



PR1725/ PR1705

PVD Coating for Small Parts Machining



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 NEW

Excellent Wear Resistance and

High Precision Machining of Free-cutting Steel



SKS Chipbreaker
For Finishing



PR1725

PVD Coating for Small Parts Machining

1st Recommendation for Steel Machining

Excellent Surface Finish and Long Tool Life

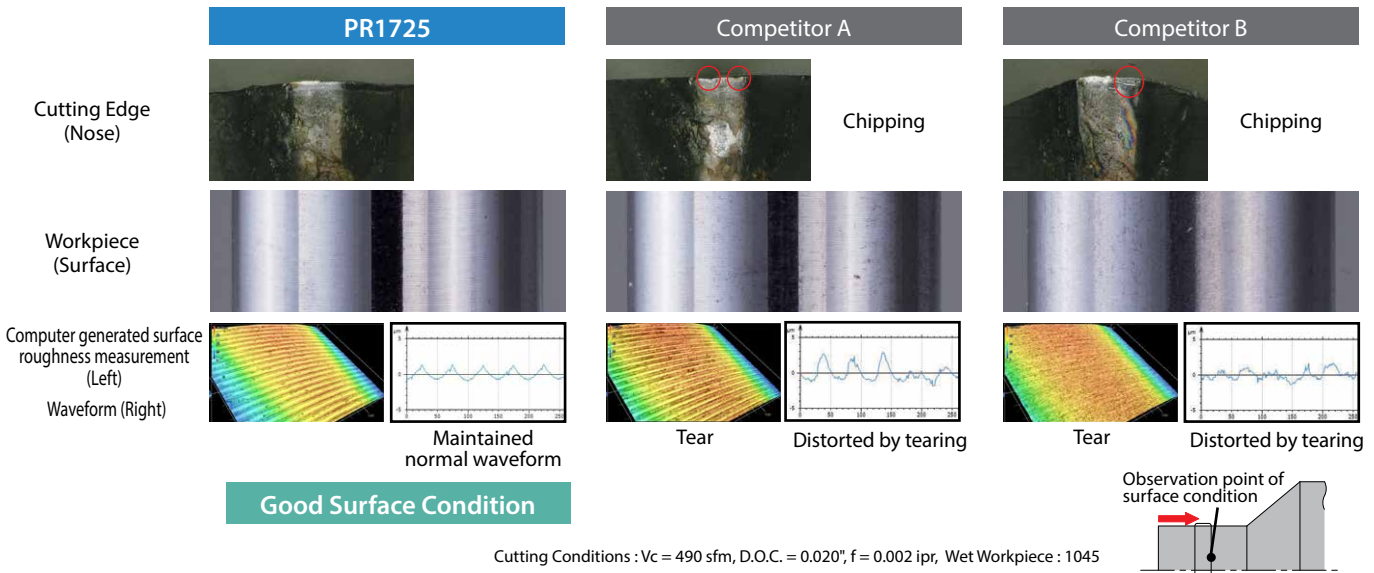
Great Performance in Small Parts Machining Applications

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 (1045) * After 20 min of machining (Internal evaluation)

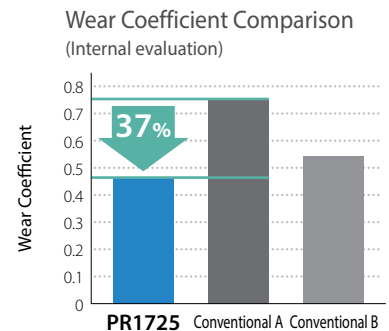
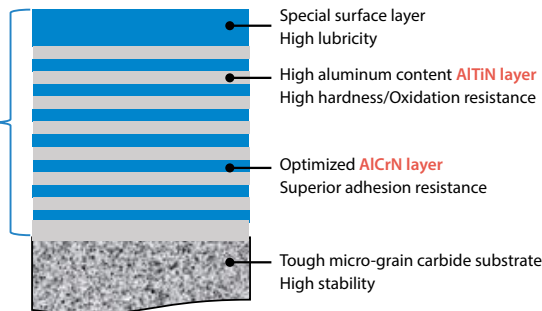


MEGACOAT NANO PLUS

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

REDUCES CRACKING

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



Superior Wear and Chipping Resistance

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

Applicable to Various Workpiece Materials

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

Excellent Surface Finish

Special surface layer with great lubricity reduces adhesion

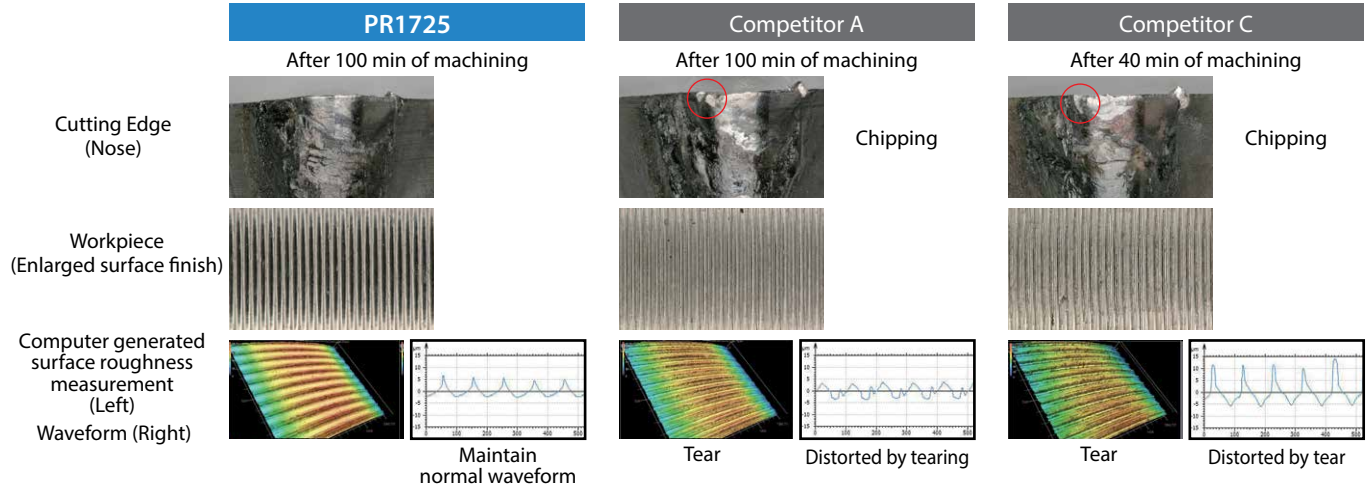
High Machining Stability

Tough micro-grain carbide substrate provides stable machining

2 One Solution for Various Workpiece Materials

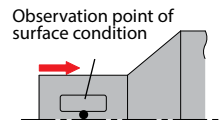
Long tool life for steel, stainless steel, and free-cutting steel

Wear on the cutting edge of insert and quality of the surface finish comparison (Stainless steel: 304) (Internal evaluation)



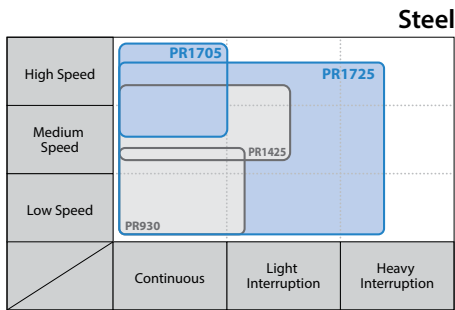
PR1725 shows less damage on the cutting edge and maintains stable finish results on the workpiece surface

Cutting Conditions : $V_c = 490$ sfm, $D.O.C. = 0.020"$, $f = 0.004$ ipr, Wet Workpiece : 304

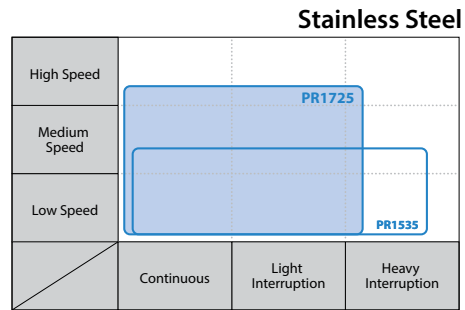


3 Applicable to a Wide Range of Machining Applications

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



PR1725 : 1st Recommendation for Steel



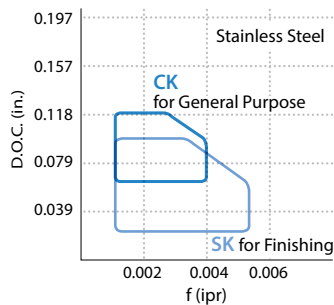
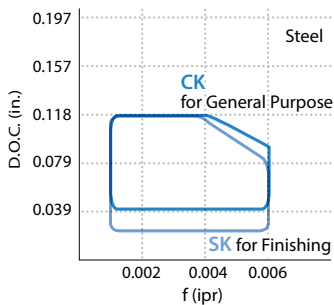
PR1725 : For general purpose high-speed machining

PR1535 : 1st Recommendation for stainless steel machining with long tool life and high-quality surface finish

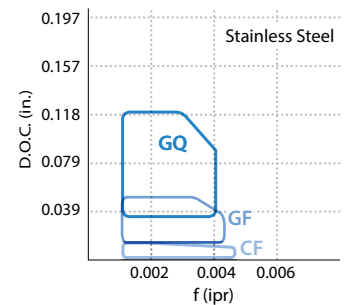
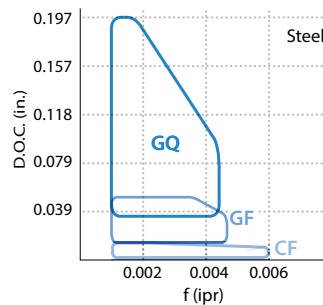
Molded Sharp Edge Chipbreaker Series

A wide variety of chipbreakers provides better chip control

Cutting Force and Surface Finish Oriented (Low Cutting Force)



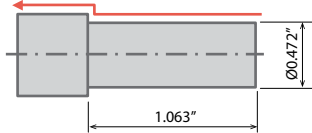
Chip Control Oriented



Case Studies

Shaft 4137

Vc = 360 sfm
 D.O.C. = ~0.059"
 f = 0.0024 ipr
 Wet
 DCGT32505MFP-SK PR1725



Tool Life

**PR1725
SK Chipbreaker**

3,000 pcs/edge

Tool Life

x2

Competitor D
(Molded Chipbreaker)

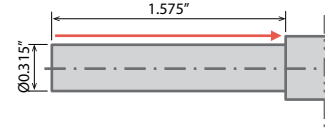
1,500 pcs/edge

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

(User Evaluation)

Shaft 4140

Vc = 230 sfm
 D.O.C. = 0.039"
 f = 0.0020 ipr
 Wet
 DCGT32505MFP-SK PR1725



Tool Life

**PR1725
SK Chipbreaker**

250 pcs/edge

Tool Life

x1.6

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 1035

Vc = 295 sfm
 D.O.C. = 0.012"
 f = 0.0024 ipr
 Wet
 DCGT32505MFP-SK PR1725



Tool Life

**PR1725
SK Chipbreaker**

300 pcs/edge

Tool Life

x1.5

Competitor F
(Molded Chipbreaker)

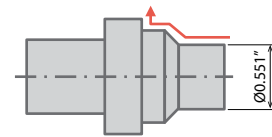
200 pcs/edge

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

(User Evaluation)

Pin SCM420

Vc = 360 sfm
 D.O.C. = 0.008"~0.028"
 f = 0.0024 ipr
 Wet
 DCGT32505MFP-GQ PR1725



Tool Life

**PR1725
GQ Chipbreaker**

200 pcs/edge

Tool Life

x1.3

Competitor G
(Molded Chipbreaker)

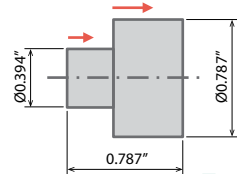
150 pcs/edge

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

(User Evaluation)

Shaft 420

Vc = 160 sfm
 D.O.C. = 0.0039"
 f = 0.0020 ipr
 Wet
 DCGT32505MFP-GQ PR1725



Tool Life

**PR1725
GQ Chipbreaker**

600 pcs/edge

Tool Life

x2

Competitor H
(Molded Chipbreaker)

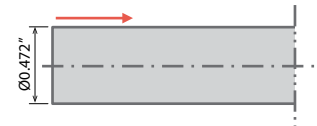
300 pcs/edge

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

(User Evaluation)

Shaft 1137

Vc = 360 sfm
 D.O.C. = ~0.079"
 f = 0.0020 ipr
 Wet
 CCET09T304MFR-J PR1725



Tool Life

**PR1725
J Chipbreaker**

3,000 pcs/edge

Tool Life

x3

Competitor I
(Molded Chipbreaker)

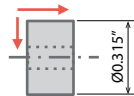
1,000 pcs/edge

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

(User Evaluation)

Shaft 1045

Vc = 330 sfm
 ap = 0.0039"
 f = 0.0010 ipr
 Wet
 DCGT32505MFP-GF PR1725



Tool Life

**PR1725
GF Chipbreaker**

3,000 pcs/edge

Tool Life

x2

Competitor J
(Molded Chipbreaker)

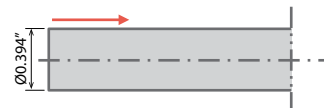
1,500 pcs/edge

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

(User Evaluation)

Pin SKS

Vc = 360 sfm
 D.O.C. = 0.0079"
 f = 0.0020 ipr
 Wet
 DCGT32505MFP-SK PR1725



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



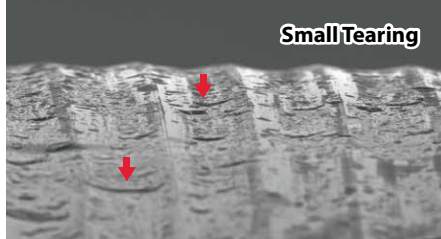
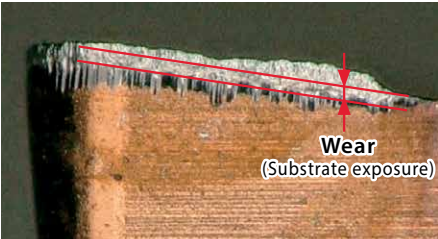

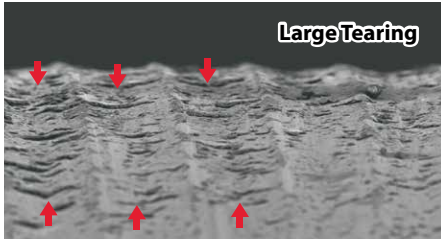
(User Evaluation)

PR1705

New PVD Coating for Small Parts Machining

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

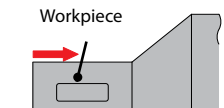
Insert Wear and Surface Finish Comparison (1215) * After 40 min of machining (Internal evaluation)

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>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 = 490 sfm, D.O.C. = 0.0197", f = 0.0020 ipr, Wet Workpiece : 1215

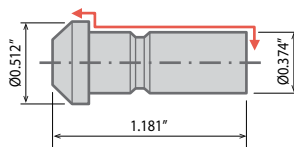
PR1705 improved tool life in continuous machining for steel and electromagnetic soft iron *For more stable machining, use PR1725



Case Studies

Pin 12L14

Vc = 660 sfm
D.O.C. = 0.0047"
f = 0.0016 ipr
Wet
CCGT32502MF PR1705



Tool Life

PR1705 MF Chipbreaker 4,800 pcs/edge

Tool Life

x1.5

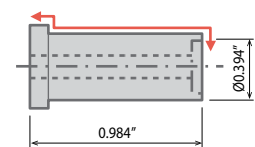
Competitor L (Ground chipbreaker) 3,200 pcs/edge

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

(User Evaluation)

Shaft 12I14

Vc = 330 sfm
D.O.C. = 0.051"
f = 0.0020 ipr
Wet
DCGT32505MFR-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 Sharp Edge Chipbreaker

Molded Chipbreaker Series for Small Parts Machining

Extensive lineup to solve various chip control issues

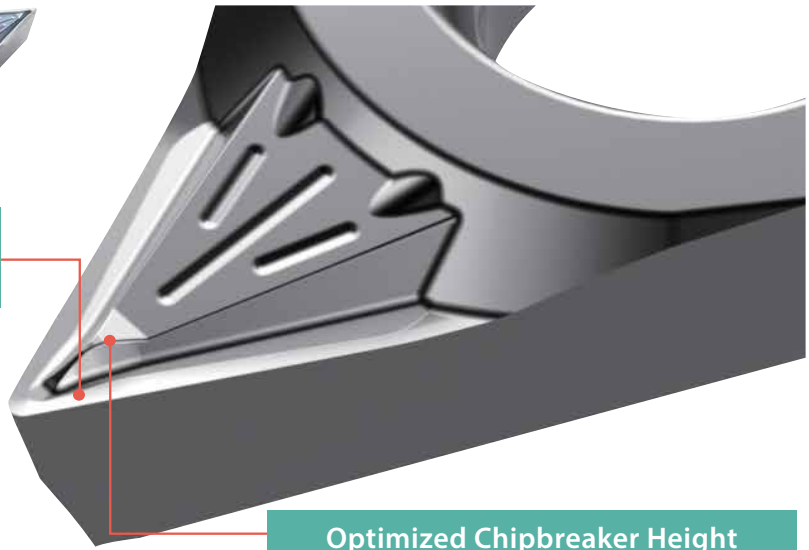
Utilizing PR1725 and PR1705 provides stable machining and extended tool life

- 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

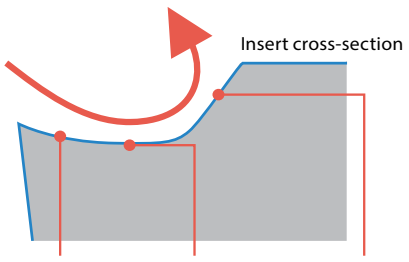
1st Recommendation for Finishing

SKS Chipbreaker NEW

D.O.C.: 0.008" to 0.059"
Excellent Chip Control and Surface Finish



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

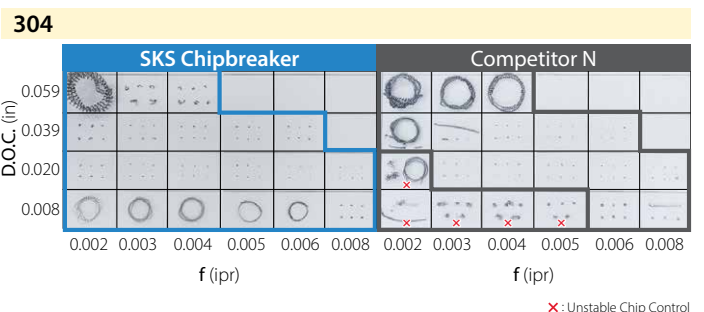
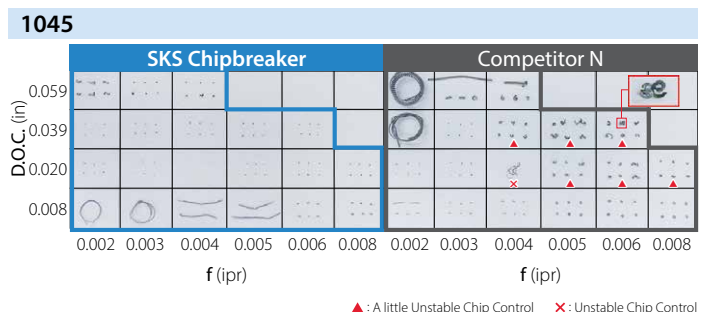


Rake Face Bottom Face Chipbreaker Face

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)



Cutting Conditions : Vc = 330 sfm, Wet, DCGT32505 Type

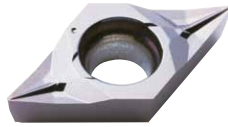
SKS chipbreaker showed greater chip control when compared to competitor N

1st Recommendation for Semi-finishing

SK Chipbreaker

D.O.C.: 0.0197" to 0.118"

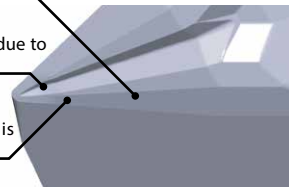
The molded chipbreaker maintains both sharpness and chip control



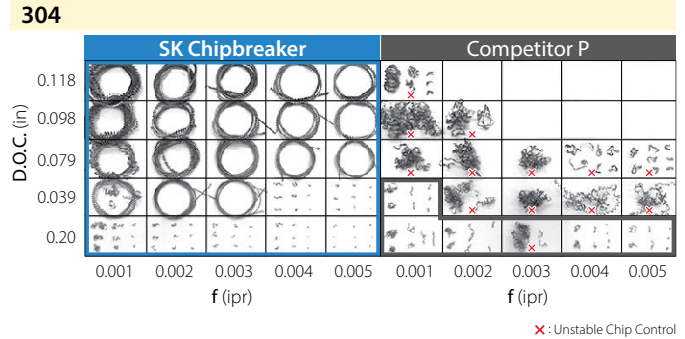
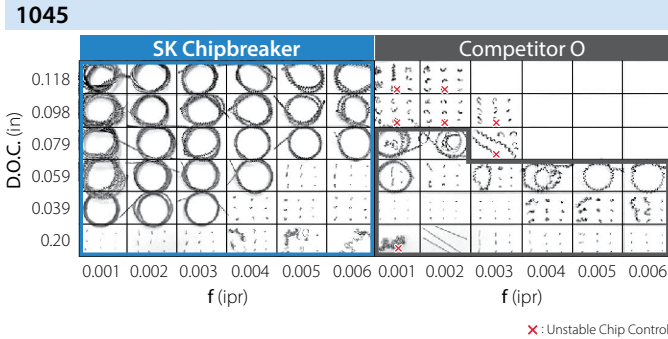
Stable chip evacuation in large D.O.C.
due to large rake angle

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)



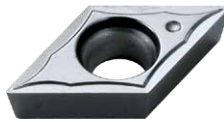
Cutting Conditions : Vc = 330 sfm, Wet, DCGT32505 Type

Additional Chipbreakers (Chip Control Oriented)

GQ Chipbreaker for Small to Large D.O.C.

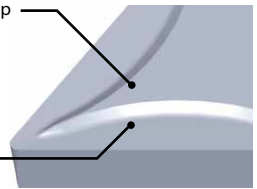
D.O.C.: 0.003" to 0.197" (Steel)
0.003" to 0.118" (Stainless Steel)

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

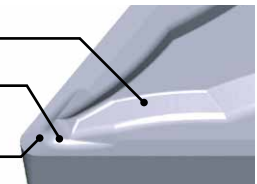
D.O.C.: 0.010" to 0.050"
Controlled Chips during Finishing



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



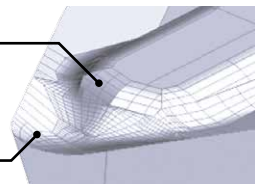
CF Chipbreaker for Minute ap

D.O.C.: 0.0008" to 0.008"
Excellent Chip Formation in Minute D.O.C.



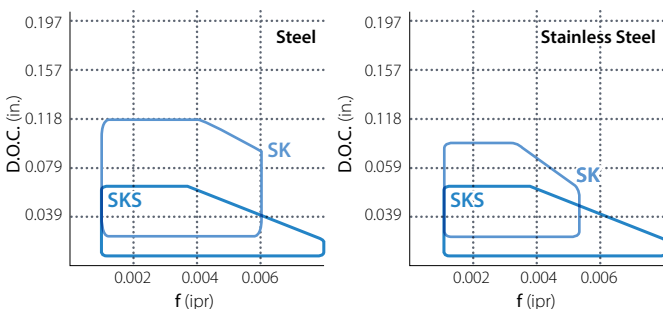
Properly curled chips with special dot design

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

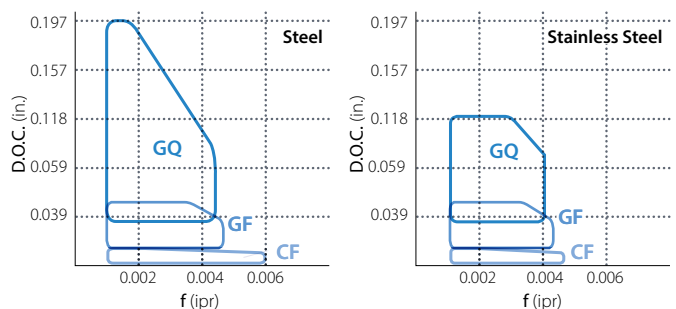


Chipbreaker Map









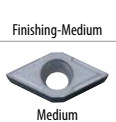
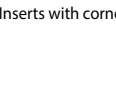
1st Recommendation for Finishing (Low Cutting Force)



Complementary Chipbreakers (Chip Control Oriented)













Positive Inserts













Shape Handed Inserts Show Left-hand	Part Number	Dimensions (in)					MEGACOAT NANO PLUS			MEGA COAT NANO							
		IC	Thickness	Hole	Corner-R (RE)	AN	PR1725	PR1705	PR1535	IC	Thickness	Hole	Corner-R (RE)	AN	PR1725	PR1705	PR1535
	DCGT 21502MFP-GF	1/4	3/32	0.110	<0.004	7°	●	●	●	3/8	5/32	0.173	<0.004	7°	●	●	●
	21505MFP-GF				<0.008		●	●	●				<0.008		●	●	●
	2151MFP-GF				<1/64		●	●	●				<1/64		●	●	●
	DCGT 32502MFP-GF	<0.004	●	●	●	<0.004	●	●	●								
	32505MFP-GF	<0.008	●	●	●	<0.008	●	●	●								
	3251MFP-GF	<1/64	●	●	●	<1/64	●	●	●								
	DCGT 215013MFP-SKS	1/4	3/32	0.110	<0.004	7°	●	●	●	3/8	5/32	0.173	<0.002	7°	●	●	●
	21502MFP-SKS				<0.004		●	●	●				<0.004		●	●	●
	21505MFP-SKS				<0.008		●	●	●				<0.008		●	●	●
	DCGT 325013MFP-SKS	<0.002	●	●	●	<0.002	●	●	●								
	32502MFP-SKS	<0.004	●	●	●	<0.004	●	●	●								
	32505MFP-SKS	<0.008	●	●	●	<0.008	●	●	●								
	DCGT 21502MFP-SK	1/4	3/32	0.110	<0.004	7°	●	●	●	3/8	5/32	0.173	<0.004	7°	●	●	●
	21505MFP-SK				<0.008		●	●	●				<0.008		●	●	●
	2151MFP-SK				<1/64		●	●	●				<1/64		●	●	●
	DCGT 32502MFP-SK	<0.004	●	●	●	<0.004	●	●	●								
	32505MFP-SK	<0.008	●	●	●	<0.008	●	●	●								
	3251MFP-SK	<1/64	●	●	●	<1/64	●	●	●								
	DCGT 21502MP-CK	1/4	3/32	0.110	<0.004	7°	●	●	●	3/8	5/32	0.173	<0.004	7°	●	●	●
	21505MP-CK				<0.008		●	●	●				<0.008		●	●	●
	2151MP-CK				<0.004		●	●	●				<0.004		●	●	●
	DCGT 32502MP-CK	<0.004	●	●	●	<0.004	●	●	●								
	32505MP-CK	<0.008	●	●	●	<0.008	●	●	●								
	3251MP-CK	<0.008	●	●	●	<0.008	●	●	●								
	DCGT 21502MFP-GQ	1/4	3/32	0.110	<0.004	7°	●	●	●	3/8	5/32	0.173	<0.004	7°	●	●	●
	21505MFP-GQ				<0.008		●	●	●				<0.008		●	●	●
	2151MFP-GQ				<1/64		●	●	●				<1/64		●	●	●
	DCGT 32502MFP-GQ	<0.004	●	●	●	<0.004	●	●	●								
	32505MFP-GQ	<0.008	●	●	●	<0.008	●	●	●								
	3251MFP-GQ	<1/64	●	●	●	<1/64	●	●	●								
	DCMX 21505WP	1/4	3/32	0.110	0.008	7°	●	●	●	3/8	5/32	0.173	0.008	7°	●	●	●
	2151WP				1/64		●	●	●				1/64		●	●	●
	2152WP				1/32		●	●	●				1/32		●	●	●
	DCMX 32505WP	0.008	●	●	●	0.008	●	●	●								
	3251WP	1/64	●	●	●	1/64	●	●	●								
	3252WP	1/32	●	●	●	1/32	●	●	●								
	DCMX 2151 1/2-WP	1/4	3/32	0.110	1/64	7°	●	●	●				7°	●	●	●	
	DCMX 3251 1/2-WP	3/8	5/32	0.173	1/64	7°	●	●	●				7°	●	●	●	
	DCMT 21505PP	1/4	3/32	0.110	0.008	7°	●	●	●	3/8	5/32	0.173	0.008	7°	●	●	●
	2151PP				1/64		●	●	●				1/64		●	●	●
	DCMT 32505PP	0.008	●	●	●	0.008	●	●	●								
	3251PP	1/64	●	●	●	1/64	●	●	●								
	DCMT 21505GP	1/4	3/32	0.110	0.008	7°	●	●	●	3/8	5/32	0.173	0.008	7°	●	●	●
	2151GP				1/64		●	●	●				1/64		●	●	●
	DCMT 3251GP	1/64	●	●	●	1/64	●	●	●								
	3252GP	1/32	●	●	●	1/32	●	●	●								
	DCMT 21505GK	1/4	3/32	0.110	0.008	7°	●	●	●	3/8	5/32	0.173	0.008	7°	●	●	●
	2151GK				1/64		●	●	●				1/64		●	●	●
	2152GK				1/32		●	●	●				1/32		●	●	●
	DCMT 32505GK	0.008	●	●	●	0.008	●	●	●								
	3251GK	1/64	●	●	●	1/64	●	●	●								
	3252GK	1/32	●	●	●	1/32	●	●	●								
	DCMT 21505HQ	1/4	3/32	0.110	0.008	7°	●	●	●	3/8	5/32	0.173	0.008	7°	●	●	●
	2151HQ				1/64		●	●	●				1/64		●	●	●
	2152HQ				1/32		●	●	●				1/32		●	●	●
	DCMT 32505HQ	0.008	●	●	●	0.008	●	●	●								
	3251HQ	1/64	●	●	●	1/64	●	●	●								
	3252HQ	1/32	●	●	●	1/32	●	●	●								
	DCMT 3252	3/8	5/32	0.173	1/32	7°	●	●	●				7°	●	●	●	

* Inserts with corner-R (RE) dimension expressed with less than sign (ex. <0.004, <0.008, etc.) indicate models with minus tolerance.

● : Standard Item ⊕ : Right-hand Only ⊖ : Left-hand Only










Positive Inserts

Shape	Part Number	Dimensions (in)					MEGACOAT NANO PLUS			MEGACOAT NANO
		IC	Thickness	Hole	Corner-R (RE)	AN	PRT725	PRT705	PRT535	
 Super Fine Finishing Sharp Edge / Precision	JCET 110902M $\frac{1}{2}$ -FSF	0.138	0.055	0.075	<0.004	7°	●			
	JCET 110905M $\frac{1}{2}$ -F 11091M $\frac{1}{2}$ -F	0.138	0.055	0.075	<0.008 <1/64	7°	●		●	
 Finishing / Sharp Edge	TBGT 12102MP-CF 12105MP-CF	5/32	1/16	0.091	<0.004 <0.008	5°	●		●	
	TBGT 12102MFP-PF 12105MFP-PF 1211MFP-PF	5/32	1/16	0.091	<0.004 <0.008 <1/64	5°	●		●	
 Minute D.O.C. Sharp Edge / Polished	TBET 121013M $\frac{1}{2}$ 12102M $\frac{1}{2}$ 12105M $\frac{1}{2}$ 1211M $\frac{1}{2}$	5/32	1/16	0.091	<0.002 <0.004 <0.008 <1/64	5°	●	●	●	
	TCMX 18151WP TCMX 2151WP	7/32 1/4	3/32 3/32	0.098 0.110	1/64 1/64	7° 7°	●			
 Super Fine Low feed Sharp Edge / Precision	TCET 22013MF $\frac{1}{2}$ -USF 2202MF $\frac{1}{2}$ -USF 2205MF $\frac{1}{2}$ -USF	1/4	1/8	0.110	<0.002 <0.004 <0.008	7°	⊕			
	TCGT 151505ME $\frac{1}{2}$ -U TCGT 2205ME $\frac{1}{2}$ -U 221ME $\frac{1}{2}$ -U	3/16 1/4	3/32 1/8	0.091 0.110	<0.008 <0.008 <1/64	7° 7°	●			
 Low Feed / Honed Edge	TPGT 181502MP-CF 151505MP-CF	3/16	3/32	0.091	<0.004 <0.008	11°	●	●	●	
	TPGT 181502MP-CF 181505MP-CF	7/32	3/32	0.118	<0.004 <0.008	11°	●	●	●	
 Minute D.O.C. Sharp Edge / Polished	TPGT 181502MFP-PF 181505MFP-PF 18151MFP-PF	7/32	3/32	0.118	<0.004 <0.008 <1/64	11°	●		●	
	TPMX 181505WP 18151WP 18152WP	7/32	3/32	0.110	0.008 1/64 1/32	11°	●			
 Finishing Wiper Edge	TPMX 2205WP 221WP 222WP	1/4	1/8	0.130	0.008 1/64 1/32	11°	●			
	TPMX 221 $\frac{1}{2}$ -WP	1/4	1/8	0.130	1/64	11°	●			
 Finishing Wiper Edge	TPMT 181505PP 18151PP	7/32	3/32	0.110	0.008 1/64	11°	●		●	
	TPMT 2205PP 221PP 222PP	1/4	1/8	0.130	0.008 1/64 1/32	11°	●		●	
 Finishing	TPMT 181505GP 18151GP	7/32	3/32	0.110	0.008 1/64	11°	●		●	
	TPMT 221GP 222GP	1/4	1/8	0.130	1/64 1/32	11°	●		●	
 Finishing	TPMT 321GP	3/8	1/8	0.173	1/64	11°	●		●	













Shape	Part Number	Dimensions (in)					MEGACOAT NANO PLUS			MEGACOAT NANO
		IC	Thickness	Hole	Corner-R (RE)	AN	PRT725	PRT705	PRT535	
 Finishing-Medium	TPMT 181505HQ 18151HQ	7/32	3/32	0.110	0.008 1/64	11°	●		●	
	TPMT 2205HQ 221HQ 222HQ	1/4	1/8	0.130	0.008 1/64 1/32	11°	●		●	
 Finishing-Medium	TPMT 3205HQ 321HQ 322HQ	3/8	1/8	0.173	0.008 1/64 1/32	11°	●		●	
	TPMT 18151XP TPMT 221XP 222XP	7/32 1/4	3/32 1/8	0.110 0.130	1/64 1/64 1/32	11°	●		●	
 Finishing Low Carbon Steel	TPMT 321XP 322XP	3/8	1/8	0.173	1/64 1/32	11°	●		●	
	TPGH 151502 $\frac{1}{2}$ 151505 $\frac{1}{2}$ 15151 $\frac{1}{2}$	3/16	3/32	0.091	0.004 0.008 1/64	11°	●	●	●	
 Finishing Low Carbon Steel	TPGH 181502 $\frac{1}{2}$ 181505 $\frac{1}{2}$ 18151 $\frac{1}{2}$	7/32	3/32	0.118	0.004 0.008 1/64	11°	●	●	●	
	TPGH 21505 $\frac{1}{2}$ 2151 $\frac{1}{2}$	1/4	3/32	0.138	0.008 1/64	11°	●	●	●	
 Finishing Low Carbon Steel	TPGH 2205 $\frac{1}{2}$ 221 $\frac{1}{2}$ 222 $\frac{1}{2}$	1/4	1/8	0.130	0.008 1/64 1/32	11°	●	●	●	
	TPGH 3205 $\frac{1}{2}$ 321 $\frac{1}{2}$ 322 $\frac{1}{2}$	3/8	1/8	0.177	0.008 1/64 1/32	11°	●	●	●	
 Finishing Low Carbon Steel	TPGH 151502M $\frac{1}{2}$ 151505M $\frac{1}{2}$ 15151M $\frac{1}{2}$	3/16	3/32	0.091	<0.004 <0.008 <1/64	11°	●	●		
	TPGH 181502M $\frac{1}{2}$ 181505M $\frac{1}{2}$ 18151M $\frac{1}{2}$	7/32	3/32	0.118	<0.004 <0.008 <1/64	11°	●	●		
 Finishing Low Carbon Steel	TPGH 2151M $\frac{1}{2}$ TPGH 2205M $\frac{1}{2}$ 221M $\frac{1}{2}$ 222M $\frac{1}{2}$	1/4 1/4	3/32 1/8	0.138 0.130	<1/64 <0.008 <1/64 <1/32	11°	●	●		
	TPGH 3205M $\frac{1}{2}$ 321M $\frac{1}{2}$ 322M $\frac{1}{2}$	3/8	1/8	0.177	<0.008 1/64 1/32	11°	●	●		
 Finishing Sharp Edge	TPGH 181502 $\frac{1}{2}$ -H 181505 $\frac{1}{2}$ -H 18151 $\frac{1}{2}$ -H	7/32	3/32	0.118	0.004 0.008 1/64	11°	●		●	
	TPGH 2205 $\frac{1}{2}$ -H 221 $\frac{1}{2}$ -H 222 $\frac{1}{2}$ -H	1/4	1/8	0.130	0.008 1/64 1/32	11°	●		●	
 Finishing Sharp Edge	TPGH 321 $\frac{1}{2}$ -H 322 $\frac{1}{2}$ -H	3/8	1/8	0.177	1/64 1/32	11°	●		●	
	TPGH 2205M $\frac{1}{2}$ -H 221M $\frac{1}{2}$ -H	1/4	1/8	0.130	<0.008 <1/64	11°	●		●	
 Medium	TPGH 321M $\frac{1}{2}$ -H	3/8	1/8	0.177	<1/64	11°	●		●	
	TPET 151505 $\frac{1}{2}$ -FSF TPET 22013 $\frac{1}{2}$ -FSF 2202 $\frac{1}{2}$ -FSF 2205 $\frac{1}{2}$ -FSF	3/16 1/4	3/32 1/8	0.091 0.130	0.008 0.002 0.004 0.008	11°	●		●	
 Finishing Sharp Edge / Precision	TPET 151505M $\frac{1}{2}$ -FSF TPET 22013M $\frac{1}{2}$ -FSF 2202M $\frac{1}{2}$ -FSF 2205M $\frac{1}{2}$ -FSF	3/16 1/4	3/32 1/8	0.091 0.130	<0.008 <0.002 <0.004 <0.008	11°	●		●	
	TPEH 151502M $\frac{1}{2}$ -P 151505M $\frac{1}{2}$ -P 15151M $\frac{1}{2}$ -P	3/16	3/32	0.091	<0.004 <0.008 <1/64	11°	●		●	
 Finishing Sharp Edge / Precision	TPEH 181502M $\frac{1}{2}$ -P 181505M $\frac{1}{2}$ -P 18151M $\frac{1}{2}$ -P	7/32	3/32	0.118	<0.004 <0.008 <1/64	11°	●		●	
	TPEH 2202M $\frac{1}{2}$ -P 2205M $\frac{1}{2}$ -P 221M $\frac{1}{2}$ -P	1/4	1/8	0.130	<0.004 <0.008 <1/64	11°	●		●	

* Inserts with corner-R (RE) dimension expressed with less than sign (ex. <0.004, <0.008, etc.) indicate models with minus tolerance. ● : Standard Item ⊕ : Right-hand Only ◐ : Left-hand Only

Negative Inserts

Shape Handed Inserts Show Right-hand	Part Number	Dimensions (in)				MEGACOAT NANO PLUS	MEGA COAT NANO
		IC	Thickness	Hole	Corner-R (RE)	PR1725	PR1535
 Finishing-Medium / Sharp Edge /Polished	CNGG 4305MFP-SK	1/2	3/16	0.203	<0.008	●	●
	431MFP-SK				<1/64	●	●
 Medium-Roughing / Sharp Edge /Polished	CNGG 431FP-TK	1/2	3/16	0.203	1/64	●	●
	432FP-TK				1/32	●	●
 Finishing-Medium / Sharp Edge /Polished	DNGG 4305MFP-SK	1/2	3/16	0.203	<0.008	●	●
	431MFP-SK				<1/64	●	●
 Large DOC	DNMG 4305%L-LD	1/2	3/16	0.203	0.008	Ⓡ	Ⓡ
	431%L-LD				1/64	Ⓡ	Ⓡ
 Medium-Roughing / Sharp Edge /Polished	DNGG 431FP-TK	1/2	3/16	0.203	1/64	●	●
	432FP-TK				1/32	●	●
 Finishing-Medium / Sharp Edge /Polished	TNGG 3302MFP-SK	3/8	3/16	0.150	<0.004	●	●
	3305MFP-SK				<0.008	●	●
	331MFP-SK				<1/64	●	●
 Large DOC	TNMG 3305%L-LD	3/8	3/16	0.150	0.008	Ⓡ	Ⓡ
	331%L-LD				1/64	Ⓡ	Ⓡ
 Medium-Roughing / Sharp Edge /Polished	TNGG 331FP-TK	3/8	3/16	0.150	1/64	●	●
	332FP-TK				1/32	●	●
 Finishing Surface Finishing Oriented /Sharp Edge	TNGG 3305%L-S	3/8	3/16	0.150	0.008	●	●
	331%L-S				1/64	●	●
	332%L-S				1/32	●	●
 Finishing-Medium / Sharp Edge /Polished	VNGG 3305MFP-SK	3/8	3/16	0.150	<0.008	●	●
	331MFP-SK				<1/64	●	●


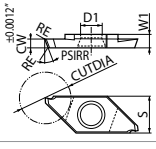

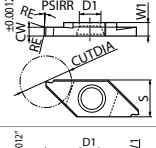

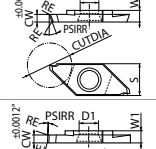

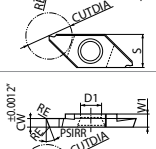

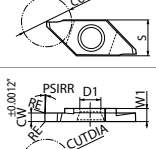
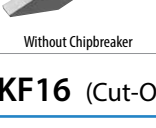
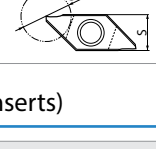
Small Double-Sided Inserts

Shape Handed Inserts Show Right-hand	Part Number	Dimensions (in)				MEGACOAT NANO PLUS	MEGA COAT NANO	
		IC	Thickness	Hole	Corner-R (RE)	PR1725	PR1705	PR1535
 Finishing-Medium Sharp Edge /Polished	CNGU 24202MFP-SK	0.295	1/8	0.142	<0.004	●	●	
	24205MFP-SK				<0.008	●	●	
 Medium-Roughing Honed Edge	CNMU 24205E-GK	0.295	1/8	0.142	0.008	●	●	
	2421E-GK				1/64	●	●	
 Finishing / Sharp Edge	CNGU 242013MF%L-F	0.295	1/8	0.142	<0.002	●	Ⓡ	
	24202MF%L-F				<0.004	Ⓡ	Ⓡ	Ⓡ
	24205MF%L-F				<0.008	Ⓡ	Ⓡ	Ⓡ
	2421MF%L-F				<1/64	Ⓡ	Ⓡ	Ⓡ
 Low Feed / Sharp Edge	CNGU 242013MF%L-U	0.295	1/8	0.142	<0.002	●	Ⓡ	
	24202MF%L-U				<0.004	Ⓡ	Ⓡ	Ⓡ
	24205MF%L-U				<0.008	Ⓡ	Ⓡ	Ⓡ
	2421MF%L-U				<1/64	Ⓡ	Ⓡ	Ⓡ
 Finishing-Medium / Sharp Edge /Polished	DNGU 22202MFP-SK	0.276	1/8	0.142	<0.004	●	●	
	22205MFP-SK				<0.008	●	●	
	2221MFP-SK				<1/64	●	●	
 Medium-Roughing / Honed Edge	DNMU 22205E-GK	0.276	1/8	0.142	0.008	●	●	
	2221E-GK				1/64	●	●	
 Finishing / Sharp Edge	DNGU 22202MF%L-F	0.276	1/8	0.142	<0.004	Ⓡ	Ⓡ	
	22205MF%L-F				<0.008	Ⓡ	Ⓡ	Ⓡ
	2221MFR-F				<1/64	Ⓡ	Ⓡ	Ⓡ
 Low Feed / Sharp Edge	DNGU 22202MF%L-U	0.276	1/8	0.142	<0.004	Ⓡ	Ⓡ	
	22205MF%L-U				<0.008	Ⓡ	Ⓡ	Ⓡ
	2221MF%L-U				<1/64	Ⓡ	Ⓡ	Ⓡ
 Low Feed / Honed Edge	DNGU 22202ME%L-U	0.276	1/8	0.142	<0.004	Ⓡ	Ⓡ	
	22205ME%L-U				<0.008	Ⓡ	Ⓡ	Ⓡ
	2221ME%L-U				<1/64	Ⓡ	Ⓡ	Ⓡ
 Finishing / Sharp Edge	TNGU 18202MF%L-F	7/32	1/8	0.118	<0.004	Ⓡ	Ⓡ	
	18205MF%L-F				<0.008	Ⓡ	Ⓡ	Ⓡ
	1821MF%L-F				<1/64	Ⓡ	Ⓡ	Ⓡ
 Low Feed / Sharp Edge	TNGU 18202MF%L-U	7/32	1/8	0.118	<0.004	Ⓡ	Ⓡ	
	18205MF%L-U				<0.008	Ⓡ	Ⓡ	Ⓡ
	1821MF%L-U				<1/64	Ⓡ	Ⓡ	Ⓡ
 Low Feed / Honed Edge	TNGU 1821ME%L-U	7/32	1/8	0.118	<1/64	Ⓡ	Ⓡ	


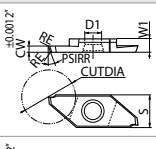

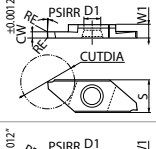

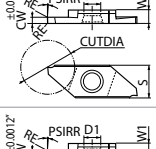

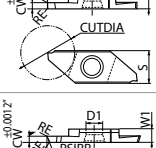

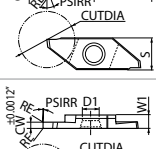

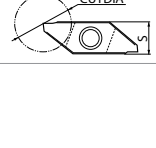
* Inserts with corner-R (RE) dimension expressed with less than sign (ex. <0.004, <0.008, etc.) indicate models with minus tolerance.

● : Standard Item Ⓡ : Right-hand Only Ⓛ : Left-hand Only

TKF12 (Cut-Off Inserts)

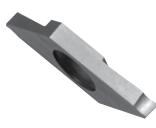
Shape Handed Inserts Show Right-hand		Part Number	Dimensions (in)					Angle PSIRR	MEGACOAT NANO PLUS		MEGACOAT NANO		Applicable Toolholders		
			CW		CUTDIA	RE	W1		S	D1	PR1725			PR1535	
			inch	mm							R	L		R	L
 Right Lead Angle		TKF12 050-S-16DR	0.020	0.50	0.197	0.001	0.118	0.343	0.197	16°	●	●	●	●	
		070-S-16DR	0.028	0.70	0.315						●	●	●	●	
		100-S-16DR	0.039	1.00	0.472						●	●	●	●	
		125-S-16DR	0.049	1.25							●	●	●	●	
		150-S-16DR	0.059	1.50							●	●	●	●	
200-S-16DR	0.079	2.00	●	●	●	●									
 0°		TKF12 050-S	0.020	0.50	0.197	0.001	0.118	0.343	0.197	0°	●	●	●	●	
		070-S	0.028	0.70	0.315						●	●	●	●	
		100-S	0.039	1.00	0.472						●	●	●	●	
		125-S	0.049	1.25							●	●	●	●	
		150-S	0.059	1.50							●	●	●	●	
200-S	0.079	2.00	●	●	●	●									
 Right Lead Angle / Tough Edge		TKF12 100-T-16DR	0.039	1.00	0.472	0.003	0.118	0.343	0.197	16°	●	●	●	●	
		150-T-16DR	0.059	1.50							●	●	●	●	
		200-T-16DR	0.079	2.00							●	●	●	●	
 Tough Edge		TKF12 100-T	0.039	1.00	0.472	0.003	0.118	0.343	0.197	0°	●	●	●	●	
		150-T	0.059	1.50							●	●	●	●	
		200-T	0.079	2.00							●	●	●	●	
 Right Lead Angle / Without Chipbreaker		TKF12 050-NB-20DR	0.020	0.50	0.197	0	0.118	0.343	0.197	20°	●	●	●	●	
		070-NB-20DR	0.028	0.70	0.315						●	●	●	●	
		100-NB-20DR	0.039	1.00	0.472						●	●	●	●	
		150-NB-20DR	0.059	1.50							●	●	●	●	
		200-NB-20DR	0.079	2.00							●	●	●	●	
 Without Chipbreaker		TKF12 050-NB	0.020	0.50	0.197	0	0.118	0.343	0.197	0°	●	●	●	●	
		070-NB	0.028	0.70	0.315						●	●	●	●	
		100-NB	0.039	1.00	0.472						●	●	●	●	
		150-NB	0.059	1.50							●	●	●	●	
		200-NB	0.079	2.00							●	●	●	●	

TKF16 (Cut-Off Inserts)


Shape Handed Inserts Show Right-hand		Part Number	Dimensions (in)					Angle PSIRR	MEGACOAT NANO PLUS		MEGACOAT NANO		Applicable Toolholders		
			CW		CUTDIA	RE	W1		S	D1	PR1725			PR1535	
			inch	mm							R	L		R	L
 Right Lead Angle		TKF16 150-S-16DR	0.059	1.50	0.630	0.002	0.157	0.374	0.197	16°	●	●	●	●	
		200-S-16DR	0.079	2.00							●	●	●	●	
 0°		TKF16 150-S	0.059	1.50	0.630	0.002	0.157	0.374	0.197	0°	●	●	●	●	
		200-S	0.079	2.00							●	●	●	●	
 Right Lead Angle / Tough Edge		TKF16 150-T-16DR	0.059	1.50	0.630	0.003	0.157	0.374	0.197	16°	●	●	●	●	
		200-T-16DR	0.079	2.00							●	●	●	●	
 Tough Edge		TKF16 150-T	0.059	1.50	0.630	0.003	0.157	0.374	0.197	0°	●	●	●	●	
		200-T	0.079	2.00							●	●	●	●	
 Right Lead Angle / Without Chipbreaker		TKF16 150-NB-20DR	0.059	1.50	0.630	0	0.157	0.374	0.197	20°	●	●	●	●	
		200-NB-20DR	0.079	2.00							●	●	●	●	
 Without Chipbreaker		TKF16 150-NB	0.059	1.50	0.630	0	0.157	0.374	0.197	0°	●	●	●	●	
		200-NB	0.079	2.00							●	●	●	●	

● : Standard Item


TKFS (Cut-Off Inserts for Sub-Spindle)

Shape Handed Inserts Show Left-hand	Part Number	Dimensions (in)								MEGACOAT NANO PLUS		MEGACOAT NANO		Applicable Toolholders
		CW		CUTDIA	RE	W1	S	D1	PR1725		PR1535			
		inch	mm						R	L	R	L		
	TKFS12% 100-S	0.039	1.00	0.236	0.002	0.087	0.343	0.173	●	●	●	●	KTKFS%...-12	
	150-S	0.059	1.50	0.354					●	●	●	●		
	200-S	0.079	2.00	0.472					●	●	●	●		
	TKFS16% 150-S	0.059	1.50	0.551	0.002	0.087	0.374	0.173	●	●	●	●		KTKFS%...-16
	200-S	0.079	2.00	0.630					●	●	●	●		
									●	●	●	●		
				●	●	●	●							


TKF-GTP (Grooving and Traversing Inserts)

Shape Handed Inserts Show Right-hand	Part Number	Dimensions (in)								Angle	MEGACOAT NANO PLUS	MEGACOAT NANO	Applicable Toolholders
		CW		CUTDIA	RE	W1	S	D1	PSIRR	PR1725	PR1535		
		inch	mm										
	TKF12R 200-GTP	0.079	2.0	0.181	0.003	0.118	0.343	0.197	0°	●	●	KTKFR...-12	
	TKF16R 300-GTP	0.118	3.0	0.236	0.003	0.157	0.374	0.197	0°	●	●	KTKFR...-16	


TKFT (Threading Inserts)

Shape Handed Inserts Show Right-hand	Part Number	Applicable Thread	Pitch		Dimensions (in)								Angle	MEGACOAT NANO PLUS	MEGACOAT NANO	Applicable Toolholders
			mm	TPI	W1	CW	S	D1	RE	PDX	PDX1	PNA	PR1725	PR1535		
	TKFT 12RA6000	M UN	0.20 ~ 0.60	64 ~ 48	0.118	0.098	0.343	0.205	Max 0.002 or flat	0.016	0.083	60°	●	●	KTKFR...-12	
	12RB6000									0.083	0.016		●	●		
	12RA60005									0.031	0.067		●	●		
	12RB60005									0.067	0.031		●	●		
	12RN6001	G,R W	-	40 ~ 16	0.118	0.098	0.343	0.205	0.004	0.049	0.049	55°	●	●	KTKFR...-16	
	12RA55005									0.031	0.067		●	●		
	12RB55005	0.067	0.031	●	●											
	TKFT 12LA6000	M UN	0.20 ~ 0.60	64 ~ 48	0.118	0.098	0.343	0.205	Max 0.002 or flat	0.083	0.016	60°	●	●	KTKFR...-16	
	12LB6000									0.016	0.083		●	●		
	12LA60005									0.067	0.031		●	●		
	12LB60005									0.031	0.067		●	●		
	12LN6001	G,R W	-	40 ~ 16	0.118	0.098	0.343	0.205	0.004	0.049	0.049	55°	●	●	KTKFR...-16	
	12LA55005									0.067	0.031		●	●		
	12LB55005	0.031	0.067	●	●											

TKFB-GQ (Back Turning inserts)




Shape Handed Inserts Show Right-hand	Part Number	Dimensions (in)									MEGACOAT NANO PLUS PR1725	MEGACOAT NANO PR1535	Applicable Toolholders
		CW		a	CDX	RE	W1	S	D1	θ			
		in	mm										
 Polished	TKFB 12R28005P-GQ	0.110	2.80	0.059	0.181	0.002	0.118	0.343	0.205	74°	●	●	KTKFR...12
	TKFB 12R28015P-GQ					0.006					●	●	
	TKFB 16R38005P-GQ	0.150	3.80	0.071	0.248	0.002	0.157	0.374	0.205	72°	●	●	KTKFR...16
	TKFB 16R38015P-GQ					0.006					●	●	

TKFB (Back Turning inserts)

Shape Handed Inserts Show Right-hand	Part Number	Dimensions (in)									MEGACOAT NANO PLUS PR1725	MEGACOAT NANO PR1535	Applicable Toolholders
		CW		a	CDX	RE	W1	S	D1				
		in	mm										
	TKFB 12R15005M	0.059	1.50	0.010	0.102	<0.002	0.118	0.343	0.205		●	●	KTKFR...12
	TKFB 12R28005M	0.110	2.80	0.012	0.181	<0.002					●	●	
	TKFB 12R28010M					<0.004	●	●					
	TKFB 16R38005M	0.150	3.80	0.012	0.248	<0.002	0.157	0.374	0.205	●	●	KTKFR...16	
	TKFB 16R38010M					<0.004				●	●		

* Inserts with corner-R (RE) dimension expressed with less than sign (ex. <0.004, <0.008, etc.) indicate models with minus tolerance.

ABS / ABW (Back Turning inserts)

Shape Handed Inserts Show Right-hand	Part Number	Dimensions (in)	MEGACOAT NANO PLUS		Applicable Toolholders
		RE	PR1725	PR1705	
	ABS 15R4005M	<0.002	●	●	AABSR-40F SABSR-40F
	15R4015M	<0.006	●	●	
	ABW 15R4005M	<0.002	●	●	AABWR-40F SABWR-40F
	15R4015M	<0.006	●	●	
	ABW 23R5005M	<0.002	●		AABWR-50F SABWR-50F
	23R5015M	<0.006	●	●	

* Inserts with corner-R (RE) dimension expressed with less than sign (ex. <0.004, <0.008, etc.) indicate models with minus tolerance.

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

● : Standard Item



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