



# PR1535

MEGACOAT NANO Insert Grade for Turning



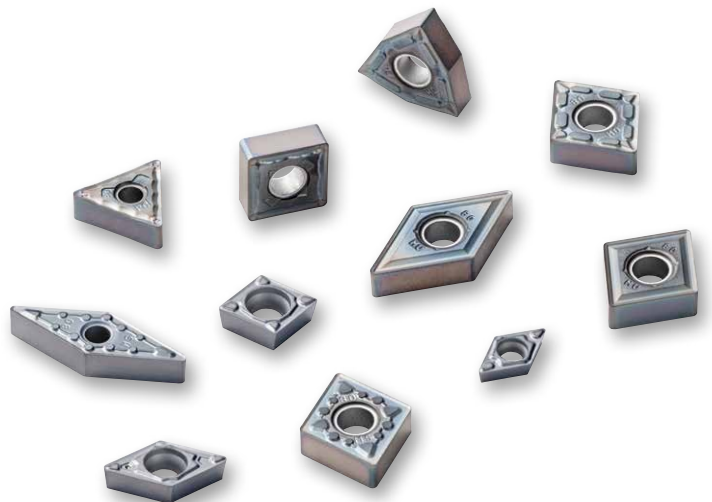
**Tough Grade for Heat-Resistant Alloy, Titanium Alloy, and Stainless Steel**

First Choice for Heat-Resistant Alloy, Titanium Alloy, and Stainless Steel

Reduced Sudden Fracturing during Scale Removal and Interrupted Machining

Reliable and Tough Grade for S35 / M35 / P35

Line-up Expansion **NEW**



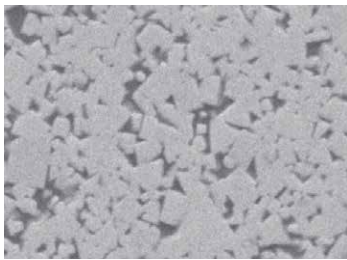
# PR1535 MEGACOAT NANO

Fracture resistant with a tough substrate and high heat-resistant coating for stable machining of heat-resistant alloy, titanium alloy, and stainless steel

## 1 23% Improved Fracture Toughness

An increase in cobalt content yields a substrate with greater toughness. Fracture toughness values are improved by 23% over previous grades.

High Toughness Carbide Base Material

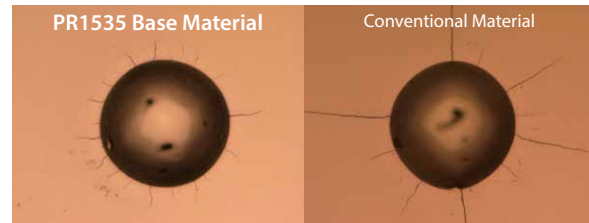


↑  
23%  
Fracture  
Toughness

## 2 Stability Improvement

The coarse grain structure and uniform particle size correspond to improved heat resistance, with conductivity values decreased by 11%. The uniform structure also reduces crack propagation.

Cracking Comparison by Diamond Indenter (In-house Evaluation)

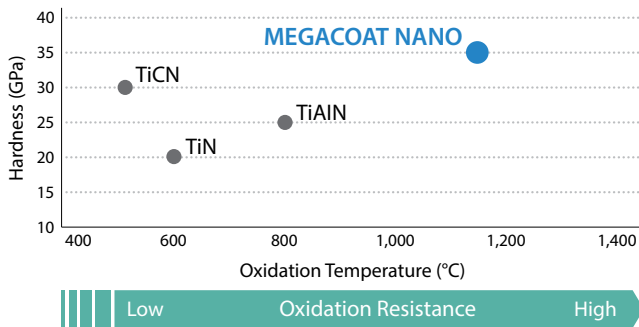


↑  
Shock  
Resistance

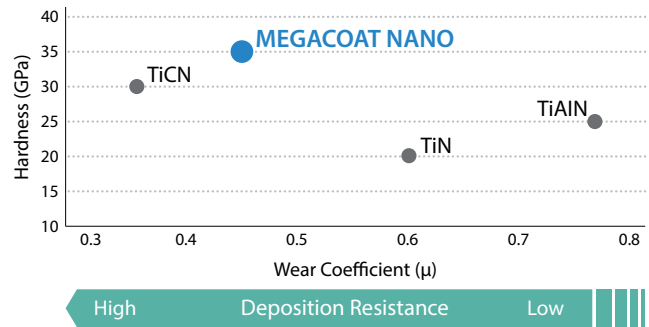
Short Cracks  
(High Impact Improvement)

Long Cracks

Coating Properties (Abrasion Resistance)



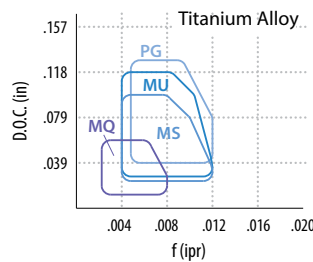
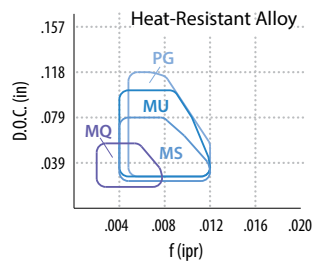
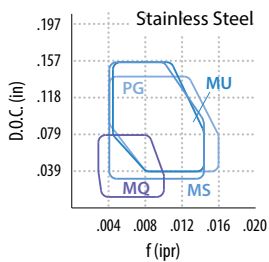
Coating Properties (Deposition Resistance)



Achieves long tool life with the combination of a tough substrate and a special Nano coating layer

Stable machining with excellent wear resistance

Cutting Conditions (External)



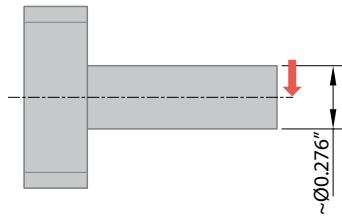
Workpiece Material	Cutting Speed Vc (sfm) Min. ~ Recommended ~ Max.
Stainless Steel	230 ~ 390 ~ 530
Heat-Resistant Alloy	130 ~ 160 ~ 200
Titanium Alloy	130 ~ 160 ~ 200

## Case Studies

### Ni-base Heat Resistant Alloy

#### Bolt

Vc = 165 sfm  
D.O.C. = 0.118"  
0.008 ipr  
Wet  
CNMG432MS PR1535



Machining Efficiency

**PR1535**  
(MS Chipbreaker) **80 pcs/edge**

**Tool Life**  
**2.6x**

Competitor A **30 pcs/edge**

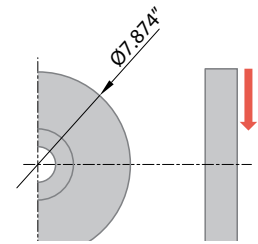
PR1535 (MS chipbreaker) shows 2.6 times longer tool life compared to Competitor A (PVD Coated Carbide).

(User Evaluation)

### Ni-base Heat Resistant Alloy

#### Aircraft Parts

Vc = 165 sfm  
D.O.C. = 0.020"  
0.004 ipr  
Wet  
CNMG432MU PR1535



Machining Efficiency

**PR1535**  
(MU Chipbreaker) **1 pcs/edge**

Competitor B **1 pcs/edge**

PR1535-MU Chipbreaker realized the stable machining by preventing the fracture at scaling and interrupted cutting compared with Competitor B (PVD coated).

(User Evaluation)



PR1535

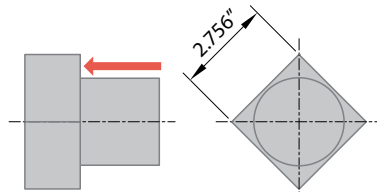


Competitor B

### 304 Stainless Steel

#### Square Bar

Vc = 330 sfm  
D.O.C. = 0.079"  
0.008 ipr  
Wet  
CNMG432MS PR1535



Machining Efficiency

**PR1535**  
(MS Chipbreaker) **50 pcs/edge**

**Tool Life**  
**5x**

Competitor C **10 pcs/edge**

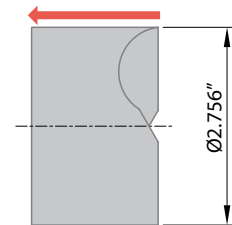
Competitor C fractured due to heavy interrupted machining. PR1535 (MS chipbreaker) shows 5 times longer tool life compared to Competitor C (CVD Coated Carbide).

(User Evaluation)

### 304 Stainless Steel

#### Lens Tube

Vc = 395 sfm  
D.O.C. = 0.039"  
0.006 ipr  
Wet  
CNMG432MS PR1535



Machining Efficiency

**PR1535**  
(MS Chipbreaker) **80 pcs/edge**

**Tool Life**  
**2.6x**

Competitor D **30 pcs/edge**

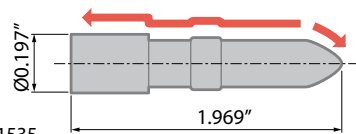
In heavy interrupted machining PR1535 (MS chipbreaker) shows 2.6 times longer tool life compared to Competitor D (PVD Coated Carbide).

(User Evaluation)

### S17400 Stainless Steel

#### Pin

Vc = ~180 sfm  
(n = 3,600 rpm)  
D.O.C. = 0.004"~0.028"  
0.0012 ipr  
Wet (oil-based)  
DCGT32505MFP-GQ PR1535



Machining Efficiency

**PR1535**  
(GQ Chipbreaker) **1,600 pcs/edge**

**Tool Life**  
**1.3x**

Competitor E **1,200 pcs/edge**

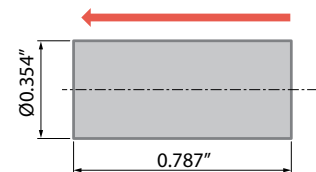
Competitor E had unstable tool life due to sudden defects. PR1535 with the GQ chipbreaker was capable of machining without defects and had improved tool life by 1.3 times that of Competitor E.

(User Evaluation)

### 440C Stainless Steel

#### Valve

Vc = 330 sfm  
(n = 3,600 rpm)  
D.O.C. = 0.004"  
0.0024 ipr  
Wet (oil-based)  
DCGT32505MFP-SK PR1535



Machining Efficiency

**PR1535**  
(SK Chipbreaker) **600 pcs/edge**
















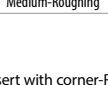
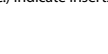
**Tool Life**  
**1.3x**


















Competitor F **450 pcs/edge**

SK chipbreaker in PR1535 increased tool life by 1.3 times that of Competitor F.

(User Evaluation)

# Negative Inserts

● Light Interruption / 1st Choice		M		Stainless Steel		●	
		S		Heat-Resistant Alloy		●	
				Titanium Alloy		●	
Shape	Part Number	Dimensions (in)				MEGACOAT NANO	
		IC	Thickness	Hole	Corner-R (RE)	PR1535	
	<b>CNMG 431HQ</b>	1/2	3/16	0.203	1/64	●	
	<b>432HQ</b>				1/32	●	
	<b>433HQ</b>				3/64	●	
	<b>CNMG 431MQ</b>	1/2	3/16	0.203	1/64	●	
	<b>432MQ</b>				1/32	●	
	<b>CNMG 431MS</b>	1/2	3/16	0.203	1/64	●	
	<b>432MS</b>				1/32	●	
	<b>433MS</b>				3/64	●	
	<b>434MS</b>				1/16	●	
	<b>CNMG 431MU</b>	1/2	3/16	0.203	1/64	●	
	<b>432MU</b>				1/32	●	
	<b>433MU</b>				3/64	●	
	<b>434MU</b>	1/16	●				
	<b>CNMG 542MU</b>	5/8	1/4	0.250	1/32	●	
					<b>543MU</b>	3/64	●
<b>544MU</b>					1/16	●	
	<b>CNMG 643MU</b>	3/4	1/4	0.313	3/64	●	
	<b>644MU</b>				1/16	●	
	<b>CNMG 431PG</b>	1/2	3/16	0.203	1/64	●	
	<b>432PG</b>				1/32	●	
	<b>433PG</b>				3/64	●	
	<b>CNMG 431TK</b>	1/2	3/16	0.203	1/64	●	
	<b>432TK</b>				1/32	●	
	<b>CNMG 432SG</b>	1/2	3/16	0.203	1/32	●	
	<b>433SG</b>				3/64	●	
	<b>CNMG 543SG</b>	5/8	1/4	0.250	3/64	●	
	<b>544SG</b>				1/16	●	
	<b>CNMG 643SG</b>				3/4	1/4	0.313
<b>644SG</b>	1/16	●					
	<b>CNMG 431</b>	1/2	3/16	0.203	1/64	●	
	<b>432</b>				1/32	●	
	<b>433</b>				3/64	●	
	<b>CNGG 431FP-TK</b>	1/2	3/16	0.203	1/64	●	
	<b>432FP-TK</b>				1/32	●	
	<b>CNGG 4305MFP-SK</b>	1/2	3/16	0.203	<0.008	●	
	<b>431MFP-SK</b>				<1/64	●	
	<b>DNMG 431HQ</b>	1/2	3/16	0.203	1/64	●	
	<b>432HQ</b>				1/32	●	
	<b>441HQ</b>				1/64	●	
	<b>DNMG 441HQ</b>	1/2	1/4	0.203	1/32	●	
	<b>442HQ</b>				1/64	●	
	<b>DNMG 431MQ</b>	1/2	3/16	0.203	1/64	●	
	<b>432MQ</b>				1/32	●	
	<b>DNMG 441MQ</b>	1/2	1/4	0.203	1/64	●	
	<b>442MQ</b>				1/32	●	
	<b>431MS</b>				1/64	●	
	<b>432MS</b>	1/32	●				
	<b>433MS</b>	3/64	●				
	<b>441MS</b>	1/64	●				
	<b>DNMG 441MS</b>	1/2	1/4	0.203	1/32	●	
	<b>442MS</b>				1/64	●	
	<b>443MS</b>				3/64	●	
	<b>DNMG 431MU</b>	1/2	3/16	0.203	1/64	●	
	<b>432MU</b>				1/32	●	
	<b>441MU</b>				1/64	●	
	<b>DNMG 441MU</b>	1/2	1/4	0.203	1/64	●	
	<b>442MU</b>				1/32	●	

















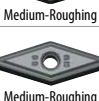





● Light Interruption / 1st Choice		M		Stainless Steel		●	
		S		Heat-Resistant Alloy		●	
				Titanium Alloy		●	
Shape	Part Number	Dimensions (in)				MEGACOAT NANO	
		IC	Thickness	Hole	Corner-R (RE)	PR1535	
	<b>DNMG 431PG</b>	1/2	3/16	0.203	1/64	●	
	<b>432PG</b>				1/32	●	
	<b>433PG</b>				3/64	●	
	<b>DNMG 441PG</b>	1/2	1/4	0.203	1/64	●	
	<b>442PG</b>				1/32	●	
	<b>443PG</b>				3/64	●	
	<b>431TK</b>				1/64	●	
	<b>DNMG 432TK</b>	1/2	3/16	0.203	1/32	●	
	<b>441TK</b>				1/64	●	
	<b>DNMG 432SG</b>	1/2	3/16	0.203	1/32	●	
	<b>433SG</b>				3/64	●	
	<b>DNMG 4305R-LD</b>	1/2	3/16	0.203	0.008	●	
	<b>431R-LD</b>				1/64	●	
	<b>DNGG 431FP-TK</b>	1/2	3/16	0.203	1/64	●	
	<b>432FP-TK</b>				1/32	●	
	<b>DNGG 4305MFP-SK</b>	1/2	3/16	0.203	<0.008	●	
	<b>431MFP-SK</b>				<1/64	●	
	<b>SNMG 432HQ</b>	1/2	3/16	0.203	1/32	●	
	<b>431MQ</b>				1/64	●	
	<b>SNMG 432MQ</b>	1/2	3/16	0.203	1/32	●	
	<b>431MS</b>				1/64	●	
	<b>SNMG 432MS</b>	1/2	3/16	0.203	1/32	●	
	<b>433MS</b>				3/64	●	
	<b>434MS</b>				1/16	●	
	<b>643MU</b>				3/64	●	
	<b>SNMG 644MU</b>	3/4	1/4	0.313	1/16	●	
	<b>432PG</b>				1/32	●	
	<b>SNMG 433PG</b>	1/2	3/16	0.203	3/64	●	
	<b>432SG</b>				1/32	●	
	<b>SNMG 433SG</b>	1/2	3/16	0.203	3/64	●	
	<b>643SG</b>				3/64	●	
	<b>644SG</b>				1/16	●	
	<b>SNMG 432</b>	1/2	3/16	0.203	1/32	●	
	<b>433</b>				3/64	●	
	<b>TNMG 331HQ</b>	3/8	3/16	0.150	1/64	●	
	<b>332HQ</b>				1/32	●	
	<b>TNMG 331MQ</b>	3/8	3/16	0.150	1/64	●	
	<b>332MQ</b>				1/32	●	
	<b>TNMG 331MS</b>	3/8	3/16	0.150	1/64	●	
	<b>332MS</b>				1/32	●	
	<b>333MS</b>				3/64	●	




















Insert with corner-R(RE) dimension shown with less than sign (e.g. <0.002, <0.004, <0.008 etc.) indicate inserts with minus tolerance for corner-R (RE).

● : Standard Item

Inserts sold in 10 piece boxes

# Negative Inserts

● Light Interruption / 1st Choice		M	Stainless Steel			●
		S	Heat-Resistant Alloy			●
		Titanium Alloy				●
Shape	Part Number	Dimensions (in)				MEGACOAT NANO PR1535
		IC	Thickness	Hole	Corner-R (RE)	
	<b>TNMG 331MU</b>	3/8	3/16	0.150	1/64	●
	<b>332MU</b>				1/32	●
	<b>TNMG 331PG</b>	3/8	3/16	0.150	1/64	●
	<b>332PG</b>				1/32	●
	<b>333PG</b>				3/64	●
 	<b>TNMG 331TK</b>	3/8	3/16	0.150	1/64	●
<b>332TK</b>	1/32				●	
 	<b>TNMG 331<sup>3</sup>/<sub>4</sub>-ST</b>	3/8	3/16	0.150	1/64	●
<b>332<sup>3</sup>/<sub>4</sub>-ST</b>	1/32				●	
	<b>TNMG 332SG</b>	3/8	3/16	0.150	1/32	●
	<b>333SG</b>				3/64	●
	<b>TNMG 432SG</b>	1/2	3/16	0.203	1/32	●
<b>433SG</b>	3/64				●	
 	<b>TNMG 331</b>	3/8	3/16	0.150	1/64	●
<b>332</b>	1/32				●	
	<b>TNMG 3305R-LD</b>	3/8	3/16	0.150	0.008	●
	<b>331R-LD</b>				1/64	●
	<b>TNGG 331FP-TK</b>	3/8	3/16	0.150	1/64	●
	<b>332FP-TK</b>				1/32	●
	<b>TNGG 3305<sup>3</sup>/<sub>4</sub>-S</b>	3/8	3/16	0.150	0.008	●
	<b>331<sup>3</sup>/<sub>4</sub>-S</b>				1/64	●
	<b>332<sup>3</sup>/<sub>4</sub>-S</b>				1/32	●
	<b>TNGG 3302MFP-SK</b>	3/8	3/16	0.150	<0.004	●
	<b>3305MFP-SK</b>				<0.008	●
	<b>331MFP-SK</b>				<1/64	●
 	<b>TNGG 331<sup>3</sup>/<sub>4</sub>-25R</b>	3/8	3/16	0.150	1/64	●
<b>332<sup>3</sup>/<sub>4</sub>-25R</b>	1/32				●	
	<b>VNMG 331MQ</b>	3/8	3/16	0.150	1/64	●
	<b>332MQ</b>				1/32	●
	<b>VNMG 331MS</b>	3/8	3/16	0.150	1/64	●
	<b>332MS</b>				1/32	●
	<b>333MS</b>				3/64	●
	<b>VNMG 331MU</b>	3/8	3/16	0.150	1/64	●
	<b>332MU</b>				1/32	●
	<b>VNMG 331SG</b>	3/8	3/16	0.150	1/64	●
	<b>332SG</b>				1/32	●
	<b>VNGG 3305MFP-SK</b>	3/8	3/16	0.150	<0.008	●
	<b>331MFP-SK</b>				<1/64	●
 	<b>WNMG 431HQ</b>	1/2	3/16	0.203	1/64	●
<b>432HQ</b>	1/32				●	

● Light Interruption / 1st Choice		M	Stainless Steel			●
		S	Heat-Resistant Alloy			●
		Titanium Alloy				●
Shape	Part Number	Dimensions (in)				MEGACOAT NANO PR1535
		IC	Thickness	Hole	Corner-R (RE)	
	<b>WNMG 431MQ</b>	1/2	3/16	0.203	1/64	●
	<b>432MQ</b>				1/32	●
	<b>WNMG 431MS</b>	1/2	3/16	0.203	1/64	●
	<b>432MS</b>				1/32	●
	<b>433MS</b>				3/64	●
	<b>WNMG 431MU</b>	1/2	3/16	0.203	1/64	●
	<b>432MU</b>				1/32	●
	<b>WNMG 431PG</b>	1/2	3/16	0.203	1/64	●
	<b>432PG</b>				1/32	●
	<b>433PG</b>				3/64	●
 	<b>WNMG 431TK</b>	1/2	3/16	0.203	1/64	●
<b>432TK</b>	1/32				●	
	<b>WNMG 432SG</b>	1/2	3/16	0.203	1/32	●
	<b>433SG</b>				3/64	●
 	<b>WNMG 431</b>	1/2	3/16	0.203	1/64	●
<b>432</b>	1/32				●	
<b>433</b>	3/64				●	
	<b>CNGU 24202MFR-U</b>	0.295	1/8	0.142	<0.004	●
	<b>24205MFR-U</b>				<0.008	●
	<b>2421MFR-U</b>				<1/64	●
	<b>CNGU 24202MFR-F</b>	0.295	1/8	0.142	<0.004	●
	<b>24205MFR-F</b>				<0.008	●
	<b>2421MFR-F</b>				<1/64	●
	<b>CNGU 24202MFP-SK</b>	0.295	1/8	0.142	<0.004	●
	<b>24205MFP-SK</b>				<0.008	●
	<b>CNMU 24205E-GK</b>	0.295	1/8	0.142	<0.008	●
	<b>2421E-GK</b>				<1/64	●
	<b>DNGU 22202MFR-U</b>	0.276	1/8	0.142	<0.004	●
	<b>22205MFR-U</b>				<0.008	●
	<b>2221MFR-U</b>				<1/64	●
	<b>DNGU 22202MFR-F</b>	0.276	1/8	0.142	<0.004	●
	<b>22205MFR-F</b>				<0.008	●
	<b>2221MFR-F</b>				<1/64	●
	<b>DNGU 22202MFP-SK</b>	0.276	1/8	0.142	<0.004	●
	<b>22205MFP-SK</b>				<0.008	●
	<b>2221MFP-SK</b>				<1/64	●
	<b>DNMU 22205E-GK</b>	0.276	1/8	0.142	0.008	●
	<b>2221E-GK</b>				1/64	●
	<b>TNGU 18202MFR-U</b>	7/32	1/8	0.118	<0.004	●
	<b>18205MFR-U</b>				<0.008	●
	<b>1821MFR-U</b>				<1/64	●
	<b>TNGU 18202MFR-F</b>	7/32	1/8	0.118	<0.004	●
	<b>18205MFR-F</b>				<0.008	●
	<b>1821MFR-F</b>				<1/64	●

Insert with corner-R(RE) dimension shown with less than sign (e.g. <0.002, <0.004, <0.008 etc.) indicate inserts with minus tolerance for corner-R (RE).

● : Standard Item

Inserts sold in 10 piece boxes

# Positive Inserts

● Light Interruption / 1st Choice		M	Stainless Steel		●						
		S	Heat-Resistant Alloy		●						
		Titanium Alloy		●							
Shape	Part Number	Dimensions (in)					MEGACOAT NANO				
		IC	Thickness	Hole	Corner-R (RE)	Relief Angle	PR1535				
	CCGT 215013MF	1/4	3/32	0.110	<0.002	7°	●				
	21502MF				<0.004		●				
	21505MF				<0.008		●				
	2151MF				<1/64		●				
	CCGT 325013MF				<0.002		●				
	CCGT 32502MF	3/8	5/32	0.173	<0.004	7°	●				
	32505MF				<0.008		●				
	3251MF				<1/64		●				
	CCGT 21502MP-CK				1/4		3/32	0.110	<0.004	7°	●
	21505MP-CK								<0.008		●
	CCGT 32502MP-CK	3/8	5/32	0.173	<0.004	7°	●				
	32505MP-CK				<0.008		●				
	CCGT 110902MP-CF				0.138		0.055	0.075	<0.004	7°	●
110905MP-CF	<0.008	●									
	CCGT 141102MP-CF	0.169	0.071	0.091	<0.004	7°	●				
	141105MP-CF				<0.008		●				
	CCGT 21502MFP-GQ				1/4		3/32	0.110	<0.004	7°	●
21505MFP-GQ	<0.008	●									
	2151MFP-GQ	3/8	5/32	0.173	<1/64	7°	●				
	CCGT 32502MFP-GQ				<0.004		7°	●			
	32505MFP-GQ				<0.008			●			
	3251MFP-GQ	3/8	5/32	0.173	<1/64	7°		●			
	CCGT 21502MFP-GF				1/4		3/32	0.110	<0.004	7°	●
	21505MFP-GF								<0.008		●
	2151MFP-GF	3/8	5/32	0.173	<1/64	7°	●				
	CCGT 32502MFP-GF				<0.004		7°	●			
	32505MFP-GF				<0.008			●			
	3251MFP-GF	3/8	5/32	0.173	<1/64	7°		●			
	CCGT 21502MFP-SK				1/4		3/32	0.110	<0.004	7°	●
	21505MFP-SK								<0.008		●
	2151MFP-SK	3/8	5/32	0.173	<1/64	7°	●				
	CCGT 32502MFP-SK				<0.004		7°	●			
	32505MFP-SK				<0.008			●			
	3251MFP-SK	3/8	5/32	0.173	<1/64	7°		●			
	CCMT 3252				3/8		5/32	0.173	1/32	7°	●
	CCMT 21505PP								1/4		3/32
2151PP	1/64	●									
	CCMT 32505PP	3/8	5/32	0.173	0.008	7°	●				
	3251PP				1/64		●				
	3252PP				1/32		●				
	CCMT 21505HQ	1/4	3/32	0.110	0.008	7°	●				
	2151HQ				1/64		●				
	CCMT 32505HQ	3/8	5/32	0.173	0.008	7°	●				
3251HQ	1/64				●						
	3252HQ	3/8	5/32	0.173	1/32	7°	●				
	CCMT 21505GK				1/4		3/32	0.110	0.008	7°	●
	2151GK								1/64		●
	CCMT 32505GK	3/8	5/32	0.173	0.008	7°	●				
	3251GK				1/64		●				
	CCMT 3251MQ				3/8		5/32	0.173	0.008	7°	●
3252MQ	1/64	●									
	CCET 1109013M <sup>1/2</sup> -F	0.138	0.055	0.075	<0.002	7°	●				
	110902ML-F				<0.004		●				
	110905M <sup>1/2</sup> -F				<0.008		●				
	11091M <sup>1/2</sup> -F				<1/64		●				
	CCET 141102M <sup>1/2</sup> -F				<0.004		7°	●			
141105M <sup>1/2</sup> -F	<0.008	●									
14111M <sup>1/2</sup> -F	<1/64	●									
CCET 215013M <sup>1/2</sup> -U	<0.002	7°	●								
21502M <sup>1/2</sup> -U	<0.004		●								
21505M <sup>1/2</sup> -U	<0.008		●								
CCET 325013M <sup>1/2</sup> -U	<0.002		7°	●							
32502M <sup>1/2</sup> -U	<0.004			●							
32505M <sup>1/2</sup> -U	<0.008	●									
3251M <sup>1/2</sup> -U	<1/64	●									

● Light Interruption / 1st Choice		M	Stainless Steel		●						
		S	Heat-Resistant Alloy		●						
		Titanium Alloy		●							
Shape	Part Number	Dimensions (in)					MEGACOAT NANO				
		IC	Thickness	Hole	Corner-R (RE)	Relief Angle	PR1535				
	CCET 215013MFR-J	1/4	3/32	0.110	<0.002	7°	●				
	21502M <sup>1/2</sup> -J				<0.004		●				
	21505M <sup>1/2</sup> -J				<0.008		●				
	CCET 32502M <sup>1/2</sup> -J	3/8	5/32	0.173	<0.004	7°	●				
	32505M <sup>1/2</sup> -J				<0.008		●				
	3251M <sup>1/2</sup> -J				<1/64		●				
	CPMH 25151	5/16	3/32	0.138	1/64	11°	●				
	25152				1/32		●				
	CPMH 321	3/8	1/8	0.177	1/64	11°	●				
	322				1/32		●				
	CPMT 251505PP				5/16		3/32	0.130	0.008	11°	●
25151PP	1/64	●									
	CPMT 3205PP	3/8	1/8	0.173	0.008	11°	●				
	321PP				1/64		●				
	322PP				1/32		●				
	CPMT 25151GP	5/16	3/32	0.130	1/64	11°	●				
	321GP				1/64		●				
	322GP	1/32	●								
	CPMH 25151HQ	5/16	3/32	0.138	1/64	11°	●				
	25152HQ				1/32		●				
	CPMH 321HQ	3/8	1/8	0.177	1/64	11°	●				
322HQ	1/32				●						
	CPMT 25151XP	5/16	3/32	0.130	1/64	11°	●				
	321XP				1/64		●				
	322XP	1/32	●								
	DCGT 215013MF	1/4	3/32	0.110	<0.002	7°	●				
	21502MF				<0.004		●				
	21505MF				<0.008		●				
	2151MF				<1/64		●				
	DCGT 325013MF				<0.002		7°	●			
32502MF	<0.004	●									
32505MF	<0.008	●									
3251MF	<1/64	●									
DCGT 21502MP-CF	1/4	3/32	0.110	<0.004	7°	●					
21505MP-CF				<0.008		●					
	DCGT 32502MP-CF	3/8	5/32	0.173	<0.004	7°	●				
	32505MP-CF				<0.008		●				
	DCGT 21502MP-CK				1/4		3/32	0.110	<0.004	7°	●
21505MP-CK	<0.008	●									
	DCGT 32502MP-CK	3/8	5/32	0.173	<0.004	7°	●				
	32505MP-CK				<0.008		●				
	DCGT 21502MFP-GQ				1/4		3/32	0.110	<0.004	7°	●
21505MFP-GQ	<0.008	●									
	2151MFP-GQ	3/8	5/32	0.173	<1/64	7°	●				
	DCGT 32502MFP-GQ				<0.004		7°	●			
	32505MFP-GQ				<0.008			●			
	3251MFP-GQ	3/8	5/32	0.173	<1/64	7°		●			
	DCGT 32505MFP-GQ				<0.004		7°	●			
	3251MFP-GQ				<0.008			●			
	DCGT 21502MFP-GF	1/4	3/32	0.110	<0.004	7°		●			
	21505MFP-GF				<0.008		●				
	2151MFP-GF	3/8	5/32	0.173	<1/64	7°	●				
DCGT 32502MFP-GF	<0.004				7°		●				
32505MFP-GF	<0.008	●									
	3251MFP-GF	3/8	5/32	0.173		<1/64	7°	●			
	DCGT 21502MFP-SK				1/4	3/32		0.110	<0.004	7°	●
	21505MFP-SK								<0.008		●
	2151MFP-SK	3/8	5/32	0.173	<1/64	7°	●				
	DCGT 32502MFP-SK				<0.004		7°	●			
	32505MFP-SK				<0.008			●			
	3251MFP-SK	3/8	5/32	0.173	<1/64	7°		●			
	DCMT 21505MQ				1/4		3/32	0.110	0.008	7°	●
	2151MQ								1/64		●
	DCMT 32505MQ	3/8	5/32	0.173	0.008	7°	●				
	3251MQ				1/64		●				
	3252MQ				1/32		●				

Insert with corner-R(RE) dimension shown with less than sign (e.g. <0.002, <0.004, <0.008 etc.) indicate inserts with minus tolerance for corner-R (RE).

● : Standard Item

Inserts sold in 10 piece boxes

# Positive Inserts

● Light Interruption / 1st Choice		M	Stainless Steel				●	
		S	Heat-Resistant Alloy				●	
				Titanium Alloy				●
Shape	Part Number	Dimensions (in)					MEGACOAT NANO	
		IC	Thickness	Hole	Corner-R (RE)	Relief Angle	PR1535	
Finishing	DCMT 21505PP	1/4	3/32	0.110	0.008	7°	●	
	DCMT 2151PP				1/64		●	
	DCMT 32505PP	3/8	5/32	0.173	0.008	7°	●	
	DCMT 3251PP				1/64		●	
DCMT 3252PP	1/32	●						
Finishing	DCMT 21505GP	1/4	3/32	0.110	0.008	7°	●	
	DCMT 2151GP				1/64		●	
	DCMT 3251GP	3/8	5/32	0.173	1/64	7°	●	
	DCMT 3252GP				1/32		●	
Finishing-Medium	DCMT 21505GK	1/4	3/32	0.110	0.008	7°	●	
	DCMT 2151GK				1/64		●	
	DCMT 2152GK				1/32		●	
	DCMT 32505GK	3/8	5/32	0.173	0.008	7°	●	
	DCMT 3251GK				1/64		●	
	DCMT 3252GK				1/32		●	
Finishing-Medium	DCMT 21505HQ	1/4	3/32	0.110	0.008	7°	●	
	DCMT 2151HQ				1/64		●	
	DCMT 2152HQ				1/32		●	
	DCMT 32505HQ	3/8	5/32	0.173	0.008	7°	●	
	DCMT 3251HQ				1/64		●	
	DCMT 3252HQ				1/32		●	
Finishing	DCMT 2151XP	1/4	3/32	0.110	1/64	7°	●	
	DCMT 32505XP				0.008		●	
	DCMT 3251XP				1/64		●	
	DCMT 3252XP	3/8	5/32	0.173	1/64	7°	●	
	DCMT 32505XP				0.008		●	
	DCMT 3251XP				1/64		●	
Sharp Edge	DCET 215013MR-F	1/4	3/32	0.110	<0.002	7°	●	
	DCET 21502M <sup>R/L</sup> -F				<0.004		●	
	DCET 21505M <sup>R/L</sup> -F				<0.008		●	
	DCET 2151M <sup>R/L</sup> -F	<1/64	●					
	DCET 325013MR-F	3/8	5/32	0.173	<0.002	7°	●	
	DCET 32502M <sup>R/L</sup> -F				<0.004		●	
DCET 32505M <sup>R/L</sup> -F	<0.008				●			
DCET 3251M <sup>R/L</sup> -F	<1/64	●						
Sharp Edge	DCET 215013MFR-J	1/4	3/32	0.110	<0.002	7°	●	
	DCET 21502MF <sup>R/L</sup> -J				<0.004		●	
	DCET 21505MF <sup>R/L</sup> -J				<0.008		●	
	DCET 325013MFR-J	3/8	5/32	0.173	<0.002	7°	●	
	DCET 32502MF <sup>R/L</sup> -J				<0.004		●	
	DCET 32505MF <sup>R/L</sup> -J				<0.008		●	
DCET 3251MFR-J	<1/64	●						
Sharp Edge	DCET 215013MFR-U	1/4	3/32	0.110	<0.002	7°	●	
	DCET 21502MF <sup>R/L</sup> -U				<0.004		●	
	DCET 21505MF <sup>R/L</sup> -U				<0.008		●	
	DCET 325013MFR-U	3/8	5/32	0.173	<0.002	7°	●	
	DCET 32502MF <sup>R/L</sup> -U				<0.004		●	
	DCET 32505MF <sup>R/L</sup> -U				<0.008		●	
DCET 3251MFR-U	<1/64	●						
Sharp Edge	JCET 110905M <sup>R/L</sup> -F	0.138	0.055	0.075	<0.008	7°	●	
	JCET 11091M <sup>R/L</sup> -F				<1/64		●	
Medium	SPMR 321	3/8	1/8	-	1/64	11°	●	
	SPMR 322				1/32		●	
	SPMR 421	1/2	1/8	-	1/64	11°	●	
SPMR 422	1/32				●			
Sharp Edge / Mirror Surface Finish	TBGT 12102MP-CF	5/32	1/16	0.091	<0.004	5°	●	
	TBGT 12105MP-CF				<0.008		●	
Finishing	TBET 121013M <sup>R/L</sup>	5/32	1/16	0.091	<0.002	5°	●	
	TBET 12102M <sup>R/L</sup>				<0.004		●	
	TBET 12105M <sup>R/L</sup>				<0.008		●	
	TBET 1211M <sup>R/L</sup>				<1/64		●	
Sharp Edge / Mirror Surface Finish	TPGT 151502MP-CF	3/16	3/32	0.091	<0.004	11°	●	
	TPGT 151505MP-CF				<0.008		●	
	TPGT 181502MP-CF	7/32	3/32	0.118	<0.004	11°	●	
TPGT 181505MP-CF	<0.008				●			





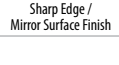



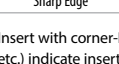

● Light Interruption / 1st Choice		M	Stainless Steel				●	
		S	Heat-Resistant Alloy				●	
				Titanium Alloy				●
Shape	Part Number	Dimensions (in)					MEGACOAT NANO	
		IC	Thickness	Hole	Corner-R (RE)	Relief Angle	PR1535	
Finishing	TPMT 181505PP	7/32	3/32	0.118	0.008	11°	●	
	TPMT 18151PP				1/64		●	
	TPMT 2205PP	1/4	1/8	0.130	0.008	11°	●	
	TPMT 221PP				1/64		●	
TPMT 222PP	1/32	●						
Finishing	TPMT 181505GP	7/32	3/32	0.118	0.008	11°	●	
	TPMT 18151GP				1/64		●	
	TPMT 221GP	1/4	1/8	0.130	1/64	11°	●	
	TPMT 222GP				1/32		●	
Finishing-Medium	TPMT 321GP	3/8	1/8	0.177	1/64	11°	●	
	TPMT 181505HQ				0.008		●	
	TPMT 18151HQ	7/32	3/32	0.118	1/64	11°	●	
	TPMT 2205HQ				0.008		●	
	TPMT 221HQ	1/4	1/8	0.130	1/64	11°	●	
	TPMT 222HQ				1/32		●	
TPMT 3205HQ	3/8	1/8	0.177	1/64	11°	●		
TPMT 321HQ				1/32		●		
Finishing	TPMT 18151XP	7/32	3/32	0.118	1/64	11°	●	
	TPMT 221XP				1/64		●	
	TPMT 222XP	1/4	1/8	0.130	1/32	11°	●	
	TPMT 321XP				1/64		●	
TPMT 322XP	3/8	1/8	0.177	1/32	11°	●		
TPMT 322XP				1/64		●		
NEW Finishing-Medium	TPMR 221HQ	1/4	1/8	-	1/64	11°	●	
	TPMR 222HQ				1/32		●	
	TPMR 321HQ	3/8	1/8	-	1/64	11°	●	
	TPMR 322HQ				1/32		●	
NEW Medium	TPMR 221	1/4	1/8	-	1/64	11°	●	
	TPMR 222				1/32		●	
	TPMR 321	3/8	1/8	-	1/64	11°	●	
TPMR 322	1/32				●			
Finishing	TPGH 151502 <sup>R/L</sup>	3/16	3/32	0.091	0.004	11°	●	
	TPGH 151505 <sup>R/L</sup>				0.008		●	
	TPGH 15151 <sup>R/L</sup>				1/64		●	
	TPGH 181502 <sup>R/L</sup>	7/32	3/32	0.118	0.004	11°	●	
	TPGH 181505 <sup>R/L</sup>				0.008		●	
	TPGH 18151 <sup>R/L</sup>				1/64		●	
TPGH 21505 <sup>R/L</sup>	1/4	3/32	0.138	0.008	11°	●		
TPGH 2151 <sup>R/L</sup>				1/64		●		
Finishing	TPGH 2205 <sup>R/L</sup>	1/4	1/8	0.130	0.008	11°	●	
	TPGH 221 <sup>R/L</sup>				1/64		●	
	TPGH 222 <sup>R/L</sup>	1/4	1/8	0.130	1/32	11°	●	
	TPGH 3205 <sup>R/L</sup>				0.008		●	
	TPGH 321 <sup>R/L</sup>	3/8	1/8	0.177	1/64	11°	●	
	TPGH 322 <sup>R/L</sup>				1/32		●	
TPGH 322 <sup>R/L</sup>	1/64	●						
Medium	TPGH 181502L-H	7/32	3/32	0.118	0.004	11°	●	
	TPGH 181505L-H				0.008		●	
	TPGH 18151L-H	1/4	1/8	0.130	0.008	11°	●	
	TPGH 2205 <sup>R/L</sup> -H				1/64		●	
	TPGH 221 <sup>R/L</sup> -H				1/32		●	
	TPGH 222 <sup>R/L</sup> -H	3/8	1/8	0.177	1/64	11°	●	
TPGH 321 <sup>R/L</sup> -H	1/32				●			
TPGH 322 <sup>R/L</sup> -H	1/64	●						
Finishing	VBMT 2205PP	1/4	1/8	0.110	0.008	5°	●	
	VBMT 221PP				1/64		●	
	VBMT 222PP	3/8	3/16	0.173	1/32	5°	●	
	VBMT 331PP				1/64		●	
VBMT 332PP	1/32	●						
VBMT 333PP	3/64	●						
Finishing	VBMT 221GP	1/4	1/8	0.110	1/64	5°	●	
	VBMT 221GP				1/64		●	
Finishing-Medium	VBMT 221HQ	1/4	1/8	0.110	1/64	5°	●	
	VBMT 222HQ				1/32		●	














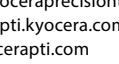
Insert with corner-R(RE) dimension shown with less than sign (e.g. <0.002, <0.004, <0.008 etc.) indicate inserts with minus tolerance for corner-R (RE).

● : Standard Item

Inserts sold in 10 piece boxes

# Positive Inserts

● Light Interruption / 1st Choice		M	Stainless Steel				●	
		S	Heat-Resistant Alloy				●	
				Titanium Alloy				●
Shape	Part Number	Dimensions (in)					MEGACOAT NANO	PR1535
		IC	Thickness	Hole	Corner-R (RE)	Relief Angle		
	<b>VBMT 2205VF</b>	1/4	1/8	0.110	0.008	5°	●	
	<b>221VF</b>				1/64			
	<b>222VF</b>				1/32			
	<b>VBET 22013M<sup>RL</sup>-F</b>	1/4	1/8	0.110	<0.002	5°	●	
	<b>2202M<sup>RL</sup>-F</b>				<0.004			
	<b>2205M<sup>RL</sup>-F</b>				<0.008			
	<b>VBET 22013M<sup>RL</sup>-Y</b>	1/4	1/8	0.110	<0.002	5°	●	
	<b>2202M<sup>RL</sup>-Y</b>				<0.004			
	<b>2205M<sup>RL</sup>-Y</b>				<0.008			
	<b>221M<sup>RL</sup>-Y</b>				<1/64			
	<b>VCMT 2202MP-CF</b>	1/4	1/8	0.110	<0.004	7°	●	
	<b>2205MP-CF</b>				<0.008			
	<b>VCMT 2202MFP-CF</b>	1/4	1/8	0.110	<0.004	7°	●	
	<b>2205MFP-CF</b>				<0.008			
	<b>VCMT 151505PP</b>	3/16	3/32	0.091	0.008	7°	●	
	<b>15151PP</b>				1/64			
	<b>VCMT 331PP</b>	3/8	3/16	0.173	1/64	7°	●	
<b>332PP</b>	1/32							
	<b>VCMT 151505VF</b>	3/16	3/32	0.091	0.008	7°	●	
	<b>15151VF</b>				1/64			
	<b>VCMT 151505HQ</b>	3/16	3/32	0.091	0.008	7°	●	
	<b>15151HQ</b>				1/64			
	<b>VCET 2202M<sup>RL</sup>-F</b>	1/4	1/8	0.110	<0.004	7°	●	
	<b>2205M<sup>RL</sup>-F</b>				<0.008			
	<b>221M<sup>RL</sup>-F</b>				<1/64			
	<b>VCET 22013M<sup>RL</sup>-Y</b>	1/4	1/8	0.110	<0.002	7°	●	
	<b>2202M<sup>RL</sup>-Y</b>				<0.004			
	<b>2205M<sup>RL</sup>-Y</b>				<0.008			
	<b>221M<sup>RL</sup>-Y</b>				<1/64			

● Light Interruption / 1st Choice		M	Stainless Steel				●	
		S	Heat-Resistant Alloy				●	
				Titanium Alloy				●
Shape	Part Number	Dimensions (in)					MEGACOAT NANO	PR1535
		IC	Thickness	Hole	Corner-R (RE)	Relief Angle		
	<b>VPGT 2202MP-CF</b>	1/4	1/8	0.110	<0.004	11°	●	
	<b>2205MP-CF</b>				<0.008			
	<b>VPGT 151502MP-CK</b>	3/16	3/32	0.091	<0.004	11°	●	
	<b>151505MP-CK</b>				<0.008			
	<b>VPGT 2202MP-CK</b>	1/4	1/8	0.110	<0.004	11°	●	
	<b>2205MP-CK</b>				<0.008			
	<b>VPGT 2202MFP-GF</b>	1/4	1/8	0.110	<0.004	11°	●	
	<b>2205MFP-GF</b>				<0.008			
	<b>VPET 151502M<sup>RL</sup>-F</b>	3/16	3/32	0.091	<0.004	11°	●	
	<b>151505M<sup>RL</sup>-F</b>				<0.008			
	<b>VPET 22013MR-F</b>	1/4	1/8	0.110	<0.002	11°	●	
	<b>2202MR-F</b>				<0.004			
	<b>2205M<sup>RL</sup>-F</b>				<0.008			
	<b>VPET 151502MF<sup>RL</sup>-U</b>	3/16	3/32	0.091	<0.004	11°	●	
	<b>151505MF<sup>RL</sup>-U</b>				<0.008			
	<b>VPET 22013MF<sup>RL</sup>-U</b>				1/4			1/8
<b>2202MF<sup>RL</sup>-U</b>	<0.004							
	<b>VPET 2205MF<sup>RL</sup>-U</b>	1/4	1/8	0.110	<0.008	11°	●	
	<b>22013MFR-J</b>				<0.002			
	<b>VPET 2202MF<sup>RL</sup>-J</b>	1/4	1/8	0.110	<0.004	11°	●	
	<b>2205MF<sup>RL</sup>-J</b>				<0.008			
	<b>WBGT 12102MP<sup>RL</sup>-CF</b>	5/32	1/16	0.091	<0.004	5°	●	
	<b>12105MP<sup>RL</sup>-CF</b>				<0.008			
	<b>WBMT 12105<sup>RL</sup>-DP</b>	5/32	1/16	0.091	<0.008	5°	●	
	<b>1211<sup>RL</sup>-DP</b>				<1/64			
	<b>WBMT 151505<sup>RL</sup>-DP</b>	3/16	3/32	0.091	<0.008	5°	●	
	<b>15151L-DP</b>				<1/64			
	<b>WBET 121013ML-F</b>	5/32	1/16	0.091	<0.002	5°	●	
	<b>12102M<sup>RL</sup>-F</b>				<0.004			
	<b>12105M<sup>RL</sup>-F</b>				<0.008			
	<b>1211M<sup>RL</sup>-F</b>				<1/64			
	<b>WBET 151502ML-F</b>	3/16	3/32	0.091	<0.004	5°	●	
	<b>151505ML-F</b>				<0.008			
	<b>15151M<sup>RL</sup>-F</b>				<1/64			

Insert with corner-R(RE) dimension shown with less than sign (e.g. <0.002, <0.004, <0.008 etc.) indicate inserts with minus tolerance for corner-R (RE).

● : Standard Item

Inserts sold in 10 piece boxes



## KYOCERA Precision Tools

102 Industrial Park Road  
Hendersonville, NC 28792  
Customer Service | 800.823.7284 - Option 1  
Technical Support | 800.823.7284 - Option 2



Official Website | [www.kyoceraprecisiontools.com](http://www.kyoceraprecisiontools.com)  
Distributor Website | [mykpti.kyocera.com](http://mykpti.kyocera.com)  
Email | [cuttingtools@kyocerapti.com](mailto:cuttingtools@kyocerapti.com)