Al (>8%Si)	12		AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910	





# CCMT 433 NN LT 10 & LT 1000

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

DRILLING

SPMG

WCMX

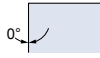
Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. (inch)		Feed (inch/rev)		A <sub>max</sub>	V <sub>c</sub> (sfm)		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, CK45, 1020,	125 HB	0.020	0.197	0.008	0.024	0.0033	590	910	0.118	0.017	780		
		2	1045, 1060,	190 HB										720		
		3	28Mn6	250 HB										650		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.157	0.008	0.021	0.0022	390	0.118	0.014	650		
		4,6	Ck60, 4140, 4340,	230 HB	590											
		5,7	100Cr6	280 HB	490											
		8		350 HB	420											
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.157	0.007	0.019	0.0022	220	0.098	0.014	450		
		10	H13, M42, D3,	280 HB	390											
		11	S6-5-2, 12Mn19	320 HB	320											
		11		350 HB	290											
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.197	0.008	0.019	0.0022	550	0.118	0.014	620		
		14	X5CrNi18-9	240 HB	550											
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.157	0.007	0.017	0.0015	260	0.098	0.011	320		
		14	S31500	310 HB	290											
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.157	0.009	0.019	0.0019	550	0.118	0.014	620		
		13	17-4 PH, 430	42 HRC	420											
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.197	0.006	0.028	0.0037	550	0.118	0.017	650		
		16	EN-GJL-250,	200 HB	590											
		16	No30B	250 HB	520											
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.197	0.006	0.024	0.0028	390	0.118	0.014	590		
		17,19	50005	200 HB	750											
		18,20		250 HB	620											
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.118	0.008	0.017	0.0013	80	0.079	0.012	100		
		33	Inconel 700	250 HB	80						90					
		34	Stellite 21	350 HB	70						130					
	Ti based	10	36	TiAl6V4	-	0.020	0.157	0.008	0.019	0.0015	140	0.079	0.014	180		
		37	T40	-	110						180					
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.079	0.004	0.012	0.0007	160	0.079	0.012	260		
		38	440C,	50 HRC	130						290			0.059	0.009	220
		38	G-X260NiCr42	55 HRC	130						260			0.039	0.009	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.012	0.0007	130	190	0.059	0.009	160		
		41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.009	0.0006	90	160	0.039	0.007	130		
Al (C-6%Si)	12	25	AISI12	130 HB	0.020	0.236	0.008	0.028	0.0034	650	1310	0.118	0.019	910		

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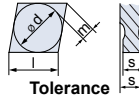


**C****N****M****G**

Shape

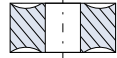


Clearance Angle



Tolerance

d ± 0.003  
m ± 0.005  
s ± 0.005

Fixing  
Chip breaker

Part No.	Description	Grade	<u>magia</u>	l	s	r	Stock
6607029	<b>CNMG 431 NN</b>	LT 10		0.508	0.187	0.016	●
6608011	<b>CNMG 431 NN</b>	LT 1000	<u>magia</u>	0.508	0.187	0.016	●
6607033	<b>CNMG 432 NN</b>	LT 10		0.508	0.187	0.031	●
6608016	<b>CNMG 432 NN</b>	LT 1000	<u>magia</u>	0.508	0.187	0.031	●
6601436	<b>CNMG 432 NM</b>	LT 10		0.508	0.187	0.031	●
6601437	<b>CNMG 432 NM</b>	LT 1000	<u>magia</u>	0.508	0.187	0.031	○
6601446	<b>CNMG 432 NR</b>	LT 10		0.508	0.187	0.031	●
6608026	<b>CNMG 432 NX</b>	LT 1000	<u>magia</u>	0.508	0.187	0.031	●
6607037	<b>CNMG 433 NN</b>	LT 10		0.508	0.187	0.047	●
6608021	<b>CNMG 433 NN</b>	LT 1000	<u>magia</u>	0.508	0.187	0.047	●

● Stocking

○ Non-stocking

### Application Guide

**NN** All purpose Chipbreaker    **NM** Steel and Cast Iron    **NR** Steel and Cast Iron

**NX** All purpose Chipbreaker

The most popular general purpose Turning inserts. Use for Turning, Facing and Boring operations.





**C**

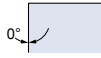
**N**

**M**

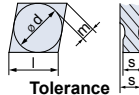
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Shape

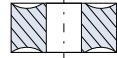


Clearance Angle



Tolerance

d ± 0.003  
m ± 0.005  
s ± 0.005



Fixing  
Chip breaker

**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut	
CNMG 431 NN	😊	😐	😞	<b>Finishing:</b> d.o.c. = 0.012 - 0.059 inch fn = 0.003 - 0.008 inch/rev
CNMG 432 NN	😐	😊	😊	
CNMG 432 NM	😞	😊	😊	<b>Medium:</b> d.o.c. = 0.028 - 0.177 inch fn = 0.006 - 0.018 inch/rev
CNMG 433 NR	😞	😐	😊	
CNMG 432 NX	😊	😊	😐	<b>Roughing</b> d.o.c. = 0.118 - 0.276 inch fn = 0.014 - 0.028 inch/rev
CNMG 433 NN	😞	😐	😊	

😊 = Good  
 😐 = Acceptable  
 😞 = Not recommended

Machine Recommendations Guide. Details on page 19.

**Stainless Steel**

**F ⇒**



- CCMT
- CNMG**
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG
- DRILLING
- SPMG
- WCMX

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# CNMG 431 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.008	0.118	0.004	0.009	0.0009	590	1080	0.079	0.007	980
		2		190 HB		0.098		0.009	0.0008		910			850
		3		250 HB		0.098		0.008	0.0007		820			780
	Low alloyed	2	6 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.008	0.098	0.004	0.008	0.0008	390	910	0.079	0.006	850
		4,6		230 HB		0.098		0.008	0.0007		820			780
		5,7		280 HB		0.079		0.007	0.0006		680			650
		8		350 HB		0.079		0.007	0.0006		590			590
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.008	0.098	0.004	0.007	0.0006	220	620	0.079	0.005	590
		11		280 HB		0.098		0.006	0.0006		490			450
		10		320 HB		0.079		0.006	0.0005		420			390
		11		350 HB		0.079		0.006	0.0004		360			360
	Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005
14				240 HB		0.098		0.007	0.0004	520	720			680
Duplex		5	14 X2CrNiMo23-4, S31500	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450
		14		310 HB		0.079		0.006		220	450			450
Ferritic & Martensitic		6	12 410, X6Cr17, X5CrNi18-9	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780
		13		42 HRc		0.079		0.006	0.0004	390	620			590
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.008	0.118	0.003	0.008	0.0009	520	750	0.079	0.007	720
		15		200 HB		0.118		0.008	0.0009	490	680			650
		16		250 HB		0.118		0.008	0.0009					
	Malleable & Nodular	8	17,19 GG640, GGG70, 50005	150 HB	0.008	0.098	0.003	0.007	0.0007	390	820	0.079	0.006	780
		17,19		200 HB		0.098		0.007	0.0006	390	750			720
		18,20		250 HB		0.098		0.007	0.0006	620				590
High Temp. Alloys	Fe, Ni & Co based	9	31,32 IncoIny 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130
		33	Inconel 700	250 HB		0.079		0.006		80	160			130
		34	Stellite 21	350 HB		0.079		0.006		70	140			110
	Ti based	10	36 TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190
		37	T40	-		0.079		0.006	0.0004	110	190			160
Hardened Mat.	Steel	11	38 X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290
		38		50 HRc		0.059		0.004	0.0003	130	290	0.047	0.004	260
		38		55 HRc		0.055		0.004	0.0002	130	260	0.039	0.003	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160
		41	G-X300CrMo15	65 HRc	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130
IF	Al C-8%Si	12	25 AISi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140



## CNMG 432 NN LT 10 &amp; LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.197	0.008	0.020	0.0031	590	1080	0.118	0.015	780	
		2	190 HB	0.197		0.020		0.0028	910		0.014		720		
		3	250 HB	0.197		0.018		0.0023	820		0.013		650		
	Low alloyed	2	6 42CrMo4, S150, 4,6 Ck60, 4140, 4340, 5,7 100Cr6 8	180 HB	0.020	0.197	0.008	0.018	0.0025	390	910	0.118	0.013	650	
		230 HB	0.157	0.008		0.018		0.0022	820		0.013		590		
		280 HB	0.157	0.007		0.016		0.0019	680		0.012		490		
		350 HB	0.138	0.007		0.016		0.0016	590		0.012		420		
	High alloyed	3	10 X40CrMoV5, 11 H13, M42, D3, 11 S6-5-2, 12Ni19 11	220 HB	0.020	0.157	0.007	0.016	0.0019	220	620	0.098	0.012	450	
		280 HB	0.157	0.016		0.0019		490	0.012		390				
		320 HB	0.118	0.014		0.0012		420	0.011		320				
		350 HB	0.118	0.014		0.0012		360	0.011		290				
Stainless Steel	Austenitic	4	14 304, 316, 14 X5CrNi18-9	180 HB	0.020	0.197	0.008	0.016	0.0016	550	880	0.118	0.010	620	
		240 HB	0.197	0.016		0.0014		520	720		0.009		550		
	Duplex	5	14 X2CrNiN23-4, 14 S31500	290 HB	0.020	0.157	0.007	0.014	0.0011	260	490	0.098	0.011	320	
		310 HB	0.157	0.014		0.0011		220	450		0.098		290		
	Ferritic & Martensitic	6	12 410, X8Cr17, 13 17-4 PH, 430	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620	
		42 HRc	0.157	0.016		0.0016		390	620		0.098		420		
Cast Iron	Grey	7	15 GG20, GG40, 15 EN-GJL-250, 16 No30B	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	650	
		200 HB	0.197	0.024		0.0028		520	750		0.011		590		
		250 HB	0.197	0.022		0.0028		490	680		0.011		520		
	Malleable & Nodular	8	17,19 GG40, GGG70, 17,19 5000S 18,20	150 HB	0.020	0.197	0.006	0.020	0.0023	390	820	0.118	0.012	590	
		200 HB	0.197	0.020		0.0020		750	0.012		520				
		250 HB	0.197	0.020		0.0019		620	0.012		450				
	High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800 33 Inconel 700	240 HB	0.020	0.118	0.003	0.014	0.0011	80	160	0.079	0.011	100
			250 HB	0.118	0.014		0.0011		80	160		0.011		90	
350 HB			0.118	0.014	0.0011		70		140	0.011		90			
Ti based		10	36 TiAl6V4 37 T40	-	0.020	0.138	0.008	0.016	0.0012	140	210	0.079	0.013	180	
		160	0.016	0.0012		140		210	0.013		180				
		190	0.014	0.0011		110		190	0.012		140				
Hardened Mat.	Steel	11	38 X100CrMo13, 38 440C, 38 G-X260N/Cr42	45 HRc	0.020	0.098	0.004	0.012	0.0009	160	320	0.079	0.010	260	
		50 HRc	0.079	0.010		0.0008		130	290		0.059		0.008	220	
		55 HRc	0.063	0.008		0.0005		130	260		0.039		0.007	190	
	Chilled Cast Iron	40 Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0008	130	190	0.059	0.007	160		
		41 G-X300C/Mo15	55 HRc	0.020	0.063	0.004	0.008	0.0005	90	160	0.039	0.006	130		
White Cast Iron	41 G-X300C/Mo15	55 HRc	0.020	0.063	0.004	0.008	0.0005	90	160	0.039	0.006	130			
Al (-8%Si)	12	25 AISi12	130 HB	0.020	0.236	0.008	0.024	0.0031	650	1310	0.118	0.016	910		

# CNMG 432 NM LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. (inch)		Feed (inch/rev)		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.197	0.028	0.0042	590	1080	0.157	0.020	680	
		2	190 HB	0.197	0.008		0.026	0.0042	910		650				
		3	250 HB	0.197	0.023		0.0035	820	650						
	Low alloyed	2	6	42CrMo4, S45, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.197	0.008	0.023	0.0028	390	910	0.157	0.017	520
		4,6	230 HB	0.157	0.008		0.023	0.0028	820	490					
		5,7	280 HB	0.157	0.007		0.020	0.0028	680	450					
		8	350 HB	0.138	0.007		0.020	0.0025	590	420					
	High alloyed	3	10	X40CrMoV5, HT3, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.157	0.020	0.0028	220	620	0.131	0.015	390	
		10	280 HB	0.157	0.007		0.020	0.0028	490		360				
		11	320 HB	0.118	0.018		0.019	420	320						
		11	350 HB	0.118	0.018		0.019	360	290						
Ferritic & Martensitic	6	12	.410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.197	0.009	0.020	390	550	820	0.157	0.015	620	
	13	42 HRc	0.157	0.020		0.0025	390	620		420					
Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.197	0.006	0.031	0.0042	520	750	0.157	0.017	550
		16	250 HB	0.197	0.028		0.0042	490	680						
		17,19	150 HB	0.197	0.028		0.0035	820	490						
	Malleable & Nodular	8	17,19	GG40, GGG70, 50005	200 HB	0.020	0.197	0.006	0.026	0.0030	390	750	0.157	0.015	450
		18,20	250 HB	0.197	0.026		0.0028	620	420						
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X280NiCr42	45 HRc	0.020	0.098	0.015	0.0014	130	160	320	0.105	0.012	260
		38	50 HRc	0.079	0.004		0.013	0.0009	130		290	0.079		0.010	220
		38	55 HRc	0.059	0.010		0.0007	130	260		0.059	0.009		190	
	Chilled Cast Iron	40	400 HB	0.020	0.079	0.004	0.013	0.0009	130	190	0.079	0.009	160		
		41	55 HRc	0.020	0.059	0.004	0.010	0.0007	90	160	0.059	0.007	130		
White Cast Iron															



# CNMG 432 NX LT 1000

Material Group	Gr. #*	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.020	0.197	0.008	0.020	0.0028	590	910	0.118	0.014	780
		2	1045, 1060,	190 HB	620										
		3	28Mn6	250 HB	750										
	Low alloyed	2	6	42CrMo4, S150,	180 HB	0.020	0.197	0.008	0.018	0.0019	390	910	0.118	0.013	650
		4.6	Ck60, 4140, 4340,	230 HB	820										
		5.7	100Cr6	280 HB	680										
		8		350 HB	590										
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.157	0.007	0.016	0.0019	220	620	0.098	0.012	450
		11	H13, M42, D3,	280 HB	490										
		10	S6-5-2, 12Ni19	320 HB	420										
		11		350 HB	360										
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.010	620
		14	X5CrNi18-9	240 HB	720										
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	320
		14	S31500	310 HB	290										
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620
		13	17-4 PH, 430	42 HRc	420										
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	650
		15	EN-GJL-250,	200 HB	520										
		16	No308	250 HB	680										
	Malleable & Nodular	8	17.19	GG640, GG670,	150 HB	0.020	0.197	0.006	0.020	0.0023	390	750	0.118	0.012	590
		17.19	50005	200 HB	520										
		18.20		250 HB	620										
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	100
		33	Inconel 700	250 HB	80										
		34	Stellite 21	350 HB	70										
	Ti based	10	36	TiAl6V4	-	0.020	0.157	0.008	0.016	0.0012	140	210	0.079	0.013	180
		37	T40	-	110										
					180										
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.079	0.004	0.012	0.0009	160	320	0.079	0.010	260
		38	440C,	50 HRc	130										
		38	G-X260NiCr42	55 HRc	260										
	Chilled Cast Iron	40		Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160
		White Cast Iron	41		G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006
HT	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910

- CCMT
- CNMG**
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG



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- DRILLING
- SPMG
- WCMX

# CNMG 433 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1 C35, Ck45, 1020,	125 HB	0.029	0.236	0.010	0.027	0.0047	590	1080	0.158	0.018	780	
		2	1045, 1060,	190 HB										720	
		3	28Mn6,	250 HB										650	
	Low alloyed	2	6 42CrMo4, S150,	180 HB	0.029	0.236	0.010	0.024	0.0032	390	910	0.158	0.017	650	
		4.6	Ck60, 4140, 4340,	230 HB										590	
		5.7	100Cr6	280 HB										490	
		8		350 HB										420	
	High alloyed	3	10 X40CrMoV5,	220 HB	0.029	0.189	0.009	0.021	0.0032	220	620	0.132	0.016	450	
		11	H13, M42, D3,	280 HB										390	
		10	S6-5-2, 12Ni19	320 HB										320	
		11		350 HB										290	
Stainless Steel	Austenitic	4	14 304, 316,	180 HB	0.029	0.236	0.010	0.021	0.0032	550	880	0.158	0.011	620	
		14	X5CrNi18-9	240 HB										550	
	Duplex	5	14 X2CrNi23-4,	290 HB	0.029	0.189	0.009	0.019	0.0021	260	490	0.132	0.013	320	
		14	S31500	310 HB										290	
	Ferritic & Martensitic	6	12 410, X6Cr17,	200 HB	0.029	0.236	0.011	0.021	0.0026	550	820	0.158	0.016	620	
		13	17-4 PH, 430	42 HRc										420	
Cast Iron	Grey	7	15 GG20, GG40,	150 HB	0.029	0.236	0.008	0.032	0.0053	550	820	0.158	0.018	650	
		15	EN-GJL-250,	200 HB										590	
		16	No30B	250 HB										520	
	Malleable & Nodular	8	17,19 GG640, GGG70,	150 HB	0.029	0.236	0.008	0.027	0.0032	390	750	0.158	0.016	520	
		17,19	50005	200 HB										520	
		18,20		250 HB										450	
	High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.029	0.142	0.010	0.019	0.0018	80	140	0.106	0.015	100
			33	Inconel 700	250 HB										90
34			Stellite 21	350 HB	90										
Ti based		10	36 TiAl6V4	-	0.029	0.189	0.010	0.021	0.0021	140	210	0.106	0.017	180	
	37	Ti40	-	140											
Hardened Mat.	Steel	11	38 X100CrMo13,	45 HRc	0.029	0.118	0.005	0.016	0.0016	160	320	0.106	0.013	260	
		38	440C,	50 HRc										220	
		38	G-X260NiCr42	55 HRc										190	
	Chilled Cast Iron	11	40 Ni-Hard 2	400 HB	0.029	0.094	0.005	0.013	0.0011	130	190	0.079	0.009	160	
		41	G-X300CrMo15	55 HRc	0.029	0.071	0.005	0.011	0.0008	90	160	0.053	0.008	130	
White Cast Iron															
Al (>8%Si)	12	25	AlSi12	130 HB	0.029	0.276	0.010	0.032	0.0048	650	1310	0.158	0.020	910	







**C**

**N**

**M**

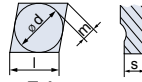
**M**



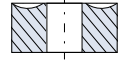
Shape



Clearance Angle



Tolerance  
 d ± 0.003  
 m ± 0.005  
 s ± 0.005



Fixing  
Chip breaker

CCMT

CNMG

**CNMM**

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WVMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

DRILLING

SPMG

WCMX

Part No.	Description	Grade	magia	l	s	r	Stock
6602011	CNMM 432 NR	LT 10		0.508	0.187	0.031	●
6602013	CNMM 432 NR	LT 1000	magia	0.508	0.187	0.031	○
6602022	CNMM 433 NR	LT 10		0.508	0.187	0.047	●
6602023	CNMM 433 NR	LT 1000	magia	0.508	0.187	0.047	○

**NR** Roughing chipbreaker

- Stocking
- Non-stockings

80° Diamond shape, single sided inserts. Strong cutting edge for Roughing operations which includes Interrupted cut, high feeds and high depth of cut.

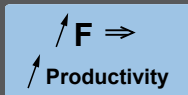
**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut	Roughing / Interrupted cut <i>magia</i>
CNMM 432 NR	☹	😊	☹	😊
CNMM 433 NR	☹	😊	😊	😊

**Finishing:** d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev  
**Medium:** d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev  
**Roughing:** d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- ☹ = Acceptable
- ☹ = Not recommended

Machine Recommendations Guide. Details on page 19.



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# CNMM 432 NR LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.276	0.008	0.024	0.0050	1080	0.195	0.018	780		
		2	1045, 1060,	190 HB		0.276		0.024		0.0045		910	0.017	720	
		3	28Mn6	250 HB		0.276		0.021		0.0037		820	0.016	650	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.276	0.008	0.021	0.0040	910	0.195	0.015	650	
		4.6	Ck60, 4140, 4340,	230 HB	0.220		0.021		0.0035		820		0.015	590	
		5.7	100Cr6	280 HB	0.220		0.007		0.019		0.0030		680	0.014	490
		8		350 HB	0.193		0.007		0.019		0.0025		590	0.014	420
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.220	0.007	0.019	0.0030	620	0.162	0.014	450	
		10	H13, M42, D3,	280 HB	0.220		0.019		0.0030		490		0.014	390	
		11	S6-5-2, 12Mn19	320 HB	0.165		0.017		0.0020		420		0.013	320	
		11		350 HB	0.165		0.017		0.0020		360		0.013	290	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.276	0.008	0.019	0.0030	550	0.195	0.013	620	
		14	X5CrNi18-9	240 HB	0.276		0.019		0.0027		520		0.012	550	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.220	0.007	0.017	0.0022	260	0.162	0.010	320	
		14	S31500	310 HB	0.220		0.017		0.0022		220		0.010	290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.276	0.009	0.019	0.0030	550	0.195	0.013	620	
		13	17-4 PH, 430	42 HRC	0.220		0.019		0.0030		390		0.012	420	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.276	0.008	0.028	0.0050	550	0.195	0.017	650	
		15	EN-GJL-250,	200 HB	0.276		0.028		0.0045		520		0.017	590	
		16	No30B	250 HB	0.276		0.026		0.0045		490		0.017	520	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.276	0.006	0.024	0.0037	820	0.195	0.014	590	
		17,19	50005	200 HB	0.276		0.024		0.0032		390		0.014	520	
		18,20		250 HB	0.276		0.024		0.0030		620		0.014	450	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.165	0.008	0.017	0.0022	80	0.130	0.013	100	
		33	Inconel 700	250 HB	0.165		0.017		0.0022		80		0.013	90	
		34	Stellite 21	350 HB	0.165		0.017		0.0020		70		0.013	90	
	Ti based	10	36	TiAl6V4	-	0.020	0.193	0.008	0.019	0.0025	140	0.130	0.015	180	
		37	T40	-	0.165		0.017		0.0020		110		0.013	140	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.138	0.004	0.014	0.0015	160	0.130	0.012	260	
		38	440C,	50 HRC	0.110		0.012		0.0012		130		0.009	0.009	220
		38	G-X260NiCr42	55 HRC	0.088		0.009		0.0007		130		0.065	0.009	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.110	0.004	0.012	0.0012	130	190	0.097	0.009	160	
		41	G-X300CrMo15	55 HRC	0.020	0.088	0.004	0.009	0.0007	90	160	0.065	0.007	130	
White Cast Iron															
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.331	0.008	0.028	0.0050	650	1310	0.195	0.019	910	



# CNMM 433 NR LT 10 & LT 1000

Material Group	Gr. No	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	Vc [sfm]		Suggested Starting Parameters					
					min	max	min	max		min	max	D.O.C.	Feed	Vc			
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.276	0.008	0.024	0.0056	590	1080	0.195	0.018	780			
		2		190 HB		0.276		0.024					0.0050	910	0.017	720	
		3		250 HB		0.276		0.021					0.0042	820	0.016	650	
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.276	0.008	0.021	0.0045	390	910	0.195	0.015	650		
		4,6		230 HB	0.220		0.021		0.0039					820	0.015	590	
		5,7		280 HB	0.220		0.007		0.019					0.0033	680	0.014	490
		8		350 HB	0.193		0.007		0.019					0.0028	590	0.014	420
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.220	0.007	0.019	0.0033	220	620	0.162	0.014	450		
		10		280 HB	0.220		0.019		0.0033					490	0.014	390	
		11		320 HB	0.165		0.019		0.0022					420	0.013	320	
		11		350 HB	0.165		0.017		0.0022					360	0.013	290	
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.020	0.276	0.008	0.019	0.0033	550	880	0.195	0.013	620			
		14		240 HB		0.276		0.019					0.0031	520	0.012	550	
	Duplex	5	14 X2CrNi23-4, S31500	290 HB	0.020	0.220	0.007	0.017	0.0025	260	490	0.162	0.010	320			
		14		310 HB		0.220		0.017					0.0025	220	0.010	290	
	Ferritic & Martensitic	6	12 410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.276	0.009	0.019	0.0033	550	820	0.195	0.013	620			
		13		42 HRc		0.220		0.019					0.0028	390	0.012	420	
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.276	0.006	0.028	0.0056	550	820	0.195	0.017	650			
		16		200 HB		0.276		0.026					0.0050	520	0.017	590	
		16		250 HB		0.276		0.026					0.0050	490	0.017	520	
	Malleable & Nodular	8	17,19 GG40, GGG70, 50005	150 HB	0.020	0.276	0.006	0.024	0.0042	390	750	0.195	0.014	590			
		17,19		200 HB		0.276		0.024					0.0033	620	0.014	520	
		18,20		250 HB		0.276		0.024					0.0033	620	0.014	450	
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.020	0.165	0.008	0.017	0.0022	80	160	0.130	0.013	100			
		33		250 HB		0.165		0.017					0.0022	80	0.013	90	
		34		350 HB		0.165		0.017					0.0020	70	0.013	90	
	Ti based	10	36 TiAl6V4	-	0.020	0.193	0.008	0.019	0.0025	140	210	0.130	0.015	180			
37			T40	0.165		0.017		0.0020					110	0.013	140		
Hardened Mat.	Steel	11	38 X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.138	0.004	0.014	0.0017	160	320	0.130	0.012	260			
		38		50 HRc		0.110		0.012					0.0014	130	0.009	220	
		38		55 HRc		0.088		0.009					0.0008	130	0.009	190	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.110	0.004	0.012	0.0014	130	190	0.097	0.009	160			
		41	G-X300CrMo15	55 HRc	0.020	0.088	0.004	0.009	0.0008	90	160	0.065	0.007	130			
W	Al (>8%Si)	12	25 AlSi12	130 HB	0.020	0.331	0.008	0.028	0.0056	650	1310	0.195	0.019	910			

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- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNXX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

- DRILLING
- SPMG
- WCMX



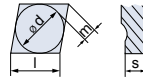
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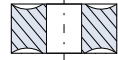
Shape



Clearance Angle



**Tolerance**  
 d ± 0.003  
 m ± 0.005  
 s ± 0.005



**Fixing Chip breaker**

Part No.	Description	Grade	magia	l	s	r	Stock
6607045	<b>CNMP 432 NN</b>	LT 10		0.508	0.187	0.031	●
6608031	<b>CNMP 432 NN</b>	LT 1000	magia	0.508	0.187	0.031	●
3665525	<b>CNMP 433 NN</b>	LT 10		0.508	0.187	0.047	●
6608036	<b>CNMP 433 NN</b>	LT 1000	magia	0.508	0.187	0.047	●

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

80° Diamond shape, double sided inserts with positive chipbreaker geometry. Generates low cutting forces, suitable for High Temperature Alloys.

**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut
<b>CNMP 432 NN</b>			
<b>CNMP 433 NN</b>			

<b>Finishing:</b> d.o.c. = 0.012 - 0.059 inch fn = 0.003 - 0.008 inch/rev	<b>Medium:</b> d.o.c. = 0.028 - 0.177 inch fn = 0.006 - 0.018 inch/rev	<b>Roughing</b> d.o.c. = 0.118 - 0.276 inch fn = 0.014 - 0.028 inch/rev
---	--	---

= Good  
 = Acceptable  
 = Not recommended

Machine Recommendations Guide. Details on page 19.



**Stainless Steel Exotic Material**

**CNMP - TNMP - WNMP**

**CNMP TNMP WNMP**

**Exotic Material**

Verify

**Cutting Conditions**

# CNMP 432 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>s</sub> [sfm]		Suggested Starting Parameters					
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>s</sub>			
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.197	0.008	0.020	0.0028	590	1080	0.118	0.014	0.780			
		2	190 HB	0.020				0.0028	910					720			
		3	250 HB	0.018				0.0023	820					650			
	Low alloyed	2	6 42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.157	0.008	0.018	0.0019	390	910	0.118	0.013	0.650			
		4,6	230 HB	0.018				0.0019	820					590			
		5,7	260 HB	0.016				0.0019	680					490			
		8	350 HB	0.016				0.0016	590					420			
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.157	0.007	0.016	0.0019	220	490	0.098	0.012	0.390			
		10	280 HB	0.014				0.0012	420					320			
		11	320 HB	0.011				0.0012	360					290			
		11	350 HB	0.011				0.0012	360					290			
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.010	0.620			
		14	240 HB	0.016				0.0016	520					720	0.009	0.550	
	Duplex	5	14 X2CrNiN23-4, S31500	290 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	0.320			
		14	310 HB	0.014				0.0012	220					450	0.290		
	Ferritic & Martensitic	6	12 410, X5Cr17, 17-4 PH, 430	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	0.620			
		13	42 HRC	0.016				0.0016	390					620	0.420		
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	0.590			
		15	200 HB	0.022				0.0028	520					750	0.520		
		16	250 HB	0.020				0.0019	490					680	0.450		
	Malleable & Nodular	8	17,19 GG40, GGG70, 50005	150 HB	0.020	0.197	0.006	0.020	0.0023	390	750	0.118	0.012	0.590			
		17,19	200 HB	0.020				0.0020	620					450			
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoiy 800	240 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	0.100			
		33	Inconel 700	250 HB				0.014	0.0011					80	140	0.090	
		34	Stellite 21	350 HB				0.014	0.0011					70	130	0.090	
	Ti based	10	36 TiAl6V4	-	0.020	0.157	0.008	0.016	0.0012	140	210	0.079	0.013	0.180			
		37	T40	-				0.014	0.0011					110	180	0.140	
	Hardened Mat.	Steel	11	38 X100CrMo13, 440C	45 HRC	0.020	0.098	0.004	0.012	0.0009	160	320	0.079	0.010	0.260		
			38	50 HRC	0.010				0.0006	130					290	0.059	0.008
38			G-X260NiCr42	55 HRC	0.008				0.0005	130					260	0.039	0.007
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	0.160			
		41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	0.130			
HT	Al (C-8%Si)	12	25 AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	0.910			

- CCMT
- CNMG
- CNMM
- CNMP**
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

All Nexus products are backed by our 100% satisfaction guarantee.



- DRILLING
- SPMG
- WCMX



# CNMP 433 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [ftm]		Suggested Starting Parameters					
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.029	0.236	0.010	0.027	0.0047	1080	0.158	0.018	780				
		2	190 HB	0.236		0.027		0.0047		910				720			
		3	250 HB	0.236		0.024		0.0040		820				650			
	Low alloyed	2	6 42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.029	0.236	0.010	0.024	0.0032	910	0.158	0.017	650				
		4,6	230 HB	0.189		0.010		0.024		0.0032				390	820	0.017	590
		5,7	280 HB	0.189		0.009		0.021		0.0032				680	420	0.016	490
		8	350 HB	0.185		0.009		0.021		0.0026				590	360	0.016	420
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.029	0.189	0.009	0.021	0.0032	620	0.132	0.016	390				
		10	280 HB	0.189		0.019		0.021		0.0021				220	490	0.016	320
		11	320 HB	0.142		0.019		0.021		0.0021				360	290	0.015	290
	Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.029	0.236	0.010	0.021	0.0032	550	0.158	0.016	620			
			14	240 HB	0.236		0.021		0.0026		520				720	0.015	550
Duplex		5	14 X2CrNiNi23-4, S31500	290 HB	0.029	0.189	0.009	0.019	0.0021	260	0.132	0.013	320				
		14	310 HB	0.189		0.019		220		450				290			
Ferritic & Martensitic		6	12 410, X6Cr17, 17-4 PH, 430	200 HB	0.029	0.236	0.011	0.021	0.0026	550	0.158	0.016	620				
		13	42 HRc	0.189		0.021		390		820				0.118	0.014	420	
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.029	0.236	0.008	0.032	0.0053	550	0.158	0.018	650				
		15	200 HB	0.236		0.032		0.0047		520				750	590		
		16	250 HB	0.236		0.029		0.0047		490				680	520		
	Malleable & Nodular	8	17,19 GGG40, GGG70, 50005	150 HB	0.029	0.236	0.008	0.027	0.0040	820	0.158	0.016	590				
		17,19	200 HB	0.236		0.027		0.0034		390				750	520		
		18,20	250 HB	0.236		0.027		0.0032		620				450			
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.029	0.142	0.010	0.019	0.0018	80	0.106	0.015	100				
		33	Inconel 700	250 HB		0.142		0.019		80				140	90		
		34	Stellite 21	350 HB		0.142		0.019		70				130	90		
	Ti based	10	36 TiAl6V4	-	0.029	0.189	0.010	0.021	0.0021	140	0.106	0.016	180				
		37	T40	-		0.142		0.019		0.0018				110	150	140	
		Hardened Mat.	Steel	11		38 X100CrMo13, 440C, G-X260NiCr42		45 HRc		0.029				0.118	0.005	0.016	0.0016
38	50 HRc			0.094	0.013	0.0011	130	290	0.079		0.010	220					
38	55 HRc			0.071	0.011	0.0008	130	260	0.053		0.009	190					
Chilled Cast Iron	40		Ni-Hard 2	400 HB	0.029	0.094	0.005	0.013	0.0011	130	190	0.079	0.009	160			
	White Cast Iron		41	G-X300CrMo15	55 HRc	0.029	0.071	0.005	0.011	0.0008	90	160	0.053	0.008	130		
IF	Al (>8%Si)	12	25 AlSi12	130 HB	0.029	0.276	0.010	0.032	0.0048	650	1310	0.158	0.020	910			

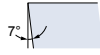




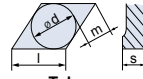
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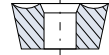
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $m \pm 0.003$   
 $s \pm 0.005$



Fixing Chip breaker

CCMT  
 CNMG  
 CNMM  
 CNMP  
**DCMT**  
 DNMG  
 DNUX

EPGT  
 EPMT  
 KNUX  
 RCMT  
 SCMT  
 SNMG  
 TCMT  
 TNMG  
 TNMP

TNUX  
 TPMR  
 VBMT  
 VCMT  
 VNMG  
 WNMG  
 WNMP  
 STAR

CGGX  
 CNGG  
 DCGX  
 DNGG  
 TCGX  
 TNGG  
 VNGG

Part No.	Description	Grade	magia	l	s	r	Stock
3764421	DCMT 2(1.5)1 NN	LT 10		0.305	0.094	0.016	●
3768811	DCMT 2(1.5)1 NN	LT 1000	magia	0.305	0.094	0.016	●
3764424	DCMT 3(2.5)1 NN	LT 10		0.458	0.156	0.016	●
3768821	DCMT 3(2.5)1 NN	LT 1000	magia	0.458	0.156	0.016	●
3764427	DCMT 3(2.5)2 NN	LT 10		0.458	0.156	0.031	●
3768826	DCMT 3(2.5)2 NN	LT 1000	magia	0.458	0.156	0.031	●
3732040	DCMT 432 PM4	5615		0.591	0.187	0.031	●

**NN** All purpose Chipbreaker

● Stocking  
 ○ Non-stocking

55°Diamond shape inserts, suitable for Internal Turning due to a unique chip removal geometry. Generates low cutting forces, most suitable for small work-pieces.

**Application Guide**

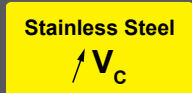
	Finishing	Medium	Roughing / Interrupted cut	
DCMT 2(1.5)1 NN	😊	😐	😞	😊 = Good 😐 = Acceptable 😞 = Not recommended
DCMT 3(2.5)1 NN	😊	😐	😞	
DCMT 3(2.5)2 NN	😐	😊	😐	
DCMT 432 PM4	See the back of the box			

**Finishing:** d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:** d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing:** d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

Machine Recommendations Guide. Details on page 19.



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DRILLING  
 SPMG  
 WCMX

# DCMT 2(1.5)1 NN LT 10 & LT 1000

Material Group	Gr. N <sup>+</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.008	0.083 0.069 0.069	0.003	0.008 0.007 0.007	0.0006 0.0005 0.0005	590	1080 910 820	0.039	0.007	980 850 780		
		Low alloyed	2	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.008	0.069 0.069 0.055 0.055	0.003	0.007 0.007 0.006 0.006	0.0005 0.0005 0.0004 0.0003	390	910 820 680 590	0.039	0.006	850 780 650 590	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB 280 HB 320 HB 350 HB	0.008	0.069 0.069 0.055 0.055	0.003	0.006 0.005 0.005 0.005	0.0004 0.0004 0.0002	220	620 490 420 360	0.039	0.005	590 450 390 360
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.008	0.069 0.069	0.003	0.006 0.006	0.0003 0.0002	550 520	880 720	0.039	0.005	850 680
		Duplex		5	X2CrNi23-4, S31500	290 HB 310 HB	0.008	0.055 0.055	0.003	0.005 0.005	0.0002	260 220	490 450	0.039	0.005	450 450
	Ferritic & Martensitic		6	410, X6Cr17, 17-4 PH, 430	200 HB 42 HRc	0.008	0.069 0.055	0.003	0.006 0.005	0.0003 0.0002	550 390	820 620	0.039	0.006 0.005	780 590	
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, Nu30B	150 HB 200 HB 250 HB	0.008	0.083 0.083 0.083	0.002	0.007 0.007 0.007	0.0006	550 520 490	820 750 680	0.039	0.007	780 720 650
	Malleable & Nodular			8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.008	0.069 0.069 0.069	0.002	0.006 0.006 0.006	0.0005 0.0004	390	820 750 620	0.039	0.006	780 720 590
				Fe, Ni & Co based	9	31,32 Incoloy 800 33 Inconel 700 34 Stellite 21	240 HB 250 HB 350 HB	0.008	0.055 0.055 0.055	0.003	0.005 0.005 0.005	0.0002	80 80 70	160 160 140	0.039	0.005
	Ti based	10	36 TiAl6V4 37 T40		- -	0.008	0.055 0.055	0.003	0.005 0.005	0.0003 0.0002	140 110	210 190	0.039	0.006 0.005	190 160	
		Hardened Mat.	Steel	11	38 X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.008	0.050 0.041 0.039	0.001	0.004 0.003 0.003	0.0002 0.0002 0.0001	160 130 130	320 290 260	0.030 0.024 0.020	0.004 0.004 0.003	290 260 220
Chilled Cast Iron	40			Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002	130	190	0.024	0.004	160	
	White Cast Iron			41	G-X300CrMo15	55 HRc	0.008	0.039	0.001	0.003	0.0001	90	160	0.020	0.003	130
HP	Al (>8%Si)		12	25 AlSi12	130 HB	0.008	0.110	0.003	0.010	0.0007	650	1310	0.039	0.008	1140	





# DCMT 3(2.5)1 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [Inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.008	0.118	0.004	0.009	0.0009	1080	0.079	0.007	980								
		2	1045, 1060,	190 HB										0.009	0.0008	590	910	850			
		3	28Mn6	250 HB										0.098	0.0007	910	780				
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.008	0.098	0.004	0.008	0.0008	390	910	0.079	0.006	850						
		4,6	Ck60, 4140, 4340,	230 HB	0.008											0.0007	0	820	780		
		5,7	100Cr6	260 HB	0.007											0.0006	0	680	650		
		8		350 HB	0.079											0.0006	0	590	590		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.008	0.098	0.004	0.006	0.0006	220	490	0.079	0.005	590						
		10	H13, M42, D3,	280 HB	0.006											0.0005	420	390			
		11	S6-5-2, 12N19	320 HB	0.079											0.0004	360	360			
		11		350 HB	0.079											0.0004					
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850						
		14	X5CrNi18-9	240 HB	0.007											0.0004	520	720	680		
	Duplex	5	14	X2CrNiMo23-4,	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450						
		14	S31500	310 HB	0.006											0.0004	220	450	450		
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780						
		13	17-4 PH, 430	42 HRC	0.079											0.0004	390	620	590		
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	720						
		15	EN-GJL-250,	200 HB	0.008											0.0009	520	750	650		
		16	No30B	118	0.008											0.0009	490	680			
	Malleable & Nodular	8	17,19	GG40, GGG70,	150 HB	0.008	0.098	0.003	0.007	0.0007	80	160	0.079	0.006	780						
		17,19	50005	200 HB	0.007											0.0006	390	750	720		
		18,20		250 HB	0.079											0.0006	620	590			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130						
		33	Inconel 700	250 HB	0.006											0.0004	80	160	130		
		34	Stellite 21	350 HB	0.079											0.006	70	140	110		
	Ti based	10	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190						
37		T40	-	0.006	0.0004											110	190	0.005	160		
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290						
		38	440C,	50 HRC	0.004											0.0003	130	290	0.047	0.004	260
		38	G-X260NiCr42	55 HRC	0.004											0.0002	130	260	0.039	0.003	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160							
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130						
HF	Al (C-8%Si)	12	25	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140						

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT**
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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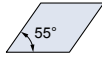
- DRILLING
- SPMG
- WCMX



# DCMT 3(2.5)2 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.157	0.008	0.020	0.0025	590	1080	0.118	0.012	780	
		2	180 HB	0.157		0.020		0.0025			910			720	
		3	250 HB	0.157		0.018		0.0021			820			650	
	Low alloyed	2	6 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.157	0.008	0.018	0.0017	390	910	0.118	0.011	650	
		4,6	230 HB	0.126		0.008		0.018			0.0017			820	590
		5,7	260 HB	0.126		0.007		0.016			0.0017			680	490
		8	350 HB	0.110		0.007		0.016			0.0014			590	420
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.126	0.007	0.016	0.0017	220	620	0.098	0.011	450	
		10	280 HB	0.126		0.016		0.0017			490			390	
		11	230 HB	0.094		0.014		0.0011			420			320	
		11	350 HB	0.094		0.014		0.0011			360			290	
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.020	0.157	0.008	0.016	0.0017	550	880	0.118	0.012	620	
		14	240 HB	0.157		0.016		0.0014		520	720			550	
	Duplex	5	14 X2CrNiMo23-4, S31500	290 HB	0.020	0.126	0.007	0.014	0.0011	260	490	0.098	0.010	320	
		14	310 HB	0.126		0.014		220		450	290				
	Ferritic & Martensitic	6	12 410, X5Cr17, 17-4 PH, 430	200 HB	0.020	0.157	0.009	0.016	0.0014	550	820	0.118	0.011	620	
		13	42 HRc	0.126		0.016		390		620	420				
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.157	0.006	0.024	0.0028	550	820	0.118	0.012	650	
		15	200 HB	0.157		0.024		0.0025		520	750			590	
		16	250 HB	0.157		0.022		0.0025		490	690			520	
	Malleable & Nodular	8	17,19 GG640, GGG70, 50005	150 HB	0.020	0.157	0.006	0.020	0.0021	390	750	0.118	0.011	520	
		17,19	200 HB	0.157		0.020		0.0018		620	450				
		18,20	250 HB	0.157		0.020		0.0017		620	450				
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.020	0.094	0.008	0.014	0.0010	80	140	0.079	0.010	100	
		33	Inconel 700	250 HB		0.094		0.014		80	140			90	
		34	Stellite 21	350 HB		0.094		0.014		70	130			90	
	Ti based	10	36 TiAl6V4	-	0.020	0.126	0.008	0.016	0.0011	140	210	0.079	0.012	180	
		37	T40	-		0.094		0.014		0.0010	110			160	140
Hardened Mat.	Steel	11	38 X100CrMo13, 440C	45 HRc	0.020	0.079	0.004	0.012	0.0008	160	320	0.079	0.009	260	
		38	440C	50 HRc		0.063		0.010		0.0006	130			290	220
		38	G-X260NiCr42	55 HRc		0.047		0.008		0.0004	130			260	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.063	0.004	0.010	0.0006	130	190	0.059	0.006	160	
		41	G-X300CrMo15	55 HRc	0.020	0.047	0.004	0.008	0.0004	90	160	0.039	0.005	130	
WC	12	25 AISI12	130 HB	0.020	0.169	0.008	0.024	0.0025	650	1310	0.118	0.014	910		

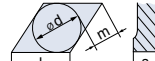



**D**
**N**
**M**
**G**


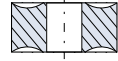
Shape



Clearance Angle



Tolerance


 Fixing  
Chip breaker

$s \pm 0.005$   
 For  $l = 11, d \pm 0.002 \quad m \pm 0.003$   
 For  $l = 15, d \pm 0.003 \quad m \pm 0.005$

Part No.	Description	Grade	magia	l	s	r	Stock
7607061	DNMG 331 NN	LT 10		0.458	0.187	0.016	●
7608011	DNMG 331 NN	LT 1000	magia	0.458	0.187	0.016	●
7607065	DNMG 332 NN	LT 10		0.458	0.187	0.031	●
7608016	DNMG 332 NN	LT 1000	magia	0.458	0.187	0.031	●
7607069	DNMG 431 NN	LT 10		0.610	0.187	0.016	●
7608021	DNMG 431 NN	LT 1000	magia	0.610	0.187	0.016	●
7607073	DNMG 432 NN	LT 10		0.610	0.187	0.031	●
7608026	DNMG 432 NN	LT 1000	magia	0.610	0.187	0.031	●
7608029	DNMG 432 NX	LT 1000	magia	0.610	0.187	0.031	●
7607077	DNMG 433 NN	LT 10		0.610	0.187	0.047	●
7608031	DNMG 433 NN	LT 1000	magia	0.610	0.187	0.047	●
7608036	DNMG 441 NN	LT 10		0.610	0.250	0.016	●
7601910	DNMG 441 NN	LT 1000	magia	0.610	0.250	0.016	○
7608041	DNMG 442 NN	LT 10		0.610	0.250	0.031	●
7601911	DNMG 442 NN	LT 1000	magia	0.610	0.250	0.031	○
7608046	DNMG 443 NN	LT 10		0.610	0.250	0.047	●
7601912	DNMG 443 NN	LT 1000	magia	0.610	0.250	0.047	○

**NN** All purpose Chipbreaker

● Stocking  
 ○ Non-stocking

Machine Recommendations  
Guide. Details on page 19.

Stainless Steel



$V_c \Rightarrow$

Productivity



LAMINA

TECHNOLOGIES

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185

DRILLING

SPMG

WCMX

CCMT

CNMG

CNMM

CNMP

DCMT

**DNMG**

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

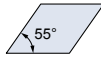
TCGX

TNGG

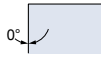
VNGG



**D N M G**



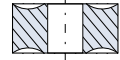
Shape



Clearance Angle



Tolerance



Fixing Chip breaker

s ± 0.005  
For l = 11, d ± 0.002 m ± 0.003  
For l = 15, d ± 0.003 m ± 0.005

**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut	Roughing / Interrupted cut <i>magia</i>
DNMG 331 NN	😊	😞	😡	😡
DNMG 332 NN	😞	😊	😞	😞
DNMG 431 NN	😊	😞	😡	😡
DNMG 432 NN	😞	😊	😞	😊
DNMG 433 NN	😡	😞	😊	😊
DNMG 441 NN	😊	😞	😡	😡
DNMG 442 NN	😞	😊	😞	😊
DNMG 443 NN	😡	😞	😊	😊

**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
fn = 0.003 - 0.008 inch/rev

**Medium:**

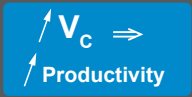
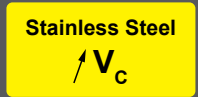
d.o.c. = 0.028 - 0.177 inch  
fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
fn = 0.014 - 0.028 inch/rev

55° Diamond shape inserts. Suitable for roughing complex shapes operations such as Profiling, Copying and Finishing turning operations.

- 😊 = Good
- 😞 = Acceptable
- 😡 = Not recommended



Machine Recommendations Guide. Details on page 19.



# DNMG 331 NN LT 10 & LT 1000

Material Group	Gr. # <sup>1</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters												
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>										
<b>Steel</b>	<b>Non-alloyed</b>	1	1	C35, Ck45, 1020, 125 HB	0.008	0.118	0.004	0.009	0.0009	590	1080	0.079	0.007	980										
		2	2	1045, 1060, 190 HB		0.098		0.009	0.0008	910	850													
		3	3	28Mn6, 250 HB		0.098		0.008	0.0007	820	780													
	<b>Low alloyed</b>	2	6	42CrMo4, Si50, 180 HB	0.008	0.098	0.004	0.008	0.0008	390	910	0.079	0.006	850										
		4	4	42CrMo4, Si50, 230 HB											0.008	0.098	0.007	0.0007	820	780				
		5	5	Ck60, 4140, 4340, 100Cr6, 280 HB											0.007	0.079	0.007	0.0006	680	650				
		8	8	350 HB											0.007	0.079	0.007	0.0006	590	590				
	<b>High alloyed</b>	3	10	X40CrMoV5, 180 HB	0.008	0.098	0.004	0.007	0.0006	220	620	0.079	0.005	590										
10		10	H13, M42, D3, 280 HB	0.006											0.098	0.006	0.0006	490	450					
11		11	S6-5-2, 12Ni19, 320 HB	0.006											0.079	0.006	0.0005	420	390					
14		14	350 HB	0.006											0.079	0.006	0.0004	360	360					
<b>Stainless Steel</b>	<b>Austenitic</b>	4	4	304, 316, 180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850										
		14	14	X5CrNi18-9, 240 HB											0.007	0.098	0.007	0.0004	520	720	680			
	<b>Duplex</b>	5	14	X2CrNi23-4, 290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450										
14	14	S31500, 310 HB	0.006	0.079											0.006	0.0003	220	450	0					
<b>Ferritic &amp; Martensitic</b>	6	12	410, X6Cr17, 200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.008	780											
	13	13	17-4 PH, 430, 42 HRC											0.006	0.079	0.006	0.0004	390	620	0.005	590			
<b>Cast Iron</b>	<b>Grey</b>	7	7	G620, GG40, 150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	780										
		15	15	EN-GJL-250, 200 HB											0.008	0.118	0.003	0.008	0.0009	520	750	0.079	0.007	720
		16	16	No308, 250 HB												0.118		0.008	0.0009	490	680			650
	<b>Malleable &amp; Nodular</b>	8	17,19	GGG40, GGG70, 150 HB	0.008	0.098	0.003	0.007	0.0007	390	750	0.079	0.008	720										
		17,19	17,19	50005, 200 HB											0.007	0.098	0.007	0.0006	390	750	0.079	0.008	720	
		18,20	18,20	250 HB											0.007	0.098	0.007	0.0006	620	590			590	
<b>High Temp. Alloys</b>	<b>Fe, Ni &amp; Co based</b>	9	9	Incoloy 800, 240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130										
		33	33	Inconel 700, 250 HB											0.006	0.079	0.006	0.0004	80	160	0.079	0.005	130	
		34	34	Stellite 21, 350 HB											0.006	0.079	0.006	0.0004	70	140	0.079	0.006	190	
	<b>Ti based</b>	10	10	TA616V4, -	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190										
		37	37	T40, -											0.006	0.079	0.006	0.0004	110	190	0.079	0.005	160	
<b>Hardened Mat.</b>	<b>Steel</b>	11	38	X100CrMo13, 45 HRC	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290										
		38	38	440C, 50 HRC											0.004	0.059	0.004	0.0003	130	290	0.047	0.004	260	
		38	38	G-X260NiCr42, 55 HRC											0.004	0.055	0.004	0.0002	130	260	0.039	0.003	220	
	<b>Chilled Cast Iron</b>	11	40	Ni-Hard 2, 400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160										
41		41	G-X300CrMo15, 55 HRC	0.004											0.055	0.004	0.0002	90	160	0.039	0.003	130		
<b>WC</b>		12	25	AlSi12, 130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140										

CCMT

CNMG

CNMM

CNMP

DCMT

**DNMG**

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNWX

TPMR

VBMT

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VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

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DRILLING

SPMG

WCMX



# DNMG 332 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [ftm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.197	0.020	0.0028	590	1080	0.118	0.014	780		
		2	1045, 1060,	190 HB		0.197	0.020	0.0028		910				720	
		3	28Mn6	250 HB		0.197	0.018	0.0023		820				650	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.197	0.008	0.018	390	910	0.118	0.013	650		
		4,6		230 HB		0.157	0.008	0.018		0.0019				820	590
		5,7		280 HB		0.157	0.007	0.016		0.0019				680	490
		8		350 HB		0.138	0.007	0.016		0.0016				590	420
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.157	0.007	0.016	220	620	0.098	0.012	450		
		10		280 HB		0.157	0.016	0.0019		490				390	
		11		320 HB		0.118	0.014	0.0012		420				320	
		11		350 HB		0.118	0.014	0.0012		360				290	
Stainless Steel	Austenitic	4	304, 316,	180 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.010	620	
		14	X5CrNi18-9	240 HB		0.197	0.016	0.0016	520	720	0.009		550		
	Duplex	5	X2CrNiNi23-4, S31500	290 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	320	
		14	310 HB	0.157		0.014	0.0000	220	450	290					
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620	
		13	42 HRC	0.157		0.016	0.0000	390	620	0.098	420				
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	650	
		15	200 HB	0.197		0.024	0.0028	520	750	590					
		16	250 HB	0.197		0.022	0.0028	490	680	520					
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520	
		17,19	200 HB	0.197		0.020	0.0019	620	450						
		18,20	250 HB	0.197		0.020	0.0019	620	450						
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	100	
		33	Inconel 700	250 HB		0.118	0.014	0.0000	80	140	90				
		34	Stellite 21	350 HB		0.118	0.014	0.0000	70	130	90				
	Ti based	10	TiAl6V4	-	0.020	0.138	0.008	0.016	0.0012	140	210	0.079	0.013	180	
		37	T40	-		0.118	0.014	0.0011	110	180	0.012			140	
	Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260N-C142	45 HRc	0.020	0.098	0.004	0.012	0.0009	160	320	0.079	0.010	260
38			50 HRc	0.079	0.010		0.0006	130	290	0.059	0.008	220			
38			55 HRc	0.059	0.008		0.0005	130	260	0.039	0.007	190			
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160	
		41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	130	
HP		Al (>8%Si)	12	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910



# DNMG 431 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, CK45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.008	0.118 0.098 0.098	0.004	0.009 0.009 0.0007	0.0009 0.0008 0.0007	590	1080 910 820	0.079	0.007	980 850 780		
		Low alloyed	2	42CrMo4, St50, CK60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.008 0.008 0.007 0.007	0.0008 0.0007 0.0006 0.0006	390	910 820 680 590	0.079	0.006	850 780 650 590	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12W19	220 HB 280 HB 320 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.007 0.006 0.006 0.006	0.0006 0.0006 0.0005 0.0004	220	620 490 420 360	0.079	0.005	590 450 390 360
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.008	0.098 0.098	0.004	0.007 0.007	0.0005 0.0004	550 520	880 720	0.079	0.005	850 680
				Duplex	5	X2CrNi23-4, S31500	290 HB 310 HB	0.008	0.079 0.079	0.004	0.006 0.006	0.0003 0.0003	260 220	490 450	0.079	0.005
	Ferritic & Martensitic	6			410, X6Cr17, 17-4 PH, 430	200 HB 42 HRC	0.008	0.098 0.079	0.004	0.007 0.006	0.0005 0.0004	550 390	820 620	0.079	0.006 0.005	780 590
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.008	0.118 0.118 0.118	0.003	0.008 0.008 0.008	0.010 0.009 0.009	550 520 490	820 750 680	0.079	0.007	780 720 650
	Malleable & Nodular			8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.008	0.098 0.098 0.098	0.003	0.007 0.007 0.007	0.0007 0.0006 0.0006	390	820 750 620	0.079	0.006	780 720 590
				Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB 250 HB 350 HB	0.008	0.079 0.079 0.079	0.004	0.006 0.006 0.006	0.0004 0.0004 0.0004	80	160 160 70	0.079	0.005
	Ti based		10		TiAl6V4 T40	- -	0.008	0.079 0.079	0.004	0.006 0.006	0.0005 0.0004	140 110	210 190	0.079	0.006 0.005	190 160
			Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC 50 HRC 55 HRC	0.008	0.071 0.059 0.055	0.002	0.005 0.004 0.004	0.0003 0.0003 0.0002	160 130 130	320 290 260	0.059 0.047 0.039	0.004 0.004 0.003
Chilled Cast Iron	11	Ni-Hard 2			400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160	
	White Cast Iron	41			G-X300CrMo15	55 HRC	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130
Al (>8%Si)	12	AlSi12		130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140		

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG**
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
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- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
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# DNMG 432 NN LT 10 & LT 1000

## DNMG 432 NX LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.197	0.008	0.020	0.0028	590	1080	0.118	0.014	780		
		2	1045, 1060,	190 HB		0.197		0.020	0.0028		910			720		
		3	28Mn6	250 HB		0.197		0.018	0.0023		820			650		
	Low alloyed	2	6	42CrMo4, S150,	180 HB	0.020	0.197	0.008	0.018	0.0019	390	910	0.118	0.013	650	
		4,6	Ck60, 4140, 4340,	230 HB	0.157		0.008	0.018	0.0019	820		590				
		5,7	100Cr6	280 HB	0.157		0.007	0.016	0.0019	680		490				
		8		350 HB	0.138		0.007	0.016	0.0016	590		420				
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.157	0.007	0.016	0.0019	220	620	0.098	0.012	450	
		10	H13, M42, D3,	280 HB	0.157		0.016		0.0019	490		390				
		11	S6-5-2, 12W19	320 HB	0.118		0.014		0.0012	420		320				
		11		350 HB	0.118		0.014		0.0012	360		290				
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.010	620	
		14	X5CrNi18-9	240 HB	0.197		0.000		0.0016	520	720	0.009		550		
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	320	
		14	S31500	310 HB	0.157		0.000		0.0012	220	450	290				
	Ferritic & Martensitic	6	12	410, XCr17,	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620	
		13	17-1 PH, 430	42 HRC	0.157		0.000		0.000	390	620	0.098			420	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	650	
		15	EN-GJL-250,	200 HB	0.197		0.024		0.0028	520	750	590				
		16	No30B	250 HB	0.197		0.022		0.0028	490	690	520				
	Malleable & Nodular	8	17,19	GG40, GGG70,	150 HB	0.020	0.197	0.006	0.020	0.0023	820	0.118	0.012	590		
		17,19	50005	200 HB	0.197		0.000		0.0020	390	750			520		
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	100	
		33	Inconel 700	250 HB	0.118		0.000		0.0011	80	140	90				
		34	Stellite 21	350 HB	0.118		0.000		0.000	70	130	90				
	Ti based	10	36	TiAl6V4	-	0.020	0.138	0.008	0.016	0.0012	140	210	0.079	0.013	180	
		37	T40	-	0.118		0.014		0.0011	110	189	140				
	Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.098	0.004	0.012	0.0009	160	320	0.079	0.010	260
			38	440C,	50 HRC	0.079		0.010		0.0006	130	290	0.059		0.008	220
38			G-X260NiCr42	55 HRC	0.059	0.008		0.0005		130	260	0.039	0.007		190	
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160		
White Cast Iron		41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.008	130		
HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910	





## DNMG 433 NN LT 10 &amp; LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.029	0.236	0.010	0.027	0.0047	1080	0.158	0.018	780		
		2	1045, 1060,	190 HB		0.236		0.027		910				720	
		3	28Mn6	250 HB		0.236		0.024		820				650	
	Low alloyed	2	6	42CrMo4, S150,	180 HB	0.029	0.236	0.010	0.024	0.0032	910	0.158	0.017	650	
		4,6	Ck60, 4140, 4340,	230 HB	0.189		0.010	0.024	0.0032	820	0.017		590		
		5,7	100Cr6	280 HB	0.189		0.009	0.021	0.0032	680	0.016		490		
		8	350 HB	0.165	0.009		0.021	0.0026	590	0.016	420				
	High alloyed	3	10	X40CrMoV5,	220 HB	0.029	0.189	0.009	0.021	0.0032	620	0.132	0.016	450	
		10	H13, M42, D3,	280 HB	0.189		0.021		0.0032	490	0.016		390		
		11	S6-5-2, 12N19	320 HB	0.142		0.019		0.0021	420	0.015		320		
		11	350 HB	0.142	0.019		0.0021		360	0.015	290				
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.029	0.236	0.010	0.021	0.0032	550	880	0.158	0.016	620
		14	X5CrNi18-9	240 HB	0.236		0.021	0.0026	520	720	0.015	550			
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.029	0.189	0.009	0.019	0.0021	260	490	0.132	0.013	320
		14	S31500	310 HB	0.189		0.019		0.0021	220	450	0.013		290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.029	0.236	0.011	0.021	0.0026	550	820	0.158	0.016	620
		13	17-4 PH, 430	42 HRC	0.189		0.021		0.0026	390	620	0.118		0.014	420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.029	0.236	0.008	0.032	0.0053	550	820	0.158	0.018	650
		15	EN-GJL-250,	200 HB	0.236		0.032		0.0047	520	750	0.158		0.018	590
		16	No308	250 HB	0.236		0.029		0.0047	490	680	0.158		0.018	520
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.029	0.236	0.008	0.027	0.0040	820	0.158	0.016	590	
		17,19	50005	200 HB	0.236		0.027		0.0034	390	750		0.158	0.016	520
18,20	250 HB	0.236	0.027	0.0032	620	450									
High Temp Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.029	0.142	0.010	0.019	0.0018	80	140	0.106	0.015	100
		33	Inconel 700	250 HB	0.142		0.019		0.0018	80	140	0.106		0.015	90
		34	Stellite 21	350 HB	0.142		0.019		0.0018	70	130	0.106		0.015	90
	Ti based	10	36	TiAl6V4	-	0.029	0.189	0.010	0.021	0.0021	140	210	0.106	0.017	180
37		T40	-	0.142	0.019		0.0018		110	180	0.106	0.016		140	
Hardened Met.	Steel	11	38	X100CrMo13,	45 HRC	0.029	0.118	0.005	0.016	0.0016	160	320	0.106	0.013	260
		38	440C,	50 HRC	0.094		0.013		0.0011	130	290	0.079		0.010	220
		38	G-X260N/Cr42	55 HRC	0.071		0.011		0.0008	130	260	0.053		0.009	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.029	0.094	0.005	0.013	0.0011	130	190	0.079	0.009	160	
		41	G-X30CrMo15	55 HRC	0.029	0.071	0.005	0.011	0.0008	90	160	0.053	0.008	130	
HT	Al (C-8%Si)	12	25	AlSi12	130 HB	0.029	0.276	0.010	0.032	0.0048	650	1310	0.158	0.020	910



# DNMG 441 NN LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.008	0.118	0.004	0.009	0.0009	590	1080	0.079	0.007	980						
		2	190 HB	0.098										0.008	0.009	0.0008	910	850		
		3	250 HB	0.098										0.008	0.008	0.0007	820	750		
	Low alloyed	2	6 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.008	0.098	0.004	0.008	0.0008	390	910	0.079	0.006	850						
		4,6	230 HB	0.008										0.006	0.0007	820	780			
		5,7	280 HB	0.079										0.007	0.0006	680	650			
		8	350 HB	0.079										0.007	0.0006	590	590			
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.008	0.098	0.004	0.007	0.0006	220	620	0.079	0.005	590						
		10	280 HB	0.098										0.006	0.0006	490	450			
		11	320 HB	0.079										0.006	0.0005	420	390			
		11	350 HB	0.079										0.006	0.0004	360	360			
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850						
		14	240 HB	0.098										0.007	0.0004	520	720	680		
	Duplex	5	14 X2CrNiN23-4, S31500	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450						
		14	310 HB	0.079										0.006	0.0003	220	450	450		
	Ferritic & Martensitic	6	12 410, X6Cr17, 17-4 PH, 430	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780						
		13	42 HRc	0.079										0.006	0.0004	390	620	590		
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	780						
		15	200 HB	0.118										0.008	0.0009	520	750	720		
		16	250 HB	0.118										0.008	0.0009	490	680	650		
	Malleable & Nodular	8	17,19 GGG40, GGG70, 50005	150 HB	0.008	0.098	0.003	0.007	0.0007	390	750	0.079	0.006	780						
		17,19	200 HB	0.098										0.007	0.0006	620	720			
		18,20	250 HB	0.098										0.007	0.0006	520	590			
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130						
		33	Inconel 700	250 HB										0.006	0.0004	80	160	130		
		34	Stellite 21	350 HB										0.079	0.006	0.0004	70	140	110	
	Ti based	10	36 TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190						
		37	T40	-										0.079	0.006	0.0004	110	190	160	
Hardened Mat.	Steel	11	38 X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.008	0.000	0.002	0.005	0.0003	160	320	0.059	0.004	290						
		38	50 HRc	0.000										0.004	0.0003	130	290	0.047	0.004	260
		38	55 HRc	0.000										0.004	0.0002	130	260	0.039	0.003	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160						
		41	G-X300CrMo15	55 HRc	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130						
UT	Al (>8%Si)	12	25 AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140						



# DNMG 442 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.197	0.008	0.020	0.0028	590	1080	0.118	0.014	780
		2		190 HB		0.197		0.020			910			720
		3		250 HB		0.197		0.018			820			650
	Low alloyed	2	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.197	0.008	0.018	0.0019	390	910	0.118	0.013	650
		4,6		230 HB		0.157		0.018			820			590
		5,7		280 HB		0.157		0.007			680			490
		8		350 HB		0.138		0.007			590			420
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.157	0.007	0.016	0.0019	220	620	0.098	0.012	450
		10		280 HB		0.157		0.016			490			390
		11		320 HB		0.118		0.014			420			320
		11		350 HB		0.118		0.014			360			290
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.197	0.008	0.016	0.0019	550	0.118	0.010	620	
		14		240 HB		0.197		0.016		520			550	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.020	0.157	0.007	0.014	0.0012	260	0.098	0.011	320	
		14		310 HB		0.157		0.014		220			290	
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.197	0.009	0.016	0.0016	550	0.118	0.013	620	
		13		42 HRC		0.157		0.016		390			420	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.197	0.006	0.024	0.0031	550	0.118	0.014	650	
		15		200 HB		0.197		0.024		520			590	
		16		250 HB		0.197		0.022		490			520	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.197	0.006	0.020	0.0023	390	0.118	0.012	590	
		17,19		200 HB		0.197		0.020		750			520	
		18,20		250 HB		0.197		0.020		620			450	
High Temp Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.020	0.118	0.008	0.014	0.0011	80	0.079	0.011	100	
		33		250 HB		0.118		0.014		80			90	
		34		350 HB		0.118		0.014		70			90	
	Ti based	10	TiAl6V4, T40	-	0.020	0.138	0.008	0.016	0.0012	140	0.079	0.013	180	
		36		-		0.014		0.0011		110			180	
		37		-		0.118		0.014		110			140	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.020	0.098	0.004	0.012	0.0009	160	0.079	0.010	260	
		38		50 HRC		0.079		0.010		290			220	
		38		55 HRC		0.059		0.008		130			190	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	0.059	0.007	160	
		41	G-X300CrMo15	55 HRC		0.059		0.008		90			160	
	HT	Al (>8%Si)	12	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	0.118	0.016	910

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG**
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

All Nexus products are backed by our 100% satisfaction guarantee.



- DRILLING
- SPMG
- WCMX



# DNMG 443 NN LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB		0.236		0.027	0.0047		1080			780	
		2	1045, 1060,	190 HB	0.029	0.236	0.010	0.027	0.0047	590	910	0.158	0.018	720	
		3	28Mn6	250 HB		0.236		0.024	0.0040		820			650	
	Low alloyed	2	6	42CrMo4, St50,	180 HB		0.236	0.010	0.024	0.0032		910		0.017	650
		4,6	Ck60, 4140, 4340,	230 HB	0.029	0.189	0.010	0.024	0.0032	390	820	0.158	0.017	590	
		5,7	100Cr6	280 HB		0.189	0.009	0.021	0.0032		680		0.016	490	
		8		350 HB		0.165	0.009	0.021	0.0026		590		0.016	420	
	High alloyed	3	10	X40CrMoV5,	220 HB		0.189		0.021	0.0032		620		0.016	450
		10	H13, M42, D3,	280 HB	0.029	0.189	0.009	0.021	0.0032	220	490	0.132	0.016	390	
		11	S6-5-2, 12Ni19	320 HB		0.142		0.021	0.0021		420		0.015	320	
		11		350 HB		0.142		0.019	0.0021		360		0.015	290	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.029	0.236	0.010	0.021	0.0032	550	880	0.158	0.016	620
		14	X5CrNi18-9	240 HB		0.236		0.021	0.0026	520	720		0.015	550	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.029	0.189	0.009	0.019	0.0021	260	490	0.132	0.013	320
		14	S31500	310 HB		0.189		0.019		220	450			290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.029	0.236	0.011	0.021	0.0026	550	820	0.158	0.016	620
		13	17-4 PH, 430	42 HRC		0.189		0.021		390	620	0.118	0.014	420	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB		0.236		0.032	0.0053	550	820			650
		15	EN-GJL-250,	200 HB	0.029	0.236	0.008	0.032	0.0047	520	750	0.158	0.018	590	
		16	No30B	250 HB		0.236		0.029	0.0047	490	680			520	
	Malleable & Nodular	8	17,19	GG640, GGG70,	150 HB		0.236		0.027	0.0040		820			590
		17,19	50005	200 HB	0.029	0.236	0.008	0.027	0.0034	390	750	0.158	0.016	520	
		18,20		250 HB		0.236		0.027	0.0032		620			450	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB		0.142		0.019		80	140			100
		33	Inconel 700	250 HB	0.029	0.142	0.010	0.019	0.0018	80	140	0.106	0.015	90	
		34	Stellite 21	350 HB		0.142		0.019		70	130			90	
	Ti based	10	36	TiAl6V4	-	0.029	0.189	0.010	0.021	0.0021	140	210	0.106	0.017	180
		37	T40	-		0.142		0.019	0.0018	110	180		0.016	140	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC		0.118		0.016	0.0016	160	320	0.106	0.013	260
		38	440C,	50 HRC	0.029	0.094	0.005	0.013	0.0011	130	290	0.079	0.010	220	
		38	G-X26NiCr42	55 HRC		0.071		0.011	0.0008	130	260	0.053	0.009	190	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.029	0.094	0.005	0.013	0.0011	130	190	0.079	0.009	160	
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.029	0.071	0.005	0.011	0.0008	90	160	0.053	0.008	130
WF	Al (>6%Si)	12	25	AlSi12	130 HB	0.029	0.276	0.010	0.032	0.0048	650	1310	0.158	0.020	910



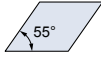


**D**

**N**

**U**

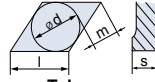
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Shape

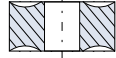


Clearance Angle



Tolerance

d ± 0.003  
m ± 0.005  
s ± 0.005



Fixing Chip breaker

CCMT  
CNMG  
CNMM  
CNMP  
DCMT  
DNMG  
**DNUX**

Part No.	Description	Grade	magia	l	s	r	Stock
7602157	<b>DNUX 442 R11</b>	LT 10		0.610	0.250	0.031	○
7602793	<b>DNUX 442 R11</b>	LT 1000	magia	0.610	0.250	0.031	○

**R11** All purpose Chipbreaker

- Stocking
- Non-stocking

EPGT  
EPMT  
KNUX  
RCMT  
SCMT  
SNMG  
TCMT  
TNMG  
TNMP  
TNUX  
TPMR

55° nose angle insert with four cutting edges. Excellent chip control and low cutting forces, suitable for conventional Turning operations and long shafts.

**Application Guide**

Finishing Medium Roughing / Interrupted cut

**DNUX 150608 R11**



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😞 = Not recommended

VCMT  
VNMG  
WNMG  
WNMP  
STAR  
CCGX  
CNGG  
DCGX  
DNGG  
TCGX  
TNGG  
VNGG

Machine Recommendations Guide. Details on page 19.

Feed x d.o.c.  
= Amax

V<sub>c</sub> ⇒  
Productivity



All Nexus products are backed by our 100% satisfaction guarantee.



DRILLING  
SPMG  
WCMX

# DNUX 442 R11 LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.197	0.008	0.020 0.020 0.018	0.0028 0.0028	590	1080 910 820	0.118	0.014	780 720 650		
		Low alloyed	2	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.020	0.197	0.008	0.018 0.018 0.016 0.016	0.0019 0.0019 0.0019 0.0016	390	910 820 680 590	0.118	0.013 0.013 0.012 0.012	650 590 490 420	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB 280 HB 320 HB 350 HB	0.020	0.157	0.007	0.016 0.018 0.014	0.0019 0.0019 0.0012	220	620 490 420 360	0.098	0.012 0.012 0.011 0.011	450 390 320 290
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.020	0.197	0.008	0.016 0.016	0.0019 0.0016	550 520	880 720	0.118	0.014 0.013	620 550
				Duplex	5	X2CrNiN23-4, S31500	290 HB 310 HB	0.020	0.157	0.007	0.014 0.014	0.0012	260 220	490 450	0.098	0.011
	Ferritic & Martensitic	6			410, X6Cr17, 17-4 PH, 430	200 HB 42 HRc	0.020	0.197	0.009	0.016 0.016	0.0016	550 390	820 620	0.118 0.098	0.013	620 420
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.024 0.024 0.022	0.0031 0.0028 0.0028	550 520 490	820 750 680	0.118	0.014	650 590 520
	Malleable & Nodular			8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020 0.020 0.020	0.0023 0.0020 0.0019	390	820 750 620	0.118	0.012	590 520 450
				High Temp. Alloys	9	Incoloy 800 Inconel 700 Stellite 21	240 HB 250 HB 350 HB	0.020	0.118	0.008	0.014 0.014 0.014	0.0011	80 80 70	140 140 130	0.079	0.011
			TI based		10	TiAl6V4 Ti40	- -	0.020	0.157	0.008	0.016 0.014	0.0012 0.0011	140 110	210 180	0.079	0.013 0.012
	Hardened Mat.				Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.020	0.098 0.079 0.059	0.004	0.012 0.010 0.008	0.0009 0.0006 0.0005	160 130 130	320 290 260	0.079 0.059 0.039
Chilled Cast Iron			40	Ni-Hard 2		400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160
		White Cast Iron	41	G-X300CrMo15		55 HRc	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	130
HT	AI (>8%Si)	12	AISI12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910		





# EPGT

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX

## EPGT

Part No.	Description	Grade	l	s	r	Stock
3934020	EPGT 1.2(1).5L W08 (ANSI)	NS530	0.161	0.063	0.008	●
	EPGT 040102L W08 (ISO)					

- Stocking
- Non-stocking

- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR

### Application Guide

See the back of the box for speeds and feeds.

- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG



# EPMT

Part No.	Description	Grade	l	s	r	Stock
3934030	EPMT 1.3(3).5 PM5 (ANSI)	5625	0.224	0.094	0.008	●
	EPMT 050202 PM5 (ISO)					○

- Stocking
- Non-stocking

## Application Guide

See the back of the box for speeds and feeds.



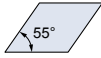


**K**

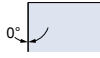
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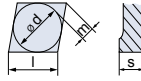
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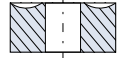
Shape



Clearance Angle



Tolerance  
 $d \pm 0.003$   
 $m \pm 0.005$   
 $s \pm 0.005$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Stock
3164420	<b>KNUX 160405 R11</b>	<b>LT 10</b>	0.630	0.187	0.020	●

**R11** All purpose Chipbreaker

- Stocking
- Non-stocking

A 55° nose angle insert with two cutting edges. Popular insert with excellent chip control and low cutting forces, suitable for conventional Turning operations

**Application Guide**

**Finishing Medium Roughing / Interrupted cut**

**KNUX 160405 R11**



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😞 = Not recommended

Machine Recommendations Guide. Details on page 19.

Feed x d.o.c.  
= Amax

$V_c \Rightarrow$   
Productivity



All Nexus products are backed by our 100% satisfaction guarantee.

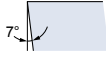


# KNUX 160405 R11 LT 10

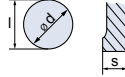
Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [ftm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.008	0.196 0.163 0.163	0.004	0.009 0.009 0.008	0.0013 0.0011 0.0010	1080 910 820	0.118	0.007	980 850 780		
		Low alloyed	2	42CrMo4, S50, Ck60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.008	0.163 0.163 0.131 0.131	0.004	0.008 0.008 0.007 0.007	0.0011 0.0010 0.0009 0.0008	910 820 680 590	0.118	0.006	850 780 650 590	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB 280 HB 320 HB 350 HB	0.008	0.163 0.163 0.131 0.131	0.004	0.007 0.006 0.006 0.006	0.0009 0.0009 0.0007 0.0006	620 490 420 360	0.079	0.005	590 450 390 360
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.008	0.163 0.163	0.004	0.007 0.007	0.0009 0.0008	550 520	0.118	0.006	850 680
				Duplex	5	X2CrNiN23-4, S31500	290 HB 310 HB	0.008	0.131 0.131	0.004	0.006 0.006	0.0006 0.0006	260 220	0.079	0.006
	Ferritic & Martensitic	6			410, X6Cr17, 17-4 PH, 430	200 HB 42 HRc	0.008	0.163 0.131	0.004	0.007 0.006	0.0008 0.0007	550 390	0.118 0.079	0.006	780 590
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N630B	150 HB 200 HB 250 HB	0.008	0.196 0.196 0.196	0.003	0.008 0.008 0.008	0.0013 0.0012 0.0010	550 520 490	0.118	0.007	780 720 650
	Malleable & Nodular			8	GGG40, GG670, 50005	150 HB 200 HB 250 HB	0.008	0.163 0.163 0.163	0.003	0.007 0.007 0.007	0.0010 0.0009 0.0009	820 390 750 620	0.098	0.006	780 720 590
				Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB 250 HB 350 HB	0.008	0.131 0.131 0.131	0.004	0.006 0.006 0.006	0.0006 0.0006 0.0006	80 80 70	0.079	0.005
			Ti based		10	TiAl6V4 T40	- -	0.008	0.131 0.131	0.004	0.006 0.006	0.0007 0.0006	140 110	0.079	0.006 0.005
	Hardened Mat.				Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.008	0.118 0.098 0.091	0.002	0.005 0.004 0.004	0.0004 0.0004 0.0003	160 130 130	0.071 0.055 0.047
			Chilled Cast Iron	40		NI-Hard 2	400 HB	0.008	0.105	0.002	0.005	0.0004	130	0.190	0.071
White Cast Iron		41	G-X300CrMo15	55 HRc		0.008	0.091	0.002	0.004	0.0003	90	160	0.047	0.003	130
WF		12	Al (>8%Si)	AIS:12	130 HB	0.008	0.261	0.004	0.012	0.0015	650	1310	0.118	0.008	1140


**R**
**C**
**M**
**T**

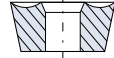

Shape



Clearance Angle



Tolerance


 Fixing  
Chip breaker

$s \pm 0.005$   
 For  $l = 06/08/10$ ,  $d \pm 0.002$   $m \pm 0.003$   
 For  $l = 12$ ,  $d \pm 0.003$   $m \pm 0.005$

Part No.	Description	Grade	magia	l	s	r	Stock
3355511	RCMT 0602 M0	LT 10		0.236	0.094	0.118	●
3351914	RCMT 0602 M0	LT 1000	magia	0.236	0.094	0.118	○
3355516	RCMT 0803 M0	LT 10		0.315	0.125	0.158	●
3351915	RCMT 0803 M0	LT 1000	magia	0.315	0.125	0.158	○
3355521	RCMT 10T3 M0	LT 10		0.394	0.156	0.197	●
3351916	RCMT 10T3 M0	LT 1000	magia	0.394	0.156	0.197	○
3355528	RCMT 1204 M0	LT 10		0.472	0.187	0.236	●
3351917	RCMT 1204 M0	LT 1000	magia	0.472	0.187	0.236	○

● Stocking

○ Non-stocking

Round inserts with positive Rake angle and excellent edge resistance. Suitable for Profiling operations of Mill rolls and Aerospace parts.

Machine Recommendations  
 Guide. Details on page 19.

Stainless Steel



Productivity



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 by our 100% satisfaction guarantee.



201

DRILLING

SPMG

WCMX

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

**RCMT**

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG



R

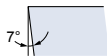
C

M

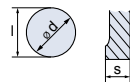
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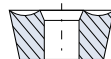
Shape



Clearance Angle



Tolerance



Fixing Chip breaker

s ± 0.005  
For l = 06/08/10, d ± 0.002 m ± 0.003  
For l = 12, d ± 0.003 m ± 0.005

Application Guide

Finishing Medium Roughing / Interrupted cut

RCMT 0602  
RCMT 0803  
RCMT 10T3  
RCMT 1204

	Finishing	Medium	Roughing / Interrupted cut
RCMT 0602	☹️	😊	☹️
RCMT 0803	☹️	😊	☹️
RCMT 10T3	☹️	😊	☹️
RCMT 1204	☹️	😊	☹️

😊 = Good  
☹️ = Acceptable  
☹️ = Not recommended

Finishing:

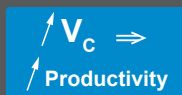
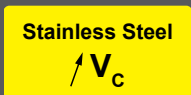
d.o.c. = 0.012 - 0.059 inch  
fn = 0.003 - 0.008 inch/rev

Medium:

d.o.c. = 0.028 - 0.177 inch  
fn = 0.006 - 0.018 inch/rev

Roughing

d.o.c. = 0.118 - 0.276 inch  
fn = 0.014 - 0.028 inch/rev



Machine Recommendations Guide. Details on page 19.



# RCMT 0602 M0 LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.079	0.006	0.016	0.0010	1080	0.039	0.014	780					
		2	1045, 1060,	190 HB										0.016	0.0010	910	0.014	720
		3	28Mn6	250 HB										0.014	0.0009	820	0.012	650
	Low alloyed	2	6	42CrMo4, S150,	180 HB	0.020	0.079	0.006	0.014	0.0009	390	0.039	0.012	650				
		4,6	Ck60, 4140, 4340,	230 HB	0.014									0.0007	820	0.011	590	
		5,7	100Cr6	280 HB	0.014									0.0006	680	0.011	490	
		8		320 HB	0.014									0.0006	590	0.011	420	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.079	0.005	0.012	0.0006	220	0.039	0.011	450				
		10	H13, M42, D3,	280 HB	0.012									0.0005	490	0.011	390	
		11	S6-5-2, 12N19	320 HB	0.012									0.0005	420	0.011	320	
			11		350 HB		0.059		0.012	0.0004			0.011	290				
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.079	0.006	0.014	0.0005	550	0.039	0.013	720				
		14	X5CrNi18-9	240 HB	0.013									0.0005	520	0.012	620	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.059	0.005	0.012	0.0005	260	0.039	0.011	320				
		14	S31500	310 HB	0.012									0.0005	220	0.011	290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.079	0.006	0.014	0.0005	550	0.039	0.013	680				
		13	17-4 PH, 430	42 HRc	0.012									0.0005	390	0.011	450	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.079	0.004	0.018	0.0011	550	0.039	0.014	650				
		16	EN-GJL-250,	200 HB	0.018									0.0010	520	0.013	590	
		16	No30B	250 HB	0.018									0.0009	490	0.012	520	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.079	0.004	0.014	0.0009	390	0.039	0.012	590				
		17,19	50005	200 HB	0.014									0.0008	750	0.011	520	
		18,20		250 HB	0.014									0.0007	620	0.011	450	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.059	0.005	0.012	0.0005	80	0.039	0.011	100				
		33	Inconel 700	250 HB	0.012									0.0005	80	0.011	90	
		34	Stellite 21	350 HB	0.012									0.0005	70	0.011	90	
	Ti based	10	36	TiAl6V4	-	0.020	0.059	0.005	0.013	0.0005	140	0.039	0.012	180				
		37	T40	-	0.012									0.0005	110	0.011	140	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.047	0.002	0.009	0.0003	160	0.035	0.007	260				
		38	440C,	50 HRc	0.007									0.0003	130	0.028	220	
		38	G-X260NiCr42	55 HRc	0.006									0.0002	130	0.024	190	
	Chilled Cast Iron		40	Ni-Hard 2	400 HRc	0.020	0.047	0.002	0.009	0.0003	130	0.035	0.007	160				
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.012	0.031	0.002	0.006	0.0002	90	0.024	0.005	130				
HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.079	0.006	0.016	0.0011	650	0.039	0.014	910				

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT**
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX



# RCMT 0803 M0 LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB		0.094		0.016	0.0012		1080		0.014	780	
		2	1045, 1060,	190 HB	0.020	0.094	0.006	0.016	0.0012		590	0.047	0.014	720	
		3	28Mn6	250 HB		0.071		0.014	0.0010				0.012	650	
	Low alloyed	2	42CrMo4, S150,	180 HB		0.094		0.014	0.0010		910		0.012	650	
		4,6	Ck60, 4140, 4340,	230 HB	0.020	0.094	0.006	0.014	0.0009		390	0.047	0.012	590	
		5,7	100Cr6	280 HB		0.094		0.014	0.0007				0.012	490	
		8		350 HB		0.071		0.014	0.0007				0.012	420	
	High alloyed	3	X40CrMoV5,	220 HB		0.094		0.014	0.0009		620		0.012	450	
		10	H13, M42, D3,	280 HB	0.020	0.094	0.005	0.012	0.0007		220	0.047	0.011	390	
		11	S6-5-2, 12Ni19	320 HB		0.071		0.012	0.0006				0.011	320	
		11		350 HB		0.071		0.012	0.0005				0.011	290	
Stainless Steel	Austenitic	4	304, 316,	180 HB	0.020	0.094	0.006	0.014	0.0006	550	880	0.047	0.013	720	
		14	X5CrNi18-9	240 HB		0.094		0.013	0.0006	520	720		0.013	620	
	Duplex	5	X2CrNiN23-4,	290 HB	0.020	0.071	0.005	0.012	0.0006	260	490	0.047	0.011	320	
		14	S31500	310 HB		0.071		0.012	0.0006	220	450		0.011	290	
	Ferritic & Martensitic	6	410, X6Cr17,	200 HB	0.020	0.094	0.006	0.014	0.0006	550	820	0.047	0.013	680	
		13	17-4 PH, 430	42 HRc		0.094		0.012	0.0006	390	620		0.011	450	
Cast Iron	Grey	7	GG20, GG40,	150 HB		0.094		0.018	0.0013	550	820		0.014	650	
		15	EN-GJL-250,	200 HB	0.020	0.094	0.004	0.018	0.0012	520	750	0.047	0.014	590	
	16	No30B	250 HB		0.094		0.018	0.0011	490	680		0.014	520		
	Malleable & Nodular	8	GGC40, GGG70,	150 HB		0.094		0.014	0.0011		820		0.012	590	
		17,19	50005	200 HB	0.020	0.094	0.004	0.014	0.0009	390	750	0.047	0.012	520	
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB		0.071		0.012	0.0006	80	160		0.011	100	
		33	Inconel 700	250 HB	0.020	0.071	0.005	0.012	0.0006	80	160	0.047	0.011	90	
		34	Stellite 21	350 HB		0.071		0.012	0.0006	70	140		0.011	90	
	Ti based	10	TiAl6V4	-	0.020	0.071	0.005	0.013	0.0006	140	210	0.047	0.012	180	
		37	T40	-		0.071		0.012	0.0006	110	190		0.011	140	
	Hardened Mat.	Steel	11	X100CrMo13,	45 HRc	0.020	0.057	0.002	0.009	0.0004	160	320	0.043	0.007	260
			36	440C,	50 HRc		0.020	0.047	0.007	0.0003	130	290	0.033	0.006	220
38			G-X260NiCr42	55 HRc	0.012	0.038		0.006	0.0002	130	260	0.028	0.005	190	
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.057	0.002	0.009	0.0003	130	190	0.043	0.007	160	
		41	G-X300CrMo15	55 HRc	0.012	0.038	0.002	0.006	0.0002	90	160	0.028	0.005	130	
HP	Al (>8%Si)	12	AlSi12	130 HB	0.020	0.094	0.006	0.016	0.0013	650	1310	0.047	0.014	910	



# RCMT 10T3 M0 LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, CK45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.110 0.110 0.083	0.006	0.016 0.016 0.014	0.0014 0.0014 0.0012	1080 590 910	910 820 820	0.055	0.014 0.014 0.012	780 720 650		
		Low alloyed	2	42CrMo4, St50, CK60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.020	0.110 0.110 0.110 0.083	0.006	0.014 0.014 0.014 0.014	0.0012 0.0010 0.0009 0.0008	390	910 820 680 590	0.055	0.012	650 590 490 420	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12W19	220 HB 280 HB 320 HB 350 HB	0.020	0.110 0.110 0.083 0.083	0.005	0.014 0.012 0.012 0.012	0.0010 0.0009 0.0007 0.0006	220	620 490 420 360	0.055	0.012 0.011 0.011 0.011	450 390 320 290
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.020	0.110 0.110	0.006	0.014 0.013	0.0007 0.0007	550 520	880 720	0.055	0.013	720 620
				Duplex	5	X2CrNi23-4, S31500	290 HB 310 HB	0.020	0.083 0.083	0.005	0.012 0.012	0.0007 0.0007	260 220	490 450	0.055	0.011
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430		200 HB 42 HRC	0.020	0.110 0.110	0.006	0.014 0.012	0.0007 0.0007	550 390	820 620	0.055	0.013 0.011	680 450	
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.110 0.110 0.110	0.004	0.018 0.018 0.018	0.0015 0.0014 0.0013	550 520 490	820 750 680	0.055	0.014	650 590 520
	Malleable & Nodular			8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.110 0.110 0.110	0.004	0.014 0.014 0.014	0.0013 0.0011 0.0010	390	820 750 620	0.055	0.012	590 520 450
				Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB 250 HB 350 HB	0.020	0.083 0.083 0.083	0.005	0.012 0.012 0.012	0.0007 0.0007 0.0007	80 80 70	160 160 140	0.055	0.011
	Ti based		10		TiAl6V4 T40	- -	0.020	0.083 0.083	0.005	0.013 0.012	0.0007 0.0007	140 110	210 190	0.055	0.012 0.011	180 140
			Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC 50 HRC 55 HRC	0.020	0.066 0.055 0.044	0.002	0.009 0.007 0.006	0.0004 0.0004 0.0003	160 130 130	320 290 260	0.050	0.007 0.006 0.005
Chilled Cast Iron	11	Ni-Hard 2			400 HB	0.020	0.066	0.002	0.009	0.0004	130	190	0.050	0.007	160	
	White Cast Iron	41			G-X300CrMo15	55 HRC	0.012	0.044	0.002	0.006	0.0002	90	160	0.033	0.005	130
Al (>8%Si)	12	AlSi12		130 HB	0.020	0.110	0.006	0.016	0.0015	650	1310	0.055	0.014	910		

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT**
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX



# RCMT 1204 M0 LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>
Steel	Non-alloyed	1	C35, CK45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.126	0.006	0.016	0.0024	1080 590	910 910 820	0.079	0.017	780
		2		0.126		0.016		0.0024					0.017	720
		3		0.094		0.014		0.0021					0.014	650
	Low alloyed	2	42CrMo4, St50, CK60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.020	0.126	0.006	0.014	0.0021	390	910 820 680 590	0.079	0.014	650
		4,6		0.126		0.014		0.0018						590
		5,7		0.126		0.014		0.0015						680
		8		0.094		0.014		0.0013						590
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB 280 HB 320 HB 350 HB	0.020	0.126	0.005	0.014	0.0018	220	620 490 420 360	0.079	0.014	450
		10		0.126		0.012		0.0015					390	
		11		0.094		0.012		0.0012					420	
		11		0.094		0.012		0.0010					360	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB 240 HB	0.020	0.126	0.006	0.014	0.0012	550 520	880 720	0.079	0.015	720
		14		0.126		0.013		0.0012					520	
	Duplex	5	X2CrNi23-4, S31500	290 HB 310 HB	0.020	0.094	0.005	0.012	0.0009	260 220	490 450	0.059	0.013	320
		14		0.094		0.012		0.0009					220	
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB 42 HRC	0.020	0.126	0.006	0.014	0.0012	550 390	820 620	0.079	0.015	680
		13		0.126		0.012		0.0010					390	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.126	0.004	0.018	0.0026	550 520 490	820 750 680	0.079	0.017	650
		15		0.126		0.018		0.0024					520	
		16		0.126		0.018		0.0022					490	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.126	0.004	0.014	0.0022	390	820 750 620	0.079	0.014	520
		17,19		0.126		0.014		0.0017					620	
		17,19		0.126		0.014		0.0019					750	
		18,20		0.126		0.014		0.0017					620	
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB 250 HB 350 HB	0.020	0.094	0.005	0.012	0.0009	80 80 70	160 160 140	0.059	0.013	100
		33		0.094		0.012		0.0009					80	
		34		0.094		0.012		0.0009					70	
	Ti based	10	TiAl6V4 T40	- -	0.020	0.094	0.005	0.013	0.0009	140 110	210 190	0.059	0.014	180
		36		0.094		0.013		0.0009					140	
		37		0.094		0.012		0.0009					110	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC 50 HRC 55 HRC	0.020	0.076	0.002	0.009	0.0007	160 130 130	320 290 260	0.071	0.009	260
		38		0.063		0.007		0.0006					130	
		38		0.050		0.006		0.0004					130	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.076	0.002	0.009	0.0006	130	190	0.071	0.009	160
		41	G-X300CrMo15	55 HRC	0.020	0.050	0.002	0.006	0.0004	90	160	0.047	0.006	130
NI	Al (>8%Si)	25	AlSi12	130 HB	0.020	0.126	0.006	0.016	0.0026	650	1310	0.079	0.017	910







**S**

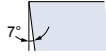
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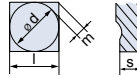
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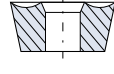
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $m \pm 0.003$   
 $s \pm 0.005$



Fixing Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
8661459	SCMT 3(2.5)1 NN	LT 10		0.375	0.156	0.016	○
8661918	SCMT 3(2.5)1 NN	LT 1000	magia	0.375	0.156	0.016	○
8661458	SCMT 3(2.5)2 NN	LT 10		0.375	0.156	0.031	○
8661919	SCMT 3(2.5)2 NN	LT 1000	magia	0.375	0.156	0.031	○

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

Square inserts with a positive rake angle with excellent cutting edge resistance. Suitable for Boring.

**Application Guide**

**Finishing Medium Roughing / Interrupted cut**

**SCMT 3(2.5)1 NN**



**SCMT 3(2.5)2 NN**



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 $f_n = 0.003 - 0.008$  inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 $f_n = 0.006 - 0.018$  inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 $f_n = 0.014 - 0.028$  inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😞 = Not recommended



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# SCMT 3(2.5)1 NN LT 10 & LT 1000

Material Group	Gr. N° / Group	VDR	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>s</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>s</sub>	
Steel	Non- alloyed	1	C35, Ck45, 1020	125 HB		0.157		0.010	0.0011		1080			980	
		2	1045, 1060, 28Mn6	190 HB	0.008	0.131	0.004	0.010	0.0010	590	910	0.098	0.007	850	
		3		250 HB		0.131		0.009	0.0009		820			780	
	Low alloyed	2		42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB		0.131		0.009	0.0009		910			850
		4,6			230 HB	0.008	0.131	0.004	0.009	0.0009	390	820	0.098	0.006	780
		5,7			280 HB		0.105		0.008	0.0007		680			650
		8			350 HB		0.105		0.008	0.0007		590			590
	High alloyed	3		X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB		0.131		0.008	0.0007		620			590
		10			280 HB	0.008	0.131	0.004	0.007	0.0007	220	490	0.098	0.005	450
		11			320 HB		0.105		0.006	0.0006		420			390
		11			350 HB		0.105		0.006	0.0005		360			360
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.008	0.131	0.004	0.008	0.0006	550	880	0.098	0.005	850	
		14		240 HB		0.131		0.008	0.0005	520	720			680	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.008	0.105	0.004	0.006	0.0004	260	490	0.079	0.005	450	
		14		310 HB		0.105		0.006		220	450				
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.008	0.131	0.004	0.008	0.0006	550	820	0.098	0.006	780	
		13		42 HRC		0.105		0.007	0.0005	390	620	0.079	0.005	590	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, Nc30B	150 HB		0.157		0.009	0.0012	550	820			780	
		15		200 HB	0.008	0.157	0.003	0.009	0.0011	520	750	0.098	0.007	720	
		16		250 HB		0.157		0.009	0.0011	490	680			650	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB		0.131		0.008	0.0009		820			780	
		17,19		200 HB	0.008	0.131	0.003	0.008	0.0007	390	750	0.098	0.006	720	
		18,20		250 HB		0.131		0.008	0.0007		620			590	
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB		0.105		0.007		80	160			130	
		33	Inconel 700	250 HB	0.008	0.105	0.004	0.007	0.0005	80	160	0.079	0.005	130	
		34	Stellite 21	350 HB		0.105		0.007		70	140			110	
	Ti based	10	TiAlSiV4	-		0.105		0.007	0.0006	140	210			190	
		37	T40	-	0.008	0.105	0.004	0.006	0.0005	110	190	0.079	0.005	160	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.008	0.094	0.002	0.005	0.0004	160	320	0.074	0.004	290	
		38		50 HRC		0.079		0.005	0.0003	130	290	0.059	0.004	260	
		38		55 HRC		0.073		0.004	0.0002	130	260	0.049	0.003	220	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.084	0.002	0.005	0.0003	130	190	0.059	0.004	160	
		41	G-X300CrMo15	55 HRC	0.008	0.073	0.002	0.004	0.0002	90	160	0.049	0.003	130	
HF	Al (>8%Si)	25	AlSi12	130 HB	0.008	0.209	0.004	0.014	0.0013	650	1310	0.098	0.008	1140	



# SCMT 3(2.5)2 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non- alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.157	0.008	0.020	0.0025	590	1080	0.118	0.012	780		
		2	190 HB	0.157		0.020		0.0025	910		720					
		3	250 HB	0.157		0.018		0.0021	820		650					
	Low alloyed	2	6 42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.157	0.008	0.018	0.0017	390	910	0.118	0.011	650		
		4,6	230 HB	0.126		0.008		0.018	0.0017		820			590		
		5,7	280 HB	0.126		0.007		0.016	0.0017		680			490		
		8	350 HB	0.110		0.007		0.016	0.0014		590			420		
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.126	0.007	0.016	0.0017	220	620	0.098	0.011	450		
		10	280 HB	0.126		0.016		0.0017	490		390					
		11	320 HB	0.094		0.014		0.0011	420		320					
		11	350 HB	0.094		0.014		0.0011	360		290					
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.020	0.157	0.008	0.016	0.0017	550	880	0.118	0.012	650		
		14	240 HB	0.157		0.016		0.0014	520		720			590		
	Duplex	5	14 X2CrNi23-4, S31500	290 HB	0.020	0.126	0.007	0.014	0.0011	260	490	0.098	0.010	320		
		14	310 HB	0.126		0.014		0.0011	220		450			290		
	Ferritic & Martensitic	6	12 410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.157	0.009	0.016	0.0014	550	820	0.118	0.011	620		
		13	42 HRC	0.126		0.016		0.0014	390		620			420		
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No308	150 HB	0.020	0.157	0.006	0.024	0.0028	550	820	0.118	0.012	650		
		15	200 HB	0.157		0.024		0.0025	520		750			590		
		16	250 HB	0.157		0.022		0.0025	490		680			520		
	Malleable & Nodular	8	17,19 GG640, GGG70, 50005	150 HB	0.020	0.157	0.006	0.020	0.0018	390	820	0.118	0.011	590		
		17,19	200 HB	0.157		0.020		0.0017	620		450					
		18,20	250 HB	0.157		0.020		0.0017	620		450					
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.020	0.094	0.008	0.014	0.0010	80	140	0.079	0.010	100		
		33	Inconel 700	250 HB		0.094		0.014		80	140			90		
		34	Stellite 21	350 HB		0.094		0.014		70	130			90		
	Ti based	10	36 TiAl6V4	-	0.020	0.126	0.008	0.016	0.0011	140	210	0.079	0.012	180		
		37	T40	-		0.094		0.014	0.0010		110			180	140	
Hardened Mat.	Steel	11	38 X100CrMo13, 440C, 50 HRC	45 HRC	0.020	0.079	0.004	0.012	0.0008	160	320	0.079	0.009	260		
		38	50 HRC	0.063		0.010		0.0006	130		290			0.059	0.007	220
		38	G-X260NiCr42	55 HRC		0.047		0.008	0.0004		130			260	0.039	0.006
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.063	0.004	0.010	0.0006	130	190	0.059	0.006	160		
		41	G-X300CrMo15	55 HRC	0.020	0.047	0.004	0.008	0.0004	90	160	0.039	0.005	130		
NE	Al (c-8%Si)	12	25 AlSi12	130 HB	0.020	0.189	0.008	0.024	0.0025	650	1310	0.118	0.014	910		

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT**
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX





**S**

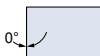
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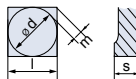
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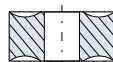
Shape



Clearance Angle



Tolerance  
 $d \pm 0.003$   
 $m \pm 0.005$   
 $s \pm 0.005$



Fixing Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
3263311	SNMG 432 NN	LT 10		0.500	0.187	0.031	●
3261921	SNMG 432 NN	LT 1000	magia	0.500	0.187	0.031	○
3263322	SNMG 433 NN	LT 10		0.500	0.187	0.047	●
3263011	SNMG 432 NX*	LT 1000	magia	0.500	0.187	0.031	○
3263326	SNMG 433 NN	LT 1000	magia	0.500	0.187	0.047	●

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

Square inserts with strong cutting edge. Suitable for Roughing operations.

**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut	Roughing / Interrupted cut <b>magia</b>
SNMG 432 NN	☹️	😊	☹️	😊
SNMG 432 NX	😊	😊	☹️	
SNMG 433 NN	☹️	☹️	😊	

😊 = Good  
 ☹️ = Acceptable  
 ☹️ (red) = Not recommended

**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

Machine Recommendations Guide. Details on page 19.



**F** ⇒  
Productivity

Feed x d.o.c.  
=  
Amax

**V<sub>c</sub>** ⇒  
Productivity



# SNMG 432 NN/NX LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1 C35, Ck45, 1020,	125 HB		0.197		0.028	0.0039		1080					780
		2	1045, 1060,	190 HB	0.020	0.197	0.012	0.028	0.0039	590	910	0.118	0.020	720		
		3	28Mn6	250 HB		0.197		0.025	0.0033		820			650		
	Low alloyed	2	6 42CrMo4, S150,	180 HB		0.197	0.012	0.025	0.0026		910		0.018	650		
		4.6	Ck60, 4140, 4340,	230 HB	0.020	0.157	0.012	0.025	0.0026	390	820	0.118	0.018	590		
		5.7	100Cr6	280 HB		0.157	0.010	0.022	0.0026		680		0.017	490		
		8		350 HB		0.138	0.010	0.022	0.0022		590		0.017	420		
	High alloyed	3	10 X40CrMoV5,	220 HB		0.157		0.022	0.0026		620		0.017	450		
		10	H13, M42, D3,	280 HB	0.020	0.157	0.010	0.022	0.0026	220	490	0.098	0.017	390		
		11	S6-5-2, 12N19	320 HB		0.118		0.019	0.0017		420		0.016	320		
		11		350 HB		0.118		0.019	0.0017		360		0.016	290		
Stainless Steel	Austenitic	4	14 304, 316,	180 HB	0.020	0.197	0.011	0.022	0.0026	550	880	0.118	0.020	620		
		14	X5CrNi19-9	240 HB		0.197		0.022	0.0022	520	720		0.018	550		
	Duplex	5	14 X2CrNi23-4,	290 HB	0.020	0.157	0.010	0.019	0.0017	260	490	0.098	0.016	320		
		14	S31500	310 HB		0.157		0.019		220	450		0.098	290		
	Ferritic & Martensitic	6	12 410, X6Cr17,	200 HB	0.020	0.197	0.012	0.022	0.0022	550	820	0.118	0.018	620		
		13	17-4 PH, 430	42 HRC		0.157		0.022		390	620	0.098	0.018	420		
Cast Iron	Grey	7	15 GG20, GG40,	150 HB		0.197		0.033	0.0044	550	820			650		
		15	EN-GJL-250,	200 HB	0.020	0.197	0.008	0.033	0.0039	520	750	0.118	0.020	590		
		16	No308	250 HB		0.197		0.030	0.0039	490	680			520		
	Malleable & Nodular	8	17,19 GG40, GG70,	150 HB		0.197		0.028	0.0033		820			590		
17,19		50005	200 HB	0.020	0.197	0.008	0.028	0.0028	390	750	0.118	0.017	520			
18,20			250 HB		0.197		0.028	0.0026		620			450			
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Inco700	240 HB		0.118		0.019		80	140			100		
		33	Inconel 700	250 HB	0.020	0.118	0.011	0.019	0.0015	80	140	0.079	0.016	90		
		34	Stellite 21	350 HB		0.118		0.019		70	130			90		
	Ti based	10	36 TiAl6V4	-		0.157		0.022	0.0017	140	210		0.018	180		
		37	T40	-	0.020	0.118	0.011	0.019	0.0015	110	180	0.079	0.017	140		
Hardened Mat.	Steel	11	38 X100CrMo13,	45 HRC		0.098		0.017	0.0013	160	320	0.079	0.014	260		
		38	440C,	50 HRC	0.020	0.079	0.006	0.014	0.0009	130	290	0.059	0.011	220		
		38	G-X260NiCr42	55 HRC		0.059		0.011	0.0007	130	260	0.039	0.010	190		
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.006	0.014	0.0009	130	190	0.059	0.010	160		
		41	G-X300CrMo15	55 HRC	0.020	0.059	0.006	0.011	0.0007	90	160	0.039	0.008	130		
HT Al (>8%Si)	12	25 AlSi12	130 HB	0.020	0.236	0.011	0.031	0.0039	650	1310	0.118	0.022	910			

Values for lead angle (Kr)=45°; For lead angle (Kr)=75°, please limit feed to 75% of the recommended

# SNMG 433 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.029	0.236	0.015	0.037	0.0061	590	910	0.158	0.026	780					
		2	1045, 1060,	190 HB	720															
		3	28Mn6	250 HB	650															
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.029	0.236	0.015	0.034	0.0041	390	680	0.158	0.023	650					
		4,6	820																	
		5,7	290 HB		0.189										0.015	0.034	0.0041	0.022	590	
		8	350 HB		0.189										0.012	0.030	0.0041	0.022	490	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.029	0.189	0.012	0.030	0.0041	220	490	0.132	0.022	450					
		10	280 HB		0.026										0.0027	420	390			
		11	320 HB		0.142										0.026	0.0027	420	320		
		11	350 HB		0.142										0.026	0.0027	360	290		
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.029	0.236	0.014	0.030	0.0041	550	880	0.158	0.023	620					
		14	240 HB	0.030	0.0034										520	720	0.020	550		
	Duplex	5	14	X2CrNi23-4, S31500	290 HB	0.029	0.189	0.012	0.026	0.0027	260	490	0.132	0.018	320					
		14	310 HB	0.189	0.026										220	450	290			
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.029	0.236	0.015	0.030	0.0034	550	820	0.158	0.022	620					
		13	42 HRC	0.189	0.030										390	620	0.118	0.020	420	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.029	0.236	0.012	0.045	0.0061	520	750	0.158	0.026	650					
		15	EN-GJL-250, No30B	200 HB	0.236										0.041	0.0061	490	680	520	
		16	250 HB	0.236	0.041										0.0061	490	680	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.029	0.236	0.012	0.037	0.0051	390	820	0.158	0.022	590					
		17,19	200 HB	0.037	0.0044										750	520				
		18,20	250 HB	0.236	0.037										0.0041	620	450			
	High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.029	0.142	0.014	0.026	0.0024	80	140	0.106	0.021	100				
			33	Inconel 700	250 HB	0.142										0.026	80	140	90	
			34	Stellite 21	350 HB	0.142										0.026	70	130	90	
		Ti based	10	36	TiAl6V4	-	0.029	0.189	0.014	0.030	0.0027	140	210	0.106	0.023	180				
37	T40	-	0.142	0.026	0.0024	110										180	140			
Hardened Mat.	Steel	11	38	X100CrMo13, 440C,	45 HRc	0.029	0.094	0.008	0.019	0.0014	130	290	0.079	0.015	220					
		38	G-X260NiCr42	50 HRc	0.019										0.010	130	260	0.053	0.013	190
		38	55 HRc	0.071	0.015										0.010	130	260	0.053	0.013	190
		40	Ni-Hard 2	400 HB	0.029										0.094	0.008	0.019	0.0014	130	190
	Chilled Cast Iron	41	G-X300CrMo15	55 HRc	0.029	0.071	0.008	0.015	0.0010	90	160	0.053	0.011	130						
White Cast Iron	41	G-X300CrMo15	55 HRc	0.029	0.071	0.008	0.015	0.0010	90	160	0.053	0.011	130							
Al (>8%Si)	12	25	AlSi12	130 HB	0.029	0.276	0.014	0.045	0.0067	650	1310	0.158	0.031	910						

Values for lead angle (Kr)=45°; For lead angle (Kr)=75°, please limit feed to 75% of the recommended





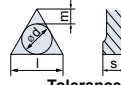
**T C M T**



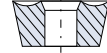
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $m \pm 0.003$   
 $s \pm 0.005$



Fixing  
 Chip breaker

CCMT  
 CNMG  
 CNMM  
 CNMP  
 DCMT  
 DNMG  
 DNUX  
 EPGT

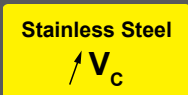
Part No.	Description	Grade	magia	l	s	r	Stock
3533010	TCMT 1.2(1).50	5615		0.378	0.094	0.004	●
3533020	TCMT 1.2(1)1	5625		0.378	0.094	0.008	●
3563311	TCMT 1.8(1.5)0 HF	251		0.378	0.094	0.008	●
3533033	TCMT 1.8(1.5)1 HM	251		0.378	0.094	0.016	●
3563388	TCMT 1.8(1.5)2 HM	251		0.378	0.094	0.031	●
3563399	TCMT 1.8(1.5)1 HF	251		0.378	0.094	0.016	●
3533030	TCMT 1.8(1.5)1 PF4	5625		0.378	0.094	0.016	●
3564431	TCMT 2(1.5)1 NN	LT 10		0.433	0.094	0.016	●
3568831	TCMT 2(1.5)1 NN	LT 1000	magia	0.433	0.094	0.016	●
3564435	TCMT 2(1.5)2 NN	LT 10		0.433	0.094	0.031	●
3568841	TCMT 2(1.5)2 NN	LT 1000	magia	0.433	0.094	0.031	●
3564438	TCMT 3(2.5)1 NN	LT 10		0.650	0.156	0.016	●
3568851	TCMT 3(2.5)1 NN	LT 1000	magia	0.650	0.156	0.016	●
3564441	TCMT 3(2.5)2 NN	LT 10		0.650	0.156	0.031	●
3568861	TCMT 3(2.5)2 NN	LT 1000	magia	0.650	0.156	0.031	●
3533090	TCMT 3(2.5)2 PM4	5625		0.650	0.156	0.031	○
3561774	TCMT 3(2.5)3 NN	LT 10		0.650	0.156	0.047	○
3561929	TCMT 3(2.5)3 NN	LT 1000	magia	0.650	0.156	0.047	○

EPMT  
 KNUX  
 RCMT  
 SCMT  
 SNMG  
**TCMT**  
 TNMG  
 TNMP  
 TNUX  
 TPMR  
 VBMT  
 VCMT  
 VNMG  
 WNMG  
 WNMP  
 STAR

60° Triangle shape inserts, with positive rake angle.  
 Suitable for Boring and Internal Turning.

● Stocking  
 ○ Non-stocking

DCGX  
 DNGG



NN All purpose Chipbreaker

Machine Recommendations  
 Guide. Details on page 19.



TCGX  
 TNGG  
 VNGG

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DRILLING  
 SPMG  
 WCMX



**T**

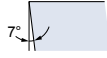
**C**

**M**

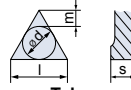
**T**



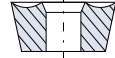
Shape



Clearance Angle



Tolerance  
 d ± 0.002  
 m ± 0.003  
 s ± 0.005



Fixing  
 Chip breaker

**Application Guide**

- TCMT 1.2(1).50
- TCMT 1.2(1)1
- TCMT 1.81.50 HF
- TCMT 1.81.51 HM
- TCMT 1.8(1.5)1 PF4
- TCMT 1.81.52 HM
- TCMT 3(2.5)2 PM4

See the back of the box for Speeds and Feeds.

	Finishing	Medium	Roughing / Interrupted cut	Roughing / Interrupted cut <i>magia</i>
TCMT 2(1.5)1 NN	😊	😐	😞	😞
TCMT 2(1.5)2 NN	😐	😊	😐	😐
TCMT 3(2.5)1 NN	😊	😐	😞	😞
TCMT 3(2.5)2 NN	😐	😊	😐	😊
TCMT 3(2.5)3 NN	😞	😐	😊	😊

😊 = Good  
 😐 = Acceptable  
 😞 = Not recommended

**Roughing**

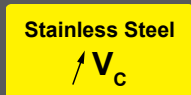
d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev



Machine Recommendations  
 Guide. Details on page 19.



# TCMT 2(1.5)1 NN LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, CK45, 1020,	125 HB		0.083		0.008	0.0006		1080		980		
		2	1045, 1060,	190 HB	0.008	0.069	0.003	0.007	0.0005		590	0.039	0.007	850	
		3	28Mn6	250 HB		0.069		0.007	0.0005					780	
	Low alloyed	2	6	42CrMo4, S150,	180 HB		0.069		0.007	0.0005		910		850	
		4,6	CK80, 4140, 4340,	230 HB	0.008	0.069	0.003	0.007	0.0005		390	0.039	0.006	780	
		5,7	100Cr6	280 HB		0.055		0.006	0.0004					650	
		8		350 HB		0.055		0.006	0.0003					590	
	High alloyed	3	10	X40CrMoV5,	220 HB		0.069		0.006	0.0004		620		590	
		10	H13, MA2, D3,	280 HB	0.008	0.069	0.003	0.005	0.0004		220	0.039	0.005	450	
		11	S6-5-2, 12N19	320 HB		0.055		0.005	0.0003					390	
		11		350 HB		0.055		0.005	0.0002					360	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.069	0.003	0.005	0.0003	550	880	0.039	0.005	850
		14	X5CrNi18-9	240 HB		0.069		0.006	0.0002		520	720		680	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.008	0.055	0.003	0.005	0.0002	260	490	0.039	0.005	450
		14	S31500	310 HB		0.055		0.005	0.0002		220	450			
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.069	0.003	0.006	0.0003	550	820	0.039	0.006	780
		13	17-4 PH, 430	42 HRc		0.055		0.005	0.0002		390	620		0.005	590
Cast Iron	Grey	7	15	GG20, GG40,	150 HB		0.083		0.007	0.0006	550	820		780	
		16	EN-GJL-250,	200 HB	0.008	0.083	0.002	0.007	0.0006		520	750	0.039	0.007	720
		16	No30B	250 HB		0.083		0.007	0.0006		490	680		650	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB		0.069		0.006	0.0005		820		780	
		17,19	GGG40, GGG70,	200 HB	0.008	0.069	0.002	0.006	0.0004		390	750	0.039	0.006	720
		18,20	50005	250 HB		0.069		0.006	0.0004			620		590	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB		0.055		0.005	0.0002	80	160		130	
		33	Inconel 700	250 HB	0.008	0.055	0.003	0.005	0.0002		80	160	0.039	0.005	130
		34	Stellite 21	350 HB		0.055		0.005	0.0002		70	140		110	
	Ti based	10	36	TiAl6V4	-		0.055		0.005	0.0003	140	210		0.006	190
		37	T40	-	0.008	0.055	0.003	0.005	0.0002		110	190	0.039	0.005	160
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc		0.050		0.004	0.0002	160	320	0.030	0.004	290
		38	440C,	50 HRc	0.008	0.041	0.001	0.003	0.0002		130	290	0.024	0.004	260
		38	G-X260NiCr42	55 HRc		0.039		0.003	0.0001		130	260	0.020	0.003	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002		130	190	0.024	0.004	160
		White Cast Iron	41	G-X300CrMo15	55 HRc	0.008	0.039	0.001	0.003	0.0001		90	160	0.020	0.003
HP	Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.110	0.003	0.010	0.0007	650	1310	0.039	0.008	1140

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

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DRILLING

SPMG

WCMX



# TCMT 2(1.5)2 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters					
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.008	0.083	0.003	0.008	0.0006	1080	0.039	0.010	980				
		2	190 HB	0.069									0.007	0.0005	910	850	
		3	250 HB	0.069									0.007	0.0005	820	750	
	Low alloyed	2	6 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.008	0.069	0.003	0.007	0.0005	390	0.039	0.008	910	850			
		4,6	230 HB	0.069									0.007	0.0005	820	780	
		5,7	280 HB	0.055									0.006	0.0004	680	650	
		8	350 HB	0.055									0.005	0.0003	590	590	
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.008	0.069	0.003	0.006	0.0004	220	0.039	0.007	620	590			
		10	280 HB	0.069									0.005	0.0004	490	450	
		11	320 HB	0.055									0.005	0.0003	420	390	
		11	350 HB	0.055									0.005	0.0002	360	360	
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.008	0.069	0.003	0.006	0.0003	550	0.039	0.007	880				
		14	240 HB	0.069									0.006	0.0002	520	220	720
	Duplex	5	14 X2CrNiN23-4, S31500	290 HB	0.008	0.055	0.003	0.005	0.0002	260	0.039	0.007	490				
		14	310 HB	0.055									0.005	0.0002	220	450	
	Ferritic & Martensitic	6	12 410, X6Cr17, 17-4 PH, 430	200 HB	0.008	0.069	0.003	0.006	0.0003	550	0.039	0.008	820				
		13	42 HRc	0.055									0.005	0.0002	390	620	590
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.008	0.083	0.002	0.007	0.0006	550	0.039	0.010	820				
		15	200 HB	0.083									0.007	0.0006	520	750	
		16	250 HB	0.083									0.007	0.0006	490	680	
	Malleable & Nodular	8	17,19 GG40, GGG70, 50005	150 HB	0.008	0.069	0.002	0.006	0.0005	390	0.039	0.008	820				
		17,19	200 HB	0.069									0.006	0.0004	750	720	
		18,20	250 HB	0.069									0.006	0.0004	620	590	
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.008	0.055	0.003	0.005	0.0002	80	0.039	0.007	160				
		33	Inconel 700	250 HB									0.055	0.005	0.0002	80	160
		34	Stellite 21	350 HB									0.055	0.005	0.0002	70	140
	Ti based	10	36 TiAl6V4	-	0.008	0.055	0.003	0.005	0.0003	140	0.039	0.008	210				
		37	T40	-									0.055	0.005	0.0002	110	190
Hardened Mat.	Steel	11	38 X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.008	0.050	0.001	0.004	0.0002	160	0.030	0.006	320				
		38	50 HRc	0.041									0.003	0.0002	130	290	
		38	55 HRc	0.039									0.003	0.0001	130	260	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002	130	0.024	0.006	160				
		41	G-X300CrMo15	55 HRc	0.008	0.039	0.001	0.003	0.0001	90	0.020	0.004	130				
UT	AI (>8%Si)	12	25 AlSi12	130 HB	0.008	0.110	0.003	0.010	0.0007	650	0.039	0.011	1140				



# TCMT 3(2.5)1 NN LT 10 & LT 1000

Material Group	Gr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax [mm]		V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max	min	max	min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, CK45, 1020, 1045, 1060, 28Mn6	125 HB	0.008	0.118	0.004	0.009	0.0009	1080	0.079	0.007	980				
		2		190 HB										0.098	0.008	850	
		3		250 HB										0.098	0.007	780	
	Low alloyed	2	42CrMo4, S150, CK60, 4140, 4340, 100Cr6	180 HB	0.008	0.098	0.004	0.008	0.0008	910	0.079	0.006	850				
		4,6		230 HB										0.098	0.007	780	
		5,7		280 HB										0.079	0.007	650	
		8		350 HB										0.079	0.006	590	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.008	0.098	0.004	0.007	0.0006	620	0.079	0.005	590				
		10		280 HB										0.098	0.006	490	
		11		320 HB										0.079	0.006	390	
		11		350 HB										0.079	0.006	360	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850			
		14		240 HB											0.098	0.007	720
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450			
		14		310 HB											0.079	0.006	220
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780			
		13		42 HRC											0.079	0.006	390
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.008	0.118	0.003	0.008	0.0009	520	750	0.079	0.007	780			
		15		200 HB											0.118	0.008	650
		16		250 HB											0.118	0.008	590
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.008	0.098	0.003	0.007	0.0007	820	0.079	0.006	720				
		17,19		200 HB										0.098	0.007	590	
		18,20		250 HB										0.098	0.007	590	
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130			
		33	Inconel 700	250 HB											0.079	0.006	140
		34	Stellite 21	350 HB											0.079	0.006	140
	Ti based	10	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190			
		36	TiAl6V4	-											0.079	0.006	160
		37	T40	-											0.079	0.006	160
Hardened Mat	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.008	0.059	0.002	0.005	0.0003	160	320	0.059	0.004	290			
		38		50 HRC											0.059	0.004	260
		38		55 HRC											0.055	0.004	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160			
		41	G-X300CrMo15	55 HRC											0.055	0.002	130
	HT	Al (>8%Si)	12	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140		

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT**
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX



# TCMT 3(2.5)2 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples†	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	Vc [sfm]		Suggested Starting Parameters					
					7	max	min	max		min	max	D.O.C.	Feed	Vc			
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.197	0.008	0.017	0.0025	590	1080	0.118	0.012	780			
		2		190 HB		0.197		0.017			0.0025		910	0.012	720		
		3		250 HB		0.197		0.015			0.0021		820		650		
	Low alloyed	2	6 42CrMo4, S150, 4,6 Ck60, 4140, 4340, 5,7 100Cr6	180 HB 230 HB 280 HB 350 HB	0.020	0.197	0.008	0.015	0.0017	390	910	0.118	0.011	650			
		4		230 HB		0.157		0.015			0.0017		820	0.011	590		
		5		280 HB		0.157		0.007			0.013		0.0017	680	0.010	490	
		8		350 HB		0.138		0.007			0.013		0.0014	590	0.010	420	
	High alloyed	3	10 X40CrMoV5, 11 H13, M42, D3, 12 S6-5-2, 12Ni19	220 HB 280 HB 320 HB 350 HB	0.020	0.157	0.007	0.013	0.0017	220	620	0.098	0.010	450			
		10		280 HB		0.157		0.013			0.0017		490	0.010	390		
		11		320 HB		0.118		0.012			0.0011		420	0.009	320		
		11		350 HB		0.118		0.012			0.0011		360	0.009	290		
Stainless Steel	Austenitic	4	14 304, 316, 14 X5CrNi18-9	180 HB 240 HB	0.020	0.197	0.008	0.013	0.0017	550	880	0.118	0.012	650			
		14		240 HB		0.197		0.013		0.0014			520	720	0.011	590	
	Duplex	5	14 X2CrNi23-4, 14 S31500	290 HB 310 HB	0.020	0.157	0.007	0.012	0.0011	260	490	0.098	0.009	320			
		14		310 HB		0.157		0.012					220	450	0.000	290	
	Ferritic & Martensitic	6	12 410, X6Cr17, 13 17-4 PH, 430	200 HB 42 HRc	0.020	0.197	0.009	0.013	0.0014	550	820	0.118	0.011	620			
		13		42 HRc		0.157		0.013					390	620	0.098	420	
Cast Iron	Grey	7	15 GG20, GG40, 15 EN-GJL-250, 16 No308	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0028	550	820	0.118	0.012	650			
		15		200 HB		0.197		0.020		0.0025			520	750	0.012	590	
		16		250 HB		0.197		0.018		0.0025			490	680		520	
	Malleable & Nodular	8	17,19 GG640, GG70, 17,19 50005, 18,20	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.017	0.0021	390	750	0.118	0.010	520			
		17,19		200 HB		0.197		0.017		0.0018			620		450		
		18,20		250 HB		0.197		0.017		0.0017							
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800 33 Inconel 700	240 HB 250 HB 350 HB	0.020	0.118	0.008	0.012	0.0010	80	140	0.079	0.009	90			
		36		350 HB		0.118		0.012					70	130	0.009	90	
	Ti based	10	34 TiAl6V4 37 T40	- -	0.020	0.157	0.008	0.013	0.0011	140	210	0.079	0.011	180			
		37		-		0.118		0.012		0.0010			110	180	0.010	140	
Hardened Mat.	Steel	11	38 X100CrMo13, 38 440C, 38 G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.020	0.098	0.004	0.010	0.0008	160	320	0.079	0.008	260			
		38		50 HRc		0.079		0.008		0.0006			130	290	0.059	0.007	220
		38		55 HRc		0.059		0.007		0.0004			130	260	0.039	0.006	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.008	0.0006	130	190	0.059	0.006	160			
		41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.007	0.0004	90	160	0.039	0.005	130			
Al (>8%Si)	12	25 AISi12	130 HB	0.020	0.236	0.008	0.020	0.0025	650	1310	0.118	0.013	910				



# TCMT 3(2.5)3 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.197	0.019	0.0030	590	1080	0.118	0.015	780		
		2		190 HB		0.197	0.008	0.019		0.0030		910	0.015	720	
		3		250 HB		0.197	0.017	0.0025		910		0.015	650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.197	0.008	0.017	390	910	0.118	0.014	650	
		4,6		230 HB	0.157		0.008	0.017	0.0020		820		0.014	590	
		5,7		280 HB	0.157		0.007	0.015	0.0020		680		0.013	490	
		8		350 HB	0.138		0.007	0.015	0.0017		590		0.013	420	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.157	0.015	0.0020	220	620	0.098	0.013	450	
		10		280 HB	0.157		0.007	0.015	0.0020		490		0.013	390	
		11		320 HB	0.118		0.013	0.0013	420		0.012		320		
		11		350 HB	0.118		0.013	0.0013	360		0.012		290		
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.020	0.197	0.015	0.0020	550	0.118	0.015	650		
		14		240 HB	0.197		0.015	0.0017	520	720		0.014	590		
	Duplex	5	14	X2CrNi23-4, S31500	290 HB	0.020	0.157	0.007	0.013	260	0.098	0.012	320		
		14		310 HB	0.157		0.013	0.0013	220	450		0.012	290		
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.197	0.009	0.015	550	0.118	0.014	620		
		13		42 HRC	0.157		0.015	0.0017	390	620			0.088	420	
Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, Ne30B	150 HB	0.020	0.197	0.008	0.022	0.0033	550	0.118	0.015	650	
		16		200 HB	0.197		0.021	0.0030	520	750	0.015		590		
		16		250 HB	0.197		0.021	0.0030	490	680	0.015		520		
	Malleable & Nodular	8	17,19	GG640, GGG70, 50005	150 HB	0.020	0.197	0.019	0.0025	820	0.118	0.013	590		
		17,19		200 HB	0.197		0.006	0.019	0.0022	390			750	0.013	520
		18,20		250 HB	0.197		0.019	0.0020	620	450					
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.118	0.008	0.013	80	0.079	0.012	100		
		33		Inconel 700	250 HB		0.118	0.013	0.0012	80			140	90	
		34		Stellite 21	350 HB		0.118	0.013	0.0012	70			130	90	
	Ti based	10	36	TiAl6V4	-	0.020	0.157	0.008	0.015	0.0013	140	0.079	0.014	180	
37			T40	-	0.118		0.013	0.0012	110	180	0.013		140		
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.020	0.098	0.004	0.011	0.0010	160	0.079	0.011	260	
		38		50 HRC	0.079		0.009	0.0007	130	290	0.059		0.009	220	
		38		55 HRC	0.059		0.007	0.0005	130	260	0.039		0.008	190	
	Chilled Cast Iron	40		Ni-Hard 2	400 HB	0.020	0.079	0.004	0.009	0.0007	130	190	0.059	0.008	160
		41		G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.007	0.0005	90	160	0.039	0.006	130
HT	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.236	0.008	0.022	0.0029	650	1310	0.118	0.017	910

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT**
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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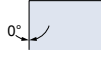


- DRILLING
- SPMG
- WCMX

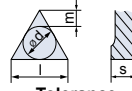


**T****N****M****G**

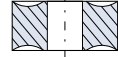
Shape



Clearance Angle



Tolerance

Fixing  
Chip breaker

s ± 0.005  
For l = 16, d ± 0.002 m ± 0.003  
For l = 22, d ± 0.003 m ± 0.005

Part No.	Description	Grade	magia	l	s	r	Stock
3577715	TNMG 331 NN	LT 10		0.650	0.187	0.016	●
3578011	TNMG 331 NN	LT 1000	magia	0.650	0.187	0.016	●
3567721	TNMG 332 NN	LT 10		0.650	0.187	0.031	●
3578016	TNMG 332 NN	LT 1000	magia	0.650	0.187	0.031	●
3573012	TNMG 332 NX	LT 1000	magia	0.650	0.187	0.031	○
3561734	TNMG 333 NN	LT 10		0.650	0.187	0.047	○
3578021	TNMG 333 NN	LT 1000	magia	0.650	0.187	0.047	●
3578031	TNMG 431 NN	LT 10		0.866	0.187	0.016	●
3571934	TNMG 431 NN	LT 1000	magia	0.866	0.187	0.016	○
3573036	TNMG 432 NN	LT 10		0.866	0.187	0.031	●
3571935	TNMG 432 NN	LT 1000	magia	0.866	0.187	0.031	○
3573013	TNMG 432 NX	LT 1000	magia	0.866	0.187	0.031	○
3578036	TNMG 433 NN	LT 10		0.866	0.187	0.047	●
3571936	TNMG 433 NN	LT 1000	magia	0.866	0.187	0.047	○

**NN** All purpose Chipbreaker

● Stocking  
○ Non-stocking

60° Triangle shape inserts. Suitable for general purpose Turning and Copying operations.





**T**

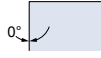
**N**

**M**

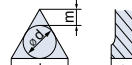
**G**



Shape

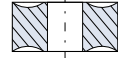


Clearance Angle



Tolerance

s ± 0.005  
For l = 16, d ± 0.002 m ± 0.003  
For l = 22, d ± 0.003 m ± 0.005



Fixing  
Chip breaker

CCMT  
CNMG  
CNMM  
CNMP  
DCMT  
DNMG  
DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

**TNMG**

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG

DRILLING

SPMG

WCMX

**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut	Roughing / Interrupted cut <i>magia</i>
TNMG 331 NN	😊	😊	😞	😞
TNMG 332 NN	😞	😊	😞	😊
TNMG 332 NX	😊	😊		😞
TNMG 333 NN	😞	😞	😊	😊
TNMG 431 NN	😊	😞	😞	😞
TNMG 432 NN	😞	😊	😞	😊
TNMG 432 NX	😊	😊		😞
TNMG 433 NN	😞	😞	😊	😊

😊 = Good  
 😞 = Acceptable  
 😞 = Not recommended

**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

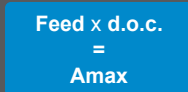
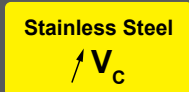
d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

60° Triangle shape inserts. Suitable for general purpose Turning and Copying operations.

Machine Recommendations Guide. Details on page 19.



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# TNMG 331 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB		0.118		0.009	0.0009		1080		0.007	0.007	980	
		2		190 HB	0.008	0.098	0.004	0.009	0.0008	590	910				850	
		3		250 HB		0.098		0.008	0.0007		820				780	
	Low alloyed	2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB		0.098		0.008	0.0008		910		0.079	0.006		850
		4,6		230 HB	0.008	0.098	0.004	0.008	0.0007	390	820				780	
		5,7		280 HB		0.079		0.007	0.0006		680				650	
		8		350 HB		0.079		0.007	0.0006		590				590	
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Mn19	220 HB		0.098		0.007	0.0006		620		0.079	0.005		590
		10		280 HB	0.008	0.098	0.004	0.006	0.0006	220	490				450	
		11		320 HB		0.079		0.006	0.0005		420				390	
		11		350 HB		0.079		0.006	0.0004		360				360	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005		850	
		14		240 HB		0.098		0.007	0.0004	520	720				640	
	Duplex	5	X2CrNi23-4, S31500	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005		450	
		14		310 HB		0.079		0.006		220	450					
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006		780	
		13		42 HRC		0.079		0.006	0.0004	390	620		0.005		590	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, N5308	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007		780	
		15		200 HB		0.118		0.008	0.0009	520	750				720	
		16		250 HB		0.118		0.008	0.0009	490	680				650	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.008	0.098	0.003	0.007	0.0007		820	0.079	0.006		780	
		17,19		200 HB		0.098		0.007	0.0006	390	750				720	
		18,20		250 HB		0.098		0.007	0.0006		620				590	
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005		130	
		33	Inconel 700	250 HB		0.079		0.006		80	160				130	
		34	Stellite 21	350 HB		0.079		0.006		70	140				110	
	TI based	10	TiAl6V4, T40	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006		190	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004		290	
		38		50 HRC		0.059		0.004	0.0003	130	290	0.047	0.004		260	
		38		55 HRC		0.055		0.004	0.0002	130	260	0.039	0.003		220	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004		160	
		41	G-X300CrMo15	55 HRC	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003		130	
WF	Al (>8%Si)	12	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008		1140	





# TNMG 332 NN/NX LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>				
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.197	0.008	0.020	0.0028	590	910	0.118	0.014	780				
		2	1045, 1060,	190 HB		0.197		0.020						0.0028	910	720		
		3	28Mn6	250 HB		0.197		0.018						0.0023	820	650		
	Low alloyed	2	42CrMo4, St50,	180 HB	0.020	0.197	0.008	0.018	0.0019	390	910	0.118	0.013	650				
		4,6	Ck60, 4140, 4340,	230 HB		0.157		0.008						0.018	0.0019	820	590	
		5,7	100Cr6	280 HB		0.157		0.007						0.016	0.0019	680	490	
		8		350 HB		0.138		0.007						0.016	0.0016	590	420	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.157	0.007	0.016	0.0019	220	0.098	0.012	450				
		10	H13, M42, D3,	280 HB	0.157		0.016		0.0019					490	390			
		11	S6-5-2, 12N19	320 HB	0.118		0.014		0.0012					420	320			
		11		350 HB	0.118		0.014		0.0012					360	290			
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.014	620			
		14	X5CrNi18-9	240 HB	0.197		0.016		0.0016					520	720	0.013	550	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	320			
		14	S31500	310 HB	0.157		0.014		0.0012						220	450	0.011	290
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620			
		13	17-4 PH, 430	42 HRC	0.157		0.016		0.0016						390	620	0.098	0.000
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	650			
		15	EN-GJL-250,	200 HB	0.197		0.024		0.0028						520	750	590	
		16	No30B	250 HB	0.197		0.022		0.0028						490	680	520	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520			
		17,19	50005	200 HB	0.197		0.020		0.0019						620	450		
		18,20		250 HB	0.197		0.020		0.0019						620	450		
	High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	90		
			33	Inconel 700	250 HB	0.118		0.014		0.0011						80	140	90
34			Stellite 21	350 HB	0.118	0.014		0.0011		70						130	90	
Ti based		10	36	TiAl6V4	-	0.020	0.157	0.008	0.016	0.0012	140	210	0.079	0.013	180			
		37	T40	-	0.118		0.014		0.0011					110	180	0.012	140	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.098	0.004	0.012	0.0009	160	320	0.079	0.010	260			
		38	440C,	50 HRC	0.079		0.010		0.0006					130	290	0.059	0.008	220
		38	G-X260NiCr42	55 HRC	0.059		0.008		0.0005					130	260	0.039	0.007	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160				
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	130			
	Nr	Al (c-8%Si)	12	25	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910		

CCMT  
CNMG  
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CNMP  
DCMT  
DNMG  
DNUX  
EPGT  
EPMT  
KNUX  
RCMT  
SCMT  
SNMG  
TCMT  
**TNMG**  
TNMP  
TNUX  
TPMR  
VBMT  
VCMT  
VNMG  
WNMG  
WNMP  
STAR  
CCGX  
CNGG  
DCGX  
DNGG  
TCGX  
TNGG  
VNGG

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DRILLING  
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# TNMG 333 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters												
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>										
Steel	Non-alloyed	1	1 C35, CK45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.029	0.197	0.010	0.027 0.027 0.0040	0.0047 0.0047	590	1080 910 820	0.158	0.018	780 720 650										
		Low alloyed	2	6 42CrMo4, St50, 4,6 Ck60, 4140, 4340, 5,7 100Cr6	180 HB 230 HB 280 HB 350 HB	0.029	0.197 0.157 0.157 0.138	0.010 0.010 0.009 0.021	0.024 0.024 0.021 0.0026	0.0032 0.0032	390				910 820 680 590	0.158	0.017 0.017 0.016 0.016	650 590 490 420						
			High alloyed	3	10 X40CrMoV5, 10 H13, M42, D3, 11 S6-5-2, 12N19		220 HB 280 HB 320 HB 350 HB	0.029	0.157 0.157 0.118 0.118	0.009 0.009	0.021 0.021 0.0021 0.019				0.0032 0.0032				220	620 490 420 360	0.132	0.016 0.016 0.015 0.015	390 320 320 290	
	Austenitic			4	14 304, 316, 14 X5CrNi18-9		180 HB 240 HB		0.029	0.197 0.197	0.010	0.021 0.021	0.0032 0.0026	550 520	880 720				0.158	0.016 0.014				620 550
				Duplex	5		14 X2CrNi23-4, 14 S31500			290 HB 310 HB	0.029	0.157 0.157	0.009	0.019 0.019	0.0021									
	Ferritic & Martensitic	6			12 410, X6Cr17, 13 17-4 PH, 430	200 HB 42 HRc	0.029		0.197 0.157	0.011		0.021 0.021	0.0026	550 390	820 620	0.158	0.016 0.014	620 420						
		Cast Iron	Grey	7	15 GG20, GG40, 15 EN-GJL-250, 16 Ns30B	150 HB 200 HB 250 HB		0.029	0.197 0.197 0.197	0.008	0.032 0.032 0.029	0.0053 0.0047	550 520 490	820 750 660	0.158				0.018	650 590 520				
	Malleable & Nodular			8	17,19 GGG40, GGG70, 17,19 50005	150 HB 200 HB 250 HB	0.029		0.197 0.197 0.197	0.008	0.027 0.027 0.027	0.0040 0.0034	390	820 750 620		0.158	0.016	590 520 450						
				Fe, Ni & Co based	9	31,32 Incoloy 800 33 Inconel 700 34 Stellite 21			240 HB 250 HB 350 HB	0.029	0.118 0.118 0.118	0.010	0.019 0.019 0.019	0.0018 0.0018							80 80 70	140 140 130	0.106	0.015
			Ti based		10	36 TiAl6V4 37 T40		- -	0.029		0.157 0.118	0.010	0.021 0.019	0.0021 0.0018	140 110				210 180	0.106	0.016 0.015	180 140		
	Hardened Mat.				Steel	11	38 X100CrMo13, 38 440C, 38 G-X260NiCr42	45 HRc 50 HRc 55 HRc			0.029	0.098 0.079 0.059	0.005	0.016 0.013 0.011	0.0016 0.0011 0.0008	160 130 130	320 290 260	0.087 0.079 0.053	0.013 0.010 0.009					
Chilled Cast Iron			40	Ni-Hard 2		400 HB	0.029	0.079	0.005	0.013		0.0011	130	190	0.079	0.009	160							
		White Cast Iron	41	G-X300C/Mo15		55 HRc		0.029	0.059	0.005		0.011	0.0008	90						160	0.053	0.008	130	
Al (>8%Si)		12	25 AISI12	130 HB	0.029	0.236	0.010		0.032	0.0048	650	1310	0.158	0.020	910									



# TNMG 431 NN LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, CK45, 1020,	125 HB		0.118		0.009	0.0009		1080		980		
		2	1045, 1060,	190 HB	0.008	0.098	0.004	0.009	0.0008		590	0.079	0.007	850	
		3	28Mn6	250 HB				0.008	0.0007					780	
	Low alloyed	2	42CrMo4, S150,	180 HB		0.098		0.008	0.0008		910			850	
		4,6	CK60, 4140, 4340,	230 HB	0.008	0.098	0.004	0.008	0.0007		390	0.079	0.006	780	
		5,7	100Cr6	280 HB		0.079		0.007	0.0006		690			650	
		8		350 HB		0.079		0.007	0.0006		590			590	
	High alloyed	3	X40CrMoV5,	220 HB		0.098		0.007	0.0006		620			590	
		10	H13, M42, D3,	280 HB	0.008	0.098	0.004	0.006	0.0006		220	0.079	0.005	450	
		11	S6-5-2, 12N19	320 HB		0.079		0.006	0.0005		420			390	
				350 HB		0.079		0.006	0.0004		380			360	
Stainless Steel	Austenitic	4	304, 316,	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850	
		14	X5CrNi18-9	240 HB		0.098		0.007	0.0004	520	720			680	
	Duplex	5	X2CrNiN23-4,	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450	
		14	S31500	310 HB		0.079		0.006	0.0003	220	450				
	Ferritic & Martensitic	6	410, X6Cr17,	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780	
		12	17-4 PH, 430	42 HRc		0.079		0.006	0.0004	390	620			590	
Cast Iron	Grey	7	GG20, GG40,	150 HB		0.118		0.008	0.0010	550	820			780	
		15	EN-GJL-250,	200 HB	0.008	0.118	0.003	0.008	0.0008	520	750	0.079	0.007	720	
		16	No30B	250 HB		0.118		0.008	0.0009	490	680			650	
	Malleable & Nodular	8	GGG40, GGG70,	150 HB		0.098		0.007	0.0007		820			780	
		17,19	50005	200 HB	0.008	0.098	0.003	0.007	0.0006	390	750	0.079	0.006	720	
		18,20		250 HB		0.098		0.007	0.0006		620			590	
	High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130
			33	Inconel 700	250 HB		0.079		0.006	0.0004	80	160			130
34			Stellite 21	350 HB		0.079		0.006	0.0004	70	140			110	
Ti based		10	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190	
		37	T40	-		0.079		0.006	0.0004	110	190		0.005	160	
Hardened Mat.	Steel	11	X100CrMo13,	45 HRc		0.071		0.005	0.0003	160	320	0.059	0.004	290	
		38	440C,	50 HRc	0.008	0.059	0.002	0.004	0.0003	130	290	0.047	0.004	260	
		38	G-X260NiCr42	55 HRc		0.055		0.004	0.0002	130	260	0.039	0.003	220	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160	
		41	G-X300CrMo15	55 HRc	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130	
HT	Al (>8%Si)	12	AISI12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140	

CCMT  
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# TNMG 432 NN/NX LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters							
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.276	0.008	0.020	0.0028	590	1080	0.118	0.014	780					
		2	190 HB	0.276		0.020		0.0028						910	720				
		3	250 HB	0.276		0.018		0.0023						820	650				
	Low alloyed	2	6 42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.276	0.008	0.018	0.0019	390	910	0.118	0.013	650					
		4,6	230 HB	0.220		0.008		0.018						0.0019	820	590			
		5,7	280 HB	0.220		0.007		0.016						0.0019	680	490			
		8	350 HB	0.193		0.007		0.016						0.0016	590	0.012	420		
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.020	0.220	0.007	0.016	0.0019	220	620	0.098	0.012	450					
		11	280 HB	0.220		0.016		0.0019						490	390				
		10	320 HB	0.165		0.014		0.0012						420	320				
		11	350 HB	0.165		0.014		0.0012						360	0.011	290			
Stainless Steel	Austenitic	4	14 304, 316, X5CrNi18-9	180 HB	0.020	0.276	0.008	0.016	0.0019	550	860	0.118	0.014	620					
		14	240 HB	0.276		0.016		0.0016						520	720	0.013	550		
	Duplex	5	14 X2CrNiMo23-4, S31500	290 HB	0.020	0.220	0.007	0.014	0.0012	260	490	0.098	0.011	320					
		14	310 HB	0.220		0.014		0.0012						220	450	0.098	0.011	290	
	Ferritic & Martensitic	6	12 410, X9Cr17, 17-4 PH, 430	200 HB	0.020	0.276	0.009	0.016	0.0016	550	820	0.118	0.013	620					
		13	42 HRc	0.220		0.022		0.0028						490	660	0.088	0.013	420	
Cast Iron	Grey	7	15 GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.276	0.006	0.024	0.0031	550	820	0.118	0.014	650					
		15	200 HB	0.276		0.024		0.0028						520	750				
		16	250 HB	0.276		0.022		0.0028						490	660				
	Malleable & Nodular	8	17,19 GGG40, GGG70, 50005	150 HB	0.020	0.276	0.006	0.020	0.0023	390	750	0.118	0.012	520					
		17,19	200 HB	0.276		0.020		0.0020						620	450				
		18,20	250 HB	0.276		0.020		0.0019						620	450				
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoy 800	240 HB	0.020	0.165	0.008	0.014	0.0011	80	140	0.079	0.011	100					
		33	Inconel 700	250 HB		0.165		0.014						0.0011	80	140	90		
		34	Stellite 21	350 HB		0.165		0.014						0.0011	70	130	90		
	Ti based	10	36 TiAl6V4	-	0.020	0.220	0.008	0.016	0.0012	140	210	0.079	0.013	180					
		37	T40	-		0.165		0.014						0.0011	110	160	0.012	140	
		38	X100CrMo13, 440C	45 HRc		0.138		0.012						0.0009	160	320	0.079	0.010	260
Hardened Mat.	Steel	11	38 440C	50 HRc	0.020	0.110	0.004	0.010	0.0006	130	290	0.059	0.008	220					
		38	G-X260NiCr42	55 HRc		0.083		0.008						0.0005	130	260	0.039	0.007	190
		40	Ni-Hard 2	400 HB		0.020		0.110						0.004	0.010	0.0006	130	190	0.059
	Chilled Cast Iron	41	G-X300CrMo15	65 HRc	0.020	0.063	0.004	0.008	0.0005	90	160	0.039	0.006	130					
White Cast Iron	41	G-X300CrMo15	65 HRc	0.020	0.063	0.004	0.008	0.0005	90	160	0.039	0.006	130						
Al (>8%Si)	12	25 AlSi12	130 HB	0.020	0.331	0.008	0.024	0.0028	650	1310	0.118	0.016	910						



## TNMG 433 NN LT 10 &amp; LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C	Feed	V <sub>c</sub>		
Sheet	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.029	0.276	0.010	0.027	0.0047	590	1080	0.158	0.018	780		
		2	190 HB	0.276		0.027		0.0047			910			720		
		3	250 HB	0.276		0.024		0.0040			820			650		
	Low alloyed	2	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.029	0.276	0.010	0.024	0.0032	390	910	0.158	0.017	650		
				230 HB		0.220		0.024			0.0032			820	590	
				280 HB		0.220		0.009			0.021			0.0032	680	490
				350 HB		0.193		0.009			0.021			0.0026	590	420
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.029	0.220	0.009	0.021	0.0032	220	620	0.132	0.016	450		
				280 HB		0.220		0.021			0.0032			490	390	
				320 HB		0.165		0.019			0.021			0.0032	420	320
				350 HB		0.165		0.019			0.021			0.0021	360	290
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.029	0.276	0.010	0.021	0.0032	550	0.158	0.016	620			
				240 HB		0.276		0.021		0.0026			520	550		
	Duplex	5	X2CrNi23-4, S31500	290 HB	0.029	0.220	0.009	0.019	0.0021	260	0.132	0.013	320			
				310 HB		0.220		0.019		0.0021			220	290		
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.029	0.276	0.011	0.021	0.0026	550	0.158	0.016	620			
				42 HRC		0.220		0.021		0.0026			390	620		
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.029	0.276	0.008	0.032	0.0053	550	0.158	0.018	850			
				200 HB		0.276		0.032		0.0047			520	750		
				250 HB		0.276		0.029		0.0047			490	520		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.029	0.276	0.008	0.027	0.0034	390	0.158	0.016	520			
				200 HB		0.276		0.027		0.0032			620	450		
				250 HB		0.276		0.027		0.0032			820	590		
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB	0.029	0.165	0.010	0.019	0.0018	80	0.106	0.015	100			
				250 HB		0.165		0.019		0.0018			80	90		
				350 HB		0.165		0.019		0.0018			70	90		
	Ti based	10	TiAl6V4 T40	-	0.029	0.220	0.010	0.021	0.0021	140	0.106	0.016	180			
-				0.165		0.019		0.0018		110			140			
Hardened Mat.	Steel	11	X100CrMoT3, 440C, G-X260NiCr42	45 HRC	0.029	0.138	0.005	0.016	0.0016	160	0.087	0.013	260			
				50 HRC		0.110		0.013		0.0011			130	290		
				55 HRC		0.083		0.011		0.0008			130	260		
	Chilled Cast Iron White Cast Iron	41	Ni-Hard 2 G-X300CrMo15	400 HB	0.029	0.110	0.005	0.013	0.0011	130	0.079	0.009	160			
55 HRC				0.029		0.083		0.005		0.011			0.0008	90	160	
Al (>8%Si)	12	25	AlSi12	130 HB	0.029	0.276	0.010	0.032	0.0048	650	1310	0.158	0.020	910		

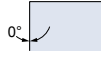
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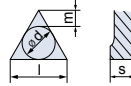
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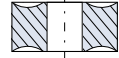
Shape



Clearance Angle



**Tolerance**  
 d ± 0.002  
 m ± 0.003  
 s ± 0.005



**Fixing Chip breaker**

Part No.	Description	Grade	magia	l	s	r	Stock
3567735	<b>TNMP 332 NN</b>	<b>LT 10</b>		0.650	0.187	0.031	●
3578026	<b>TNMP 332 NN</b>	<b>LT 1000</b>	magia	0.650	0.187	0.031	●

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

60° Triangle shape inserts, with positive chip breaker geometry. Generates considerably low cutting forces. Suitable for General purpose, Copying, High Temperature Alloys and Stainless Steel Turning operations.

**Application Guide**

**Finishing Medium Roughing / Interrupted cut**

**TNMP 332 NN**



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😞 = Not recommended

Machine Recommendations Guide. Details on page 19.



**Stainless Steel Exotic Material**  
 👍  
**CNMP - TNMP - WNMP**

**CNMP TNMP WNMP** →

**Exotic Material**  
 Verify ⚠️  
**Cutting Conditions**

# TNMP 332 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C	Feed	V <sub>c</sub>		
Sheet	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.020	0.197	0.008	0.020	0.0028	590	1080	0.118	0.014	780		
		2		190 HB		0.197		0.020	0.0028		910		0.014	720		
		3		250 HB		0.197		0.018	0.0023		820			650		
	Low alloyed	2	6	42CrMo4, S150, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.197	0.008	0.018	0.0019	390	910	0.118	0.013	650	
			4,6		230 HB		0.157		0.008	0.018		0.0019		820	0.013	590
			5,7		280 HB		0.157		0.007	0.016		0.0019		680	0.012	490
			8		350 HB		0.138		0.007	0.016		0.0016		590	0.012	420
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.157	0.007	0.016	0.0019	220	620	0.098	0.012	450		
				280 HB		0.157		0.016	0.0019		490		0.012	390		
				320 HB		0.118		0.014	0.0012		420		0.011	320		
				350 HB		0.118		0.014	0.0012		360		0.011	290		
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.014	620		
				240 HB		0.197		0.016	0.0016		520		720	0.013	550	
	Duplex	5	X2CrNi23-4, S31500	290 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	320		
				310 HB		0.157		0.014	0.0012		220		450	0.011	290	
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620		
				42 HRc		0.157		0.016	0.0016		390		620	0.098	0.013	420
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	650		
				200 HB		0.197		0.024	0.0028		520		750	0.011	590	
				250 HB		0.197		0.022	0.0028		490		680	0.000	520	
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.197	0.006	0.020	0.0023	390	820	0.118	0.012	590		
				200 HB		0.197		0.020	0.0020		750		620	0.011	520	
				250 HB		0.197		0.020	0.0019		620		450		450	
High Temp. Alloys	Fe, Ni & Co based	9	31.32	Incoloy 800	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	100		
			33					Inconel 700			0.014		80	140	90	
			34					Stellite 21			0.014		70	130	90	
	Ti based	10	TiAl6V4, T40	-	0.020	0.157	0.008	0.016	0.0012	140	210	0.079	0.013	180		
-				0.118		0.014		0.0011	110		180		0.012	140		
Hardened Mat.	Steel	11	X100CrMoT3, 440C, G-X260NiCr42	45 HRc	0.020	0.079	0.004	0.012	0.0009	160	320	0.079	0.010	260		
			50 HRc	0.079		0.010		0.0006	130		290		0.059	0.008	220	
			55 HRc	0.059		0.008		0.0005	130		260		0.039	0.007	190	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160		
White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	130			
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910		

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP**
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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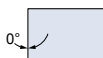
- DRILLING
- SPMG
- WCMX



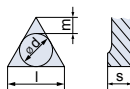
**T N U X**



Shape



Clearance Angle



Tolerance  
 d ± 0.003  
 m ± 0.005  
 s ± 0.005



Fixing Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
3567737	TNUX 331 R	LT 10		0.650	0.187	0.016	●
3561938	TNUX 331 R	LT 1000	magia	0.650	0.187	0.016	○
3561877	TNUX 331 L	LT 10		0.650	0.187	0.016	○
3562794	TNUX 331 L	LT 1000	magia	0.650	0.187	0.016	○
3567739	TNUX 332 R	LT 10		0.650	0.187	0.031	●
3561939	TNUX 332 R	LT 1000	magia	0.650	0.187	0.031	○
3561878	TNUX 332 L	LT 10		0.650	0.187	0.031	○
3562795	TNUX 332 L	LT 1000	magia	0.650	0.187	0.031	○

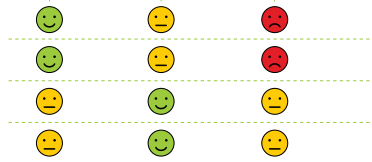
- Stocking
- Non-stocking

60° Triangle shape inserts. Suitable for general Turning and longitudinal operations, where there is a concern for work piece vibrations.

**Application Guide**

**Finishing Medium Roughing / Interrupted cut**

TNUX 331 R  
 TNUX 331 L  
 TNUX 332 R  
 TNUX 332 L



- 😊 = Good
- 😞 = Acceptable
- 😡 = Not recommended

**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev



Feed x d.o.c.  
 =  
 Amax

$V_c \Rightarrow$   
 Productivity

Machine Recommendations  
 Guide. Details on page 19.





# TNUX 331 R&L LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, CK45, 1020,	125 HB	0.008	0.118	0.004	0.009	0.0009	1080	0.079	0.007	980		
		2	1045, 1060, 28Mn6	190 HB									850		
		3		250 HB									750		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.008	0.098	0.004	0.008	0.0008	910	0.079	0.006	850	
		4,6	CK60, 4140, 4340,	230 HB	780										
		5,7	100Cr6	280 HB	650										
		8		350 HB	590										
	High alloyed	3	10	X40CrMoV5,	220 HB	0.008	0.098	0.004	0.007	0.0006	220	0.079	0.005	590	
		10	H13, M42, D3,	280 HB	450										
		11	S6-5-2, 12Ni19	320 HB	390										
		11		350 HB	360										
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850
		14	X5CrNi18-9	240 HB	680										
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450
		14	S31500	310 HB	450										
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.008	780
		13	17-4 PH, 430	42 HRC	590										
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	780
		15	EN-GJL-250,	200 HB	720										
		16	No30B	250 HB	650										
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.008	0.098	0.003	0.007	0.0007	820	0.079	0.006	780	
		17,19	50005	200 HB	720										
		18,20		250 HB	590										
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130
		33	Inconel 700	250 HB	130										
		34	Stellite 21	350 HB	110										
	Ti based	10	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190
37		T40	-	160											
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290
		38	440C,	50 HRC	260										
		38	G-X260NiCr42	55 HRC	220										
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160	
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130
NI	Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140

CCMT  
CNMG  
CNMM  
CNMP  
DCMT  
DNMG  
DNUX  
EPGT  
EPMT  
KNUX  
RCMT  
SCMT  
SNMG  
TCMT  
TNMG  
TNMP  
**TNUX**  
TPMR  
VBMT  
VCMT  
VNMG  
WNMG  
WNMP  
STAR  
CCGX  
CNGG  
DCGX  
DNGG  
TCGX  
TNGG  
VNGG

# TNUX 332 R&L LT 10 & LT 1000

Material Group	Gr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.197	0.008	0.020	0.0028	590	910	0.118	0.014	780	
		2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.020	0.197	0.008	0.018	0.0019	390	910	0.118	0.013	650	
		3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB 280 HB 320 HB 350 HB	0.020	0.157	0.007	0.016	0.0019	220	490	0.098	0.012	390	
	Low alloyed	4	304, 316, X5CrNi18-9	180 HB 240 HB	0.020	0.197	0.008	0.016	0.0019	550	880	0.118	0.014	620	
		5	X2CrNiN23-4, S31500	290 HB 310 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	320	
		6	410, X8Cr17, 17-4 PH, 430	200 HB 42 HRc	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620	
	High alloyed	7	G620, G640, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.024	0.0028	520	750	0.118	0.014	590	
		8	GG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.022	0.0028	490	680	0.118	0.014	520	
		9	GG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520	
	Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB 240 HB	0.020	0.197	0.008	0.016	0.0016	520	720	0.118	0.013	550
			5	X2CrNiN23-4, S31500	290 HB 310 HB	0.020	0.157	0.007	0.014	0.0012	220	450	0.098	0.011	290
Duplex		6	410, X8Cr17, 17-4 PH, 430	200 HB 42 HRc	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620	
		7	G620, G640, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.024	0.0028	520	750	0.118	0.014	590	
Ferritic & Martensitic		8	GG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520	
		9	GG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520	
Cast Iron		Gray	7	G620, G640, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.024	0.0028	520	750	0.118	0.014	590
			8	GG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520
		Malleable & Nodular	8	GG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520
			9	GG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520
	High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800	240 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	100
10			Inconel 700	250 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	90	
11			Stellite 21	350 HB	0.020	0.118	0.008	0.014	0.0011	70	130	0.079	0.011	90	
Ti based		10	TiAl6V4	-	0.020	0.157	0.008	0.016	0.0012	140	210	0.079	0.013	180	
		11	T40	-	0.020	0.118	0.008	0.014	0.0011	110	180	0.079	0.012	140	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.020	0.098	0.004	0.012	0.0009	160	320	0.079	0.010	260	
		12	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.020	0.079	0.004	0.010	0.0006	130	290	0.059	0.008	220	
		13	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.020	0.059	0.004	0.008	0.0005	130	260	0.039	0.007	190	
	Chilled Cast Iron	14	Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160	
		15	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	130	
NE	Al (>8%Si)	12	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910	





**T**

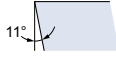
**P**

**M**

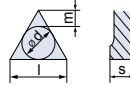
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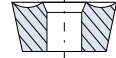
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $m \pm 0.003$   
 $s \pm 0.005$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Stock
3567758	TPMR 321 NN	LT 10	0.650	0.125	0.016	●
3567759	TPMR 322 NN	LT 10	0.650	0.125	0.031	●

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

60° Triangle shape inserts, with positive rake angle.  
 Suitable for Boring and Internal Turning operations.

**Application Guide**

**Finishing Medium Roughing / Interrupted cut**

**TPMR 321 NN**

**TPMR 322 NN**



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 $f_n = 0.003 - 0.008$  inch/rev

**Medium:**

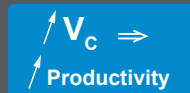
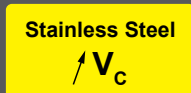
d.o.c. = 0.028 - 0.177 inch  
 $f_n = 0.006 - 0.018$  inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 $f_n = 0.014 - 0.028$  inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😡 = Not recommended

Machine Recommendations Guide. Details on page 19.



CCMT  
 CNMG  
 CNMM  
 CNMP  
 DCMT  
 DNMG  
 DNUX  
 EPGT  
 EPMT  
 KNUX  
 RCMT  
 SCMT  
 SNGM  
 TCMT  
 TNMG  
 TNMP  
 TNUX  
**TPMR**  
 VBMT  
 VCMT  
 VNMG  
 WNMG  
 WNMP  
 STAR  
 CGGX  
 CNGG  
 DCGX  
 DNGG  
 TCGX  
 TNGG  
 VNGG

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DRILLING  
 SPMG  
 WCMX

# TPMR 321 NN LT 10

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [ftm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB		0.118		0.009	0.0009		1080			980	
		2		190 HB	0.008	0.098	0.004	0.009	0.0008	590	910	0.079	0.007	850	
		3		250 HB		0.098		0.008	0.0007		820			780	
	Low alloyed	2	6	42CrMo4, S550, Ck60, 4140, 4340, 100Cr6	180 HB		0.098		0.008	0.0008		910			850
		4,6		230 HB	0.008	0.098	0.004	0.008	0.0007	390	820	0.079	0.006	780	
		5,7		280 HB		0.079		0.007	0.0006		680			650	
		8		350 HB		0.079		0.007	0.0006		590			590	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB		0.098		0.007	0.0006		620			590
		10		280 HB	0.008	0.098	0.004	0.006	0.0006	220	490	0.079	0.005	450	
		11		320 HB		0.079		0.006	0.0005		390			390	
		11		350 HB		0.079		0.006	0.0004		360			360	
Stainless Steel	Austenitic	4	14	304, 316, X5CrNi18-9	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850
		14		240 HB		0.098		0.007	0.0004	520	720			640	
	Duplex	5	14	X2CrNiN23-4, S31500	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450
		14		310 HB		0.079		0.006	0.0003	220	450				
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780
		13		42 HRC		0.079		0.006	0.0004	390	620	0.079	0.005	590	
Cast Iron	Grey	7	15	GG20, GG40, EN-GJL-250, N630B	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	780
		16		200 HB		0.118		0.008	0.0009	520	750			720	
		16		250 HB		0.118		0.008	0.0009	490	680			650	
	Malleable & Nodular	8	17,19	GG40, GG670, 50005	150 HB	0.008	0.098	0.003	0.007	0.0007		820	0.079	0.006	780
		17,19		200 HB		0.098		0.007	0.0006	390	750			720	
		18,20		250 HB		0.098		0.007	0.0006		620			590	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130
		33	Inconel 700	250 HB		0.079		0.006	0.0004	80	160			130	
		34	Stellite 21	350 HB		0.079		0.006	0.0004	70	140			110	
	Ti based	10	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190
37		T40	-		0.079		0.006	0.0004	110	190			160		
Hardened Mat.	Steel	11	38	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290
		38		50 HRC		0.059		0.004	0.0003	130	290	0.047	0.004	260	
		38		55 HRC		0.055		0.004	0.0002	130	260	0.039	0.003	220	
	Chilled Cast Iron	11	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160
		41	G-X300CrMo15	55 HRC	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130	
White Cast Iron															
WF	Al (>8%Si)	12	25	AISI12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140



# TPMR 322 NN LT 10

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters									
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>							
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.197	0.008	0.020	0.0028	590	910	0.118	0.014	780							
		2	1045, 1060,	190 HB										0.020	0.0028	910	720				
		3	28Mn6	250 HB										0.197	0.018	0.0023	820	650			
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.157	0.008	0.018	0.0019	390	0.118	0.013	650							
		4,6	Ck60, 4140, 4340,	230 HB	0.157									0.008	0.018	0.0019	820	590			
		5,7	100Cr6	260 HB	0.157									0.007	0.016	0.0019	680	490			
		8		350 HB	0.138									0.007	0.016	0.0016	590	0.012	420		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.157	0.007	0.016	0.0019	220	0.098	0.012	450							
		10	H13, M42, D3,	280 HB	0.157									0.014	0.0019	490	390				
		11	S6-5-2, 12W19	320 HB	0.118									0.014	0.0012	420	320				
		11		350 HB	0.118									0.014	0.0012	360	0.011	290			
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.197	0.008	0.016	0.0019	550	890	0.118	0.014	620						
		14	X5CrNi18-9	240 HB	0.197									0.016	0.0016	520	720	0.013	550		
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.157	0.007	0.014	0.0012	260	490	0.098	0.011	320						
		14	S31500	310 HB	0.157										0.014		220	450	290		
	Ferritic & Martensitic	6	12	410, X5Cr17,	200 HB	0.020	0.197	0.009	0.016	0.0016	550	820	0.118	0.013	620						
		13	17-4 PH, 430	42 HRC	0.157										0.016		390	620	0.098	420	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.197	0.006	0.024	0.0031	550	820	0.118	0.014	650						
		15	EN-GJL-250,	200 HB	0.197										0.024	0.0028	520	750	590		
		16	No30B	350 HB	0.197										0.022	0.0028	490	680	520		
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.197	0.006	0.020	0.0020	390	750	0.118	0.012	520						
		17,19	50005	200 HB	0.197										0.020	0.0019	620	450			
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.118	0.008	0.014	0.0011	80	140	0.079	0.011	100						
		33	Inconel 700	250 HB	0.118										0.014		80	140	90		
		34	Stellite 21	350 HB	0.118										0.014		70	130	90		
	Ti based	10	36	TiAl6V4	-	0.020	0.157	0.008	0.016	0.0012	140	210	0.079	0.013	180						
		37	T40	-	0.118										0.014	0.0011	110	180	0.012	140	
		Hardened Mat.	Steel	11	38										X100CrMo13,	45 HRC	0.020	0.079	0.004	0.012	0.0009
38	440C,			50 HRC	0.079	0.010	0.0096	130	290	0.059	0.008	220									
38	G-X260NiCr42			55 HRC	0.059	0.008	0.0005	130	260	0.039	0.007	190									
Chilled Cast Iron	40		Ni-Hard 2	400 HB	0.020	0.079	0.004	0.010	0.0006	130	190	0.059	0.007	160							
	White Cast Iron		41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	0.0005	90	160	0.039	0.006	130						
HF	Al (c-8%Si)	12	25	AlSi12	130 HB	0.020	0.236	0.008	0.024	0.0028	650	1310	0.118	0.016	910						

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR**
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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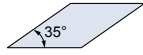


- DRILLING
- SPMG
- WCMX

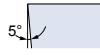




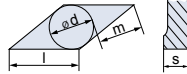
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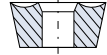
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $m \pm 0.003$   
 $s \pm 0.005$



Fixing  
Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
3862215	VBMT 221 NN	LT 10		0.433	0.125	0.016	●
3861942	VBMT 221 NN	LT 1000	magia	0.433	0.125	0.016	○
3862221	VBMT 331 NN	LT 10		0.654	0.187	0.016	●
3861943	VBMT 331 NN	LT 1000	magia	0.654	0.187	0.016	○
3862225	VBMT 332 NN	LT 10		0.654	0.187	0.031	●
3861944	VBMT 332 NN	LT 1000	magia	0.654	0.187	0.031	○

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

35° shape inserts with positive rake angle. Suitable for Internal and External Copying operations of complex geometries.

## Application Guide

### Finishing Medium Roughing / Interrupted cut

VBMT 221 NN



VBMT 331 NN



VBMT 332 NN



- = Good
- = Acceptable
- = Not recommended

#### Finishing:

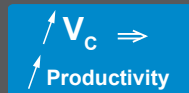
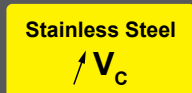
d.o.c. = 0.012 - 0.059 inch  
 $f_n = 0.003 - 0.008$  inch/rev

#### Medium:

d.o.c. = 0.028 - 0.177 inch  
 $f_n = 0.006 - 0.018$  inch/rev

#### Roughing

d.o.c. = 0.118 - 0.276 inch  
 $f_n = 0.014 - 0.028$  inch/rev



Machine Recommendations  
 Guide. Details on page 19.

# VBMT 221 NN LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.008	0.083	0.003	0.006	0.0006	590	910	0.039	0.007	980	
		2	180 HB	0.008	0.069	0.003	0.007	0.0005	820	910	0.039	0.007	850		
		3	250 HB	0.008	0.069	0.003	0.007	0.0005	820	910	0.039	0.007	780		
	Low alloyed	2	6 42CrMo4, S150, 4,6 Ck60, 4140, 4340, 5,7 100Cr6	180 HB	0.008	0.069	0.003	0.007	0.0005	390	820	0.039	0.006	850	
		2	230 HB	0.008	0.069	0.003	0.007	0.0005	390	820	0.039	0.006	780		
		2	280 HB	0.008	0.055	0.003	0.006	0.0004	390	680	0.039	0.006	650		
		2	350 HB	0.008	0.055	0.003	0.006	0.0003	390	590	0.039	0.006	590		
	High alloyed	3	10 X40CrMoV5, H13, M42, D3, 11 S6-5-2, 12Ni19	220 HB	0.008	0.069	0.003	0.006	0.0004	220	620	0.039	0.005	590	
		3	280 HB	0.008	0.069	0.003	0.005	0.0004	220	490	0.039	0.005	450		
		3	290 HB	0.008	0.055	0.003	0.005	0.0002	220	420	0.039	0.005	390		
		3	350 HB	0.008	0.055	0.003	0.005	0.0002	220	360	0.039	0.005	360		
Stainless Steel	Austenitic	4	14 304, 316, 14 X5CrNi18-9	180 HB	0.008	0.069	0.003	0.006	0.0003	550	880	0.039	0.005	850	
		4	240 HB	0.008	0.069	0.003	0.006	0.0002	520	720	0.039	0.005	680		
	Duplex	5	14 X2CrNiN23-4, 14 S31500	290 HB	0.008	0.055	0.003	0.005	0.0002	260	490	0.039	0.005	450	
		5	310 HB	0.008	0.055	0.003	0.005	0.0002	220	450	0.039	0.005	450		
	Ferritic & Martensitic	6	12 410, X6Cr17, 13 17-4 PH, 430	200 HB	0.008	0.069	0.003	0.006	0.0003	550	820	0.039	0.006	780	
		6	42 HRC	0.008	0.055	0.003	0.005	0.0002	390	620	0.039	0.005	590		
Cast Iron	Grey	7	15 GG20, GG40, 15 EN-GJL-250, 16 No30B	150 HB	0.008	0.083	0.002	0.007	0.0006	550	820	0.039	0.007	780	
		7	200 HB	0.008	0.083	0.002	0.007	0.0006	520	750	0.039	0.007	720		
		7	250 HB	0.008	0.083	0.002	0.007	0.0006	490	680	0.039	0.007	650		
	Malleable & Nodular	8	17,19 GGG40, GGG70, 17,19 50005	150 HB	0.008	0.069	0.002	0.006	0.0005	390	820	0.039	0.006	780	
		8	200 HB	0.008	0.069	0.002	0.006	0.0004	390	750	0.039	0.006	720		
		8	250 HB	0.008	0.069	0.002	0.006	0.0004	390	620	0.039	0.006	590		
	High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800	240 HB	0.008	0.055	0.003	0.005	0.0002	80	160	0.039	0.005	130
			9	33 Inconel 700	250 HB	0.008	0.055	0.003	0.005	0.0002	80	160	0.039	0.005	130
9			34 Stellite 21	350 HB	0.008	0.055	0.003	0.005	0.0002	70	140	0.039	0.005	110	
Ti based		10	36 TiAl6V4	-	0.008	0.055	0.003	0.005	0.0003	140	210	0.039	0.006	190	
		10	37 T40	-	0.008	0.055	0.003	0.005	0.0002	110	190	0.039	0.005	160	
Hardened Mat.	Steel	11	38 X100CrMo13, 38 440C, 38 G-X260NiCr42	45 HRC	0.008	0.050	0.001	0.004	0.0002	160	320	0.030	0.004	290	
		11	50 HRC	0.008	0.041	0.001	0.003	0.0002	130	290	0.024	0.004	260		
		11	55 HRC	0.008	0.039	0.001	0.003	0.0001	130	260	0.020	0.003	220		
	Chilled Cast Iron	11	40 Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002	130	190	0.024	0.004	160	
		11	41 G-X300CrMo15	55 HRC	0.008	0.039	0.001	0.003	0.0001	90	160	0.020	0.003	130	
12	25 AISI12	130 HB	0.008	0.110	0.003	0.010	0.0007	650	1310	0.039	0.008	1140			

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT**
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX



# VBMT 331 NN LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.008	0.118 0.098 0.098	0.004	0.009 0.009 0.008	0.009 0.008 0.007	1080 910 820	0.079	0.007	980 850 780		
		Low alloyed	2	42CrMo4, St50, CK60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.008 0.008 0.007 0.007	0.008 0.007 0.006 0.006	910 820 680 590	0.079	0.006	850 780 650 590	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB 280 HB 320 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.007 0.006 0.006 0.006	0.006 0.006 0.005 0.004	620 490 420 360	0.079	0.005	590 450 390 360
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.008	0.098 0.098	0.004	0.007 0.007	0.005 0.004	550 520	0.079	0.005	880 720
				Duplex	5	X2CrNiN23-4, S31500	290 HB 310 HB	0.008	0.079 0.079	0.004	0.006 0.006	0.003 0.003	260 220	0.079	0.005
	Ferritic & Martensitic	6			410, X6Cr17, 17-4 PH, 430	200 HB 42 HRc	0.008	0.098 0.079	0.004	0.007 0.006	0.005 0.004	550 390	0.079	0.006 0.005	820 620
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.008	0.118 0.118 0.118	0.003	0.008 0.008 0.008	0.010 0.009 0.009	550 520 490	0.079	0.007	820 720 650
	Malleable & Nodular			8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.008	0.098 0.098 0.098	0.003	0.007 0.007 0.007	0.007 0.006 0.006	820 390 620	0.079	0.006	780 720 590
				Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB 250 HB 350 HB	0.008	0.079 0.079 0.079	0.004	0.006 0.006 0.006	0.004 0.004 0.004	80 80 70	0.079	0.005
			Ti based		10	TiAl6V4 T40	- -	0.008	0.079 0.079	0.004	0.006 0.006	0.005 0.004	140 110	0.079	0.006 0.005
	Hardened Mat.				Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.008	0.071 0.059 0.055	0.002	0.005 0.004 0.004	0.003 0.003 0.002	160 130 260	0.059 0.047 0.039
Chilled Cast Iron			40	Ni-Hard 2		400 HB	0.008	0.063	0.002	0.005	0.003	130	0.047	0.004	160
		White Cast Iron	41	G-X300CrMo15		55 HRc	0.008	0.055	0.002	0.004	0.002	90	0.039	0.003	130
Al (>8%Si)		12	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	0.079	0.008	1140		





# VBMT 332 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.138	0.007	0.016	0.0020	590	1080	0.097	0.012	780		
		2	1045, 1060,	190 HB		0.138		0.016	0.0020		910		720			
		3	28Mn6	250 HB		0.138		0.014	0.0016		820		650			
	Low alloyed	2	42CrMo4, St50,	180 HB	0.020	0.138	0.007	0.014	0.0013	390	910	0.097	0.011	650		
		4,6	Ck60, 4140, 4340,	230 HB		0.110	0.007	0.014	0.0013		820		590			
		5,7	100Cr6	260 HB		0.110	0.006	0.013	0.0013		680		490			
		8		350 HB		0.096	0.006	0.013	0.0011		590		420			
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.110	0.006	0.013	0.0013	220	0.081	0.010	450		
		10	H13, M42, D3,	280 HB	0.110		0.013		0.0013	490			390			
		11	S6-5-2, 12W19	320 HB	0.083		0.011		0.0099	420			320			
		11		350 HB	0.083		0.011		0.0099	360			290			
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.138	0.007	0.013	0.0013	550	0.097	0.012	620		
		14	X5CrNi18-9	240 HB	0.138		0.013		0.0011	520			720	0.011	550	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.110	0.006	0.011	0.0009	260	0.081	0.009	320		
		14	S31500	310 HB	0.110		0.011		0.0009	220			450	0.009	290	
	Ferritic & Martensitic	6	12	410, X5Cr17,	200 HB	0.020	0.138	0.008	0.013	0.0011	550	0.097	0.011	620		
		13	17-4 PH, 430	42 HRC	0.110		0.000		0.013	390				620	0.000	420
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.138	0.005	0.019	0.0022	550	0.097	0.012	650		
		15	EN-GJL-250,	200 HB	0.138		0.019		0.0020	520				750	590	
		16	NC30B	130 HB	0.138		0.017		0.0020	490				680	520	
	Malleable & Nodular	8	17,19	GG40, GGG70,	150 HB	0.020	0.138	0.005	0.016	0.0016	390	0.097	0.010	590		
		17,19	50005	200 HB	0.138		0.016		0.0014	750				520		
		18,20		250 HB	0.138		0.016		0.0013	620				450		
	High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.083	0.007	0.011	0.0008	80	0.079	0.009	100	
			33	Inconel 700	250 HB	0.083		0.011		0.0008	80				140	90
34			Stellite 21	350 HB	0.083	0.011		0.0008		70	130				90	
Ti based		10	36	TiAl6V4	-	0.020	0.110	0.007	0.013	0.0009	140	0.079	0.011	180		
		37	T40	-	0.083		0.011		0.0008	110			180	0.010	140	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.069	0.004	0.009	0.0007	160	0.065	0.008	260		
		38	440C,	50 HRC	0.055		0.008		0.0094	130			290	0.048	0.007	220
		38	G-X260NiCr42	55 HRC	0.041		0.006		0.0003	130			260	0.039	0.006	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.055	0.004	0.008	0.0004	130	190	0.048	0.006	160		
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.041	0.004	0.006	0.0003	90	160	0.039	0.005	130	
HF	Al (c-8%Si)	12	25	AlSi12	130 HB	0.020	0.165	0.007	0.019	0.0022	650	1310	0.097	0.013	910	

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT**
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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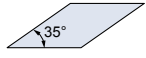


- DRILLING
- SPMG
- WCMX





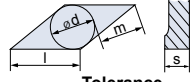
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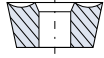
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $m \pm 0.003$   
 $s \pm 0.005$



Fixing Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
8608828	VCMT 331 NN	LT 10		0.654	0.187	0.016	●
8608831	VCMT 331 NN	LT 1000	magia	0.654	0.187	0.016	●
8608833	VCMT 332 NN	LT 10		0.654	0.187	0.031	●
8608836	VCMT 332 NN	LT 1000	magia	0.654	0.187	0.031	●

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

35° shape inserts with positive rake angle. Suitable for Internal and External Copying operations of complex geometries.

**Application Guide**

Finishing Medium Roughing / Interrupted cut

VCMT 331 NN  
 VCMT 332 NN



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

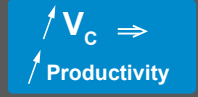
**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😞 = Not recommended



Machine Recommendations Guide. Details on page 19.



# VCMT 331 NN LT 10 & LT 1000

Material Group	Gr. N <sup>o</sup>	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, CK45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.008	0.118 0.098 0.098	0.004	0.009 0.009 0.008	0.009 0.008 0.007	1080 910 820	0.079	0.007	980 850 780		
		Low alloyed	2	42CrMo4, S150, CK60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.008 0.008 0.007 0.006	0.008 0.007 0.006	910 820 680 590	0.079	0.006	850 780 650 590	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB 280 HB 320 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.007 0.006 0.007 0.006	0.006 0.006 0.005 0.004	620 490 420 380	0.079	0.005	590 450 390 360
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.008	0.098 0.098	0.004	0.007 0.007	0.005 0.004	550 520	0.079	0.005	880 720 680
				Duplex	5	X2CrNiN23-4, S31500	290 HB 310 HB	0.008	0.079 0.079	0.004	0.006 0.006	0.003 0.003	260 220	0.079	0.005
	Ferritic & Martensitic	6			410, X6Cr17, 17-4 PH, 430	200 HB 42 HRc	0.008	0.098 0.079	0.004	0.007 0.006	0.005 0.004	550 390	0.079	0.006	780 590
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.008	0.118 0.118 0.118	0.003	0.008 0.008 0.008	0.010 0.009 0.009	550 520 490	0.079	0.007	820 720 680
	Malleable & Nodular			8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.008	0.098 0.098 0.098	0.003	0.007 0.007 0.007	0.007 0.006 0.006	820 390 620	0.079	0.006	780 720 590
				Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB 250 HB 350 HB	0.008	0.079 0.079 0.079	0.004	0.006 0.006 0.006	0.004 0.004 0.004	80 80 70	0.079	0.005
			Ti based		10	TiAl6V4 T40	- -	0.008	0.079 0.079	0.004	0.006 0.006	0.005 0.004	140 110	0.079	0.006
	Hardened Mat				Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.008	0.071 0.059 0.055	0.002	0.005 0.004 0.004	0.003 0.003 0.002	160 130 130	0.059 0.047 0.039
Chilled Cast Iron			40	Ni-Hard 2		400 HB	0.000	0.000	0.000	0.000	0.000	0	0	0.000	0.000
White Cast Iron		41	G-X300CrMo15	55 HRc		0.008	0.055	0.002	0.004	0.002	90	160	0.039	0.003	130
HP		12	25	AISI12	130 HB	0.008	0.157	0.004	0.012	0.011	650	1310	0.079	0.008	1140

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT**
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX



# VCMT 332 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.138	0.007	0.016	0.0020	590	1080	0.097	0.012	780	
		2		180 HB 230 HB		0.138		0.016	0.0020		910			720	
		3		250 HB		0.138		0.016	0.0016		820			650	
	Low alloyed	2	6 42CrMo4, St50, 4,6 Ck60, 4140, 4340, 5,7 100Cr6	180 HB 230 HB 280 HB 350 HB	0.020	0.138	0.007	0.014	0.0013	390	910	0.097	0.011	650	
		4		230 HB		0.110	0.007	0.014	0.0013		820			590	
		5		280 HB		0.110	0.006	0.013	0.0013		680			490	
		8		350 HB		0.096	0.006	0.013	0.0011		590			420	
	High alloyed	3	10 X40CrMoV5, 11 H13, M42, D3, 11 S6-5-2, 12Ni19	220 HB 280 HB 320 HB 350 HB	0.020	0.110	0.006	0.013	0.0013	220	620	0.081	0.010	450	
		10		280 HB		0.110		0.013	0.0013		490			390	
		11		320 HB		0.093		0.011	0.0009		420			320	
		11		350 HB		0.083		0.011	0.0009		360			290	
Stainless Steel	Austenitic	4	14 304, 316, 14 X5CrNi18-9	180 HB 240 HB	0.020	0.138	0.007	0.013	0.0013	550	880	0.097	0.012	620	
		5		290 HB 310 HB		0.110		0.006	0.011		0.0009			260	490
	Duplex	5		290 HB 310 HB	0.020	0.110	0.006	0.011	0.0009	220	450	0.081	0.009	320	
		14		310 HB		0.110		0.011	0.0000		220			290	
	Ferritic & Martensitic	6	12 410, X6Cr17, 13 17-4 PH, 430	200 HB 42 HRc	0.020	0.138	0.008	0.013	0.0011	550	820	0.097	0.011	620	
		13		42 HRc		0.110		0.013	0.0000		390			620	420
Cast Iron	Grey	7	15 GG20, GG40, 15 EN-GJL-250, 16 No30B	150 HB 200 HB 250 HB	0.020	0.138	0.005	0.019	0.0022	550	820	0.097	0.012	650	
		15		200 HB		0.138		0.019	0.0020		520			750	590
		16		250 HB		0.138		0.017	0.0020		490			690	520
	Malleable & Nodular	8	17,19 GG640, GGG70, 17,19 50005, 18,20	150 HB 200 HB 250 HB	0.020	0.138	0.005	0.016	0.0016	390	820	0.097	0.010	590	
		17,19		200 HB		0.138		0.016	0.0014		750			520	
		18,20		250 HB		0.138		0.016	0.0013		620			450	
High Temp. Alloys	Fe, Ni & Co based	9	31,32 Incoloy 800 33 Inconel 700	240 HB 250 HB 350 HB	0.020	0.083	0.007	0.011	0.0008	80	140	0.079	0.009	100	
		34		250 HB		0.083		0.011	0.0000		80			140	90
		34		350 HB		0.083		0.011	0.0000		70			130	90
	Ti based	10	36 TiAl6V4 37 T40	- -	0.020	0.110	0.007	0.013	0.0009	140	210	0.079	0.011	180	
		37		-		0.083		0.011	0.0008		110			180	140
Hardened Mat.	Steel	11	38 X100CrMo13, 38 440C, 38 G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.020	0.069	0.004	0.009	0.0007	160	320	0.065	0.008	260	
		38		50 HRc		0.055		0.008	0.0004		130			290	220
		38		55 HRc		0.041		0.006	0.0003		130			260	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.055	0.004	0.008	0.0004	130	190	0.048	0.006	160	
		41	G-X300CrMo15	65 HRc	0.020	0.041	0.004	0.006	0.0003	90	160	0.039	0.005	130	
NE	Al (c-8%Si)	12	25 AlSi12	130 HB	0.020	0.165	0.007	0.019	0.0022	650	1310	0.097	0.013	910	



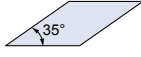


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N

M

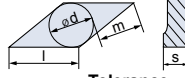
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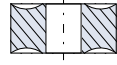
Shape



Clearance Angle



Tolerance  
 $d \pm 0.002$   
 $m \pm 0.003$   
 $s \pm 0.005$



Fixing Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
8607241	VNMG 331 NN	LT 10		0.654	0.187	0.016	●
8608011	VNMG 331 NN	LT 1000	magia	0.654	0.187	0.016	●
8607245	VNMG 332 NN	LT 10		0.654	0.187	0.031	●
8608016	VNMG 332 NN	LT 1000	magia	0.654	0.187	0.031	●

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

35° shape inserts. Suitable for Semi-roughing External Copying operations.

**Application Guide**

Finishing Medium Roughing / Interrupted cut

VNMG 331 NN  
 VNMG 332 NN



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 🙂 = Acceptable
- ☹️ = Not recommended

Machine Recommendations Guide. Details on page 19.

**Stainless Steel**

$V_c \Rightarrow$   
 ↑ Productivity

Feed x d.o.c.  
 =  
 Amax



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# VNMG 331 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1 C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.008	0.118 0.098 0.098	0.004	0.009 0.009 0.008	0.0009 0.0008 0.0007	1080 910 820	0.079	0.007	980 850 780		
		Low alloyed	2	42CrMo4, St50, CK60, 4140, 4340, 100Cr6	180 HB 230 HB 280 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.008 0.008 0.007 0.007	0.0008 0.0007 0.0006 0.0006	910 820 680 590	0.079	0.006	850 780 650 590	
			High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB 280 HB 320 HB 350 HB	0.008	0.098 0.098 0.079 0.079	0.004	0.007 0.006 0.006 0.006	0.0006 0.0006 0.0005 0.0004	620 490 420 360	0.079	0.005	590 450 390 360
	Austenitic			4	304, 316, X5CrNi18-9	180 HB 240 HB	0.008	0.098 0.098	0.004	0.007 0.007	0.0005 0.0004	550 520	0.079	0.005	880 720 680
				Duplex	5	X2CrNiMn23-4, S31500	290 HB 310 HB	0.008	0.079 0.079	0.004	0.006 0.006	0.0003 0.0003	260 220	0.079	0.005
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430		200 HB 42 HRc	0.008	0.098 0.079	0.004	0.007 0.006	0.0005 0.0004	550 390	0.079	0.006	820 620 590	
		Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.008	0.118 0.118 0.118	0.003	0.008 0.008 0.009	0.0010 0.0009 0.0009	550 520 490	0.079	0.007	820 720 650
	Malleable & Nodular			8	GGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.008	0.098 0.098 0.098	0.003	0.007 0.007 0.007	0.0007 0.0006 0.0006	820 390 620	0.079	0.006	780 720 590
				Fe, Ni & Co based	9	Incoloy 800 Inconel 700	240 HB 250 HB	0.008	0.079 0.079	0.004	0.006 0.006	0.0004 0.0004	80 70	0.079	0.005
			Ti based		10	Stellite 21 TiAl6V4 T40	350 HB - -	0.008	0.079 0.079	0.004	0.006 0.006	0.0004 0.0004	140 110	0.079	0.006
	Hardened Met.			Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc 50 HRc 55 HRc	0.008	0.071 0.059 0.055	0.002	0.005 0.004 0.004	0.0003 0.0003 0.0002	160 130 130	0.059	0.004
Chilled Cast Iron			11		Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	0.047	0.004	160
		White Cast Iron	41		G-X300CrMo15	55 HRc	0.008	0.055	0.002	0.004	0.0002	90	0.039	0.003	130
Al (>8%Si)		12	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	0.079	0.008	1140		



# VNMG 332 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters													
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>											
Steel	Non- alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB 190 HB 250 HB	0.020	0.157	0.007	0.016 0.016 0.014	0.0022 0.0022 0.0019	590	1080 910 820	0.106	0.012	780											
		2	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB 230 HB										0.020	0.157 0.126	0.007	0.014 0.014	0.0015 0.0015	390	910 820	0.106	0.011	650		
		3		280 HB 350 HB																			0.126 0.110	0.006 0.006	0.013 0.012
	Low alloyed	2	6	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	180 HB	0.020	0.126	0.006	0.013	0.0015	220	620 490 420 360	0.089	0.011	450										
			10		280 HB										0.126	0.013	0.0015	390	320						
			11		320 HB										0.094	0.011	0.0010	420	290						
			11		350 HB										0.094	0.111	0.0010	360	290						
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12N19	220 HB	0.020	0.126	0.006	0.013	0.0015	220	620 490 420 360	0.089	0.011	390										
			10		280 HB										0.126	0.013	0.0015	390	320						
		11	320 HB		0.094										0.011	0.0010	420	290							
		11	350 HB		0.094										0.111	0.0010	360	290							
Austenitic		4	14		304, 316, X5CrNi18-9										180 HB 240 HB	0.020	0.157	0.007	0.013	0.0015	550	880 720	0.106	0.012	620
			14		240 HB										0.157										0.013
	Duplex	5	14	X2CrNiMo23-4, S31500	290 HB 310 HB	0.020	0.126	0.006	0.011	0.0010	260	490 450	0.089	0.010	320										
14			310 HB	0.126	0.011										0.0010	220	290								
Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB 42 HRC	0.020	0.157	0.008	0.013	0.0012	550	820 620	0.106	0.011	620											
		13	42 HRC	0.126										0.013	0.0012	390	420								
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB 200 HB 250 HB	0.020	0.157	0.005	0.019	0.0025	550	820 750 680	0.106	0.012	650											
				200 HB										0.157	0.019	0.0022	520	590							
				250 HB										0.157	0.017	0.0022	490	520							
	Malleable & Nodular	8	CGG40, GGG70, 50005	150 HB 200 HB 250 HB	0.020	0.157	0.005	0.016	0.0019	80	140 140 130	80 750 620	0.106	0.011	590										
				200 HB											0.157	0.016	0.0016	390	520						
				250 HB											0.157	0.016	0.0015	620	450						
	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB 250 HB 350 HB	0.020	0.094	0.007	0.011	0.0009	80	140 140 130	80 750 620	0.079	0.010	100										
				250 HB											0.094	0.011	0.0009	80	90						
				350 HB											0.094	0.011	0.0009	70	80						
Ti based		10	TiAl6V4, T40	- -	0.020	0.126 0.094	0.007	0.013	0.0010	140	210 180	0.079	0.012	180											
				-										0.094	0.011	0.0009	110	140							
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC 50 HRC 55 HRC	0.020	0.079 0.063 0.047	0.004	0.009	0.0007	160	320 290 260	0.071	0.009	260											
				50 HRC										0.063	0.008	0.0005	130	220							
				55 HRC										0.047	0.006	0.0004	130	190							
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.063	0.004	0.008	0.0005	130	190	0.053	0.006	160											
				400 HB										0.063	0.008	0.0005	130	190							
	White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.047	0.004	0.006	0.0004	90	160	0.039	0.005	130											
	Al (>8%Si)	12	AlSi12	130 HB	0.020	0.189	0.007	0.019	0.0022	650	1310	0.106	0.014	910											

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG**
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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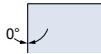


- DRILLING
- SPMG
- WCMX

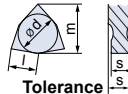


**W****N****M****G**

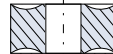
Shape



Clearance Angle



Tolerance

Fixing  
Chip breaker

s ± 0.005  
For l = 06, d ± 0.002 m ± 0.003  
For l = 08, d ± 0.003 m ± 0.005

Part No.	Description	Grade	magia	l	s	r	Stock
3463311	WNMG 331 NN	LT 10		0.256	0.187	0.016	●
3461949	WNMG 331 NN	LT 1000	magia	0.256	0.187	0.016	○
3463315	WNMG 332 NN	LT 10		0.256	0.187	0.031	●
3461950	WNMG 332 NN	LT 1000	magia	0.256	0.187	0.031	○
3463014	WNMG 332 NX	LT 1000	magia	0.256	0.187	0.031	○
4607257	WNMG 431 NN	LT 10		0.343	0.187	0.016	●
4608011	WNMG 431 NN	LT 1000	magia	0.343	0.187	0.016	●
4607261	WNMG 432 NN	LT 10		0.343	0.187	0.031	●
4608016	WNMG 432 NN	LT 1000	magia	0.343	0.187	0.031	●
4601967	WNMG 432 NM	LT 10		0.343	0.187	0.031	○
4608023	WNMG 432 NM	LT 1000	magia	0.343	0.187	0.031	●
4601437	WNMG 432 NR	LT 10		0.343	0.187	0.031	●
4608021	WNMG 432 NX	LT 1000	magia	0.343	0.187	0.031	●
4600076	WNMG 432 WM	LT 10		0.343	0.187	0.031	●
4607265	WNMG 433 NN	LT 10		0.343	0.187	0.047	●
4608026	WNMG 433 NN	LT 1000	magia	0.343	0.187	0.047	●

**NN** All purpose Chipbreaker

**NM** Steel and Cast Iron

**NX** All purpose Chipbreaker

● Stocking

○ Non-stocking

80° Trigon shape inserts, with 6 cutting edges. Suitable for all-purpose Turning, Facing and Boring operations.







W

N

M

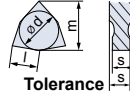
G



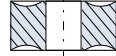
Shape



Clearance Angle



Tolerance  
 s ± 0.005  
 For l = 06, d ± 0.002 m ± 0.003  
 For l = 08, d ± 0.003 m ± 0.005



Fixing Chip breaker

Application Guide

	Finishing	Medium	Roughing / Interrupted cut	Roughing / Interrupted cut <i>magia</i>
WNMG 331 NN	😊	😐	😞	😞
WNMG 332 NN	😐	😊	😐	😐
WNMG 332 NX	😊	😊	😐	😐
WNMG 431 NN	😊	😐	😞	😞
WNMG 432 NN	😐	😊	😐	😊
WNMG 432 NM	😞	😊	😊	😊
WNMG 432 NX	😐	😊	😊	😊
WNMG 433 NN	😞	😐	😊	😊

😊 = Good  
 😐 = Acceptable  
 😞 = Not recommended

Finishing:

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

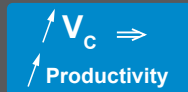
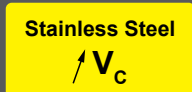
Medium:

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

Roughing

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

Machine Recommendations Guide. Details on page 19.



CCMT  
 CNMG  
 CNMM  
 CNMP  
 DCMT  
 DNMG  
 DNUX  
 EPGT  
 EPMT  
 KNUX  
 RCMT  
 SCMT  
 SNMG  
 TCMT  
 TNMG  
 TNMP  
 TNUX  
 TPMR  
 VBMT  
 VCMT  
 VNMG  
**WNMG**  
 WNMP  
 STAR  
 CCGX  
 CNGG  
 DCGX  
 DNGG  
 TCGX  
 TNGG  
 VNGG

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DRILLING  
 SPMG  
 WCMX

# WNMG 331 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, CK45, 1020,	125 HB	0.008	0.118	0.004	0.009	0.0009	590	1080	0.079	0.007	980		
		2	1045, 1060,	190 HB		0.098		0.009	0.0008		910			850		
		3	28Mn6	250 HB		0.098		0.007	0.0007		820			780		
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.008	0.098	0.004	0.008	0.0008	390	910	0.079	0.006	850	
		4,6	CK60, 4140, 4340,	230 HB	0.098		0.008		0.0007	820		780				
		5,7	100Cr6	280 HB	0.079		0.007		0.0006	680		650				
		8		250 HB	0.079		0.007		0.0006	590		590				
	High alloyed	3	10	X40CrMoV5,	220 HB	0.008	0.098	0.004	0.007	0.0006	220	620	0.079	0.005	590	
		10	H13, M42, D3,	280 HB	0.098		0.006		0.0006	490		450				
		11	S6-5-2, 12Ni19	320 HB	0.079		0.006		0.0005	420		390				
		11		350 HB	0.079		0.006		0.0004	360		360				
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850	
		14	X5CrNi18-9	240 HB	0.098		0.007		0.0004	520	720	680				
	Duplex	5	14	X2CrNi23-4,	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450	
		14	S31500	310 HB	0.079		0.006		0.0003	220	450					
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780	
		13	17-4 PH, 430	42 HRc	0.079		0.006		0.0004	390	620	590				
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	780	
		15	EN-GJL-250,	200 HB	0.118		0.008		0.0009	520	750	720				
		16	Ne30B	250 HB	0.118		0.008		0.0009	490	680	650				
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.008	0.098	0.003	0.007	0.0007	390	820	0.079	0.006	780	
		17,19	50005	200 HB	0.098		0.007		0.0006	750		720				
		18,20		250 HB	0.098		0.007		0.0006	620		590				
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130	
		33	Inconel 700	250 HB	0.079		0.006		0.0004	80	160					
		34	Stellite 21	350 HB	0.079		0.006		0.0004	70	140	110				
	Ti based	10	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190	
		37	T40	-	0.079		0.006		0.0004	110	190	160				
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290	
		38	440C,	50 HRc	0.059		0.004		0.0003	130	290	0.047			0.004	260
		38	G-X260NiCr42	55 HRc	0.055		0.004		0.0002	130	260	0.039			0.003	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160		
		41	G-X300CrMo15	55 HRc	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130		
HT	Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140	



# WNMG 332 NN/NX LT 10 & LT 1000

Material Group	Gr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.098	0.008	0.020	0.0018	1080	0.086	0.014	780			
		2	1045, 1060,	190 HB		0.098		0.020						910	720	
		3	28Mn6	250 HB		0.098		0.015						820	650	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.098	0.008	0.018	0.0012	910	0.086	0.013	650		
		4,6	Ck60, 4140, 4340,	230 HB	0.079		0.018		820						590	
		5,7	100Cr6	280 HB	0.079		0.016		680						490	
		8		350 HB	0.069		0.010		590						420	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.079	0.007	0.016	0.0012	220	0.072	0.012	390		
		10	H13, M42, D3,	280 HB	0.079		0.014		420						320	
		11	S6-5-2, 12N19	320 HB	0.059		0.008		490						320	
		11		350 HB	0.059		0.008		360						290	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.098	0.008	0.016	0.0012	550	880	0.086	0.010	620	
		14	X5CrNi18-9	240 HB	0.098		0.010		520							720
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.079	0.007	0.014	0.0008	260	490	0.072	0.011	320	
		14	S31500	310 HB	0.079		0.014		220							450
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.098	0.009	0.016	0.0010	550	820	0.086	0.013	620	
		13	17-4 PH, 430	42 HRC	0.016		390		620							
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.098	0.006	0.024	0.0020	550	820	0.086	0.014	590	
		16	EN-GJL-250,	200 HB	0.098		0.018		520							750
		16	Ne30B	250 HB	0.098		0.022		490							680
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.098	0.006	0.020	0.0015	390	750	0.086	0.012	520	
		17,19	50005	200 HB	0.098		0.012		620							450
		18,20		250 HB	0.098		0.012									
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.059	0.008	0.014	0.0007	80	140	0.057	0.011	100	
		33	Inconel 700	250 HB	0.059		0.014		80							140
		34	Stellite 21	350 HB	0.059		0.014		70							130
	Ti based	10	36	TiAl6V4	-	0.020	0.079	0.008	0.016	0.0008	140	210	0.057	0.013	180	
37		T40	-	0.059	0.014		110		180							
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.063	0.004	0.012	0.0006	160	320	0.057	0.010	260	
		38	440C,	50 HRC	0.051		0.010		130							290
		38	G-X260NiCr42	55 HRC	0.051		0.008		130							260
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.051	0.004	0.010	0.0004	130	190	0.039	0.007	160		
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.051	0.004	0.008	0.0003	90	160	0.039	0.006	130	
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.118	0.008	0.024	0.0028	650	1310	0.086	0.016	910		

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG**
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX



# WNMG 431 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, CK45, 1020,	125 HB	0.008	0.118	0.004	0.009	0.0009	590	1080	0.079	0.007	980		
		2	1045, 1060,	190 HB		0.098		0.008	0.009		0.0008			910	850	
		3	28Mn6	250 HB		0.098		0.007	0.008		0.0007			820	750	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.008	0.098	0.004	0.008	0.0008	390	910	0.079	0.006	850	
		4,6	CK60, 4140, 4340,	230 HB	0.098		0.008		0.007	0.0006		820			780	
		5,7	100Cr6	280 HB	0.079		0.007		0.007	0.0006		680			650	
		8		250 HB	0.079		0.007		0.006	0.0006		590			590	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.008	0.098	0.004	0.007	0.0006	220	620	0.079	0.005	590	
		10	H13, M42, D3,	280 HB	0.098		0.006		0.0006	490		450				
		11	S6-5-2, 12Ni19	320 HB	0.079		0.006		0.0005	420		390				
		11		350 HB	0.079		0.006		0.0004	360		360				
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850	
		14	X5CrNi18-9	240 HB	0.098		0.007		0.0004	520	720	680				
	Duplex	5	14	X2CrNi23-4,	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450	
		14	S31500	310 HB	0.079		0.006		0.0003	220	450					
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780	
		13	17-4 PH, 430	42 HRc	0.079		0.006		0.0004	390	620	590				
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.008	0.118	0.003	0.008	0.0010	550	820	0.079	0.007	780	
		15	EN-GJL-250,	200 HB	0.118		0.008		0.0009	520	750	720				
		16	Ne30B	250 HB	0.118		0.008		0.0009	490	680	650				
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.008	0.098	0.003	0.007	0.0007	390	820	0.079	0.006	780	
		17,19	50005	200 HB	0.098		0.007		0.0006	750		720				
		18,20		250 HB	0.098		0.007		0.0006	620		590				
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130	
		33	Inconel 700	250 HB	0.079		0.006		0.0004	80	160	130				
		34	Stellite 21	350 HB	0.079		0.006		0.0004	70	140	110				
	Ti based	10	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190	
		37	T40	-	0.079		0.006		0.0004	110	190	160				
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290	
		38	440C,	50 HRc	0.059		0.004		0.0003	130	290	0.047			0.004	260
		38	G-X260NiCr42	55 HRc	0.055		0.004		0.0002	130	260	0.039			0.003	220
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160		
White Cast Iron	41	G-X300CrMo15	55 HRc	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130			
HT	Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140	



# WNMG 432 NN & NX LT 10 & LT 1000

Material Group	Gr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.138	0.008	0.020	0.0028	590	910	0.094	0.014	785		
		2	1045, 1060,	190 HB		0.138		0.020						0.0028	910	720
		3	28Mn6	250 HB		0.138		0.018						0.0023	820	655
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.138	0.008	0.018	0.0019	390	910	0.094	0.013	655	
		4,6	Ck60, 4140, 4340,	230 HB	0.110		0.018		0.0019					820	590	
		5,7	100Cr6	280 HB	0.110		0.007		0.0019					680	490	
		8		350 HB	0.096		0.007		0.0016					590	425	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.110	0.007	0.016	0.0019	220	620	0.079	0.012	455	
		10	H13, M42, D3,	280 HB	0.110		0.016		0.0019					490	390	
		11	S6-5-2, 12N19	320 HB	0.083		0.014		0.0012					420	325	
		11		350 HB	0.083		0.014		0.0012					360	295	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.138	0.008	0.016	0.0019	550	880	0.094	0.010	620	
		14	X5CrNi18-9	240 HB	0.138		0.016		0.0016					520	555	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.110	0.007	0.014	0.0012	260	490	0.079	0.011	325	
		14	S31500	310 HB	0.110		0.014		0.0012					220	295	
	Ferritic & Martensitic	6	12	410, X8Cr17,	200 HB	0.020	0.138	0.009	0.016	0.0016	550	820	0.094	0.013	620	
		13	17-4 PH, 430	42 HRc	0.110		0.016		0.0016						390	425
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.138	0.006	0.024	0.0031	550	820	0.094	0.014	855	
		16	EN-GJL-250,	200 HB	0.138		0.022		0.0028						520	750
		16	Ne30B	250 HB	0.138		0.022		0.0028						490	680
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.138	0.006	0.020	0.0023	390	820	0.094	0.012	590	
		17,19	50005	200 HB	0.138		0.020		0.0020						0	750
		18,20		250 HB	0.138		0.020		0.0019						0	620
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.083	0.008	0.014	0.0011	80	140	0.063	0.011	100	
		33	Inconel 700	250 HB	0.083		0.014		0.0011						80	140
		34	Stellite 21	350 HB	0.083		0.014		0.0011						70	130
	Ti based	10	36	TiAl6V4	-	0.020	0.110	0.008	0.016	0.0012	140	210	0.063	0.013	180	
37		T40	-	0.083	0.014		0.0011		110					180		
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.059	0.004	0.012	0.0009	160	320	0.063	0.010	260	
		38	440C,	50 HRC	0.059		0.010		0.0006					130	290	
		38	G-X260NiCr42	55 HRC	0.059		0.008		0.0005					130	260	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.059	0.004	0.010	0.0006	130	190	0.047	0.007	160		
		White Cast Iron	41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	0.0005	90	160	0.031	0.006	130	
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.165	0.008	0.024	0.0028	650	1310	0.094	0.016	915		

CCMT  
CNMG  
CNMM  
CNMP  
DCMT  
DNMG  
DNUX  
EPGT  
EPMT  
KNUX  
RCMT  
SCMT  
SNMG  
TCMT  
TNMG  
TNMP  
TNUX  
TPMR  
VBMT  
VCMT  
VNMG  
WNMG  
WNMP  
STAR  
CCGX  
CNGG  
DCGX  
DNGG  
TCGX  
TNGG  
VNGG

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DRILLING  
SPMG  
WCMX



# WNMG 432 NM LT 10 & LT 1000

Material Group	Gr. N#	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.138	0.010	0.026	0.0033	590	1080	0.118	0.017	780	
		2	1045, 1060,	190 HB										720	
		3	28Mn6	250 HB										650	
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.138	0.010	0.023	0.0022	390	910	0.118	0.018	650
			4,6		230 HB										590
			5,7		280 HB										490
			8		350 HB										420
	High alloyed	3	X40CrMoV5, H13, M42, D3, S6-5-2, 12W19	220 HB	0.020	0.110	0.009	0.020	0.0022	220	620	0.098	0.015	450	
				10										280 HB	380
				11										320 HB	320
				11										350 HB	290
Cast Iron	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.138	0.010	0.020	0.0019	550	820	0.118	0.016	620	
		12		42 HRc										420	
	Grey	7	GG20, GG40, EN-GJL-250, Ne30B	150 HB	0.020	0.138	0.007	0.031	0.0037	550	820	0.118	0.017	650	
				15										200 HB	590
				16										250 HB	520
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.138	0.007	0.026	0.0028	390	750	0.118	0.015	520	
				17,19										200 HB	520
				17,19, 18,20										250 HB	450
	Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.059	0.005	0.015	0.0011	160	320	0.079	0.012	260
					50 HRc										220
55 HRc					190										
400 HB					160										
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.020	0.059	0.005	0.013	0.0007	130	190	0.059	0.009	160	
White Cast Iron	41	G-X300CrMo15	55 HRc	0.020	0.059	0.005	0.010	0.0006	90	160	0.039	0.007	130		



# WNMG 432 NX LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters					
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.138	0.008	0.020	0.0028	590	910	0.094	0.014	785			
		2	1045, 1060,	190 HB		0.138		0.020						0.0028	920	720	
		3	28Mn6	250 HB		0.138		0.018						0.0023	820	655	
	Low alloyed	2	6	42CrMo4, St50,	180 HB	0.020	0.138	0.008	0.018	0.0019	390	910	0.094	0.013	655		
		4,6	Ck60, 4140, 4340,	230 HB	0.110		0.018		0.0019					820	590		
		5,7	100Cr6	280 HB	0.110		0.007		0.016					680	490		
		8		350 HB	0.096		0.007		0.016					590	425		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.110	0.007	0.016	0.0019	220	620	0.079	0.012	455		
		10	H13, M42, D3,	280 HB	0.110		0.016		0.0019					490	390		
		11	S6-5-2, 12N19	320 HB	0.083		0.014		0.0012					420	325		
		11		350 HB	0.083		0.014		0.0012					360	295		
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.138	0.008	0.016	0.0019	550	880	0.094	0.010	620		
		14	X5CrNi18-9	240 HB	0.138		0.016		0.0016		520			720	0.009	555	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.020	0.110	0.007	0.014	0.0012	260	490	0.079	0.011	325		
		14	S31500	310 HB	0.110		0.014		0.0012		220			450	0.079	295	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.138	0.009	0.016	0.0016	550	820	0.094	0.013	620		
		13	17-4 PH, 430	42 HRC	0.110		0.016		0.0016		390				620	0.079	425
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.138	0.006	0.024	0.0031	550	820	0.094	0.014	855		
		16	EN-GJL-250,	200 HB	0.138		0.022		0.0028		520				750	590	
		16	Ne30B	250 HB	0.138		0.022		0.0028		490				680	520	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.138	0.006	0.020	0.0023	390	820	0.094	0.012	590		
		17,19	50005	200 HB	0.138		0.020		0.0020		0				750	520	
18,20	250 HB	0.138	0.020	0.0019	0	620	455										
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.083	0.008	0.014	0.0011	80	140	0.063	0.011	100		
		33	Inconel 700	250 HB	0.083		0.014		0.0011		80				140	95	
		34	Stellite 21	350 HB	0.083		0.014		0.0011		70				130	90	
	Ti based	10	36	TiAl6V4	-	0.020	0.110	0.008	0.016	0.0012	140	210	0.063	0.013	180		
37		T40	-	0.083	0.014		0.0011		110		180			0.012	145		
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.020	0.069	0.004	0.012	0.0009	160	320	0.063	0.010	260		
		38	440C,	50 HRC	0.059		0.010		0.0006		130			290	0.047	0.008	225
		38	G-X260NiCr42	55 HRC	0.059		0.008		0.0005		130			260	0.031	0.007	195
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.059	0.004	0.010	0.0006	130	190	0.047	0.007	160			
		41	G-X300CrMo15	55 HRC	0.020	0.059	0.004	0.008	0.0005	90	160	0.031	0.006	130			
White Cast Iron																	
Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.165	0.008	0.024	0.0028	650	1310	0.094	0.016	915			

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG**
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
- SPMG
- WCMX



# WNMG 432 NN LT 10 & LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, CK45, 1020,	125 HB		0.138		0.026	0.0033		1080			780	
		2	1045, 1060,	190 HB	0.029	0.138	0.010	0.026	0.0033	590	0.118	0.017	720		
		3	28Mn6	250 HB		0.138		0.023	0.0028		820		650		
	Low alloyed	2	6	42CrMo4, S150,	180 HB		0.138	0.010	0.023	0.0022		910		0.016	650
		4,6	CK60, 4140, 4340,	230 HB	0.029	0.110	0.010	0.023	0.0022	390	0.118	0.016	590		
		5,7	100Cr6	280 HB		0.110	0.009	0.020	0.0022		680		0.015	490	
		8		350 HB		0.096	0.009	0.020	0.0019		580		0.015	420	
	High alloyed	3	10	X40CrMoV5,	220 HB		0.110		0.020	0.0022		620		0.015	450
		10	H13, M42, D3,	280 HB	0.029	0.110	0.009	0.020	0.0022	220	0.098	0.015	390		
		11	S6-5-2, 12N19	320 HB		0.083		0.018	0.0015		490		0.014	320	
		11		350 HB		0.083		0.018	0.0015		360		0.014	290	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.029	0.138	0.009	0.020	0.0022	550	880	0.118	0.016	620
		14	X5CrNi18-9	240 HB		0.138		0.020	0.0019	520	720		0.014	550	
	Duplex	5	14	X2CrNi23-4,	290 HB	0.029	0.110	0.009	0.018	0.0015	260	490	0.098	0.013	320
		14	S31500	310 HB		0.110		0.018	0.0000	220	450			290	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.029	0.138	0.010	0.020	0.0019	550	820	0.118	0.016	620
		13	17-4 PH, 430	42 HRc		0.110		0.020	0.0033	490	680	0.098	0.014	420	
Cast Iron	Gray	7	15	GG20, GG40,	150 HB	0.029	0.138	0.007	0.031	0.0037	550	820	0.118	0.017	590
		15	EN-GJL-250,	200 HB		0.138		0.028	0.0033	490	680			520	
		16	No30B	250 HB		0.138		0.026	0.0028		820			590	
	Malleable & Nodular	8	17,19	GG40, GGG70,	150 HB	0.029	0.138	0.007	0.026	0.0024	390	750	0.118	0.015	520
		17,19	50005	200 HB		0.138		0.026	0.0022		620			450	
		18,20		250 HB		0.138		0.026	0.0022		620			450	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB		0.083		0.018		80	140		100	
		33	Inconel 700	250 HB	0.029	0.083	0.009	0.018	0.0013	80	140	0.079	0.014	90	
		34	Stellite 21	350 HB		0.083		0.018		70	130			90	
	Ti based	10	36	TiAl6V4	-	0.029	0.110	0.009	0.020	0.0015	140	210	0.079	0.016	180
		37	T40	-		0.083		0.018	0.0013	110	180		0.014	140	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.029	0.069	0.005	0.015	0.0011	160	320	0.079	0.012	260
		38	440C,	50 HRc		0.059		0.013	0.0007	130	290	0.059	0.010	220	
		38	G-X260N/Cr42	55 HRc		0.059		0.010	0.0006	130	260	0.039	0.009	190	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.029	0.059	0.005	0.013	0.0007	130	190	0.059	0.009	160	
		41	G-X300CrMo15	55 HRc	0.029	0.059	0.005	0.010	0.0006	90	160	0.039	0.007	130	
NI	Al (>8%Si)	12	25	AlSi12	130 HB	0.029	0.165	0.009	0.031	0.0034	650	1310	0.118	0.020	910







**W**

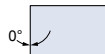
**N**

**M**

**P**



Shape

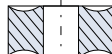


Clearance Angle



Tolerance

s ± 0.005  
For l = 06, d ± 0.002 m ± 0.003  
For l = 08, d ± 0.003 m ± 0.005



Fixing Chip breaker

Part No.	Description	Grade	magia	l	s	r	Stock
4608029	WNMP 331 NN	LT 10		0.256	0.187	0.016	●
4601954	WNMP 331 NN	LT 1000	magia	0.256	0.187	0.016	○
4608030	WNMP 332 NN	LT 10		0.256	0.187	0.031	●
4601955	WNMP 332 NN	LT 1000	magia	0.256	0.187	0.031	○
4607277	WNMP 432 NN	LT 10		0.343	0.187	0.031	●
4608031	WNMP 432 NN	LT 1000	magia	0.343	0.187	0.031	●

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

80° Trigon shape inserts with positive chipbreaker geometry. Generates lower cutting forces, suitable for High Temperature Alloys and Stainless Steel operations.

**Application Guide**

	Finishing	Medium	Roughing / Interrupted cut	
WNMP 331 NN	😊	😐	😞	😊 = Good 😐 = Acceptable 😞 = Not recommended
WNMP 332 NN	😊	😊	😞	
WNMP 432 NN	😊	😊	😞	

**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
fn = 0.014 - 0.028 inch/rev

Machine Recommendations Guide. Details on page 19.

**Exotic Material**  
Verify ⚠️  
Cutting Conditions

**Stainless Steel Exotic Material**  
👍  
CNMP - TNMP - WNMP

CNMP  
TNMP  
WNMP



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# WNMP 331 NN LT 10 & LT 1000

Material Group	Gr. #*	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB		0.118		0.009	0.0009	1080		980		
		2	2	1045, 1060,	190 HB	0.008	0.098	0.004	0.009	0.0008	590	910	0.079	0.007	850
		3	3	28Mn6	250 HB		0.098		0.008	0.0007		820			780
	Low alloyed	2	6	42CrMo4, S150,	180 HB		0.098		0.008	0.0008					850
		4,6	4,6	Ck60, 4140, 4340,	230 HB	0.008	0.098	0.004	0.008	0.0007	390		0.079	0.006	780
		5,7	5,7	100Cr6	280 HB		0.079		0.007	0.0006		680			650
		8	8		350 HB		0.079		0.007	0.0006		590			590
	High alloyed	3	10		220 HB		0.098		0.007	0.0006		620			590
		10	10	X40CrMoV5,	280 HB	0.008	0.098	0.004	0.006	0.0006		490	0.079	0.005	450
		11	11	H13, M42, D3,	320 HB		0.079		0.006	0.0005	220				390
		11	11	S6-5-2, 12Ni19	350 HB		0.079		0.006	0.0004		360			360
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850
		14	14	X5CrNi18-9	240 HB		0.098		0.007	0.0004	520	720			680
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450
		14	14	S31500	310 HB		0.079		0.006		220	450			
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780
		13	13	17-4 PH, 430	42 HRC		0.079		0.006	0.0004	390	620		0.005	590
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.008	0.118		0.008	0.0010	550	820			780
		15	15	EN-GJL-250,	200 HB	0.008	0.118	0.003	0.008	0.0009	520	750	0.079	0.007	720
		16	16	No30B	250 HB		0.118		0.008	0.0009	490	680			650
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.008	0.098		0.007	0.0007		820			780
		17,19	17,19	50005	200 HB	0.008	0.098	0.003	0.007	0.0006	390	750	0.079	0.006	720
		18,20	18,20		250 HB		0.098		0.007	0.0006		620			590
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.079	0.004	0.006		80	160			130
		33	33	Inconel 700	250 HB	0.008	0.079	0.004	0.006	0.0004	80	160	0.079	0.005	130
	Ti based	10	34	Stellite 21	350 HB		0.079		0.006		70	140			110
		36	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190
		37	37	T40	-		0.079		0.006	0.0004	110	190		0.005	160
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.008	0.071	0.002	0.005	0.0003	160	320	0.059	0.004	290
		38	38	440C,	50 HRC		0.059		0.004	0.0003	130	290	0.047	0.004	260
		38	38	G-X260NiCr42	55 HRC		0.055		0.004	0.0002	130	260	0.039	0.003	220
	Chilled Cast Iron	11	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160
		41	41	G-X300CrMo15	55 HRC	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130
White Cast Iron															
HF	Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140



# WNMP 332 NN LT 10 & LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.098	0.008	0.020	0.0018	590	1080	0.086	0.014	780		
		2	1045, 1060,	190 HB		0.098		0.020	0.0018		910			720		
		3	28Mn6	250 HB		0.098		0.018	0.0015		820			650		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.020	0.098	0.008	0.018	0.0012	390	910	0.086	0.013	650	
			4.6		230 HB		0.079	0.008	0.018	0.0012		820	0.071	0.013	590	
			5.7		280 HB		0.079	0.007	0.016	0.0012		680	0.071	0.012	490	
			8		350 HB		0.069	0.007	0.016	0.0010		590	0.063	0.012	420	
	High alloyed	3	X40CrMoV5, H13, M42, D3, SG-5-2, 12Ni19	220 HB	0.020	0.079	0.007	0.016	0.0012	220	620	0.072	0.012	450		
				280 HB		0.079		0.016	0.0012		490	0.052	0.012	390		
				320 HB		0.059		0.014	0.0008		420	0.059	0.011	320		
				350 HB		0.059		0.014	0.0008		360	0.059	0.011	290		
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.020	0.098	0.008	0.016	0.0012	550	880	0.086	0.014	620		
				240 HB		0.098		0.016	0.0010	520	720			0.013	550	
	Duplex	5	X2CrNiNi23-4, S31500	290 HB	0.020	0.079	0.007	0.014	0.0008	260	490	0.072	0.011	320		
				310 HB		0.079		0.014	390	450	290					
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.020	0.098	0.009	0.016	0.0010	550	820	0.086	0.013	620		
				42 HRC		0.079		0.016	390	620	0.079			420		
Cast Iron	Gray	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.020	0.098	0.006	0.024	0.0020	550	820	0.086	0.014	650		
				200 HB		0.098		0.024	0.0018	520	750			590		
				250 HB		0.098		0.022	0.0018	490	680			520		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.020	0.098	0.006	0.020	0.0015	390	820	0.086	0.012	590		
				200 HB		0.098		0.020	0.0013	390	750			520		
				250 HB		0.098		0.020	0.0012	620	450					
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.020	0.059	0.008	0.014	0.0007	80	140	0.057	0.011	100		
				250 HB		0.059		0.014		80	140			90		
				350 HB		0.059		0.014		70	130			90		
	Ti based	10	TiAl6V4, T40	-	0.020	0.079	0.008	0.016	0.0008	140	210	0.057	0.013	180		
				-		0.059		0.014	0.0007	110	180			140		
				-		0.059		0.016	0.0006	160	320			0.057	0.010	260
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.020	0.063	0.004	0.012	0.0006	160	320	0.057	0.010	260		
				50 HRc		0.051		0.010	0.0004	130	290			0.039	0.008	220
				55 HRc		0.051		0.008	0.0003	130	260			0.039	0.007	190
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.051	0.004	0.010	0.0004	130	190	0.039	0.007	160		
				55 HRc		0.051		0.008	0.0003	90	160			0.039	0.006	130
	White Cast Iron	41	G-X300C/Mo15	55 HRc	0.020	0.051	0.004	0.008	0.0003	90	160	0.039	0.006	130		
12				25		AlSi12		130 HB	0.020	0.118	0.008			0.024	0.0028	650

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG

- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG



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- DRILLING
- SPMG
- WCMX

# WNMP 432 NN LT 10 & LT 1000

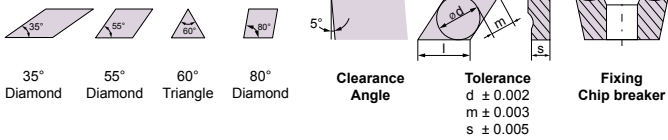
Material Group	Gr. #*	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters					
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.020	0.138	0.008	0.020	0.0028	590	0.094	0.014	0.014	785			
		2	1045, 1060, 28Mn6	190 HB		0.138		0.020	0.0028					910	720		
		3		250 HB		0.138		0.018	0.0023					820	655		
	Low alloyed	2	6	42CrMo4, S150,	180 HB	0.020	0.138	0.008	0.018	0.0019	390	0.094	0.013	0.013	655		
		4,6	Ck60, 4140, 4340,	230 HB	0.110		0.008	0.018	0.0019	820					590		
		5,7	100Cr6	280 HB	0.110		0.007	0.016	0.0019	680					490		
		8		350 HB	0.096		0.007	0.016	0.0016	580					425		
	High alloyed	3	10	X40CrMoV5,	220 HB	0.020	0.110	0.007	0.016	0.0019	220	0.079	0.012	0.012	455		
		10	H13, M42, D3,	280 HB	0.110		0.016		0.0019	490					390		
		11	S6-5-2, 12N19	320 HB	0.083		0.014		0.0012	420					325		
		11		350 HB	0.083		0.014		0.0012	360					295		
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.020	0.138	0.008	0.016	0.0019	550	0.094	0.010	0.010	620		
		14	X5CrNi18-9	240 HB	0.138		0.016		0.0016	520					720	555	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.020	0.110	0.007	0.014	0.0012	260	0.079	0.011	0.011	325		
		14	S31500	310 HB	0.110		0.014		0.0012	220					450	295	
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.020	0.138	0.009	0.016	0.0016	550	0.094	0.013	0.013	620		
		13	17-4 PH, 430	42 HRc	0.110		0.016		0.0016	390					620	425	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.020	0.138	0.006	0.024	0.0031	550	0.094	0.014	0.014	655		
		15	EN-GJL-250,	200 HB	0.138		0.022		0.0028	520					750	590	
		16	No30B	250 HB	0.138		0.022		0.0028	490					680	520	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.020	0.138	0.006	0.020	0.0023	390	0.094	0.012	0.012	590		
		17,19	50005	200 HB	0.138		0.020		0.0020	0					750	520	
		18,20		250 HB	0.138		0.020		0.0019	0					620	455	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.020	0.083	0.008	0.014	0.0011	80	0.063	0.011	0.011	100		
		33	Inconel 700	250 HB	0.083		0.014		0.0011						80	140	95
		34	Stellite 21	350 HB	0.083		0.014		0.0011						70	130	90
	Ti based	10	36	TiAl6V4	-	0.020	0.110	0.008	0.016	0.0012	140	0.063	0.013	0.013	180		
		37	T40	-	0.083		0.014		0.0011	110					180	145	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRc	0.020	0.069	0.004	0.012	0.0009	160	0.063	0.010	0.010	260		
		38	440C,	50 HRc	0.059		0.010		0.0006	130					290	225	
		38	G-X260NiCr42	55 HRc	0.059		0.008		0.0005	130					260	195	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.020	0.059	0.004	0.010	0.0006	130	190	0.047	0.007	160			
		41	G-X300CrMo15	55 HRc	0.020	0.059	0.004	0.008	0.0005	90	160	0.031	0.006	130			
HT	Al (>8%Si)	12	25	AlSi12	130 HB	0.020	0.165	0.008	0.024	0.0028	650	1310	0.094	0.016	915		





STAR

V<sub>35°</sub> D<sub>55°</sub> T<sub>60°</sub> C<sub>80°</sub> B M T



Part No.	Description	Grade	magia	l	s	r	Stock
3262784	ST-CBMT 232-L NN	LT 1000	magia	0.256	0.187	0.031	○
3262781	ST-DBMT 231-L NN	LT 1000	magia	0.256	0.187	0.016	○
3262783	ST-TBMT 231-L NN	LT 1000	magia	0.256	0.187	0.016	○
3262782	ST-VBMT 231-L NN	LT 1000	magia	0.256	0.187	0.016	○

**NN** All purpose Chipbreaker

- Stocking
- Non-stocking

Exclusive and unique design inserts with positive chipbreaker geometry. Suitable for Roughing, Semi-finishing and Finishing operations due to the ability to use the same Tool holder and for 35° - 80° angle operations. Limited in Plunging angle.

**Application Guide**

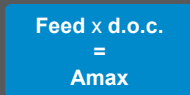
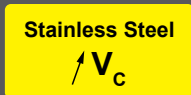
	Finishing	Medium	Roughing / Interrupted cut	
ST-CBMT 232-L NN	😊	😞	😡	😊 = Good 😞 = Acceptable 😡 = Not recommended
ST-DBMT 231-L NN	😊	😡	😡	
ST-TBMT 231-L NN	😊	😡	😡	
ST-VBMT 231-L NN	😊	😡	😡	

**Finishing:**  
 d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**  
 d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**  
 d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

Machine Recommendations Guide. Details on page 19.



- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR**
- CGGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

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- DRILLING
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- WCMX

# ST-CBMT 232-L NN LT 10 & LT 1000

Material Group	Gr. #*	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax		V <sub>s</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	min	max	min	max	D.O.C.	Feed	V <sub>s</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB		0.118		0.009	0.0009		1090			980	
		2	2	1045, 1060,	190 HB	0.008	0.098	0.004	0.009	0.0008	590	910	0.079	0.007	850	
		3	3	28Mn6	250 HB				0.008	0.0007		820			780	
	Low alloyed	2	6	42CrMo4, S150,	180 HB		0.098		0.008	0.0008			910			850
		4,6	2	Ck60, 4140, 4340,	230 HB	0.008	0.098	0.004	0.008	0.0007	390		0.079	0.006	780	
		5,7	8	100Cr6	280 HB		0.079		0.007	0.0006		680			650	
		8	8		350 HB		0.079		0.007	0.0006		590			590	
	High alloyed	3	10	X40CrMoV5,	220 HB		0.098		0.007	0.0006		620			590	
		10	10	H13, M42, D3,	280 HB	0.008	0.098	0.004	0.006	0.0006	220	490	0.079	0.005	450	
		11	11	S6-5-2, 12Ni19	320 HB		0.079		0.006	0.0005		420			390	
			11		350 HB		0.079		0.006	0.0004		360			360	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.098	0.004	0.007	0.0005	550	880	0.079	0.005	850	
		14	14	X5CrNi18-9	240 HB		0.098		0.007	0.0004	520	720			680	
	Duplex	5	14	X2CrNiMo23-4,	290 HB	0.008	0.079	0.004	0.006	0.0003	260	490	0.079	0.005	450	
		14	14	S31500	310 HB		0.079		0.006	0.0003	220	450				
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.098	0.004	0.007	0.0005	550	820	0.079	0.006	780	
		13	13	17-4 PH, 430	42 HRC		0.079		0.006	0.0004	390	620			590	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.008	0.118		0.008	0.0010	550	820			780	
		15	15	EN-GJL-250,	200 HB	0.008	0.118	0.003	0.008	0.0009	520	750	0.079	0.007	720	
		16	16	No30B	250 HB		0.118		0.008	0.0009	490	680			650	
	Malleable & Nodular	8	17,19	GG40, GG70,	150 HB	0.008	0.098		0.007	0.0007		820			780	
		17,19	17,19	50005	200 HB	0.008	0.098	0.003	0.007	0.0006	390	750	0.079	0.006	720	
		18,20	18,20		250 HB		0.098		0.007	0.0006		620			590	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.079	0.004	0.006	0.0004	80	160			130	
		33	33	Inconel 700	250 HB		0.079		0.006	0.0004	80	160	0.079	0.005	130	
		34	34	Stellite 21	350 HB		0.079		0.006	0.0004	70	140			110	
	Ti based	10	36	TiAl6V4	-	0.008	0.079	0.004	0.006	0.0005	140	210	0.079	0.006	190	
		37	37	T40	-		0.079		0.006	0.0004	110	190			0.005	160
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC		0.071		0.005	0.0003	160	320	0.059	0.004	290	
		38	38	440C,	50 HRC	0.008	0.059	0.002	0.004	0.0003	130	290	0.047	0.004	260	
		38	38	G-X260NiCr42	55 HRC		0.055		0.004	0.0002	130	260	0.039	0.003	220	
	Chilled Cast Iron	11	40	Ni-Hard 2	400 HB	0.008	0.063	0.002	0.005	0.0003	130	190	0.047	0.004	160	
		41	41	G-X300CrMo15	55 HRC	0.008	0.055	0.002	0.004	0.0002	90	160	0.039	0.003	130	
White Cast Iron																
HT	Al (>8%Si)	12	25	AlSi12	130 HB	0.008	0.157	0.004	0.012	0.0011	650	1310	0.079	0.008	1140	



## ST-DBMT 231-L NN LT 10 &amp; LT 1000

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [Inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB		0.083	0.008	0.0006		1080				980	
		2	1045, 1060,	190 HB	0.008	0.069	0.003	0.007	0.0005	590	910	0.039	0.007	850	
		3	28Mn6	250 HB		0.069		0.007	0.0005		820			780	
	Low alloyed	2	6	42CrMo4, S150,	180 HB		0.069	0.007	0.0005		910			850	
		4,6	Ck60, 4140, 4340,	230 HB	0.008	0.069	0.003	0.007	0.0005	390	820	0.039	0.006	780	
		5,7	100Cr6	280 HB		0.055		0.006	0.0004		680			650	
		8		350 HB		0.055		0.006	0.0003		590			590	
	High alloyed	3	10	X40CrMoV5,	220 HB		0.069	0.006	0.0004		620			590	
		10	H13, M42, D3,	280 HB	0.008	0.069	0.003	0.005	0.0004	220	490	0.039	0.005	490	
		11	S6-5-2, 12Ni19	320 HB		0.055		0.005	0.0003		420			350	
		11		350 HB		0.055		0.005	0.0002		360			360	
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.008	0.069	0.003	0.006	0.0003	550	880	0.039	0.005	850
		14	X5CrNi18-9	240 HB		0.069		0.006	0.0002	520	720			680	
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.008	0.055	0.003	0.005	0.0002	260	490	0.039	0.005	450
		14	S31500	310 HB		0.055		0.005	0.0002	220	450				
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.008	0.069	0.003	0.006	0.0003	550	820	0.039	0.006	780
		13	17-4 PH, 430	42 HRC		0.055		0.005	0.0002	390	620		0.005	590	
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.008	0.083	0.002	0.007	0.0006	520	750	0.039	0.007	720
		15	EN-GJL-250,	200 HB		0.083		0.007	0.0006	490	680			650	
		16	No30B	250 HB		0.083		0.007	0.0006					780	
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.008	0.069	0.002	0.006	0.0005	820			780	
		17,19	50005	200 HB		0.069		0.006	0.0004	390	750	0.039	0.006	720	
		18,20		250 HB		0.069		0.006	0.0004		620			590	
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.055	0.003	0.005	0.0002	80	160		130	
		33	Inconel 700	250 HB		0.055		0.005	0.0002	80	160	0.039	0.005	130	
		34	Stellite 21	350 HB		0.055		0.005	0.0002	70	140			110	
	Ti based	10	36	TiAl6V4	-	0.008	0.055	0.003	0.005	0.0003	140	210	0.039	0.006	190
		37	T40	-		0.055		0.005	0.0002	110	190		0.005	160	
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.008	0.050	0.001	0.004	0.0002	160	320	0.030	0.004	290
		38	440C,	50 HRC		0.041		0.003	0.0002	130	290	0.024	0.004	260	
		38	G-X260NiCr42	55 HRC		0.039		0.003	0.0001	130	260	0.020	0.003	220	
	Chilled Cast Iron	11	40	Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002	130	190	0.024	0.004	160
		41	G-X300CrMo15	55 HRC	0.008	0.039	0.001	0.003	0.0001	90	160	0.020	0.003	130	
White Cast Iron	12	25	AlSi12	130 HB	0.008	0.110	0.003	0.010	0.0007	650	1310	0.039	0.008	1140	

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG



# ST-TBMT 231-L NN LT 10 & LT 1000

Material Group	Gr. #*	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters								
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>						
Steel	Non-alloyed	1	C35, Ck45, 1020,	125 HB	0.008	0.083	0.003	0.007	0.0006	1090	980	0.039	0.007	850						
		2	1045, 1060,	190 HB											0.069	0.007	0.0005	910	820	850
		3	28Mn6	250 HB																
	Low alloyed	2	42CrMo4, S150,	180 HB	0.008	0.069	0.003	0.007	0.0005	390	910	0.039	0.006	850						
		4,6	Ck60, 4140, 4340,	230 HB											0.069	0.007	0.0005	820	650	
		5,7	100Cr6	280 HB																0.055
		8		350 HB											0.003	0.006	0.0003	590	360	
	High alloyed	3	10	X40CrMoV5,	220 HB	0.008	0.069	0.003	0.005	0.0004	220	620	0.039	0.005						450
		10	H13, M42, D3,	280 HB	0.069										0.005	0.0004	490	390		
		11	S6-5-2, 12Ni19	320 HB															0.055	
	11		350 HB	0.003	0.005	0.0002	360	360												
Stainless Steel	Austenitic	4	14						304, 316,	180 HB	0.008	0.069	0.003	0.006	0.0003	550	880	0.039	0.005	850
		14	X5CrNi18-9	240 HB	0.069	0.006	0.0002	520	720											
	Duplex	5	14	X2CrNiMo23-4,						290 HB	0.008	0.055	0.003	0.005	0.0002	260	490	0.039	0.005	450
		14	S31500	310 HB	0.003	0.005	0.0002	220	450											
	Ferritic & Martensitic	6	12	410, X6Cr17,						200 HB	0.008	0.069	0.003	0.006	0.0003	550	820	0.039	0.006	780
		13	17-4 PH, 430	42 HRC	0.055	0.005	0.0002	390	620											
Cast Iron	Grey	7	15	GG20, GG40,						150 HB	0.008	0.083	0.002	0.007	0.0006	550	820	0.039	0.007	720
		15	EN-GJL-250,	200 HB	0.083	0.007	0.0006	520	750											
		16	No30B	250 HB						0.003										
	Malleable & Nodular	8	17,19	GGG40, GGG70,	150 HB	0.008	0.069	0.002	0.006		0.0004	390	750	0.039	0.006	720				
		17,19	50005	200 HB	0.069					0.006							0.0004	620	590	
		18,20		250 HB																0.003
High Temp. Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.008	0.055	0.003	0.005	0.0002	80	160	0.039	0.005	130					
		33	Inconel 700	250 HB	0.055											0.005	0.0002	70	140	
		34	Stellite 21	350 HB																0.003
	Ti based	10	36	TiAl6V4	-	0.008	0.055	0.003	0.005	0.0003	140	210	0.039	0.006	190					
		37	T40	-	0.005											0.0002	110	190		
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.008	0.041	0.001	0.003	0.0002	130	290	0.024	0.004	260					
		38	440C,	50 HRC	0.039											0.003	0.0001	130	260	
		38	G-X260NiCr42	55 HRC																0.001
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002	130	190	0.024	0.004	160						
		41	G-X300CrMo15	55 HRC											0.008	0.039	0.001	0.003	0.0001	90
	White Cast Iron	41				0.008	0.110	0.003	0.010	0.0007	650	1310	0.039	0.008						
12		25	AlSi12	130 HB																





## ST-VBMT 231-L NN LT 10 &amp; LT 1000

Material Group	Gr. #	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	C35, Ck45, 1020, 1045, 1060, 28Mn6	125 HB	0.008	0.083	0.003	0.008	0.0006	1080	0.039	0.007	980			
		190 HB		0.069										0.0005	850	
		250 HB		0.069										0.0005	780	
	Low alloyed	2	42CrMo4, ST50, Ck60, 4140, 4340, 100Cr6	180 HB	0.008	0.069	0.003	0.007	0.0005	910	0.039	0.006	850			
		230 HB		0.069										0.0005	780	
		280 HB		0.055										0.0004	680	
		350 HB		0.055										0.0003	590	
	High alloyed	3	X40CrMoV5, H13, M42, B3, S6-5-2, 12N119	220 HB	0.008	0.069	0.003	0.006	0.0004	620	0.039	0.005	590			
		280 HB		0.069										0.0004	490	
		320 HB		0.055										0.0003	390	
		350 HB		0.055										0.0002	360	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.008	0.069	0.003	0.006	0.0003	550	880	0.039	0.005	850		
		240 HB		0.069											0.0002	720
	Duplex	5	X2CrNiMo23-4, S31500	290 HB	0.008	0.055	0.003	0.005	0.0002	260	490	0.039	0.005	450		
		310 HB		0.055											0.0002	220
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.008	0.069	0.003	0.008	0.0003	550	820	0.039	0.006	780		
		42 HRC		0.055											0.0002	390
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.008	0.083	0.002	0.007	0.0006	550	820	0.039	0.007	720		
		200 HB		0.083											0.0006	520
		250 HB		0.083											0.0006	490
	Malleable & Nodular	8	GG40, GG670, 50005	150 HB	0.008	0.069	0.002	0.006	0.0005	820	0.039	0.006	720			
		200 HB		0.069										0.0004	390	
		250 HB		0.069										0.0004	620	
	High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.008	0.055	0.003	0.005	0.0002	80	160	0.039	0.005	130	
			350 HB		0.055											0.0002
Ti based		10	TiAl6V4, T40	-	0.008	0.055	0.003	0.005	0.0003	140	210	0.039	0.006	190		
		-		0.055											0.0002	110
Hardened Mat.		Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.008	0.041	0.001	0.003	0.0002	160	320	0.030	0.004	290	
			50 HRC		0.002											130
	55 HRC		0.039		0.0001											130
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.008	0.044	0.001	0.004	0.0002	130	190	0.024	0.004	160		
		41		G-X300CrMo15											55 HRC	0.039
HF	12	25	AlSi12	130 HB	0.008	0.110	0.003	0.010	0.0007	650	1310	0.039	0.008	1140		

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

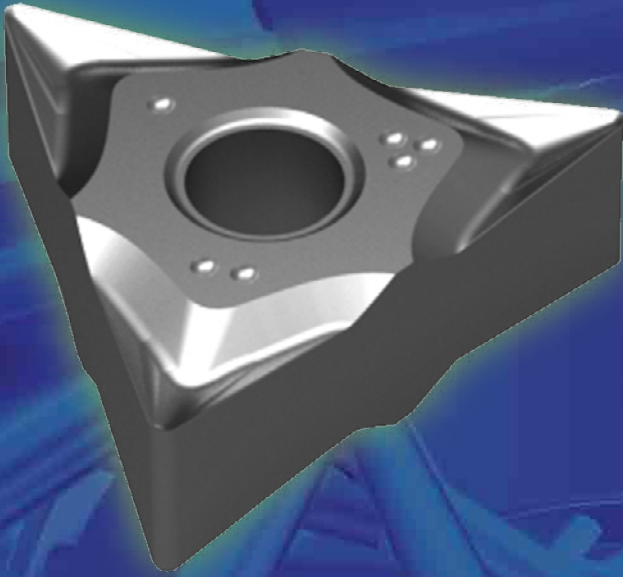
VNGG



Turning

# Alu-Turning Inserts

LT 05 Alu-Turning



Attacking Heat & Vibration is in Our DNA.





C

C

G

X

Part No.	Description	Grade	l	s	r	Stock
3663336	<b>CCGX 2(1.5)1 LH HP</b>	<b>101</b>	0.252	0.094	0.016	●
3663337	<b>CCGX 3(2.5)1 LH HP</b>	<b>101</b>	0.382	0.156	0.016	●
3663338	<b>CCGX 3(2.5)2 LH HP</b>	<b>101</b>	0.382	0.156	0.031	●
3663339	<b>CCGX 432 LH HP</b>	<b>101</b>	0.508	0.187	0.031	●

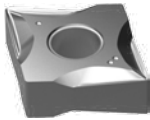
HP = High Polish

- Stocking
- Non-stocking

**Application Guide**

**See the back of the box for speeds and feeds.**

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX**
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG



C

N

G

G



Shape



Clearance Angle



Tolerance  
 $d \pm 0.001$   
 $m \pm 0.001$   
 $s \pm 0.005$



Fixing  
 Chip breaker

Part No.	Description	Grade	l	s	r	Stock
6607901	CNCG 431 ALU	LT 05	0.508	0.187	0.016	●
6607905	CNCG 432 ALU	LT 05	0.508	0.187	0.031	●

ALU All purpose Chipbreaker

- Stocking
- Non-stocking

ISO standard with extreme and unique positive chipbreaker geometry for Aluminium Turning operations. Suitable mostly for External operations but good also for Internal operations, Roughing and Finishing operations.

Application Guide

	Finishing	Medium	Roughing / Interrupted cut
CNCG 431 ALU	😊	😐	😡
CNCG 432 ALU	😐	😊	😐

Finishing:

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

Medium:

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

Roughing

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😡 = Not recommended



## CNGG 431 ALU LT 05

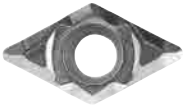
Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.D.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>				
HP	13	21, 22	Si < 4 %	60 HB	0.010	0.197	0.005	0.014	0.0023	1320	3960	0.098	0.009	1320				
		23, 24	4% < Si < 8 %	100 HB										0.197	0.004	0.012	0.0019	825
	14	26, 27, 28	CuZn30	100 HB	0.010	0.197	0.004	0.012	0.0019	495	2640	0.098	0.009	825				
		29	Fiber Plastics	-											0.197	0.008	231	1650
		30	Hard Rubber	-											0.010	0.197	0.004	0.008
-	Graphite	-	0.197	0.008	330	660												
HTA	10	36	Ti 1	-	0.010	0.079	0.004	0.006	0.0004	115.5	198	0.059	0.005	148.5				
		37	TiAl 6 V4	-										0.079	0.005	0.008	0.0004	92.4

## CNGG 432 ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.D.C. [inch]		Feed [inch/rev]		Amax	V <sub>c</sub> [sfm]		Suggested Starting Parameters						
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>				
HP	13	21, 22	Si < 4 %	60 HB	0.010	0.197	0.007	0.024	0.0023	1320	3960	0.118	0.013	1320				
		23, 24	4% < Si < 8 %	100 HB										0.197	0.020	0.0019	825	1980
	14	26, 27, 28	CuZn30	100 HB	0.010	0.197	0.006	0.016	0.0019	495	2640	0.118	0.010	825				
		29	Fiber Plastics	-											0.197	0.016	231	1650
		30	Hard Rubber	-											0.010	0.197	0.006	0.016
-	Graphite	-	0.197	0.016	330	660												
HTA	10	36	Ti 1	-	0.010	0.157	0.006	0.011	0.0004	115.5	198	0.098	0.008	148.5				
		37	TiAl 6 V4	-										0.157	0.010	0.010	92.4	132

CCMT  
CNMG  
CNMM  
CNMP  
DCMT  
DNMG  
DNUX  
EPGT  
EPMT  
KNUX  
RCMT  
SCMT  
SNMG  
TCMT  
TNMG  
TNMP  
TNUX  
TPMR  
VBMT  
VCMT  
VNMG  
WNMG  
WNMP  
STAR  
CGGX  
CNGG  
DCGX  
DNGG  
TCGX  
TNGG  
VNGG





D

C

G

X

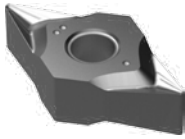
Part No.	Description	Grade	l	s	r	Stock
3763336	DCGX 2(1.5)1 LH HP	101	0.037	0.094	0.016	●
3763337	DCGX 3(2.5)2 LH HP	101	0.457	0.156	0.031	●

HP=High Polish

- Stocking
- Non-stocking

### Application Guide

See the back of the box for speeds and feeds.

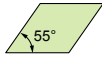


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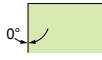
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**G**

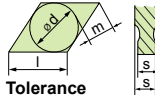
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Shape

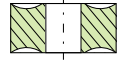


Clearance Angle



Tolerance

$d \pm 0.001$   
 $m \pm 0.001$   
 $s \pm 0.005$



Fixing Chip breaker

Part No.	Description	Grade	l	s	r	Stock
7607909	<b>DNGG 331 ALU</b>	<b>LT 05</b>	0.457	0.187	0.016	●
7607913	<b>DNGG 332 ALU</b>	<b>LT 05</b>	0.457	0.187	0.031	●

**ALU** All purpose Chipbreaker

- Stocking
- Non-stocking

ISO standard with extreme and unique positive chipbreaker geometry for Aluminium Turning operations. Suitable mostly for External operations but good also for Internal operations, Roughing and Finishing operations.

**Application Guide**

**Finishing Medium Roughing / Interrupted cut**

**DNGG 331 ALU**

**DNGG 332 ALU**



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 😞 = Acceptable
- 😡 = Not recommended

- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CGGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG



- DRILLING
- SPMG
- WCMX

# DNGG 331 ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>
NF	13	21, 22	Si < 4 %	60 HB	0.010	0.157	0.005	0.014	0.0023	1320	3960	0.098	0.009	1320
		23, 24	4% < Si < 8 %	100 HB										
	14	26, 27, 28	CuZn30	100 HB	0.010	0.157	0.004	0.012	0.0019	495	2640	0.098	0.009	825
		29	Fiber Plastics	-		0.157		0.008		231	1650			495
Non-Metallic	15	30	Hard Rubber	-	0.010	0.157	0.004	0.008	0.0019	264	990	0.079	0.006	495
		-	Graphite	-										
	RTA	10	36	Ti 1	-	0.010	0.079	0.004	0.006	0.0004	115.5	198	0.059	0.005
37			TiAl 6 V4	-										

# DNGG 332 ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Optimal cutting conditions		
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>
NF	13	21, 22	Si < 4 %	60 HB	0.010	0.157	0.007	0.024	0.0023	1320	3960	0.079	0.010	1320
		23, 24	4% < Si < 8 %	100 HB										
	14	26, 27, 28	CuZn30	100 HB	0.010	0.157	0.006	0.016	0.0019	495	2640	0.079	0.010	825
		29	Fiber Plastics	-		0.157		0.016		231	1650			495
Non-Metallic	15	30	Hard Rubber	-	0.010	0.157	0.006	0.016	0.0019	264	990	0.079	0.010	495
		-	Graphite	-										
	RTA	10	36	Ti 1	-	0.010	0.118	0.006	0.011	0.0004	115.5	198	0.079	0.008
37			TiAl 6 V4	-										





T C G X

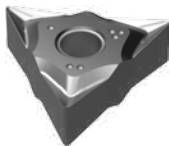
Part No.	Description	Grade	l	s	r	Stock
3563336	TCGX21.51-LH-101-HP	101	0.433	0.94	0.016	●
3563337	TCGX32.52-LH-101-HP	101	0.650	0.156	0.031	●

- Stocking
- Non-stocking

**Application Guide**

See the back of the box for speeds and feeds.

CCMT  
 CNMG  
 CNMM  
 CNMP  
 DCMT  
 DNMG  
 DNUX  
 EPGT  
 EPMT  
 KNUX  
 RCMT  
 SCMT  
 SNMG  
 TCMT  
 TNMG  
 TNMP  
 TNUX  
 TPMR  
 VBMT  
 VCMT  
 VNMG  
 WNMG  
 WNMP  
 STAR  
 CCGX  
 CNGG  
 DCGX  
 DNGG  
**TCGX**  
 TNGG  
 VNGG



**T**

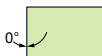
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**G**

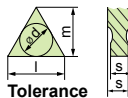
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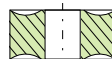
Shape



Clearance Angle



Tolerance  
 $d \pm 0.001$   
 $m \pm 0.001$   
 $s \pm 0.005$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Stock
3567711	<b>TNGG 331 ALU</b>	<b>LT 05</b>	0.457	0.187	0.031	●

**ALU** All purpose Chipbreaker

- Stocking
- Non-stocking

ISO standard with extreme and unique positive chipbreaker geometry for Aluminium Turning operations. Suitable mostly for External operations but good also for Internal operations, Roughing and Finishing operations.

### Application Guide

**Finishing Medium Roughing / Interrupted cut**

**TNGG 331 ALU**



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- = Good
- = Acceptable
- = Not recommended



# TNGG 331 ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>
Al (<8%Si)	13	21, 22	Si < 4 %	60 HB	0.010	0.157	0.005	0.014	0.0023	1320	3950	0.098	0.009	1320
		23, 24	4% < Si < 8 %	100 HB										
	14	26, 27, 28	CuZn30	100 HB	0.010	0.157	0.004	0.012	0.0019	495	2640	0.098	0.009	825
		29	Fiber Plastics	-										
Non-Metallic	15	30	Hard Rubber	-	0.010	0.157	0.004	0.008	0.0019	264	990	0.079	0.006	495
		-	Graphite	-										
	10	36	Ti 1	-	0.010	0.079	0.004	0.006	0.0004	115.5	198	0.059	0.005	148.5
37		TiAl 6 V4	-	0.079										

CCMT  
 CNMG  
 CNMM  
 CNMP  
 DCMT  
 DNMG  
 DNUX  
 EPGT  
 EPMT  
 KNUX  
 RCMT  
 SCMT  
 SNMG  
 TCMT  
 TNMG  
 TNMP  
 TNUX  
 TPMR  
 VBMT  
 VCMT  
 VNMG  
 WNMG  
 WNMP  
 STAR  
 CCGX  
 CNGG  
 DCGX  
 DNGG  
 TCGX  
**TNGG**  
 VNGG

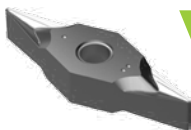


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 by our 100% satisfaction guarantee.



273

DRILLING  
 SPMG  
 WCMX

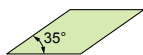


V

N

G

G



Shape



Clearance Angle



Tolerance  
 $d \pm 0.001$   
 $m \pm 0.001$   
 $s \pm 0.005$



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Stock
8607921	VNGG 331 ALU	LT 05	0.654	0.187	0.016	●
8607925	VNGG 332 ALU	LT 05	0.654	0.187	0.031	●

**ALU** All purpose Chipbreaker

- Stocking
- Non-stocking

ISO standard with extreme and unique positive chipbreaker geometry for Aluminium Turning operations.  
 Suitable mostly for External operations but good also for Internal operations, Roughing and Finishing operations.

**Application Guide**

**Finishing Medium Roughing / Interrupted cut**

VNGG 331 ALU



VNGG 332 ALU



**Finishing:**

d.o.c. = 0.012 - 0.059 inch  
 fn = 0.003 - 0.008 inch/rev

**Medium:**

d.o.c. = 0.028 - 0.177 inch  
 fn = 0.006 - 0.018 inch/rev

**Roughing**

d.o.c. = 0.118 - 0.276 inch  
 fn = 0.014 - 0.028 inch/rev

- 😊 = Good
- 😐 = Acceptable
- 😞 = Not recommended



# VNGG 331 ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [ftm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
NF	Al (<8%Si)	13	21, 22	Si < 4 %	60 HB	0.010	0.157	0.005	0.012	0.0023	1320	3960	0.098	0.009	1320
			23, 24	4% < Si < 8 %	100 HB						825	1980			990
	Cooper Alloys	14	26, 27, 28	CuZn30	100 HB	0.010	0.157	0.004	0.010	0.0019	495	2640	0.098	0.009	825
			29	Fiber Plastics	-						0.157	0.008			0.0019
Non-Metallic	15	30	Hard Rubber	-	0.010	0.157	0.004	0.008	0.0019	264	990	0.079	0.006	495	
		-	Graphite	-						0.157	0.008			0.0019	330
H.T.A.	Ti based Alloys	10	36	Ti 1	-	0.010	0.079	0.004	0.006	0.0004	115.5	198	0.059	0.005	148.5
			37	TiAl 6 V4	-						0.079	0.005			0.008

# VNGG 332 ALU LT 05

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	D.O.C. [inch]		Feed [inch/rev]		A <sub>max</sub>	V <sub>c</sub> [ftm]		Suggested Starting Parameters			
					min	max	min	max		min	max	D.O.C.	Feed	V <sub>c</sub>	
NF	Al (<8%Si)	13	21, 22	Si < 4 %	60 HB	0.010	0.236	0.007	0.024	0.0023	1320	3960	0.118	0.010	1320
			23, 24	4% < Si < 8 %	100 HB						0.236	0.020			0.0019
	Cooper Alloys	14	26, 27, 28	CuZn30	100 HB	0.010	0.236	0.006	0.016	0.0019	495	2640	0.118	0.010	825
			29	Fiber Plastics	-						0.236	0.016			0.0019
Non-Metallic	15	30	Hard Rubber	-	0.010	0.236	0.006	0.016	0.0019	264	990	0.118	0.010	495	
		-	Graphite	-						0.236	0.016			0.0019	330
H.T.A.	Ti based Alloys	10	36	Ti 1	-	0.010	0.118	0.006	0.011	0.0004	115.5	198	0.079	0.008	148.5
			37	TiAl 6 V4	-						0.118	0.010			0.0004

# Drilling

## Indexable Drills & Inserts

### LT 30 Multi-Mat™ Drilling



Indexable Drills



LAMINA  
TECHNOLOGIES







Inserts



Attacking Heat & Vibration is in Our DNA.

# MULTI-MAT™

The Lamina Multi-Mat™ LT 30 Grade for Drilling  
can machine most materials with  
**ONLY ONE GRADE**

-  Steel
-  Stainless Steel
-  Cast Iron
-  High Temp. Alloys
-  Hardened Steel
-  Aluminium & Non ferrous Alloys

**True Multi-Mat™ Inserts  
for Real Productivity**



All Nexus products are backed  
by our 100% satisfaction guarantee.



277

Drilling

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNUMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

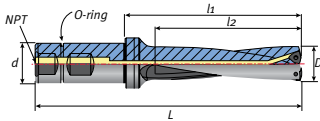
VNGG

DRILLING

SPMG

WCMX

# Nexus Indexable Drills



## Features

- Coolant fed through center
- Special -ring design to help seal coolant
- H13 steel for rigidity and tool life
- 4x depth to diameter
- High-performance inserts reduce setup time and inventory of inserts

## 4WD Indexable Drills

Part No.	Description	NTP Thread P	D	d	Drill Depth I2	I1	L	Insert	Screw	Torx
1741234	4WD.625-.750C-2.50-3	1/8"	0.625"	0.750"	2.50"	3.44"	5.48"	WC_0302	9315446	9355333
1751244	4WD.750-.750C-3.00-3	1/8"	0.750"	0.750"	3.00"	3.94"	6.00"	WC_0302	9315446	9355333
1751254	4WD.875-1.00C-3.50-4	1/8"	0.875"	1.00"	3.50"	4.43"	6.72"	WC_0402	9315446	9355333
1761264	4WD1.00-1.00C-4.00-4	1/8"	1.00"	1.00"	4.00"	4.94"	7.23"	WC_0402	9315446	9355333
1771284	4WD1.25-1.25C-5.00-6	1/4"	1.25"	1.25"	5.00"	6.14"	8.43"	WC_06T3	9317547	9355555
1771294	4WD1.375-1.25C-5.50-6	1/4"	1.375"	1.25"	5.50"	6.64"	8.92"	WC_06T3	9317547	9355555
1781334	4WD1.50-1.25C-6.00-6	1/4"	1.50"	1.25"	6.00"	7.26"	9.54"	WC_06T3	9317547	9355555
1781354	4WD1.75-1.50C-7.00-6	1/4"	1.75"	1.50"	7.00"	8.26"	10.95"	WC_06T3	9317547	9355555
1781374	4WD2.00-1.50C-8.00-8	1/4"	2.00"	1.50"	8.00"	9.34"	12.03"	WC_0804	9319345	9355555
1791394	4WD2.25-1.50C-9.00-8	1/4"	2.25"	1.50"	9.00"	10.34"	13.03"	WC_0804	9319345	9355555

**Takes W shaped inserts. See speeds and feeds machining guide starting on page 280.**





**S**

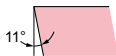
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**M**

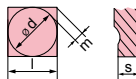
**G**



Shape

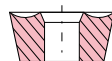


Clearance Angle



Tolerance

d ± 0.002  
m ± 0.003  
s ± 0.005



Fixing  
Chip breaker

Part No.	Description	Grade	l	s	r	Direction	Stock
3262913	<b>SPMG 060204 NN</b>	<b>LT 30</b>	0.236	0.094	0.016	Right	○
3262914	<b>SPMG 07T308 NN</b>	<b>LT 30</b>	0.313	0.156	0.031	Right	○
3262915	<b>SPMG 090408 NN</b>	<b>LT 30</b>	0.386	0.187	0.031	Right	○

- Stocking
- Non-stocking

Square inserts for Drilling. Strong cutting edges for High feeds.



CCMT  
CNMG  
CNMM  
CNMP  
DCMT  
DNMG  
DNUX  
EPGT  
EPMT  
KNUX  
RCMT  
SCMT  
SNMG  
TCMT  
TNMG  
TNMP  
TNUX  
TPMR  
VBMT  
VCMT  
VNMG  
WNMG  
WNMP  
STAR  
CCGX  
CNGG  
DCGX  
DNGG  
TCGX  
TNGG  
VNGG



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# SPMG 060204 NN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	Feed [Inch/rev]		V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.001	0.004	590	0.003	730			
		2	2	1045, 1060,	190 HB						0.004	750	370
		3	3	28Mn6	250 HB						0.004	650	320
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.001	0.004	390	750	0.003	570		
			4,6		230 HB			0.004	390	620	0.002	500	
			5,7		280 HB			0.003	320	550	0.002	440	
			8		350 HB			0.003	320	490	0.002	410	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.002	0.004	220	550	0.003	390		
			10		280 HB			0.004	220		490	360	
			11		320 HB			0.003	190		420	310	
			11		350 HB			0.003	190		320	260	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.001	0.003	550	750	0.002	650			
		14		240 HB	0.002	0.003	390	680	0.003	540			
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.002	0.003	220	390	0.003	310			
		14		310 HB							0.003	390	
	Ferritic & Martensitic	6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.002	0.003	320	490	0.003	410		
					13	42 HRC	0.001	0.003	190	320	0.002	260	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.003	0.004	490	680	0.003	620			
		15		200 HB						550	340		
		16		250 HB						550	270		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.003	0.004	390	650	0.003	520			
		17,19		200 HB						550	270		
		18,20		250 HB						490	240		
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB	0.001	0.003	80	110	0.002	90			
		33		250 HB			80	110					
		34		350 HB			70	110					
	Ti based	10	TiAl6V4 T40	-	0.001	0.003	110	190	0.002	140			
		37		-			90	130		110			
	Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.001	0.003	160	290	0.002	220		
38			50 HRC		130			220	180				
38			55 HRC		90			190	140				
Chilled Cast Iron		40	Ni-Hard 2	400 HB	0.001	0.003	130	190	0.002	160			
White Cast Iron		41	G-X300CrMo15	55 HRC	0.001	0.003	90	160	0.002	130			
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.001	0.004	650	1310	0.003	980		



**SPMG 07T308 NN LT 30**

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	Feed [Inch/rev]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.002	0.004	590	0.003	880	730	
		2	2	1045, 1060,	190 HB					0.004	750	370
		3	3	28Mn6	250 HB					0.004	650	320
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.002	0.004	390	0.003	750	570	
			4,6		230 HB					0.004	620	500
			5,7		280 HB					0.004	550	440
			8		350 HB					0.004	490	410
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.003	0.004	220	0.003	550	390	
			10		280 HB					0.004	490	360
			11		320 HB					0.003	420	310
			11		350 HB					0.003	320	260
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.002	0.004	390	0.003	750	650		
		14		240 HB					0.003	680	540	
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.003	0.003	220	0.003	390	310		
		14		310 HB					0.003		390	
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.003	0.003	320	0.003	490	410		
				42 HRc					0.002	320	260	
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.004	0.004	490	0.004	750	620		
				200 HB					680	340		
				250 HB					550	270		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.004	0.004	390	0.004	650	520		
				200 HB					550	270		
				250 HB					490	240		
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB	0.002	0.003	80	0.003	110	90		
				250 HB					80		110	
				350 HB					70		110	
	Ti based	10	TiAl6V4 T40	-	0.002	0.003	110	0.003	190	140		
				-					90	130	110	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRc	0.002	0.003	160	0.003	290	220		
				50 HRc					130	220	180	
				55 HRc					90	190	140	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.002	0.003	130	190	0.003	160		
	White Cast Iron	41	G-X300CrMo15	55 HRc	0.002	0.003	90	160	0.003	130		
IN	Al (>8%Si)	12	25	AISI12	130 HB	0.002	0.004	650	1310	0.003	980	



All Nexus products are backed  
by our 100% satisfaction guarantee.



281

DRILLING

SPMG

WCMX

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

# SPMG 090408 NN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	Feed [Inch/rev]		V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.002	0.005	590	880	0.003	730
		2	2	1045, 1060,	190 HB						370
		3	3	28Mn6	250 HB						320
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.002	0.005	390	750	0.003	570
			4,6		230 HB						500
			5,7		280 HB						440
			8		350 HB						410
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.003	0.005	220	550	0.004	390
			10		280 HB						360
			11		320 HB						310
			11		350 HB						260
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.002	0.004	550	750	0.003	650	
				240 HB						0.003	390
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.003	0.004	220	390	0.004	310	
				310 HB							0.004
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.003	0.004	320	490	0.004	410	
				42 HRC							0.002
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.005	0.005	490	750	0.005	620	
				200 HB						680	
				250 HB						550	270
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.005	0.005	390	550	0.005	520	
				200 HB						270	
				250 HB						490	240
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB	0.002	0.003	80	110	0.003	90	
				250 HB							
				350 HB							
	Ti based	10	TiAl6V4 T40	-	0.002	0.003	110	190	0.003	140	
				-						90	130
	Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.002	0.003	160	290	0.003	220
50 HRC					180						
55 HRC					140						
Chilled Cast Iron		40	NI-Hard 2	400 HB	0.002	0.003	130	190	0.003	160	
White Cast Iron		41	G-X300CrMo15	55 HRC	0.002	0.003	90	160	0.003	130	
NF	Al (>8%Si)	12	25	AISI12	130 HB	0.002	0.005	650	1310	0.003	980





**W**

**C**

**M**

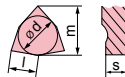
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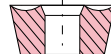
Shape



Clearance Angle



Tolerance



Fixing  
Chip breaker

s ± 0.005  
For l = 04/05/06, d ± 0.002 m ± 0.003  
For l = 08, d ± 0.003 m ± 0.005

Part No.	Description	Grade	l	s	r	Direction	Stock
3441111	<b>WCMX 030208 R53</b>	<b>201</b>	0.150	0.094	0.031	Neutral	●
3441121	<b>WCMX 040208 NN</b>	<b>LT 30</b>	0.169	0.094	0.031	Neutral	●
3441125	<b>WCMX 050308 NN</b>	<b>LT 30</b>	0.199	0.125	0.031	Neutral	●
3441131	<b>WCMX 06T308 NN</b>	<b>LT 30</b>	0.256	0.156	0.031	Neutral	●
3441135	<b>WCMX 080412 NN</b>	<b>LT 30</b>	0.343	0.187		Neutral	●

- Stocking
- Non-stocking

Trigon inserts for Drilling. Strong cutting edges for High feeds.

**Application Guide**

**For the 201 grade, see the back of the box for speeds and feeds.  
Speeds and feeds for the LT30 grades start on page 280.**



- CCMT
- CNMG
- CNMM
- CNMP
- DCMT
- DNMG
- DNUX
- EPGT
- EPMT
- KNUX
- RCMT
- SCMT
- SNMG
- TCMT
- TNMG
- TNMP
- TNUX
- TPMR
- VBMT
- VCMT
- VNMG
- WNMG
- WNMP
- STAR
- CCGX
- CNGG
- DCGX
- DNGG
- TCGX
- TNGG
- VNGG

# WCMX 040208 NN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	Feed (Inch/rev)		V <sub>c</sub> (sfm)		Suggested Starting Parameters						
					min	max	min	max	Feed	V <sub>c</sub>					
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.002	0.004	590	880	0.003	730				
		2	2	1045, 1060,	190 HB							0.004	750	370	
		3	3	28Mn6	250 HB							0.004	650	320	
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.002	0.004	390	750	0.003	570				
			4,6		230 HB							0.004	390	620	500
			5,7		280 HB							0.004	320	550	440
			8		350 HB							0.004	320	490	410
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.003	0.004	220	550	0.003	390				
			10		280 HB							0.004	220	490	360
			11		320 HB							0.003	190	420	310
			11		350 HB							0.003	190	320	260
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.002	0.004	550	750	0.003	650					
				240 HB							0.003	0.004	390	680	540
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.003	0.003	220	390	0.003	310					
				310 HB							0.003	0.003	390		
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.003	0.003	320	490	0.003	410					
				42 HRC							0.002	0.003	190	320	280
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.004	0.004	490	750	0.004	620					
				200 HB							0.004	680	340		
				250 HB							0.004	550	270		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.004	0.004	390	650	0.004	520					
				200 HB							0.004	550	270		
250 HB	0.004	490	240												
High Temp. Alloys	Fe, Ni & Co based	9	Incoloy 800 Inconel 700 Stellite 21	240 HB	0.002	0.003	80	110	0.003	90					
				250 HB							0.003	80	110		
				350 HB							0.003	70	110		
	Ti based	10	TiAl6V4 T40	-	0.002	0.003	110	190	0.003	140					
				-							0.003	90	130	110	
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.002	0.003	160	290	0.003	220					
				50 HRC							0.003	130	220	180	
				55 HRC							0.003	90	190	140	
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.002	0.003	130	190	0.003	160					
	White Cast Iron	41	G-X300CrMo15	55 HRC	0.002	0.003	90	160	0.003	130					
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.002	0.004	650	1310	0.003	980				

## WCMX 050308 NN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	Feed [Inch/rev]		V <sub>c</sub> [sfm]		Suggested Starting Parameters		
					min	max	min	max	Feed	V <sub>c</sub>	
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.002	590	880	0.003	730	
		2	2	1045, 1060,	190 HB			750		370	
		3	3	28Mn6	250 HB			650		320	
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.002	390	750	0.003	570	
			4,6		230 HB			620		500	
			5,7		280 HB			550		440	
			8		350 HB			490		410	
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.003	220	550	0.004	390	
			10		280 HB			490		360	
			11		320 HB			420		310	
			11		350 HB			320		260	
Stainless Steel	Austenitic	4	304, 316, X5CrNi18-9	180 HB	0.002	390	750	0.003	650		
				240 HB			680		540		
	Duplex	5	X2CrNiN23-4, S31500	290 HB	0.003	220	390	0.004	310		
				310 HB			390				
	Ferritic & Martensitic	6	410, X6Cr17, 17-4 PH, 430	200 HB	0.003	320	490	0.004	410		
				42 HRC			320		260		
Cast Iron	Grey	7	GG20, GG40, EN-GJL-250, No30B	150 HB	0.005	490	750	0.005	620		
				200 HB			680		340		
				250 HB			550		270		
	Malleable & Nodular	8	GGG40, GGG70, 50005	150 HB	0.005	390	650	0.005	520		
				200 HB			550		270		
250 HB	490	240									
High Temp Alloys	Fe, Ni & Co based	9	Incoloy 800, Inconel 700, Stellite 21	240 HB	0.002	80	110	0.003	90		
				250 HB			80		110		
				350 HB			70		110		
	Ti based	10	TiAl6V4, T40	-	0.002	110	190	0.003	140		
-				90			130		110		
Hardened Mat.	Steel	11	X100CrMo13, 440C, G-X260NiCr42	45 HRC	0.002	130	290	0.003	220		
				50 HRC			220		180		
				55 HRC			190		140		
	Chilled Cast Iron White Cast Iron	40	Ni-Hard 2	400 HB	0.002	130	190	0.003	160		
				55 HRC			160		130		
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.002	0.005	650	1310	0.003	980

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG



# WCMX 06T308 NN LT 30

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	Feed [Inch/rev]		V <sub>c</sub> [sfm]		Suggested Starting Parameters				
					min	max	min	max	Feed	V <sub>c</sub>			
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.002	0.005	590	880	0.004	730		
		2	1045, 1060,	190 HB	370								
		3	28Mn6	250 HB	650						320		
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.002	0.005	390	750	0.004	570		
		4,6	230 HB		500								
		5,7	280 HB		440								
		8	350 HB		410								
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.003	0.005	220	550	0.004	390		
		10	280 HB		490								
		11	320 HB		420								
		11	350 HB		320						260		
	Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.002	0.005	550	750	0.003	650	
14			X5CrNi18-9	240 HB	0.003	0.005	390	680	0.004	540			
Duplex		5	14	X2CrNiN23-4, S31500	290 HB	0.003	0.004	220	390	0.004	310		
		14	310 HB	0.004	390								
Ferritic & Martensitic		6	12	410, X6Cr17, 17-4 PH, 430	200 HB	0.003	0.004	320	490	0.004	410		
		13	42 HRC	0.002	0.004	190	320	0.003	260				
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.005	0.005	490	750	0.005	620		
		15	EN-GJL-250, No30B	200 HB	680						340		
		16	250 HB	0.005	550						270		
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.005	0.005	390	650	0.005	520		
		17,19	200 HB		550						270		
		18,20	250 HB		0.005						490	240	
High Temp Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.002	0.004	80	110	0.003	90		
		33	Inconel 700	250 HB	0.004							80	110
		34	Stellite 21	350 HB	0.004							70	110
	Ti based	10	36	TiAl6V4	-	0.002	0.004	110	190	0.003	140		
		37	T40	-	0.004						90	130	110
	Hardened Mat.	Steel	11	38	X100CrMo13, 440C,	45 HRC	0.002	0.004	130	220	0.003	220	
38			G-X260NiCr42	50 HRC	0.004	90						190	140
38			55 HRC	0.004	90	190							
Chilled Cast Iron		40	NI-Hard 2	400 HB	0.002	0.004	130	190	0.003	160			
White Cast Iron		41	G-X300CrMo15	55 HRC	0.002	0.004	90	160	0.003	130			
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.004	0.005	650	1310	0.004	980		



**WCMX 080412 NN LT 30**

Material Group	Gr. N°	VDI Group	Material Examples*	Hardness	Feed [Inch/rev]		V <sub>c</sub> [sfm]		Suggested Starting Parameters			
					min	max	min	max	Feed	V <sub>c</sub>		
Steel	Non-alloyed	1	1	C35, Ck45, 1020,	125 HB	0.002	0.006	590	880	0.004	730	
		2	1045, 1060,	190 HB	370							
		3	28Mn6	250 HB	650							
	Low alloyed	2	6	42CrMo4, St50, Ck60, 4140, 4340, 100Cr6	180 HB	0.002	0.006	390	750	0.004	570	
		4,6	230 HB		500							
		5,7	280 HB		440							
		8	350 HB		410							
	High alloyed	3	10	X40CrMoV5, H13, M42, D3, S6-5-2, 12Ni19	220 HB	0.003	0.006	220	550	0.005	390	
		10	280 HB		360							
		11	320 HB		310							
		11	350 HB		260							
Stainless Steel	Austenitic	4	14	304, 316,	180 HB	0.002	0.006	550	750	0.004	650	
		14	X5CrNi18-9	240 HB	0.003	0.006	390	680	0.005	540		
	Duplex	5	14	X2CrNiN23-4,	290 HB	0.003	0.005	220	390	0.004	310	
		14	S31500	310 HB	0.005							390
	Ferritic & Martensitic	6	12	410, X6Cr17,	200 HB	0.003	0.005	320	490	0.004	410	
		13	17-4 PH, 430	42 HRC	0.002	0.005	190	320	260			
Cast Iron	Grey	7	15	GG20, GG40,	150 HB	0.004	0.007	490	750	0.005	620	
		15	EN-GJL-250,	200 HB	680							
		16	No30B	250 HB	550						270	
	Malleable & Nodular	8	17,19	GGG40, GGG70, 50005	150 HB	0.004	0.007	390	650	0.005	520	
		17,19	200 HB		550						270	
		18,20	250 HB		490						240	
High Temp Alloys	Fe, Ni & Co based	9	31,32	Incoloy 800	240 HB	0.002	0.005	80	110	0.004	90	
		33	Inconel 700	250 HB	80							110
		34	Stellite 21	350 HB	70							110
	Ti based	10	36	TiAl6V4	-	0.002	0.005	110	190	0.004	140	
		37	T40	-	90						130	110
Hardened Mat.	Steel	11	38	X100CrMo13,	45 HRC	0.002	0.005	160	290	0.004	220	
		38	440C,	50 HRC	130						220	180
		38	G-X260NiCr42	55 HRC	90						190	140
	Chilled Cast Iron	40	Ni-Hard 2	400 HB	0.002	0.005	130	190	0.004	160		
	White Cast Iron	41	G-X300CrMo15	55 HRC	0.002	0.005	90	160	0.004	130		
NF	Al (>8%Si)	12	25	AlSi12	130 HB	0.004	0.006	650	1310	0.005	980	

CCMT

CNMG

CNMM

CNMP

DCMT

DNMG

DNUX

EPGT

EPMT

KNUX

RCMT

SCMT

SNMG

TCMT

TNMG

TNMP

TNUX

TPMR

VBMT

VCMT

VNMG

WNMG

WNMP

STAR

CCGX

CNGG

DCGX

DNGG

TCGX

TNGG

VNGG



# Boring Tools



**High Precision Boring Tools**



**BohrSTAR  
Boring Kits**



**Rough & Finish  
Boring Heads**



**Boring Head  
Toolholders**

**Carbide & HSS  
Boring Bars**

**Built for Speed.**

# BohrSTAR High Precision Kits

## Range 0.314" to 8.27"

BohrSTAR boring kits include quality, reliability, and ease-of-use features that make setup and adjustment a snap.

### BohrSTAR Kit Features

#### AccuSET Adjustment Dial



ADJUSTABLE  
IN 0.0001"  
INCREMENTS

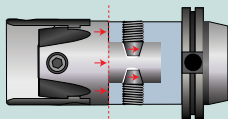


#### Adjustment is This Easy

- AccuSET design for fast and easy cutting adjustments.
- .0001" graduated dial allows operators to quickly set the head to any cutting diameter.

#### Modular Coupling System

Allows heads to be changed without removing tools from the spindle. Two offset center lock screws apply maximum tightening force between the boring head and the toolholder. This increases rigidity and enhances vibration dampening characteristics.



Offset Center Lock Screws

BohrSTAR kits are fully compatible with our 54mm extensions, reducers, and toolholders.



### Setup Examples BohrSTAR 210 Kit



BohrSTAR kits are designed for maximum performance and ease-of-use (no spacers or complicated set-ups).

Our boring tools out-perform all others when it comes to accuracy, rigidity, and repeatability.

BohrSTAR components are manufactured from nickle-chrome alloy steel hardened to 58-60 HRC.

All moving parts are precision ground for accuracy, wear resistance, and smooth adjustment.



4 kits to Choose from.

All Nexus products are backed by our 100% satisfaction guarantee.



# BohrSTAR 100 Triangular Kit

## Range: 0.314" to 3.94"



### Kit Includes Triangular Inserts:

- 2 Pcs. TCMT 1.2\_
- 3 Pcs. TCMT 1.8\_
- 2 Pcs. TCMT 32.5\_



TCMT

### Toolholders on page 294.

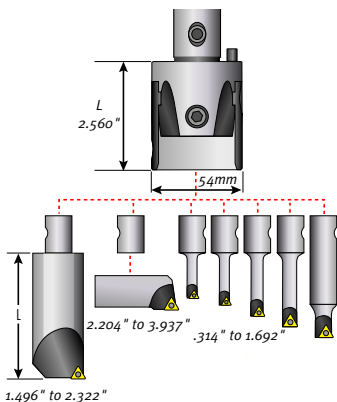
BohrSTAR kits are designed for maximum performance and ease-of-use (no spacers or complicated set-ups). Our boring tools out perform all others when it comes to accuracy, rigidity, and repeatability.

Our exclusive, modular coupling system features two, tapered locking screws that provide maximum rigidity between the boring head and the toolholder to increase accuracy. All connections are easily made using the tools provided.

Kit Part No.	Description	Range
6991235	BS-54-KIT-TC-8-100	0.314" – 3.94"

### BohrSTAR 100 Kit Includes These Components

Part No.	Description	Length
1	6951234 BS-54-16-W head	.2560"
	6943333 BS-06-16-T01 6mm bar	.984"
	6943334 BS-08-16-T01 8mm bar	1.378"
2	6943335 BS-10-16-T02 10mm bar	1.772"
	6943336 BS-12-16-T02 12mm bar	2.244"
	6943337 BS-16-16-T02 16mm bar	2.874"
3	6943338 BS-34-16-T04 34mm bar	3.228"
4	6922243 BS-2CT-T04 cartridge	.787"
5	6921239 BS-16-M10 location sleeve	
	6962233 H3 hex	
	6962235 H5 hex	
6	6962236 H6 hex	
	6962238 H8 hex	
	6972236 T6 torx	
7	6972237 T7 torx	
	6972215 T15 torx	
8	6921241 CS-10-25 cartridge screw	



### Kit Boring Bar and Insert Specifications

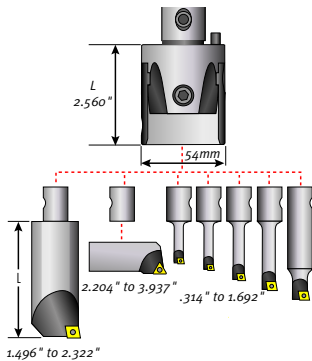
Part No.	Boring Bar Description	Bore Range		L	Insert	Insert Screw	Wrench
		Min	Max				
6943333	BS-06-16-T01	.314"	1.181"	.984"	TCMT 1.21_	6811220	9355111
6943334	BS-08-16-T01	.394"	1.260"	1.378"	TCMT 1.21_	6811235	9355111
6943335	BS-10-16-T02	.512"	1.378"	1.772"	TCMT 1.81.5_	6811250	9355222
6943336	BS-12-16-T02	.630"	1.496"	2.244"	TCMT 1.81.5_	6811250	9355222
6943337	BS-16-16-T02	.787"	1.692"	2.874"	TCMT 1.81.5_	6811250	9355222
6943338	BS-34-16-T04	1.496"	2.322"	3.228"	TCMT 32.5_	6811260	9355555
6922243	BS-2CT-T04 cartridge	2.204"	3.937"	.787"	TCMT 32.5_	6811260	9355555

# BohrSTAR 100 Rhombic Kit

## Range: 0.314" to 3.94"



Kit Part No.	Description	Range
6991220	BS-54-KIT-RC-8-100	0.314" – 3.94"



### Kit Boring Bar and Insert Specifications

Part No.	Description	Bore Range		L	Insert	Insert Screw	Wrench
		Min	Max				
6942234	BS-06-16-R02	.314"	1.181"	.984"	EPMT 1.53_	6811220	9355222
6942235	BS-08-16-R03	.394"	1.260"	1.378"	CCMT 21.5_	6811235	9355333
6942236	BS-10-16-R03	.512"	1.378"	1.772"	CCMT 21.5_	6811250	9355333
6942237	BS-12-16-R03	.630"	1.496"	2.244"	CCMT 21.5_	6811250	9355333
6942238	BS-16-16-R04	.787"	1.692"	2.874"	CCMT 32.5_	6811260	9355555
6942239	BS-34-16-R04	1.496"	2.322"	3.228"	CCMT 32.5_	6811260	9355555
6922243	BS-2CT-R04 Cartridge	2.204"	3.937"	.787"	CCMT 32.5_	6811260	9355555

### Kit Includes Rhombic Inserts:

- 1 Pc. EPMT 1.5\_
- 3 Pcs. CCMT 21.5\_
- 3 Pcs. CCMT 32.5\_

Toolholders on page 294.



CCMT

BohrSTAR kits are designed for maximum performance and ease-of-use (no spacers or complicated set-ups). Our boring tools out perform all others when it comes to accuracy, rigidity, and repeatability.

Our exclusive, modular coupling system features two, tapered locking screws that provide maximum rigidity between the boring head and the toolholder to increase accuracy. All connections are easily made using the tools provided.

### BohrSTAR 100 Kit Includes These Components

	Part No.	Description	Length
1	6951234	BS-54-16-W Head	.2560"
2	6942234	BS-06-16-R02 6mm bar	.984"
	6942235	BS-08-16-R03 8mm bar	1.378"
	6942236	BS-10-16-R03 10mm bar	1.772"
3	6942237	BS-12-16-R03 12mm bar	2.244"
	6942238	BS-16-16-R04 16mm bar	2.874"
4	6942239	BS-34-16-R04 34mm bar	3.228"
5	6922243	BS-2CT-R04 Cartridge	.787"
6	6921239	BS-16-M10 Location sleeve	-
	6962233	H3 Hex	
	6962235	H5 Hex	
	6962236	H6 Hex	
7	6962238	H8 Hex	
	6972236	T6 Torx	
	6972237	T7 Torx	
8	6972215	T15 Torx	
	6921241	CS-10-25 Cartridge screw	

# BohrSTAR 170 Rhombic Kit

## Range: 0.314" to 6.69"



### Kit Includes Rhombic Inserts:

- 1 Pcs. EPMT 1.5\_
- 3 Pcs. CCMT 21.5\_
- 3 Pcs. CCMT 32.5\_



Toolholders on page 294.

Kit Part No.	Description	Range
6991230	BS-54-KIT-RC-8-170	0.314" – 6.69"

### BohrSTAR 170 Kit Includes These Components

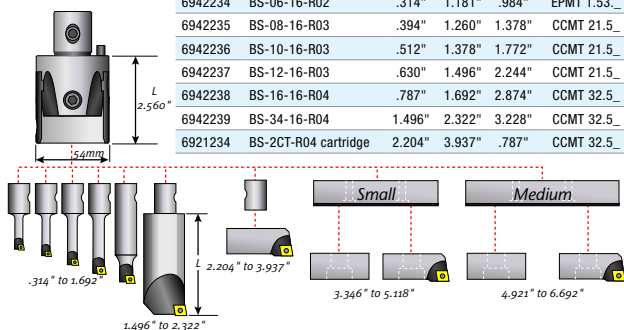
Part No.	Description	Length
1	6951234 BS-54-16-W head	2.560"
	6942234 BS-06-16-R02 6mm bar	.984"
	6942235 BS-08-16-R03 8mm bar	1.378"
2	6942236 BS-10-16-R03 10mm bar	1.772"
	6942237 BS-12-16-R03 12mm bar	2.244"
	6942238 BS-16-16-R04 16mm bar	2.874"
3	6942239 BS-34-16-R04 34mm bar	3.228"
4	6921234 BS-2CT-R04 cartridge	.787"
5	6921235 BS-2CW counterweight	.728"
6	6921236 BS-SP-83-130 small plate	.787"
7	6921237 BS-SP-123-170 medium plate	.787"
8	6921239 BS-16-M10 location sleeve	-

Part No.	Description
9	6921243 A3 adjusting key
	6962234 H4 hex
	6962235 H5 hex
10	6962236 H6 hex
	6962238 H8 hex
	6972237 T7 torx
11	6972238 T8 torx
	6972215 T15 torx
12	6921240 D-27-21 plate fixing screws
13	6921241 CS-10-25 cartridge screw
14	6921242 CS-08-25 counterweight screw

### Kit Boring Bar and Insert Specifications

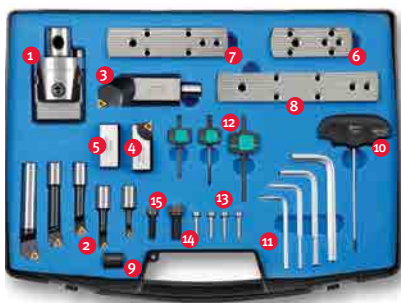
#### Bore Range

Part No.	Description	Min	Max	L	Insert	Insert Screw	Wrench
6942234	BS-06-16-R02	.314"	1.181"	.984"	EPMT 1.53_	6811220	9355222
6942235	BS-08-16-R03	.394"	1.260"	1.378"	CCMT 21.5_	6811235	9355333
6942236	BS-10-16-R03	.512"	1.378"	1.772"	CCMT 21.5_	6811250	9355333
6942237	BS-12-16-R03	.630"	1.496"	2.244"	CCMT 21.5_	6811250	9355333
6942238	BS-16-16-R04	.787"	1.692"	2.874"	CCMT 32.5_	6811260	9355555
6942239	BS-34-16-R04	1.496"	2.322"	3.228"	CCMT 32.5_	6811260	9355555
6921234	BS-2CT-R04 cartridge	2.204"	3.937"	.787"	CCMT 32.5_	6811260	9355555



# BohrSTAR 210 Triangular Kit

## Range: 0.314" to 8.27"



### BohrSTAR 210 Kit Includes These Components

Part No.	Description	Length
1	6951234 BS-54-16-W head	2.560"
	6943333 BS-06-16-T01 6mm bar	.984"
	6943334 BS-08-16-T01 8mm bar	1.378"
2	6943335 BS-10-16-T02 10mm bar	1.772"
	6943336 BS-12-16-T02 12mm bar	2.244"
	6943337 BS-16-16-T02 16mm bar	2.874"
3	6943338 BS-34-16-T04 34mm bar	3.228"
4	6922243 BS-2CT-T04 cartridge	.787"
5	6921235 BS-2CW counterweight	.728"
6	6921236 BS-SP-83-130 small plate	.787"
7	6921237 BS-SP-123-170 medium plate	.787"
8	6921238 BS-SP-165-210 large plate	.787"

### Kit Includes Triangular Inserts:

- 2 Pcs. TCMT 1.21\_
- 3 Pcs. TCMT 1.81\_
- 2 Pcs. TCMT 32.5\_



TCMT

Toolholders on page 294.

BohrSTAR kits are designed for maximum performance and ease-of-use (no spacers or complicated set-ups). Our boring tools out perform all others when it comes to accuracy, rigidity, and repeatability.

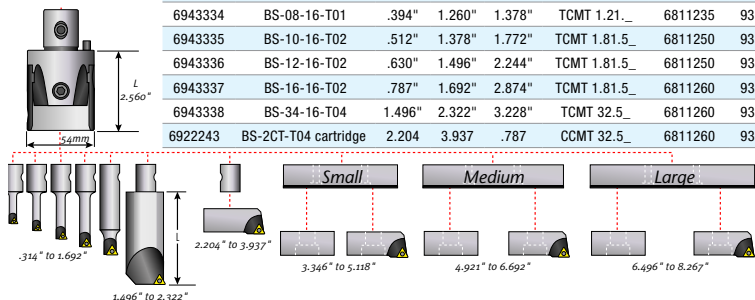
Kit Part No.	Description	Range
6991240	BS-54-KIT-TC-8-210	0.314" – 8.27"

Part No.	Description
9	6921239 BS-16-M10 location sleeve
10	6921243 A3 adjusting key
	6962234 H4 hex
11	6962235 H5 hex
	6962236 H6 hex
	6962238 H8 hex
	6972236 T6 torx
12	6972237 T7 torx
	6972215 T15 torx
13	6921240 D-27-21 plate fixing screws
14	6921241 CS-10-25 cartridge screw
15	6921242 CS-08-25 counterweight screw

### Kit Boring Bar and Insert Specifications

#### Bore Range

Part No.	Description	Min	Max	L	Insert	Insert Screw	Wrench
6943333	BS-06-16-T01	.314"	1.181"	.984"	TCMT 1.21_	6811220	9355111
6943334	BS-08-16-T01	.394"	1.260"	1.378"	TCMT 1.21_	6811235	9355111
6943335	BS-10-16-T02	.512"	1.378"	1.772"	TCMT 1.81.5_	6811250	9355222
6943336	BS-12-16-T02	.630"	1.496"	2.244"	TCMT 1.81.5_	6811250	9355222
6943337	BS-16-16-T02	.787"	1.692"	2.874"	TCMT 1.81.5_	6811260	9355222
6943338	BS-34-16-T04	1.496"	2.322"	3.228"	TCMT 32.5_	6811260	9355555
6922243	BS-2CT-T04 cartridge	2.204	3.937	.787	CCMT 32.5_	6811260	9355555



All Nexus products are backed by our 100% satisfaction guarantee.



# High Precision Toolholders for BohrSTAR Kits

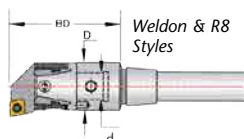
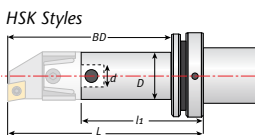
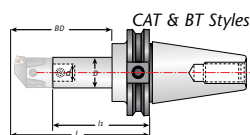
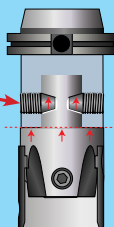


- CAT40, CAT50, BT40, BT50, HSK63A, HSK100A, Weldon, and R8
- Compatible with our 54mm boring heads, adapters, and reducers
- Exceed industry standards for taper accuracy and concentricity

## Modular Coupling System

Offset Center Lock Screws

Our exclusive, modular coupling system features two, tapered locking screws that provide maximum rigidity between the boring head and the toolholder to increase accuracy.



Use the drawings to select your toolholder size.

## Toolholders for BohrSTAR Kits

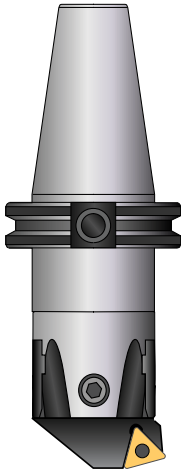
Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6134310	CT-340-54-120	54	28	4.724"	5.60"	3.00"	6811550
6134315	CT-340-54-160	54	28	6.299"	7.17"	4.57"	6811550
6134320	CT-340-54-200	54	28	7.874"	8.74"	6.14"	6811550
6141305	CT-350-54-90	54	28	3.543"	5.04"	2.44"	6811550
6141310	CT-350-54-160	54	28	6.299"	7.80"	5.20"	6811550
6141315	CT-350-54-200	54	28	7.874"	9.37"	6.77"	6811550
6140400	BT-340-54-90	54	28	3.543"	4.72"	2.13"	6811550
6140425	BT-340-54-160	54	28	6.299"	7.48"	4.88"	6811550
6140450	BT-340-54-200	54	28	7.874"	9.06"	6.46"	6811550
6150375	BT-350-54-90	54	28	3.543"	5.16"	2.56"	6811550
6150400	BT-350-54-160	54	28	6.299"	7.91"	5.31"	6811550
6150425	BT-350-54-200	54	28	7.874"	9.49"	6.90"	6811550
6155635	HSK-63A-54-110	54	28	4.331"	5.35"	2.76"	6811550
6155105	HSK-100A-54-110	54	28	4.331"	5.47"	2.76"	6811550
6165343	B-20-54-110-3/4	54	12	4.331"			6811550
6165103	B-25-54-110-1.0	54	15	4.331"			6811550
6165144	B-32-54-110-1-1/4	54	24	4.331"			6811550
6165123	B-40-54-110-1-1/2	54	24	4.331"			6811550
6165805	R8-54-110	54	28	4.331"			6811550



# Pinzbohr Design Features Are Unbeatable

## Pinzbohr Design

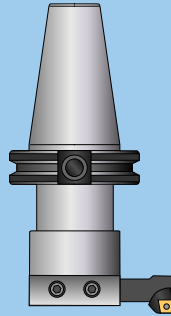
Pinzbohr is More Rigid and Accurate Than Other Manufacturers' Designs



- Simple and extremely strong design for best reliability, rigidity, and repeatability.
- Flexible, modular system reduces tooling inventory.
- Top quality steel alloy hardened to 58-60 HRc.
- Heads are heat treated to minimize wear.
- Precision ground components for highest accuracy.

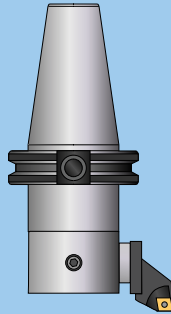
All Pinzbohr heads feature insert pockets that are either integral with the body of the head, or integral cartridges to provide maximum rigidity and accuracy.

## Other Manufacturers' Designs



### Design #1

Dogleg design relies on an extension out from the body of the head to maintain accuracy.

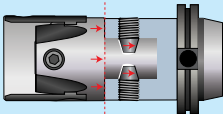


### Design #2

Dogleg variation also extends beyond the body of the boring head.

### Modular Coupling System

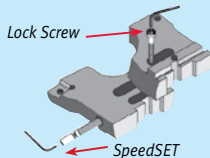
Allows heads to be changed without removing tools from the spindle. Two offset center lock screws apply maximum tightening force between the boring head and the toolholder. This increases rigidity and enhances vibration dampening characteristics.



Offset Center Lock Screws

### Ease-of-Use Features

- SafetySET feature prevents damage to the adjustment screw.



- SpeedSET synchronized adjustment for setting of roughing heads.

### Adjustment is This Easy

- AccuSET design for fast and easy cutting adjustments.

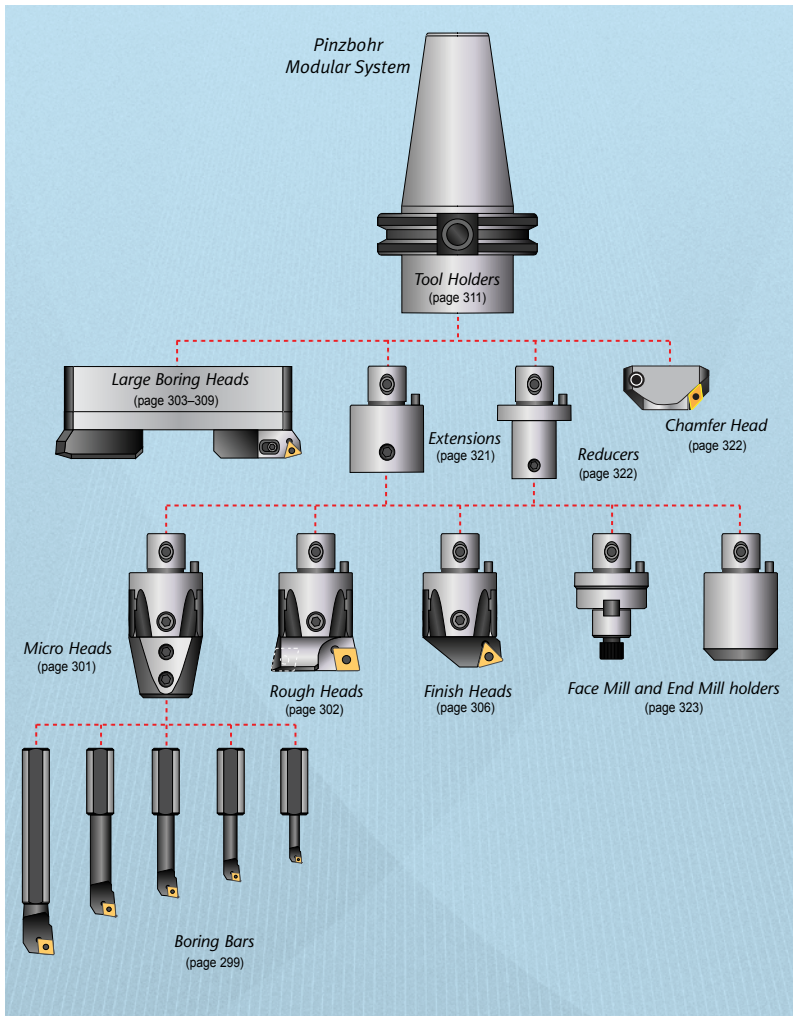


- .0001" graduated dial allows operators to quickly set the head to any cutting diameter.

All Nexus products are backed by our 100% satisfaction guarantee.

# Pinzbohr Modular Boring Tools

## Range .315" – 19.685"



### MACROBOHR

- Range up to 40"
- Famous Pinzbohr rigidity
- Call (877) 616-6016 for info.

**So new we couldn't  
get it in this catalog!**



# Choosing a Pinzbohr Boring Head

## Choosing a Boring Head

Use a 75-degree head for thru holes when the hole position is accurate. A 75-degree head will tend to follow a pre-existing hole. A 75-degree head can also be used when there is a lot of stock to be removed. The lead angle will allow higher feed rates.

Use a 90-degree boring head when a hole is off-center, shifted, or off-angle. The 90-degree lead angle will have fewer tendencies to follow the existing hole. It is also used for blind or stepped holes and is the most versatile of our heads.

The diameter of the boring bar should always be less than the diameter of the pre-existing hole to allow proper chip evacuation.

5:1 length-to-diameter ratios can be achieved when roughing with steel bars.

3:1 length-to-diameter ratios can be achieved when finishing with steel bars. 7:1 length-to-diameter ratios can be achieved with carbide bars.

## Three Major Influences on Boring

### 1. Depth of Cut (D.O.C.)

To determine the depth of a cut, take the finish diameter, minus the starting diameter and divide by two (2). The D.O.C. should always be greater than or equal to the nose radius of the insert. This will produce a stable cut with axial cutting forces. When D.O.C. is less than the radius, the forces are radial, and can cause chatter and deflection.

### 2. Feed Rate (IPR)

Feeds and speeds are always dependent upon material, machine, setup conditions (fixturing) and tool over-hang. The feed rate (IPR) should always be larger than the hone of the insert and at least 25% of the nose radius. This creates full use of the chip breaker. An IPR less than the hone will produce vibration, which will affect the tool life and finish.

### 3. Speed (SFPM)

Speed is the function of coating, nose radius, and over-hang. Higher speeds typically produce a better finish, shorter cycling times and better chip evacuation. Lower speed reduces the possibility of chatter, but also has higher cycle times and poorer quality finishes. This can also cause a built-up edge and reduce insert life. Sometimes coatings can be used to run higher surface footage, create better finish, and limit built-up edges.



# Pinzbohr Boring Tool Selection Guide

Use the questions below to determine your tooling requirements. You can also fill out and fax this information to us if you need assistance with your tooling selection. Fax it to: (317) 803-8001.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ St \_\_\_\_\_ Zip \_\_\_\_\_

E-mail \_\_\_\_\_ Ph \_\_\_\_\_ Fax \_\_\_\_\_

1. What is the finish size of the hole? \_\_\_\_\_

(Determines size of boring head.)

2. What is the tolerance of the finished hole? \_\_\_\_\_

(Determines if you need rough or finish boring head.)

3. Is the starting hole forged, cast, drilled, or reamed? \_\_\_\_\_

(Determines whether you need 75 or 90 degree boring head.)

4. What is the design of the bored hole? \_\_\_\_\_

(Also determines degree of boring head.)

a. Stepped bore \_\_\_\_\_

b. Thru bore \_\_\_\_\_

5. What material are you machining? \_\_\_\_\_

(Determines insert grade and chip breaker selection.)

6. What spindle type is on the machine? \_\_\_\_\_

(Determines holder selection.)

7. How deep is the bore? \_\_\_\_\_

(Determines length of holder and extensions.)

8. Do you require any extra reach for fixturing or other reasons? \_\_\_\_\_

9. Does your machine have coolant-thru capability? \_\_\_\_\_

Misc: Select coolant option based on connection diameter and bore depth requirements (question #6 above).



## Key to boring head descriptions

A 22 75 400 A = finish heads, D = rough heads (see #2 above)

22 = connection diameter (see question #1 above)

75 = approach angle (see question #3 above)

400 = insert style or CT cartridge (see question #5 above)

## Key to boring toolholder descriptions

CT 330 or 350 22 100

CT = type of spindle (see question #6 above)

330 = taper size (see question #6 above)

22 = connection diameter (match head connection)

100 = boring depth (BD) (see question #7 above)

# HSS Boring Bars

## Use with Micro Head A-42-016



### Features

- 16mm shanks for A-42-016 micro head
- Precision ground accuracy



Inserts  
page 160  
&  
Cartridges  
page 310

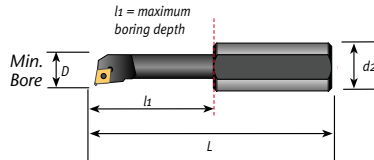
Toolholders  
page 311

Extensions  
page 321  
& Reducers  
page 322

Retention  
Knobs  
page  
330

5:1 length-to-diameter ratios can be achieved when roughing with steel bars. 3:1 length-to-diameter ratios can be achieved when finishing with steel bars.

The shortest bar overhang possible should be used to maximize results.



### HSS Boring Bars for Micro Head A-42-016

Part No.	Description	Min. Bore	d2 (mm)	L	Max Depth (l1)	Insert	Screw	Wrench
6711225	S06-16SEXPR-04	.315"	16	2.756"	.945"	EPGT 1.21_L	6811210	9355111
6711235	S06-16SEXPR-05	.315"	16	2.756"	1.260"	EPMT 1.53_	6811220	9355111
6722225	S06-16STFCR-06	.315"	16	2.756"	1.260"	TCMT 1.21_	6811215	9355111
6711245	S08-16SCLCR-06	.394"	16	3.150"	1.575"	CCMT 21.5_	6811235	9355222
6722235	S08-16STFCR-06	.394"	16	3.150"	1.575"	TCMT 1.21_	6811215	9355111
6711255	S10-16SCLCR-06	.512"	16	3.543"	2.047"	CCMT 21.5_	6811250	9355222
6722245	S10-16STFCR-09	.512"	16	3.543"	2.047"	TCMT 1.81.5_	6811230	9355222
6711265	S12-16SCLCR-06	.630"	16	3.937"	2.520"	CCMT 21.5_	6811255	9355222
6722255	S12-16STFCR-09	.630"	16	3.937"	2.520"	TCMT 1.81.5_	6811230	9355222
6711275	S16-16SCLCR-09	.787"	16	4.331"	3.150"	CCMT 21.5_	6811260	9355555
6722265	S16-16STFCR-09	.787"	16	4.331"	3.150"	TCMT 1.81.5_	6811230	9355222
6722275	S16-16STFCR-16	.787"	16	4.331"	3.150"	TCMT 32.5_	6811260	9355555

# Boring Bars – Carbide or HSS Shank



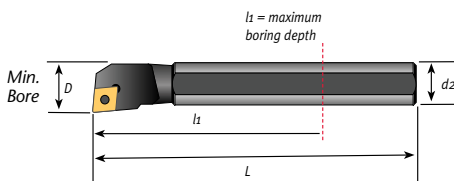
### Features

- Minimum bore .315"
- Maximum bore 1.496"
- Carbide or HSS

### Usage

- 7:1 length-to-diameter ratios can be achieved with carbide bars
- 5:1 for roughing with steel bars
- 3:1 for finishing with steel bars

Select a boring bar with a "d2" dimension that matches the "d2" of the head.



### Carbide Shank Boring Bars

Part No.	Description	Micro Head	Min. Bore	d2	L	Max Depth	Insert	Screw	Wrench
6733225	C06F-SEXPR-04	A-27-006	.315"	6mm	3.150"	1.654"	EPGT1.21_L	6811210	T6
6733230	C06-08H-SELPR-05	A-27-008 or A-32-008	.315"	8mm	3.150"	1.654"	EMPT1.53_	6811210	T6
6733235	C08G-SCLCR-06	A-27-008 or A-32-008	.394"	8mm	3.543"	2.205"	CCMT21.5_	6811235	T7
6733245	C10J-SCLCR-06	A-32-010 or A-42-010	.512"	10mm	4.331"	2.756"	CCMT21.5_	6811250	T7
6733255	C12K-SCLCR-06	A-42-012	.630"	12mm	4.921"	3.307"	CCMT21.5_	6811255	T7
6733265	C16L-SCLCR-09	A-42-016	.787"	16mm	5.512"	4.409"	CCMT32.5_	6811260	T15

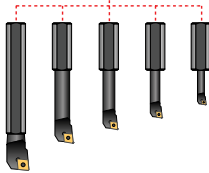
### HSS Shank Boring Bars

Part No.	Description	Micro Head	Min. Bore	d2	L	Max Depth	Insert	Screw	Wrench
6733227	S06E-SEXPR-04	A-27-006	.315"	6mm	2.756"	1.181"	EPGT1.21_L	6811210	T6
6733232	S06D-SELP-05	A-27-006	.315"	6mm	2.362"	1.181"	EMPT1.53_	6811210	T6
6733237	S08F-SCLCR-06	A-27-008 & A32-008	.394"	8mm	3.150"	1.575"	CCMT21.5_	6811235	T7
6733247	S10G-SCLCR-06	A-32-010 & A42-010	.512"	10mm	3.543"	1.969"	CCMT21.5_	6811250	T7
6733257	S12H-SCLCR-06	A-42-012	.630"	12mm	3.937"	2.362"	CCMT21.5_	6811255	T7
6733267	S16J-SCLCR-09	A-42-016	.787"	16mm	4.331"	3.150"	CCMT32.5_	6811260	T15

# Micro Heads for Carbide or HSS Boring Bars



Micro Heads available in 5 shank sizes for carbide and HSS boring bars.



### Features

- .0001" dial allows fast and easy adjustments
- Tapered nose improves clearance
- Two offset center lock screws maximize rigidity while still permitting fast tool changes



Inserts  
page 160  
& Cartridges



Toolholders  
page 311



Extensions  
page 321  
& Reducers  
page 322



Retention  
Knobs  
page 330

### Adjustment Is This Easy



Adjustable  
in 0.0001"  
increments

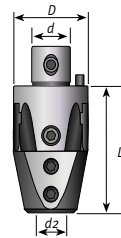
Metric dials available

.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw

Select a micro head with a "d2" dimension that matches the "d2" of the boring bar.



### AccuSET Micro Heads

Part No.	Description	Range		D (mm)	d (mm)	d2 (mm)	L
		Min	Max				
6011000	A-27-006	.315"	.787"	27	15	6	1.97"
6011050	A-27-008	.394"	.827"	27	15	8	1.97"
6011100	A-32-008	.394"	.827"	32	18	8	2.28"
6011150	A-32-010	.512"	.984"	32	18	10	2.28"
6011200	A-42-010	.512"	1.142"	42	24	10	2.76"
6011250	A-42-012	.63"	1.339"	42	24	12	2.76"
6011300	A-42-016	.787"	1.496"	42	24	16	2.76"

Note: All wrenches are included with each boring head. No special tools are needed.

# 75° Lead Angle Rough Heads

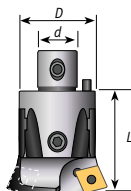
## Range .945" up to 8.661"



Integral pocket type

### Features

- SpeedSET feature adjusts both slides at once and slides won't lose position during adjustment
- SafetySET feature prevents accidental damage to adjustment screw
- Two insert pockets for faster cutting and better accuracy



Cartridge type rough head

### 75° Integral Pocket Rough Heads

Part No.	Description	Range		D (mm)	d (mm)	L	Insert	Screw
		Min	Max					
6275100	D-22-75-400	.945"	1.181"	22	12	1.39"	CCMT 21.5_	6811250
6275105	D-27-75-409	1.142"	1.575"	27	15	1.65"	CCMT 32.5_	6811260
6275115	D-32-75-409	1.535"	1.969"	32	18	1.77"	CCMT 32.5_	6811260
6275120	D-42-75-300	1.929"	2.559"	42	24	2.20"	TCMT 1.81_	6811262
6275125	D-42-75-402	1.929"	2.559"	42	24	2.20"	CCMT 43_	6811266
6275130	D-42-75-402N	2.087"	2.559"	42	24	2.20"	CNMG 43_	6811270
6275135	D-54-75-300	2.48"	3.228"	54	28	2.60"	TCMT 1.81_	6811262
6275140	D-54-75-402	2.48"	3.228"	54	28	2.60"	CCMT 43_	6811266
6275145	D-54-75-402N	2.48"	3.228"	54	28	2.60"	CNMG 43_	6811270

### 75° Cartridge Type Rough Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6275150	D-68-75-2CT-300	3.15"	4.016"	2CT-75-300	68	36	3.39"	TCMT 1.81.5_	6811262
6275155	D-68-75-2CT-402	3.15"	4.016"	2CT-75-402	68	36	3.39"	CCMT 43_	6811266
6275160	D-68-75-2CT-402N	3.15"	4.016"	2CT-75-402N	68	36	3.39"	CNMG 43_	6811270
6275165	D-85-75-3CT-300	3.937"	4.921"	3CT-75-300	85	50	3.94"	TCMT 32.5_	6811262
6275170	D-85-75-3CT-402	3.937"	4.921"	3CT-75-402	85	50	3.94"	CCMT 43_	6811266
6275175	D-85-75-3CT-402N	3.937"	4.921"	3CT-75-402N	85	50	3.94"	CNMG 43_	6811270
6275180	D-100-75-3CT-300	4.921"	6.299"	3CT-75-300	110	60	3.94"	TCMT 32.5_	6811262
6275185	D-100-75-3CT-402	4.921"	6.299"	3CT-75-402	110	60	3.94"	CCMT 43_	6811266
6275190	D-100-75-3CT-402N	4.921"	6.299"	3CT-75-402N	110	60	3.94"	CNMG 43_	6811270
6275195	D-200-75-3CT-300	6.299"	8.661"	2CT-75-300	145	60	3.94"	TCMT 32.5_	6811262
6275200	D-200-75-3CT-402	6.299"	8.661"	3CT-75-402	145	60	3.94"	CCMT 43_	6811266
6275205	D-200-75-3CT-402N	6.299"	8.661"	3CT-75-402N	145	60	3.94"	CNMG 432_	6811270

AccuSET dial not available on small rough heads due to their design differences.



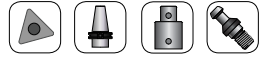
# 75° Lead Angle Rough Heads

## Range 8.661" up to 19.685"



### Features

- Two AccuSET .0001" dials allow setting both inserts simultaneously
- Top quality steel alloy hardened to 58-60 HRC.
- Precision ground components for accuracy.
- SafetySET feature not available on large boring heads due to their design differences.



Inserts page 160  
&  
Cartridges page 310

Toolholders page 311

Extensions & Reducers page 322

Retention Knobs page 330

75° lead angle heads tend to self center in the pilot hole, stabilizing the cut and maximizing stock removal rates.



Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection. See page 319.

### Adjustment Is This Easy



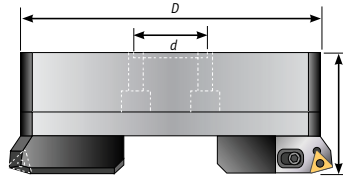
Adjustable in 0.0001" increments

Metric dials available

Two AccuSET .0001" dials allow setting both inserts simultaneously

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw



### 75° Large Rough Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6275210	D-300-75-3CT-300	8.661"	12.598"	3CT-75-300	202	60	3.54"	TCMT 32.5_	6811262
6275215	D-300-75-3CT-402	8.661"	12.598"	3CT-75-402	202	60	3.54"	CCMT 43_	6811266
6275220	D-300-75-3CT-402N	8.661"	12.598"	3CT-75-402N	202	60	3.54"	CNMG 43_	6811270
6275225	D-400-75-3CT-300	11.417"	15.748"	3CT-75-300	272	60	3.54"	TCMT 32.5_	6811262
6275230	D-400-75-3CT-402	11.417"	15.748"	3CT-75-402	272	60	3.54"	CCMT 43_	6811266
6275235	D-400-75-3CT-402N	11.417"	15.748"	3CT-75-402N	272	60	3.54"	CNMG 43_	6811270
6275240	D-500-75-3CT-300	14.567"	19.685"	3CT-75-300	352	60	3.54"	TCMT 32.5_	6811262
6275245	D-500-75-3CT-402	14.567"	19.685"	3CT-75-402	352	60	3.54"	CCMT 43_	6811266
6275250	D-500-75-3CT-402N	14.567"	19.685"	3CT-75-402N	352	60	3.54"	CNMG 43_	6811270

SafetySET feature not available on large boring heads due to their design differences.

# 90° Lead Angle Rough Heads

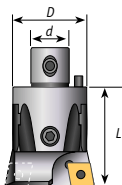
## Range .945" up to 8.661"



Integral pocket type

### Features

- SpeedSET feature adjusts both slides at once and slides won't lose position during adjustment
- SafetySET feature prevents accidental damage to the adjustment screw
- Two insert pockets for faster metal removal



Cartridge type rough head

### 90° Integral Pocket Type Rough Heads

PART No.	Description	Range		D (mm)	d (mm)	L	Insert	Screw
		Min	Max					
6390100	D-22-90-400	.945"	1.181"	22	12	1.39"	CCMT 21.5_	6811250
6390105	D-27-90-409	1.142"	1.575"	27	15	1.65"	CCMT 32.5_	6811260
6390110	D-32-90-409	1.535"	1.969"	32	18	1.77"	CCMT 32.5_	6811260
6390115	D-42-90-300	1.929"	2.559"	42	24	2.20"	TCMT 32.5_	6811262
6390120	D-42-90-402	1.929"	2.559"	42	24	2.20"	CCMT 43_	6811266
6390125	D-42-90-402N	2.087"	2.559"	42	24	2.20"	CNMG 43_	6811270
6390130	D-54-90-300	2.48"	3.228"	54	28	2.60"	TCMT 32.5_	6811262
6390135	D-54-90-402	2.48"	3.228"	54	28	2.60"	CCMT 43_	6811266
6390140	D-54-90-402N	2.48"	3.228"	54	28	2.60"	CNMG 43_	6811270

### 90° Cartridge Type Rough Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6390145	D-68-90-2CT-300	3.15"	4.016"	2CT-90-300	68	36	3.39"	TCMT 32.5_	6811262
6390150	D-68-90-2CT-402	3.15"	4.016"	2CT-90-402	68	36	3.39"	CCMT 43_	6811266
6390155	D-68-90-2CT-402N	3.15"	4.016"	2CT-90-402N	68	36	3.39"	CNMG 43_	6811270
6390160	D-85-90-3CT-300	3.937"	4.921"	3CT-90-300	85	50	3.94"	TCMT 32.5_	6811262
6390165	D-85-90-3CT-402	3.937"	4.921"	3CT-90-402	85	50	3.94"	CCMT 43_	6811266
6390170	D-85-90-3CT-402N	3.937"	4.921"	3CT-90-402N	85	50	3.94"	CNMG 43_	6811270
6390175	D-100-90-3CT-300	4.921"	6.299"	3CT-90-300	110	60	3.94"	TCMT 32.5_	6811262
6390180	D-100-90-3CT-402	4.921"	6.299"	3CT-90-402	110	60	3.94"	CCMT 43_	6811266
6390185	D-100-90-3CT-402N	4.921"	6.299"	3CT-90-402N	110	60	3.94"	CNMG 43_	6811270
6390190	D-200-90-3CT-300	6.299"	8.661"	2CT-90-300	145	60	3.94"	TCMT 32.5_	6811262
6390200	D-200-90-3CT-402	6.299"	8.661"	3CT-90-402	145	60	3.94"	CCMT 43_	6811266
6390205	D-200-90-3CT-402N	6.299"	8.661"	3CT-90-402N	145	60	3.94"	CNMG 43_	6811270

AccuSET, feature not available on large boring heads due to their design differences.

# 90° Lead Angle Rough Heads

## Range 8.661" up to 19.685"



### Features

- Two AccuSET .0001" dials allow setting both inserts simultaneously
- Top quality steel alloy hardened to 58-60 HRC.
- Precision ground components for accuracy.
- SafetySET feature not available on large boring heads due to their design differences.



Inserts page 160 & Cartridges page 310  
 Toolholders page 311  
 Extensions page 321 & Reducers page 322  
 Retention Knobs page 330

Use 90° lead angle heads when performing blind boring, or if the desired hole is not exactly on center with your pilot hole. The 90° lead will have less tendency to follow the pilot hole.

### Adjustment Is This Easy



Adjustable in 0.0001" increments

Two AccuSET .0001" dials allow setting both inserts simultaneously

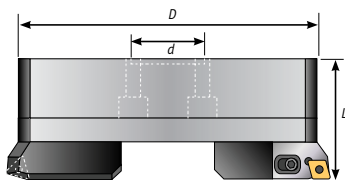
Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw

Metric dials available



Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection. See "Toolholders for Large Boring Heads" page 319.



### 90° Large Rough Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6390210	D-300-90-3CT-300	8.661"	12.598"	3CT-90-300	202	60	3.54"	TCMT 32.5_	6811262
6390215	D-300-90-3CT-402	8.661"	12.598"	3CT-90-402	202	60	3.54"	CCMT 43_	6811266
6390220	D-300-90-3CT-402N	8.661"	12.598"	3CT-90-402N	202	60	3.54"	CNMG 43_	6811270
6390225	D-400-90-3CT-300	11.417"	15.748"	3CT-90-300	272	60	3.54"	TCMT 32.5_	6811262
6390230	D-400-90-3CT-402	11.417"	15.748"	3CT-90-402	272	60	3.54"	CCMT 43_	6811266
6390235	D-400-90-3CT-402N	11.417"	15.748"	3CT-90-402N	272	60	3.54"	CNMG 43_	6811270
6390240	D-500-90-3CT-300	14.567"	19.685"	3CT-90-300	352	60	3.54"	TCMT 32.5_	6811262
6390245	D-500-90-3CT-402	14.567"	19.685"	3CT-90-402	352	60	3.54"	CCMT 43_	6811266
6390250	D-500-90-3CT-402N	14.567"	19.685"	3CT-90-402N	352	60	3.54"	CNMG 43_	6811270

SafetySET feature not available on large boring heads due to their design differences.

# 75° Lead Angle Finish Heads

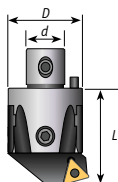
## Range .945" up to 8.661"



Integral pocket type

### Features

- AccuSET spring-loaded slide won't lose position during adjustment
- .0001" dial allows fast and easy adjustments
- Designed for maximum rigidity and accuracy



Cartridge type

### 75° Integral Pocket Type Finish Heads

Part No.	Description	Range		D (mm)	d (mm)	L	Insert	Screw
		Min	Max					
6275255	A-22-75-400	.945"	1.181"	22	12	1.39"	CCMT 21.5_	6811250
6275260	A-27-75-409	1.142"	1.575"	27	15	1.65"	CCMT 32.5_	6811260
6275265	A-32-75-409	1.535"	1.969"	32	18	1.77"	CCMT 32.5_	6811260
6275270	A-42-75-300	1.929"	2.559"	42	24	2.20"	TCMT 32.5_	6811262
6275275	A-54-75-300	2.48"	3.228"	54	28	2.60"	TCMT 32.5_	6811262

### 75° Cartridge Type Finish Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6275280	A-68-75-2CT-300	3.15"	4.016"	2CT-75-300	68	36	3.39"	TCMT 32.5_	6811262
6275285	A-68-75-2CT-402	3.15"	4.016"	2CT-75-402	68	36	3.39"	CCMT 43_	6811266
6275290	A-68-75-2CT-402N	3.15"	4.016"	2CT-75-402N	68	36	3.39"	CNMG 43_	6811270
6275295	A-85-75-3CT-300	3.937"	4.921"	3CT-75-300	85	50	3.94"	TCMT 32.5_	6811262
6275300	A-85-75-3CT-402	3.937"	4.921"	3CT-75-402	85	50	3.94"	CCMT 43_	6811266
6275305	A-85-75-3CT-402N	3.937"	4.921"	3CT-75-402N	85	50	3.94"	CNMG 43_	6811270
6275310	A-100-75-3CT-300	4.921"	6.299"	3CT-75-300	110	60	3.94"	TCMT 32.5_	6811262
6275315	A-100-75-3CT-402	4.921"	6.299"	3CT-75-402	110	60	3.94"	CCMT 43_	6811266
6275320	A-100-75-3CT-402N	4.921"	6.299"	3CT-75-402N	110	60	3.94"	CNMG 43_	6811270
6275325	A-200-75-3CT-300	6.299"	8.661"	2CT-75-300	145	60	3.94"	TCMT 32.5_	6811262
6275330	A-200-75-3CT-402	6.299"	8.661"	3CT-75-402	145	60	3.94"	CCMT 43_	6811266
6275335	A-200-75-3CT-402N	6.299"	8.661"	3CT-75-402N	145	60	3.94"	CNMG 43_	6811270

# 75° Lead Angle Finish Heads

## Range 8.661" up to 19.685"



### Features

- AccuSET .0001" adjustment dial
- Designed for maximum rigidity and accuracy
- Top quality steel alloy hardened to 58-60 HRC



Inserts  
page 160  
&  
Cartridges  
page 310



Toolholders  
page 311



Extensions  
page 321  
& Reducers  
page 322



Retention  
Knobs  
page  
330

75° lead angle head tends to self-center in the pilot hole, stabilizing the cut and maximizing stock removal rates.



Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection. See page 319.

### Adjustment Is This Easy



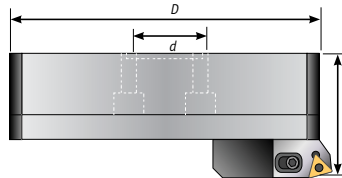
Adjustable in 0.0001" increments

Metric dials available

.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw



### 75° Large Finish Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6275340	A-300-75-3CT-300	8.661"	12.598"	3CT.75.300	202	60	3.54"	TCMT 32.5_	6811262
6275345	A-300-75-3CT-402	8.661"	12.598"	3CT.75.402	202	60	3.54"	CCMT 43_	6811266
6275350	A-300-75-3CT-402N	8.661"	12.598"	3CT.75.402N	202	60	3.54"	CNMG 43_	6811270
6275355	A-400-75-3CT-300	11.417"	15.748"	3CT.75.300	272	60	3.54"	TCMT 32.5_	6811262
6275360	A-400-75-3CT-402	11.417"	15.748"	3CT.75.402	272	60	3.54"	CCMT 43_	6811266
6275365	A-400-75-3CT-402N	11.417"	15.748"	3CT.75.402N	272	60	3.54"	CNMG 43_	6811270
6275370	A-500-75-3CT-300	14.567"	19.685"	3CT.75.300	352	60	3.54"	TCMT 32.5_	6811262
6275375	A-500-75-3CT-402	14.567"	19.685"	3CT.75.402	352	60	3.54"	CCMT 43_	6811266
6275380	A-500-75-3CT-402N	14.567"	19.685"	3CT.75.402N	352	60	3.54"	CNMG 43_	6811270

# 90° Lead Angle Finish Heads

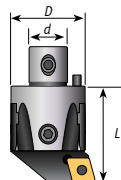
## Range .945" up to 8.661"



Integral pocket type

### Features

- AccuSET spring-loaded slide won't lose position during adjustment
- .0001" dial allows fast and easy adjustments
- Designed for maximum rigidity and accuracy



Cartridge type

### 90° Integral Pocket Type Finish Heads

Part No.	Description	Range		D (mm)	d (mm)	L	Insert	Screw
		Min	Max					
6390255	A-22-90-400	.945"	1.181"	22	12	1.39"	CCMT 21.5_	6811250
6390260	A-27-90-409	1.142"	1.575"	27	15	1.65"	CCMT 32.5_	6811260
6390265	A-32-90-300	1.535"	1.969"	32	18	1.77"	TCMT 32.5_	6811262
6390270	A-32-90-409	1.535"	1.969"	32	18	1.77"	CCMT 32.5_	6811260
6390275	A-42-90-300	1.929"	2.559"	42	24	2.20"	TCMT 32.5_	6811262
6390280	A-42-90-402	1.929"	2.559"	42	24	2.20"	CCMT 43_	6811266
6390285	A-42-90-402N	2.087"	2.559"	42	24	2.20"	CNMG 43_	6811270
6390290	A-54-90-300	2.48"	3.228"	54	28	2.60"	TCMT 32.5_	6811262
6390295	A-54-90-402	2.48"	3.228"	54	28	2.60"	CCMT 43_	6811266
6390300	A-54-90-402N	2.48"	3.228"	54	28	2.60"	CNMG 43_	6811270

### 90° Cartridge Type Finish Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6390305	A-68-90-2CT-300	3.15"	4.016"	2CT-90-300	68	36	3.39"	TCMT 32.5_	6811262
6390310	A-68-90-2CT-402	3.15"	4.016"	2CT-90-402	68	36	3.39"	CCMT 43_	6811266
6390315	A-68-90-2CT-402N	3.15"	4.016"	2CT-90-402N	68	36	3.39"	CNMG 43_	6811270
6390320	A-85-90-3CT-300	3.937"	4.921"	3CT-90-300	85	50	3.94"	TCMT 32.5_	6811262
6390325	A-85-90-3CT-402	3.937"	4.921"	3CT-90-402	85	50	3.94"	CCMT 43_	6811266
6390330	A-85-90-3CT-402N	3.937"	4.921"	3CT-90-402N	85	50	3.94"	CNMG 43_	6811270
6390335	A-100-90-3CT-300	4.921"	6.299"	3CT-90-300	110	60	3.94"	TCMT 32_	6811262
6390340	A-100-90-3CT-402	4.921"	6.299"	3CT-90-402	110	60	3.94"	CCMT 43_	6811266
6390345	A-100-90-3CT-402N	4.921"	6.299"	3CT-90-402N	110	60	3.94"	CNMG 43_	6811270
6390350	A-200-90-3CT-300	6.299"	8.661"	2CT-90-300	145	60	3.94"	TCMT 32.5_	6811262
6390355	A-200-90-3CT-402	6.299"	8.661"	3CT-90-402	145	60	3.94"	CCMT 43_	6811266
6390360	A-200-90-3CT-402N	6.299"	8.661"	3CT-90-402N	145	60	3.94"	CNMG 43_	6811270

# 90° Lead Angle Finish Heads

## Range 8.661" up to 19.685"



### Features

- AccuSET .0001" adjustment dial
- Designed for maximum rigidity and accuracy
- Top quality steel alloy hardened to 58-60 HRC



Inserts  
page 160  
& Cartridges  
page 310



Toolholders  
page 311



Extensions  
page 321  
& Reducers  
page 322



Retention  
Knobs  
page  
330

Use 90° lead angle heads when performing blind boring, or if the desired hole is not exactly on center with your pilot hole. The 90° lead will have less tendency to follow the pilot hole.



Use large boring heads with direct mount toolholders or ADT 100-50 adapter and a toolholder with a 100mm connection.

See page 319.

### Adjustment Is This Easy



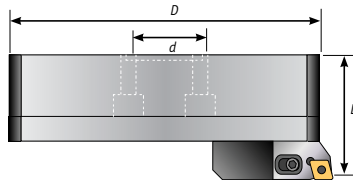
Adjustable  
in 0.0001"  
increments

Metric dials available

.0001" dial allows operators to quickly set the finish head to any diameter.

Procedure:

1. Loosen locking screw
2. Remove any backlash
3. Rotate scale to desired setting
4. Tighten locking screw



### 90° Large Finish Heads

Part No.	Description	Range		Cartridge	D (mm)	d (mm)	L	Insert	Screw
		Min	Max						
6390365	A-300-90-3CT-300	8.661"	12.598"	3CT-90-300	202	60	3.54"	TCMT 32.5_	6811262
6390370	A-300-90-3CT-402	8.661"	12.598"	3CT-90-402	202	60	3.54"	CCMT 43_	6811266
6390375	A-300-90-3CT-402N	8.661"	12.598"	3CT-90-402N	202	60	3.54"	CNMG 43_	6811270
6390380	A-400-90-3CT-300	11.417"	15.748"	3CT-90-300	272	60	3.54"	TCMT 32.5_	6811262
6390385	A-400-90-3CT-402	11.417"	15.748"	3CT-90-402	272	60	3.54"	CCMT 43_	6811266
6390390	A-400-90-3CT-402N	11.417"	15.748"	3CT-90-402N	272	60	3.54"	CNMG 43_	6811270
6390395	A-500-90-3CT-300	14.567"	19.685"	3CT-90-300	352	60	3.54"	TCMT 32.5_	6811262
6390400	A-500-90-3CT-402	14.567"	19.685"	3CT-90-402	352	60	3.54"	CCMT 43_	6811266
6390405	A-500-90-3CT-402N	14.567"	19.685"	3CT-90-402N	352	60	3.54"	CNMG 43_	6811270

# Indexable Cartridges

## 75° & 90° Lead Angle



75° type 300



75° type 402



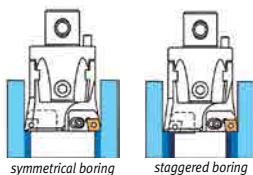
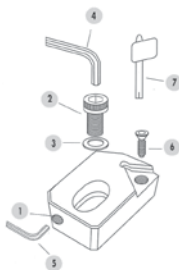
90° type 300



90° type 402

### Features

- Change lead angle or insert style by simply changing cartridges
- Precision ground accuracy
- Symmetrical or staggered boring



Staggered boring is possible by substituting a staggered cartridge in place of the regular cartridge. This .020" of axial stagger will accommodate most staggered, or "stepped" boring processes. Note that staggered cartridge descriptions end in "S".

### 75° Lead Angle Cartridges for Symmetrical Boring

Part No.	Description	Insert	1	2	3	4	5	6	7
6675125	2CT-75-300	TCMT 32.5_	D-68-29	A-68-26	D-68-28	H5	H2	6811260	9355555
6675130	2CT-75-402	CCMT 43_	D-68-29	A-68-26	D-68-28	H5	H2	6811266	9355666
6675135	2CT-75-402N	CNMG 43_	D-68-29	A-68-26	D-68-28	H5	H2	6811270	9322116
6675140	3CT-75-300	TCMT 32.5_	D-85-29	D-85-27	D-68-28	H5	H3	6811262	9355555
6675145	3CT-75-402	CCMT 43_	D-85-29	D-85-27	D-68-28	H5	H3	6811266	9355666
6675150	3CT-75-402N	CNMG 43_	D-85-29	D-85-27	D-68-28	H5	H3	6811270	9322116

### 90° Lead Angle Cartridges for Symmetrical Boring

Part No.	Description	Insert	1	2	3	4	5	6	7
6690125	2CT-90-300	TCMT 32.5_	D-68-29	A-68-26	D-68-28	H5	H2	6811260	9355555
6690130	2CT-90-402	CCMT 43_	D-68-29	A-68-26	D-68-28	H5	H2	6811266	9355666
6690135	2CT-90-402N	CNMG 43_	D-68-29	A-68-26	D-68-28	H5	H2	6811270	9322116
6690140	3CT-90-300	TCMT 32.5_	D-85-29	D-85-27	D-68-28	H5	H3	6811262	9355555
6690145	3CT-90-402	CCMT 43_	D-85-29	D-85-27	D-68-28	H5	H3	6811266	9355666
6690150	3CT-90-402N	CNMG 43_	D-85-29	D-85-27	D-68-28	H5	H3	6811270	9322116

### 90° Lead Angle Cartridges for Staggered Boring

Part No.	Description	Insert	1	2	3	4	5	6	7
6690155	2CT-90-300S	TCMT 32.5_	D-68-29	A-68-26	D-68-28	H5	H2	6811260	9355555
6690160	2CT-90-402S	CCMT 43_	D-68-29	A-68-26	D-68-28	H5	H2	6811266	9355666
6690165	2CT-90-402NS	CNMG 43_	D-68-29	A-68-26	D-68-28	H5	H2	6811270	9322116
6690170	3CT-90-300S	TCMT 32.5_	D-85-29	D-85-27	D-68-28	H5	H3	6811262	9355555
6690175	3CT-90-402S	CCMT 43_	D-85-29	D-85-27	D-68-28	H5	H3	6811266	9355666
6690180	3CT-90-402NS	CNMG 43_	D-85-29	D-85-27	D-68-28	H5	H3	6811270	9322116



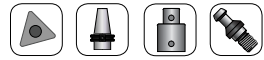
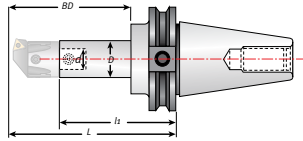
# Pinzbohr High Precision CAT40 Toolholders



Match the *d* dimension on toolholder and boring head for proper selection.

## Features

- Exceed industry standards for taper accuracy and concentricity
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder
- Extensions allow more depth



Inserts  
page 160  
&  
Cartridges  
page 310

Toolholders  
page 311

Extensions  
page 321  
& Reducers  
page 322

Retention  
Knobs  
page  
330

## CAT40 Boring Toolholders

*Boring depth (BD) is tool length plus boring head.*

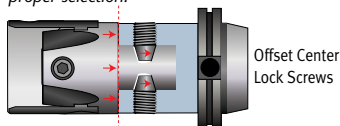
Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6133250	CT-340-22-80	22	12	3.150"	4.65"	3.31"	6811510
6133255	CT-340-22-100	22	12	3.937"	5.43"	4.09"	6811510
6133260	CT-340-27-55	27	15	2.165"	3.54"	1.89"	6811520
6133265	CT-340-27-100	27	15	3.937"	5.43"	3.78"	6811520
6133270	CT-340-27-130	27	15	5.118"	6.61"	4.96"	6811520
6133275	CT-340-32-60	32	18	2.362"	3.78"	2.01"	6811530
6133280	CT-340-32-100	32	18	3.937"	5.43"	3.66"	6811530
6133285	CT-340-32-130	32	18	5.118"	6.61"	4.84"	6811530
6133290	CT-340-42-75	42	24	2.953"	4.41"	2.20"	6811540
6133295	CT-340-42-120	42	24	4.724"	5.59"	3.86"	6811540
6134300	CT-340-42-160	42	24	6.300"	7.17"	4.96"	6811540
6134305	CT-340-42-200	42	24	7.874"	8.74"	6.54"	6811540
6134310	CT-340-54-120	54	28	4.724"	5.59"	2.99"	6811550
6134315	CT-340-54-160	54	28	6.300"	7.17"	4.57"	6811550
6134320	CT-340-54-200	54	28	7.874"	8.74"	6.14"	6811550
6134325	CT-340-68-160	68	36	6.300"	7.20"	3.82"	6811560
6134330	CT-340-68-200	68	36	7.874"	8.78"	5.39"	6811560
6134335	CT-340-085-200	85	50	7.874"	8.819"	4.88"	6811570
6134340	CT-340-100-200	100	60	7.874"	8.819"	4.88"	6811580

For large head toolholders, see page 319.

# Pinzbohr CAT40 Coolant-Thru Toolholders



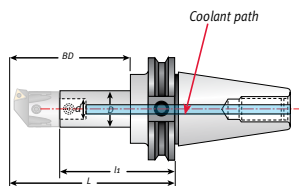
Match the "d" dimension on toolholder and boring head for proper selection.



Our modular coupling system allows heads to be changed without removing tools from the spindle. Two offset center lock screws apply maximum tightening force between the boring head and the toolholder. This increases rigidity and enhances vibration dampening characteristics.

## Features

- Exceed industry standards for taper accuracy and concentricity
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder
- Extensions allow more depth



Use with coolant-thru extensions page 321.

Boring depth (BD) is tool length plus boring head.

## CAT40 Coolant-thru

Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6133257	CT-340-22-100-R	22	12	3.937"	5.43"	4.09"	6811510
6133252	CT-340-22-80-R	22	12	3.150"	4.65"	3.31"	6811510
6133267	CT-340-27-100-R	27	15	3.937"	5.43"	3.78"	6811520
6133272	CT-340-27-130-R	27	15	5.118"	6.61"	4.96"	6811520
6133262	CT-340-27-55-R	27	15	2.165"	3.54"	1.89"	6811520
6133282	CT-340-32-100-R	32	18	3.937"	5.34"	3.66"	6811530
6133287	CT-340-32-130-R	32	18	5.118"	6.61"	4.84"	6811520
6133277	CT-340-32-60-R	32	18	2.362"	3.78"	2.01"	6811530
6133297	CT-340-42-120-R	42	24	4.724"	5.59"	3.39"	6811540
6134302	CT-340-42-160-R	42	24	6.300"	7.17"	4.96"	6811540
6134307	CT-340-42-200-R	42	24	7.874"	8.74"	6.54"	6811540
6133292	CT-340-42-75-R	42	24	2.953"	4.41"	2.20"	6811540
6134312	CT-340-54-120-R	54	28	4.724"	5.59"	2.99"	6811550
6134317	CT-340-54-160-R	54	28	6.300"	7.17"	4.57"	6811550
6134322	CT-340-54-200-R	54	28	7.874"	8.74"	6.14"	6811550
6134327	CT-340-68-160-R	68	36	6.300"	7.20"	3.82"	6811560
6134332	CT-340-68-200-R	68	36	7.874"	8.78"	5.39"	6811560

For large head toolholders, see page 319.

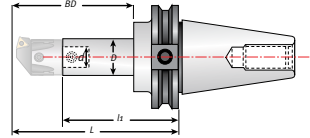
# Pinzbohr High Precision CAT50 Toolholders



Match the *d* dimension on toolholder and boring head for proper selection.

## Features

- Exceed industry standards for taper accuracy and concentricity
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder
- Extensions allow more depth



## CAT50 Boring Toolholders

Boring depth (BD) is tool length plus boring head.

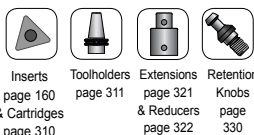
Part No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling Screw
6141250	CT-350-22-80	22	12	3.150"	4.65"	3.31"	6811510
6141255	CT-350-22-100	22	12	3.937"	5.43"	4.09"	6811510
6141260	CT-350-27-55	27	15	2.165"	3.54"	1.89"	6811520
6141265	CT-350-27-100	27	15	3.937"	5.43"	3.78"	6811520
6141270	CT-350-27-130	27	15	5.118"	6.61"	4.96"	6811520
6141275	CT-350-32-60	32	18	2.362"	3.78"	2.01"	6811530
6141280	CT-350-32-130	32	18	5.118"	6.61"	4.84"	6811530
6141285	CT-350-32-160	32	18	6.299"	7.80"	6.02"	6811530
6141290	CT-350-42-75	42	24	2.953"	4.41"	2.20"	6811540
6141295	CT-350-42-160	42	24	6.299"	7.80"	5.59"	6811540
6141300	CT-350-42-200	42	24	7.874"	9.37"	7.17"	6811540
6141305	CT-350-54-90	54	28	3.543"	5.04"	2.44"	6811550
6141310	CT-350-54-160	54	28	6.299"	7.80"	5.20"	6811550
6141315	CT-350-54-200	54	28	7.874"	9.37"	6.77"	6811550
6141320	CT-350-68-115	68	36	4.528"	5.94"	2.56"	6811560
6141325	CT-350-68-200	68	36	7.874"	8.78"	5.39"	6811560
6141330	CT-350-68-260	68	36	10.236"	11.14"	7.76"	6811560
6141335	CT-350-85-200	85	50	7.874"	8.82"	4.88"	6811570
6141340	CT-350-85-260	85	50	10.236"	11.18"	7.24"	6811570
6141345	CT-350-85-320	85	50	12.598"	13.54"	9.61"	6811570
6141350	CT-350-100-190	100	60	7.480"	8.43"	4.49"	6811580
6141355	CT-350-100-260	100	60	10.236"	11.18"	7.24"	6811580
6141360	CT-350-100-320	100	60	12.598"	13.54"	9.61"	6811580
6166124	CT-550-160*	100	60	4.921"	6.30"	2.76"	6811590

For large head toolholders, see page 319.

# Pinzbohr CAT50 Coolant-Thru Toolholders

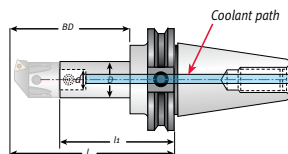


Match the *d* dimension on toolholder and boring head for proper selection.



## Features

- Exceed industry standards for taper accuracy and concentricity
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder
- Extensions allow more depth



Boring depth (BD) is tool length plus boring head.

## CAT50 Coolant-thru

Part No.	Description	D (mm)	d (mm)	BD	L	I1	Coupling Screw
6141252	CT-350-22-80-R	22	12	3.150"	4.65"	3.31"	6811510
6141257	CT-350-22-100-R	22	12	3.937"	5.43"	4.09"	6811510
6141262	CT-350-27-55-R	27	15	2.165"	3.54"	1.89"	6811520
6141267	CT-350-27-100-R	27	15	3.937"	5.43"	3.78"	6811520
6141272	CT-350-27-130-R	27	15	5.118"	6.61"	4.96"	6811520
6141277	CT-350-32-60-R	32	18	2.362"	3.78"	2.01"	6811530
6141282	CT-350-32-130-R	32	18	5.118"	6.61"	4.84"	6811530
6141287	CT-350-32-160-R	32	18	6.299"	7.80"	6.02"	6811530
6141292	CT-350-42-75-R	42	24	2.953"	4.41"	2.20"	6811540
6141297	CT-350-42-160-R	42	24	6.299"	7.80"	5.59"	6811540
6141302	CT-350-42-200-R	42	24	7.874"	9.37"	7.17"	6811540
6141307	CT-350-54-90-R	54	28	3.543"	5.04"	2.44"	6811550
6141312	CT-350-54-160-R	54	28	6.299"	7.80"	5.20"	6811550
6141317	CT-350-54-200-R	54	28	7.874"	9.37"	6.77"	6811550
6141322	CT-350-68-115-R	68	36	4.528"	5.94"	2.56"	6811560
6141327	CT-350-68-200-R	68	36	7.874"	8.78"	5.39"	6811560
6141332	CT-350-68-260-R	68	36	10.236"	11.14"	7.76"	6811560
6141337	CT-350-85-200-R	85	50	7.874"	8.82"	4.88"	6811570
6141342	CT-350-85-260-R	85	50	10.236"	11.18"	7.24"	6811570
6141347	CT-350-85-320-R	85	50	12.598"	13.54"	9.61"	6811570
6141352	CT-350-100-190-R	100	60	7.480"	8.43"	4.49"	6811580
6141362	CT-350-100-320-R	100	60	12.598"	13.54"	9.61"	6811580

For large head toolholders, see page 319.

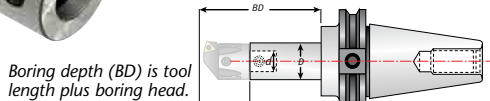
# Pinzbohr High Precision BT30, BT40 Toolholders



Match the *d* dimension on toolholder and boring head for proper selection.

## Features

- Exceed industry standards for taper accuracy and concentricity
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder
- Extensions allow more depth



## BT30 Boring Toolholders

Part-No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling-Screw
6130100	BT-330-22-100	22	12	3.937"	4.92"	3.58"	6811510
6130150	BT-330-27-55	27	15	2.165"	3.03"	1.38"	6811520
6130200	BT-330-27-100	27	15	3.937"	4.92"	3.27"	6811520
6130250	BT-330-32-60	32	18	2.362"	3.27"	1.50"	6811530
6130300	BT-330-32-100	32	18	3.937"	4.92"	3.15"	6811530

## BT40 Boring Toolholders

Part-No.	Description	D (mm)	d (mm)	BD	L	l1	Coupling-Screw
6140100	BT-340-22-50	22	12	1.969"	3.15"	1.81"	6811510
6140125	BT-340-22-80	22	12	3.150"	4.33"	2.99"	6811510
6140150	BT-340-22-100	22	12	3.937"	5.12"	3.78"	6811510
6140175	BT-340-27-55	27	15	2.165"	3.23"	1.57"	6811520
6140200	BT-340-27-100	27	15	3.937"	5.12"	3.46"	6811520
6140225	BT-340-27-130	27	15	5.118"	6.30"	4.65"	6811520
6140250	BT-340-32-60	32	18	2.362"	3.46"	1.69"	6811530
6140275	BT-340-32-100	32	18	3.937"	5.12"	3.35"	6811530
6140300	BT-340-32-130	32	18	5.118"	6.30"	4.53"	6811530
6140325	BT-340-42-75	42	24	2.953"	4.09"	1.89"	6811540
6140350	BT-340-42-160	42	24	6.299"	7.48"	5.28"	6811540
6140375	BT-340-42-200	42	24	7.874"	9.06"	6.85"	6811540
6140400	BT-340-54-90	54	28	3.543"	4.72"	2.13"	6811550
6140425	BT-340-54-160	54	28	6.299"	7.48"	4.88"	6811550
6140450	BT-340-54-200	54	28	7.874"	9.06"	6.46"	6811550
6140475	BT-340-68-160	68	36	6.299"	7.13"	3.74"	6811560
6140500	BT-340-68-200	68	36	7.874"	8.70"	5.31"	6811560
6140525	BT-340-85-200	85	50	7.874"	8.66"	4.72"	6811570
6140550	BT-340-100-200	100	60	7.874"	8.66"	4.72"	6811580

For large head toolholders, see page 319.

# Pinzbohr High Precision BT50 Toolholders



Inserts  
page 160  
& Cartridges  
page 310



Toolholders  
page 311

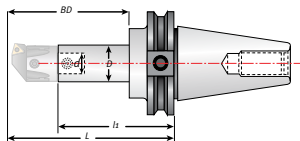


Extensions  
page 321  
& Reducers  
page 322



Retention  
Knobs  
page  
330

Match the *d* dimension on toolholder and boring head for proper selection.



Boring depth (BD) is tool length plus boring head.

## Features

- Exceed industry standards for taper accuracy and concentricity
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder
- Extensions allow more depth

## BT50 Boring Toolholders

Part No.	Description	D (mm)	d (mm)	BD	L	I1	Coupling Screw
6150100	BT-350-22-80	22	12	3.150"	4.76"	3.43"	6811510
6150125	BT-350-22-100	22	12	3.937"	5.55"	4.21"	6811510
6150150	BT-350-27-55	27	15	2.165"	3.66"	2.01"	6811520
6150175	BT-350-27-100	27	15	3.937"	5.55"	3.90"	6811520
6150200	BT-350-27-130	27	15	5.118"	6.73"	5.08"	6811520
6150225	BT-350-32-60	32	18	2.362"	3.90"	2.13"	6811530
6150250	BT-350-32-130	32	18	5.118"	6.73"	4.96"	6811530
6150275	BT-350-32-160	32	18	6.299"	7.91"	6.14"	6811530
6150300	BT-350-42-75	42	24	2.953"	4.53"	2.32"	6811540
6150325	BT-350-42-160	42	24	6.299"	7.91"	5.71"	6811540
6150350	BT-350-42-200	42	24	7.874"	9.49"	7.28"	6811540
6150375	BT-350-54-90	54	28	3.543"	5.16"	2.56"	6811550
6150400	BT-350-54-160	54	28	6.299"	7.91"	5.31"	6811550
6150425	BT-350-54-200	54	28	7.874"	9.49"	6.89"	6811550
6150450	BT-350-68-115	68	36	4.528"	6.06"	2.68"	6811560
6150475	BT-350-68-200	68	36	7.874"	9.53"	6.14"	6811560
6150500	BT-350-68-260	68	36	10.236"	11.89"	8.50"	6811560
6150525	BT-350-85-200	85	50	7.874"	9.53"	5.59"	6811570
6150550	BT-350-85-260	85	50	10.236"	11.89"	7.95"	6811570
6150575	BT-350-85-320	85	50	12.598"	14.25"	10.31"	6811570
6150600	BT-350-100-170	100	60	6.693"	7.68"	3.74"	6811580
6150625	BT-350-100-260	100	60	10.236"	11.89"	7.95"	6811580
6150650	BT-350-100-320	100	60	12.598"	14.25"	10.31"	6811580
6166123	BT-550-160*	100	60	4.921"	6.30"	2.76"	6811590

For large head toolholders, see page 319.

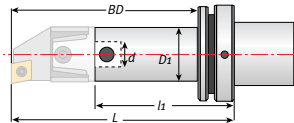
# Pinzbohr HSK50A, 63A, 100A Toolholders



Match the  $d$  dimension on toolholder and boring head for proper selection.

## Features

- Exceed industry standards for taper accuracy and concentricity
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder



Boring depth (BD) is tool length plus boring head.

## HSK50A Boring Toolholders

Part No.	Description	D1 (mm)	d (mm)	BD	L	l1	Coupling Screw
6155501	HSK-50A-22-55	22	12	2.165"	3.19"	1.85"	6811510
6155502	HSK-50A-27-65	27	15	2.559"	3.58"	1.93"	6811520
6155503	HSK-50A-32-75	32	18	2.953"	3.98"	2.20"	6811530
6155504	HSK-50A-42-90	42	24	3.543"	4.57"	2.36"	6811540

## HSK63A Boring Toolholders

Part No.	Description	D1 (mm)	d (mm)	BD	L	l1	Coupling Screw
6155631	HSK-63A-22-55	22	12	2.165"	3.19"	1.85"	6811510
6155632	HSK-63A-27-65	27	15	2.559"	3.58"	1.93"	6811520
6155633	HSK-63A-32-75	32	18	2.953"	3.98"	2.20"	6811530
6155634	HSK-63A-42-90	42	24	3.543"	4.57"	2.36"	6811540
6155635	HSK-63A-54-110	54	28	4.331"	5.35"	2.76"	6811550
6155636	HSK-63A-68-145	68	36	5.709"	6.73"	3.35"	6811560

## HSK100A Boring Toolholders

Part No.	Description	D1 (mm)	d (mm)	BD	L	l1	Coupling Screw
6155101	HSK-100A-22-55	22	12	2.165"	3.50"	1.85"	6811510
6155102	HSK-100A-27-65	27	15	2.559"	3.90"	1.93"	6811520
6155103	HSK-100A-32-75	32	18	2.953"	4.09"	2.20"	6811530
6155104	HSK-100A-42-90	42	24	3.543"	4.69"	2.36"	6811540
6155105	HSK-100A-54-110	54	28	4.331"	5.47"	2.76"	6811550
6155106	HSK-100A-68-145	68	36	5.709"	6.85"	3.46"	6811560
6155107	HSK-100A-85-165	85	50	6.496"	7.64"	3.70"	6811570
6155108	HSK-100A-100-185	100	60	7.283"	8.43"	4.49"	6811580

For large head toolholders, see page 319.

# Pinzbohr Weldon & R8 Toolholders



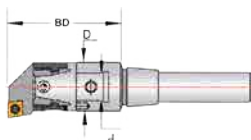
Weldon toolholder

Match the  $d$  dimension on toolholder and boring head for proper selection.

## Features

- Convert your end mill holder into a precision boring head holder.
- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes

Boring depth (BD) is tool length plus boring head.



## Weldon 3/4" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165341	B-20-22-50-3/4-SS-WELDON	22	12	1.969"	6811510
6165342	B-20-22-100-3/4-SS-WELDON	22	12	3.937"	6811510
6165343	B-20-54-110-3/4-SS-WELDON	54	28	4.331"	6811550

## Weldon 1" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165101	B-25-27-55-1.0-SS-WELDON	27	15	2.163"	6811520
6165102	B-25-27-100-1.0-SS-WELDON	27	15	3.937"	6811520
6165103	B-25-54-110-1.0-SS-WELDON	54	28	4.331"	6811550

## Weldon 1-1/4" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165141	B-32-32-60-1-1/4-SS-WELDON	32	18	2.362"	6811530
6165142	B-32-32-100-1-1/4-SS-WELDON	32	18	3.937"	6811530
6165143	B-32-42-90-1-1/4-SS-WELDON	42	24	3.543"	6811540
6165144	B-32-54-110-1-1/4-SS-WELDON	54	28	4.331"	6811550

## Weldon 1-1/2" Shank

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165121	B-40-42-90-1-1/2-SS-WELDON	42	24	3.543"	6811540
6165122	B-40-42-160-1-1/2-SS-WELDON	42	24	6.299"	6811540
6165123	B-40-54-110-1-1/2-SS-WELDON	54	28	4.331"	6811550

## R8 Toolholders

Part No.	Description	D (mm)	d (mm)	BD	Coupling Screws
6165801	R8-22-50-R8-WELDON	22	12	1.969"	6811510
6165802	R8-27-60-R8-WELDON	27	15	2.362"	6811520
6165803	R8-32-75-R8-WELDON	32	18	2.953"	6811530
6165804	R8-42-90-R8-WELDON	42	24	3.543"	6811540
6165805	R8-54-110-R8-WELDON	54	28	4.331"	6811550



R8 Tool holder

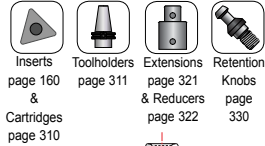


# Toolholders for Large Boring Heads



### Features

- Direct mount system maximizes rigidity and accuracy
- For CAT50, BT50 and spindles
- Use with large heads page 302, page 305, page 306, page 309



Inserts  
page 160  
&  
Cartridges  
page 310

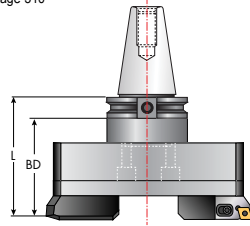
Toolholders  
page 311

Extensions  
page 321  
& Reducers  
page 322

Retention  
Knobs  
page  
330

### Direct Mount Toolholders for Large Boring Heads

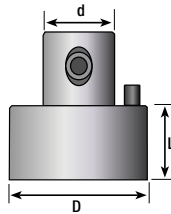
Part No.	Description	BD	L (mm)	Coupling Screw
6166123	BT-550-160	4.921	160	6811590
6166124	CT-550-160	4.921	160	6811590



ADT 100-50 adapter

### Features

- Adapter works with 100mm connection toolholders
- CAT, BT, and HSK spindles
- Use with large heads page 302, page 305, page 306, page 309



toolholder

ADT 100-50  
adapter

large boring head

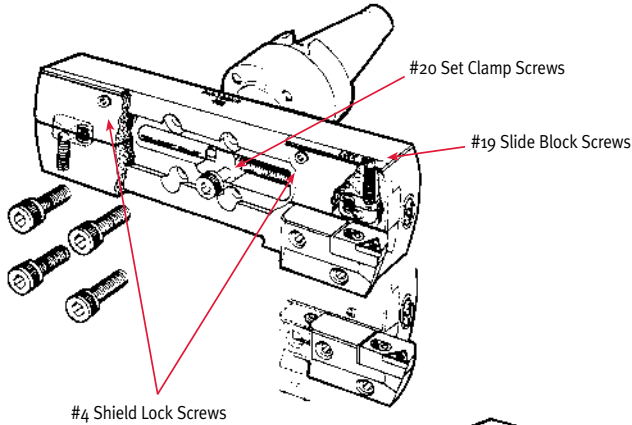
### Large Head Adapter Mount

Part No.	Description	D	d	L
6022510	ADT-100-50 Large head adapter	100	60	50

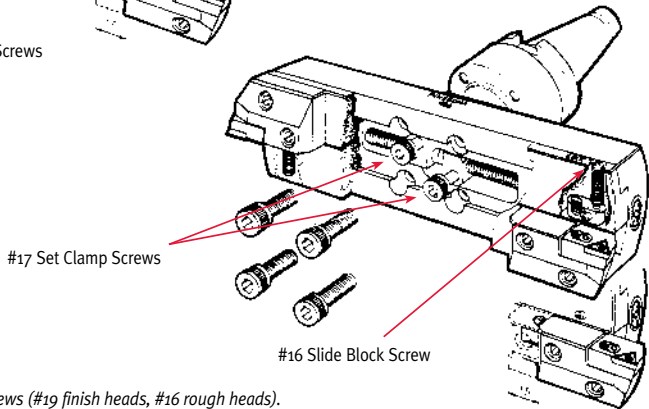
Use with all toolholders that have 100mm connections. Adds 50mm length.

# Large Head Mounting Instructions

## Finish Heads



## Rough Heads



1. Loosen slide block screws (#19 finish heads, #16 rough heads).
2. Remove set clamp screws (#20 finish heads, #17 rough heads).
3. On finish boring heads only, remove shield lock screws #4.
4. Move slide blocks /shield off-center until the four counter bored bolt holes located in the body below the slide blocks are completely exposed.
5. Place taper shank holder or adapter on back side of boring head with pilot completely engaged in pilot cavity.
6. Insert 4 socket head cap screws into counter bored holes and tighten to 90 ft-lbs torque.
7. Push slide blocks back into position to line up with threaded holes below.
8. Insert nut /close shield lock screws and tighten.
9. Adjust boring head to desired diameter and tighten slide block lock screws.

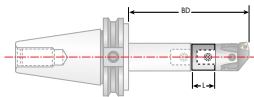
# Pinzbohr High Precision Extensions



Match the  $d$  dimensions on toolholder, extension, and boring head for proper selection.

## Features

- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes



Calculate needed extension length ( $L$ ) to achieve your boring depth ( $BD$ )

## Standard Extensions

Part No.	Description	D (mm)	d (mm)	L	Coupling Screw
6552220	P-22-20	22	12	0.79"	6811510
6552230	P-22-30	22	12	1.18"	6811510
6552730	P-27-30	27	15	1.18"	6811520
6552745	P-27-45	27	15	1.77"	6811520
6553235	P-32-35	32	18	1.38"	6811530
6553252	P-32-52	32	18	2.05"	6811530
6554240	P-42-40	42	24	1.57"	6811540
6554260	P-42-60	42	24	2.36"	6811540
6555450	P-54-50	54	28	1.97"	6811550
6555475	P-54-75	54	28	2.95"	6811550
6556860	P-68-60	68	36	2.36"	6811560
6556890	P-68-90	68	36	3.54"	6811560
6558570	P-85-70	85	50	2.76"	6811570
6558510	P-85-105	85	50	4.13"	6811570
6551080	P-100-80	100	60	3.15"	6811580
6551012	P-100-120	100	60	4.72"	6811580

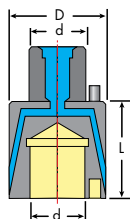
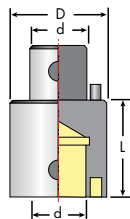
## Coolant-thru Spindle Extension

Part No.	Description	D (mm)	d (mm)	L	Coupling Screw
6562230	P-22-30R	22	12	1.18"	6811510
6562730	P-27-30R	27	15	1.18"	6811520
6563235	P-32-35R	32	18	1.38"	6811530
6564240	P-42-40R	42	24	1.57"	6811540
6565450	P-54-50R	54	28	1.97"	6811550
6566860	P-68-60R	68	36	2.36"	6811560
6568570	P-85-70R	85	50	2.76"	6811570
6561080	P-100-80R	100	60	3.15"	6811580

Use with coolant-thru toolholders available upon request.



Inserts page 160 & Cartridges page 310  
 Toolholders page 311  
 Extensions page 321 & Reducers page 322  
 Retention Knobs page 330



## Coolant-thru Spindle Extension

The coolant-thru spindle extension provides coolant to the cutting zone for optimal stock removal rates.

Minimum recommend coolant pressure is 70 psi. Coolant is directed onto cutting edge by adapter.

# Pinzbohr Reducers & Chamfering Heads



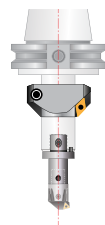
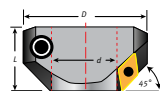
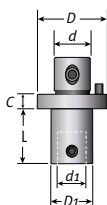
## Features

- Two offset axial tapered locking screws maximize rigidity and allow fast tool changes
- Reducers allow different boring heads to be used with the same toolholder / extension combination

Match the  $d$  dimensions on toolholder, reducer, and boring head for proper selection.

## Reducers

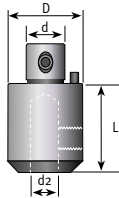
Part No.	Description	D (mm)	d (mm)	D1 (mm)	d1 (mm)	L	c	Coupling Screw
6442236	R-27-22-36	27	15	22	12	1.02"	.39"	6811510
6442240	R-32-22-40	32	18	22	12	1.18"	.39"	6811510
6442258	R-42-22-58	42	24	22	12	1.89"	.39"	6811510
6442286	R-54-22-86	54	28	22	12	2.99"	.39"	6811510
6442210	R-68-22-102	68	36	22	12	3.54"	.47"	6811510
6442734	R-32-27-34	32	18	27	15	0.94"	.39"	6811520
6442750	R-42-27-50	42	24	27	15	1.57"	.39"	6811520
6442780	R-54-27-80	54	28	27	15	2.76"	.39"	6811520
6442795	R-68-27-95	68	36	27	15	3.27"	.47"	6811520
6443246	R-42-32-46	42	24	32	18	1.42"	.39"	6811530
6443276	R-54-32-76	54	28	32	18	2.60"	.39"	6811530
6443290	R-68-32-90	68	36	32	18	3.07"	.47"	6811530
6444270	R-54-42-70	54	28	42	24	2.36"	.39"	6811540
6444282	R-68-42-82	68	36	42	24	2.76"	.47"	6811540
6444295	R-85-42-95	85	50	42	24	3.27"	.47"	6811540
6445472	R-68-54-72	68	36	54	28	2.36"	.47"	6811550
6445490	R-85-54-90	85	50	54	28	3.07"	.47"	6811550
6446810	R-85-68-100	85	50	68	36	3.46"	.47"	6811560
6448510	R-100-85-100	100	60	85	50	3.46"	.47"	6811570



## 45° Chamfering Heads





Part No.	Desc.	D (mm)	d (mm)	L	Insert	Insert Screw	Wrench	Hex Wrench
6033311	CH-22	43	22	0.94"	DCMT 32.5_	6811260	9355555	4 hex
6033322	CH-27	48	27	0.94"	DCMT 32.5_	6811260	9355555	4 hex
6033333	CH-32	62	32	1.18"	DCMT 32.5_	6811260	9355555	5 hex
6033344	CH-42	72	42	1.18"	DCMT 32.5_	6811260	9355555	5 hex
6033355	CH-54	94	54	1.57"	DCMT 43_	6811266	9355666	6 hex
6033366	CH-68	110	68	1.57"	DCMT 43_	6811266	9355666	8 hex
6033377	CH-85	145	85	2.17"	DCMT 43_	6811266	9355666	10 hex
6033388	CH-100	170	100	2.36"	DCMT 43_	6811266	9355666	14 hex
6033399	CH-200	200	100	2.36"	DCMT 43_	6811266	9355666	14 hex

# Modular End Mill Holders & Face Mill Arbors



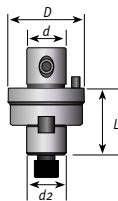
### Features

- For 1/4" up to 3/4" end mills
- Use with extra-long toolholders and extensions for extended length applications
- Two offset center lock screws maximize rigidity while still permitting fast tool changes

			
Inserts page 160 & Cartridges page 310	Toolholders page 311	Extensions page 321 & Reducers page 322	Retention Knobs page 330

### End Mill Holders

Part No.	Description	D (mm)	d (mm)	L	d2
6123300	ADM-42-W1/4	42	24	1.38"	1/4"
6123305	ADM-42-W3/8	42	24	1.50"	3/8"
6123310	ADM-42-W1/2	42	24	2.17"	1/2"
6123315	ADM-42-W3/4	42	28	2.83"	3/4"
6123320	ADM-54-W3/4	54	28	2.85"	3/4"



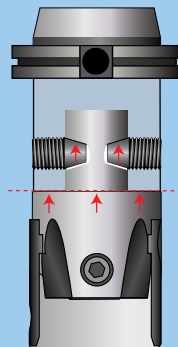
### Features

- For 3/4" up to 1-1/4" face mills
- Two offset center lock screws maximize rigidity while still permitting fast tool changes
- Use with extra-long toolholders and extensions for extended length applications

### Face Mill Arbor

Part No.	Description	D (mm)	d (mm)	L	d2
6133300	ADM-54-3/4	54	28	1.97"	3/4"
6133305	ADM-54-1.0	54	28	1.97"	1.0"
6133310	ADM-68-1.0	68	36	1.97"	1.0"
6133315	ADM-68-1-1/4	68	36	1.97"	1-1/4"

### Modular Coupling System



Offset Center Lock Screws

Pin and taper coupling system allows tools to be changed without removing from the spindle. Two offset center lock screws apply maximum tightening force between the tool and the toolholder. This increases rigidity and enhances vibration damping characteristics.

# Pinzbohr Speeds & Feeds Guidelines

Optimal speeds & feeds depend upon material, machine, tool overhang, and setup. These guidelines may not be correct for your application, but can serve as a useful starting point.

## Rough Boring with Dual Inserts

Material: Plain Carbon Steel

Dia. Range (inch)	Head Size	Max. Stock Removal on Dia.	Suggested Speed SFM	Speeds & Feeds IPR
.944 - 1.181	22	0.38	320 - 420	.006 - .010
1.141 - 1.574	27	0.47	350 - 450	.006 - .012
1.535 - 1.968	32	0.56	350 - 500	.008 - .012
1.929 - 4.015	42, 54, 68	0.75	350 - 500	.010 - .014
3.935 - 20.00	85, 100, 200	0.84	350 - 500	.012 - .016
	300, 400, 500		350 - 500	.012 - .016

Material: Alloy Steels

.944 - 1.181	22	0.38	300 - 390	.006 - .010
1.141 - 1.574	27	0.47	320 - 420	.006 - .012
1.535 - 1.968	32	0.56	320 - 420	.008 - .012
1.929 - 4.015	42, 54, 68	0.75	320 - 420	.010 - .014
3.935 - 20.00	85, 100, 200	0.84	320 - 420	.012 - .016
	300, 400, 500		320 - 420	.012 - .016

Material: Stainless Steels

.944 - 1.181	22	0.38	200 - 300	.005 - .008
1.141 - 1.574	27	0.47	220 - 320	.006 - .010
1.535 - 1.968	32	0.56	220 - 320	.006 - .010
1.929 - 4.015	42, 54, 68	0.75	220 - 320	.008 - .012
3.935 - 20.00	85, 100, 200	0.84	220 - 320	.010 - .014
	300, 400, 500		220 - 320	.010 - .014

Material: Cast Iron

.944 - 1.181	22	0.38	200 - 350	.008 - .012
1.141 - 1.574	27	0.47	220 - 350	.010 - .014
1.535 - 1.968	32	0.56	220 - 350	.010 - .014
1.929 - 4.015	42, 54, 68	0.75	220 - 350	.012 - .016
3.935 - 20.00	85, 100, 200	0.84	220 - 350	.012 - .018
	300, 400, 500		220 - 350	.012 - .018

Material: Aluminum and Aluminum Alloys

.944 - 1.181	22	0.38	400 - 1000	.008 - .012
1.141 - 1.574	27	0.47	500 - 1200	.010 - .014
1.535 - 1.968	32	0.56	500 - 1200	.010 - .014
1.929 - 4.015	42, 54, 68	0.75	500 - 1200	.012 - .016
3.935 - 20.00	85, 100, 200	0.84	500 - 1200	.012 - .018
	300, 400, 500		500 - 1200	.012 - .018

Material: Titanium and High Temperature Alloys

.944 - 1.181	22	0.25	90 - 120	.005 - .008
1.141 - 1.574	27	0.32	100 - 130	.006 - .010
1.535 - 1.968	32	0.38	100 - 130	.006 - .010
1.929 - 4.015	42, 54, 68	0.50	100 - 130	.008 - .012
3.935 - 20.00	85, 100, 200	0.56	100 - 130	.008 - .014
	300, 400, 500		100 - 130	.008 - .014

## Finish Boring with Single Inserts

Material: Plain Carbon Steel

Dia. Range (inch)	Head Size	Max. Stock Removal on Dia.	Suggested Speed SFM	Speeds & Feeds IPR
.944 - 1.181	22	.004 - .024	350 - 450	.002 - .006
1.141 - 1.574	27	.004 - .024	380 - 500	.002 - .006
1.535 - 1.968	32	.005 - .030	380 - 500	.002 - .006
1.929 - 4.015	42, 54, 68	.005 - .030	380 - 500	.004 - .008
3.935 - 20.00	85, 100, 200	.006 - .040	380 - 500	.004 - .008
	300, 400, 500	.006 - .040	380 - 500	.004 - .008

Material: Alloy Steels

.944 - 1.181	22	.004 - .024	320 - 420	.002 - .006
1.141 - 1.574	27	.004 - .024	350 - 450	.002 - .006
1.535 - 1.968	32	.005 - .030	350 - 480	.002 - .006
1.929 - 4.015	42, 54, 68	.005 - .030	350 - 480	.004 - .008
3.935 - 20.00	85, 100, 200	.006 - .040	350 - 480	.004 - .008
	300, 400, 500	.006 - .040	350 - 480	.004 - .008

Material: Stainless Steels

.944 - 1.181	22	.010 - .030	220 - 320	.003 - .006
1.141 - 1.574	27	.010 - .030	250 - 350	.003 - .006
1.535 - 1.968	32	.015 - .040	250 - 350	.003 - .006
1.929 - 4.015	42, 54, 68	.015 - .040	250 - 350	.004 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	250 - 350	.005 - .008
	300, 400, 500	.020 - .050	250 - 350	.005 - .008

Material: Cast Iron

.944 - 1.181	22	.010 - .030	220 - 350	.003 - .006
1.141 - 1.574	27	.010 - .030	250 - 380	.003 - .006
1.535 - 1.968	32	.015 - .040	250 - 380	.003 - .006
1.929 - 4.015	42, 54, 68	.015 - .040	250 - 380	.005 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	250 - 380	.005 - .008
	300, 400, 500	.020 - .050	250 - 380	.005 - .008

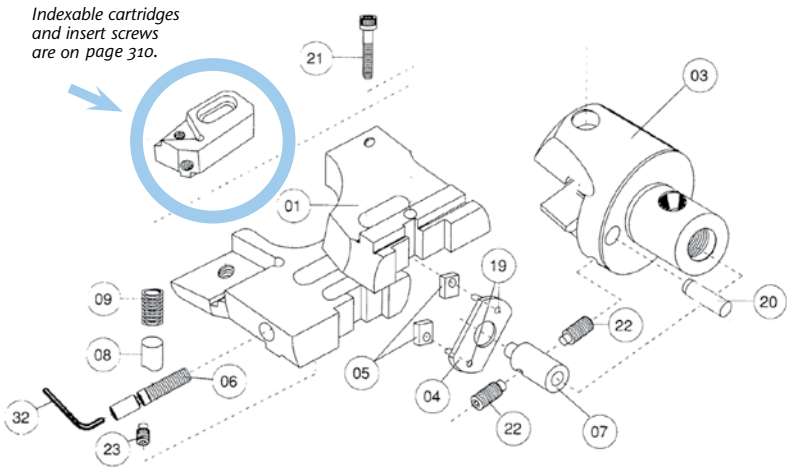
Material: Aluminum and Aluminum Alloys

.944 - 1.181	22	.010 - .030	500 - 1000	.002 - .006
1.141 - 1.574	27	.010 - .030	500 - 1200	.004 - .008
1.535 - 1.968	32	.015 - .040	500 - 1200	.004 - .008
1.929 - 4.015	42, 54, 68	.015 - .040	500 - 1200	.004 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	500 - 1200	.004 - .010
	300, 400, 500	.020 - .050	500 - 1200	.004 - .010

Material: Titanium and High Temperature Alloys

.944 - 1.181	22	.010 - .030	100 - 130	.003 - .006
1.141 - 1.574	27	.010 - .030	100 - 150	.003 - .006
1.535 - 1.968	32	.015 - .040	100 - 150	.003 - .006
1.929 - 4.015	42, 54, 68	.015 - .040	100 - 150	.004 - .008
3.935 - 20.00	85, 100, 200	.020 - .050	100 - 150	.004 - .008
	300, 400, 500	.020 - .050	100 - 150	.004 - .008

# Parts for Rough Heads



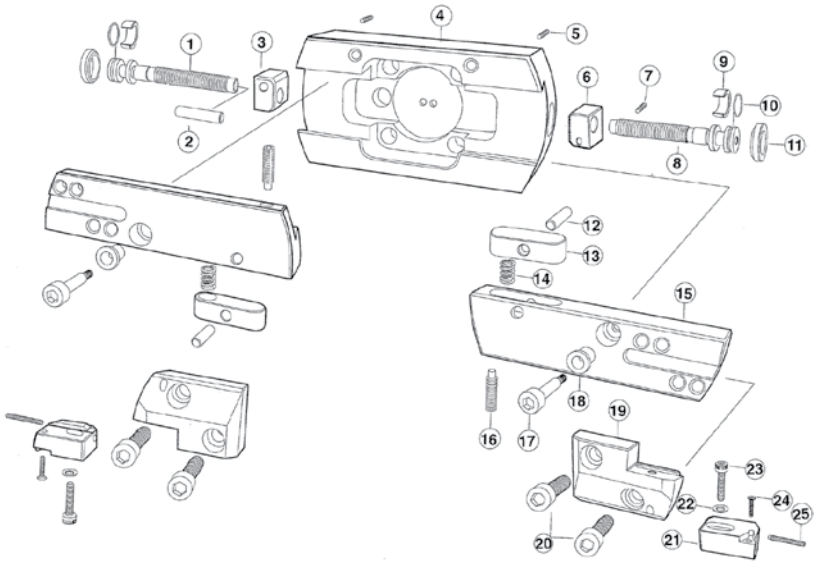
## Rough Boring Heads - Integral Pocket

Boring Heads	01	03	04	05	06	07	08	09	19	20	21	22	23
D 22.75_ _ _	D22.75.01_ _ _	D22 03	D22 04		D22 06	D22 07	D22 08	D22 09	D22 19	D22 20	D22 21	D22 22	D22 23
D 22.90_ _ _	D22.90.01_ _ _	D22 03	D22 04		D22 06	D22 07	D22 08	D22 09	D22 19	D22 20	D22 21	D22 22	D22 23
D 27.75_ _ _	D27.75.01_ _ _	D27 03	D27 04		D27 06	D27 07	D27 08	D27 09	D27 19	D27 20	D27 21	D27 22	D27 23
D 27.90_ _ _	D27.90.01_ _ _	D27 03	D27 04		D27 06	D27 07	D27 08	D27 09	D27 19	D27 20	D27 21	D27 22	D27 23
D 32.75_ _ _W	D32.75.01_ _ _	D32 03W	D32 04		D32 06	D32 07	D32 08	D32 09	D32 19	D32 20	D32 21	D32 22	D32 23
D 32.90_ _ _W	D32.90.01_ _ _	D32 03W	D32 04		D32 06	D32 07	D32 08	D32 09	D32 19	D32 20	D32 21	D32 22	D32 23
D 42.75_ _ _	D42.75.01_ _ _	D42 03	D42 04	D42 05	D42 06	D42 07	D42 08	D42 09	D22 20	D42 20	D42 21	D42 22	D42 23
D 42.90_ _ _	D42.90.01_ _ _	D42 03	D42 04	D42 05	D42 06	D42 07	D42 08	D42 09	D22 20	D42 20	D42 21	D42 22	D42 23
D 54.75_ _ _	D54.75.01_ _ _	D54 03	D54 04	D42 05	D54 06	D54 07	D54 08	D42 09	D22 20	D54 20	D54 21	D54 22	D42 23
D 54.90_ _ _	D54.90.01_ _ _	D54 03	D54 04	D42 05	D54 06	D54 07	D54 08	D42 09	D22 20	D54 20	D54 21	D54 22	D42 23

## Rough Boring Heads - Cartridge Type

Boring Heads	01	03	04	05	06	07	08	09	19	20	21	22	23
D 68.2CT_ _ _	D68 01 2CT	D68 03	D68 04	D68 05	D68 06	D68 07	D68 08	D68 09	D68 19	D68 20	D68 21	D68 22	D68 23
D 85.3CT_ _ _	D85 01 3CT	D85 03	D85 04	D85 05	D85 06	D85 07	D85 08	D85 09	D85 19	D85 20	D85 21	D85 22	D85 23
D 100.3CT_ _ _	D100 01 3CT	D100 03	D100 04	D85 05	D100 06	D100 07	D100 08	D85 09	D85 19	D100 20	D100 21	D85 22	D85 23
D 200.3CT_ _ _	D200 01 3CT	D200 03	D100 04	D85 05	D200 06	D100 07	D100 08	D85 09	D85 19	D100 20	D100 21	D85 22	D85 23

# Parts for Large Rough Heads



## Large Rough Boring Heads

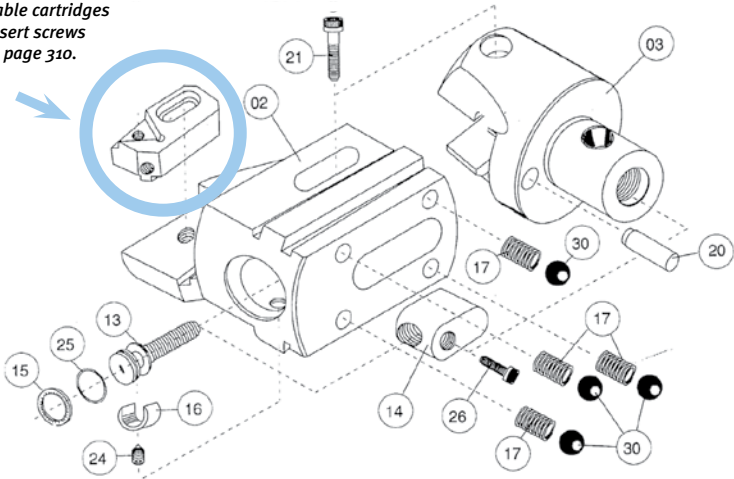
Spare Part	Rough Head Reference Number		
	D 300W	D 400W	D 500W
1	D300.51W	D400.51W	D500.51W
2	D300.69	D300.69	D300.69
3	D300.55I	D300.55I	D300.55I
4	D300.03	D400.03	D500.03
5	D68.23	D68.23	D68.23
6	D300.54D	D300.54D	D300.54D
7	D300.68	D300.68	D300.68
8	D300.50DW	D400.50DW	D500.50DW
9	A68.16	A68.16	A68.16
10	A68.25	A68.25	A68.25
11	A68.15	A68.15	A68.15
12	D300.60	D300.60	D300.60
13	D300.56	D300.56	D300.56

Spare Part	Rough Head Reference Number		
	D 300W	D 400W	D 500W
14	D300.59	D300.59	D300.59
15	D300.001	D400.001	D500.001
16	D300.58	D300.58	D300.58
17	D300.57	D300.57	D300.57
18	D300.62	D300.62	D300.62
19	D300.49	D300.49	D300.49
20	D300.61	D300.61	D300.61
21	3CT_-----	3CT_-----	3CT_-----
22	D68.28	D68.28	D68.28
23	D85.27	D85.27	D85.27
24	TT_-----	TT_-----	TT_-----
25	D85.29	D85.29	D85.29



# Parts for Finish Heads

*Indexable cartridges and insert screws are on page 310.*



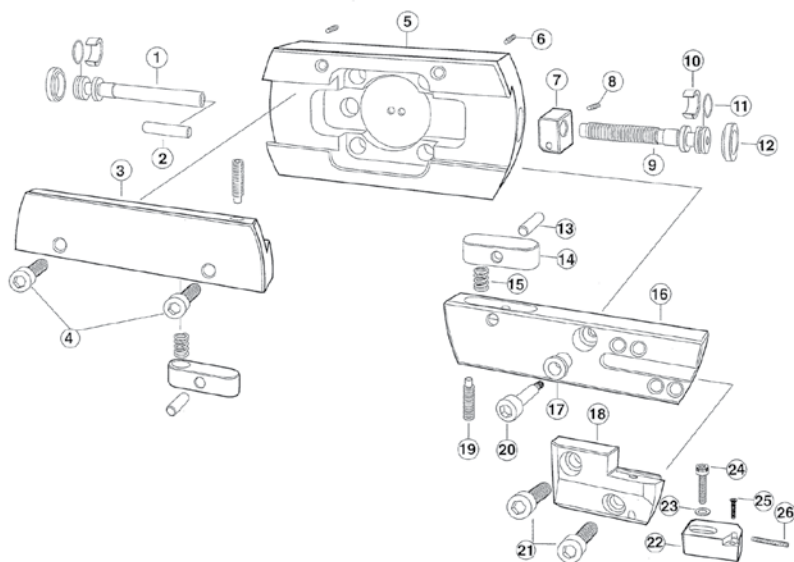
### Finish boring heads - Integral Pocket

Boring Head	02	03	13	14	15	16	17	20	21	25	26	30
A 22.75__W	A22.75.02__	A22 03	A22 13W	A22 14W	A22 15W	A22 16	A22 17	D22 20	D22 21	A22 25	A22 26	A22 30
A 22.90__W	A22.90.02__	A22 03	A22 13W	A22 14W	A22 15W	A22 16	A22 17	D22 20	D22 21	A22 25	A22 26	A22 30
A 27.75__W	A27.75.02__	A27 03	A27 13W	A22 14W	A22 15W	A22 16	A27 17	D27 20	D27 21	A22 25	A27 26	A27 30
A 27.90__W	A27.90.02__	A27 03	A27 13W	A22 14W	A22 15W	A22 16	A27 17	D27 20	D27 21	A22 25	A27 26	A27 30
A 32.75__W	A32.75.02__	A32 03W	A32 13W	A32 14W	A32 15W	A32 16	A27 17	D32 20	D32 21	A22 25	A32 26	A27 30
A 32.90__W	A32.90.02__	A32 03W	A32 13W	A32 14W	A32 15W	A32 16	A27 17	D32 20	D32 21	A22 25	A32 26	A27 30
A 42.75__W	A42.75.02__	A42 03	A42 13W	A42 14W	A42 15W	A42 16	A42 17	D42 20	D42 21	A42 25	A42 26	A42 30
A 42.90__W	A42.90.02__	A42 03	A42 13W	A42 14W	A42 15W	A42 16	A42 17	D42 20	D42 21	A42 25	A42 26	A42 30
A 54.75__W	A54.75.02__	A54 03	A54 13W	A54 14W	A42 15W	A42 16	D42 09	D54 20	D54 21	A42 25	A42 26	A54 30

### Finish boring heads - Cartridge Type

Boring Head	02	03	13	14	15	16	17	20	21	25	26	30
A 68.2CT__W	A68 02 2CT	A68 03	A68 13W	A68 14W	A68 15W	A68 16	A68 17	D68 20	D68 21	A68 25	A68 26	A68 30
A 85.3CT__W	A85 02 3CT	A85 03	A85 13W	A85 14W	A85 15W	A85 16	D85 09	D85 20	D85 21	A85 25	A85 26	A85 30
A 100.3CT__W	A100 02 3CT	A100 03	A85 13W	A85 14W	A85 15W	A85 16	D85 09	D100 20	D100 21	A85 25	A85 26	A85 30
A 200.3CT__W	A200 02 3CT	A200 03	A200 13W	A85 14W	A85 15W	A85 16	D85 09	D100 20	D100 21	A85 25	A85 26	A85 30

# Parts for Large Finish Heads



## Large Finish Boring Heads

Spare Part	Finish Head Reference Number		
	A 300W	A 400W	A 500W
1	A300.52N	A400.52N	A500.52N
2	D 300.69	D 300.69	D 300.69
3	A 300.002	A400.002	A500.002
4	A300.68	A300.68	A300.68
5	D300.03	D400.03	D500.03
6	D68.23	D68.23	D68.23
7	D300.54D	D300.54D	D300.54D
8	D300.68	D300.68	D300.68
9	D300.50DW	D400.50DW	D500.50DW
10	A68.16	A68.16	A68.16
11	A68.25	A68.25	A68.25
12	A68.15	A68.15	A68.15
13	D300.60	D300.60	D300.60

Spare Part	Finish Head Reference Number		
	A 300W	A 400W	A 500W
14	D300.56	D300.56	D300.56
15	D300.59	D300.59	D300.59
16	D300.001	D400.001	D500.001
17	D300.62	D300.62	D300.62
18	D300.49	D300.49	D300.49
19	D300.58	D300.58	D300.58
20	D300.57	D300.57	D300.57
21	D300.61	D300.61	D300.61
22	3CT_-----	3CT_-----	3CT_-----
23	D68.28	D68.28	D68.28
24	D85.27	D85.27	D85.27
25	TT_-----	TT_-----	TT_-----
26	D85.29	D85.29	D85.29

# Pinzbohr Modular Boring Tools

## Pinzbohr Modular System



Pinzbohr is a flexible boring system for holes ranging from 0.315" up to 19.685". The system includes all necessary extensions and reducers, rough heads, finish heads and even includes face mill arbors and end mill holder options.

## Coupling System

Our exclusive, modular coupling system features two, tapered locking screws that provide maximum rigidity between the boring head and the toolholder. All connections are easily made using the tools provided.



*Boring Heads*

*Carbide & HSS Boring Bars*



*Toolholders*



*Extensions & Reducers*



*modular toolholders*

All Nexus products are backed by our 100% satisfaction guarantee.

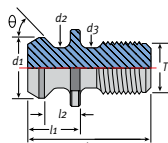
# CAT40, CAT50 Precision Retention Knobs



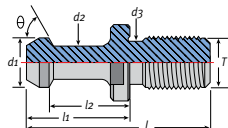
### Techniks Retention Knobs

- All mating surfaces precision ground
- Manufactured to the highest standards for maximum safety and long life
- Hardened for maximum longevity

Please make sure that the Retention Knob you order is the correct one for your machine. Using the wrong Retention Knob can cause damage to your machine spindle, the toolholder, and may create a safety hazard.



ANSI Style



MAS Style

### CAT Retention Knobs

Part No.	Type	$\theta$	d1	d2	d3	L	I1	I2	T
21006-15	CAT40-DIN	15°	.75"	0.55"	0.640"	1.88"	1.024"	.787"	5/8 - 11"
21007-15	CAT40-DIN	15°	.75"	0.55"	-	1.89"	1.028"	.792"	5/8 - 11"
21003	CAT40-ANSI	45°	0.740"	0.490"	0.490"	1.50"	0.640"	.440"	5/8 - 11"
21003-45	CAT40-MAS-I	45°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-60	CAT40-MAS-II	60°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-90	CAT40-MAS-III	90°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21005-45	CAT50-MAS-I	45°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-60	CAT50-MAS-II	60°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-90	CAT50-MAS-III	90°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21008-15	CAT50-DIN	15°	1.101"	0.825"	-	2.640"	1.338"	.984"	1 - 8"
21005	CAT50-ANSI	45°	1.140"	0.820"	0.820"	2.30"	1.00"	.700"	1 - 8"

### CAT Coolant Style Retention Knobs

Part No.	Type	$\theta$	d1	d2	d3	L	I1	I2	T
21006-15C	CAT40-DIN Coolant	15°	.75"	0.55"	0.640"	1.88"	1.024"	.787"	5/8 - 11"
21007-15C	CAT40-DIN Coolant	15°	.75"	0.55"	-	1.89"	1.028"	.792"	5/8 - 11"
21003-C	CAT40-ANSI-C	45°	0.740"	0.490"	0.490"	1.50"	0.640"	.440"	5/8 - 11"
21003-45C	CAT40-Coolant-I	45°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-60C	CAT40-Coolant-II	60°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-90C	CAT40-Coolant-III	90°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-45CSF	CAT40-Coolant-I SlimFIT	45°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-60CSF	CAT40-Coolant-II SlimFIT	60°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21003-90CSF	CAT40-Coolant-III SlimFIT	90°	0.590"	0.394"	0.512"	2.25"	1.266"	.990"	5/8 - 11"
21005-45C	CAT50-Coolant-I	45°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-60C	CAT50-Coolant-II	60°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21005-90C	CAT50-Coolant-III	90°	0.906"	0.669"	0.827"	3.346"	1.772"	1.378"	1 - 8"
21008-15C	CAT50-DIN Coolant	15°	1.101"	0.825"	-	2.640"	1.338"	.984"	1 - 8"
21005-C	CAT50-ANSI-C	45°	1.140"	0.820"	0.820"	2.30"	1.00"	.700"	1 - 8"

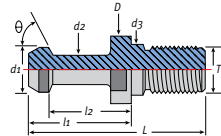
# BT Retention Knobs



## Techniks Retention Knobs

- All mating surfaces precision ground
- Manufactured to the highest standards for maximum safety and long life
- Hardened for maximum longevity

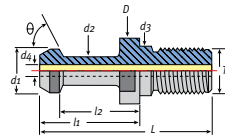
Please make sure that the Retention Knob you order is the correct one for your machine. Using the wrong Retention Knob can cause damage to your machine spindle, the toolholder, and may create a safety hazard.



## BT Retention Knobs

Dimensions in millimeters.

Part No.	Description	θ	D	d1	d2	d3	L	l1	l2	T
17801	BT30 - 45°	45°	16.5	11	7	12.5	43	23	18	M12
17803	BT40 - 45°	45°	23	15	10	17	60	35	28	M16
17834	BT40, ANSI, metric thread	45°	23	18.8	12.5	12.4	38	16	11	M16
17805	BT50 - 45°	45°	38	23	17	25	85	45	35	M24
17806	BT30 - 60°	60°	16.5	11	7	12.5	43	23	18	M12
17808	BT40 - 60°	60°	23	15	10	17	60	35	28	M16
17810	BT50 - 60°	60°	38	23	17	25	85	45	35	M24
17812	BT30 - 90°	60°	16.5	11	7	12.5	43	23	8	M12
17814	BT40 - 90°	60°	23	15	10	17	60	35	28	M16
17816	BT50 - 90°	60°	38	23	17	25	85	45	35	M24



## BT Coolant Style Retention Knobs

Dimensions in millimeters.

Part No.	Description	θ	D	d1	d2	d3	d4	L	l1	l2	T
17817	BT30 - 45° coolant	45°	16.5	11	7	12.5	4	43	23	18	M12
17836	BT40, ANSI, metric, coolant	45°	-	18.8	12.5	12.5	6.8	38	16	11	M16
17818	BT40 - 45° coolant	45°	23	15	10	17	4	60	35	28	M16
17820	BT40 - 60° coolant	60°	23	15	10	17	4	60	35	28	M16
17822	BT40 - 90° coolant	90°	23	15	10	17	4	60	35	28	M16
17824	BT50 - 45° coolant	45°	38	23	17	25	5	85	45	35	M24
17826	BT50 - 60° coolant	60°	38	23	17	25	5	85	45	35	M24
17828	BT50 - 90° coolant	90°	38	23	17	25	5	85	45	35	M24

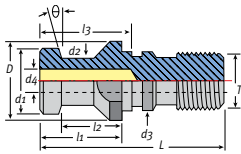
# DIN 69871 A & B Retention Knobs



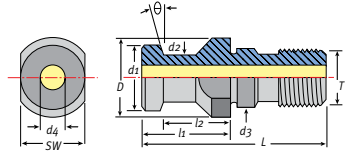
### Techniks Retention Knobs

- All mating surfaces precision ground
- Manufactured to the highest standards for maximum safety and long life
- Hardened for maximum longevity

Please make sure that the Retention Knob you order is the correct one for your machine. Using the wrong Retention Knob can cause damage to your machine spindle, the toolholder, and may create a safety hazard.



DIN 69871B



DIN 69871A

### DIN 69871 A and B Style Retention Knobs

Dimensions in millimeters.

Part No.	Description	$\theta$	D	d1	d2	d3	d4	L	l1	l2	l3	SW	T
49001	DAT30-A	15°	17	13	9	13	-	44	24	19	-	14	M12
49003	DAT40-A	15°	23	19	14	17	7	54	26	20	-	19	M16
49005	DAT50-A	15°	36	28	21	25	11.5	74	34	25	-	30	M24
49011	DAT30-B	15°	17	13	9	13	-	44	24	19	2.3	14	M12
49013	DAT40-B	15°	23	19	14	17	7	54	26	20	3.0	19	M16
49015	DAT50-B	15°	36	28	21	25	11.5	74	34	25	4.5	30	M24

# Master Hardware List

## Torx Screws

Part No.	Description
6811270	HM6.3-1.0-13.2
9311455	I60M2.5-5.5
9316547	I60M2.5-6.5
9317446	I60M3.5-8.0
9318446	I60M3.5-12
9319345	I60M4-10
9319446	I60M4-11
9318547	I60M4-8.4
9312345	M1.8-4.2-2.5-5.4
9313345	M2.5-0.2-7-60
9314345	M2.5-5.0-3.7-43
9315345	M2.5-6.0-3.5-60
9315446	M2.5-6.3-3.35-60
9316446	M2.5-6.45-3.7-60
9317345	M3.0-8.0-4.0-43
9318345	M3.5-12.0-5.3-60
9317547	M3.5-8.0-5.3-60
9311311	M4-10-5.0-43
9319345	M4.0-10.0-5.7-60
6811210	TM2.0-4.0
6811215	TM2.0-4.9
6811220	TM2.2-5.6
6811230	TM2.2-6.4
6811235	TM2.5-4.8
6811240	TM2.5-5.8
6811250	TM2.5-6.0
6811255	TM2.5-6.8
6811256	TM3.5-5.0
6811259	TM3.5-8.0
6811262	TM4.0-15.0
6811257	TM4.0-5.5
6811260	TM4.0-8.5
6811264	M3.5-9.3-4.8-60
6811266	TM5.0-13.1

## Hex Screws

Part No.	Description
9319547	SM5-8.65XA
9319648	SM6-10XA

## Torx Wrenches

Part No.	Description
9355111	T6Flag
9355222	T7Flag
9355333	T8Flag
9355321	T9Flag
9355444	T10Flag
9355555	T15Flag
9355666	T20Flag

## Hex Wrenches

Part No.	Description
9322111	WH20L
9322116	WH25L
9322121	WH30L
9322126	WH35L

## Shims

Part No.	Description
9333252	C12APB
9333111	C12BM
9333222	C12BS
9333225	D11BM
9333333	D11BS
9333353	D15AP
9333444	D15BM
9333555	T16BS
9333666	V16BM
9333777	V16BS
9333757	W08AP
9333888	W08BM
9333889	T16BM
9333890	T22BM

## Shim Pin

Part No.	Description
9333999	SP4

## Clamps

Part No.	Description
9344111	C1RD
9344222	C2RD
9344333	C3RD

## Clamp Screw

Part No.	Description
9344888	DM6-30

## Wedges

Part No.	Description
9344454	WD-204
9344444	WD-208

## Levers

Part No.	Description
9335111	L3D
9335222	L4
9335333	L4A

## Lock Pins

Part No.	Description
9344555	TM5-13
9344666	TM6-17
9344777	TM6-19

## Lock Screws

Part No.	Description
9345111	LEM5-12B
9345222	LEM6-13A
9345333	LEM8-21

## Boring Screws/Washers

Part No.	Description	Cartridge
6811280	D-68-29	Adjusting
6811290	D-85-29	Adjusting
6811310	D-68-26	Mounting
6811320	D-85-27	Mounting
6811410	D-68-28	Washer

## Coupling Screws

Part No.	Description
6811510	TC-22-68
6811520	TC-27-610
6811530	TC-32-810
6811540	TC-42-1014
6811550	TC-54-1220
6811560	TC-68-1624
6811570	TC-85-1630
6811580	TC-100-2035
6811590	TC-M12X40

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
16611 . . . . .	.38	22321 . . . . .	.49	1632234 . . . . .	.44	1771284 . . . . .	278
16614 . . . . .	.38	22711 . . . . .	.36	1632234 . . . . .	.44	1771294 . . . . .	278
16620 . . . . .	.38	22715 . . . . .	.36	1632345 . . . . .	.45	1781334 . . . . .	278
16626 . . . . .	.38	22717 . . . . .	.36	1633345 . . . . .	.45	1781354 . . . . .	278
16639 . . . . .	.38	22721 . . . . .	.37	1642235 . . . . .	.44	1781374 . . . . .	278
16642 . . . . .	.38	22725 . . . . .	.37	1642235 . . . . .	.44	1791394 . . . . .	278
16645 . . . . .	.38	22727 . . . . .	.37	1652236 . . . . .	.44	2139910 . . . . .	.32
16646 . . . . .	.38	49001 . . . . .	332	1652236 . . . . .	.44	2149920 . . . . .	.32
17801 . . . . .	331	49003 . . . . .	332	1652336 . . . . .	.44	2159930 . . . . .	.32
17803 . . . . .	331	49005 . . . . .	332	1652336 . . . . .	.44	2169940 . . . . .	.32
17805 . . . . .	331	49011 . . . . .	332	1654345 . . . . .	.45	2321234 . . . . .	.30
17806 . . . . .	331	49013 . . . . .	332	1655345 . . . . .	.45	2331235 . . . . .	.30
17808 . . . . .	331	49015 . . . . .	332	1658810 . . . . .	.46	2341236 . . . . .	.30
17810 . . . . .	331	66610 . . . . .	.38	1662237 . . . . .	.44	2351237 . . . . .	.30
17812 . . . . .	331	72711 . . . . .	.36	1662237 . . . . .	.44	2421234 . . . . .	.31
17814 . . . . .	331	72715 . . . . .	.36	1662250 . . . . .	.44	2431235 . . . . .	.31
17816 . . . . .	331	72717 . . . . .	.36	1662250 . . . . .	.44	2441236 . . . . .	.31
17817 . . . . .	331	72721 . . . . .	.37	1665345 . . . . .	.45	2451237 . . . . .	.31
17818 . . . . .	331	72725 . . . . .	.37	1666345 . . . . .	.45	2502115 . . . . .	118
17820 . . . . .	331	72727 . . . . .	.37	1666350 . . . . .	.45	2502205 . . . . .	118
17822 . . . . .	331	93500 . . . . .	.39	1668820 . . . . .	.46	2503095 . . . . .	104
17824 . . . . .	331	93502 . . . . .	.39	1668822 . . . . .	.46	2503096 . . . . .	104
17826 . . . . .	331	93510 . . . . .	.39	1672238 . . . . .	.44	2506169 . . . . .	115
17828 . . . . .	331	93530 . . . . .	.39	1672238 . . . . .	.44	2506509 . . . . .	146
17834 . . . . .	331	95901 . . . . .	.39	1678830 . . . . .	.46	2521234 . . . . .	.31
17836 . . . . .	331	95905 . . . . .	.39	1678840 . . . . .	.46	2531235 . . . . .	.31
21003 . . . . .	330	95907 . . . . .	.39	1682239 . . . . .	.44	2541236 . . . . .	.31
21005 . . . . .	330	1500300 . . . . .	.59	1682239 . . . . .	.44	2551237 . . . . .	.31
22253 . . . . .	.49	1506065 . . . . .	.55	1688850 . . . . .	.46	2621234 . . . . .	.30
22255 . . . . .	.49	1506075 . . . . .	.59	1741234 . . . . .	278	2621244 . . . . .	.30
22261 . . . . .	.49	1506077 . . . . .	.59	1751244 . . . . .	278	2631235 . . . . .	.30
22311 . . . . .	.49	1506501 . . . . .	143	1751254 . . . . .	278	2641236 . . . . .	.30
22313 . . . . .	.49	1506505 . . . . .	143	1761264 . . . . .	278	2651237 . . . . .	.30



Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
2825635 . . . . .	.33	3262781 . . . . .	.259	3441131 . . . . .	.283	3567735 . . . . .	.228
2825650 . . . . .	.33	3262782 . . . . .	.259	3441135 . . . . .	.283	3567737 . . . . .	.230
2835640 . . . . .	.33	3262783 . . . . .	.259	3451112 . . . . .	.140	3567739 . . . . .	.230
2835645 . . . . .	.33	3262784 . . . . .	.259	3461949 . . . . .	.246	3567741 . . . . .	.132
2928860 . . . . .	.35	3262913 . . . . .	.279	3461950 . . . . .	.246	3567745 . . . . .	.132
2928865 . . . . .	.35	3262914 . . . . .	.279	3463014 . . . . .	.246	3567751 . . . . .	.135
2938870 . . . . .	.35	3262915 . . . . .	.279	3463311 . . . . .	.246	3567755 . . . . .	.135
3151134 . . . . .	.69	3263011 . . . . .	.210	3463315 . . . . .	.246	3567758 . . . . .	.233
3151232 . . . . .	.142	3263311 . . . . .	.210	3533010 . . . . .	.213	3567759 . . . . .	.233
3151236 . . . . .	.142	3263322 . . . . .	.210	3533020 . . . . .	.213	3567761 . . . . .	.138
3151239 . . . . .	.142	3263326 . . . . .	.210	3533030 . . . . .	.213	3568831 . . . . .	.213
3153311 . . . . .	.57	3263333 . . . . .	.130	3533033 . . . . .	.213	3568841 . . . . .	.213
3153317 . . . . .	.69	3263336 . . . . .	.121	3533090 . . . . .	.213	3568851 . . . . .	.213
3153321 . . . . .	.69	3263336 . . . . .	.125	3561734 . . . . .	.220	3568861 . . . . .	.213
3153325 . . . . .	.69	3263341 . . . . .	.121	3561774 . . . . .	.213	3571934 . . . . .	.220
3154411 . . . . .	.59	3263341 . . . . .	.125	3561877 . . . . .	.230	3571935 . . . . .	.220
3154422 . . . . .	.59	3263347 . . . . .	.128	3561878 . . . . .	.230	3571936 . . . . .	.220
3154433 . . . . .	.59	3266029 . . . . .	.121	3561929 . . . . .	.213	3573012 . . . . .	.220
3154444 . . . . .	.59	3351552 . . . . .	.99	3561938 . . . . .	.230	3573013 . . . . .	.220
3154455 . . . . .	.59	3351881 . . . . .	.87	3561939 . . . . .	.230	3573036 . . . . .	.220
3161989 . . . . .	.73	3351882 . . . . .	.87	3562794 . . . . .	.230	3577715 . . . . .	.220
3164420 . . . . .	.199	3355528 . . . . .	.87	3562795 . . . . .	.230	3578011 . . . . .	.220
3251239 . . . . .	.145	3355531 . . . . .	.87	3563311 . . . . .	.213	3578016 . . . . .	.220
3253310 . . . . .	.107	3355533 . . . . .	.87	3563336 . . . . .	.271	3578021 . . . . .	.220
3253320 . . . . .	.107	3355536 . . . . .	.87	3563337 . . . . .	.271	3578026 . . . . .	.228
3254411 . . . . .	.102	3355541 . . . . .	.87	3563388 . . . . .	.213	3578031 . . . . .	.220
3254415 . . . . .	.108	3355543 . . . . .	.87	3563399 . . . . .	.213	3578036 . . . . .	.220
3254417 . . . . .	.108	3355546 . . . . .	.96	3564431 . . . . .	.213	3631083 . . . . .	.160
3254421 . . . . .	.108	3355548 . . . . .	.96	3564435 . . . . .	.213	3663311 . . . . .	.160
3254431 . . . . .	.112	3355549 . . . . .	.99	3564438 . . . . .	.213	3663336 . . . . .	.265
3254433 . . . . .	.112	3441111 . . . . .	.283	3564441 . . . . .	.213	3663337 . . . . .	.265
3254435 . . . . .	.115	3441121 . . . . .	.283	3567711 . . . . .	.272	3663338 . . . . .	.265
3261921 . . . . .	.210	3441125 . . . . .	.283	3567721 . . . . .	.220	3663339 . . . . .	.265

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
3663344 . . . . .	160	3954411 . . . . .	.75	6033322 . . . . .	322	6133287 . . . . .	312
3663399 . . . . .	160	3954415 . . . . .	.78	6033333 . . . . .	322	6133290 . . . . .	311
3664411 . . . . .	160	3954421 . . . . .	.80	6033344 . . . . .	322	6133292 . . . . .	312
3664413 . . . . .	160	3954431 . . . . .	.82	6033355 . . . . .	322	6133295 . . . . .	311
3664416 . . . . .	160	3954435 . . . . .	.82	6033366 . . . . .	322	6133297 . . . . .	312
3664419 . . . . .	160	3954441 . . . . .	.82	6033377 . . . . .	322	6133300 . . . . .	323
3664421 . . . . .	160	3959999 . . . . .	.86	6033388 . . . . .	322	6133305 . . . . .	323
3664422 . . . . .	160	4600076 . . . . .	246	6033399 . . . . .	322	6133310 . . . . .	323
3664425 . . . . .	160	4601437 . . . . .	246	6123300 . . . . .	323	6133315 . . . . .	323
3664427 . . . . .	160	4601954 . . . . .	255	6123305 . . . . .	323	6134300 . . . . .	311
3664429 . . . . .	160	4601955 . . . . .	255	6123310 . . . . .	323	6134302 . . . . .	312
3665525 . . . . .	178	4601967 . . . . .	246	6123315 . . . . .	323	6134305 . . . . .	311
3668011 . . . . .	160	4607257 . . . . .	246	6123320 . . . . .	323	6134307 . . . . .	312
3668021 . . . . .	160	4607261 . . . . .	246	6130100 . . . . .	315	6134310 . . . . .	294
3668026 . . . . .	160	4607265 . . . . .	246	6130150 . . . . .	315	6134310 . . . . .	311
3732040 . . . . .	181	4607277 . . . . .	255	6130200 . . . . .	315	6134312 . . . . .	312
3763336 . . . . .	268	4608011 . . . . .	246	6130250 . . . . .	315	6134315 . . . . .	294
3763337 . . . . .	268	4608016 . . . . .	246	6130300 . . . . .	315	6134315 . . . . .	311
3764421 . . . . .	181	4608021 . . . . .	246	6133250 . . . . .	311	6134317 . . . . .	312
3764424 . . . . .	181	4608023 . . . . .	246	6133252 . . . . .	312	6134320 . . . . .	294
3764427 . . . . .	181	4608026 . . . . .	246	6133255 . . . . .	311	6134320 . . . . .	311
3768811 . . . . .	181	4608029 . . . . .	255	6133257 . . . . .	312	6134322 . . . . .	312
3768821 . . . . .	181	4608030 . . . . .	255	6133260 . . . . .	311	6134325 . . . . .	311
3768826 . . . . .	181	4608031 . . . . .	255	6133262 . . . . .	312	6134327 . . . . .	312
3861942 . . . . .	236	6011000 . . . . .	301	6133265 . . . . .	311	6134330 . . . . .	311
3861943 . . . . .	236	6011050 . . . . .	301	6133267 . . . . .	312	6134332 . . . . .	312
3861944 . . . . .	236	6011100 . . . . .	301	6133270 . . . . .	311	6134335 . . . . .	311
3862215 . . . . .	236	6011150 . . . . .	301	6133272 . . . . .	312	6134340 . . . . .	311
3862221 . . . . .	236	6011200 . . . . .	301	6133275 . . . . .	311	6140100 . . . . .	315
3862225 . . . . .	236	6011250 . . . . .	301	6133277 . . . . .	312	6140125 . . . . .	315
3934020 . . . . .	197	6011300 . . . . .	301	6133280 . . . . .	311	6140150 . . . . .	315
3934030 . . . . .	198	6022510 . . . . .	319	6133282 . . . . .	312	6140175 . . . . .	315
3954406 . . . . .	.75	6033311 . . . . .	322	6133285 . . . . .	311	6140200 . . . . .	315

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
6140225 . . . . .	315	6141290 . . . . .	313	6150125 . . . . .	316	6155108 . . . . .	317
6140250 . . . . .	315	6141292 . . . . .	314	6150150 . . . . .	316	6155501 . . . . .	317
6140275 . . . . .	315	6141295 . . . . .	313	6150175 . . . . .	316	6155502 . . . . .	317
6140300 . . . . .	315	6141297 . . . . .	314	6150200 . . . . .	316	6155503 . . . . .	317
6140325 . . . . .	315	6141300 . . . . .	313	6150225 . . . . .	316	6155504 . . . . .	317
6140350 . . . . .	315	6141302 . . . . .	314	6150250 . . . . .	316	6155631 . . . . .	317
6140375 . . . . .	315	6141305 . . . . .	294	6150275 . . . . .	316	6155632 . . . . .	317
6140400 . . . . .	294	6141305 . . . . .	313	6150300 . . . . .	316	6155633 . . . . .	317
6140400 . . . . .	315	6141307 . . . . .	314	6150325 . . . . .	316	6155634 . . . . .	317
6140425 . . . . .	294	6141310 . . . . .	294	6150350 . . . . .	316	6155635 . . . . .	294
6140425 . . . . .	315	6141310 . . . . .	313	6150375 . . . . .	294	6155635 . . . . .	317
6140450 . . . . .	294	6141312 . . . . .	314	6150375 . . . . .	316	6155636 . . . . .	317
6140450 . . . . .	315	6141315 . . . . .	294	6150400 . . . . .	294	6165101 . . . . .	318
6140475 . . . . .	315	6141315 . . . . .	313	6150400 . . . . .	316	6165102 . . . . .	318
6140500 . . . . .	315	6141317 . . . . .	314	6150425 . . . . .	294	6165103 . . . . .	294
6140525 . . . . .	315	6141320 . . . . .	313	6150425 . . . . .	316	6165103 . . . . .	318
6140550 . . . . .	315	6141322 . . . . .	314	6150450 . . . . .	316	6165121 . . . . .	318
6141250 . . . . .	313	6141325 . . . . .	313	6150475 . . . . .	316	6165122 . . . . .	318
6141252 . . . . .	314	6141327 . . . . .	314	6150500 . . . . .	316	6165123 . . . . .	294
6141255 . . . . .	313	6141330 . . . . .	313	6150525 . . . . .	316	6165123 . . . . .	318
6141257 . . . . .	314	6141332 . . . . .	314	6150550 . . . . .	316	6165141 . . . . .	318
6141260 . . . . .	313	6141335 . . . . .	313	6150575 . . . . .	316	6165142 . . . . .	318
6141262 . . . . .	314	6141337 . . . . .	314	6150600 . . . . .	316	6165143 . . . . .	318
6141265 . . . . .	313	6141340 . . . . .	313	6150625 . . . . .	316	6165144 . . . . .	294
6141267 . . . . .	314	6141342 . . . . .	314	6150650 . . . . .	316	6165144 . . . . .	318
6141270 . . . . .	313	6141345 . . . . .	313	6155101 . . . . .	317	6165341 . . . . .	318
6141272 . . . . .	314	6141347 . . . . .	314	6155102 . . . . .	317	6165342 . . . . .	318
6141275 . . . . .	313	6141350 . . . . .	313	6155103 . . . . .	317	6165343 . . . . .	294
6141277 . . . . .	314	6141352 . . . . .	314	6155104 . . . . .	317	6165343 . . . . .	318
6141280 . . . . .	313	6141355 . . . . .	313	6155105 . . . . .	294	6165801 . . . . .	318
6141282 . . . . .	314	6141360 . . . . .	313	6155105 . . . . .	317	6165802 . . . . .	318
6141285 . . . . .	313	6141362 . . . . .	314	6155106 . . . . .	317	6165803 . . . . .	318
6141287 . . . . .	314	6150100 . . . . .	316	6155107 . . . . .	317	6165804 . . . . .	318

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
6165805 . . . . .	294	6275240 . . . . .	303	6390120 . . . . .	304	6390290 . . . . .	308
6165805 . . . . .	318	6275245 . . . . .	303	6390125 . . . . .	304	6390295 . . . . .	308
6166123 . . . . .	316	6275250 . . . . .	303	6390130 . . . . .	304	6390300 . . . . .	308
6166123 . . . . .	319	6275255 . . . . .	306	6390135 . . . . .	304	6390305 . . . . .	308
6166124 . . . . .	313	6275260 . . . . .	306	6390140 . . . . .	304	6390310 . . . . .	308
6166124 . . . . .	319	6275265 . . . . .	306	6390145 . . . . .	304	6390315 . . . . .	308
6275100 . . . . .	302	6275270 . . . . .	306	6390150 . . . . .	304	6390320 . . . . .	308
6275105 . . . . .	302	6275275 . . . . .	306	6390155 . . . . .	304	6390325 . . . . .	308
6275115 . . . . .	302	6275280 . . . . .	306	6390160 . . . . .	304	6390330 . . . . .	308
6275120 . . . . .	302	6275285 . . . . .	306	6390165 . . . . .	304	6390335 . . . . .	308
6275125 . . . . .	302	6275290 . . . . .	306	6390170 . . . . .	304	6390340 . . . . .	308
6275130 . . . . .	302	6275295 . . . . .	306	6390175 . . . . .	304	6390345 . . . . .	308
6275135 . . . . .	302	6275300 . . . . .	306	6390180 . . . . .	304	6390350 . . . . .	308
6275140 . . . . .	302	6275305 . . . . .	306	6390185 . . . . .	304	6390355 . . . . .	308
6275145 . . . . .	302	6275310 . . . . .	306	6390190 . . . . .	304	6390360 . . . . .	308
6275150 . . . . .	302	6275315 . . . . .	306	6390200 . . . . .	304	6390365 . . . . .	309
6275155 . . . . .	302	6275320 . . . . .	306	6390205 . . . . .	304	6390370 . . . . .	309
6275160 . . . . .	302	6275325 . . . . .	306	6390210 . . . . .	305	6390375 . . . . .	309
6275165 . . . . .	302	6275330 . . . . .	306	6390215 . . . . .	305	6390380 . . . . .	309
6275170 . . . . .	302	6275335 . . . . .	306	6390220 . . . . .	305	6390385 . . . . .	309
6275175 . . . . .	302	6275340 . . . . .	307	6390225 . . . . .	305	6390390 . . . . .	309
6275180 . . . . .	302	6275345 . . . . .	307	6390230 . . . . .	305	6390395 . . . . .	309
6275185 . . . . .	302	6275350 . . . . .	307	6390235 . . . . .	305	6390400 . . . . .	309
6275190 . . . . .	302	6275355 . . . . .	307	6390240 . . . . .	305	6390405 . . . . .	309
6275195 . . . . .	302	6275360 . . . . .	307	6390245 . . . . .	305	6442210 . . . . .	322
6275200 . . . . .	302	6275365 . . . . .	307	6390250 . . . . .	305	6442236 . . . . .	322
6275205 . . . . .	302	6275370 . . . . .	307	6390255 . . . . .	308	6442240 . . . . .	322
6275210 . . . . .	303	6275375 . . . . .	307	6390260 . . . . .	308	6442258 . . . . .	322
6275215 . . . . .	303	6275380 . . . . .	307	6390265 . . . . .	308	6442286 . . . . .	322
6275220 . . . . .	303	6390100 . . . . .	304	6390270 . . . . .	308	6442734 . . . . .	322
6275225 . . . . .	303	6390105 . . . . .	304	6390275 . . . . .	308	6442750 . . . . .	322
6275230 . . . . .	303	6390110 . . . . .	304	6390280 . . . . .	308	6442780 . . . . .	322
6275235 . . . . .	303	6390115 . . . . .	304	6390285 . . . . .	308	6442795 . . . . .	322

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
6443246 . . . . .	322	6568570 . . . . .	321	6690140 . . . . .	310	6733255 . . . . .	300
6443276 . . . . .	322	6601436 . . . . .	168	6690145 . . . . .	310	6733257 . . . . .	300
6443290 . . . . .	322	6601437 . . . . .	168	6690150 . . . . .	310	6733265 . . . . .	300
6444270 . . . . .	322	6601446 . . . . .	168	6690155 . . . . .	310	6733267 . . . . .	300
6444282 . . . . .	322	6602011 . . . . .	175	6690160 . . . . .	310	6811210 . . . . .	333
6444295 . . . . .	322	6602013 . . . . .	175	6690165 . . . . .	310	6811215 . . . . .	333
6445472 . . . . .	322	6602022 . . . . .	175	6690170 . . . . .	310	6811220 . . . . .	333
6445490 . . . . .	322	6602023 . . . . .	175	6690175 . . . . .	310	6811230 . . . . .	333
6446810 . . . . .	322	6602117 . . . . .	47	6690180 . . . . .	310	6811235 . . . . .	333
6448510 . . . . .	322	6602118 . . . . .	47	6702119 . . . . .	47	6811240 . . . . .	333
6551012 . . . . .	321	6607029 . . . . .	168	6702120 . . . . .	47	6811250 . . . . .	333
6551080 . . . . .	321	6607033 . . . . .	168	6711225 . . . . .	299	6811255 . . . . .	333
6552220 . . . . .	321	6607037 . . . . .	168	6711235 . . . . .	299	6811256 . . . . .	333
6552230 . . . . .	321	6607045 . . . . .	178	6711245 . . . . .	299	6811257 . . . . .	333
6552730 . . . . .	321	6607901 . . . . .	266	6711255 . . . . .	299	6811259 . . . . .	333
6552745 . . . . .	321	6607905 . . . . .	266	6711265 . . . . .	299	6811260 . . . . .	333
6553235 . . . . .	321	6608011 . . . . .	168	6711275 . . . . .	299	6811262 . . . . .	333
6553252 . . . . .	321	6608016 . . . . .	168	6712119 . . . . .	48	6811264 . . . . .	333
6554240 . . . . .	321	6608021 . . . . .	168	6712120 . . . . .	48	6811266 . . . . .	333
6554260 . . . . .	321	6608026 . . . . .	168	6722225 . . . . .	299	6811270 . . . . .	333
6555450 . . . . .	321	6608031 . . . . .	178	6722235 . . . . .	299	6811280 . . . . .	333
6555475 . . . . .	321	6608036 . . . . .	178	6722245 . . . . .	299	6811290 . . . . .	333
6556860 . . . . .	321	6612117 . . . . .	48	6722255 . . . . .	299	6811310 . . . . .	333
6556890 . . . . .	321	6612118 . . . . .	48	6722265 . . . . .	299	6811320 . . . . .	333
6558510 . . . . .	321	6675125 . . . . .	310	6722275 . . . . .	299	6811410 . . . . .	333
6558570 . . . . .	321	6675130 . . . . .	310	6733225 . . . . .	300	6811510 . . . . .	333
6561080 . . . . .	321	6675135 . . . . .	310	6733227 . . . . .	300	6811520 . . . . .	333
6562230 . . . . .	321	6675140 . . . . .	310	6733230 . . . . .	300	6811530 . . . . .	333
6562730 . . . . .	321	6675145 . . . . .	310	6733232 . . . . .	300	6811540 . . . . .	333
6563235 . . . . .	321	6675150 . . . . .	310	6733235 . . . . .	300	6811550 . . . . .	333
6564240 . . . . .	321	6690125 . . . . .	310	6733237 . . . . .	300	6811560 . . . . .	333
6565450 . . . . .	321	6690130 . . . . .	310	6733245 . . . . .	300	6811570 . . . . .	333
6566860 . . . . .	321	6690135 . . . . .	310	6733247 . . . . .	300	6811580 . . . . .	333

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
6811590 . . . . .	333	6942234 . . . . .	292	6943336 . . . . .	290	6972215 . . . . .	291
6921234 . . . . .	292	6942235 . . . . .	291	6943336 . . . . .	290	6972215 . . . . .	292
6921234 . . . . .	292	6942235 . . . . .	291	6943336 . . . . .	293	6972215 . . . . .	293
6921235 . . . . .	292	6942235 . . . . .	292	6943336 . . . . .	293	6972236 . . . . .	290
6921235 . . . . .	293	6942235 . . . . .	292	6943337 . . . . .	290	6972236 . . . . .	291
6921236 . . . . .	292	6942236 . . . . .	291	6943337 . . . . .	290	6972236 . . . . .	293
6921236 . . . . .	293	6942236 . . . . .	291	6943337 . . . . .	293	6972237 . . . . .	290
6921237 . . . . .	292	6942236 . . . . .	292	6943337 . . . . .	293	6972237 . . . . .	291
6921237 . . . . .	293	6942236 . . . . .	292	6943338 . . . . .	290	6972237 . . . . .	292
6921238 . . . . .	293	6942237 . . . . .	291	6943338 . . . . .	290	6972237 . . . . .	293
6921239 . . . . .	290	6942237 . . . . .	291	6943338 . . . . .	293	6972238 . . . . .	292
6921239 . . . . .	291	6942237 . . . . .	292	6943338 . . . . .	293	6991220 . . . . .	291
6921239 . . . . .	292	6942237 . . . . .	292	6951234 . . . . .	290	6991230 . . . . .	292
6921239 . . . . .	293	6942238 . . . . .	291	6951234 . . . . .	291	6991235 . . . . .	290
6921240 . . . . .	292	6942238 . . . . .	291	6951234 . . . . .	292	6991240 . . . . .	293
6921240 . . . . .	293	6942238 . . . . .	292	6951234 . . . . .	293	7189027 . . . . .	.50
6921241 . . . . .	290	6942238 . . . . .	292	6962233 . . . . .	290	7189036 . . . . .	.50
6921241 . . . . .	291	6942239 . . . . .	291	6962233 . . . . .	291	7189042 . . . . .	.50
6921241 . . . . .	292	6942239 . . . . .	291	6962234 . . . . .	292	7189060 . . . . .	.50
6921241 . . . . .	293	6942239 . . . . .	292	6962234 . . . . .	293	7189064 . . . . .	.50
6921242 . . . . .	292	6942239 . . . . .	292	6962235 . . . . .	290	7189068 . . . . .	.50
6921242 . . . . .	293	6943333 . . . . .	290	6962235 . . . . .	291	7601910 . . . . .	185
6921243 . . . . .	292	6943333 . . . . .	290	6962235 . . . . .	292	7601911 . . . . .	185
6921243 . . . . .	293	6943333 . . . . .	293	6962235 . . . . .	293	7601912 . . . . .	185
6922243 . . . . .	290	6943333 . . . . .	293	6962236 . . . . .	290	7602157 . . . . .	195
6922243 . . . . .	290	6943334 . . . . .	290	6962236 . . . . .	291	7602793 . . . . .	195
6922243 . . . . .	291	6943334 . . . . .	290	6962236 . . . . .	292	7607061 . . . . .	185
6922243 . . . . .	291	6943334 . . . . .	293	6962236 . . . . .	293	7607065 . . . . .	185
6922243 . . . . .	293	6943334 . . . . .	293	6962238 . . . . .	290	7607069 . . . . .	185
6922243 . . . . .	293	6943335 . . . . .	290	6962238 . . . . .	291	7607073 . . . . .	185
6942234 . . . . .	291	6943335 . . . . .	290	6962238 . . . . .	292	7607077 . . . . .	185
6942234 . . . . .	291	6943335 . . . . .	293	6962238 . . . . .	293	7607909 . . . . .	269
6942234 . . . . .	292	6943335 . . . . .	293	6972215 . . . . .	290	7607913 . . . . .	269

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
7608011 . . . . .	185	8177766 . . . . .	155	8661458 . . . . .	207	9315345 . . . . .	333
7608016 . . . . .	185	8177777 . . . . .	155	8661459 . . . . .	207	9315446 . . . . .	333
7608021 . . . . .	185	8177788 . . . . .	155	8661918 . . . . .	207	9316446 . . . . .	333
7608026 . . . . .	185	8178831 . . . . .	152	8661919 . . . . .	207	9316547 . . . . .	333
7608029 . . . . .	185	8178832 . . . . .	152	8665511 . . . . .	154	9317345 . . . . .	333
7608031 . . . . .	185	8178833 . . . . .	152	8665522 . . . . .	154	9317446 . . . . .	333
7608036 . . . . .	185	8178841 . . . . .	152	8665533 . . . . .	154	9317547 . . . . .	333
7608041 . . . . .	185	8178842 . . . . .	152	8665544 . . . . .	154	9318345 . . . . .	333
7608046 . . . . .	185	8178843 . . . . .	152	8669911 . . . . .	149	9318446 . . . . .	333
8148871 . . . . .	153	8188851 . . . . .	153	8669912 . . . . .	149	9318547 . . . . .	333
8148872 . . . . .	153	8188852 . . . . .	153	8675555 . . . . .	154	9319345 . . . . .	333
8157711 . . . . .	156	8188861 . . . . .	153	8675566 . . . . .	154	9319345 . . . . .	333
8157722 . . . . .	156	8188862 . . . . .	153	8675577 . . . . .	154	9319446 . . . . .	333
8157733 . . . . .	156	8188873 . . . . .	153	8675588 . . . . .	154	9319547 . . . . .	333
8167711 . . . . .	155	8188881 . . . . .	153	8679921 . . . . .	149	9319648 . . . . .	333
8167722 . . . . .	155	8188882 . . . . .	153	8679922 . . . . .	149	9322111 . . . . .	333
8167733 . . . . .	155	8188883 . . . . .	153	8679923 . . . . .	149	9322116 . . . . .	333
8167744 . . . . .	155	8607241 . . . . .	243	8679924 . . . . .	149	9322121 . . . . .	333
8167755 . . . . .	155	8607245 . . . . .	243	8689931 . . . . .	150	9322126 . . . . .	333
8167766 . . . . .	155	8607921 . . . . .	274	8689932 . . . . .	150	9333111 . . . . .	333
8167777 . . . . .	155	8607925 . . . . .	274	8699911 . . . . .	151	9333222 . . . . .	333
8167788 . . . . .	155	8608011 . . . . .	243	8699915 . . . . .	151	9333225 . . . . .	333
8168811 . . . . .	152	8608016 . . . . .	243	8699921 . . . . .	151	9333252 . . . . .	333
8168812 . . . . .	152	8608828 . . . . .	240	8699925 . . . . .	151	9333333 . . . . .	333
8168813 . . . . .	152	8608831 . . . . .	240	9202123 . . . . .	34	9333353 . . . . .	333
8168821 . . . . .	152	8608833 . . . . .	240	9212124 . . . . .	34	9333444 . . . . .	333
8168822 . . . . .	152	8608836 . . . . .	240	9223123 . . . . .	34	9333555 . . . . .	333
8168823 . . . . .	152	8649941 . . . . .	150	9233124 . . . . .	34	9333666 . . . . .	333
8177711 . . . . .	155	8649942 . . . . .	150	9311311 . . . . .	333	9333757 . . . . .	333
8177722 . . . . .	155	8655512 . . . . .	154	9311455 . . . . .	333	9333777 . . . . .	333
8177733 . . . . .	155	8655523 . . . . .	154	9312345 . . . . .	333	9333888 . . . . .	333
8177744 . . . . .	155	8655534 . . . . .	154	9313345 . . . . .	333	9333889 . . . . .	333
8177755 . . . . .	155	8655545 . . . . .	154	9314345 . . . . .	333	9333890 . . . . .	333

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
9333999 . . . . .	333	9851125 . . . . .	40	22711-6 . . . . .	.36	WF0.5 . . . . .	.40
9335111 . . . . .	333	9851135 . . . . .	40	22715-4 . . . . .	.36	WF0.75 . . . . .	.40
9335222 . . . . .	333	16646105 . . . . .	.38	22715-6 . . . . .	.36	WF1 . . . . .	.40
9335333 . . . . .	333	16646150 . . . . .	.38	22717-4 . . . . .	.36	WF1.25 . . . . .	.40
9344111 . . . . .	333	16615-3/4 . . . . .	.38	22721-10 . . . . .	.37	WF1.5 . . . . .	.40
9344222 . . . . .	333	16615-4 . . . . .	.38	22721-3.5 . . . . .	.37	WF2 . . . . .	.40
9344333 . . . . .	333	16615-6 . . . . .	.38	22721-5.5 . . . . .	.37	WF2.5 . . . . .	.40
9344444 . . . . .	333	16620-4 . . . . .	.38	22721-8 . . . . .	.37		
9344454 . . . . .	333	16639-3 . . . . .	.38	22725-3.5 . . . . .	.37		
9344555 . . . . .	333	21003-45 . . . . .	330	22725-6 . . . . .	.37		
9344666 . . . . .	333	21003-45C . . . . .	330	22725-8 . . . . .	.37		
9344777 . . . . .	333	21003-45CSF . . . . .	330	22727-4 . . . . .	.37		
9344888 . . . . .	333	21003-60 . . . . .	330	22727-6 . . . . .	.37		
9345111 . . . . .	333	21003-60C . . . . .	330	22727-8 . . . . .	.37		
9345222 . . . . .	333	21003-60CSF . . . . .	330	72711-4 . . . . .	.36		
9345333 . . . . .	333	21003-90 . . . . .	330	72711-6 . . . . .	.36		
9353123 . . . . .	.34	21003-90C . . . . .	330	72715-4 . . . . .	.36		
9355111 . . . . .	333	21003-90CSF . . . . .	330	72715-6 . . . . .	.36		
9355222 . . . . .	333	21003-C . . . . .	330	72717-4 . . . . .	.36		
9355321 . . . . .	333	21005-45 . . . . .	330	72721-3.5 . . . . .	.37		
9355333 . . . . .	333	21005-45C . . . . .	330	72721-5.5 . . . . .	.37		
9355444 . . . . .	333	21005-60 . . . . .	330	72725-3.5 . . . . .	.37		
9355555 . . . . .	333	21005-60C . . . . .	330	72725-6 . . . . .	.37		
9355666 . . . . .	333	21005-90 . . . . .	330	72727-4 . . . . .	.37		
9363123 . . . . .	.34	21005-90C . . . . .	330	72727-6 . . . . .	.37		
9396762 . . . . .	.49	21005-C . . . . .	330	72727-8 . . . . .	.37		
9396763 . . . . .	.49	21006-15 . . . . .	330	WFC1-0.5 . . . . .	.40		
9396764 . . . . .	.49	21006-15C . . . . .	330	WFC1-0.75 . . . . .	.40		
9396766 . . . . .	.49	21007-15 . . . . .	330	WFC1-1 . . . . .	.40		
9397764 . . . . .	.49	21007-15C . . . . .	330	WFC1-1.25 . . . . .	.40		
9398765 . . . . .	.49	21008-15 . . . . .	330	WFC1-1.5 . . . . .	.40		
9474123 . . . . .	.34	21008-15C . . . . .	330	WFC1-2 . . . . .	.40		
9484123 . . . . .	.34	22711-4 . . . . .	.36	WFC1-2.5 . . . . .	.40		



Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
TCGX32.52-LH-101-HP 101	271	A-200-90-3CT-402N. . . . .	308	A-54-90-402N. . . . .	308	A20T-PCLNL-4. . . . .	152
2CT-75-300 . . . . .	310	A-22-75-400. . . . .	306	A-68-75-2CT-300 . . . . .	306	A20T-PCLNR-4. . . . .	152
2CT-75-402 . . . . .	310	A-22-90-400. . . . .	308	A-68-75-2CT-402 . . . . .	306	A20T-PDUNL-4. . . . .	152
2CT-75-402N . . . . .	310	A-27-006 . . . . .	301	A-68-75-2CT-402N . . . . .	306	A20T-PDUNR-4 . . . . .	152
2CT-90-300 . . . . .	310	A-27-008 . . . . .	301	A-68-90-2CT-300 . . . . .	308	A20T-PVUNL-3. . . . .	153
2CT-90-300S . . . . .	310	A-27-75-409. . . . .	306	A-68-90-2CT-402 . . . . .	308	A20T-PVUNR-3. . . . .	153
2CT-90-402 . . . . .	310	A-27-90-409. . . . .	308	A-68-90-2CT-402N . . . . .	308	A20T-PWLNL-4 . . . . .	153
2CT-90-402N . . . . .	310	A-300-75-3CT-300 . . . . .	307	A-85-75-3CT-300 . . . . .	306	A20T-PWLN-4 . . . . .	153
2CT-90-402NS . . . . .	310	A-300-75-3CT-402 . . . . .	307	A-85-75-3CT-402 . . . . .	306	A24U-PCLNL-4. . . . .	152
2CT-90-402S . . . . .	310	A-300-75-3CT-402N. . . . .	307	A-85-75-3CT-402N . . . . .	306	A24U-PCLNR-4 . . . . .	152
3CT-75-300 . . . . .	310	A-300-90-3CT-300 . . . . .	309	A-85-90-3CT-300 . . . . .	308	A24U-PDUNL-4 . . . . .	152
3CT-75-402 . . . . .	310	A-300-90-3CT-402 . . . . .	309	A-85-90-3CT-402 . . . . .	308	A24U-PDUNR-4 . . . . .	152
3CT-75-402N . . . . .	310	A-300-90-3CT-402N. . . . .	309	A-85-90-3CT-402N . . . . .	308	A24U-PWLN-4 . . . . .	153
3CT-90-300 . . . . .	310	A-32-008 . . . . .	301	A06H-SCLCL-2. . . . .	155	A24U-PWLN-4 . . . . .	153
3CT-90-300S . . . . .	310	A-32-010 . . . . .	301	A06H-SCLCR-2 . . . . .	155	A3 adjusting key . . . . .	292
3CT-90-402 . . . . .	310	A-32-75-409. . . . .	306	A06H-SDUCL-2 . . . . .	155	A3 adjusting key . . . . .	293
3CT-90-402N . . . . .	310	A-32-90-300. . . . .	308	A06H-SDUCR-2 . . . . .	155	ADKT 1505 PDTR LT30 . . .	55
3CT-90-402NS. . . . .	310	A-32-90-409. . . . .	308	A08K-SCLCL-2. . . . .	155	ADM-42-W1/2 . . . . .	323
3CT-90-402S . . . . .	310	A-400-75-3CT-300 . . . . .	307	A08K-SCLCR-2. . . . .	155	ADM-42-W1/4 . . . . .	323
4WD.625-.750C-2.50-3 . . .	278	A-400-75-3CT-402 . . . . .	307	A08K-SDUCL-2 . . . . .	155	ADM-42-W3/4 . . . . .	323
4WD.750-.750C-3.00-3 . . .	278	A-400-75-3CT-402N. . . . .	307	A08K-SDUCR-2 . . . . .	155	ADM-42-W3/8 . . . . .	323
4WD.875-1.00C-3.50-4 . . .	278	A-400-90-3CT-300 . . . . .	309	A08K-STFCR-2. . . . .	156	ADM-54-1.0 . . . . .	323
4WD1.00-1.00C-4.00-4 . . .	278	A-400-90-3CT-402 . . . . .	309	A10M-SCLCL-3 . . . . .	155	ADM-54-3/4 . . . . .	323
4WD1.25-1.25C-5.00-6 . . .	278	A-400-90-3CT-402N. . . . .	309	A10M-SCLCR-3 . . . . .	155	ADM-54-W3/4 . . . . .	323
4WD1.375-1.25C-5.50-6 . . .	278	A-42-010 . . . . .	301	A10M-SDUCL-2 . . . . .	155	ADM-68-1-1/4. . . . .	323
4WD1.50-1.25C-6.00-6 . . .	278	A-42-012 . . . . .	301	A10M-SDUCR-2 . . . . .	155	ADM-68-1.0 . . . . .	323
4WD1.75-1.50C-7.00-6 . . .	278	A-42-016 . . . . .	301	A10M-STFCR-2 . . . . .	156	ADT-100-50 Large head adapter . . . . .	319
4WD2.00-1.50C-8.00-8 . . .	278	A-42-75-300. . . . .	306	A12Q-SCLCL-3. . . . .	155	AOMT 123608 PETR LT30 . . .	57
4WD2.25-1.50C-9.00-8 . . .	278	A-42-90-300. . . . .	308	A12Q-SCLCR-3 . . . . .	155	APET 160402 LH 101 . . . . .	142
A-100-75-3CT-300 . . . . .	306	A-42-90-402. . . . .	308	A12Q-SDUCL-3 . . . . .	155	APEX 100304 5005 . . . . .	142
A-100-75-3CT-402 . . . . .	306	A-42-90-402N. . . . .	308	A12Q-SDUCR-3 . . . . .	155	APEX 1604 GH05 . . . . .	142
A-100-75-3CT-402N. . . . .	306	A-500-75-3CT-300 . . . . .	307	A12Q-STFCR-2. . . . .	156	APGT 1003 PDER ALU LT 05 . . . . .	143
A-100-90-3CT-300 . . . . .	308	A-500-75-3CT-402 . . . . .	307	A16T-PCLNL-4. . . . .	152	APGT 1604 PDER ALU LT 05 . . . . .	143
A-100-90-3CT-402 . . . . .	308	A-500-75-3CT-402N. . . . .	307	A16T-PCLNR-4. . . . .	152	APKT 100304 PDTR LT30 . . .	59
A-100-90-3CT-402N. . . . .	308	A-500-90-3CT-300 . . . . .	309	A16T-PDUNL-3 . . . . .	152	APKT 100304 PDTR LT30 . . .	59
A-200-75-3CT-300 . . . . .	306	A-500-90-3CT-402 . . . . .	309	A16T-PDUNR-3 . . . . .	152	APKT 100312 PDTR LT30 . . .	59
A-200-75-3CT-402 . . . . .	306	A-500-90-3CT-402N. . . . .	309	A16T-PVUNL-3. . . . .	153	APKT 100332 PDTR LT30 . . .	59
A-200-75-3CT-402N. . . . .	306	A-54-75-300. . . . .	306	A16T-PVUNR-3. . . . .	153	APKT 100340 PDTR LT30 . . .	59
A-200-90-3CT-300 . . . . .	308	A-54-90-300. . . . .	308	A16T-PWLN-4 . . . . .	153		
A-200-90-3CT-402 . . . . .	308	A-54-90-402. . . . .	308	A16T-PWLN-4 . . . . .	153		

Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
APKT 1604 PDTR-NEW LT30 . . .	59	BS-08-16-R03 . . . . .	291	BS-2CT-T04 cartridge . . . . .	290	BT-340-32-100 . . . . .	315
APKT 160424 ER LT30 . . . . .	59	BS-08-16-R03 . . . . .	292	BS-2CT-T04 cartridge . . . . .	290	BT-340-32-130 . . . . .	315
APKT 1705 PETR LT30 . . . . .	59	BS-08-16-R03 8mm bar . . . . .	291	BS-2CT-T04 cartridge . . . . .	293	BT-340-32-60 . . . . .	315
APMT 0903 PDTR LT 30 . . . . .	69	BS-08-16-R03 8mm bar . . . . .	292	BS-2CT-T04 cartridge . . . . .	293	BT-340-42-160 . . . . .	315
APMT 1135 PDTR LT 30 . . . . .	69	BS-08-16-T01 . . . . .	290	BS-2CW counterweight . . . . .	292	BT-340-42-200 . . . . .	315
APMT 1604 PDTR LT 30 . . . . .	69	BS-08-16-T01 . . . . .	293	BS-2CW counterweight . . . . .	293	BT-340-42-75 . . . . .	315
APMT 160408 PDTR LT 30 . . . . .	69	BS-08-16-T01 8mm bar . . . . .	290	BS-34-16-R04 . . . . .	291	BT-340-54-160 . . . . .	294
B-20-22-100-3/4-SS-WELDON . . . . .	318	BS-08-16-T01 8mm bar . . . . .	293	BS-34-16-R04 . . . . .	292	BT-340-54-160 . . . . .	315
B-20-22-50-3/4-SS-WELDON . . . . .	318	BS-10-16-R03 . . . . .	291	BS-34-16-R04 34mm bar . . . . .	291	BT-340-54-200 . . . . .	294
B-20-54-110-3/4 . . . . .	294	BS-10-16-R03 . . . . .	292	BS-34-16-R04 34mm bar . . . . .	292	BT-340-54-200 . . . . .	315
B-20-54-110-3/4-SS-WELDON . . . . .	318	BS-10-16-R03 10mm bar . . . . .	291	BS-34-16-T04 . . . . .	290	BT-340-54-90 . . . . .	294
B-25-27-100-1.0-SS-WELDON . . . . .	318	BS-10-16-R03 10mm bar . . . . .	292	BS-34-16-T04 . . . . .	293	BT-340-54-90 . . . . .	315
B-25-27-55-1.0-SS-WELDON . . . . .	318	BS-10-16-T02 . . . . .	290	BS-34-16-T04 34mm bar . . . . .	290	BT-340-68-160 . . . . .	315
B-25-54-110-1.0 . . . . .	294	BS-10-16-T02 . . . . .	293	BS-34-16-T04 34mm bar . . . . .	293	BT-340-68-200 . . . . .	315
B-25-54-110-1.0-SS-WELDON . . . . .	318	BS-10-16-T02 10mm bar . . . . .	290	BS-54-16-W head . . . . .	290	BT-340-85-200 . . . . .	315
B-32-32-100-1-1/4-SS-WELDON . . . . .	318	BS-10-16-T02 10mm bar . . . . .	293	BS-54-16-W Head . . . . .	291	BT-350-100-170 . . . . .	316
B-32-32-60-1-1/4-SS-WELDON . . . . .	318	BS-12-16-R03 . . . . .	291	BS-54-16-W head . . . . .	292	BT-350-100-260 . . . . .	316
B-32-42-90-1-1/4-SS-WELDON . . . . .	318	BS-12-16-R03 . . . . .	292	BS-54-16-W head . . . . .	293	BT-350-100-320 . . . . .	316
B-32-54-110-1-1/4 . . . . .	294	BS-12-16-R03 12mm bar . . . . .	291	BS-54-KIT-RC-8-100 . . . . .	291	BT-350-22-100 . . . . .	316
B-32-54-110-1-1/4-SS-WELDON . . . . .	318	BS-12-16-R03 12mm bar . . . . .	292	BS-54-KIT-RC-8-170 . . . . .	292	BT-350-22-80 . . . . .	316
B-40-42-160-1-1/2-SS-WELDON . . . . .	318	BS-12-16-T02 . . . . .	290	BS-54-KIT-TC-8-100 . . . . .	290	BT-350-27-100 . . . . .	316
B-40-42-90-1-1/2-SS-WELDON . . . . .	318	BS-12-16-T02 . . . . .	293	BS-54-KIT-TC-8-210 . . . . .	293	BT-350-27-130 . . . . .	316
B-40-54-110-1-1/2 . . . . .	294	BS-12-16-T02 12mm bar . . . . .	290	BS-SP-123-170 medium plate . . . . .	292	BT-350-27-55 . . . . .	316
B-40-54-110-1-1/2-SS-WELDON . . . . .	318	BS-12-16-T02 12mm bar . . . . .	293	BS-SP-123-170 medium plate . . . . .	293	BT-350-32-130 . . . . .	316
BS-06-16-R02 . . . . .	291	BS-16-16-R04 . . . . .	291	BS-SP-165-210 large plate . . . . .	293	BT-350-32-160 . . . . .	316
BS-06-16-R02 . . . . .	292	BS-16-16-R04 . . . . .	292	BS-SP-83-130 small plate . . . . .	292	BT-350-32-60 . . . . .	316
BS-06-16-R02 6mm bar . . . . .	291	BS-16-16-R04 16mm bar . . . . .	291	BS-SP-83-130 small plate . . . . .	293	BT-350-42-160 . . . . .	316
BS-06-16-R02 6mm bar . . . . .	292	BS-16-16-R04 16mm bar . . . . .	292	BT-330-22-100 . . . . .	315	BT-350-42-200 . . . . .	316
BS-06-16-T01 . . . . .	290	BS-16-16-T02 . . . . .	290	BT-330-27-100 . . . . .	315	BT-350-42-75 . . . . .	316
BS-06-16-T01 . . . . .	293	BS-16-16-T02 . . . . .	293	BT-330-27-55 . . . . .	315	BT-350-54-160 . . . . .	294
BS-06-16-T01 6mm bar . . . . .	290	BS-16-M10 location sleeve . . . . .	290	BT-330-32-100 . . . . .	315	BT-350-54-160 . . . . .	316
BS-06-16-T01 6mm bar . . . . .	293	BS-16-M10 Location sleeve . . . . .	291	BT-330-32-60 . . . . .	315	BT-350-54-200 . . . . .	294
BS-06-16-R02 . . . . .	291	BS-16-M10 location sleeve . . . . .	292	BT-340-100-200 . . . . .	315	BT-350-54-200 . . . . .	316
BS-06-16-R02 . . . . .	292	BS-16-M10 location sleeve . . . . .	293	BT-340-22-100 . . . . .	315	BT-350-54-90 . . . . .	294
BS-06-16-T01 . . . . .	290	BS-2CT-R04 Cartridge . . . . .	291	BT-340-22-50 . . . . .	315	BT-350-54-90 . . . . .	316
BS-06-16-T01 . . . . .	293	BS-2CT-R04 Cartridge . . . . .	291	BT-340-22-80 . . . . .	315	BT-350-68-115 . . . . .	316
BS-06-16-T01 6mm bar . . . . .	290	BS-2CT-R04 cartridge . . . . .	292	BT-340-27-100 . . . . .	315	BT-350-68-200 . . . . .	316
BS-06-16-T01 6mm bar . . . . .	293	BS-2CT-R04 cartridge . . . . .	292	BT-340-27-130 . . . . .	315	BT-350-68-260 . . . . .	316
				BT-340-27-55 . . . . .	315	BT-350-85-200 . . . . .	316
						BT-350-85-260 . . . . .	316

Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
BT-350-85-320 . . . . .	316	C10J-SCLCR-06 . . . . .	300	CAT40-DIN . . . . .	330	CAT50 x FMA 3/4" - 5.5" DualDRIVE . . . . .	37
BT-550-160 . . . . .	319	C12APB . . . . .	333	CAT40-DIN . . . . .	330	CAT50 x FMA 3/4" - 8" . . . . .	37
BT-550-160°. . . . .	316	C12BM. . . . .	333	CAT40-DIN Coolant . . . . .	330	CAT50-ANSI . . . . .	330
BT30 - 45° coolant. . . . .	331	C12BS . . . . .	333	CAT40-DIN Coolant . . . . .	330	CAT50-ANSI-C . . . . .	330
BT30 - 45°. . . . .	331	C12K-SCLCR-06 . . . . .	300	CAT40-ER-32-2.76. . . . .	49	CAT50-Coolant-I . . . . .	330
BT30 - 60°. . . . .	331	C16L-SCLCR-09 . . . . .	300	CAT40-ER-32-4 . . . . .	49	CAT50-Coolant-II. . . . .	330
BT30 - 90°. . . . .	331	C1RD. . . . .	333	CAT40-ER-40-3.15. . . . .	49	CAT50-Coolant-III . . . . .	330
BT30 x 1-1/4" FMA - 1.77" . . . . .	38	C2RD. . . . .	333	CAT40-MAS-I . . . . .	330	CAT50-DIN . . . . .	330
BT30 x 3/4" FMA - 1.18" . . . . .	38	C3RD. . . . .	333	CAT40-MAS-II . . . . .	330	CAT50-DIN Coolant . . . . .	330
BT30 x DualDRIVE FMA 3/4" - 2" . . . . .	38	CAS-A-0.75 smaller "D" . . . . .	40	CAT40-MAS-III . . . . .	330	CAT50-ER-32-4 . . . . .	49
BT40 - 45° coolant. . . . .	331	CAS-A-1.00 smaller "D" . . . . .	40	CAT40-SL500-3.75 . . . . .	50	CAT50-ER-32-6 . . . . .	49
BT40 - 45°. . . . .	331	CAT40 x FMA 1-1/2" - 2.21" . . . . .	36	CAT40-SL750-4.00 . . . . .	50	CAT50-ER-40-4 . . . . .	49
BT40 - 60° coolant. . . . .	331	CAT40 x FMA 1-1/2" - 2.21" DualDRIVE . . . . .	36	CAT40-SL1.00-4.00 . . . . .	50	CAT50-MAS-I . . . . .	330
BT40 - 60°. . . . .	331	CAT40 x FMA 1-1/2" - 4" . . . . .	36	CAT50 x FMA 1-1/2" - 2.4" . . . . .	37	CAT50-MAS-II . . . . .	330
BT40 - 90° coolant. . . . .	331	CAT40 x FMA 1-1/2" - 4" DualDRIVE . . . . .	36	CAT50 x FMA 1-1/2" - 2.4" DualDRIVE . . . . .	37	CAT50-MAS-III . . . . .	330
BT40 - 90°. . . . .	331	CAT40 x FMA 1-1/4" - 2.21" . . . . .	36	CAT50 x FMA 1-1/2" - 4.0" . . . . .	37	CAT50-SL.00-4.13 . . . . .	50
BT40 x 1-1/2" FMA - 2.36" . . . . .	38	CAT40 x FMA 1-1/4" - 2.21" DualDRIVE . . . . .	36	CAT50 x FMA 1-1/2" - 4" DualDRIVE . . . . .	37	CAT50-SL500-3.94 . . . . .	50
BT40 x 1-1/4" FMA - 1.77" . . . . .	38	CAT40 x FMA 1-1/4" - 4.0" . . . . .	36	CAT50 x FMA 1-1/2" - 6.0" . . . . .	37	CAT50-SL750-4.13 . . . . .	50
BT40 x 1-1/4" FMA - 4" . . . . .	38	CAT40 x FMA 1-1/4" - 4" DualDRIVE . . . . .	36	CAT50 x FMA 1-1/2" - 6" DualDRIVE . . . . .	37	CCGX 2(1.5)1 LH HP 101. . . . .	265
BT40 x 3/4" FMA - 1" . . . . .	38	CAT40 x FMA 1-1/4" - 4" DualDRIVE . . . . .	36	CAT50 x FMA 1-1/2" - 8.0" . . . . .	37	CCGX 3(2.5)1 LH HP 101. . . . .	265
BT40 x 3/4" FMA - 4.0" . . . . .	38	CAT40 x FMA 1-1/4" - 6.0" . . . . .	36	CAT50 x FMA 1-1/2" - 8" DualDRIVE . . . . .	37	CCGX 3(2.5)2 LH HP 101. . . . .	265
BT40 x 3/4" FMA - 6.0" . . . . .	38	CAT40 x FMA 1-1/4" - 6" DualDRIVE . . . . .	36	CAT50 x FMA 1-1/4" - 1.5" DualDRIVE . . . . .	37	CCGX 432 LH HP 101 . . . . .	265
BT40, ANSI, metric thread . . . . .	331	CAT40 x FMA 3/4" - 1.37" . . . . .	36	CAT50 x FMA 1-1/4" - 1.50" . . . . .	37	CCMT 2(1.5)0 HF 251 . . . . .	160
BT40, ANSI, metric, coolant . . . . .	331	CAT40 x FMA 3/4" - 4.0" . . . . .	36	CAT50 x FMA 1-1/4" - 3.5" . . . . .	37	CCMT 2(1.5)1 NN LT 10 . . . . .	160
BT50 - 45° coolant. . . . .	331	CAT40 x FMA 3/4" - 4" DualDRIVE . . . . .	36	CAT50 x FMA 1-1/4" - 3.5" DualDRIVE . . . . .	37	CCMT 2(1.5)2 NN LT 1000 . . . . .	160
BT50 - 45°. . . . .	331	CAT40 x FMA 3/4" - 6.0" . . . . .	36	CAT50 x FMA 1-1/4" - 6" DualDRIVE . . . . .	37	CCMT 2(1.5)2 HM 251 . . . . .	160
BT50 - 60° coolant. . . . .	331	CAT40 x FMA 3/4" - 6" DualDRIVE . . . . .	36	CAT50 x FMA 1-1/4" - 8.0" . . . . .	37	CCMT 3(2.5)0 HF 251 . . . . .	160
BT50 - 60°. . . . .	331	CAT40-ANSI . . . . .	330	CAT50 x FMA 3/4" - 1.5" . . . . .	37	CCMT 3(2.5)1 NN LT 10 . . . . .	160
BT50 - 90° coolant. . . . .	331	CAT40-ANSI-C . . . . .	330	CAT50 x FMA 3/4" - 1.5" DualDRIVE . . . . .	37	CCMT 3(2.5)1 NN LT 1000 . . . . .	160
BT50 - 90°. . . . .	331	CAT40-Coolant-I . . . . .	330	CAT50 x FMA 3/4" - 10" . . . . .	37	CCMT 3(2.5)2 NN LT 10 . . . . .	160
BT50, 1-1/2" FMA - 1.77" . . . . .	38	CAT40-Coolant-I SlimFIT . . . . .	330	CAT50 x FMA 3/4" - 3.5" . . . . .	37	CCMT 431 NN LT 10 . . . . .	160
BT50, 1-1/2" FMA - 105mm . . . . .	38	CAT40-Coolant-II. . . . .	330	CAT50 x FMA 3/4" - 3.5" DualDRIVE . . . . .	37	CCMT 431 NN LT 1000 . . . . .	160
BT50, 1-1/2" FMA - 150mm . . . . .	38	CAT40-Coolant-II SlimFIT . . . . .	330	CAT50 x FMA 3/4" - 5.5" . . . . .	37	CCMT 432 NN LT 10 . . . . .	160
BT50, 1-1/4" FMA - 1.77" . . . . .	38	CAT40-Coolant-III . . . . .	330	CAT50 x FMA 3/4" - 5.5" DualDRIVE . . . . .	37	CCMT 432 NN LT 1000 . . . . .	160
BT50, 1.0" FMA - 1.77" . . . . .	38	CAT40-Coolant-III SlimFIT . . . . .	330			CCMT 433 NN LT 10 . . . . .	160
BT50, 1.0" FMA - 3" . . . . .	38					CCMT 433 NN LT 1000 . . . . .	160
C06-08H-SELPR-05 . . . . .	300					CH-100 . . . . .	322
C06F-SEXPR-04 . . . . .	300					CH-200 . . . . .	322
C08G-SCLCR-06 . . . . .	300						

Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
CH-22 . . . . .	322	CS-10-25 Cartridge screw . . . . .	291	CT-340-68-200 . . . . .	311	CT-350-68-200 . . . . .	313
CH-27 . . . . .	322	CS-10-25 cartridge screw . . . . .	292	CT-340-68-200-R . . . . .	312	CT-350-68-200-R . . . . .	314
CH-32 . . . . .	322	CS-10-25 cartridge screw . . . . .	293	CT-350-100-190 . . . . .	313	CT-350-68-260 . . . . .	313
CH-42 . . . . .	322	CT-340-085-200 . . . . .	311	CT-350-100-190-R . . . . .	314	CT-350-68-260-R . . . . .	314
CH-54 . . . . .	322	CT-340-100-200 . . . . .	311	CT-350-100-260 . . . . .	313	CT-350-85-200 . . . . .	313
CH-68 . . . . .	322	CT-340-22-100 . . . . .	311	CT-350-100-320 . . . . .	313	CT-350-85-200-R . . . . .	314
CH-85 . . . . .	322	CT-340-22-100-R . . . . .	312	CT-350-100-320-R . . . . .	314	CT-350-85-260 . . . . .	313
CNGG 431 ALU LT 05 . . . . .	266	CT-340-22-80 . . . . .	311	CT-350-22-100 . . . . .	313	CT-350-85-260-R . . . . .	314
CNGG 432 ALU LT 05 . . . . .	266	CT-340-22-80-R . . . . .	312	CT-350-22-100-R . . . . .	314	CT-350-85-320 . . . . .	313
CNMG 431 NN LT 10 . . . . .	168	CT-340-27-100 . . . . .	311	CT-350-22-80 . . . . .	313	CT-350-85-320-R . . . . .	314
CNMG 431 NN LT 1000 . . . . .	168	CT-340-27-100-R . . . . .	312	CT-350-22-80-R . . . . .	314	CT-550-160 . . . . .	319
CNMG 432 NM LT 10 . . . . .	168	CT-340-27-130 . . . . .	311	CT-350-27-100 . . . . .	313	CT-550-160* . . . . .	313
CNMG 432 NM LT 1000 . . . . .	168	CT-340-27-130-R . . . . .	312	CT-350-27-100-R . . . . .	314	D-100-75-3CT-300 . . . . .	302
CNMG 432 NN LT 10 . . . . .	168	CT-340-27-55 . . . . .	311	CT-350-27-130 . . . . .	313	D-100-75-3CT-402 . . . . .	302
CNMG 432 NN LT 1000 . . . . .	168	CT-340-27-55-R . . . . .	312	CT-350-27-130-R . . . . .	314	D-100-75-3CT-402N . . . . .	302
CNMG 432 NR LT 10 . . . . .	168	CT-340-32-100 . . . . .	311	CT-350-27-55 . . . . .	313	D-100-90-3CT-300 . . . . .	304
CNMG 432 NX LT 1000 . . . . .	168	CT-340-32-100-R . . . . .	312	CT-350-27-55-R . . . . .	314	D-100-90-3CT-402 . . . . .	304
CNMG 433 NN LT 10 . . . . .	168	CT-340-32-130 . . . . .	311	CT-350-32-130 . . . . .	313	D-100-90-3CT-402N . . . . .	304
CNMG 433 NN LT 1000 . . . . .	168	CT-340-32-130-R . . . . .	312	CT-350-32-130-R . . . . .	314	D-200-75-3CT-300 . . . . .	302
CNMM 432 NR LT 10 . . . . .	175	CT-340-32-60 . . . . .	311	CT-350-32-160 . . . . .	313	D-200-75-3CT-402 . . . . .	302
CNMM 432 NR LT 10 . . . . .	175	CT-340-32-60-R . . . . .	312	CT-350-32-160-R . . . . .	314	D-200-75-3CT-402N . . . . .	302
CNMM 432 NRv LT 1000 . . . . .	175	CT-340-42-120 . . . . .	311	CT-350-32-60 . . . . .	313	D-200-90-3CT-300 . . . . .	304
CNMM 433 NR LT 1000 . . . . .	175	CT-340-42-120-R . . . . .	312	CT-350-32-60-R . . . . .	314	D-200-90-3CT-402 . . . . .	304
CNMP 432 NN LT 10 . . . . .	178	CT-340-42-160 . . . . .	311	CT-350-42-160 . . . . .	313	D-200-90-3CT-402N . . . . .	304
CNMP 432 NN LT 1000 . . . . .	178	CT-340-42-160-R . . . . .	312	CT-350-42-160-R . . . . .	314	D-22-75-400 . . . . .	302
CNMP 433 NN LT 10 . . . . .	178	CT-340-42-200 . . . . .	311	CT-350-42-200 . . . . .	313	D-22-90-400 . . . . .	304
CNMP 433 NN LT 1000 . . . . .	178	CT-340-42-200-R . . . . .	312	CT-350-42-200-R . . . . .	314	D-27-21 plate fixing screws .292	
CoolBLAST arbor screw 1-1/2" . . . . .	40	CT-340-42-75 . . . . .	311	CT-350-42-75 . . . . .	313	D-27-21 plate fixing screws .293	
CT-340-42-75-R . . . . .	312	CT-340-42-75-R . . . . .	312	CT-350-42-75-R . . . . .	314	D-27-75-409 . . . . .	302
CoolBLAST arbor screw 1-1/4" . . . . .	40	CT-340-54-120 . . . . .	294	CT-350-54-160 . . . . .	294	D-27-90-409 . . . . .	304
CT-340-54-120 . . . . .	311	CT-340-54-120 . . . . .	311	CT-350-54-160 . . . . .	313	D-300-75-3CT-300 . . . . .	303
CoolBLAST arbor screw 1.0" . . . . .	40	CT-340-54-120-R . . . . .	312	CT-350-54-160-R . . . . .	314	D-300-75-3CT-402 . . . . .	303
CT-340-54-120-R . . . . .	312	CT-340-54-160 . . . . .	294	CT-350-54-200 . . . . .	294	D-300-75-3CT-402N . . . . .	303
CoolBLAST arbor screw 1/2" . . . . .	40	CT-340-54-160 . . . . .	311	CT-350-54-200 . . . . .	313	D-300-90-3CT-300 . . . . .	305
CT-340-54-160 . . . . .	312	CT-340-54-160-R . . . . .	312	CT-350-54-200-R . . . . .	314	D-300-90-3CT-402 . . . . .	305
CoolBLAST arbor screw 2-1/2" . . . . .	40	CT-340-54-200 . . . . .	294	CT-350-54-90 . . . . .	294	D-300-90-3CT-402N . . . . .	305
CT-340-54-200 . . . . .	311	CT-340-54-200 . . . . .	311	CT-350-54-90 . . . . .	313	D-32-75-409 . . . . .	302
CoolBLAST arbor screw 2.0" . . . . .	40	CT-340-54-200-R . . . . .	312	CT-350-54-90-R . . . . .	314	D-32-90-409 . . . . .	304
CT-340-54-200-R . . . . .	312	CT-340-68-160 . . . . .	311	CT-350-68-115 . . . . .	313	D-400-75-3CT-300 . . . . .	303
CoolBLAST arbor screw 3/4" . . . . .	40	CT-340-68-160-R . . . . .	312	CT-350-68-115-R . . . . .	314	D-400-75-3CT-402 . . . . .	303
CT-340-68-160 . . . . .	311						
CS-08-25 counterweight screw . . . . .	292						
CT-340-68-160-R . . . . .	311						
CS-08-25 counterweight screw . . . . .	293						
CT-340-68-160-R . . . . .	312						
CS-10-25 cartridge screw . . . . .	290						

Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
D-400-75-3CT-402N . . . . .	303	D11BS . . . . .	333	EPGT 040102L W08 (ISO) NS530 197		HF-2.50-750C-5SN9 . . . . .	34
D-400-90-3CT-300 . . . . .	305	D15AP . . . . .	333	EPGT 1.2(1).5L W08 (ANSI) NS530 . . . . .	197	HF-3.00-1.00C-6SN9 . . . . .	34
D-400-90-3CT-402 . . . . .	305	D15BM . . . . .	333	EPMT 050202 PM5 (ISO) 5625 . . . . .		HF-4.00-1.25C-7SN9 . . . . .	34
D-400-90-3CT-402N . . . . .	305	DAT30-A . . . . .	332	EPMT 1.3(3).5 PM5 (ANSI) 5625 . . . . .	198	HFEM-0.75-0.75-7.00-WP05-02 . . . . .	46
D-42-75-300 . . . . .	302	DAT30-B . . . . .	332	EPMT 2.0(3).5 PM5 (ANSI) 5625 . . . . .	198	HFEM-1.00-1.00-5.50-SD09-02 . . . . .	46
D-42-75-402 . . . . .	302	DAT40-A . . . . .	332	FM45-2.00C-750-4-13 . . . . .	31	HFEM-1.00-1.00-7.00-SD09-02 . . . . .	46
D-42-75-402N . . . . .	302	DAT40-B . . . . .	332	FM45-3.00C-1.25-6-13 . . . . .	31	HFEM-1.00-1.00CW-5.00-3SN9 . . . . .	47
D-42-90-300 . . . . .	304	DAT50-A . . . . .	332	FM45-4.00C-1.25-7-13 . . . . .	31	HFEM-1.00-1.00CW-8.00-3SN9 . . . . .	47
D-42-90-402 . . . . .	304	DAT50-B . . . . .	332	FM90-2.00C-750-4-16 . . . . .	30	HFEM-1.25-1.25-8.00-SD09-03 . . . . .	46
D-42-90-402N . . . . .	304	DCGX 2(1.5)1 LH HP 101 . . . . .	268	FM90-2.00C-750-5-16 . . . . .	30	HFEM-1.25-1.25-8.00-SD12-02 . . . . .	46
D-500-75-3CT-300 . . . . .	303	DCGX 3(2.5)2 LH HP 101 . . . . .	268	FM90-3.00C-1.25-6-16 . . . . .	30	HFEM-1.25-1.25CW-5.00-4SN9 . . . . .	47
D-500-75-3CT-402 . . . . .	303	DCMT 2(1.5)1 NN LT 10 . . . . .	181	FM90-4.00C-1.25-7-16 . . . . .	30	HFEM-1.25-1.25CW-8.00-3SN9 . . . . .	47
D-500-75-3CT-402N . . . . .	303	DCMT 2(1.5)1 NN LT 1000 . . . . .	181	FM90-5.00C-1.50-8-16 . . . . .	30	HFEM-1.25-1.25CW-8.00-3SN9 . . . . .	47
D-500-90-3CT-300 . . . . .	305	DCMT 3(2.5)1 NN LT 10 . . . . .	181	FMA screw 1-1/2" . . . . .	40	HFEM-1.50-1.50-8.00-SD12-03 . . . . .	46
D-500-90-3CT-402 . . . . .	305	DCMT 3(2.5)1 NN LT 1000 . . . . .	181	FMA screw 1-1/4" . . . . .	40	HFEM-1.50-1.50-8.00-SD12-03 . . . . .	46
D-500-90-3CT-402N . . . . .	305	DCMT 3(2.5)2 NN LT 10 . . . . .	181	FMA screw 1.0" . . . . .	40	HFEM-1.50-1.50-8.00-SD12-03 . . . . .	46
D-54-75-300 . . . . .	302	DCMT 3(2.5)2 NN LT 1000 . . . . .	181	FMA screw 1/2" . . . . .	40	HFM-2.00-0.75-SD09-04 . . . . .	35
D-54-75-402 . . . . .	302	DCMT 432 PM4 5615 . . . . .	181	FMA screw 2-1/2" . . . . .	40	HFM-2.50-0.75-SD09-05 . . . . .	35
D-54-75-402N . . . . .	302	DM6-30 . . . . .	333	FMA screw 2.0" . . . . .	40	HFM-3.00-1.25-SD12-05 . . . . .	35
D-54-90-300 . . . . .	304	DNGG 331 ALU LT 05 . . . . .	269	FMA screw 3/4" . . . . .	40	HM6.3-1.0-13.2 . . . . .	333
D-54-90-402 . . . . .	304	DNGG 332 ALU LT 05 . . . . .	269	H3 hex . . . . .	290	HSK-100A-100-185 . . . . .	317
D-54-90-402N . . . . .	304	DNMG 331 NN LT 10 . . . . .	185	H3 Hex . . . . .	291	HSK-100A-22-55 . . . . .	317
D-68-26 . . . . .	333	DNMG 331 NN LT 1000 . . . . .	185	H4 hex . . . . .	292	HSK-100A-27-65 . . . . .	317
D-68-28 . . . . .	333	DNMG 332 NN LT 10 . . . . .	185	H4 hex . . . . .	293	HSK-100A-32-75 . . . . .	317
D-68-29 . . . . .	333	DNMG 332 NN LT 1000 . . . . .	185	H5 hex . . . . .	290	HSK-100A-42-90 . . . . .	317
D-68-75-2CT-300 . . . . .	302	DNMG 332 NN LT 10 . . . . .	185	H5 Hex . . . . .	291	HSK-100A-54-110 . . . . .	294
D-68-75-2CT-402 . . . . .	302	DNMG 332 NN LT 1000 . . . . .	185	H5 hex . . . . .	292	HSK-100A-54-110 . . . . .	317
D-68-75-2CT-402N . . . . .	302	DNMG 332 NN LT 10 . . . . .	185	H5 hex . . . . .	293	HSK-100A-68-145 . . . . .	317
D-68-90-2CT-300 . . . . .	304	DNMG 332 NN LT 1000 . . . . .	185	H6 hex . . . . .	290	HSK-100A-85-165 . . . . .	317
D-68-90-2CT-402 . . . . .	304	DNMG 332 NN LT 10 . . . . .	185	H6 Hex . . . . .	291	HSK-50A-22-55 . . . . .	317
D-68-90-2CT-402N . . . . .	304	DNMG 332 NN LT 1000 . . . . .	185	H6 hex . . . . .	292	HSK-50A-27-65 . . . . .	317
D-85-27 . . . . .	333	DNMG 332 NN LT 10 . . . . .	185	H6 hex . . . . .	293	HSK-50A-32-75 . . . . .	317
D-85-29 . . . . .	333	DNMG 332 NN LT 1000 . . . . .	185	H8 hex . . . . .	290	HSK-50A-42-90 . . . . .	317
D-85-75-3CT-300 . . . . .	302	DNMG 332 NN LT 1000 . . . . .	185	H8 Hex . . . . .	291	HSK-63A-22-55 . . . . .	317
D-85-75-3CT-402 . . . . .	302	DNMG 332 NN LT 10 . . . . .	185	H8 hex . . . . .	292	HSK-63A-27-65 . . . . .	317
D-85-75-3CT-402N . . . . .	302	DNMG 332 NN LT 1000 . . . . .	185	H8 hex . . . . .	293	HSK-63A-32-75 . . . . .	317
D-85-90-3CT-300 . . . . .	304	DNMG 332 NN LT 10 . . . . .	185	DNUX 442 R11 LT 10 . . . . .	195	HSK-63A-42-90 . . . . .	317
D-85-90-3CT-402 . . . . .	304	DNMG 332 NN LT 1000 . . . . .	185	DNUX 442 R11 LT 1000 . . . . .	195	HSK-63A-42-90 . . . . .	317
D-85-90-3CT-402N . . . . .	304	D11BM . . . . .	333				

Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
HSK-63A-54-110 . . . . .	294	L4 . . . . .	333	P-100-80 . . . . .	321	PLSS.750xM16 . . . . .	49
HSK-63A-54-110 . . . . .	317	L4A . . . . .	333	P-100-80R . . . . .	321	PLSS.750xM20 . . . . .	49
HSK-63A-68-145 . . . . .	317	LDMT 1504 PDTR LT 30 . . . . .	73	P-22-20 . . . . .	321	PLSS1.00xM20 . . . . .	49
HSK100 A 1-1/2"FMA - 2-1/2" . . . . .	39	LEM5-12B . . . . .	333	P-22-30 . . . . .	321	PLSS1.25xM24 . . . . .	49
HSK100 A 1-1/4"FMA - 2-1/2" . . . . .	39	LEM6-13A . . . . .	333	P-22-30R . . . . .	321	PN11-3.00-1.00-08 . . . . .	32
HSK100 A 3/4"FMA - 2" . . . . .	39	LEM8-21 . . . . .	333	P-27-30 . . . . .	321	PN11-4.00-1.25-10 . . . . .	32
HSK63A 1-1/4"FMA - 2.75" . . . . .	39	M1.8-4.2-2.5-54 . . . . .	333	P-27-30R . . . . .	321	PN11-5.00-1.50-12 . . . . .	32
HSK63A 1-1/4"FMA - 4" . . . . .	39	M2-5.0-2.7-60 . . . . .	333	P-27-45 . . . . .	321	PN11-6.00-1.50-14 . . . . .	32
HSK63A 3/4"FMA - 2" . . . . .	39	M2.5-5.0-3.7-43 . . . . .	333	P-32-35 . . . . .	321	PNEG 110512 R CM 152 . . . . .	86
HSK63A 3/4"FMA - 4" . . . . .	39	M2.5-6.0-3.5-60 . . . . .	333	P-32-35R . . . . .	321	R-100-85-100 . . . . .	322
I60M2.5-5.5 . . . . .	333	M2.5-6.3-3.35-60 . . . . .	333	P-32-52 . . . . .	321	R-27-22-36 . . . . .	322
I60M2.5-6.5 . . . . .	333	M2.5-6.45-3.7-60 . . . . .	333	P-42-40 . . . . .	321	R-32-22-40 . . . . .	322
I60M3.5-12 . . . . .	333	M3.0-8.0-4.0-43 . . . . .	333	P-42-40R . . . . .	321	R-32-27-34 . . . . .	322
I60M3.5-8.0 . . . . .	333	M3.5-12.0-5.3-60 . . . . .	333	P-42-60 . . . . .	321	R-42-22-58 . . . . .	322
I60M4-10 . . . . .	333	M3.5-8.0-5.3-60 . . . . .	333	P-54-50 . . . . .	321	R-42-27-50 . . . . .	322
I60M4-11 . . . . .	333	M3.5-9.3-4.8-60 . . . . .	333	P-54-50R . . . . .	321	R-42-32-46 . . . . .	322
I60M4-8.4 . . . . .	333	M4-10-5.0-43 . . . . .	333	P-54-75 . . . . .	321	R-54-22-86 . . . . .	322
IEM90-500-500-4.00-1-10 . . . . .	44	M4.0-10.0-5.7-60 . . . . .	333	P-68-60 . . . . .	321	R-54-27-80 . . . . .	322
IEM90-500-500C-4.00-1-10 . . . . .	44	MCLNL-16-4D . . . . .	149	P-68-60R . . . . .	321	R-54-32-76 . . . . .	322
IEM90-625-625-5.00-2-10 . . . . .	44	MCLNR-16-4D . . . . .	149	P-68-90 . . . . .	321	R-54-42-70 . . . . .	322
IEM90-625-625C-5.00-2-1 . . . . .	44	MDJNL-16-4D . . . . .	149	P-85-105 . . . . .	321	R-68-22-102 . . . . .	322
IEM90-750-750-3.50-3-10 . . . . .	44	MDJNL16-3D . . . . .	149	P-85-70 . . . . .	321	R-68-27-95 . . . . .	322
IEM90-750-750-5.00-2-10 . . . . .	44	MDJNR-16-4D . . . . .	149	P-85-70R . . . . .	321	R-68-32-90 . . . . .	322
IEM90-750-750C-5.00-2-10 . . . . .	44	MDJNR16-3D . . . . .	149	PDFR F01 HP 5005 . . . . .	142	R-68-42-82 . . . . .	322
IEM90-750-750CW-3.50-3-10 . . . . .	44	MTJNL16-3D . . . . .	151	PDFR F01 HP GH05 . . . . .	142	R-68-54-72 . . . . .	322
IEM90-1.00-1.00-6.00-3-10 . . . . .	44	MTJNL16-4D . . . . .	151	PLHF-1.00-1.00C-5.00-3SN9 . . . . .	48	R-85-42-95 . . . . .	322
IEM90-1.00-1.00C-6.00-3-10 . . . . .	44	MTJNR16-3D . . . . .	151	PLHF-1.00-1.00C-8.00-3SN9 . . . . .	48	R-85-54-90 . . . . .	322
IEM90-1.00-1.00CW-3.50-2-16 . . . . .	44	MTJNR16-4D . . . . .	151	PLHF-1.25-1.25C-5.00-4SN9 . . . . .	48	R-85-68-100 . . . . .	322
IEM90-1.25-1.25-6.00-3-16 . . . . .	44	MVJNL-16-3D . . . . .	150	PLHF-1.25-1.25C-8.00-3SN9 . . . . .	48	R8-22-50-R8-WELDON . . . . .	318
IEM90-1.25-1.25C-6.00-3-16 . . . . .	44	MVJNR-16-3D . . . . .	150	PLIM.500-500C-4.00-1-10 . . . . .	45	R8-27-60-R8-WELDON . . . . .	318
IEM90-1.50-1.25-6.00-4-16 . . . . .	44	MWLNL-16-4D . . . . .	150	PLIM.500-500C-4.00-1-10 . . . . .	45	R8-32-75-R8-WELDON . . . . .	318
IEM90-1.50-1.25C-6.00-4-16 . . . . .	44	MWLNR-16-4D . . . . .	150	PLIM.750-750-5.00-2-10 . . . . .	45	R8-42-90-R8-WELDON . . . . .	318
KNUX 160405 R11 LT 10 . . . . .	199	ODMT 0504 ZZTR LT 30 . . . . .	75	PLIM.750-750C-5.00-2-10 . . . . .	45	R8-54-110 . . . . .	294
L3D . . . . .	333	ODMT 060508 TN LT 30 . . . . .	75	PLIM.750-750C-5.00-2-10 . . . . .	45	R8-54-110-R8-WELDON . . . . .	318
		ODMW 060508 TN LT 30 . . . . .	78	PLIM.1.00-1.00-6.00-3-10 . . . . .	45	RCMT 0602 M0 LT 10 . . . . .	201
		OFER 070405 TN LT 30 . . . . .	80	PLIM.1.00-1.00C-3.50-2-16 . . . . .	45	RCMT 0602 M0 LT 1000 . . . . .	201
		OFMT 050405 TR LT 30 . . . . .	82	PLIM.1.00-1.00C-6.00-3-10 . . . . .	45	RCMT 0803 M0 LT 10 . . . . .	201
		OFMT 05T305 TN LT 30 . . . . .	82	PLSS.500xM16 . . . . .	49	RCMT 0803 M0 LT 1000 . . . . .	201
		OFMT 070405 TN LT 30 . . . . .	82	PLSS.500xM20 . . . . .	49	RCMT 10T3 M0 LT 10 . . . . .	201
		P-100-120 . . . . .	321			RCMT 10T3 M0 LT 1000 . . . . .	201

Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
RCMT 1204 MO LT 10 . . . . .	201	SCMT 3(2.5)2 NN LT 10 . . . . .	207	SM6-10XA . . . . .	333	T10Flag . . . . .	333
RCMT 1204 MO LT 1000 . . . . .	201	SCMT 3(2.5)2 NN LT 1000 . . . . .	207	SNKX 09T3-HF LT 30 . . . . .	118	T15 torx . . . . .	290
RD12-2.00-750C-4 . . . . .	33	SDJCL-08-2J . . . . .	154	SNKX 1607-45° LT 30 . . . . .	118	T15 Torx . . . . .	291
RD12-3.00-1.00C-5 . . . . .	33	SDJCL-12-3C . . . . .	154	SNMG 432 NN LT 10 . . . . .	210	T15 torx . . . . .	292
RDMT 0602 MO LT 30 . . . . .	87	SDJCR-08-2J . . . . .	154	SNMG 432 NN LT 1000 . . . . .	210	T15 torx . . . . .	293
RDMT 0702 MO LT 30 . . . . .	87	SDJCR-12-3C . . . . .	154	SNMG 432 NX LT 1000 . . . . .	210	T15Flag . . . . .	333
RDMT 0803 MO LT 30 . . . . .	87	SDKT 1204 AETN LT 30 . . . . .	102	SNMG 433 NN LT 10 . . . . .	210	T16BM . . . . .	333
RDMT 1003 MO LT 30 . . . . .	87	SDKX 0904 HF LT 30 . . . . .	104	SNMG 433 NN LT 1000 . . . . .	210	T16BS . . . . .	333
RDMT 10T3 MO LT 30 . . . . .	87	SDKX 1205 HF LT 30 . . . . .	104	SP4 . . . . .	333	T20Flag . . . . .	333
RDMT 1204 MO LT 30 . . . . .	87	SDMT 09T312 DM 202 . . . . .	107	SPG 422 (ANSI) LT 30 . . . . .	130	T22BM . . . . .	333
RDMT 12T3 MO LT 30 . . . . .	87	SDMT 120412 DM 202 . . . . .	107	SPKN 1203 EDTR (ISO) LT 30 . . . . .	121	T6 torx . . . . .	290
RDMT 1604 MO LT 30 . . . . .	87	SEET 13T3 HP WSK10 . . . . .	145	SPKN 1204 EDTR (ISO) LT 30 . . . . .	121	T6 Torx . . . . .	291
RDMW 10T3 MO LT 30 . . . . .	96	SEGT 1204 AFEN ALU LT 05 . . . . .	146	SPKN 1504 EDTR (ISO) LT 30 . . . . .	121	T6 torx . . . . .	293
RDMW 1204 MO LT 30 . . . . .	96	SEKN 1203 AFTN (ISO) LT 30 . . . . .	108	SPKN 1504 EDTR (ISO) LT 30 . . . . .	121	T6Flag . . . . .	333
RDMX 10T3 MO LT 30 . . . . .	99	SEKN 1204 AFTN (ISO) LT 30 . . . . .	108	SPKN 42 EDTR (ANSI) LT 30 . . . . .	121	T7 torx . . . . .	290
RDMX 1204 MO LT 30 . . . . .	99	SEKN 1504 AFTN (ISO) LT 30 . . . . .	108	SPKN 42 EDTR (ANSI) LT 30 . . . . .	121	T7 Torx . . . . .	291
S06-16SEXPR-04 . . . . .	299	SEKN 42 AFTN (ANSI) . . . . .	108	SPKN 43 EDTR (ANSI) LT 30 . . . . .	121	T7 torx . . . . .	292
S06-16SEXPR-05 . . . . .	299	SEKN 43 AFTN (ANSI) LT 30 . . . . .	108	SPKN 43 EDTR (ANSI) LT 30 . . . . .	121	T7 torx . . . . .	293
S06-16STFCR-06 . . . . .	299	SEKN 53 AFTN (ANSI) LT 30 . . . . .	108	SPKN 53 EDTR (ANSI) LT 30 . . . . .	121	T7Flag . . . . .	333
S06D-SELP-05 . . . . .	300	SEKR 1203 AFTN (ISO) LT 30 . . . . .	112	SPKR 1203 EDTR (ISO) LT 30 . . . . .	125	T8 torx . . . . .	292
S06E-SEXPR-04 . . . . .	300	SEKR 1204 AFTN (ISO) LT 30 . . . . .	112	SPKR 1204 EDTR (ISO) LT 30 . . . . .	125	T8Flag . . . . .	333
S08-16SCLCR-06 . . . . .	299	SEKR 42 AFTN (ANSI) LT 30 . . . . .	112	SPKR 42 EDTR (ANSI) LT 30 . . . . .	125	T9Flag . . . . .	333
S08-16STFCR-06 . . . . .	299	SEKR 43 AFTN (ANSI) LT 30 . . . . .	112	SPKR 42 EDTR (ANSI) LT 30 . . . . .	125	TC-100-2035 . . . . .	333
S08F-SCLCR-06 . . . . .	300	SEKT 1204 AFTN LT 30 . . . . .	115	SPKR 43 EDTR (ANSI) LT 30 . . . . .	125	TC-22-68 . . . . .	333
S10-16SCLCR-06 . . . . .	299	SEKT 12T3 AGSN LT 30 . . . . .	115	SPMG 060204 NN LT 30 . . . . .	279	TC-27-610 . . . . .	333
S10-16STFCR-09 . . . . .	299	SFM45-2.00C-750-4-13 . . . . .	31	SPMG 07T308 NN LT 30 . . . . .	279	TC-32-810 . . . . .	333
S10G-SCLCR-06 . . . . .	300	SFM45-3.00C-1.25-6-13 . . . . .	31	SPMG 090408 NN LT 30 . . . . .	279	TC-42-1014 . . . . .	333
S12-16SCLCR-06 . . . . .	299	SFM45-4.00C-1.25-7-13 . . . . .	31	SPMT12T308 LT 30 . . . . .	128	TC-54-1220 . . . . .	333
S12-16STFCR-09 . . . . .	299	SFM45-5.00C-1.50-8-13 . . . . .	31	SPUN 120308 (ISO) LT 30 . . . . .	130	TC-68-1624 . . . . .	333
S12H-SCLCR-06 . . . . .	300	SFM90-2.00C-750-4-16 . . . . .	30	ST-CBMT 232-L NN LT 1000 . . . . .	259	TC-85-1630 . . . . .	333
S16-16SCLCR-09 . . . . .	299	SFM90-3.00C-1.25-6-16 . . . . .	30	ST-DBMT 231-L NN LT 1000 . . . . .	259	TC-M12X40 . . . . .	333
S16-16STFCR-09 . . . . .	299	SFM90-4.00C-1.25-7-16 . . . . .	30	ST-TBMT 231-L NN LT 1000 . . . . .	259	TCGX21.51-LH-101-HP 101 . . . . .	271
S16-16STFCR-16 . . . . .	299	SFM90-5.00C-1.50-8-16 . . . . .	30	ST-TBMT 231-L NN LT 1000 . . . . .	259	TCMT 1.2(1.5) 5615 . . . . .	213
S16J-SCLCR-09 . . . . .	300	SFRD12-2.00-750C-4 . . . . .	33	ST-VBMT 231-L NN LT 1000 . . . . .	259	TCMT 1.2(1)1 5625 . . . . .	213
SCLCL-08-3J . . . . .	154	SFRD12-3.00-1.00C-5 . . . . .	33	ST-GCL-08-2J . . . . .	154	TCMT 1.8(1.5)0 HF 251 . . . . .	213
SCLCL-12-4C . . . . .	154	SHF-2.00-750C-4SN9 . . . . .	34	ST-GCL-12-3C . . . . .	154	TCMT 1.8(1.5)1 HF 251 . . . . .	213
SCLCR-08-3J . . . . .	154	SHF-2.50-750C-5SN9 . . . . .	34	STGCR-08-2J . . . . .	154	TCMT 1.8(1.5)1 HM 251 . . . . .	213
SCLCR-12-4C . . . . .	154	SHF-3.00-1.00C-6SN9 . . . . .	34	STGCR-12-3C . . . . .	154	TCMT 1.8(1.5)2 HM 251 . . . . .	213
SCMT 3(2.5)1 NN LT 10 . . . . .	207	SHF-4.00-1.25C-7SN9 . . . . .	34			TCMT 2(1.5)1 NN LT 10 . . . . .	213
SCMT 3(2.5)1 NN LT 1000 . . . . .	207	SM5-8.65XA . . . . .	333				

Desc.	Page	Desc.	Page	Desc.	Page	Desc.	Page
TCMT 2(1.5)1 NN LT 1000 . . .	.213	TNMG 433 NN LT 1000 . . .	.220	VNMG 331 NN LT 10 . . . . .	.243		
TCMT 2(1.5)2 NN LT 10 . . .	.213	TNMP 332 NN LT 10 . . . . .	.228	VNMG 331 NN LT 1000 . . .	.243		
TCMT 2(1.5)2 NN LT 1000 . . .	.213	TNMP 332 NN LT 1000 . . .	.228	VNMG 332 NN LT 10 . . . . .	.243		
TCMT 3(2.5)1 NN LT 10 . . .	.213	TNMX 331 L LT 10 . . . . .	.230	VNMG 332 NN LT 1000 . . .	.243		
TCMT 3(2.5)1 NN LT 1000 . . .	.213	TNMX 331 L LT 1000 . . . . .	.230	W08AP . . . . .	.333		
TCMT 3(2.5)2 NN LT 10 . . .	.213	TNMX 331 R LT 10 . . . . .	.230	W08BM . . . . .	.333		
TCMT 3(2.5)2 NN LT 1000 . . .	.213	TNMX 331 R LT 1000 . . . . .	.230	WCMX 030208 R53 201 . . .	.283		
TCMT 3(2.5)2 PM4 5625 . . .	.213	TNMX 332 L LT 10 . . . . .	.230	WCMX 040208 NN LT 30 . . .	.283		
TCMT 3(2.5)3 NN LT 10 . . .	.213	TNMX 332 L LT 1000 . . . . .	.230	WCMX 050308 NN LT 30 . . .	.283		
TCMT 3(2.5)3 NN LT 1000 . . .	.213	TNMX 332 R LT 10 . . . . .	.230	WCMX 06T308 NN LT 30 . . .	.283		
TM2.0-4.0 . . . . .	.333	TNMX 332 R LT 1000 . . . . .	.230	WCMX 080412 NN LT 30 . . .	.283		
TM2.0-4.9 . . . . .	.333	TPKN 1603 PDTR (ISO) LT 30		WD-204 . . . . .	.333		
TM2.2-5.6 . . . . .	.333	TPKN 2204 PDTR (ISO) LT 30	.132	WD-208 . . . . .	.333		
TM2.2-6.4 . . . . .	.333	TPKN 32 PDTR (ANSI) LT 30	.132	WH20L . . . . .	.333		
TM2.5-4.8 . . . . .	.333	TPKN 43 PDTR (ANSI) LT 30	.132	WH25L . . . . .	.333		
TM2.5-5.8 . . . . .	.333	TPKR 1603 PDTR (ISO) LT 30	.135	WH30L . . . . .	.333		
TM2.5-6.0 . . . . .	.333	TPKR 2204 PDTR (ISO) LT 30	.135	WH35L . . . . .	.333		
TM2.5-6.8 . . . . .	.333	TPKR 323 PDTR (ANSI) LT 30	.135	WNMG 331 NN LT 10 . . . . .	.246		
TM3.5-5.0 . . . . .	.333	TPKR 43 PDTR (ANSI) LT 30	.135	WNMG 331 NN LT 1000 . . .	.246		
TM3.5-8.0 . . . . .	.333	TPMR 321 NN LT 10 . . . . .	.233	WNMG 332 NN LT 10 . . . . .	.246		
TM4.0-15.0 . . . . .	.333	TPMR 322 NN LT 10 . . . . .	.233	WNMG 332 NN LT 1000 . . .	.246		
TM4.0-5.5 . . . . .	.333	TPUN 160308 (ISO) LT 30 . . .	.138	WNMG 332 NX LT 1000 . . .	.246		
TM4.0-8.5 . . . . .	.333	TPUN 322 (ANSI) LT 30 . . .	.138	WNMG 431 NN LT 10 . . . . .	.246		
TM5-13 . . . . .	.333	V16BM . . . . .	.333	WNMG 431 NN LT 1000 . . .	.246		
TM5.0-13.1 . . . . .	.333	V16BS . . . . .	.333	WNMG 432 NM LT 10 . . . . .	.246		
TM6-17 . . . . .	.333	VBMT 221 NN LT 10 . . . . .	.236	WNMG 432 NM LT 1000 . . .	.246		
TM6-19 . . . . .	.333	VBMT 221 NN LT 1000 . . . . .	.236	WNMG 432 NN LT 10 . . . . .	.246		
TNGG 331 ALU LT 05 . . . . .	.272	VBMT 331 NN LT 10 . . . . .	.236	WNMG 432 NN LT 1000 . . .	.246		
TNMG 331 NN LT 10 . . . . .	.220	VBMT 331 NN LT 1000 . . . . .	.236	WNMG 432 NR LT 10 . . . . .	.246		
TNMG 331 NN LT 1000 . . . . .	.220	VBMT 332 NN LT 10 . . . . .	.236	WNMG 432 NX LT 1000 . . .	.246		
TNMG 332 NN LT 10 . . . . .	.220	VBMT 332 NN LT 1000 . . . . .	.236	WNMG 432 WM LT 10 . . . . .	.246		
TNMG 332 NN LT 1000 . . . . .	.220	VCMT 331 NN LT 10 . . . . .	.240	WNMG 433 NN LT 10 . . . . .	.246		
TNMG 332 NX LT 1000 . . . . .	.220	VCMT 331 NN LT 1000 . . . . .	.240	WNMG 433 NN LT 1000 . . .	.246		
TNMG 333 NN LT 10 . . . . .	.220	VCMT 332 NN LT 10 . . . . .	.240	WNMP 331 NN LT 10 . . . . .	.255		
TNMG 333 NN LT 1000 . . . . .	.220	VCMT 332 NN LT 1000 . . . . .	.240	WNMP 331 NN LT 1000 . . .	.255		
TNMG 431 NN LT 10 . . . . .	.220	VGG 331 ALU LT 05 . . . . .	.274	WNMP 332 NN LT 10 . . . . .	.255		
TNMG 431 NN LT 1000 . . . . .	.220	VGG 332 ALULT 05 . . . . .	.274	WNMP 332 NN LT 1000 . . .	.255		
TNMG 432 NN LT 10 . . . . .	.220			WNMP 432 NN LT 10 . . . . .	.255		
TNMG 432 NN LT 1000 . . . . .	.220			WNMP 432 NN LT 1000 . . .	.255		
TNMG 432 NX LT 1000 . . . . .	.220			WPGT 050315 ZSR HF 351 . . .	.140		
TNMG 433 NN LT 10 . . . . .	.220						



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