

New and Unique Product Information

NEW NTK CeramiX 450	A02
NEW BIDE MICS 120	A04
General Turning: Multi Clamp Toolholders	A06
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The ultimate ceramic grade for finish turning of hardened materials - NTK CeramiX 450

Our latest game changing ceramic material "NTK CeramiX" developed to replace CBN.
As a ceramic cutting tool specialist, NTK researches new advancements for ceramics in the industry.
We are excited to introduce a new grade that matches CBN on performance.
NTK's CeramiX "450" grade is a cost saving solution for hard turning applications.

NTK450

For Hard Turning in Continuous Cuts | NTK CeramiX

NTK CeramiX 450

New cost saving option for hard turning applications
Significant tooling cost reduction compared to CBN

Key points

- New TiAlN coating offers excellent wear resistance for hard turning.
- The best option when a balance of tool cost and performance is essential, like small production runs.

Application area

Continuous hard turning cuts Hardness range: 55 to 66 HRC

Price and Performance Comparison



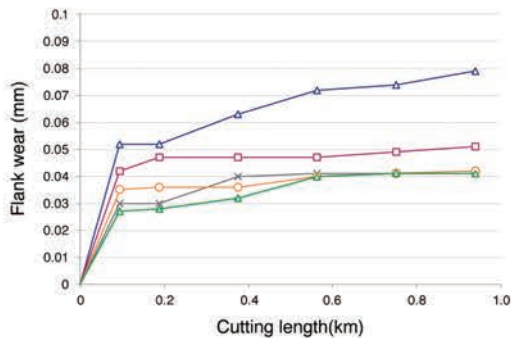
Recommended cutting conditions

Grade	Material	Application	Process	Cutting speed (m/min)	Feed (mm/rev)	DOC (mm)	Without coolant	With coolant
NTK450	Hardened materials (HRC55 to 65)	Turning	Finishing	100-200	0.08-0.15	0.1-0.5	●	●
				The same conditions as current CBN				

Material characteristic

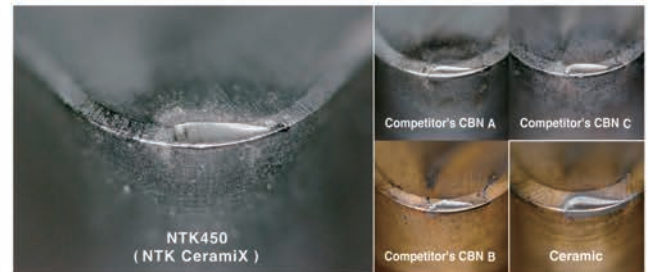
Grade	Coating	Density (g/cm ³)	Bending Strength (MPa)	Hardness (Hv)	Fracture Toughness (Mpa · √m)	Structure
NTK450	TiAlN Specialized for NTK450	7.5	1200	2290	5.7	
Conventional Ceramic	TiN	4.6	1100	2060	4.3	

Wear comparison vs. CBN



△ Ceramic
 □ Competitor's CBN A
 × Competitor's CBN B
 ○ Competitor's CBN C
 ▲ NTK450

vc = 150m/min,
 f = 0.1mm/rev,
 ap = 0.2mm,
 With coolant
 Material : SCM415
 (HRC62 – 64)



Insert Item List

Geometry	Unit : 1pc/case *			Unit : 10pcs/case *			Corner R (mm)	Grade	Dimensions (mm)		
	EDP	Item number		EDP	Item number				NTK450	IC	Thickness (mm)
	5106125	CNGA	120404 X03	5109186	CNGA	120404 X03-10	0.4	●	12.7	4.76	0.1x15° + Honed edge
	5106117		120408 X03	5109194		120408 X03-10	0.8	●			
	5106091		120412 X03	5109202		120412 X03-10	1.2	●			
	5106083	DNGA	150404 X03	5109236	DNGA	150404 X03-10	0.4	●			
	5106075		150408 X03	5109301		150408 X03-10	0.8	●			
	5106042		150412 X03	5109327		150412 X03-10	1.2	●			
	5106034	TNGA	160404 X03	5109343	TNGA	160404 X03-10	0.4	●	9.525	4.76	0.1x15° + Honed edge
	5106026		160408 X03	5109392		160408 X03-10	0.8	●			
	5106018		160412 X03	5109418		160412 X03-10	1.2	●			
	5106000	VNGA	160404 X03	5109426	VNGA	160404 X03-10	0.4	●			
	5105994		160408 X03	5109434		160408 X03-10	0.8	●			
	5105986		160412 X03	5109442		160412 X03-10	1.2	●			

* Please order Qty. you need in either item number. Insert case is the only difference.

Machine HRSA materials at speeds of 480 m/min with **BIDEMICS**

BIDEMICS revolutionary material was developed a decade ago greatly improving productivity for manufacturers machining HRSA materials; predominantly in the Aerospace industry.

The newest evolution of this material is now available with improved wear resistance!

NTK120

Finishing for HRSA Materials | BIDEMICS

NTK120

at speeds of 480 m/min with BIDEemics

Super high speed finishing of HRSA materials.

Up to 15 times faster speeds vs. carbide and CBN

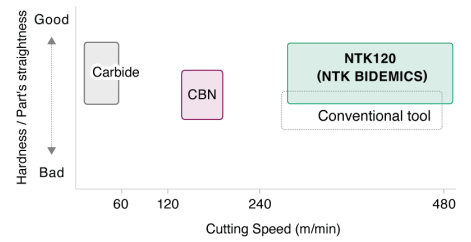
Performance

- Wear resistance provides performance and consistency of machined part straightness
- Offers finishing speeds of 500 m/min

Application Area

Continuous cuts when finishing HRSA materials

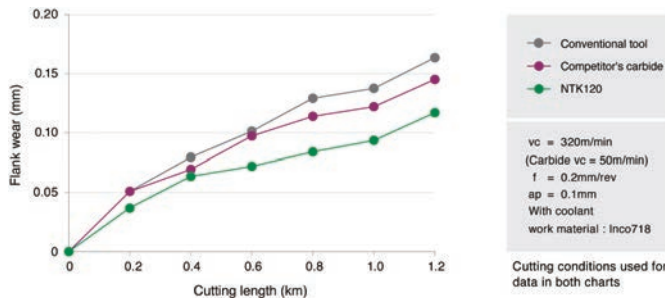
Cutting Speed and Wear Resistance Comparison



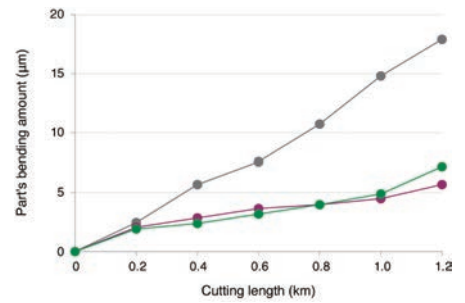
Cutting Conditions

Grade	Material	Application	Process	Cutting speed(m/min)	Feed(mm/rev)	DOC(mm)	With coolant
NTK120	Heat Resistant Super Alloys	Turning	Finishing	180-500	0.05-0.20	0.1-0.7	●

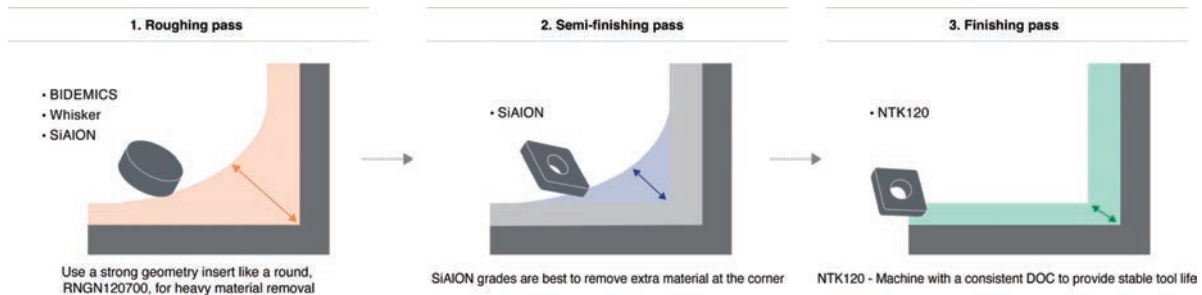
Wear resistance



Part's Straightness Performance



Recommended Machining Passes at a Corner



Insert Item List

Geometry	EDP	Item number	Corner R	Grade	Dimensions (mm)	
					Thickness	Edge preparation
	5106604	CNGA 120404 BQENB	0.4	●	12.7	Honed edge 0.04
	5106620	120408 BQENB	0.8	●		
	5106612	120412 BQENB	1.2	●		
	5106646	DNGA 150404 BQENB	0.4	●	4.76	Honed edge 0.04
	5106653	150408 BQENB	0.8	●		
	5106661	150412 BQENB	1.2	●		
	5106679	VNGA 160404 BQENB	0.4	●	9.525	
	5106687	160408 BQENB	0.8	●		



General Turning

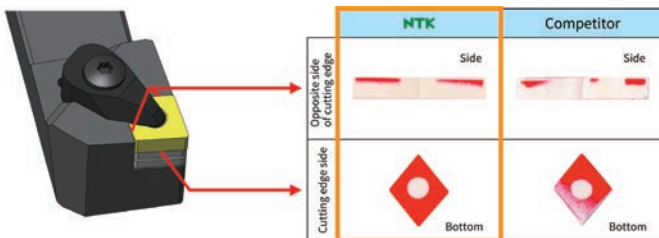
Multi Clamp Toolholders

Turning holder ideal for ceramic tools

The newly designed clamping system ensures rigidity and insert crack prevention during clamping, to achieve stable machining with ceramic tools.

Features①

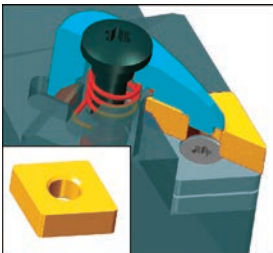
Ceramic inserts may chip or become unstable due to forces and impacts that occur during machining. NTK multi-clamp holders use a strong clamping system that evenly distributes forces on ceramic insert for a rigid set up.



Features②

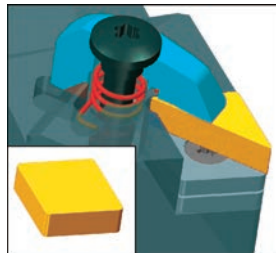
Three types of inserts can be utilized in a holder by simply changing the clamp.

Double-clamp type



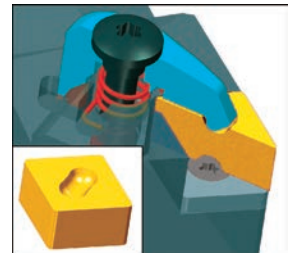
The insert can be firmly clamped.

Clamp-on type

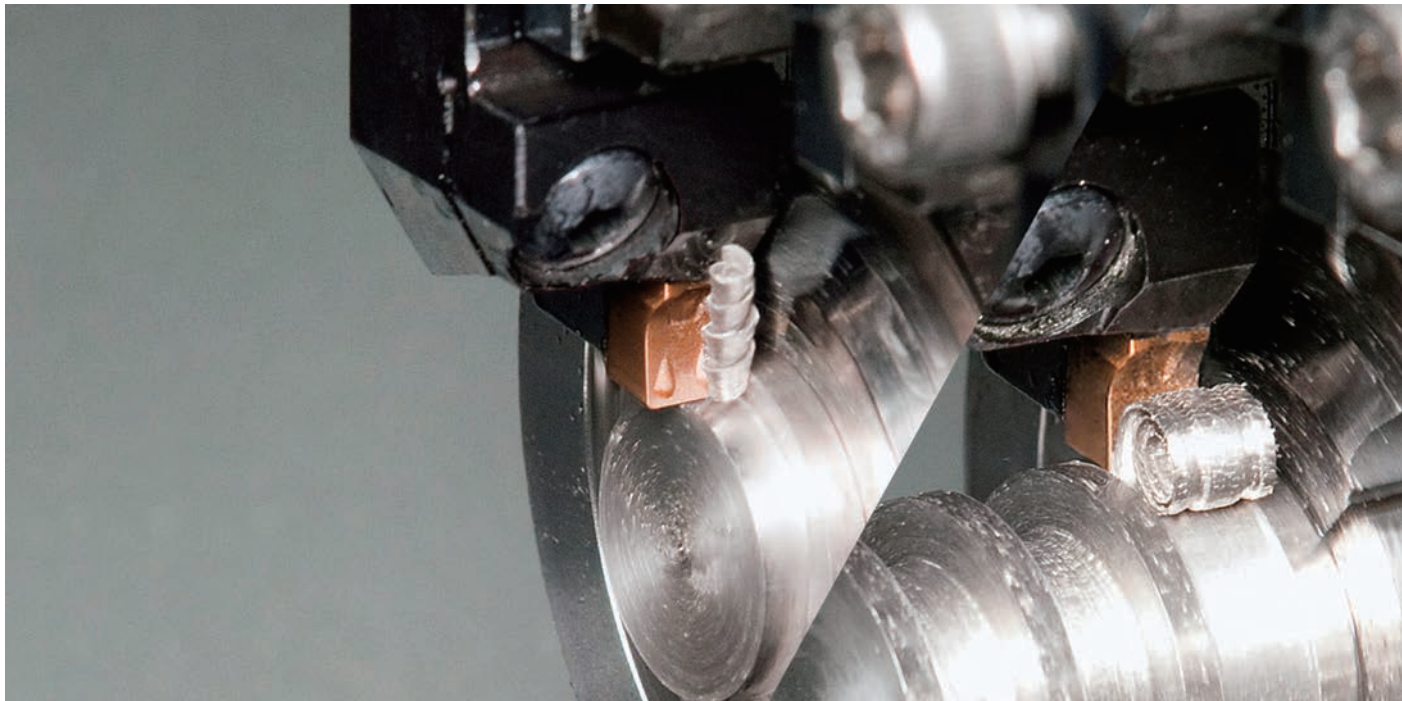


Not ideal for machining applications that apply cutting forces from multiple directions. The insert is clamped firmly and is suitable for ceramic tools.

Dimple-clamp type



Combines the double-clamp and clamp-on styles. It is effective for suppressing insert edge chipping.



For grooving | Swiss CNC lathes / Conventional CNC lathes

SCRUM DUO



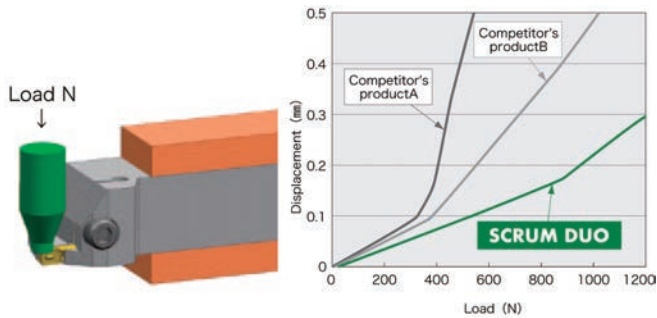
Exceptionally rigid design to ensure stable grooving

Prevents the insert from shifting during machining and achieves a good machined surface

Performance

- Applicable groove width: 3.0mm-6.0mm
- Highly rigid holder achieves a 3.5mm depth of cut during side turning operation

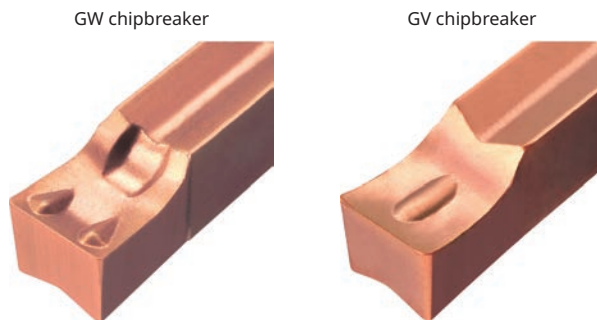
Tool pressure comparison when grooving



Two chipbreaker styles - select the best fit for your grooving application

GW chipbreaker: A versatile design with edge sharpness and chip control. Multi-functional for grooving and side turning.

GV chipbreaker: Features superior sharpness with high rake face. Ideal for applications requiring low tool pressure.



Grooving

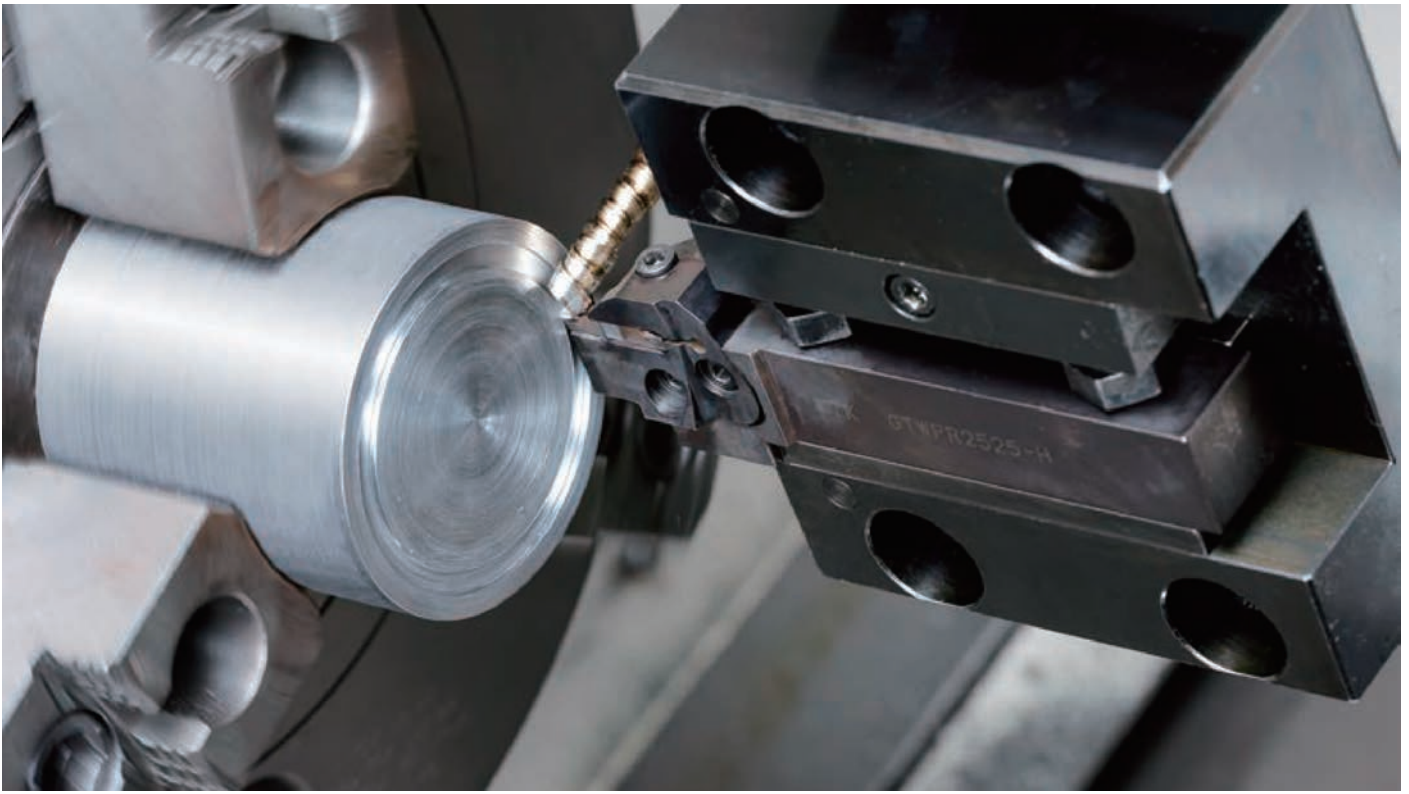
	New GW chipbreaker	Competitor's product
Chip		
Surface finish		

[Cutting conditions] SCM415 groove width: 5.0mm Vc=150m/min f=0.1mm/rev ap=7.0mm No step feed with coolant
[Tools] Insert: DM4 GWPG500N04F-GW Holder: GTWPR2525M-5F10

Side turning

	New GW chipbreaker	Competitor's product
Chip		
Surface finish		

[Cutting conditions] Material: SCM415 Groove width: 5.0mm Vc=150m/min f=0.1mm/rev ap=1.0mm No step feed With coolant
[Tools] Insert: DM4 GWPG500N04F-GW Holder: GTWPR2525M-5F10



For face grooving

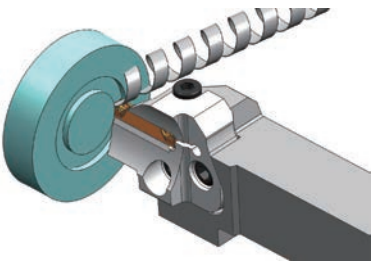
SCRUM DUO BLADE

Strongest rigidity in a modular style system

Unique S-shaped chipbreaker designed specifically for face grooving. The blade lineup supports a wide range of machining applications.

Groove widths range from 3 to 6mm and a minimum machining diameter of 29mm.

Chip Comparison Grooving

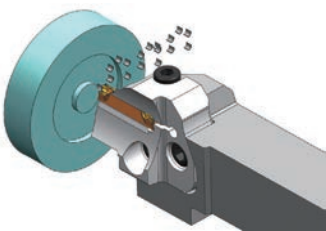


Good chip control and good machined surfaces with or without step feed

	GT chipbreaker	Competitor's	
Chip			Tangled chips during deep grooving
Grooved face			Scratches inside bottom

SCM415 Vc=150m/min f=0.1mm/rev Dia.φ50 Groove depth ap=10mm
No step feed with coolant
Insert: DM4 GWPFM500N04-GT Holder: GBWPFR-5T15-050120

Chip Comparison Side Turning



Excellent chip control and shiny groove bottom surface during side turning

		Feed(mm/rev)		
		0.05	0.1	0.2
DOC(mm)	3.0			
	1.0			
	0.2			

SCM415 =150m/min with coolant
Insert: DM4 GWPFM500N04-GT Holder: GBWPFR-5T15-050120

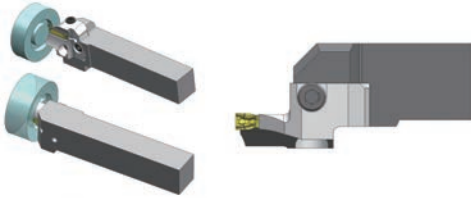
Blade and toolholder body combinations for modular system

Blade types can be easily combined with straight and L-shaped holders

GTWP-H

Holder for blades (straight type: 0°)

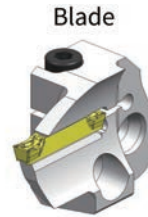
Right-hand



Clockwise rotation (M4 command)



GTWP R-H

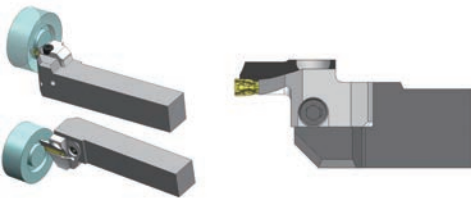


GBWPF R

* Right-hand toolholder takes Right-hand blade.

Please use the right-hand blade for the right-hand holder body.

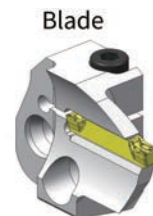
Left-hand



Counter clockwise rotation (M3 command)



GTWP L-H



GBWPF L

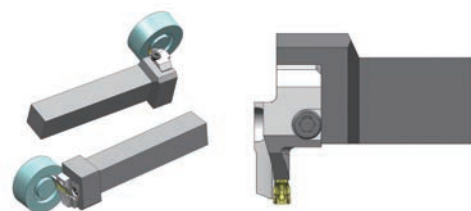
* Left-hand toolholder takes Left-hand blade.

Please use a left-handed blade for a left-handed holder body.

GKWP-H

Holder for blades (L-shaped type 90°)

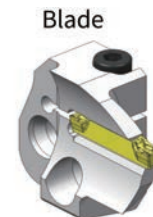
Right-hand



Counter clockwise rotation (M3 command)



GKWP R-H

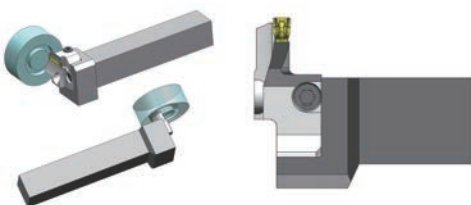


GBWPF L

* Right-hand toolholder takes Left-hand blade.

Please use the left-hand blade for the right-hand holder body.

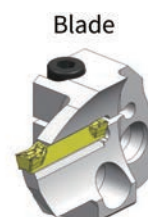
Left-hand



Clockwise rotation (M4 command)



GKWP L-H



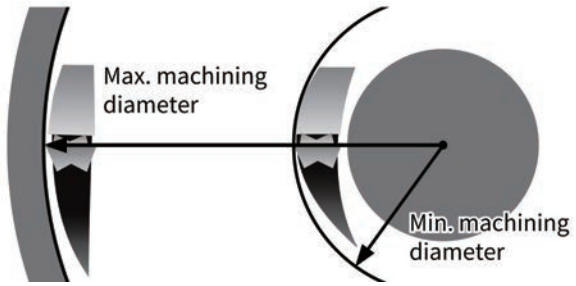
GBWPF R

* Left-hand toolholder takes Right-hand blade.

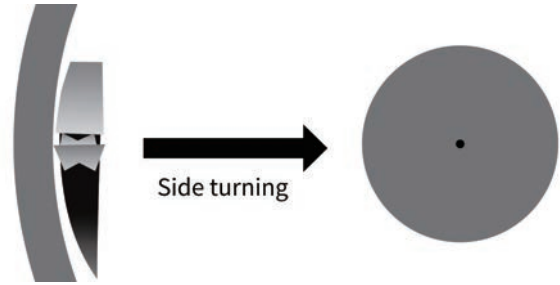
Please use the right-hand blade for the left-hand holder body.

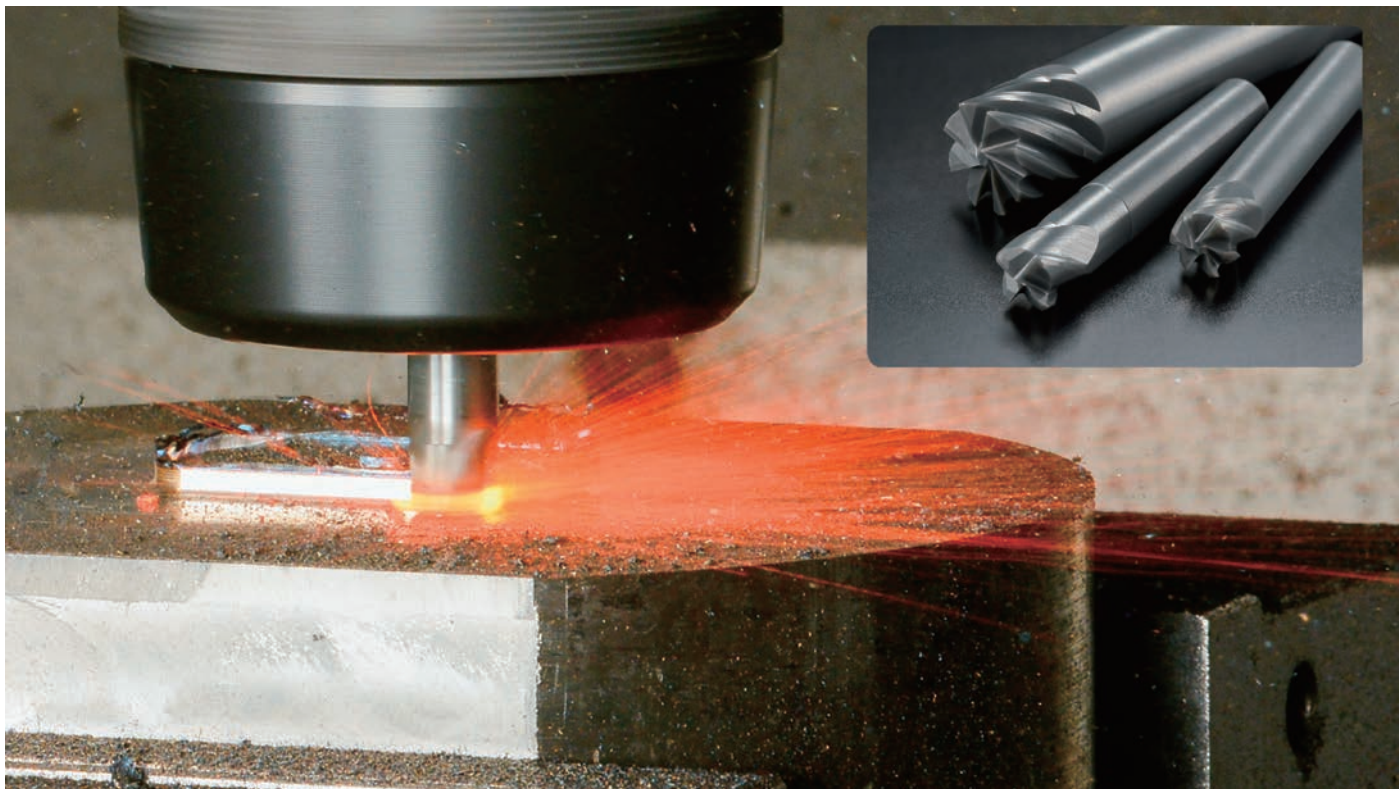
Notes on use

Select the end-face blade so that the outermost diameter of the first end-face groove to be machined is within the range of the minimum and maximum machining diameters.



To widen the groove, select a blade with the outermost diameter of the end face groove and machine from the outer edge toward the center.





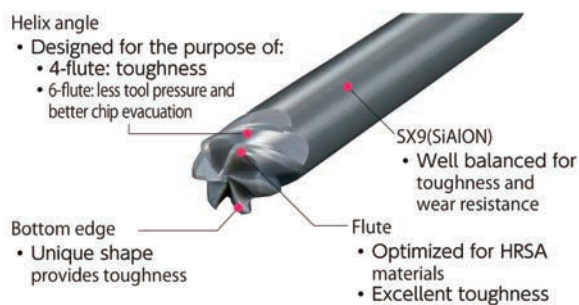
For heat-resistant alloys | Sharp edged ceramic end mills

CERAMATIC RCE type

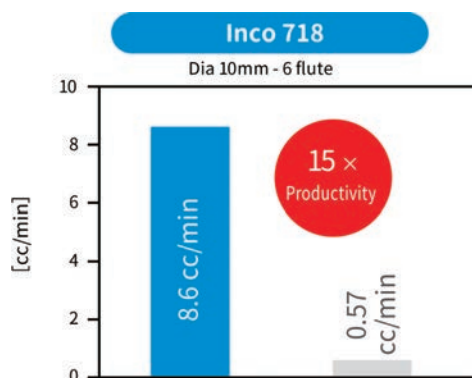
High-speed machining with ceramic

High-speed machining of heat-resistant alloys is achieved using the SiAlON ceramic grade "SX9" which has excellent wear resistance and toughness. 10 times more efficient machining than carbide end mills.

Features

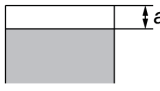



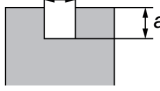




Performance



	SX9	Carbides
Cutting speed (m/min)	600	40
Feed (mm/t)	0.03	←
DOC (mm)	3.0	←

Recommended cutting condition (Heat resistant alloy)

Application	Grade	ϕD_c	Flute	Cutting Speed (m/min)			Feed (mm/t)	Depth of cut (a_p -mm)	Width of cut (a_e -mm)	Coolant
				150	600	1000				
Face Milling 	SX9	8mm	4/6/8	150	600	1000	0.03	≤ 1.2	—	DRY 
		10mm						≤ 1.5		
		12mm						≤ 1.8		
		16mm						≤ 2.4		
		20mm						≤ 3.0		
		3/8"						≤ 1.4		
		1/2"						≤ 1.9		
		5/8"						≤ 2.4		
		3/4"						≤ 2.9		
Side Milling 	SX9	8mm	4/6/8	150	600	1000	0.03	≤ 4.0	≤ 0.8	DRY 
		10mm						≤ 5.0	≤ 1.0	
		12mm						≤ 6.0	≤ 1.2	
		16mm						≤ 8.0	≤ 1.6	
		20mm						≤ 10.0	≤ 2.0	
		3/8"						≤ 4.8	≤ 0.9	
		1/2"						≤ 6.4	≤ 1.3	
		5/8"						≤ 8.0	≤ 1.6	
		3/4"						≤ 9.5	≤ 1.9	
Slotting 	SX9	8mm	4	150	600	1000	0.03	≤ 2.0	—	DRY 
		10mm						≤ 2.5		
		12mm						≤ 3.0		
		16mm						≤ 4.0		
		3/8"						≤ 2.4		
		1/2"						≤ 3.2		
	5/8"	≤ 4.0								
	SX9	6	8mm	150	600	1000	0.03	≤ 1.2	—	DRY 
			10mm					≤ 1.5		
			12mm					≤ 1.8		
			16mm					≤ 2.4		
			3/8"					≤ 1.4		
1/2"			≤ 1.9							
5/8"	≤ 2.4									

Notes on Heat-Resistant Alloy Machining

- Toolpaths in which the cutting edge leaves the workpiece during machining are likely to cause defects due to rapid cooling of the cutting edge. Use a toolpath that allows for continuous cutting as much as possible.
- Continue machining without removing the BUE (built up edge) on the cutting edge.
- Cutting speed should be 300 m/min or more.
- Maximum ramping angle of 1.5° is recommended. When ramping, please machine at 50% of the feed rate.
- Since work hardening occurs due to high-speed machining, leave a machining allowance of 0.3 mm or more for finish machining.
- Recommended arbor: 1st recommended hydro chuck, 2nd recommended milling chuck.



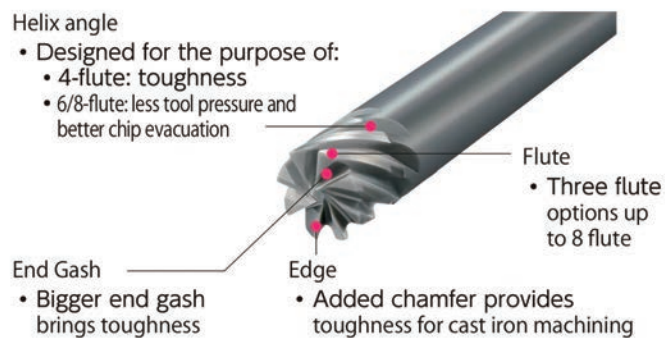
For cast iron | Edge-strengthened ceramic end mills

CERAMATIC RCS type

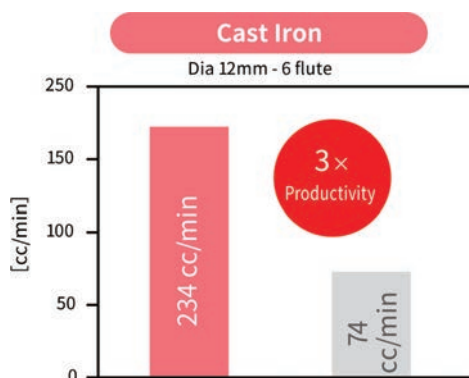
Ceramic end mills that can machine cast iron

Sialon ceramic grade "SX9" with excellent wear resistance and toughness enables high-speed machining of heat-resistant alloys and cast iron. More than 3 times higher machining efficiency than carbide end mills.

Features

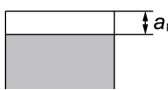



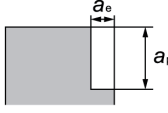



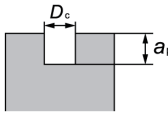





Performance



	SX9	Carbides
Cutting speed (m/min)	700	110
Feed (mm/t)	0.05	←
DOC (mm)	3.5	7.0

Recommended cutting condition (Cast iron)

Application	Grade	ϕD_c	Flute	Cutting Speed (m/min)			Feed (mm/t)	Depth of cut (a_p - mm)	Width of cut (a_e - mm)	Coolant
				150	600	1000				
Face Milling 	SX9	12mm	4/6/8			0.1	≤ 3.0	—	DRY 	
		16mm					≤ 4.0			
		20mm					≤ 5.0			
		1/2"					≤ 2.0			
		5/8"					≤ 4.0			
		3/4"					≤ 5.0			
Side Milling 	SX9	12mm	4/6/8			0.1	≤ 9.0	≤ 2.0	DRY 	
		16mm					≤ 12.0	≤ 2.5		
		20mm					≤ 15.0	≤ 3.0		
		1/2"					≤ 9.0	≤ 2.0		
		5/8"					≤ 12.0	≤ 2.5		
		3/4"					≤ 14.0	≤ 3.0		
Slotting 	SX9	12mm	4/6/8			0.1	≤ 3.0	—	DRY 	
		16mm					≤ 4.0			
		20mm					≤ 5.0			
		1/2"					≤ 2.0			
		5/8"					≤ 4.0			
		3/4"					≤ 5.0			

Notes on cast iron machining

- Cutting speed should be 350 m/min or more.
- It is recommended that tool overhang be limited to 2D.
- Although machining can be performed with coolant, "DRY machining" is recommended to stabilize tool life.
- Avoid small depths of cut where the bottom flute edge scrapes the scale of the workpiece.
- Recommended arbor: 1st recommended hydro chuck, 2nd recommended milling chuck.



Gear parts | Square tooth chamfering

End mill for square tooth chamfering RCL type

Indexable 2-flute end mill

Reduced C/T is possible through the use of fine carbide inserts (in comparison with HSS end mills).
Longer tool life compared to single-blade edge-replaceable end milling tools

Recommended cutting condition

If the recommended module or feed rate is exceeded, the clamping screw should be tightened regularly (every few hours to once a day) to prevent loosening.

Cutting edge dia.	Recommended Modules	Recommended feed rate
φ14	less than 2.25	less than 0.3mm/rev
φ12	less than 2.15	less than 0.3mm/rev

Notes

- The amount of overhang of the end mill should be minimized from the chuck to the cutting edge to prevent runout during machining (approx. 20 mm).
- The square tooth chamfering process for gear components requires a large number of impacts, which may cause the holder and clamping screw to wear out more quickly than with ordinary tools. Therefore, we recommend regular replacement of holders and clamping screws for safer and more stable use.
- Since loosening may occur during processing, please tighten the clamping screw regularly.

Case study | Sleeve holder square tooth chamfering

10 times longer tool life compared to current tools

Work material	SCM415		<table border="0"> <tr> <td style="border: 1px solid black; padding: 5px;">NTK 2 inserts</td> <td style="background-color: #008000; color: white; padding: 5px;">2000 pcs/corner</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;">Competitor's 1 insert</td> <td style="background-color: #cccccc; padding: 5px;">200 pcs/corner</td> </tr> </table>	NTK 2 inserts	2000 pcs/corner	Competitor's 1 insert	200 pcs/corner
NTK 2 inserts	2000 pcs/corner						
Competitor's 1 insert	200 pcs/corner						
Cutting speed	154m/min						
RPM	3,500min-1						
Coolant	WET						



Milling tools for machining gray cast iron and ductile cast iron | Ceramic inserts

JWNXM series Cutter

Ultra-high speed machining exceeding $V_c=1,000\text{m/min}$

Low-resistance cutters and inserts reduce edge chipping of workpiece.

Multiple machining passes → One machining pass reduces machining time and extends tool life (up to 5.5 mm depth of cut)

Ideal for cutting cast iron with scale.

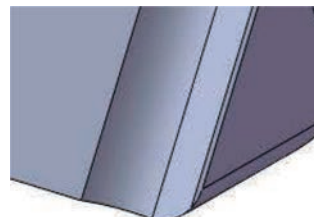
Features. 1

Unique 6-corner cutting edge reduces tooling costs. Excellent cutting performance with chipbreaker.

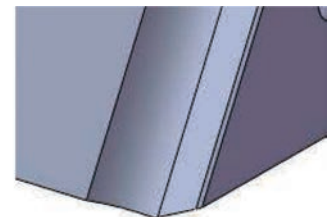


Features. 2

Two types of edge features: an edge radius for high feed rate and a C-chamfer shape for excellent cutting performance.



【Radius type】

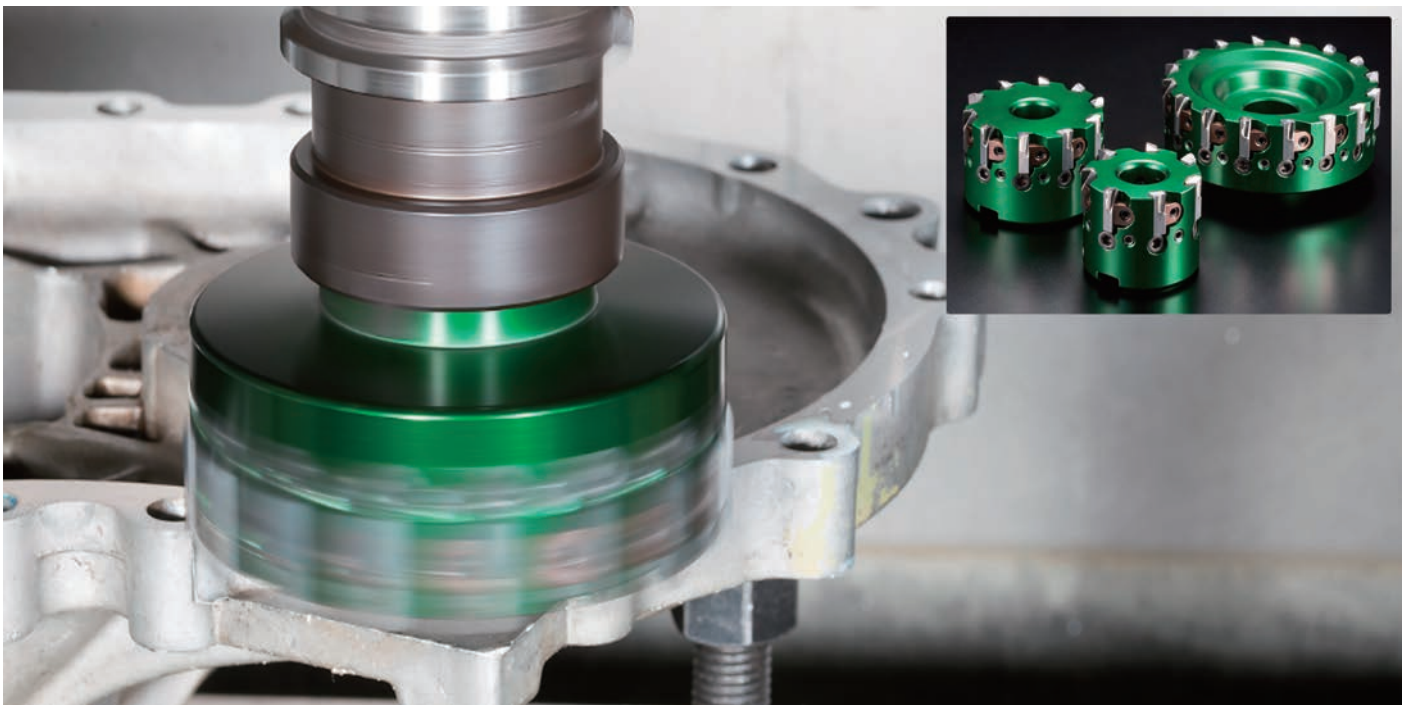


【Chamfered type】

Case study transmission case

The competitor's inserts were replaced after 60 parts because insert wear caused an increase of cutting forces that loosened clamping and shifted the workpiece, but the JWNXM series cutter has low cutting resistance, so no clamping shift due to wear progresses is observed, and the life is doubled compared to the current tool.

Work material	FC230		<p>NTK</p> <p>125 pcs/corner</p> <hr/> <p>Competitor's tool</p> <p>60 pcs/corner</p>
Cutting speed	500 m/min		
Feed	0.13 mm/t		
DOC	1mm		
Coolant	DRY		



Milling Tools for Finishing Aluminum Alloys | PCD Inserts

HFC series Cutter / JHF type



φ125 cutter can be equipped with a maximum of 22 inserts, achieving highly efficient machining.

Lineup of cutter diameters from φ50 to φ125

Up to 1.5 times higher machining efficiency than competitors cutters

Adjustable type: Cutting edge height adjustable to 5 μm or less

Features 1.

Highly improved machining efficiency by maximizing the number of cutting edges in a cutter.

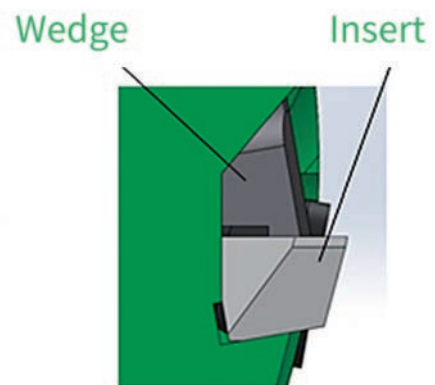
Lightweight aluminum body enables use on machines with ATC weight restrictions.

Cutter dia.	No. of inserts		Weight(kg)	
	HFC	Competitor A	HFC	Competitor A
50	7	None	0.23	None
63	10	None	0.38	None
80	12	10	0.48	1
100	16	12	0.74	1.7
125	22	15	1.10	2.2

Features 2.

Safety clamp mechanism

Unique sphenoidal pocket prevents inserts from becoming dislodged.



Case study Transmission case (φ63, 10 blades)

HFC has improved machining efficiency by 1.3 times compared to competitor's PCD cutters (flatness improved from less than 20 to 6 μm)

Work material	ADC12		NTK Competitor's milling cutter with PCD inserts	10,000mm/min
Cutting speed	1,978 m/min			7,920 mm/min
Feed	0.1 mm/t			
DOC	0.5mm			
Coolant	WET			

Inserts can be reground up to 4 times

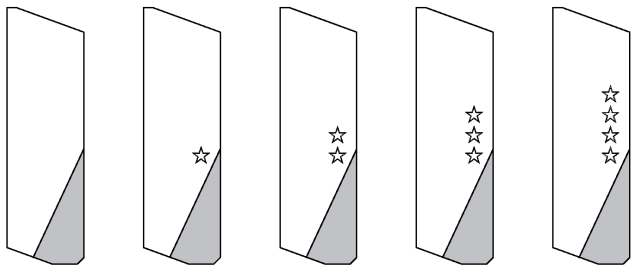
- In the first round of grinding, both the front and side cutting edges are ground 0.1mm and the first mark is added.
- In the second regrind, a further 0.1 mm (0.2 mm from new) removed and a second mark is added.
- It can be reground a total of 4 times (0.4 mm from new) in the same way.

The number of regrinds possible may vary depending on the inserts condition.

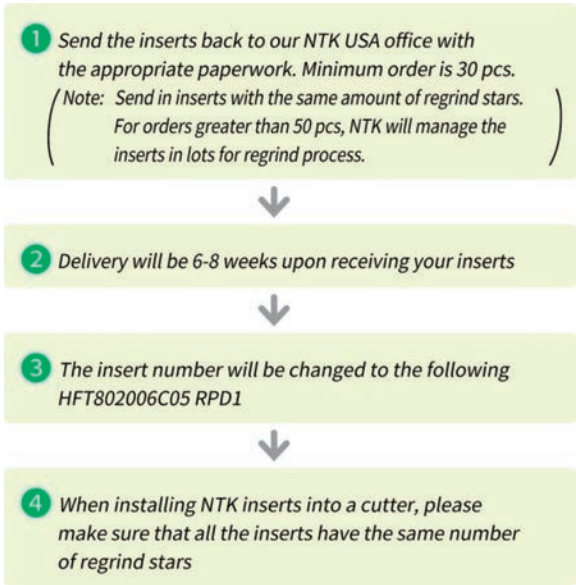
The total amount of grinding should not exceed 0.4 mm for both the front and side cutting edges to prevent problems such as brazing strength and interference with the run-out surface.

- When installing inserts into a cutter, please make sure all the inserts have the same number of regrind marks.
- When regrinding, please contact NTK for safety.

Note(s): When using regrind inserts, be careful to reduce the cutter diameter and correct the axial dimension.

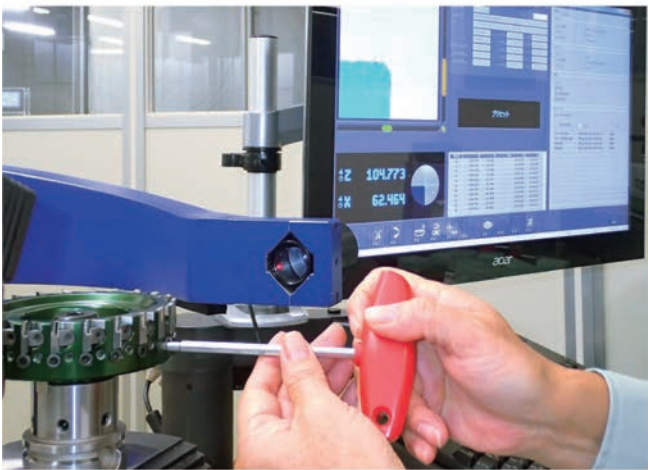


New After 1st regrinding After 2nd regrinding After 3rd regrinding After 4th regrinding



Cutter setup and balance service

Re-setting



$\pm .002\text{mm}$ height run out

Re-balancing

Balance grade: G 2.5

- Presetting for new inserts and regrind inserts is a paid service.
- We support safe and stable machining for our customers.

Procedures

Procedures

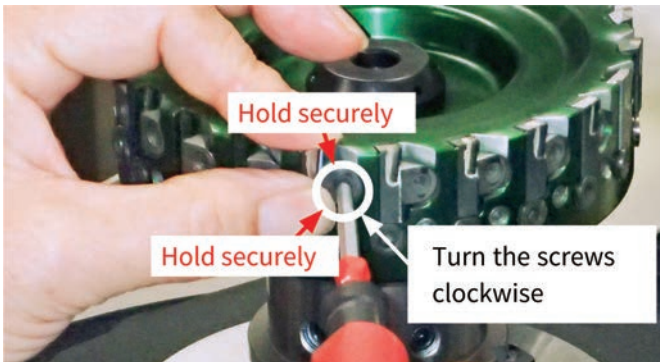
1. Loosen the axial adjustment screw
2. Insert installation (temporary tightening)
3. Cleaning the insert edge
4. Cutting edge height adjustment (Rough)
5. Insert installation (main tightening)
6. Cutting edge height adjustment (Finish)

1. Loosen the axial adjustment screw



Loosen the axial adjustment screw and move it out about 1~2mm from the outer circumference of the body. When re-setting, clean the insert mounting area with air after removing the insert.

2. Insert installation (temporary tightening)



3. cleaning the cutting edge

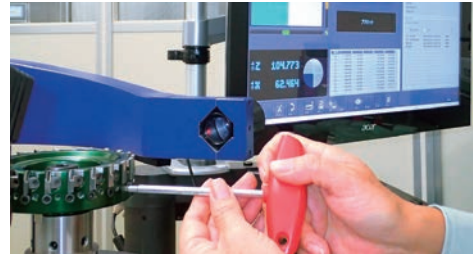


Clean the cutting edge with clay or other material to prevent misalignment of accuracy due to dust.

Preparations

- Tool presetter
- Air blower
- 4.0mm Hex wrench
- 2.5mm Hex torque-wrench(1-4 N-m)

4. Cutting edge height adjustment (rough)



Turn the axial adjustment screw until it is near the position where it does not come out of the outer circumference of the body. (clockwise) [Approximate height of the blade edge: 44.980 mm] Adjust all edge heights according to that height. (within about 10 μ m)

5. insert installation (final tightening)



Tighten the wedge fixing screw to 4 N-m. (Clockwise)

4. cutting edge height adjustment (finishing)



Turn the axial adjustment screw to further increase the height of all blades by 10 μ m and adjust the cutting edge height to within $\pm 2 \mu$ m. Adjust the blade tip height to within $\pm 2 \mu$ m. The approximate height of the cutting edge is 45.000 mm.

*If the cutting edge height is raised too high during adjustment, if it is only a few micrometers, the highest cutting edge should be adjusted again. If it is too far off, it is necessary to start over from the beginning. (Because distortion occurs due to stress.)

Note(s): After tightening (4 N-m), the lower surface of the insert and the axial adjustment screw may not be in contact, and the full blade-up operation described above is necessary as a measure to prevent the axial adjustment screw from falling out.



Milling Tools for Finishing Aluminum Alloys PCD Inserts

HPC series Cutter / RD_RA type

Wide range of sizes from $\phi 20$ to $\phi 100$

High reliability is achieved by adopting a steel body for the cutbody.

Fixed type: Machining is possible by simply replacing inserts

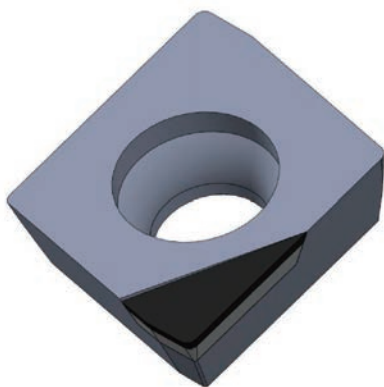
Adjustable type: Cutting edge runout adjustable to 5 μm or less

Feature 1.

The same insert can be used for $\phi 40$ to $\phi 100$

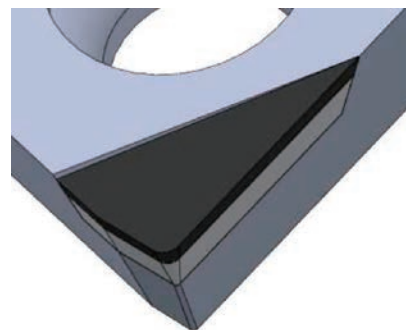
Cutting edge length : 3.5 - 6 mm

A.R. : +6 - +9°



Feature 2.

Cutting edge C0.5 type is added to the product lineup. Improved sharpness compared to Radius type, and effective in reducing tool life due to burrs.



Case study Rocker shaft ($\phi 32$, 2 to 4 blades)

HPC achieves approximately 5 times higher machining efficiency than other carbide cutters. Total cycle time has been successfully reduced by 3 min.

Material	ADC12		HPC Competitor's milling cutter with PCD inserts	15,000 pcs/corner
Cutting speed	800 m/min			8000 pcs /corner
Feed	0.05 mm/t			
DOC	MAX 1mm			
Coolant	WET			

Tool presetter procedure

■ Be sure to clean all insert pockets before performing the following operations.

• Step 1: Temporary tightening

Install the insert and turn the wedge fixing screw, Tighten the wedge temporarily at 1 N-m.

• Step 2: Cutting edge height adjustment (rough adjustment)

Turn the axial adjustment screw and set it 0.1 mm lower than the cutting edge height on the drawing.

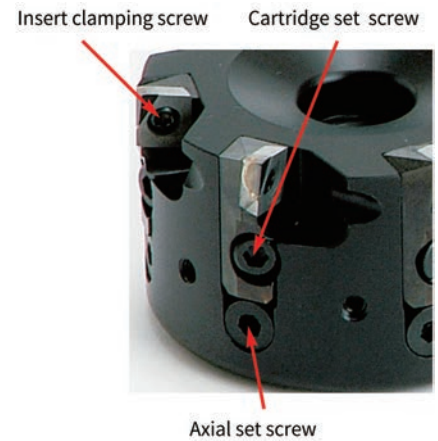
• Step 3: Main tightening

Tighten the wedge with 4 N-m.

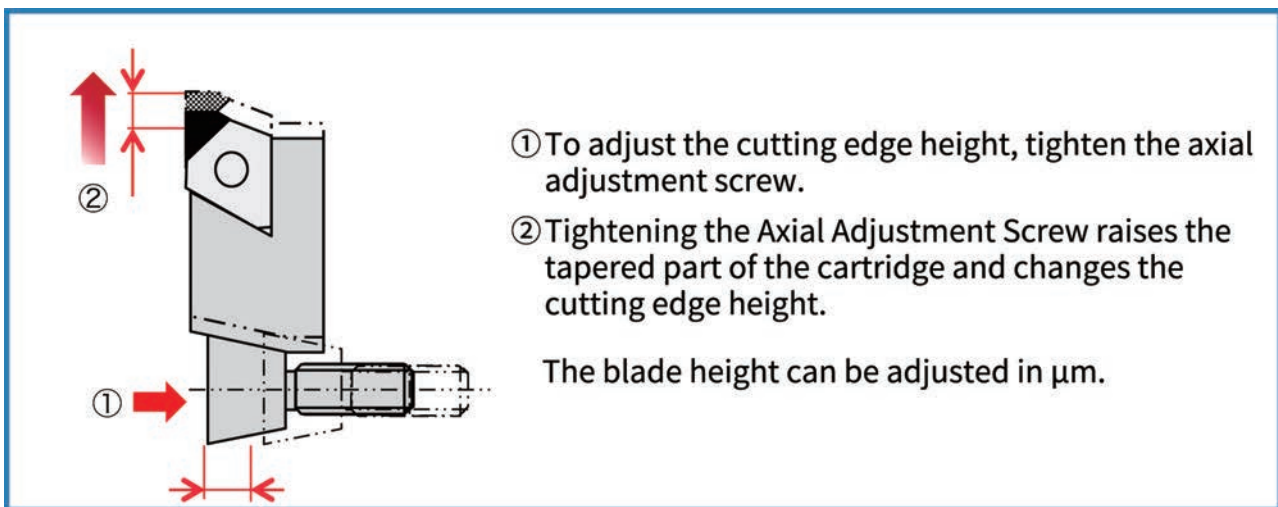
• Step 4: Edge height adjustment (finishing)

As a finishing adjustment, set all inserts at 0.05 mm lower than the cutting edge height on the drawing with the axial adjustment screw.

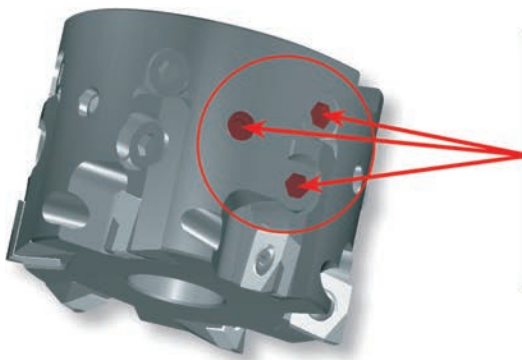
• Finish



Principle of tool position adjuster



About HPC Fixed Type Cutter



【Note】

The holes for the axial setscrews and balance adjusting screws are filled with a special material, thus, no screwdrivers and hex-wrenches can be inserted in them.

※The color of the special material is different from the color of the actual product body.