

THE NEW VALUE FRONTIER



For Turning
MEGACOAT NANO

PR1535

For Turning

MEGACOAT NANO

PR1535

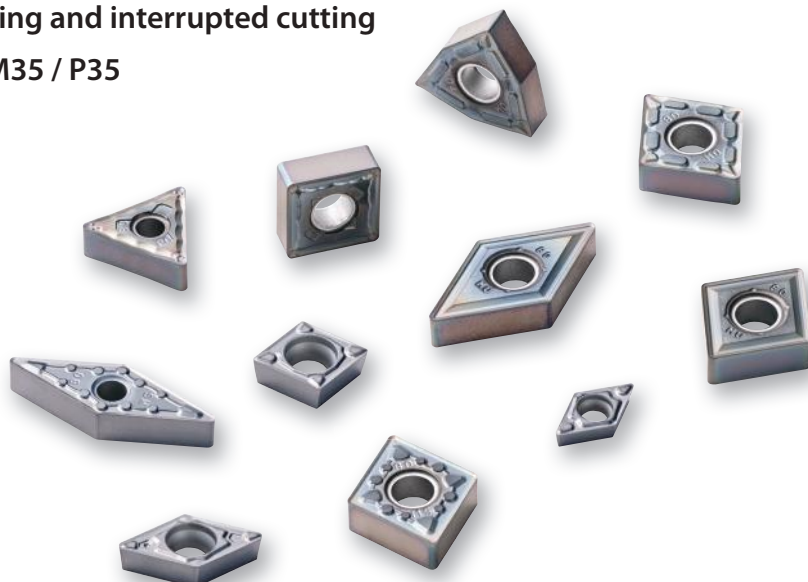


Widely applicable from steel to difficult-to-cut materials

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



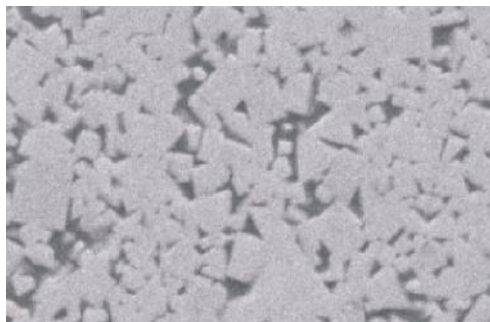
MEGACOAT NANO PR1535

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



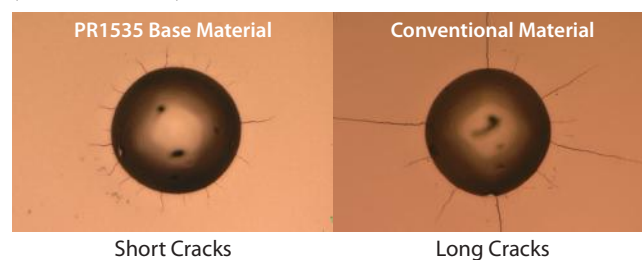
UP
23%
Fracture Toughness*

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.

UP
Shock Resistance

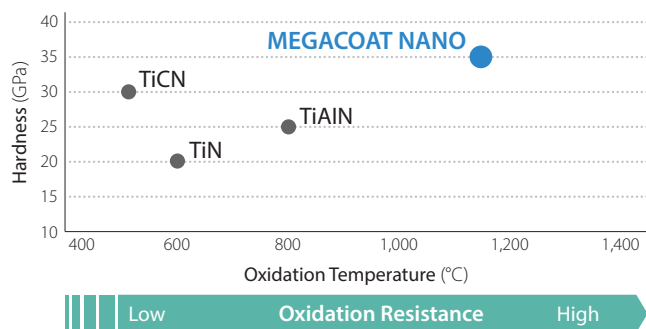
Cracking Comparison by Diamond Indenter
(In-house Evaluation)



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

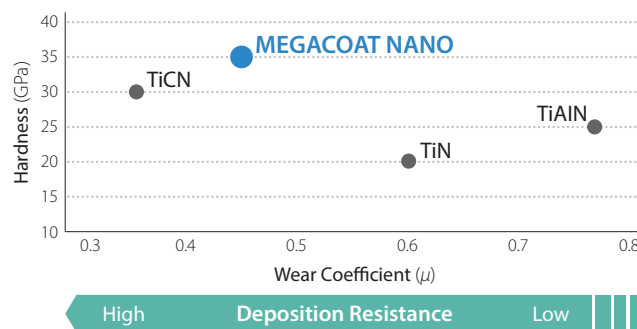
Prevents wear and fracture with high hardness (35GPa) and superior oxidation resistance (oxidation temperature 1,150°C)

Coating Properties (Abrasion Resistance)



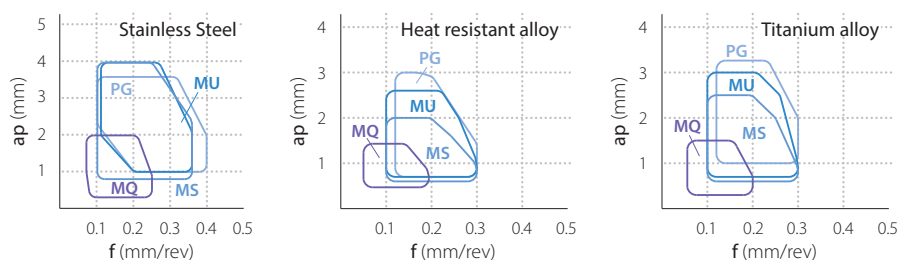
Achieve long tool life with the combination of a tough substrate and a special Nano coating layer

Coating Properties (Deposition Resistance)



Stable Machining with Excellent Wear Resistance

Cutting Condition (External)

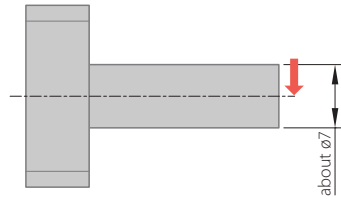


Workpiece Material	Cutting speed Vc (m/min) Min. - Recommendation - Max.
Stainless Steel	70 - 120 - 160
Heat resistant alloy	40 - 50 - 60
Titanium alloy	40 - 50 - 60

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

Tool Life
2.6 Times

Competitor A

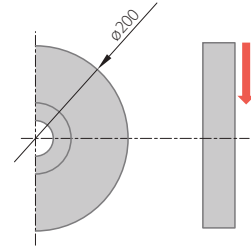
30 pcs/edge

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

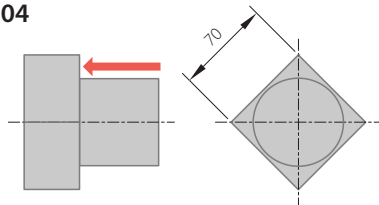


Competitor B

(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

Tool Life
5 Times

Competitor C

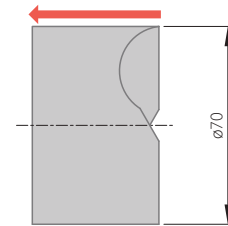
10 pcs/edge

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

Tool Life
2.6 Times

Competitor D

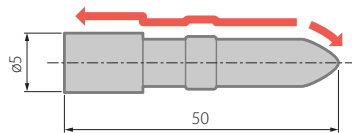
30 pcs/edge

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⁻¹)
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

Tool Life
1.3 Times

Competitor E

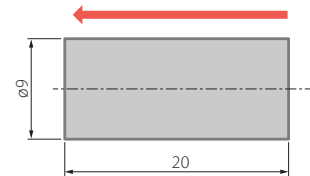
1,200 pcs/edge

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⁻¹)
ap = 0.1 mm
f = 0.06 mm/rev
Wet (Oil-based)
DCGT11T302MFP-SK
PR1535



Machining Efficiency

PR1535
(SK Chip Breaker)

600 pcs/edge

Tool Life
1.3 Times

Competitor F

450 pcs/edge

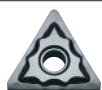
SK Chipbreaker (PR1535) Tool Life 1.3 times.

(User Evaluation)

Standard Stock Item Description

Negative Insert

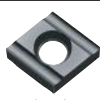
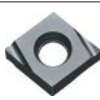
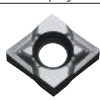
Shape	Description	Dimensions (mm)				PR1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)	
	CNMG 120404MQ	12.70	4.76	5.16	0.4	●
	120408MQ				0.8	●
	CNMG 120404MS	12.70	4.76	5.16	0.4	●
	120408MS				0.8	●
	120412MS				1.2	●
	CNMG 120404MU	12.70	4.76	5.16	0.4	●
	120408MU				0.8	●
	120412MU				1.2	●
	CNMG 120404PG	12.70	4.76	5.16	0.4	●
	120408PG				0.8	●
	120412PG				1.2	●
	CNGG 120404FP-TK	12.70	4.76	5.16	0.4	●
	120408FP-TK				0.8	●
	CNGG 120402MFP-SK	12.70	4.76	5.16	<0.2	●
	120404MFP-SK				<0.4	●
	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	●
	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	●
	DNMG 150604MU	12.70	4.76	5.16	0.4	●
	150608MU				0.8	●
	DNMG 150404PG	12.70	4.76	5.16	0.4	●
	150408PG				0.8	●
	150412PG				1.2	●
	DNMG 150604PG	12.70	4.76	5.16	0.4	●
	150608PG				0.8	●
	150612PG				1.2	●
	DNMG 150402R-LD	12.70	4.76	5.16	0.2	R
	150404R-LD				0.4	R
	DNGG 150404FP-TK	12.70	4.76	5.16	0.4	●
	150408FP-TK				0.8	●
	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)	
	SNMG 120408MS	12.70	4.76	5.16	0.8	●
	120412MS				1.2	●
	SNMG 120408PG	12.70	4.76	5.16	0.8	●
	120412PG				1.2	●
	TNMG 160404MQ	9.525	4.76	3.81	0.4	●
	160408MQ				0.8	●
	TNMG 160404MS	9.525	4.76	3.81	0.4	●
	160408MS				0.8	●
	160412MS				1.2	●
	TNMG 160404MU	9.525	4.76	3.81	0.4	●
	160408MU				0.8	●
	TNMG 160404PG	9.525	4.76	3.81	0.4	●
	160408PG				0.8	●
	160412PG				1.2	●
	TNMG 160402R-LD	9.525	4.76	3.81	0.2	●
	160404R-LD				0.4	●
	TNGG 160404FP-TK	9.525	4.76	3.81	0.4	●
	160408FP-TK				0.8	●
	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	●
	TNGG 160401MFP-SK	9.525	4.76	3.81	<0.1	●
	160402MFP-SK				<0.2	●
	160404MFP-SK				<0.4	●
	VNMG 160404MQ	9.525	4.76	3.81	0.4	●
	160408MQ				0.8	●
	VNMG 160404MS	9.525	4.76	3.81	0.4	●
	160408MS				0.8	●
	160412MS				1.2	●
	VNMG 160404MU	9.525	4.76	3.81	0.4	●
	160408MU				0.8	●
	VNGG 160402MFP-SK	9.525	4.76	3.81	<0.2	●
	160404MFP-SK				<0.4	●

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

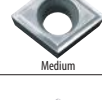
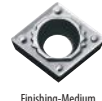
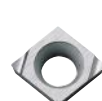
Standard Stock Item Description

Negative Insert

Shape	Description	Dimensions (mm)				PR1535
		I.C.	Thickness	Hole Diameter	Corner R (r _e)	
	WNMG 080404MQ 080408MQ	12.70	4.76	5.16	0.4 0.8	● ●
	WNMG 080404MS 080408MS 080412MS	12.70	4.76	5.16	0.4 0.8 1.2	● ● ●
	WNMG 080404MU 080408MU	12.70	4.76	5.16	0.4 0.8	● ●
	WNMG 080404PG 080408PG 080412PG	12.70	4.76	5.16	0.4 0.8 1.2	● ● ●
	CNGU 070301MFR-U 070302MFR-U 070304MFR-U	7.5	3.18	3.6	<0.1 <0.2 <0.4	R R R
	CNGU 070301MFR-F 070302MFR-F 070304MFR-F	7.5	3.18	3.6	<0.1 <0.2 <0.4	R R R
	CNGU 070301MFP-SK 070302MFP-SK	7.5	3.18	3.6	<0.1 <0.2	● ●
	CNMU 070302E-GK 070304E-GK	7.0	3.18	3.6	0.2 0.4	● ●
	DNGU 080301MFR-U 080302MFR-U 080304MFR-U	7.0	3.18	3.6	<0.1 <0.2 <0.4	R R R
	DNGU 080301MFR-F 080302MFR-F 080304MFR-F	7.0	3.18	3.6	<0.1 <0.2 <0.4	R R R
	DNGU 080301MFP-SK 080302MFP-SK 080304MFP-SK	7.0	3.18	3.6	<0.1 <0.2 <0.4	● ● ●
	DNMU 080302E-GK 080304E-GK	7.0	3.18	3.6	0.2 0.4	● ●
	TNGU 090301MFR-U 090302MFR-U 090304MFR-U	5.56	3.18	3.0	<0.1 <0.2 <0.4	R R R
	TNGU 090301MFR-F 090302MFR-F 090304MFR-F	5.56	3.18	3.0	<0.1 <0.2 <0.4	R R R

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

Positive Insert

Shape Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PR1535
		I.C.	Thickness	Hole Diameter	Corner R (r _e)		
	CCGT 0602005MF 060201MF 060202MF 060204MF	6.35	2.38	2.8	<0.05 <0.1 <0.2 <0.4	7°	● ● ● ●
	CCGT 09T3005MF 09T301MF 09T302MF 09T304MF	9.525	3.97	4.4	<0.05 <0.1 <0.2 <0.4	7°	● ● ● ●
	CCGT 060201MP-CK 060202MP-CK	6.35	2.38	2.8	<0.1 <0.2	7°	● ●
	CCGT 09T301MP-CK 09T302MP-CK	9.525	3.97	4.4	<0.1 <0.2	7°	● ●
	CCGT 030101MP-CF 030102MP-CF	3.5	1.4	1.9	<0.1 <0.2	7°	● ●
	CCGT 040101MP-CF 040102MP-CF	4.3	1.8	2.3	<0.1 <0.2	7°	● ●
	CCGT 060201MFP-GQ 060202MFP-GQ 060204MFP-GQ	6.35	2.38	2.8	<0.1 <0.2 <0.4	7°	● ● ●
	CCGT 09T301MFP-GQ 09T302MFP-GQ 09T304MFP-GQ	9.525	3.97	4.4	<0.1 <0.2 <0.4	7°	● ● ●
	CCGT 060201MFP-GF 060202MFP-GF 060204MFP-GF	6.35	2.38	2.8	<0.1 <0.2 <0.4	7°	● ● ●
	CCGT 09T301MFP-GF 09T302MFP-GF 09T304MFP-GF	9.525	3.97	4.4	<0.1 <0.2 <0.4	7°	● ● ●
	CCGT 060201MFP-SK 060202MFP-SK 060204MFP-SK	6.35	2.38	2.8	<0.1 <0.2 <0.4	7°	● ● ●
	CCGT 09T301MFP-SK 09T302MFP-SK 09T304MFP-SK	9.525	3.97	4.4	<0.1 <0.2 <0.4	7°	● ● ●
	CCMT 09T308	9.525	3.97	4.4	0.8	7°	●
	CCMT 060202PP 060204PP	6.35	2.38	2.8	0.2 0.4	7°	● ●
	CCMT 09T302PP 09T304PP 09T308PP	9.525	3.97	4.4	0.2 0.4 0.8	7°	● ● ●
	CCMT 060202HQ 060204HQ	6.35	2.38	2.8	0.2 0.4	7°	● ●
	CCMT 09T302HQ 09T304HQ 09T308HQ	9.525	3.97	4.4	0.2 0.4 0.8	7°	● ● ●
	CCMT 060202GK 060204GK	6.35	2.38	2.8	0.2 0.4	7°	● ●
	CCMT 09T302GK 09T304GK	9.525	3.97	4.4	0.2 0.4	7°	● ●
	CCMT 09T304MQ 09T308MQ	9.525	3.97	4.4	0.2 0.4	7°	● ●
	CCET 0301005M ^{R/L-F} 030101M ^{R/L-F} 030102M ^{R/L-F} 030104M ^{R/L-F}	3.5	1.4	1.9	<0.05 <0.1 <0.2 <0.4	7°	● ● ● ●
	CCET 040101M ^{R/L-F} 040102M ^{R/L-F} 040104M ^{R/L-F}	4.3	1.8	2.3	<0.1 <0.2 <0.4	7°	● ● ●
	CCET 0602005M ^{R/L-U} 060201M ^{R/L-U} 060202M ^{R/L-U}	6.35	2.38	2.8	<0.05 <0.1 <0.2	7°	● ● ●
	CCET 09T3005M ^{R/L-U} 09T301M ^{R/L-U} 09T302M ^{R/L-U} 09T304M ^{R/L-U}	9.525	3.97	4.4	<0.05 <0.1 <0.2 <0.4	7°	● ● ● ●

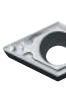
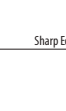
● : Standard Stock
R : Std. Item (Right-hand Only)

Standard Stock Item Description

Positive Insert

Shape Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PR1535
		I.C.	Thickness	Hole Diameter	Corner R (re)		
 Sharp Edge	CCET 0602005MFR-J	6.35	2.38	2.8	<0.05	7°	●
	060201MF R/L-J				<0.1		
	060202MF R/L-J				<0.2		
	CCET 09T301MF R/L-J	9.525	3.97	4.4	<0.1	7°	●
	09T302MF R/L-J				<0.2		
	09T304MF R/L-J				<0.4		
 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	11°	●
 Finishing	090308				0.8		
	CPMT 080202PP	7.94	2.38	3.3	0.2	11°	●
	080204PP				0.4		
	CPMT 090302PP	9.525	3.18	4.4	0.2	11°	●
	090304PP				0.4		
	090308PP				0.8		
 Finishing	CPMT 080204GP	7.94	2.38	3.3	0.4	11°	●
	CPMT 090304GP				0.4		
	090308GP	9.525	3.18	4.4	0.8	11°	●
 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	11°	●
 Finishing	090308HQ				0.8		
	CPMT 080204XP	7.94	2.38	3.3	0.4	11°	●
	CPMT 090304XP				0.4		
	090308XP	9.525	3.18	4.4	0.8	11°	●
	DCGT 0702005MF				<0.05	7°	●
 Sharp Edge	070201MF	6.35	2.38	2.8	<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		
	DCGT 11T301MP-CF	9.525	3.97	4.4	<0.1	7°	●
 Sharp Edge / Mirror Surface Finish	11T302MP-CF				<0.2		
	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	7°	●
	11T302MP-CK				<0.2		
 Sharp Edge / Mirror Surface Finish	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	7°	●
	11T302MFP-GQ				<0.2		
 Sharp Edge / Mirror Surface Finish	11T304MFP-GQ	6.35	2.38	2.8	<0.4	7°	●
	DCGT 070201MFP-GF				<0.1		
	070202MFP-GF				<0.2		
	070204MFP-GF				<0.4		
	DCGT 11T301MFP-GF	9.525	3.97	4.4	<0.1	7°	●
 Sharp Edge / Mirror Surface Finish	11T302MFP-GF				<0.2		
	11T304MFP-GF				<0.4		
	DCGT 070201MFP-SK	6.35	2.38	2.8	<0.1	7°	●
	070202MFP-SK				<0.2		
	070204MFP-SK				<0.4		
 Sharp Edge / Mirror Surface Finish	DCGT 11T301MFP-SK	9.525	3.97	4.4	<0.1	7°	●
	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	7°	●
	11T304MQ				0.4		
	11T308MQ				0.8		

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

Shape Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PR1535	
		I.C.	Thickness	Hole Diameter	Corner R (re)			
 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	7°	●	
	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	7°	●	
	11T308GP				0.8		●	
	DCMT 070202GK				6.35		2.38	2.8
070204GK	0.4	●						
070208GK	0.8	●						
 Finishing-Medium	DCMT 11T302GK	9.525	3.97	4.4	0.2	7°	●	
	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	4.4	0.2	7°	●	
11T304HQ					0.4		●	
11T308HQ	0.8				●			
 Finishing	DCMT 070204XP	6.35	2.38	2.8	0.4	7°	●	
	DCMT 11T302XP				0.2		●	
	11T304XP	9.525	3.97	4.4	0.4	7°	●	
	11T308XP				0.8		●	
	 Sharp Edge				DCET 0702005MR-F		6.35	2.38
070201M R/L-F		<0.1	●					
070202M R/L-F		<0.2	●					
070204M R/L-F		9.525	3.97	4.4	<0.4	7°	●	
DCET 11T3005MR-F					<0.05		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	7°	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	7°	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	11°	●	
	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	11°	●	
	110304PP				0.4		●	
	110308PP				0.8		●	

Standard Stock Item Description

Positive Insert

Shape Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PR1535
		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	6.35	3.18	3.3	0.4 0.8	11°	● ●
 Finishing-Medium	TPMT 160304GP	9.525	3.18	4.5	0.4	11°	●
	TPMT 090202HQ 090204HQ	5.56	2.38	3.0	0.2 0.4	11°	● ●
	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°	● ● ●
	TPMT 090204XP	5.56	2.38	3.0	0.4	11°	●
	TPMT 110304XP 110308XP	6.35	3.18	3.3	0.4 0.8	11°	● ●
 Finishing	TPMT 160304XP 160308XP	9.525	3.18	4.5	0.4 0.8	11°	● ●
	TPGH 080201 R/L 080202 R/L 080204 R/L	4.76	2.38	2.3	0.1 0.2 0.4	11°	● ● ●
	TPGH 090201 R/L 090202 R/L 090204 R/L	5.56	2.38	3.0	0.1 0.2 0.4	11°	● ● ●
 Finishing	TPGH 110302 R/L 110304 R/L 110308 R/L	6.35	2.38	3.5	0.2 0.4 0.8	11°	● ● ●
	TPGH 160302 R/L 160304 R/L 160308 R/L	9.525	3.18	4.5	0.2 0.4 0.8	11°	● ● ●
	TPGH 090201 L-H 090202 L-H 090204 L-H	5.56	2.38	3.0	0.1 0.2 0.4	11°	L L L
	TPGH 110302 R/L-L-H 110304 R/L-L-H 110308 R/L-L-H	6.35	3.18	3.3	0.2 0.4 0.8	11°	● ● ●
	TPGH 160304 R/L-L-H 160308 R/L-L-H	9.525	3.18	4.5	0.4 0.8	11°	● ●
	VBMT 110302PP 110304PP 110308PP	6.35	3.18	2.8	0.2 0.4 0.8	5°	● ● ●
 Finishing	VBMT 160404PP 160408PP 160412PP	9.525	4.76	4.4	0.4 0.8 1.2	5°	● ● ●
	VBMT 110304GP	6.35	3.18	2.8	0.4	5°	●
	VBMT 110304HQ 110308HQ	6.35	3.18	2.8	0.4 0.8	5°	● ●
 Finishing	VBMT 110302VF 110304VF 110308VF	6.35	3.18	2.8	0.2 0.4 0.8	5°	● ● ●
	VBET 1103005M R/L-F 110301M R/L-F 110302M R/L-F	6.35	3.18	2.8	<0.05 <0.1 <0.2	5°	● ● ●
	VBET 1103005M R/L-Y 110301M R/L-Y 110302M R/L-Y 110304M R/L-Y	6.35	3.18	2.8	<0.05 <0.1 <0.2 <0.4	5°	● ● ● ●

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 Left-hand (L) is shown for inserts with angles	Description	Dimensions (mm)				Relief Angle	PR1535
		I.C.	Thickness	Hole Diameter	Corner R (rε)		
 Finishing	VCMT 080202PP 080204PP	4.76	2.38	2.3	0.2 0.4	7°	● ●
	VCMT 160404PP 160408PP	9.525	4.76	4.4	0.4 0.8	7°	● ●
	VCMT 080202VF 080204VF	4.76	2.38	2.3	0.2 0.4	7°	● ●
 Finishing-Medium	VCMT 080202HQ 080204HQ	4.76	2.38	2.3	0.2 0.4	7°	● ●
	VPGT 110301MP-CF 110302MP-CF	6.35	3.18	2.8	<0.1 <0.2	11°	● ●
	VPGT 080201MP-CK 080202MP-CK VPGT 110301MP-CK 110302MP-CK	4.76 6.35	2.38 3.18	2.3 2.8	<0.1 <0.2 <0.1 <0.2	11° 11°	● ● ● ●
 Sharp Edge / Mirror Surface Finish	VPGT 110301MFP-GF 110302MFP-GF	6.35	3.18	2.8	<0.1 <0.2	11°	● ●
	VPET 080201M R/L-F 080202M R/L-F VPET 1103005MR-F 110301MR-F 110302M R/L-F	4.76 6.35	2.38 3.18	2.3 2.8	<0.1 <0.2 <0.05 <0.1 <0.2	11° 11°	● ● R R ●
	VPET 080201MF R/L-U 080202MF R/L-U VPET 1103005MF R/L-U 110301MF R/L-U 110302MF R/L-U	4.76 6.35	2.38 3.18	2.3 2.8	<0.1 <0.2 <0.05 <0.1 <0.2	11° 11°	● ● ● ● ●
 Sharp Edge	VPET 1103005MFR-J 110301MF R/L-J 110302MF R/L-J	6.35	3.18	2.8	<0.05 <0.1 <0.2	11°	R ● ●
	VBGT 060101MP R/L-CF 060102MP R/L-CF	3.97	1.59	2.3	<0.1 <0.2	5°	● ●
	VBMT 060102 R/L-DP 060104 R/L-DP VBMT 080202 R/L-DP 080204 R/L-DP	3.97 4.76	1.59 2.38	2.3 2.3	<0.2 <0.4 <0.2 <0.4	5° 5°	● ● ● ●
 Sharp Edge	VBET 0601005ML-F 060101M R/L-F 060102M R/L-F 060104M R/L-F VBET 080201ML-F 080202ML-F 080204M R/L-F	3.97 4.76	1.59 2.38	2.3 2.3	<0.05 <0.1 <0.2 <0.4 <0.1 <0.2 <0.4	5° 5°	L ● ● ● L L L

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

