

THE NEW VALUE FRONTIER



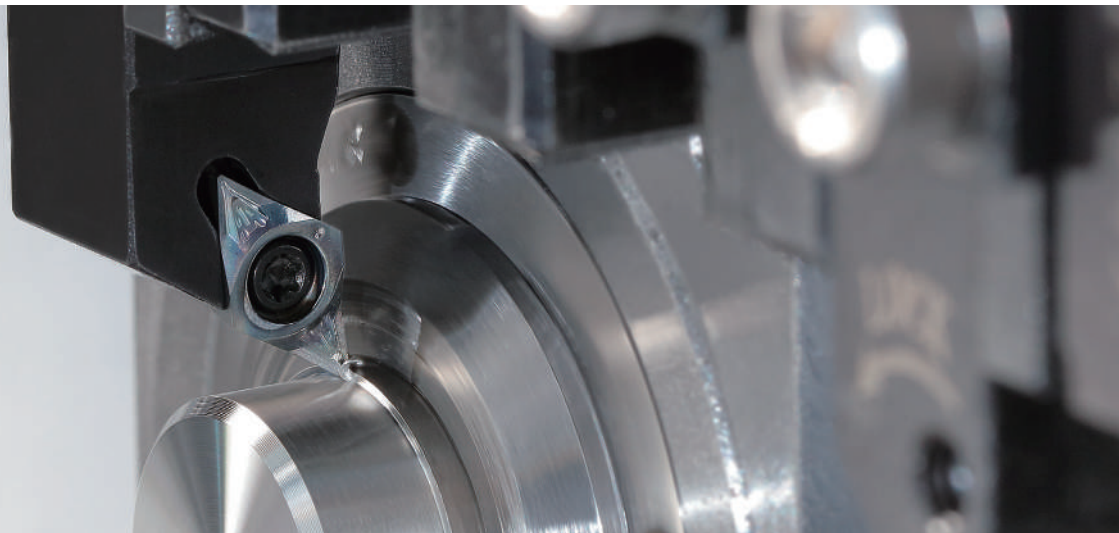
New PVD
Coating

PR1725/PR1705

New PVD Coating

PR1725/PR1705

NEW



Excellent Surface Finish and Long Tool Life

Newly Developed PVD Coating MEGACOAT NANO PLUS

PR1725

Great for Machining Steel and other Materials

Wide Range of Machining Applications with Various Chipbreakers Available

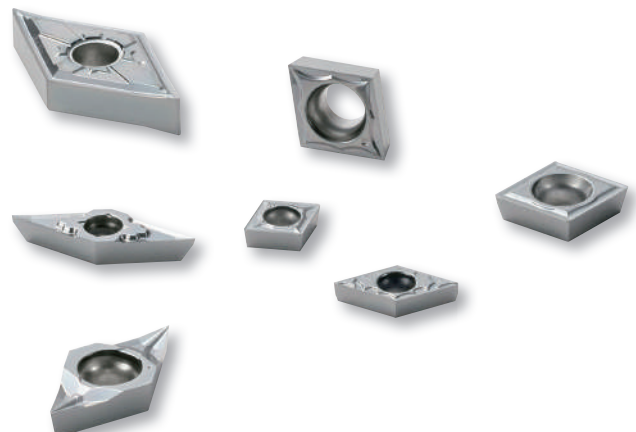
PR1705

Excellent Wear Resistance and

High Precision Machining of Free-cutting Steel

NEW

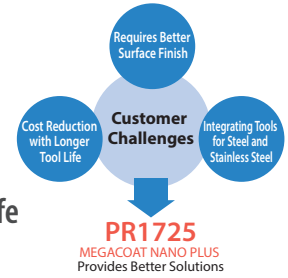
For Finishing
SKS Chipbreaker



New PVD Coating

PR1725

1st Recommendation for Steel Machining. Excellent Surface Finish and Long Tool Life
Great Performance in Small Parts Machining Applications

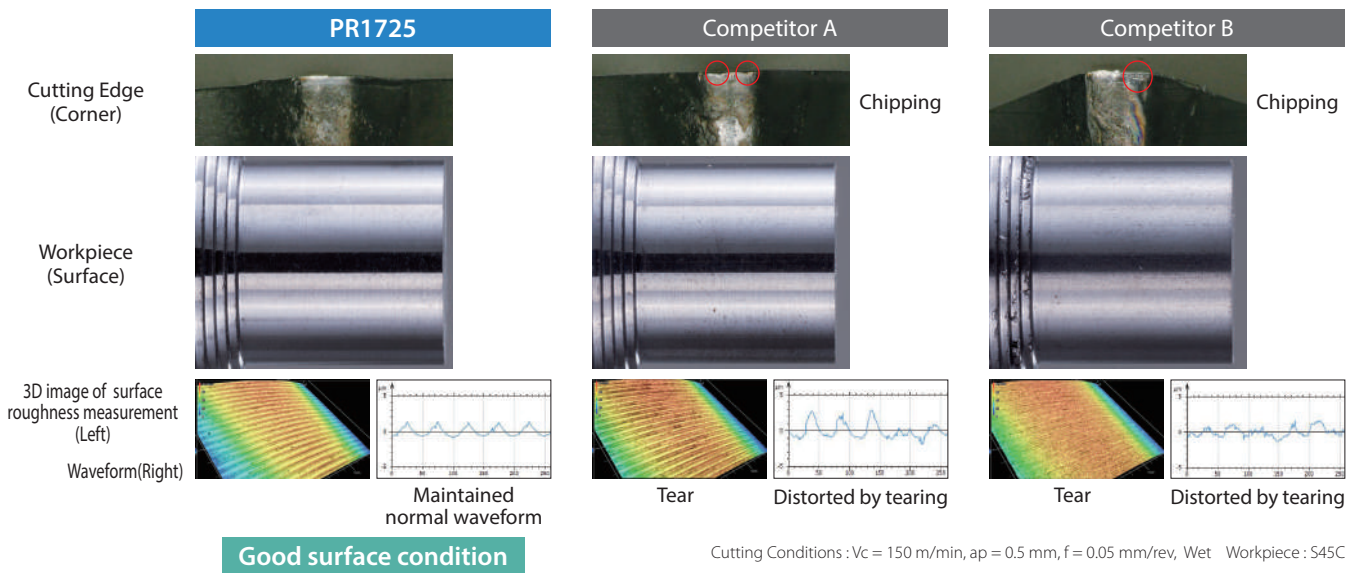


1 MEGACOAT NANO PLUS Maintains Long Tool Life and Excellent Surface Finish

Long tool life leads to improved cycle time

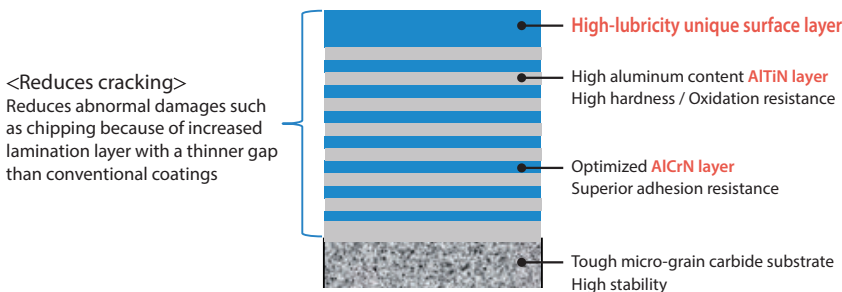
Excellent surface finish with no tearing lowers quality control costs

Insert cutting edge wear and quality of surface finish comparison (S45C) * After 20 min of machining (Internal evaluation)

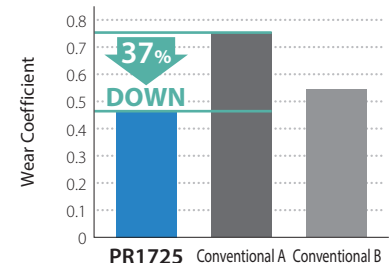


MEGACOAT NANO PLUS

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



Wear Coefficient Comparison (Internal evaluation)



Superior Wear and Chipping Resistance

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

Applicable to various workpiece materials

Excellent oxidation resistance. Superior high temperature properties maintains good performance in steel, stainless steel and free-cutting steel

Excellent Surface Finish

Special surface layer with great lubricity reduces adhesion

High machining stability

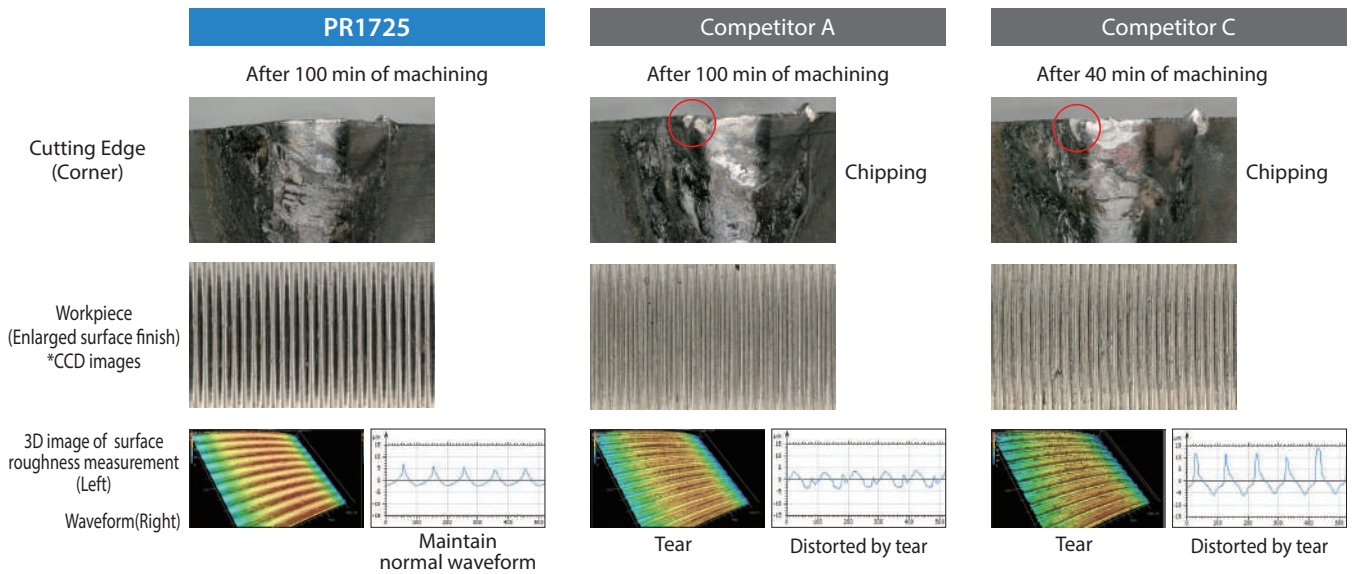
Tough micro-grain carbide substrate provides stable machining

2 One solution can be used in various workpiece materials

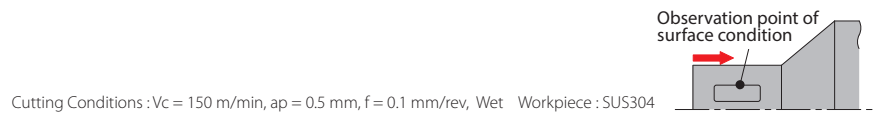
Long tool life for steel, stainless steel and free-cutting steel

Improved management of tools cut the cost

Wear on the cutting edge of insert and quality of the surface finish comparison (Stainless steel:SUS304)

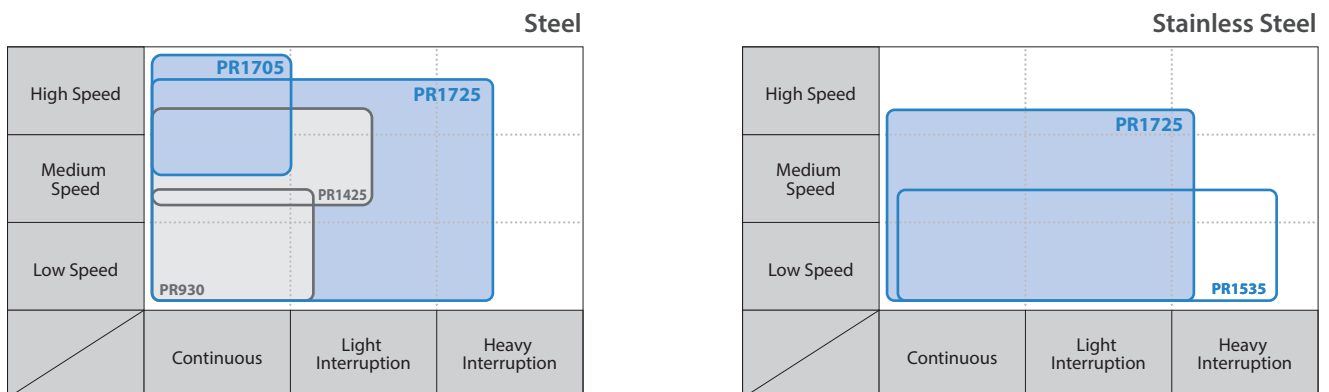


PR1725 shows less damage on the cutting edge and maintains stable tool mark on the workpiece surface



3 Applicable to a Wide Range of Machining Applications

Good performance in both steel and stainless steel from low to high speed machining



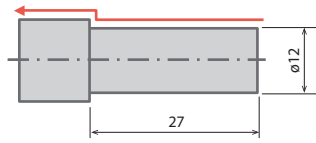
PR1725 : 1st Recommendation for steel machining
PR1705 : 1st Recommendation free-cutting steel

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

Case Studies

Shaft SCM435

Vc = 110 m/min
 ap = ~1.5 mm
 f = 0.06 mm/rev
 Wet
 DCGT11T302MFP-SK PR1725



Tool Life

**PR1725
SK Chipbreaker**

3,000 pcs/edge

Tool Life



Competitor D
(Molded Chipbreaker)

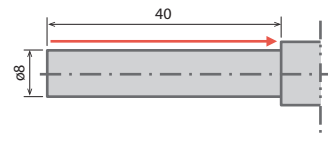
1,500 pcs/edge

PR1725 SK chipbreaker showed 2 times longer tool life when compared to competitor D

(User Evaluation)

Shaft SCM440H

Vc = 70 m/min
 ap = 1.0 mm
 f = 0.05 mm/rev
 Wet
 DCGT11T302MFP-SK PR1725



Tool Life

**PR1725
SK Chipbreaker**

250 pcs/edge

Tool Life



Competitor E
(Molded Chipbreaker)

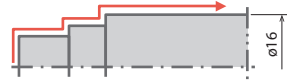
150 pcs/edge

PR1725 SK chipbreaker showed 1.6 times longer tool life when compared to competitor E

(User Evaluation)

Shaft S35C

Vc = 90 m/min
 ap = 0.3mm
 f = 0.1 mm/rev
 Wet
 DCGT11T302MFP-SK PR1725



Tool Life

**PR1725
SK Chipbreaker**

300 pcs/edge

Tool Life



Competitor F
(Molded Chipbreaker)

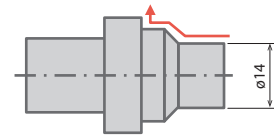
200 pcs/edge

PR1725 SK chipbreaker showed 1.5 times longer tool life when compared to competitor F

(User Evaluation)

Pin SCM420

Vc = 110 m/min
 ap = 0.2~0.7 mm
 f = 0.07 mm/rev
 Wet
 DCGT11T302MFP-GQ PR1725



Tool Life

**PR1725
GQ Chipbreaker**

200 pcs/edge

Tool Life



Competitor G
(Molded Chipbreaker)

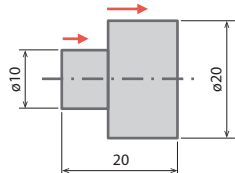
150 pcs/edge

PR1725 GQ chipbreaker showed 1.3 times longer tool life when compared to competitor G

(User Evaluation)

Shaft SUS420J2

Vc = 50 m/min
 ap = 0.1 mm
 f = 0.05 mm/rev
 Wet
 DCGT11T302MFP-GQ PR1725



Tool Life

**PR1725
GQ Chipbreaker**

600 pcs/edge

Tool Life



Competitor H
(Molded Chipbreaker)

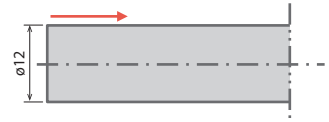
300 pcs/edge

PR1725 GQ chipbreaker showed 2 times longer tool life when compared to competitor H

(User Evaluation)

Shaft SUM

Vc = 110 m/min
 ap = ~2.0 mm
 f = 0.05 mm/rev
 Wet
 CCET09T304MFR-J PR1725



Tool Life

**PR1725
J Chipbreaker**

3,000 pcs/edge

Tool Life



Competitor I
(Molded Chipbreaker)

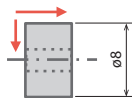
1,000 pcs/edge

PR1725 J chipbreaker showed 3 times longer tool life when compared to competitor I

(User Evaluation)

Shaft S45C

Vc = 100 m/min
 ap = 0.1 mm
 f = 0.025 mm/rev
 Wet
 DCGT11T302MFP-GF PR1725



Tool Life

**PR1725
GF Chipbreaker**

3,000 pcs/edge

Tool Life



Competitor J
(Molded Chipbreaker)

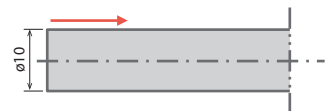
1,500 pcs/edge

PR1725 GF chipbreaker showed 2 times longer tool life when compared to competitor J

(User Evaluation)

Pin SKS

Vc = 110 m/min
 ap = 0.2 mm
 f = 0.05 mm/rev
 Wet
 DCGT11T302MFP-SK PR1725



PR1725 SK chipbreaker showed good surface finish and accuracy after machining same number of workpieces as the conventional C

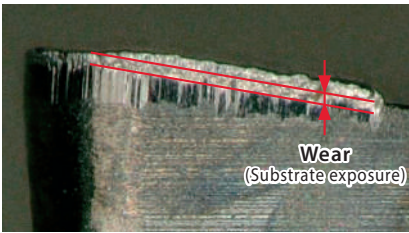
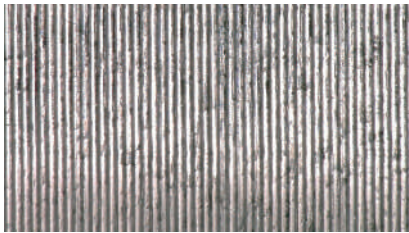
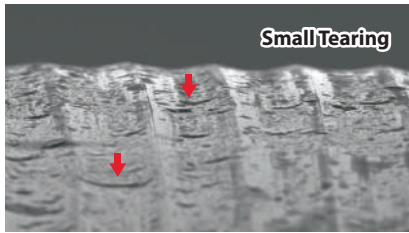
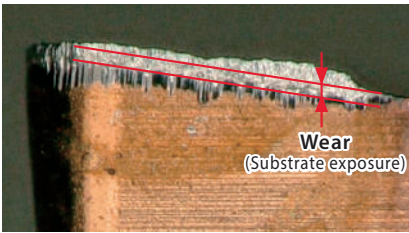
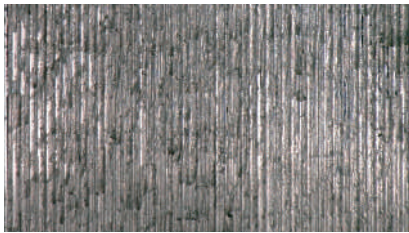
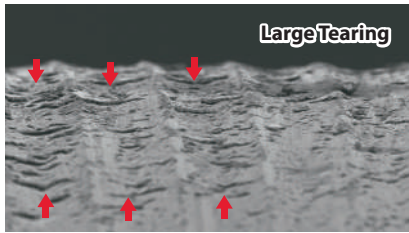
(User Evaluation)

New PVD Coating

PR1705

High-hardness ultrafine particle carbide substrates with MEGACOAT NANO PLUS offer excellent wear resistance and high precision machining

Insert Wear and Surface Finish Comparison (SUM23) * After 40 min of machining (Internal evaluation)

PR1705		
<p>Cutting Edge (Flank Face)</p>  <p>Wear (Substrate exposure)</p>	<p>Workpiece *CCD image</p>  <p>Good surface finish</p>	<p>Tearing on Workpiece (Surface Finish Enlarged)</p>  <p>Small Tearing</p>
Competitor K		
<p>Cutting Edge (Flank Face)</p>  <p>Wear (Substrate exposure)</p>	<p>Workpiece *CCD image</p>  <p>Poor surface finish</p>	<p>Tearing on Workpiece (Surface Finish Enlarged)</p>  <p>Large Tearing</p>

PR1705 showed little adhesion to the cutting edge and good surface finish on the workpiece without tearing

Cutting Conditions : Vc = 150 m/min, ap = 0.5 mm, f = 0.05 mm/rev, Wet Workpiece : SUM23

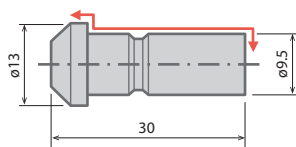
PR1705 improved tool life in continuous machining for steel and electromagnetic soft iron *For more stable machining, use PR1725



Case Studies

Pin SUM24L

Vc = 200 m/min
ap = 0.12 mm
f = 0.04 mm/rev
Wet
CCGT09T301MF PR1705



Tool Life

PR1705 MF Chipbreaker

4,800 pcs/edge

Tool Life

x1.5

Competitor L (Ground chipbreaker)

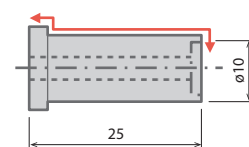
3,200 pcs/edge

PR1705 MF chipbreaker showed 1.5 times longer tool life when compared to competitor L

(User Evaluation)

Shaft SUM24L

Vc = 100 m/min
ap = 1.4 mm
f = 0.05 mm/rev
Wet
DCGT11T302MFR-J PR1705



Tool Life

PR1705 J Chipbreaker

5,800 pcs/edge

Tool Life

Approx. x1.4

Competitor M (Ground chipbreaker)

4,000 pcs/edge

PR1705 J chipbreaker showed 1.5 times longer tool life when compared to competitor M

(User Evaluation)

Molded Chipbreaker Series for Small Parts Machining

Molded Sharp Edge Chipbreaker

Extensive lineup to solve various chip control issues

Utilizing PR1725 and PR1705 provides stable machining and extended tool life

- 1 Excellent Chip Control in a Wide Range of Machining Applications
- 2 High-Precision Sharp Edge with Periphery Grinding
- 3 Anti-welding Properties for Improved Mirror Surface Finish

1st Recommendation for Finishing

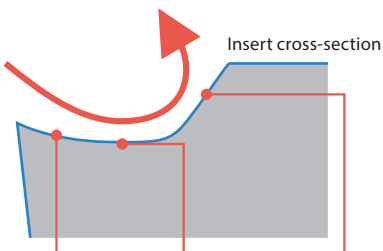
SKS Chipbreaker



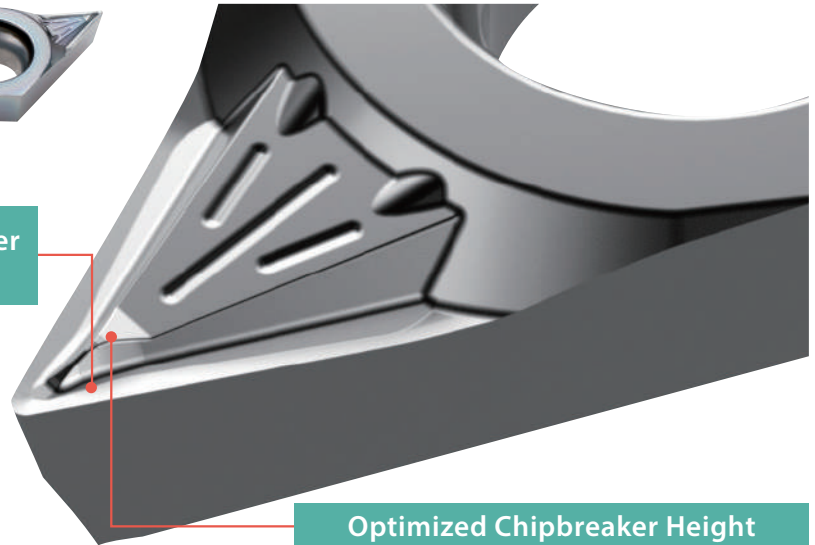
ap: 0.2 to 1.5 mm

Excellent Chip Control with Good Surface Finish

Rake face, bottom face, and chipbreaker face ensure properly curled chips



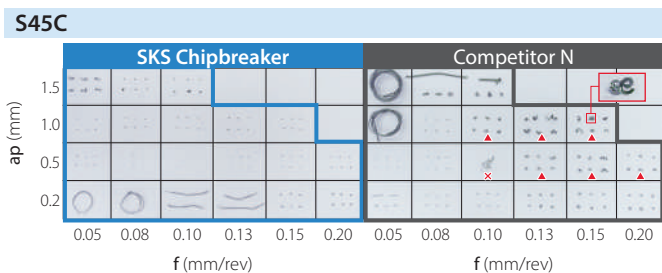
Rake Face Bottom Face Chipbreaker Face



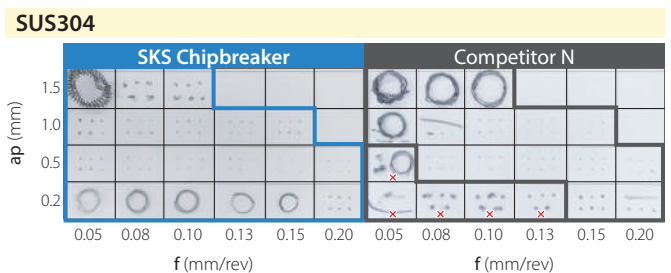
Optimized Chipbreaker Height

Stabilized chip control when machining at high feed rates
Improved chip evacuation when machining at large D.O.C.

Chip Control Comparison (Internal evaluation)



▲: A little Unstable Chip Control ✖: Unstable Chip Control



✖: Unstable Chip Control

Cutting Conditions : Vc = 100 m/min, Wet, DCGT11T302 Type

SKS chipbreaker showed greater chip control when compared to competitor N

1st Recommendation for Semi-finishing

SK Chipbreaker

ap: 0.5 to 3.0 mm

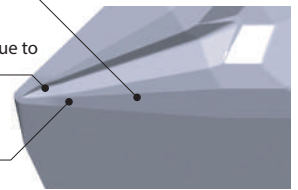
The molded chipbreaker maintains both sharpness and chip control



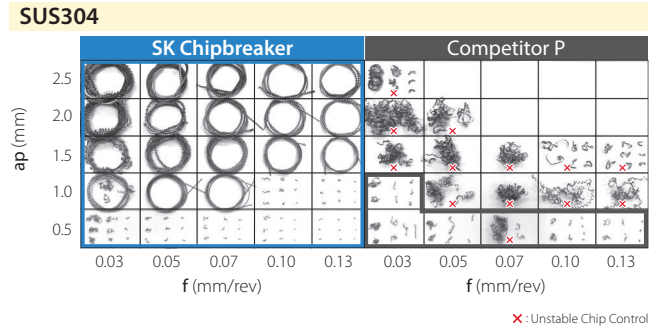
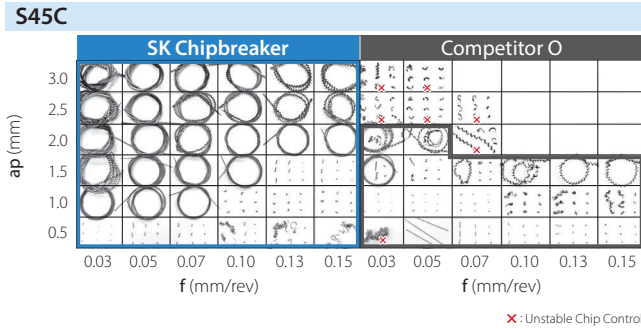
Stable chip evacuation in large D.O.C. due to large rake angle

Chip control is improved in small depths of cut due to chipbreaker projecting out to the corner tip

Cutting force is reduced as the cutting edge is lowered towards the center of the workpiece



Chip Control Comparison (Internal evaluation)



Cutting Conditions : Vc = 100 m/min, Wet, DCGT11T302 Type

Complementary Chipbreakers (Chip Control Oriented)

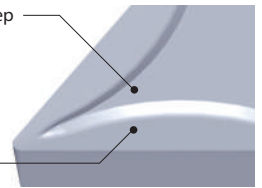
GQ Chipbreaker for Small to Large ap

ap: 0.8 to 5.0 mm (Steel)
0.8 to 3.0 mm (Stainless Steel)
For a Wide Range of Applications



Low cutting force design with a small chipbreaker step
Good chip control in small depths of cut with the breaker dot projecting out to the cutting edge

Wide range of acceptable chips is achieved by using an advanced chipbreaker design



GF Chipbreaker for Finishing

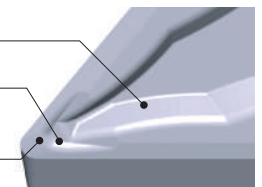
ap: 0.25 to 1.25 mm
Controlled Chips during Finishing



High slope recedes away from the cutting edge
⇒ Minimizes chip clogging in large D.O.C.

Improved sharpness with large rake angle

Chipbreaker dot extends out to the cutting edge
⇒ Divides the chips into smaller pieces



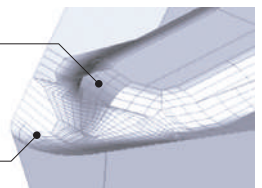
CF Chipbreaker for Minute ap

ap: 0.02 to 0.2 mm
Excellent Chip Formation in Minute ap



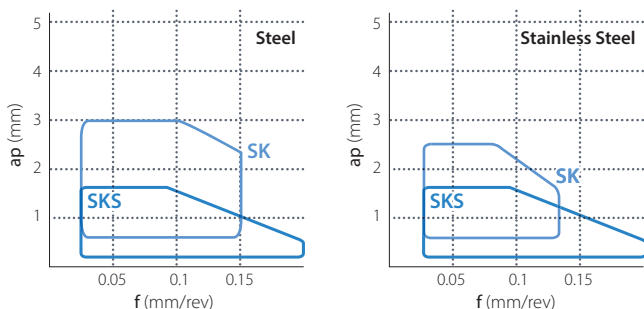
Properly curled chips with special dot design

Large rake angle improves sharpness
Suppresses burr formation and clouding of the workpiece by preventing welding onto the insert

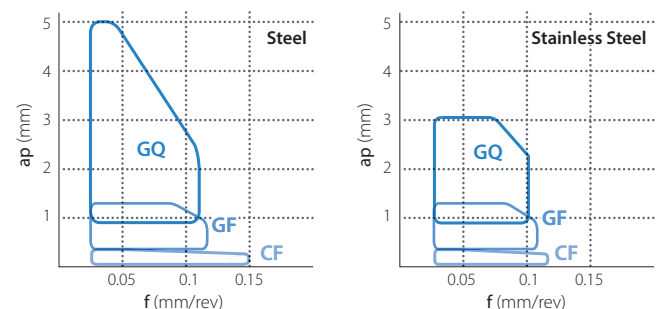


Chipbreaker Map

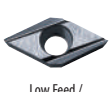
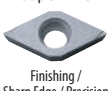

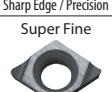



1st Recommendation for Finishing (Low Cutting Force)








Complementary Chipbreakers (Chip Control Oriented)



Stock Items (Positive)

Shape	Description	Dimensions (mm)					MEGACOAT NANO PLUS			MEGACOAT NANO			
		I.C.	Thickness	Hole	Corner-R (RE)	Relief Angel	PR1725	PR1705	PR1535	PR1535			
 Low Feed / Honed Edge	DCGT 11T3005MER-J	9.525	3.97	4.4	< 0.05	7°	R						
	11T301MER-J				< 0.1		R						
	11T302MER-J				< 0.2		R						
	11T304ME R/L-J				< 0.4								
 Super Fine	DPET 070202M R/L-FSF	9.525	3.97	4.4	< 0.2	11°	R						
	11T3005MR-FSF				< 0.05		R						
	11T302MR-FSF				< 0.2		R						
 Super Fine	DPET 0702005MFR-USF	6.35	2.38	2.8	< 0.05	11°	R						
	070201MFR-USF				< 0.1		R						
	070202MFR-USF				< 0.2		R						
	DPET 11T3005MFR-USF				< 0.05		R						
 Super Fine	DPET 11T301MFR-USF	9.525	3.97	4.4	< 0.1	11°	R						
	11T302MFR-USF				< 0.2		R						
	JCET 030101M R/L-FSF				3.5		1.4	1.9	< 0.1	7°			
	JCET 030102M R/L-F								< 0.2				
030104M R/L-F	< 0.4												
TBGT 060101MP-CF	3.97	1.59	2.3	< 0.1		5°							
060102MP-CF				< 0.2									
TBGT 060101MFP-PF				< 0.1									
060102MFP-PF				< 0.2									
 Super Fine	TBGT 060104MFP-PF	3.97	1.59	2.3	< 0.4	5°							
	TBET 0601005M R/L				< 0.05								
	060101M R/L				< 0.1								
 Super Fine	060102M R/L	3.97	1.59	2.3	< 0.2	5°							
	060104M R/L				< 0.4								
	TCMX 090204WP				5.56		2.38	2.5	0.4	7°			
	TCMX 110204WP								0.4				
TCET 1103005MFR-USF	6.35	3.18	2.8	< 0.05		7°			R				
110301MFR-USF				< 0.1					R				
110302MFR-USF				< 0.2	R								
TCGT 080202MER-U				4.76	2.38		2.3	< 0.2	7°	R			
TCGT 110302ME R/L-U	< 0.2												
110304MER-U	< 0.4												
TPGT 080201MP-CF	4.76	2.38	2.3			< 0.1		11°					
080202MP-CF				< 0.2									
TPGT 090201MP-CF				5.56	2.38	3.0	< 0.1		11°				
090202MP-CF							< 0.2						
TPGT 090201MFP-PF	5.56	2.38	3.0				< 0.1	11°					
090202MFP-PF							< 0.2						
090204MFP-PF				< 0.4									
TPMX 090202WP				5.56	2.38	2.8	0.2		11°				
090204WP	0.4												
090208WP	0.8												
TPMX 110302WP	0.2												
 Super Fine	TPMX 110304WP	6.35	3.18	3.3	0.4	11°							
	110308WP				0.8								
	TPMX 110304 R/L-WP				6.35		3.18	3.3	0.4	11°			

Shape	Description	Dimensions (mm)					MEGACOAT NANO PLUS			MEGACOAT NANO		
		I.C.	Thickness	Hole	Corner-R (RE)	Relief Angel	PR1725	PR1705	PR1535	PR1535		
 Finishing	TPMT 090202PP	5.56	2.38	2.8	0.2	11°						
	090204PP				0.4							
	TPMT 110302PP				6.35		3.18	3.3	0.2			
	110304PP								0.4			
	110308PP								0.8			
 Finishing	TPMT 090202GP	5.56	2.38	2.8	0.2	11°						
	090204GP				0.4							
	TPMT 110304GP				6.35		3.18	3.3	0.4			
	110308GP								0.8			
	TPMT 160304GP								9.525	3.18	4.4	0.4
 Finishing	TPMT 090202HQ	5.56	2.38	2.8	0.2	11°						
	090204HQ				0.4							
	TPMT 110302HQ				6.35		3.18	3.3	0.2			
	110304HQ								0.4			
	110308HQ								0.8			
 Finishing-Medium	TPMT 160302HQ	9.525	3.18	4.4	0.2	11°						
	160304HQ				0.4							
	160308HQ				0.8							
	TPMT 090204XP				5.56		2.38	2.8	0.4	11°		
110304XP	0.4											
110308XP	0.8											
TPMT 160304XP	9.525	3.18	4.4	0.4		11°						
160308XP				0.8								
TPGH 080201 R/L				4.76	2.38		2.3	0.1	11°			
080202 R/L								0.2				
080204 R/L	0.4											
TPGH 090201 R/L	5.56	2.38	3.0			0.1		11°				
090202 R/L				0.2								
090204 R/L				0.4								
TPGH 110202 R/L				6.35	2.38	3.5	0.2		11°			
110204 R/L	0.4											
TPGH 110302 R/L	6.35	3.18	3.3				0.2	11°				
110304 R/L							0.4					
110308 R/L				0.8								
TPGH 160302 R/L				9.525	3.18	4.5	0.2		11°			
160304 R/L	0.4											
160308 R/L	0.8											
TPGH 090201L-H	5.56	2.38	3.0				0.1	11°		L	L	
090202L-H				0.2	L	L						
090204L-H				0.4	L	L						
TPGH 110302 R/L-H				6.35	3.18	3.3	0.2		11°			
110304 R/L-H	0.4											
110308 R/L-H	0.8											
TPGH 160304 R/L-H	9.525	3.18	4.5				0.4	11°				
160308 R/L-H				0.8								
TPET 080202L-FSF				4.76	2.38	2.3	0.2		11°	L		
TPET 1103005L-FSF							0.05			L		
110301 R/L-FSF	0.1											
110302 R/L-FSF	0.2											
 Super Fine	TPEH 080201M R/L-P	4.76	2.38	2.3	< 0.1	11°						
	080202M R/L-P				< 0.2							
	080204M R/L-P				< 0.4							
	TPEH 090201M R/L-P				5.56		2.38	3.0	< 0.1	11°		
090202M R/L-P	< 0.2											
090204M R/L-P	< 0.4											
TPEH 110301M R/L-P	6.35	3.18	3.3	< 0.1		11°						
110302M R/L-P				< 0.2								
110304M R/L-P				< 0.4								
TPET 080202F R/L-USF				4.76	2.38		2.3	0.2	11°			
TPET 110301FL-USF	0.1	L										
110302F R/L-USF	0.2											

• Insert with corner R (RE) dimension expressed with less than sign (e.g. <0.1, <0.2 etc.) indicates models with minus tolerance for corner R (RE)

● : Standard Stock R : R-hand Only L : L-hand Only











Stock Items (Positive)

Shape Handed Insert shows Left-hand	Description	Dimensions (mm)				Relief Angel	MEGACOAT NANO PLUS			MEGA COAT NANO
		I.C.	Thickness	Hole	Corner-R (RE)		PR1725	PR1705	PR1535	
	VBMT 110302PP	6.35	3.18	2.8	0.2	5°	●	●	●	
	110304PP				0.4		●	●	●	
	110308PP				0.8		●	●	●	
Finishing	VBMT 160404PP	9.525	4.76	4.4	0.4	5°	●	●	●	
	160408PP				0.8		●	●	●	
	160412PP				1.2		●	●	●	
	VBMT 110304GP	6.35	3.18	2.8	0.4	5°	●	●	●	
	VBMT 160404GP				0.4		●	●	●	
	VBMT 160408GP				0.8		●	●	●	
Finishing	VBMT 110302VF	6.35	3.18	2.8	0.2	5°	●	●	●	
	110304VF				0.4		●	●	●	
	110308VF				0.8		●	●	●	
Finishing	VBMT 160402VF	9.525	4.76	4.4	0.2	5°	●	●	●	
	160404VF				0.4		●	●	●	
	160408VF				0.8		●	●	●	
Finishing	160412VF				1.2	●	●	●		
	VBMT 110304HQ	6.35	3.18	2.8	0.4	5°	●	●	●	
					110308HQ		0.8	●	●	
VBMT 160404HQ					0.4		●	●	●	
Finishing-Medium	160408HQ	9.525	4.76	4.4	0.8	5°	●	●	●	
	160412HQ				1.2		●	●	●	
	VBET 1103005M ^{R/L} -F				<0.05		●	●	●	
Finishing / Sharp Edge	110301M ^{R/L} -F	6.35	3.18	2.8	<0.1	5°	●	R	●	
	110302M ^{R/L} -F				<0.2		●	●	●	
	VBET 1103005M ^{R/L} -Y				<0.05		●	●	●	
Finishing-Medium / Sharp Edge	110301M ^{R/L} -Y	6.35	3.18	2.8	<0.1	5°	●	●	●	
	110302M ^{R/L} -Y				<0.2		●	●	●	
	110304M ^{R/L} -Y				<0.4		●	●	●	
Finishing-Medium	VBGT 160402MR-Y	9.525	4.76	4.4	<0.2	5°		R		
	160404MR-Y				<0.4			R		
	VCGT 110301MP-CF				6.35		3.18	2.8	<0.1	
110302MP-CF	<0.2	●	●	●						
Minute DOC / Sharp Edge / Polished	VCGT 110301MFP-GF	6.35	3.18	2.8	<0.1	7°	●	●	●	
	110302MFP-GF				<0.2		●	●	●	
Finishing / Sharp Edge / Polished	VCGT 110301MFP-SKS	6.35	3.18	2.8	<0.1	7°	●	●	●	
	110302MFP-SKS				<0.2		●	●	●	
	110304MFP-SKS				<0.4		●	●	●	
Finishing / Sharp Edge	VCMT 080202PP	4.76	2.38	2.3	0.2	7°	●	●	●	
	080204PP				0.4		●	●	●	
	Finishing	VCMT 160404PP	9.525	4.76	4.4	0.4	7°	●	●	●
160408PP	0.8	●				●		●		
Finishing	VCMT 080202VF	4.76	2.38	2.3	0.2	7°	●	●	●	
	080204VF				0.4		●	●	●	
	VCMT 080202HQ				4.76		2.38	2.3	0.2	
080204HQ	0.4	●	●	●						
Finishing-Medium	VCET 110301M ^{R/L} -F	6.35	3.18	2.8	<0.1	7°	●	●	●	
	110302M ^{R/L} -F				<0.2		●	●	●	
	110304M ^{R/L} -F				<0.4		●	●	●	
Finishing / Sharp Edge	VCET 1103005M ^{R/L} -Y	6.35	3.18	2.8	<0.05	7°	●	●	●	
	110301M ^{R/L} -Y				<0.1		●	●	●	
	110302M ^{R/L} -Y				<0.2		●	●	●	
Finishing-Medium / Sharp Edge	110304M ^{R/L} -Y				<0.4	●	●	●		
	VPGT 110301MP-CF	6.35	3.18	2.8	<0.1	11°	●	●	●	
					110302MP-CF		<0.2	●	●	

* Insert with corner R (RE) dimension expressed with less than sign (e.g. <0.1, <0.2 etc.) indicates models with minus tolerance for corner R (RE)

● : Standard Stock R : R-hand Only L : L-hand Only













Stock Items (Negative)

Shape Handed Insert shows Right-hand	Description	Dimensions (mm)				MEGACOAT NANO PLUS		MEGA COAT NANO
		I.C.	Thickness	Hole	Corner-R (RE)	PR1725	PR1535	PR1535
 Finishing-Medium / Sharp Edge / Polished	CNGG 120402MFP-SK	12.70	4.76	5.16	< 0.2	●	●	
	120404MFP-SK				< 0.4	●	●	
 Medium-Roughing / Sharp Edge / Polished	CNGG 120404FP-TK	12.70	4.76	5.16	0.4	●	●	
	120408FP-TK				0.8	●	●	
 Finishing-Medium / Sharp Edge / Polished	DNGG 150402MFP-SK	12.70	4.76	5.16	< 0.2	●	●	
	150404MFP-SK				< 0.4	●	●	
 Large DOC	DNMG 150402R-LD	12.70	4.76	5.16	0.2	R	R	
	150404R-LD				0.4	R	R	
 Medium-Roughing / Sharp Edge / Polished	DNGG 150404FP-TK	12.70	4.76	5.16	0.4	●	●	
	150408FP-TK				0.8	●	●	
 Finishing-Medium / Sharp Edge / Polished	TNGG 160401MFP-SK	9.525	4.76	3.81	< 0.1	●	●	
	160402MFP-SK				< 0.2	●	●	
	160404MFP-SK				< 0.4	●	●	
 Large DOC	TNMG 160402R-LD	9.525	4.76	3.81	0.2	R	R	
	160404R-LD				0.4	R	R	
 Medium-Roughing / Sharp Edge / Polished	TNGG 160404FP-TK	9.525	4.76	3.81	0.4	●	●	
	160408FP-TK				0.8	●	●	
 Finishing / Surface Roughness Oriented / Sharp Edge	TNGG 160402 ^{R/L-S}	9.525	4.76	3.81	0.2	●	●	
	160404 ^{R/L-S}				0.4	●	●	
	160408 ^{R/L-S}				0.8	●	●	
 Finishing-Medium / Sharp Edge / Polished	VNGG 160402MFP-SK	9.525	4.76	3.81	< 0.2	●	●	
	160404MFP-SK				< 0.4	●	●	

● : Standard Stock R : R-hand Only

* Insert with corner R (RE) dimension expressed with less than sign (e.g. <0.1, <0.2 etc.) indicates models with minus tolerance for corner R (RE)

Stock Item (Small double-sided tooling)


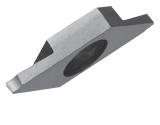



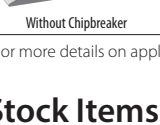
Shape Handed Insert shows Right-hand	Description	Dimensions (mm)				MEGACOAT NANO PLUS		MEGA COAT NANO
		I.C.	Thickness	Hole	Corner-R (RE)	PR1725	PR1705	PR1535
 Finishing-Medium / Sharp Edge / Polished	CNGU 070301MFP-SK	7.5	3.18	3.6	< 0.1	●		●
	070302MFP-SK				< 0.2	●		●
 Medium-Roughing / Honed Edge	CNMU 070302E-GK	7.5	3.18	3.6	0.2	●		●
	070304E-GK				0.4	●		●
 Finishing / Sharp Edge	CNGU 0703005MFR-F	7.5	3.18	3.6	< 0.05		R	
	070301MFR-F				< 0.1	R	R	R
	070302MFR-F				< 0.2	R	R	R
	070304MFR-F				< 0.4	R	R	R
 Low Feed / Sharp Edge	CNGU 0703005MFR-U	7.5	3.18	3.6	< 0.05		R	
	070301MFR-U				< 0.1	R	R	R
	070302MFR-U				< 0.2	R	R	R
	070304MFR-U				< 0.4	R	R	R
 Finishing-Medium / Sharp Edge / Polished	DNGU 080301MFP-SK	7.0	3.18	3.6	< 0.1	●		●
	080302MFP-SK				< 0.2	●		●
	080304MFP-SK				< 0.4	●		●
 Medium-Roughing / Honed Edge	DNMU 080302E-GK	7.0	3.18	3.6	0.2	●		●
	080304E-GK				0.4	●		●
 Finishing / Sharp Edge	DNGU 080301MFR-F	7.0	3.18	3.6	< 0.1	R		R
	080302MFR-F				< 0.2	R	R	R
	080304MFR-F				< 0.4	R		R
 Low Feed / Sharp Edge	DNGU 080301MFR-U	7.0	3.18	3.6	< 0.1	R	R	R
	080302MFR-U				< 0.2	R	R	R
	080304MFR-U				< 0.4	R		R
 Low Feed / Honed Edge	DNGU 080301MER-U	7.0	3.18	3.6	< 0.1	R	R	
	080302MER-U				< 0.2	R	R	
	080304MER-U				< 0.4	R	R	
 Finishing / Sharp Edge	TNGU 090301MFR-F	5.56	3.18	3.0	< 0.1	R	R	R
	090302MFR-F				< 0.2	R	R	R
	090304MFR-F				< 0.4	R	R	R
 Low Feed / Sharp Edge	TNGU 090301MFR-U	5.56	3.18	3.0	< 0.1	R		R
	090302MFR-U				< 0.2	R	R	R
	090304MFR-U				< 0.4	R	R	R
 Low Feed / Honed Edge	TNGU 090304MER-U	5.56	3.18	3.0	< 0.4	R	R	

● : Standard Stock R : R-hand Only

* Insert with corner R (RE) dimension expressed with less than sign (e.g. <0.1, <0.2 etc.) indicates models with minus tolerance for corner R (RE)

* For more details on applicable toolholders, see the KYOCERA general product catalog




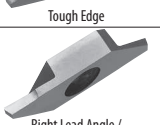


Stock Items (Cut-off) TKF12

Shape Right-hand shown	Description	Dimensions (mm)							Angle	MEGACOAT NANO PLUS		MEGACOAT NANO		Applicable Toolholders
		CW	CUTDIA	RE	W1	S	D1	PSIRR	PR1725		PR1535			
									R	L	R	L		
 Right Lead Angle	TKF12 ^{R/L} 050-S-16DR	0.5	5	0.03	3	8.7	5	16°	●	●	●	●		
	070-S-16DR	0.7	8						●	●	●	●		
	100-S-16DR	1.0	12						●	●	●	●		
	125-S-16DR	1.25	12						●	●	●	●		
	150-S-16DR	1.5	12						●	●	●	●		
	200-S-16DR	2.0	12						●	●	●	●		
 Right Lead Angle / Tough Edge	TKF12 ^{R/L} 050-S	0.5	5	0.03	3	8.7	5	0°	●	●	●	●		
	070-S	0.7	8						●	●	●	●		
	100-S	1.0	12						●	●	●	●		
	125-S	1.25	12						●	●	●	●		
	150-S	1.5	12						●	●	●	●		
	200-S	2.0	12						●	●	●	●		
 Tough Edge	TKF12 ^{R/L} 100-T-16DR	1.0	12	0.08	3	8.7	5	16°	●	●	●	●		
	150-T-16DR	1.5							●	●	●	●		
	200-T-16DR	2.0							●	●	●	●		
 Tough Edge	TKF12 ^{R/L} 100-T	1.0	12	0.08	3	8.7	5	0°	●	●	●	●		
	150-T	1.5							●	●	●	●		
	200-T	2.0							●	●	●	●		
 Right Lead Angle / Without Chipbreaker	TKF12 ^{R/L} 050-NB-20DR	0.5	5	0	3	8.7	5	20°	●	●	●	●		
	070-NB-20DR	0.7	8						●	●	●	●		
	100-NB-20DR	1.0	12						●	●	●	●		
	150-NB-20DR	1.5	12						●	●	●	●		
	200-NB-20DR	2.0	12						●	●	●	●		
 Without Chipbreaker	TKF12 ^{R/L} 050-NB	0.5	5	0	3	8.7	5	0°	●	●	●	●		
	070-NB	0.7	8						●	●	●	●		
	100-NB	1.0	12						●	●	●	●		
	150-NB	1.5	12						●	●	●	●		
	200-NB	2.0	12						●	●	●	●		

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock

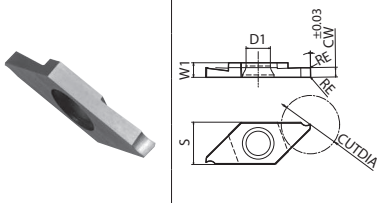
Stock Items (Cut-off) TKF16

Shape Right-hand shown	Description	Dimensions (mm)							Angle	MEGACOAT NANO PLUS		MEGACOAT NANO		Applicable Toolholders
		CW	CUTDIA	RE	W1	S	D1	PSIRR	PR1725		PR1535			
									R	L	R	L		
 Right Lead Angle	TKF16 ^{R/L} 150-S-16DR	1.5	16	0.05	4	9.5	5	16°	●	●	●	●		
	200-S-16DR	2.0							●	●	●	●		
 Right Lead Angle / Tough Edge	TKF16 ^{R/L} 150-S	1.5	16	0.05	4	9.5	5	0°	●	●	●	●		
	200-S	2.0							●	●	●	●		
 Tough Edge	TKF16 ^{R/L} 150-T-16DR	1.5	16	0.08	4	9.5	5	16°	●	●	●	●		
	200-T-16DR	2.0							●	●	●	●		
 Tough Edge	TKF16 ^{R/L} 150-T	1.5	16	0.08	4	9.5	5	0°	●	●	●	●		
	200-T	2.0							●	●	●	●		
 Right Lead Angle / Without Chipbreaker	TKF16 ^{R/L} 150-NB-20DR	1.5	16	0	4	9.5	5	20°	●	●	●	●		
	200-NB-20DR	2.0							●	●	●	●		
 Without Chipbreaker	TKF16 ^{R/L} 150-NB	1.5	16	0	4	9.5	5	0°	●	●	●	●		
	200-NB	2.0							●	●	●	●		

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock

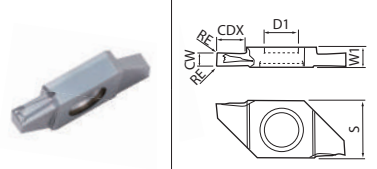
Stock Items (Cut-off for sub spindle) TKFS

Shape Left-hand shown	Description	Dimensions (mm)							MEGACOAT NANO PLUS		MEGACOAT NANO		Applicable Toolholders
		CW	CUTDIA	RE	W1	S	D1	PR1725		PR1535			
								R	L	R	L		
	TKFS12 ^{R/L} 100-S	1.0	6					●	●	●	●	KTKFS ^{R/L} ...12	
	150-S	1.5	9	0.05	2.2	8.7	4.4	●	●	●	●		
	200-S	2.0	12					●	●	●	●		
	TKFS16 ^{R/L} 150-S	1.5	14	0.05	2.2	9.5	4.4	●	●	●	●	KTKFS ^{R/L} ...16	
	200-S	2.0	16					●	●	●	●		

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock

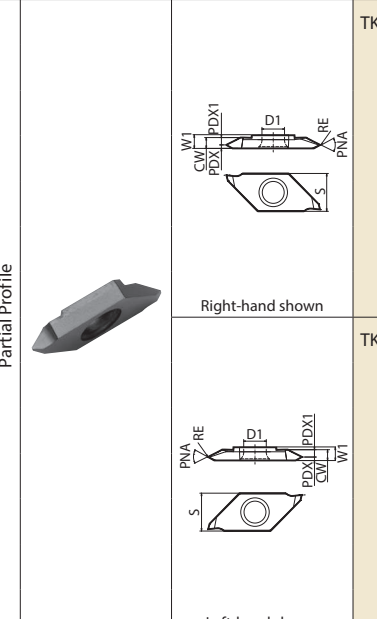
Stock Items (Grooving and Traversing) TKF-GTP Chipbreaker

Shape Right-hand shown	Description	Dimensions (mm)							Angle	MEGACOAT NANO PLUS	MEGACOAT NANO	Applicable Toolholders
		CW	CDX	RE	W1	S	D1	PSIRR	PR1725	PR1535		
	TKF12R 200-GTP	2.0	4.6	0.08	3.0	8.7	5.0	0°	●	●	KTKFR...12	
	TKF16R 300-GTP	3.0	6.0	0.08	4.0	9.5	5.0	0°	●	●	KTKFR...16	

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock


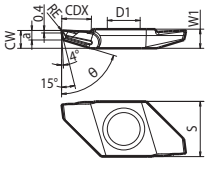

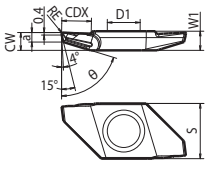
Stock Items (Threading) TKFT

Shape Right-hand shown	Description	Thread Type	Pitch		Dimensions (mm)							Angle	MEGA COAT NANO PLUS	MEGA COAT NANO	Applicable Toolholders					
			mm	TPI	W1	CW	S	D1	RE	PDX	PDX1	PNA	PR1725	PR1535						
				TKFT 12RA6000	M UN	0.2 ~ 0.6	64 ~ 48	3.0	2.5	8.7	5.2	Max 0.05 Flat	0.4	2.1		60°	●	●	KTKFR...12	
12RB6000	2.1	0.4		●								●								
12RA60005	0.8	1.7		●		●														
12RB60005	1.7	0.8		●		●														
12RN6001	1 ~ 1.5	24 ~ 18						0.1	1.25	1.25	●	●								
12RA55005	G,R W	-		40 ~ 16	3.0	2.5	8.7	5.2	0.05	0.8	1.7	55°	●	●						
12RB55005										1.7	0.8		●	●						
TKFT 12LA6000	M UN	0.2 ~ 0.6		64 ~ 48					3.0	2.5	8.7	5.2	Max 0.05 Flat	2.1	0.4	60°	●	●		KTKFL...12
12LB6000													0.4	2.1	●		●			
12LA60005		1.7		0.8	●	●														
12LB60005		0.8		1.7	●	●														
12LN6001	1 ~ 1.5	24 ~ 18						0.1	1.25	1.25	●	●								
12LA55005	G,R W	-	40 ~ 16	3.0	2.5	8.7	5.2	0.05	1.7	0.8	55°	●	●							
12LB55005									0.8	1.7		●	●							

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock


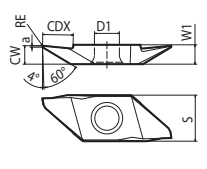
Stock Items (Back Turning) TKFB-GQ Chipbreaker

Shape Right-hand shown		Description	Dimensions (mm)							MEGACOAT NANO PLUS	MEGACOAT NANO	Applicable Toolholders		
			CW	a	CDX	RE	W1	S	D1	θ	PR1725		PR1535	
 Polished		TKFB 12R28005P-GQ	2.8	1.5	4.6	0.05	3.0	8.7	5.2	74°	●	●	KTKFR...12	
		TKFB 12R28015P-GQ				0.15					●	●		
		TKFB 16R38005P-GQ	3.8	1.8	6.3	0.05	4.0	9.5	5.2	72°	●	●		KTKFR...16
		TKFB 16R38015P-GQ				0.15					●	●		
		TKFB 12R28005-GQ	2.8	1.5	4.6	0.05	3.0	8.7	5.2	74°	●	●	KTKFR...12	
		TKFB 12R28015-GQ				0.15					●	●		
		TKFB 16R38005-GQ	3.8	1.8	6.3	0.05	4.0	9.5	5.2	72°	●	●	KTKFR...16	
		TKFB 16R38015-GQ				0.15					●	●		

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock

Stock Items (Back Turning) TKFB


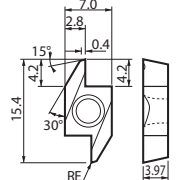

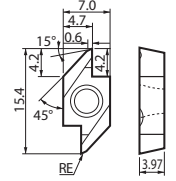

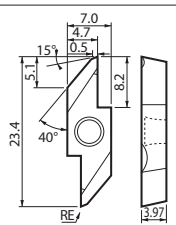
Shape Right-hand shown		Description	Dimensions (mm)						MEGACOAT NANO PLUS	MEGACOAT NANO	Applicable Toolholders	
			CW	a	CDX	RE	W1	S	D1	PR1725		PR1535
		TKFB 12R15005M	1.5	0.25	2.6	< 0.05	3.0	8.7	5.2	●	●	KTKFR...12
		TKFB 12R28005M				< 0.05				●	●	
		TKFB 12R28010M	< 0.1	●	●							
		TKFB 16R38005M	3.8	0.3	6.3	< 0.05	4.0	9.5	5.2	●	●	KTKFR...16
		TKFB 16R38010M				< 0.1				●	●	

• Insert with corner R (RE) dimension expressed with less than sign (e.g. <0.05, <0.1 etc.) indicates models with minus tolerance for corner R (RE)

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock

Stock Items (Back Turning) ABS/ABW

Shape Right-hand shown		Description	Dimensions (mm)	MEGACOAT NANO PLUS		Applicable Toolholders
			RE	PR1725	PR1705	
		ABS 15R4005M	< 0.05	●	●	AABSR-40F SABSR-40F
		ABS 15R4015M	< 0.15	●	●	
		ABW 15R4005M	< 0.05	●	●	AABWR-40F SABWR-40F
		ABW 15R4015M	< 0.15	●	●	
		ABW 23R5005M	< 0.05	●	●	AABWR-50F SABWR-50F
		ABW 23R5015M	< 0.15	●	●	

• Insert with corner R (RE) dimension expressed with less than sign (e.g. <0.05, <0.15 etc.) indicates models with minus tolerance for corner R (RE)

• For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock

Stock Items (Small Internal Grooving) GC

Shape Right-hand shown	Description	Dimensions (mm)							MEGACOAT NANO PLUS		MEGACOAT NANO		Applicable Toolholders		
		CW	CDX	RE	W1	INSL	S	D1	PR1725		PR1535				
									R	L	R	L			
	GC08 ^{R/L}	100-005	1.00	1.5	0.05	3.4	7.7	3.5	2.7	●	●	●	●	SIGC ^{R/L} 0812-EH SIGC ^{R/L} 0806-WH	
		120-005	1.20							●	●	●	●		
		125-005	1.25							●	●	●	●		
		150-010	1.50							●	●	●	●		
		200-010	2.00							●	●	●	●		
	GC10 ^{R/L}	100-005	1.00	2.2	0.05	4.7	9.6	4.4	3.5	●	●	●	●		SIGC ^{R/L} 1016-EH SIGC ^{R/L} 1008-WH-L85 SIGCR1008-WH-L100
		120-005	1.20							●	●	●	●		
		125-005	1.25							●	●	●	●		
		145-010	1.45							●	●	●	●		
		150-010	1.50							●	●	●	●		
		200-010	2.00							●	●	●	●		
		250-020	2.50							●	●	●	●		
	GC12 ^{R/L}	100-005	1.00	2.2	0.05	4.7	11.6	5.4	3.5	●	●	●	●	SIGC ^{R/L} 1216-EH SIGCR1210-WH-L95 SIGC ^{R/L} 1210-WH-L110	
		120-005	1.20							●	●	●	●		
		125-005	1.25							●	●	●	●		
		145-010	1.45		0.1					●	●	●	●		
		150-010	1.50							●	●	●	●		
		200-010	2.00							●	●	●	●		
		250-020	2.50		0.2					●	●	●	●		
		300-020	3.00							●	●	●	●		
										●	●	●	●		

• CDX shows available grooving depth
 • For more details on applicable toolholders, see the KYOCERA general product catalog

● : Standard Stock

