

THE NEW VALUE FRONTIER



For Turning  
MEGACOAT NANO

PR1535

For Turning

MEGACOAT NANO

# PR1535

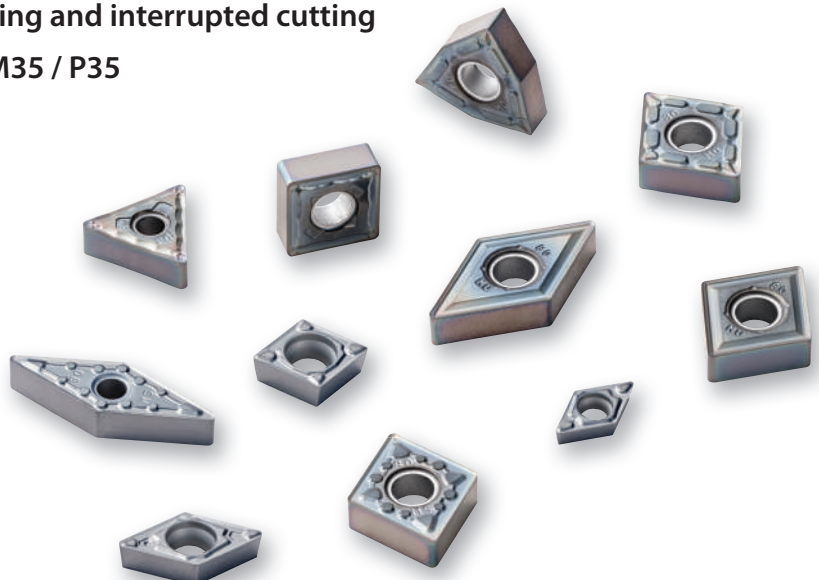


Widely applicable from steel to difficult-to-cut materials

Most suitable for heat resistant alloy, titanium alloy and stainless steel

Reduction of sudden fracture at scaling and interrupted cutting

Reliable new tough grade for S35 / M35 / P35

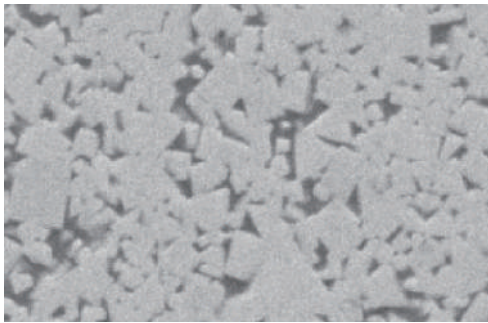


# MEGACOAT NANO PR1535

Fracture resistant with a tough substrate and high heat-resistant coating  
Stable machining of general steel, mold steel, and difficult-to-cut materials

## 1 Toughening by a New Cobalt Mixing Ratio \*In-house Evaluation

High Toughness Carbide Base Material



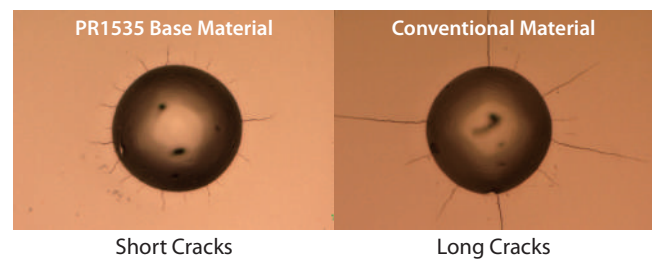
UP  
23%  
Fracture  
Toughness\*

## 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)

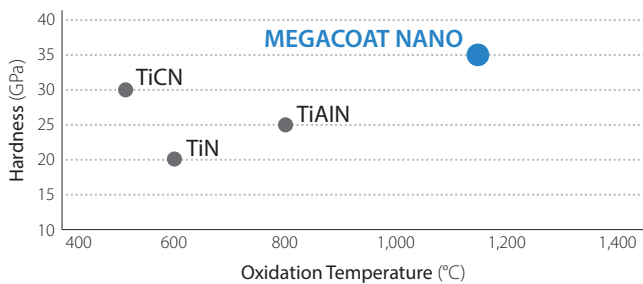
UP  
Shock  
Resistance



## 3 Stabilized turning operation and long tool life by special nano coating layer MEGACOAT NANO

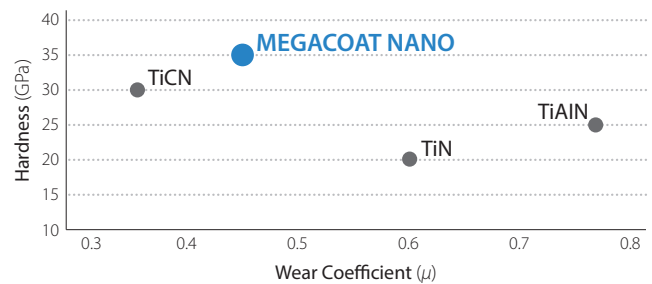
Prevents wear and fracture with high hardness (35GPa) and superior oxidation resistance (oxidation temperature 1,150°C)

Coating Properties (Abrasion Resistance)



Low Oxidation Resistance High

Coating Properties (Deposition Resistance)

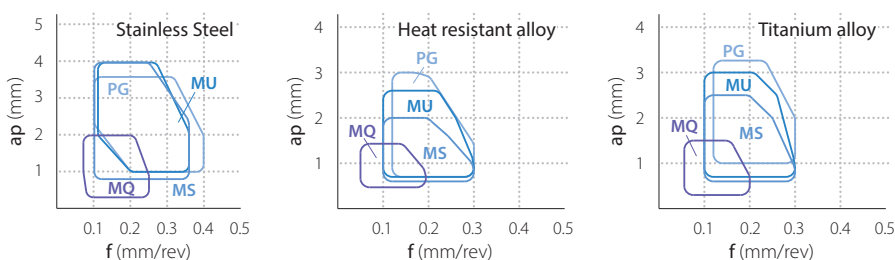


High Deposition Resistance Low

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

Stable Machining with Excellent Wear Resistance

Cutting Condition (External)

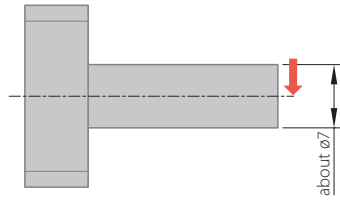


Workpiece Material	Cutting speed Vc (m/min) Min. - Recommendation - Max.
Stainless Steel	70 - 120 - 160
Heat resistant alloy	40 - 50 - 60
Titanium alloy	40 - 50 - 60

## Case Studies

### Bolt Ni-base heat resistant Alloy

Vc = 50 m/min  
ap = 1.0 mm  
f = 0.2 mm/rev  
Wet  
CNMG120408MS  
PR1535



Machining Efficiency

**PR1535**  
(MS Chip Breaker) **80 pcs/edge** **2.6 Times** Tool Life

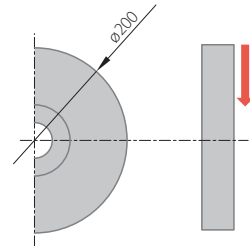
Competitor A **30 pcs/edge**

PR1535 (MS chipbreaker) shows 2.6times longer tool life compared to Competitor A

(User Evaluation)

### Aircraft Parts Ni-base heat resistant Alloy

Vc = 50 m/min  
ap = 0.5 mm  
f = 0.1 mm/rev  
Wet  
CNMG120408MU  
PR1535



Machining Efficiency

**PR1535**  
(MU Chip Breaker) **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.



PR1535

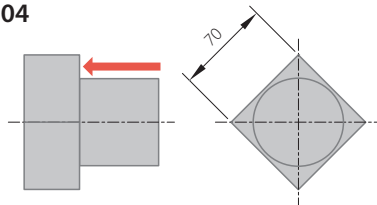


Competitor B

(User Evaluation)

### Square bar SUS304

Vc = 100 m/min  
ap = 2.0 mm  
f = 0.2 mm/rev  
Wet  
CNMG120408MS  
PR1535



Machining Efficiency

**PR1535**  
(MS Chip Breaker) **50 pcs/edge** **5 Times** Tool Life

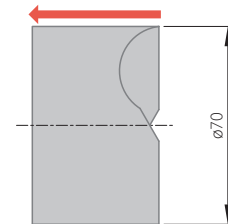
Competitor C **10 pcs/edge**

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

(User Evaluation)

### Lenz tube SUS304

Vc = 120 m/min  
ap = 1.0 mm  
f = 0.15 mm/rev  
Wet  
CNMG120408MS  
PR1535



Machining Efficiency

**PR1535**  
(MS Chip Breaker) **80 pcs/edge** **2.6 Times** Tool Life

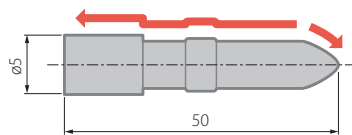
Competitor D **30 pcs/edge**

Heavy interrupted machining PR1535 (MS chipbreaker) shows 2.6times longer tool life compared to Competitor D.

(User Evaluation)

### Pin SUS630

Vc = ~55 m/min  
(n = 3,600 min<sup>-1</sup>)  
ap = 0.1~0.7 mm  
f = 0.03 mm/rev  
Wet (Oil-based)  
DCGT11T302MFP-GQ  
PR1535



Machining Efficiency

**PR1535**  
(GQ Chip Breaker) **1,600 pcs/edge** **1.3 Times** Tool Life

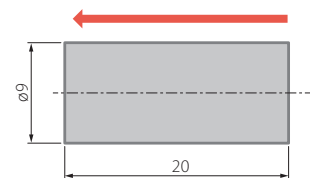
Competitor E **1,200 pcs/edge**

Unstable tool life due to sudden defects for competitor E. GQ chipbreaker (PR1535) is capable of stable machining without defects, with tool life improved to 1.3 times.

(User Evaluation)

### Valve SUS440C

Vc = 100 m/min  
(n = 3,600 min<sup>-1</sup>)  
ap = 0.1 mm  
f = 0.06 mm/rev  
Wet (Oil-based)  
DCGT11T302MFP-SK  
PR1535



Machining Efficiency

**PR1535**  
(SK Chip Breaker) **600 pcs/edge** **1.3 Times** Tool Life















Competitor F **450 pcs/edge**













SK Chipbreaker (PR1535) Tool Life 1.3 times.

(User Evaluation)

# Standard Stock Item Description

## Negative Insert







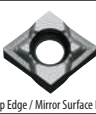


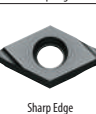




Shape	Description	Dimensions (mm)				PR1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)	
 Finishing-Medium	CNMG 120404MQ	12.70	4.76	5.16	0.4	●
	120408MQ				0.8	●
 Medium-Roughing	CNMG 120404MS	12.70	4.76	5.16	0.4	●
	120408MS				0.8	●
	120412MS				1.2	●
 Medium-Roughing	CNMG 120404MU	12.70	4.76	5.16	0.4	●
	120408MU				0.8	●
	120412MU				1.2	●
 Medium-Roughing	CNMG 120404PG	12.70	4.76	5.16	0.4	●
	120408PG				0.8	●
	120412PG				1.2	●
 Sharp Edge / Mirror Surface Finish	CNGG 120404FP-TK	12.70	4.76	5.16	0.4	●
	120408FP-TK				0.8	●
 Sharp Edge / Mirror Surface Finish	CNGG 120402MFP-SK	12.70	4.76	5.16	<0.2	●
	120404MFP-SK				<0.4	●
 Finishing-Medium	DNMG 150404MQ	12.70	4.76	5.16	0.4	●
	150408MQ				0.8	●
	DNMG 150604MQ	12.70	4.76	5.16	0.4	●
	150608MQ				0.8	●
 Medium-Roughing	DNMG 150404MS	12.70	4.76	5.16	0.4	●
	150408MS				0.8	●
	150412MS				1.2	●
	DNMG 150604MS	12.70	4.76	5.16	0.4	●
	150608MS				0.8	●
	150612MS				1.2	●
 Medium-Roughing	DNMG 150604MU	12.70	4.76	5.16	0.4	●
	150608MU				0.8	●
 Medium-Roughing	DNMG 150404PG	12.70	4.76	5.16	0.4	●
	150408PG				0.8	●
	150412PG				1.2	●
 Medium-Roughing	DNMG 150604PG	12.70	4.76	5.16	0.4	●
	150608PG				0.8	●
	150612PG				1.2	●
 Large depths of cut	DNMG 150402R-LD	12.70	4.76	5.16	0.2	R
	150404R-LD				0.4	R
 Sharp Edge / Mirror Surface Finish	DNGG 150404FP-TK	12.70	4.76	5.16	0.4	●
	150408FP-TK				0.8	●
 Sharp Edge / Mirror Surface Finish	DNGG 150402MFP-SK	12.70	4.76	5.16	<0.2	●
	150404MFP-SK				<0.4	●

Shape Right-hand (R) is shown for inserts with angles	Description	Dimensions (mm)				PR1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)	
 Medium-Roughing	SNMG 120408MS	12.70	4.76	5.16	0.8	●
	120412MS				1.2	●
 Medium-Roughing	SNMG 120408PG	12.70	4.76	5.16	0.8	●
	120412PG				1.2	●
 Finishing-Medium	TNMG 160404MQ	9.525	4.76	3.81	0.4	●
	160408MQ				0.8	●
 Medium-Roughing	TNMG 160404MS	9.525	4.76	3.81	0.4	●
	160408MS				0.8	●
	160412MS				1.2	●
 Medium-Roughing	TNMG 160404MU	9.525	4.76	3.81	0.4	●
	160408MU				0.8	●
 Medium-Roughing	TNMG 160404PG	9.525	4.76	3.81	0.4	●
	160408PG				0.8	●
	160412PG				1.2	●
 Large depths of cut	TNMG 160402R-LD	9.525	4.76	3.81	0.2	●
	160404R-LD				0.4	●
 Sharp Edge / Mirror Surface Finish	TNGG 160404FP-TK	9.525	4.76	3.81	0.4	●
	160408FP-TK				0.8	●
 Surface Roughness Oriented	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	●
 Sharp Edge / Mirror Surface Finish	TNGG 160401MFP-SK	9.525	4.76	3.81	<0.1	●
	160402MFP-SK				<0.2	●
	160404MFP-SK				<0.4	●
 Finishing-Medium	VNMG 160404MQ	9.525	4.76	3.81	0.4	●
	160408MQ				0.8	●
 Medium-Roughing	VNMG 160404MS	9.525	4.76	3.81	0.4	●
	160408MS				0.8	●
	160412MS				1.2	●
 Medium-Roughing	VNMG 160404MU	9.525	4.76	3.81	0.4	●
	160408MU				0.8	●
 Sharp Edge / Mirror Surface Finish	VNGG 160402MFP-SK	9.525	4.76	3.81	<0.2	●
	160404MFP-SK				<0.4	●

● : Standard Stock  
R : Std. Item (Right-hand Only)


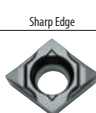







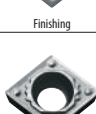





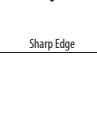

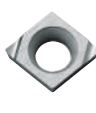


# Standard Stock Item Description

## Negative Insert

Shape	Description	Dimensions (mm)				PRI1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)	
	WNMG 080404MQ	12.70	4.76	5.16	0.4	●
	080408MQ				0.8	●
	WNMG 080404MS	12.70	4.76	5.16	0.4	●
	080408MS				0.8	●
	080412MS				1.2	●
	WNMG 080404MU	12.70	4.76	5.16	0.4	●
	080408MU				0.8	●
	WNMG 080404PG	12.70	4.76	5.16	0.4	●
	080408PG				0.8	●
	080412PG				1.2	●
	CNGU 070301MFR-U	7.5	3.18	3.6	<0.1	R
	070302MFR-U				<0.2	R
	070304MFR-U				<0.4	R
	CNGU 070301MFR-F	7.5	3.18	3.6	<0.1	R
	070302MFR-F				<0.2	R
	070304MFR-F				<0.4	R
	CNGU 070301MFP-SK	7.5	3.18	3.6	<0.1	●
	070302MFP-SK				<0.2	●
	CNMU 070302E-GK	7.0	3.18	3.6	0.2	●
	070304E-GK				0.4	●
	DNGU 080301MFR-U	7.0	3.18	3.6	<0.1	R
	080302MFR-U				<0.2	R
	080304MFR-U				<0.4	R
	DNGU 080301MFR-F	7.0	3.18	3.6	<0.1	R
	080302MFR-F				<0.2	R
	080304MFR-F				<0.4	R
	DNGU 080301MFP-SK	7.0	3.18	3.6	<0.1	●
	080302MFP-SK				<0.2	●
	080304MFP-SK				<0.4	●
	DNMU 080302E-GK	7.0	3.18	3.6	0.2	●
	080304E-GK				0.4	●
	TNGU 090301MFR-U	5.56	3.18	3.0	<0.1	R
	090302MFR-U				<0.2	R
	090304MFR-U				<0.4	R
	TNGU 090301MFR-F	5.56	3.18	3.0	<0.1	R
	090302MFR-F				<0.2	R
	090304MFR-F				<0.4	R

Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).

## Positive Insert














Shape Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PRI1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)		
	CCGT 0602005MF	6.35	2.38	2.8	<0.05	7°	●
	060201MF				<0.1		●
	060202MF				<0.2		●
	060204MF				<0.4		●
	CCGT 09T3005MF	9.525	3.97	4.4	<0.05	7°	●
	09T301MF				<0.1		●
	09T302MF				<0.2		●
	09T304MF				<0.4		●
	CCGT 060201MP-CK	6.35	2.38	2.8	<0.1	7°	●
	060202MP-CK				<0.2		●
	CCGT 09T301MP-CK	9.525	3.97	4.4	<0.1	7°	●
	09T302MP-CK				<0.2		●
	CCGT 030101MP-CF	3.5	1.4	1.9	<0.1	7°	●
	030102MP-CF				<0.2		●
	CCGT 040101MP-CF	4.3	1.8	2.3	<0.1	7°	●
	040102MP-CF				<0.2		●
	CCGT 060201MFP-GQ	6.35	2.38	2.8	<0.1	7°	●
	060202MFP-GQ				<0.2		●
	060204MFP-GQ				<0.4		●
	CCGT 09T301MFP-GQ				9.525		3.97
09T302MFP-GQ	<0.2	●					
	CCGT 09T304MFP-GQ	9.525	3.97	4.4	<0.4	7°	●
	CCGT 060201MFP-GF				6.35		2.38
060202MFP-GF	<0.2	●					
	060204MFP-GF	<0.4	●				
	CCGT 09T301MFP-GF	9.525	3.97	4.4	<0.1	7°	●
09T302MFP-GF	<0.2				●		
09T304MFP-GF	<0.4				●		
	CCGT 060201MFP-SK	6.35	2.38	2.8	<0.1	7°	●
	060202MFP-SK				<0.2		●
	060204MFP-SK				<0.4		●
	CCGT 09T301MFP-SK	9.525	3.97	4.4	<0.1	7°	●
	09T302MFP-SK				<0.2		●
	09T304MFP-SK				<0.4		●
	CCMT 09T308	9.525	3.97	4.4	0.8	7°	●
	CCMT 060202PP				6.35		2.38
060204PP	<0.4	●					
	CCMT 09T302PP	9.525	3.97	4.4	0.2	7°	●
	09T304PP				0.4		●
	09T308PP				0.8		●
	CCMT 060202HQ	6.35	2.38	2.8	0.2	7°	●
	060204HQ				<0.4		●
	CCMT 09T302HQ				9.525		3.97
09T304HQ	0.4	●					
09T308HQ	0.8	●					
	CCMT 060202GK	6.35	2.38	2.8	0.2	7°	●
	060204GK				0.4		●
	CCMT 09T302GK	9.525	3.97	4.4	0.2	7°	●
	09T304GK				0.4		●
	CCMT 09T304MQ	9.525	3.97	4.4	0.2	7°	●
	09T308MQ				0.4		●
	CCET 0301005M <sup>R/L</sup> -F	3.5	1.4	1.9	<0.05	7°	●
	030101M <sup>R/L</sup> -F				<0.1		●
	030102M <sup>R/L</sup> -F				<0.2		●
	030104M <sup>R/L</sup> -F				<0.4		●
	CCET 040101M <sup>R/L</sup> -F	4.3	1.8	2.3	<0.1	7°	●
	040102M <sup>R/L</sup> -F				<0.2		●
	040104M <sup>R/L</sup> -F				<0.4		●
	CCET 0602005MF <sup>R/L</sup> -U	6.35	2.38	2.8	<0.05	7°	●
	060201MF <sup>R/L</sup> -U				<0.1		●
	060202MF <sup>R/L</sup> -U				<0.2		●
	CCET 09T3005MF <sup>R/L</sup> -U				9.525		3.97
09T301MF <sup>R/L</sup> -U	<0.1	●					
09T302MF <sup>R/L</sup> -U	<0.2	●					
09T304MF <sup>R/L</sup> -U	<0.4	●					

● : Standard Stock  
R : Std. Item (Right-hand Only)
















# Standard Stock Item Description

## Positive Insert

Shape	Description	Dimensions (mm)				Relief Angle	PRI1535			
		I.C.	Thickness	Hole Diameter	Corner R (rε)					
 Sharp Edge	CCET 0602005MFR-J	6.35	2.38	2.8	<0.05	7°	R			
	060201MF R/L-J				<0.1		●			
	060202MF R/L-J				<0.2		●			
	CCET 09T301MF R/L-J				<0.1		●			
 Medium	CPMH 080204	7.94	2.38	3.5	0.4	11°	●			
	080208				0.8		●			
	CPMH 090304	9.525	3.18	4.5	0.4		●			
	090308				0.8		●			
 Finishing	CPMT 080202PP	7.94	2.38	3.3	0.2	11°	●			
	080204PP				0.4		●			
	CPMT 090302PP	9.525	3.18	4.4	0.2		●			
	090304PP				0.4		●			
 Finishing	CPMT 080204GP	7.94	2.38	3.3	0.4	11°	●			
	CPMT 090304GP				9.525		3.18	4.4	0.4	●
	090308GP	0.8	●							
	 Finishing-Medium	CPMH 080204HQ	7.94	2.38	3.5		0.4	11°	●	
080208HQ		0.8				●				
CPMH 090304HQ		9.525	3.18	4.5	0.4	●				
090308HQ					0.8	●				
 Finishing	CPMT 080204XP	7.94	2.38	3.3	0.4	11°	●			
	CPMT 090304XP				9.525		3.18	4.4	0.4	●
	090308XP	0.8	●							
	 Sharp Edge	DCGT 0702005MF	6.35	2.38	2.8		<0.05	7°	●	
070201MF		<0.1				●				
070202MF		<0.2				●				
070204MF		<0.4				●				
DCGT 11T3005MF		9.525	3.97	4.4	<0.05	7°	●			
11T301MF					<0.1		●			
11T302MF					<0.2		●			
11T304MF					<0.4		●			
 Sharp Edge / Mirror Surface Finish		DCGT 070201MP-CF	6.35	2.38	2.8	<0.1	7°	●		
		070202MP-CF				<0.2		●		
 Sharp Edge / Mirror Surface Finish	DCGT 11T301MP-CF	9.525	3.97	4.4	<0.1	7°	●			
	11T302MP-CF				<0.2		●			
 Sharp Edge / Mirror Surface Finish	DCGT 070201MP-CK	6.35	2.38	2.8	<0.1	7°	●			
	070202MP-CK				<0.2		●			
	DCGT 11T301MP-CK				9.525		3.97	4.4	<0.1	●
	11T302MP-CK								<0.2	●
	DCGT 070201MFP-GQ	6.35	2.38	2.8	<0.1	7°	●			
	070202MFP-GQ				<0.2		●			
	070204MFP-GQ				<0.4		●			
	DCGT 11T301MFP-GQ				9.525		3.97	4.4	<0.1	●
	11T302MFP-GQ	<0.2	●							
	11T304MFP-GQ	<0.4	●							
 Sharp Edge / Mirror Surface Finish	DCGT 070201MFP-GF	6.35	2.38	2.8	<0.1	7°	●			
	070202MFP-GF				<0.2		●			
	070204MFP-GF				<0.4		●			
	DCGT 11T301MFP-GF				9.525		3.97	4.4	<0.1	●
11T302MFP-GF	<0.2	●								
11T304MFP-GF	<0.4	●								
 Sharp Edge / Mirror Surface Finish	DCGT 070201MFP-SK	6.35	2.38	2.8	<0.1	7°	●			
	070202MFP-SK				<0.2		●			
	070204MFP-SK				<0.4		●			
	DCGT 11T301MFP-SK				9.525		3.97	4.4	<0.1	●
	11T302MFP-SK	<0.2	●							
	11T304MFP-SK	<0.4	●							
 Finishing-Medium	DCMT 070202MQ	6.35	2.38	2.8	0.2	7°	●			
	070204MQ				0.4		●			
	DCMT 11T302MQ	9.525	3.97	4.4	0.2		●			
	11T304MQ				0.4		●			
11T308MQ	0.8	●								












Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).















Shape	Description	Dimensions (mm)				Relief Angle	PRI1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)		
 Finishing	DCMT 070202PP	6.35	2.38	2.8	0.2	7°	●
	070204PP				0.4		●
	DCMT 11T302PP	9.525	3.97	4.4	0.2		●
	11T304PP				0.4		●
11T308PP	0.8	●					
 Finishing	DCMT 070202GP	6.35	2.38	2.8	0.2	7°	●
	070204GP				0.4		●
	DCMT 11T304GP	9.525	3.97	4.4	0.4		●
	11T308GP				0.8		●
 Finishing-Medium	DCMT 070202GK	6.35	2.38	2.8	0.2	7°	●
	070204GK				0.4		●
	DCMT 070208GK	9.525	3.97	4.4	0.4		●
	11T302GK				0.2		●
11T304GK	0.4	●					
11T308GK	0.8	●					
 Finishing-Medium	DCMT 070202HQ	6.35	2.38	2.8	0.2	7°	●
	070204HQ				0.4		●
	070208HQ				0.8		●
	DCMT 11T302HQ				9.525		3.97
	11T304HQ	0.4	●				
	11T308HQ	0.8	●				
 Finishing	DCMT 070204XP	6.35	2.38	2.8	0.4	7°	●
	DCMT 11T302XP				9.525		3.97
	11T304XP	0.4	●				
	11T308XP	0.8	●				
 Sharp Edge	DCET 0702005MR-F	6.35	2.38	2.8	<0.05	7°	R
	070201M R/L-F				<0.1		●
	070202M R/L-F				<0.2		●
	070204M R/L-F				<0.4		●
	DCET 11T3005MR-F	9.525	3.97	4.4	<0.05	7°	R
	11T301M R/L-F				<0.1		●
11T302M R/L-F	<0.2	●					
11T304M R/L-F	<0.4	●					
 Sharp Edge	DCET 0702005MFR-J	6.35	2.38	2.8	<0.05	7°	R
	070201MF R/L-J				<0.1		●
	070202MF R/L-J	<0.2	●				
	DCET 11T3005MFR-J	9.525	3.97	4.4	<0.05		R
11T301MF R/L-J	<0.1				●		
11T302MF R/L-J	<0.2	●					
11T304MFR-J	<0.4	R					
 Sharp Edge	DCET 0702005MFR-U	6.35	2.38	2.8	<0.05	7°	R
	070201MF R/L-U				<0.1		●
	070202MF R/L-U	<0.2	●				
	DCET 11T3005MFR-U	9.525	3.97	4.4	<0.05		R
11T301MF R/L-U	<0.1				●		
11T302MF R/L-U	<0.2	●					
11T304MFR-U	<0.4	R					
 Sharp Edge	JCET 030102M R/L-F	3.5	1.4	1.9	<0.2	7°	●
	030104M R/L-F				<0.4		●
 Sharp Edge / Mirror Surface Finish	TBGT 060101MP-CF	3.97	1.59	2.3	<0.1	5°	●
	060102MP-CF				<0.2		●
 Finishing	TBET 0601005M R/L	3.97	1.59	2.3	<0.05	5°	●
	060101M R/L				<0.1		●
	060102M R/L				<0.2		●
	060104M R/L				<0.4		●
 Sharp Edge / Mirror Surface Finish	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		●
	090202MP-CF				<0.2		●
 Finishing	TPMT 090202PP	5.56	2.38	3.0	0.2	11°	●
	090204PP				0.4		●
	TPMT 110302PP	6.35	3.18	3.3	0.2		●
	110304PP				0.4		●
110308PP	0.8	●					

● : Standard Stock  
R : Std. Item (Right-hand Only)

# Standard Stock Item Description

## Positive Insert

Shape Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PRI1535	
		I.C.	Thickness	Hole Diameter	Corner R (rε)			
 Finishing	TPMT 090202GP	5.56	2.38	3.0	0.2	11°	●	
	TPMT 090204GP				0.4			
	TPMT 110304GP 110308GP				0.4 0.8			
 Finishing-Medium	TPMT 160304GP	9.525	3.18	4.5	0.4	11°	●	
	TPMT 090202HQ 090204HQ				0.2 0.4			
	TPMT 110302HQ 110304HQ 110308HQ	6.35	3.18	3.3	0.2 0.4 0.8	11°	●	
	TPMT 160302HQ 160304HQ 160308HQ	9.525	3.18	4.5	0.2 0.4 0.8	11°	●	
	 Finishing	TPMT 090204XP	5.56	2.38	3.0	0.4	11°	●
		TPMT 110304XP 110308XP				0.4 0.8		
TPMT 160304XP 160308XP		9.525	3.18	4.5	0.4 0.8	11°	●	
 Finishing		TPGH 080201 R/L	4.76	2.38	2.3	0.1	11°	●
	TPGH 080202 R/L	0.2						
	TPGH 080204 R/L	0.4						
	TPGH 090201 R/L	5.56	2.38	3.0	0.1	11°	●	
	TPGH 090202 R/L				0.2			
	TPGH 090204 R/L				0.4			
	TPGH 110202 R/L	6.35	2.38	3.5	0.2	11°	●	
	TPGH 110204 R/L				0.4			
	TPGH 110302 R/L	6.35	3.18	3.3	0.2	11°	●	
	TPGH 110304 R/L				0.4			
	TPGH 110308 R/L				0.8			
	TPGH 160302 R/L	9.525	3.18	4.5	0.2	11°	●	
	TPGH 160304 R/L				0.4			
	TPGH 160308 R/L				0.8			
	 Medium	TPGH 090201 L-H	5.56	2.38	3.0	0.1	11°	L
TPGH 090202 L-H		0.2						
TPGH 090204 L-H		0.4						
TPGH 110302 R/L-H		6.35	3.18	3.3	0.2	11°	●	
TPGH 110304 R/L-H					0.4			
TPGH 110308 R/L-H					0.8			
TPGH 160304 R/L-H		9.525	3.18	4.5	0.4	11°	●	
TPGH 160308 R/L-H					0.8			
 Finishing		VBMT 110302PP	6.35	3.18	2.8	0.2	5°	●
	VBMT 110304PP	0.4						
	VBMT 110308PP	0.8						
	VBMT 160404PP	9.525	4.76	4.4	0.4	5°	●	
	VBMT 160408PP				0.8			
VBMT 160412PP	1.2	●						
 Finishing	VBMT 110304GP	6.35	3.18	2.8	0.4	5°	●	
 Finishing-Medium	VBMT 110304HQ	6.35	3.18	2.8	0.4	5°	●	
	VBMT 110308HQ				0.8			
 Finishing	VBMT 110302VF	6.35	3.18	2.8	0.2	5°	●	
	VBMT 110304VF				0.4			
	VBMT 110308VF				0.8			
 Sharp Edge	VBET 1103005M R/L-F	6.35	3.18	2.8	<0.05	5°	●	
	VBET 110301M R/L-F				<0.1			
	VBET 110302M R/L-F				<0.2			
 Finishing-Medium	VBET 1103005M R/L-Y	6.35	3.18	2.8	<0.05	5°	●	
	VBET 110301M R/L-Y				<0.1			
	VBET 110302M R/L-Y				<0.2			
	VBET 110304M R/L-Y				<0.4			

Shape Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PRI1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)		
 Finishing	VCMT 080202PP	4.76	2.38	2.3	0.2	7°	●
	VCMT 080204PP				0.4		
 Finishing	VCMT 160404PP	9.525	4.76	4.4	0.4	7°	●
	VCMT 160408PP				0.8		
 Finishing	VCMT 080202VF	4.76	2.38	2.3	0.2	7°	●
	VCMT 080204VF				0.4		
 Finishing-Medium	VCMT 080202HQ	4.76	2.38	2.3	0.2	7°	●
	VCMT 080204HQ				0.4		
 Sharp Edge / Mirror Surface Finish	VPGT 110301MP-CF	6.35	3.18	2.8	<0.1	11°	●
	VPGT 110302MP-CF				<0.2		
 Sharp Edge / Mirror Surface Finish	VPGT 080201MP-CK	4.76	2.38	2.3	<0.1	11°	●
	VPGT 080202MP-CK				<0.2		
	VPGT 110301MP-CK	6.35	3.18	2.8	<0.1	11°	●
 Sharp Edge / Mirror Surface Finish	VPGT 110301MFP-GF	6.35	3.18	2.8	<0.1	11°	●
	VPGT 110302MFP-GF				<0.2		
 Sharp Edge	VPET 080201M R/L-F	4.76	2.38	2.3	<0.1	11°	●
	VPET 080202M R/L-F				<0.2		
	VPET 1103005MR-F	6.35	3.18	2.8	<0.05	11°	R
 Sharp Edge	VPET 110301MR-F	6.35	3.18	2.8	<0.1	11°	R
	VPET 110302M R/L-F				<0.2		
	VPET 080201MF R/L-U				4.76		2.38
 Sharp Edge	VPET 1103005MF R/L-U	6.35	3.18	2.8	<0.05	11°	●
	VPET 110301MF R/L-U				<0.1		
	VPET 110302MF R/L-U				<0.2		
 Sharp Edge	VPET 1103005MFR-J	6.35	3.18	2.8	<0.05	11°	R
	VPET 110301MF R/L-J				<0.1		
	VPET 110302MF R/L-J				<0.2		
 Sharp Edge / Mirror Surface Finish	WBG 060101MP R/L-CF	3.97	1.59	2.3	<0.1	5°	●
	WBG 060102MP R/L-CF				<0.2		
 Finishing	WBMT 060102 R/L-DP	3.97	1.59	2.3	<0.2	5°	●
	WBMT 060104 R/L-DP				<0.4		
	WBMT 080202 R/L-DP	4.76	2.38	2.3	<0.2	5°	●
 Sharp Edge	WBET 0601005ML-F	3.97	1.59	2.3	<0.05	5°	L
	WBET 060101M R/L-F				<0.1		
	WBET 060102M R/L-F				<0.2		
	WBET 060104M R/L-F				<0.4		
	WBET 080201ML-F				4.76		2.38
WBET 080202ML-F	<0.2						
WBET 080204M R/L-F	<0.4						

● : Standard Stock  
R : Std. Item (Right-hand Only)  
L : Std. Item (Left-hand Only)

Insert whose corner-R(rε) dimension expressed with less than sign (e.g. < 0.1, < 0.2 etc.) indicate models with minus tolerance for corner-R(rε).

