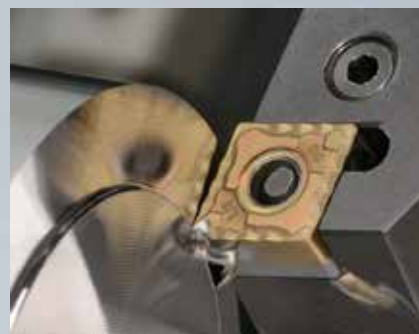
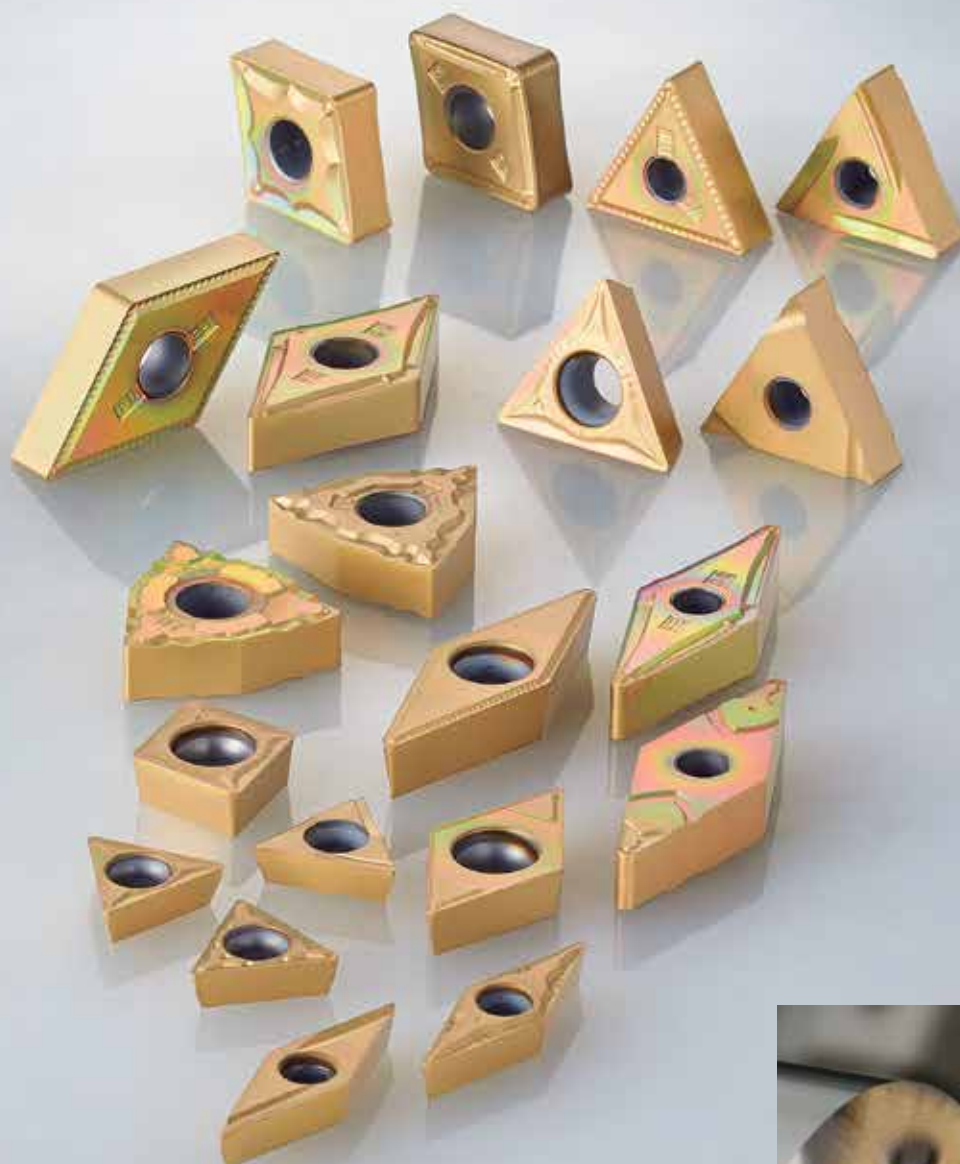


Coated Cermet Grades with Brilliant Coat™ for Steel Turning

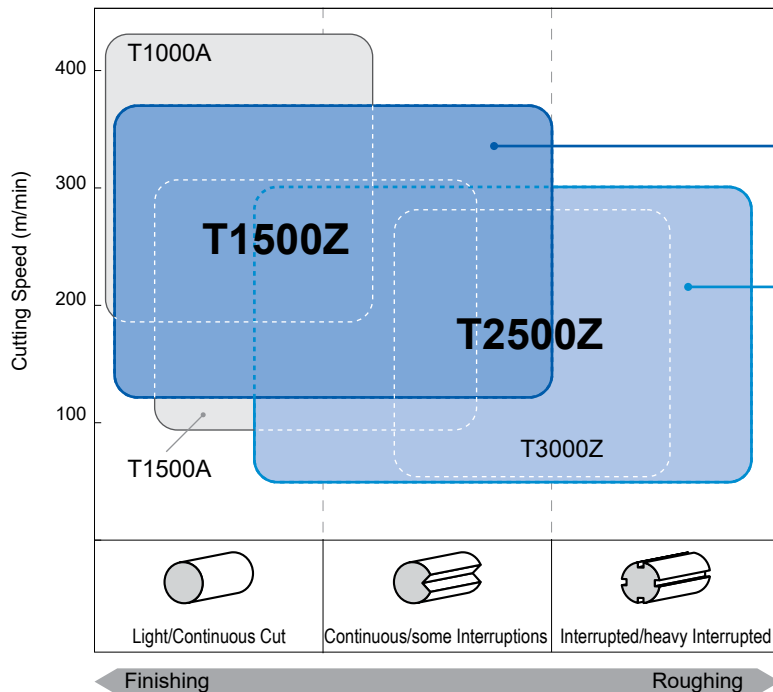
T1500Z / T2500Z

T2500Z - A Tough Grade with Exceptional Stability



For Steel Turning T1500Z/T2500Z

Application Range



T1500Z

Excellent Wear Resistance

Wear resistance **2x** that of conventional tools

T2500Z

Exceptional Stability

Fracture resistance **2x** that of conventional tools

Highly economical with reliable finish quality

Designed for wear resistance → T1000A (Uncoated)

General purpose → T1500A (Uncoated)

Benefits of T1500Z and T2500Z

Brilliant Coat™

AlN is applied as the top coat to provide excellent lubricity and an outstanding shine.

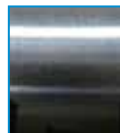


High-lubricity layer

The high-lubricity layer blocks reactions with the steel, preventing adhesion and tearing.

Wear-resistant layer

A fine grained coating is used to provide resistance to chipping and improve wear resistance.



Brilliant Coat™



Competitor



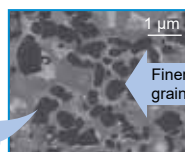
Conventional

Work Material: 15CrMo5
Cutting Conditions: $v_c = 100$ m/min,
 $f = 0,15$ mm/rev,
 $a_p = 1,00$ mm,
wet

Glossy machined surface,
no white blemishes

Cermet substrate with high thermal conductivity

A new cermet substrate with excellent thermal conductivity is used to achieve outstanding thermal crack resistance.



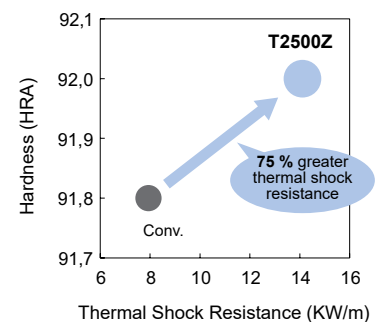
T2500Z



Conventional

20% greater transverse rupture strength
50 % greater thermal conductivity

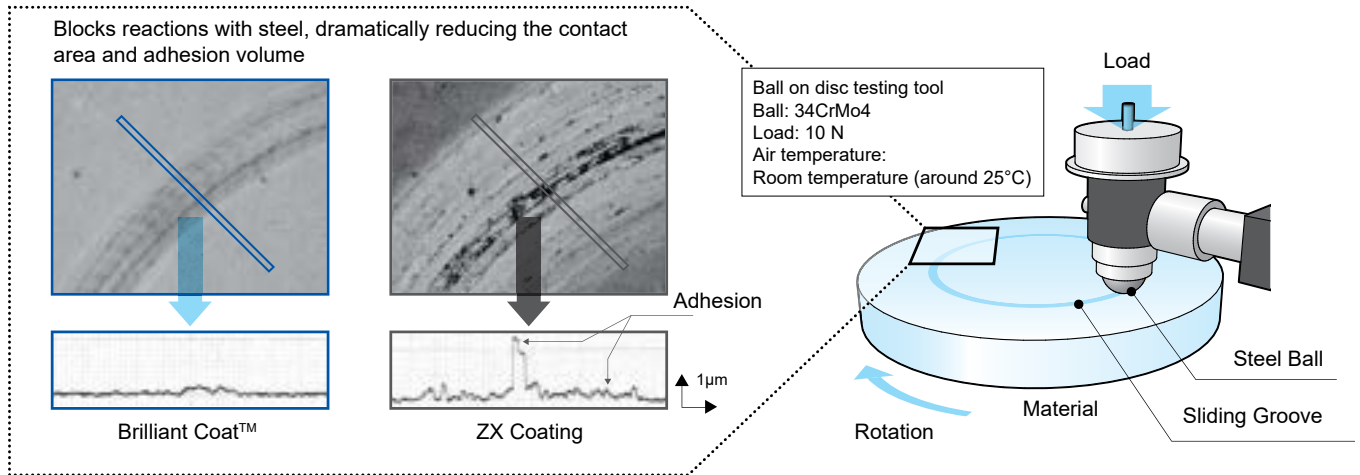
Finer, more uniform
grain structure



Benefits of Brilliant Coat™ Cermet

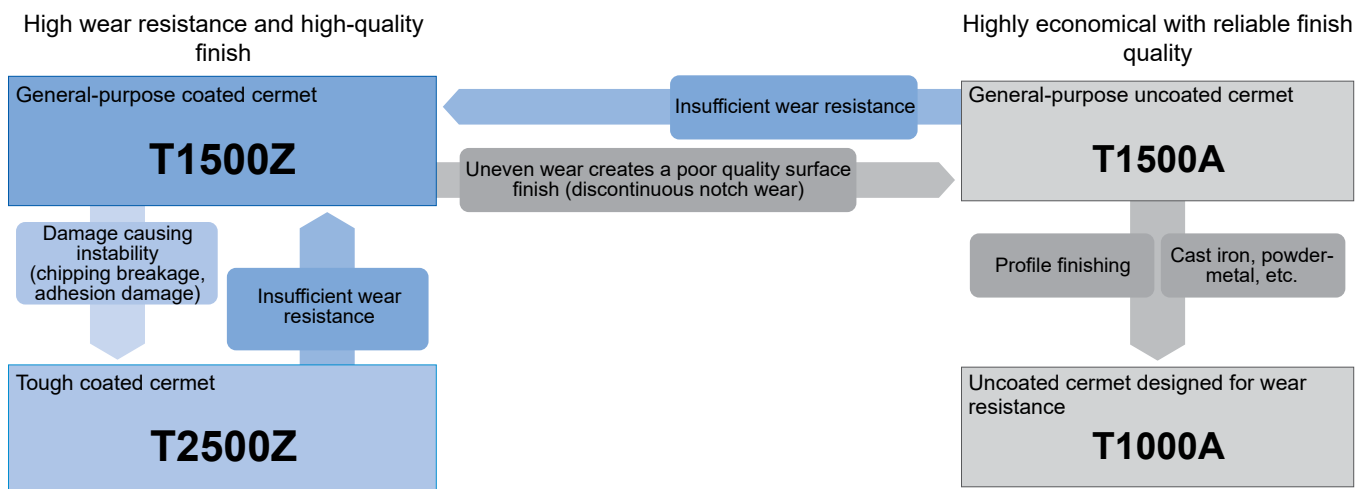
Brilliant Coat™

- PVD coating with excellent wear resistance and lubricity
- suppresses reactions with the work material, achieving a beautiful finish on the machined surface

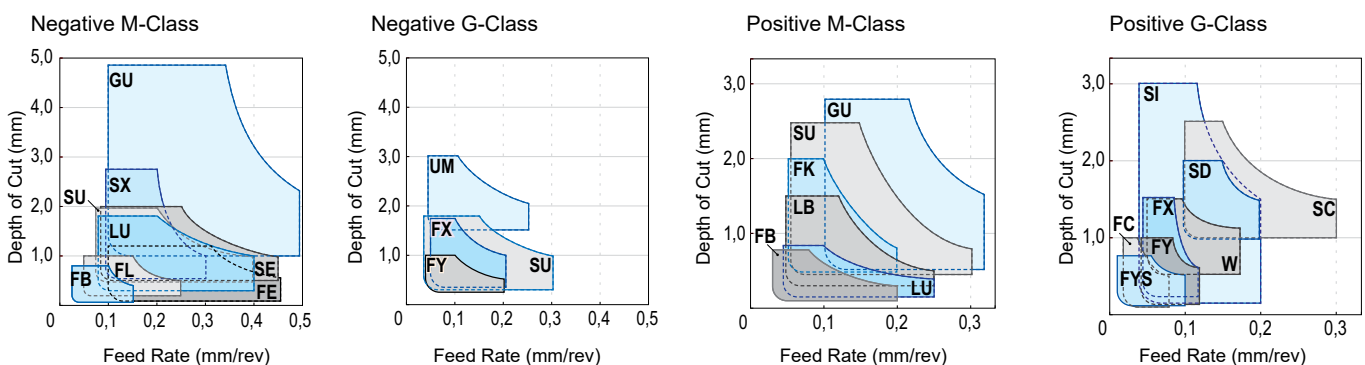


Brilliant Coat™ may vary in colour or shine due to light interference. This does not affect its performance.

Choosing a Cermet Grade



Chipbreaker Application Range

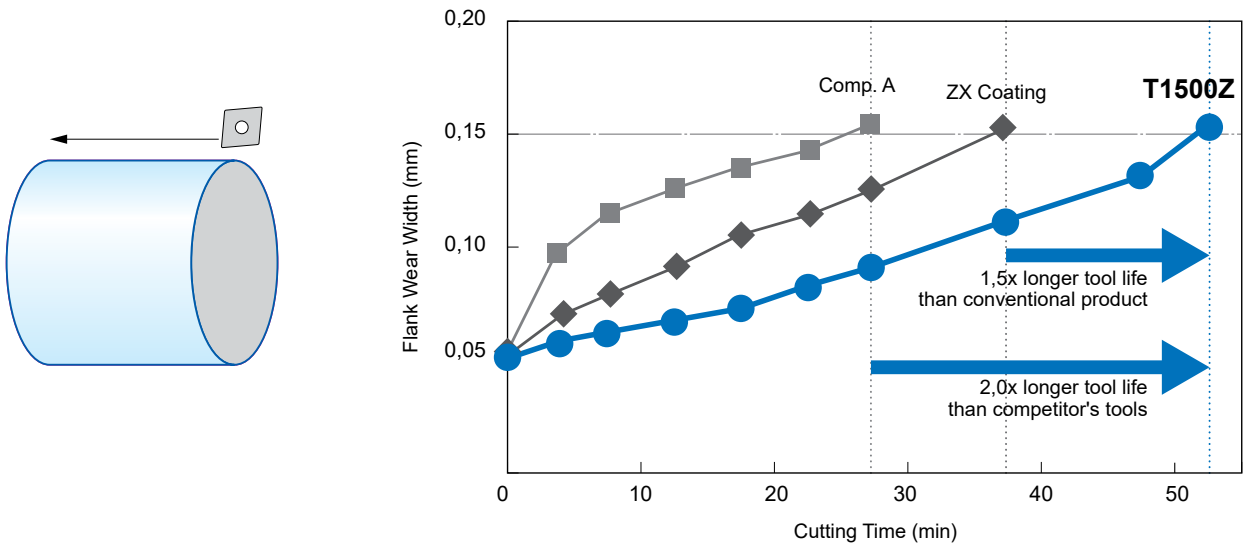


For Steel Turning T1500Z/T2500Z

■ Cutting Performance of T1500Z

Wear Resistance

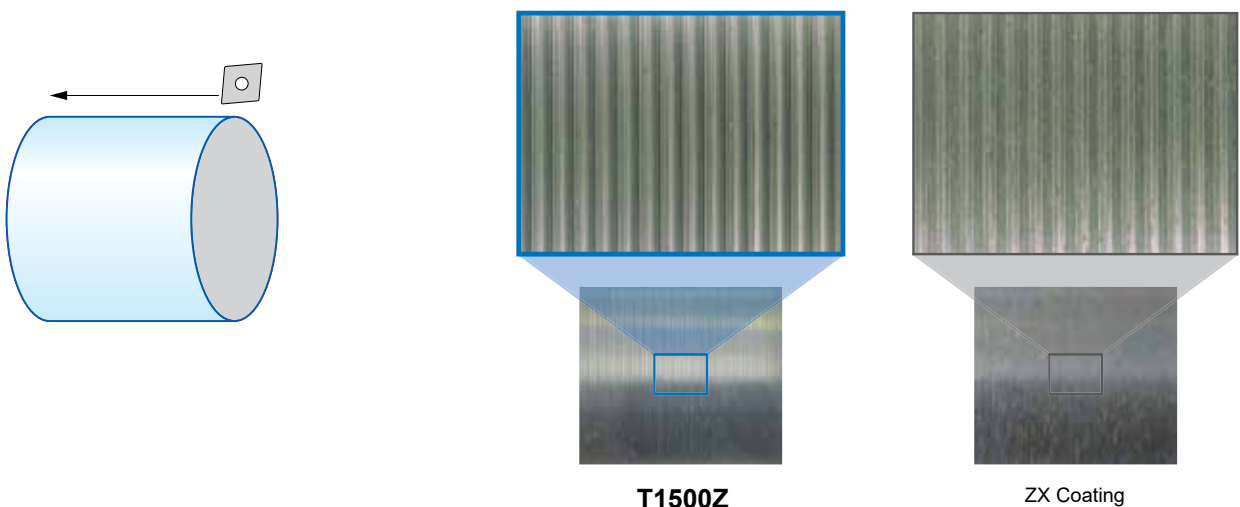
Excellent wear resistance for stable machining and a long tool life.



Work Material: 34CrMo4 (continuous machining)
Insert: CNMG 120408 NSU (T1500Z)
Cutting Conditions: $v_c = 250$ m/min, $f = 0.20$ mm/rev, $a_p = 1.00$ mm, wet

Machined Surface

Brilliant Coat™ prevents the white blemishes caused by tearing, giving machined surfaces a beautiful finish.

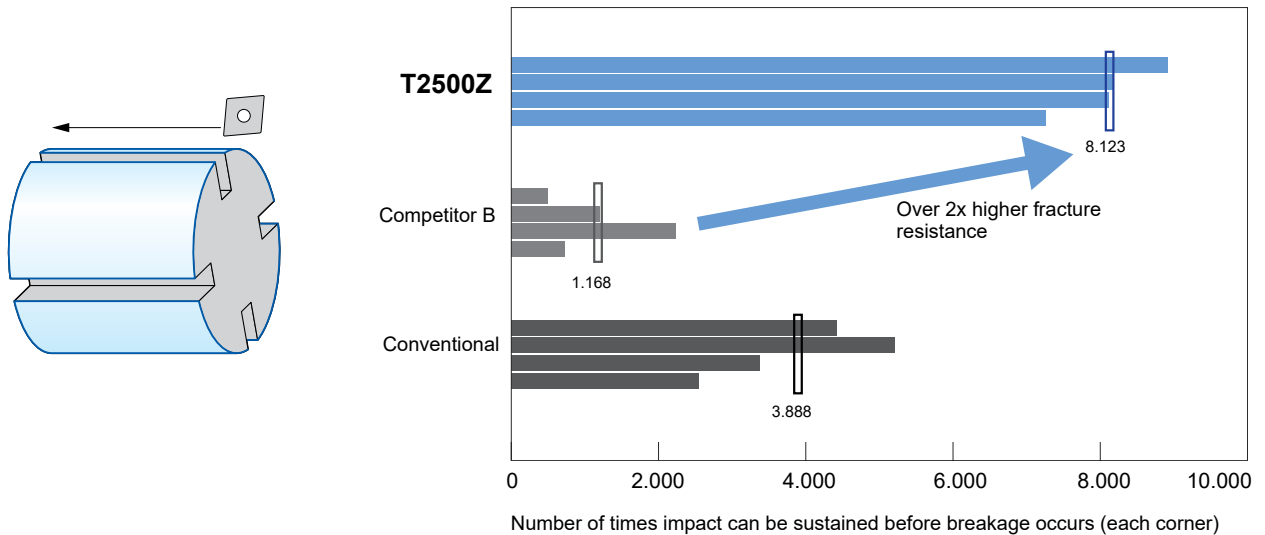


Work Material: STKM13A (continuous machining)
Insert: CNMG 120408 NLU (T1500Z)
Cutting Conditions: $v_c = 100$ m/min, $f = 0.15$ mm/rev, $a_p = 1.00$ mm, wet

Cutting Performance of T2500Z

Fracture Resistance

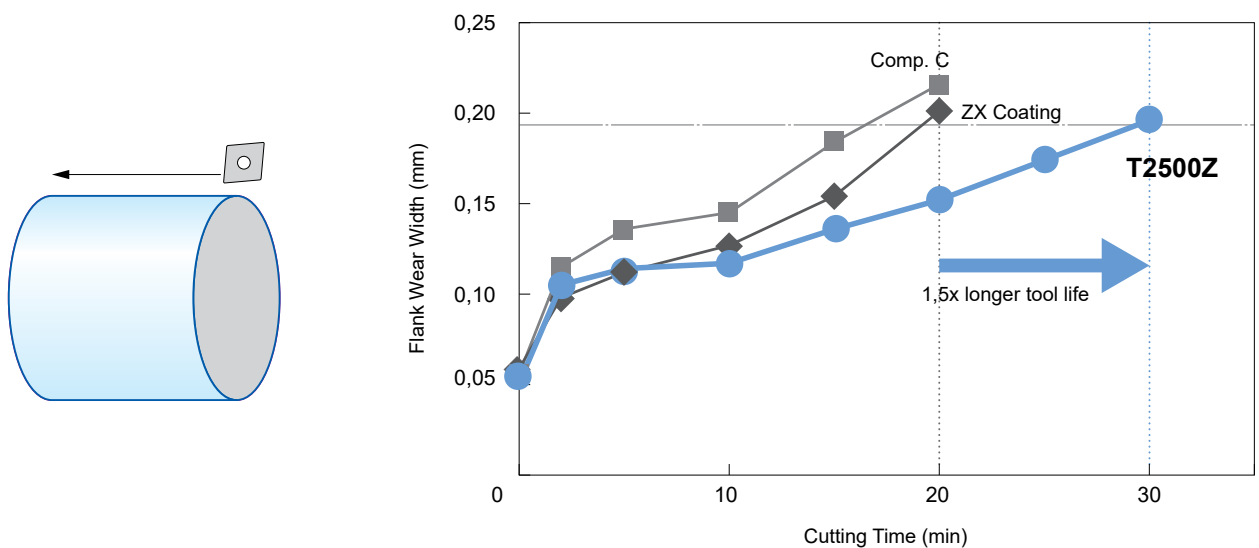
Newly developed tough substrate achieves stable machining.



Work Material: 34CrMo4 (interrupted machining)
 Insert: CNMG 120408 NSU (T2500Z)
 Cutting Conditions: $v_c = 260$ m/min, $f = 0,23$ mm/rev, $a_p = 1,50$ mm, wet

Wear Resistance

Brilliant Coat™ suppresses wear.



Work Material: 34CrMo4 (continuous machining)
 Insert: CNMG 120408 NSU (T2500Z)
 Cutting Conditions: $v_c = 260$ m/min, $f = 0,23$ mm/rev, $a_p = 1,50$ mm, wet

80° Diamond Type/M-Class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	CNMG 090304 NFB	○	○	9,525	3,18	3,81	0,4
	090308 NFB	○	○				0,8
	CNMG 090404 NFB	○	○	9,525	4,76	3,81	0,4
	090408 NFB	○	○				0,8
	CNMG 120402 NFB	○	○	12,7	4,76	5,16	0,2
	120404 NFB	○	○				0,4
	120408 NFB	○	○				0,8
	CNMG 120402 NFA	●	●	12,7	4,76	5,16	0,2
	120404 NFA	●	○				0,4
	120408 NFA	●	○				0,8
	CNMG 120404 NFL	●	○	12,7	4,76	5,16	0,4
	120408 NFL	●	●				0,8
	CNMG 090304 NFE	○	○	9,525	3,18	3,81	0,4
	090308 NFE	○	○				0,8
	CNMG 090404 NFE	○	○	9,525	4,76	3,81	0,4
	090408 NFE	○	○				0,8
	CNMG 120402 NFE	○	○	12,7	4,76	5,16	0,2
	120404 NFE	○	○				0,4
	120408 NFE	○	○				0,8
	CNMG 120412 NFE	○	○	12,7	4,76	5,16	1,2
	CNMG 090304 NLU	○	○		9,525	3,18	0,4
	090308 NLU	○	○				0,8
	CNMG 120402 NLU	○	○	12,7	4,76	5,16	0,2
	120404 NLU	●	○				0,4
	120408 NLU	●	○				0,8
	120412 NLU	●	○				1,2
	CNMG 120404 NLUW	●	●	12,7	4,76	5,16	0,4
	120408 NLUW	●	●				0,8
	120412 NLUW	●	○				1,2
	CNMG 090404 NSU	○	○	9,525	4,76	3,81	0,4
	090408 NSU	○	○				0,8
	090412 NSU	○	○				1,2
	CNMG 120402 NSU	○	○		12,7	4,76	0,2
	120404 NSU	●	○				0,4
	120408 NSU	●	○				0,8
	120412 NSU	●	○				1,2
	CNMG 120404 NSE	○	○	12,7	4,76	5,16	0,4
	120408 NSE	○	○				0,8
	CNMG 120404 NSEW	○	○	12,7	4,76	5,16	0,4
	120408 NSEW	○	○				0,8
	CNMG 120404 NSX	○	○	12,7	4,76	5,16	0,4
	120408 NSX	○	○				0,8
	CNMG 090404 NGU	○	○	9,525	4,76	3,81	0,4
	090408 NGU	○	○				0,8
	090412 NGU	○	○				1,2
	CNMG 120404 NGU	○	○		12,7	4,76	0,4
	120408 NGU	○	○				0,8

80° Diamond Type/G-Class

	CNMG 120402 NSU	○	○	12,7	4,76	5,16	0,2
	120404 NSU	○	○				0,4
	120408 NSU	○	○				0,8

55° Diamond Type/M-Class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	DNMG 110404 NFB	○	○	9,525	4,76	3,81	0,4
	110408 NFB	○	○				0,8
	DNMG 150404 NFB	○	○	12,7	4,76	5,16	0,4
	150408 NFB	○	○				0,8
	DNMG 150604 NFB	○	○	12,7	6,35	5,16	0,4
	150608 NFB	○	○				0,8
	DNMG 150404 NFA	○	○	12,7	4,76	5,16	0,4
	150408 NFA	○	○				0,8
	DNMG 150604 NFA	●	○		12,7	6,35	0,4
	150608 NFA	●	○				0,8
	DNMG 150404 NFL	○	○	12,7	4,76	5,16	0,4
	150408 NFL	○	○				0,8
	DNMG 150604 NFL	●	○		12,7	6,35	0,4
	150608 NFL	●	○				0,8
	DNMG 110404 NFE	○	○	9,525	4,76	3,81	0,4
	110408 NFE	○	○				0,8
	110412 NFE	○	○				1,2
	DNMG 150402 NFE	○	○	12,7	4,76	5,16	0,2
	150404 NFE	○	○				0,4
	150408 NFE	○	○				0,8
	150412 NFE	○	○				1,2
	DNMG 150602 NFE	○	○	12,7	6,35	5,16	0,2
	150604 NFE	○	○				0,4
	150608 NFE	○	○				0,8
	150612 NFE	○	○				1,2
	DNMG 110404 NLU	●	○	9,525	4,76	3,81	0,4
	110408 NLU	●	○				0,8
	DNMG 150402 NLU	○	○		12,7	4,76	0,2
	150404 NLU	○	○				0,4
	150408 NLU	○	○				0,8
	150412 NLU	○	○				1,2
	DNMG 150604 NLU	●	○		12,7	6,35	0,4
	150608 NLU	●	○				0,8
	150612 NLU	●	○				1,2
	DNMG 110404 NSU	○	○	9,525	4,76	3,81	0,4
	110408 NSU	○	○				0,8
	110412 NSU	○	○				1,2
	DNMG 150402 NSU	○	○	12,7	4,76	5,16	0,2
	150404 NSU	○	○				0,4
	150408 NSU	○	○				0,8
	150412 NSU	○	○				1,2
	DNMG 150604 NSU	●	○		12,7	6,35	0,4
	150608 NSU	●	○				0,8
	150612 NSU	●	○				1,2
	DNMG 150404 NSE	○	○	12,7	4,76	5,16	0,4
	150408 NSE	○	○				0,8
	150412 NSE	○	○				1,2
	DNMX 150404 NSEW	○	○	12,7	4,76	5,16	0,4
	150408 NSEW	○	○				0,8
	DNMG 150404 NSX	○	○	12,7	4,76	5,16	0,4
	150408 NSX	○	○				0,8
	DNMG 150604 NSX	○	○	12,7	6,35	5,16	0,4
	150608 NSX	○	○				0,8
	DNMG 110412 NGU	○	○	9,525	4,76	3,81	1,2
	DNMG 150404 NGU	○	○				0,4
	150408 NGU	○	○				0,8
	150412 NGU	○	○				1,2
	DNMG 150404 RUM	○	○	12,7	4,76	5,16	0,4
	150408 RUM	○	○				0,8
	150408 RUM	○	○				0,8

55° Diamond Type/G-Class

	DNMG 150402 NSU	○	○	12,7	4,76	5,16	0,2
	150404 NSU	○	○				0,4
	150408 NSU	○	○				0,8

○ Square Type/M-Class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	SNMG 120404 NFB	○	○	12,7	4,76	5,16	0,4
	120408 NFB	○	○				0,8
	SNMG 120408 NFL	○	○	12,7	4,76	5,16	0,8
	SNMG 120404 NFE	○	○	12,7	4,76	5,16	0,4
	120408 NFE	○	○				0,8
	120412 NFE	○	○				1,2
	SNMG 120408 NLU	○	○	12,7	4,76	5,16	0,8
	120412 NLU	○	○				1,2
	SNMG 120408 NSU	○	○	12,7	4,76	5,16	0,8
	SNMG 120404 NSX	○	○	12,7	4,76	5,16	0,4
	120408 NSX	○	○				0,8
	SNMG 090308 NGU	○		9,525	3,18	3,81	0,8
	SNMG 120404 NGU	○	○				0,4
	120408 NGU	○	○				0,8

△ Triangular Type/M-Class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	TNMG 160402 NFB	○	○	9,525	4,76	3,81	0,2
	160404 NFB	○	○				0,5
	160408 NFB	○	○				0,8
	TNMG 160402 NFA	●	○	9,525	4,76	3,81	0,2
	160404 NFA	●	○				0,4
	160408 NFA	●	○				0,8
	TNMG 160404 NFL	●	●	9,525	4,76	3,81	0,4
	160408 NFL	●	○				0,8
	TNMG 160402 NFE	○	○	9,525	4,76	3,81	0,2
	160404 NFE	○	○				0,4
	160408 NFE	○	○				0,8
	160412 NFE	○	●				1,2
	TNMG 160402 NLU	○	○	9,525	4,76	3,81	0,2
	160404 NLU	●	●				0,4
	160408 NLU	●	○				0,8
	160412 NLU	●	●				1,2
	TNMG 160402 NSU	○	○	9,525	4,76	3,81	0,2
	160404 NSU	●	○				0,4
	160408 NSU	●	●				0,8
	160412 NSU	●	●				1,2
	TNMG 160404 NSE	○	○	9,525	4,76	3,81	0,4
	160408 NSE						0,8
	TNMG 160404 NSX	○	○	9,525	4,76	3,81	0,4
	160408 NSX	○	○				0,8
	TNMG 160404 NGU	○	○	9,525	4,76	3,81	0,4
	160408 NGU	○	○				0,8
	TNMG 160404 RUM	○	○	9,525	4,76	3,81	0,4
	160404 LUM	○	○				0,4
	160408 RUM	○	○				0,8
	160408 LUM	○	○				0,8

△ Triangular Type/G-Class

	TNGG 160402 NSU	○	●	9,525	4,76	3,81	0,2
	160404 NSU	○	○				0,4
	160408 NSU	○	○				0,8
	TNGG 160401 RFY	○		9,525	4,76	3,81	0,1
	160401 LFY	○					0,1
	160402 RFY	○	○				0,2
	160402 LFY	○	○				0,2
	160404 RFY	○	○				0,4
	160404 LFY	○	○				0,4
	160408 RFY	○					0,8
	160408 LRY	○					0,8
	160412 RFY	○					1,2
	160412 LFY	○					1,2
	TNGG 160402 RFX	○	●	9,525	4,76	3,81	0,2
	160402 LFX	○	○				0,2
	160404 RFX	○	○				0,4
	160404 LFX	○	○				0,4
	TNGG 160402 RUM	○	○	9,525	4,76	3,81	0,2
	160402 LUM	○	○				0,2
	160404 RUM	○	○				0,4
	160404 LUM	○	○				0,4
	160408 RUM	○	○				0,8
	160408 LUM	○	○				0,8

35° Diamond Type/M-Class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	VNMG 160404 NFB	○	○	9,525	4,76	3,81	0,4
	160408 NFB	○	○				0,8
	VNMG 160404 NFA	○	○	9,525	4,76	3,81	0,4
	160408 NFA	○	○				0,8
	VNMG 160404 NFL	●	●	9,525	4,76	3,81	0,4
	160408 NFL	●	●				0,8
	VNMG 160402 NFE	○	○	9,525	4,76	3,81	0,2
	160404 NFE	○	○				0,4
	160408 NFE	○	○				0,8
	160412 NFE	○	○				1,2
	VNMG 160402 NLU	●	●	9,525	4,76	3,81	0,2
	160404 NLU	●	○				0,4
	160408 NLU	●	○				0,8
	160412 NLU	●	○				1,2
	VNMG 160402 NSU	○	○	9,525	4,76	3,81	0,2
	160404 NSU	○	○				0,4
	160408 NSU	○	○				0,8
	160412 NSU	○	○				1,2
	VNMG 160404 NSE	○	○	9,525	4,76	3,81	0,4
	160408 NSE	○	○				0,8
	VNMG 160404 NSX	○	○	9,525	4,76	3,81	0,4
	160408 NSX	○	○				0,8
	VNMG 160404 NGU	○	○	9,525	4,76	3,81	0,4
	160408 NGU	○	○				0,8

35° Diamond Type/G-Class

	VNMG 160402 NSU	○	○	9,525	4,76	3,81	0,2
	160404 NSU	○	○				0,4
	160408 NSU	○	○				0,8

Trigon Type/M-Class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	WNMG060404 NFB	○	○	9,525	4,76	3,81	0,4
	060408 NFB	○	○				0,8
	WNMG080402 NFB	○	○	12,7	4,76	5,16	0,2
	080404 NFB	○	○				0,4
	WNMG080402 NFA	○	○	12,7	4,76	5,16	0,2
	080404 NFA	●	○				0,4
	080408 NFA	●	○	12,7	4,76	5,16	0,8
	080412 NFA	○	○				1,2
	WNMG080404 NFL	●	○	12,7	4,76	5,16	0,4
	080408 NFL	●	○				0,8
	WNMG060404 NFE	○	○	9,525	4,76	3,81	0,4
	060408 NFE	○	○				0,8
	WNMG080402 NFE	○	○	12,7	4,76	5,16	0,2
	080404 NFE	○	○				0,4
	WNMG080404 NLU	○	○	12,7	4,76	5,16	0,8
	080408 NLU	○	○				1,2
	080412 NLU	○	○	12,7	4,76	5,16	0,4
	080412 NLU	●	○				0,8
	WNMG060404 NSU	○	○	9,525	4,76	3,81	0,4
	060408 NSU	○	○				0,8
	060412 NSU	○	○	12,7	4,76	5,16	1,2
	080404 NSU	○	○				0,4
	WNMG080404 NSE	○	○	12,7	4,76	5,16	0,4
	080408 NSE	○	○				0,8
	WNMG080404 NSEW	○	○	12,7	4,76	5,16	0,4
	080408 NSEW	○	○				0,8
	WNMG080404 NSX	○	○	12,7	4,76	5,16	0,4
	080408 NSX	○	○				0,8
	WNMG060404 NGU	○	○	9,525	4,76	3,81	0,4
	060408 NGU	○	○				0,8
	060412 NGU	○	○	12,7	4,76	5,16	1,2
	080404 NGU	○	○				0,4

Trigon Type/G-Class

	WNMG080404 NSU	○	○	12,7	4,76	5,16	0,4

80° Diamond Type/M-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	7°	CCMT 060202 NFB	●	●	6,35	2,38	2,8	0,2
		060204 NFB	●	●				0,4
	7°	CCMT 09T302 NFB	○	●	9,525	3,97	4,4	0,2
		09T304 NFB	○	●				0,4
		09T308 NFB	○	●				0,8
	7°	CCMT 060202 NLU	○	○	6,35	2,38	2,8	0,2
		060204 NLU	○	○				0,4
		CCMT 09T304 NLU	○	●	9,525	3,97	4,4	0,4
	7°	09T308 NLU	○	○				0,8
		CCMT 09T304 NLUW	●	●	9,525	3,97	4,4	0,4
	7°	09T308 NLUW	●	●				0,8
	7°	CCMT 060202 NLB	●	○	6,35	2,38	2,8	0,2
		060204 NLB	●	●				0,4
		060208 NLB	●	○				0,8
		CCMT 09T302 NLB	●	○	9,525	3,97	4,4	0,2
		09T304 NLB	●	●				0,4
		09T308 NLB	●	○				0,8
	7°	CCMT 060202 NSU	●	●	6,35	2,38	2,8	0,2
		060204 NSU	●	●				0,4
		060208 NSU	●	●				0,8
		CCMT 09T302 NSU	●	○	9,525	3,97	4,4	0,2
		09T304 NSU	●	●				0,4
		09T308 NSU	●	●				0,8
	7°	CCMT 060204 NGU	○	○	6,35	2,38	2,8	0,4
		060208 NGU	○	○				0,8
		CCMT 09T304 NGU	●	●	9,525	3,97	4,4	0,4
	11°	09T308 NGU	●	○				0,8
		CPMT 080204 NFB	●	○	7,94	2,38	3,4	0,4
	11°	CPMT 090304 NFB	●	○				0,4
		090308 NFB	●	○	9,525	3,18	4,4	0,8
	11°	CPMT 080204 NLU	○	○	7,94	2,38	3,4	0,4
		CPMT 090304 NLU	○	○				0,4
		090308 NLU	○	○	9,525	3,18	4,4	0,8
	11°	CPMT 090304 NLUW	○	○				0,4
		090308 NLUW	○	○	9,525	3,18	4,4	0,8
	11°	CPMT 080204 NLB	○	○	7,94	2,38	3,4	0,4
		CPMT 090304 NLB	○	○				0,4
		090308 NLB	○	○	9,525	3,18	4,4	0,8
	11°	CPMT 080204 NSU	○	○	7,94	2,38	3,4	0,4
		080208 NSU	○	○				0,8
		CPMT 090304 NSU	○	○	9,525	3,18	4,4	0,4
	11°	090308 NSU	○	○				0,8
		CPMT 090304 NGU	○	○	9,525	3,18	4,4	0,4
	11°	090308 NGU	○	○				0,8

80° Diamond Type/G-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	7°	CCGT 060201 RFX	○	○	6,35	2,38	2,8	0,1
		060201 LFX	●	○				0,1
		060202 RFX	●	○				0,2
		060202 LFX	●	○				0,2
		060204 RFX	●	○				0,4
		060204 LFX	●	○				0,4
		CCGT 09T301 RFX	●	○	9,525	3,97	4,4	0,1
		09T301 LFX	●	○				0,1
		09T302 RFX	●	○				0,2
		09T302 LFX	●	○				0,2
		09T304 RFX	●	○				0,4
		09T304 LFX	●	○				0,4
	7°	CCGT 03X101 RFY	○	○	3,5	1,4	1,8	0,1
		03X101 LFY	○	○				0,1
		03X102 RFY	○	○				0,2
		03X102 LFY	○	○				0,2
		03X104 RFY	○	○				0,4
		03X104 LFY	○	○				0,4
		CCGT 04X101 RFY	○	○	4,3	1,8	2,3	0,1
		04X101 LFY	○	○				0,1
		04X102 RFY	○	○				0,2
		04X102 LFY	○	○				0,2
		04X104 RFY	○	○				0,4
		04X104 LFY	○	○				0,4
	7°	CCGT 09T301 MNSI	●	○	9,525	3,97	4,4	<0,1
		09T302 MNSI	●	○				<0,2
		09T304 MNSI	●	○				<0,4
	7°	CCGT 060201 MNCS	○	○	6,35	2,38	2,8	<0,1
		060202 MNCS	●	○				<0,2
		060204 MNCS	●	○				<0,4
		CCGT 080201 MNCS	○	○	7,94	2,38	3,4	<0,1
		080202 MNCS	○	○				<0,2
		CCGT 090301 MNCS	○	○	9,525	3,18	4,4	<0,1
		090302 MNCS	○	○				<0,2
		CCGT 09T301 MNCS	●	○	9,525	3,97	4,4	<0,1
		09T302 MNCS	●	○				<0,2
		09T304 MNCS	●	○				<0,4
		09T308 MNCS	●	○				<0,8
	11°	CPGT 060204 LFX	○	○	6,35	2,38	2,8	0,4
	11°	CPGT 080204 NSD	●	○	7,94	3,18	3,4	0,4
		080208 NSD	○	○				0,8
	11°	CPGT 090304 NSD	○	○	9,525	3,18	4,4	0,4
		090308 NSD	○	○				0,8
		CPGT 120404 NSD	○	○	12,7	4,76	5,5	0,4

<0,... = Corner radius with negative tolerance.

55° Diamond Type/M-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	7°	DCMT 070202 NFB	●	●				0,2
		070204 NFB	●	●	6,35	2,38	2,8	0,4
		070208 NFB	●	●				0,8
	7°	DCMT 11T302 NFB	●	●				0,2
		11T304 NFB	●	●	9,525	3,97	4,4	0,4
		11T308 NFB	●	●				0,8
	7°	DCMT 070202 NLU	○	●	6,35	2,38	2,8	0,2
		070204 NLU	○	○				0,4
		DCMT 11T302 NLU	○	●				0,2
	7°	11T304 NLU	●	●	9,525	3,97	4,4	0,4
		11T308 NLU	○	●				0,8
	7°	DCMT 070202 NLB	●	○	6,35	2,38	2,8	0,2
		070204 NLB	●	○				0,4
		070208 NLB	●	○				0,8
	7°	DCMT 11T302 NLB	●	○				0,2
		11T304 NLB	●	●	9,525	3,97	4,4	0,4
		11T308 NLB	●	○				0,8
	7°	DCMT 070202 NSU	●	○	6,35	2,38	2,8	0,2
		070204 NSU	●	○				0,4
		070208 NSU	●	○				0,8
	7°	DCMT 11T302 NSU	●	○				0,2
		11T304 NSU	●	○	9,525	3,97	4,4	0,4
		11T308 NSU	●	○				0,8
	7°	DCMT 070204 NGU	●	○	6,35	2,38	2,8	0,4
		070208 NGU	○	○				0,8
		DCMT 11T302 NGU	●	○				0,2
	7°	11T304 NGU	●	●	9,525	3,97	4,4	0,4
		11T308 NGU	●	●				0,8

Square Type/M-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	7°	SCMT 09T304 NFB	●	○				0,4
		09T308 NFB	●	○	9,525	3,97	4,4	0,8
	7°	SCMT 09T304 NLU	○	○	9,525	3,97	4,4	0,4
		09T308 NLU	○	○				0,8
	7°	SCMT 09T304 NLB	○	○	9,525	3,97	4,4	0,4
		09T308 NLB	○	○				0,8
	11°	SPMT 090304 NFB	●	○	9,525	3,18	3,4	0,4
		090308 NFB	○	○				0,8
	11°	SPMT 090304 NLU		○	9,525	3,18	3,4	0,4
		090308 NLU		○				0,8
	11°	SPMT 090304 NLB	○	○	9,525	3,18	3,4	0,4
		090308 NLB	○	○				0,8

Square Type/G-Class

	11°	SPGT 090302 RSD	○					0,2
		090302 LSD	○					0,2
		090304 RSD	○					0,4
		090304 LSD	○	○	9,525	3,18	3,4	0,4
		090308 RSD	○					0,8
		090308 LSD	○	○				0,8

55° Diamond Type/G-Class

	7°	DCGT 070201 RFX	○					0,1
		070201 LFX	○					0,1
		070202 RFX	●		6,35	2,38	2,8	0,2
		070202 LFX	●					0,2
		070204 RFX	●					0,4
		070204 LFX	●					0,4
	7°	DCGT 11T301 RFX	●					0,1
		11T302 RFX	●					0,2
		11T302 LFX	●		9,525	3,97	4,4	0,2
		11T304 RFX	●					0,4
		11T304 LFX	●					0,4
	7°	DCGT 070202 RSD	○					0,2
		070202 LSD	○		6,35	2,38	2,8	0,2
		070204 RSD	○					0,4
		070204 LSD	○					0,4
		DCGT 11T304 RSD	○					0,4
		11T304 LSD	○		9,525	3,97	4,4	0,4
	7°	11T308 RSD	○					0,8
		11T308 LSD	○					0,8
	7°	DCGT 070201 MNSI	●	○	6,35	2,38	2,8	<0,1
		070202 MNSI	●	○				<0,2
		070204 MNSI	●	○				<0,4
		DCGT 11T301 MNSI	●	○				<0,1
		11T302 MNSI	●	○	9,525	3,97	4,4	<0,2
		11T304 MNSI	●	○				<0,4
	7°	11T308 MNSI	●	○				<0,8
		DCGT 070201 MNSC	●	○	6,35	2,38	2,8	<0,1
		070202 MNSC	●	○				<0,2
		070204 MNSC	●	○				<0,4
		DCGT 11T301 MNSC	●	○				<0,1
		11T302 MNSC	●	○	9,525	3,97	4,4	<0,2
	7°	11T304 MNSC	●	○				<0,4
		11T308 MNSC	●	○				<0,8

<0,... = Corner radius with negative tolerance.

△ Triangular Type/M-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	7°	TCMT 110204 NFB	●	●	6,35	2,38	2,8	0,4
		110208 NFB	●	●				0,8
	7°	TCMT 110204 NLU	○	○	6,35	2,38	2,8	0,4
		110208 NLU	○	○				0,8
	7°	TCMT 110204 NLB	○	○	6,35	2,38	2,8	0,4
		110208 NLB	○	○				0,8
	7°	TCMT 110204 NSU	●	○	6,35	2,38	2,8	0,4
	11°	TPMT 080202 NFB	○	○	4,76	2,38	2,4	0,2
		080204 NFB	●	○				0,4
		TPMT 090202 NFB	●	○	5,56	2,38	2,8	0,2
		090204 NFB	●	○				0,4
		TPMT 110302 NFB	○	○				0,2
		110304 NFB	●	○	6,35	3,18	3,4	0,4
		110308 NFB	●	○				0,8
		TPMT 160304 NFB	○	○	9,525	3,18	4,4	0,4
	11°	160308 NFB	○	○				0,8
		TPMT 160404 NFB	●	○	9,525	4,76	4,4	0,4
		160408 NFB	●	○				0,8
		TPMT 080204 NLU	○	○	4,76	2,38	2,4	0,4
		TPMT 090202 NLU	○	○	5,56	2,38	2,8	0,2
		090204 NLU	○	○				0,4
		TPMT 110302 NLU	○	○				0,2
		110304 NLU	○	○	6,35	3,18	3,4	0,4
	11°	110308 NLU	○	○				0,8
		TPMT 080202 NLB	○	○	4,76	2,38	2,4	0,2
		080204 NLB	○	○				0,4
		TPMT 090202 NLB	○	○	5,56	2,38	2,8	0,2
		090204 NLB	○	○				0,4
		TPMT 110302 NLB	○	○				0,2
		110304 NLB	○	○	6,35	3,18	3,4	0,4
		110308 NLB	○	○				0,8
	11°	TPMT 160304 NLB	○	○	9,525	3,18	4,4	0,4
		160308 NLB	○	○				0,8
		TPMT 160404 NLB	○	○	9,525	4,76	4,4	0,4
		160408 NLB	○	○				0,8
		TPMT 110302 NSU	○	○				0,2
		110304 NSU	○	○	6,35	3,18	3,4	0,4
		110308 NSU	○	○				0,8
		TPMT 160404 NSU	○	○	9,525	4,76	4,4	0,4
	11°	160408 NSU	○	○				0,8
		TPMT 110304 NGU	○	○				0,4
		110308 NGU	○	○	6,35	3,18	3,4	0,8
		TPMT 160404 NGU	○	○	9,525	4,76	4,4	0,4
	11°	160408 NGU	○	○				0,8

△ Triangular Type/G-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	5°	TBGT 060102 RFW	○					0,2
		060102 LFW	○		3,97	1,59	2,2	0,2
		060104 RFW	○					0,4
		060104 LFW	○					0,4
	5°	TBGT 060102 RW	○	○				0,2
		060102 LW	○	○	3,97	1,59	2,2	0,2
		060104 RW	○					0,4
		060104 LW	○					0,4
	7°	TCGT 110204 MNSI	○	○	6,35	2,38	2,8	<0,4
	11°	TPGT 080202 RFW	○					0,2
		080202 LFW	○		4,76	2,38	2,4	0,2
		080204 RFW	○					0,4
		080204 LFW	○	○				0,4
		TPGT 110202 RFW	○					0,2
		110202 LFW	○		6,35	2,38	2,8	0,2
	11°	110204 RFW	○					0,4
		110204 LFW	○					0,4
		TPGT 110302 RFY	○					0,2
		110302 LFY	○	○	6,35	3,18	3,4	0,2
		110304 RFY	○					0,4
		110304 LFY	○	○				0,4
	11°	TPGT 080202 RW	○	○				0,2
		080202 LW	○	○	4,76	2,38	2,4	0,2
		080204 RW	○					0,4
		080204 LW	○	○				0,4
		TPGT 110302 RSD	○					0,2
		110302 LSD	○	○				0,2
	11°	110304 RSD	○	○	6,35	3,18	3,4	0,4
		110304 LSD	○	○				0,4
		110308 RSD	○					0,8
		110308 LSD	○	○				0,8
		TPGT 160404 RSD	○	○				0,4
		160404 LSD	○	○	9,525	4,76	4,4	0,4
		160408 RSD	○					0,8
		160408 LSD	○					0,8
	11°	TPGX 110304 RSDW		○				0,4
		110304 LSDW	●		6,35	3,18	3,4	0,4
		110308 RSDW	○					0,8
		110308 LSDW	○					0,8
		TPGX 160404 RSDW	○					0,4
		160404 LSDW	○		9,525	4,76	4,4	0,4
	11°	160408 RSDW	○					0,8
		160408 LSDW	○					0,8

<0,... = Corner radius with negative tolerance.

35° Diamond Type/M-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	5°	VBMT 110302 NFB	●	○				0,2
		110304 NFB	●	○	6,35	3,18	2,8	0,4
		110308 NFB	●	○				0,8
		VBMT 160404 NFB	●	●				0,4
		160408 NFB	●	●	9,525	4,76	4,4	0,8
	5°	VBMT 110302 NLU	○	○				0,2
		110304 NLU	○	○	6,35	3,18	2,8	0,4
		VBMT 160404 NLU	○	○				0,4
		160408 NLU	○	○	9,525	4,76	4,4	0,8
	5°	VBMT 110302 NLB	○	○				0,2
		110304 NLB	○	○	6,35	3,18	2,8	0,4
		110308 NLB	○	○				0,8
		VBMT 160404 NLB	●	●				0,4
		160408 NLB	●	○	9,525	4,76	4,4	0,8
	5°	VBMT 110304 NSU	○	○	6,35	3,18	2,8	0,4
		VBMT 160404 NSU	●	●				0,4
		160408 NSU	●	○	9,525	4,76	4,4	0,8
		VBMT 110304 NGU	○	○	6,35	3,18	2,8	0,4
		110308 NGU	○	○				0,8
	5°	VBMT 160404 NGU	●	●				0,4
		160408 NGU	●	○	9,525	4,76	4,4	0,8
	7°	VCMT 080202 NFB	●	○				0,2
		080204 NFB	●	○	4,76	2,38	2,3	0,4
		VCMT 160404 NFB	●	○				0,4
		160408 NFB	●	○	9,525	4,76	4,4	0,8
	7°	VCMT 080202 NLB	○	○				0,2
		080204 NLB	○	○	4,76	2,38	2,3	0,4
		VCMT 160404 NLB	○	○				0,4
		160408 NLB	○	○	9,525	4,76	4,4	0,8
	7°	VCMT 160404 NLU	○	○				0,4
		160408 NLU	○	○	9,525	4,76	4,4	0,8

35° Diamond Type/G-Class

	5°	VBGT 110301 RFX	○	○				0,1
		110301 LFX	○	○				0,1
		110302 RFX	○	○	6,35	3,18	2,8	0,2
		110302 LFX	○	○				0,2
		110304 RFX	○	○				0,4
	5°	VBGT 110301 RFY	○	○				0,1
		110301 LFY	○	○				0,1
		110302 RFY	○	○	6,35	3,18	2,8	0,2
		110302 LFY	○	○				0,2
	7°	VCGT 110301 MNSI	●	○				<0,1
		110302 MNSI	●	○	6,35	3,18	2,8	<0,2
		110304 MNSI	●	○				<0,4
		110308 MNSI	●	○				<0,8
		VCGT 160401 MNSI	●	○				<0,1
	7°	160402 MNSI	●	○	9,525	4,76	4,4	<0,2
		160404 MNSI	●	○				<0,4

<0,... = Corner radius with negative tolerance.

Trigon Type/M-Class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	11°	WPMT 110204 NLB	○	○	6,35	2,38	2,8	0,4
		WPMT 160308 NLB	○	○	9,525	3,18	4,4	0,8

Trigon Type/G-Class

	5°	WBGT 060102 RFW	○	○				0,2
		060102 LFW	○	○				0,2
		060104 RFW	○	○	3,97	1,59	2,2	0,4
		060104 LFW	○	○				0,4
		WBGT 080202 RFW	○	○				0,2
		080202 LFW	○	○	4,76	2,38	2,4	0,2
		080204 RFW	○	○				0,4
		080204 LFW	○	○				0,4

Square Type/M-Class (without Insert Hole)

	11°	SPMR 090304 NFK	○	○	9,525	3,18	—	0,4
		090308 NFK	○	○				0,8
		SPMR 120304 NFK	○	○	12,7	3,18	—	0,4
		120308 NFK	○	○				0,8

Triangular Type/M-Class (without Insert Hole)

	11°	TPMR 110304 NFK	○	○	6,35	3,18	—	0,4
		110308 NFK	○	○				0,8
		TPMR 160304 NFK	○	○	9,525	3,18	—	0,4
		160308 NFK	○	○				0,8

Triangular Type/G-Class (without Insert Hole)

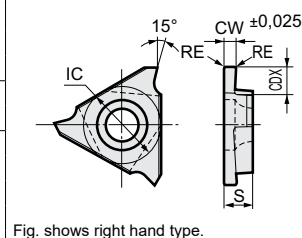
	11°	TPGR 110302 RW	○	○				0,2
		110302 LW	○	○				0,2
		110304 RW	○	○	6,35	3,18	—	0,4
		110304 LW	○	○				0,4
		110308 LW	○	○				0,8
		TPGR 160302 RW	○	○				0,2
		160302 LW	○	○				0,2
		160304 RW	○	○	9,525	3,18	—	0,4
		160304 LW	○	○				0,4
		160308 RW	○	○				0,8
		160308 LW	○	○				0,8

TGA Type (for Square Grooves)

Dimensions (mm)

Cat. No.	T2500Z		CW	Maximum Depth of Cut		Max. Groove Depth CDX	Nose Radius RE	Inscribed Circle IC	Insert Thickness S	
	R	L		External Turning	I.D.					
TGA R/L 3033	○	○	0,33	0,8	0,5	1,0	0,05	9,525	3,18	
TGA R/L 3050	○	○	0,50	1,2	0,8	1,4	0,05	9,525	3,18	
TGA R/L 3075	○	○	0,75	2,0	1,5	2,5	0,1	9,525	3,18	
3095	○	○	0,95							
3100	○	○	1,00							
3110	○	○	1,10							
3125	○	○	1,25							
3135	○	○	1,35							
3145	○	○	1,45							
3150	○	○	1,50							
3165	○	○	1,65							
3175	○	○	1,75							
3185	○	○	1,95							
TGA R/L 3200	○	○	2,00	2,5	2,0	3,0	0,1	9,525	3,18	
3220	○	○	2,20							
3230	○	○	2,30							
3250	○	○	2,50							
3265	○	○	2,65							
3270	○	○	2,70							
3280	○	○	2,80							
TGA R/L 4125	○	○	1,25	2,0	1,7	2,5	0,2	12,70	4,76	
4145	○	○	1,45							
TGA R/L 4150	○	○	1,50	3,5	2,5	3,9	0,2	12,70	4,76	
4165	○	○	1,65							
4175	○	○	1,75							
4185	○	○	1,85							
4200	○	○	2,00							
4220	○	○	2,20							
4230	○	○	2,30							
TGA R/L 4250	○	○	2,50	5,0	2,5	5,4	0,3	12,70	4,76	
4265	○	○	2,65				0,4			
4270	○	○	2,70							
TGA R/L 4280	○	○	2,80	5,0	2,5	5,4	0,3	12,70	4,76	
4300	○	○	3,00							
TGA R/L 4320	○	○	3,20	5,0	2,5	5,4	0,3	12,70	4,76	
4330	○	○	3,30							
TGA R/L 4350	○	○	3,50	5,0	2,5	5,4	0,3	12,70	4,76	
4370	○	○	3,70				0,4			
4390	○	○	3,90							
4400	○	○	4,00							
4410	○	○	4,10							
4420	○	○	4,20							
4430	○	○	4,30							
4440	○	○	4,40							
4450	○	○	4,50							
4480	○	○	4,80							
									5,00	

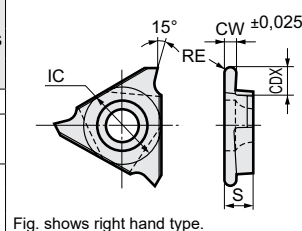
Fig. shows right hand type.



TGA Type (for Round Grooves)

Dimensions (mm)

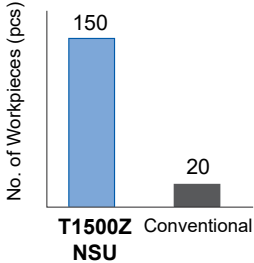
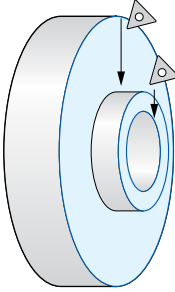
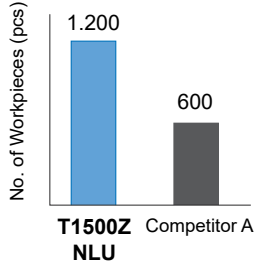
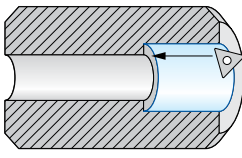
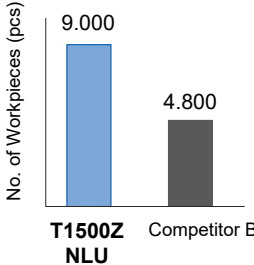
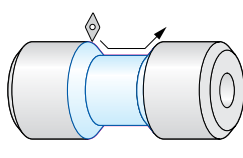
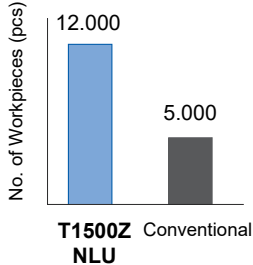
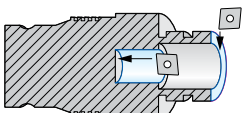
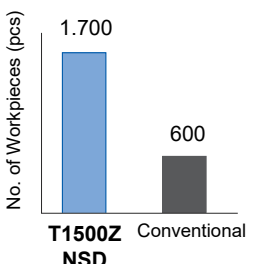
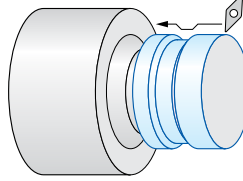
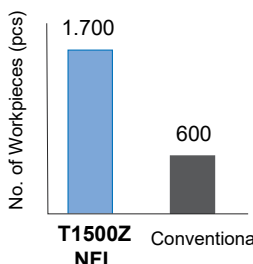
Cat. No.	T2500Z			Maximum Depth of Cut		Max. Groove Depth CDX	Nose Radius RE	Inscribed Circle IC	Insert Thickness S
	R	L		External Turning	I.D.				
TGA R/L 4050R	○		1,00	2,0	1,7	2,5	0,50	12,70	4,76
TGA R/L 4075R	○		1,50	3,5	2,5	3,9	0,75	12,70	4,76
4100R	○		2,00	5,0	2,5	5,4	1,00	12,70	4,76
TGA R/L 4125R	○		2,50				1,25		
4150R	○		3,00				1,50		
4200R	○		4,00				2,00		



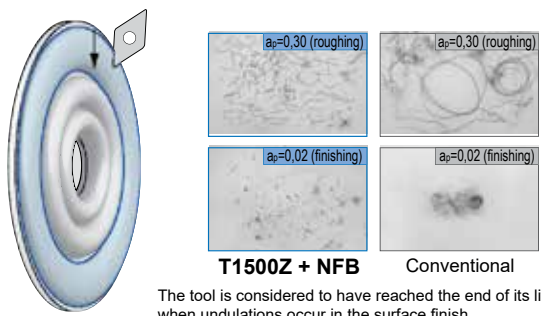
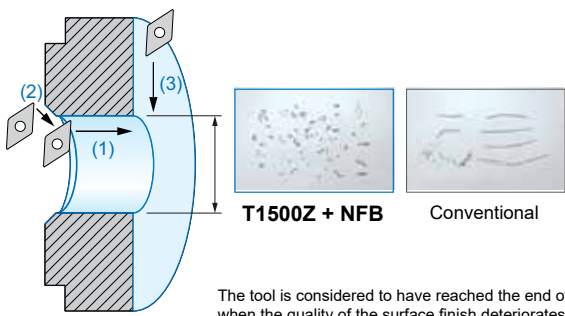
For Steel Turning

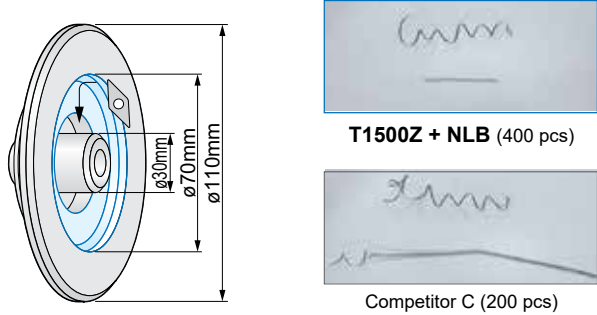
T1500Z/T2500Z

■ Application Examples of T1500Z

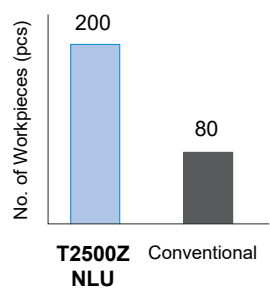
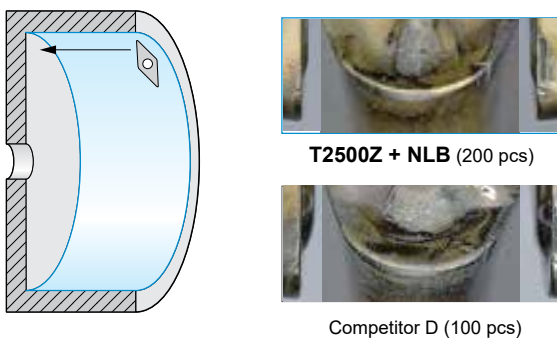
15CrMo5, Shaft Outstanding wear resistance, 7,5 times longer tool life.   Insert: TNMG 160408 NSU (T1500Z) Cutting Conditions: $v_c = 220$ m/min, $f = 0,26-0,34$ mm/rev, $a_p = 0,20-0,25$ mm, wet	24CrMo5, Automotive Parts Suppresses wear, 2 times longer tool life.   Insert: TNMG 160408 NLU (T1500Z) Cutting Conditions: $v_c = 200$ m/min, $f = 0,15$ mm/rev, $a_p = 1,00$ mm, wet
C50, Guide Good wear resistance, 1,9 times longer tool life.   Insert: TPMT 090204 NLU (T1500Z) Cutting Conditions: $v_c = 162$ m/min, $f = 0,13$ mm/rev, $a_p = 0,55$ mm, wet	C45, Sleeve Suppresses wear, 2,4 times longer tool life.   Insert: DCMT 11T304 NLU (T1500Z) Cutting Conditions: $v_c = 230$ m/min, $f = 0,10$ mm/rev, $a_p = 0,50$ mm, wet
C40, Lower Shaft Good wear resistance, 2,8 times longer tool life.   Insert: CPGT 080208 NSD (T1500Z) Cutting Conditions: $v_c = 140$ m/min, $f = 0,15$ mm/rev, $a_p = 0,50$ mm, wet	C40, Mechanical Parts Suppresses wear, 2,8 times longer tool life.   Insert: VNMG 160408 NFL (T1500Z) Cutting Conditions: $v_c = 180$ m/min, $f = 0,20$ mm/rev, $a_p = 0,20-0,90$ mm, wet

Application Examples of T1500Z

SAPH440, Press Piston Part	24CrMo5, Clutch Part
Good chip control when used the NFB breaker.  The tool is considered to have reached the end of its life when undulations occur in the surface finish	Good chip control when used the NFB breaker.  The tool is considered to have reached the end of its life when the quality of the surface finish deteriorates (white blemishes, burrs, etc.)
Insert: DCMT 11T308 NFB (T1500Z) Cutting Conditions: $v_c = 360$ m/min, $f = 0,14$ mm/rev, $a_p = 0,30$ mm (roughing) $0,02$ mm (finishing), wet	Insert: DCMT 11T304 NFB (T1500Z) Cutting Conditions: $v_c = 220$ m/min, $f = (1)0,15/(2)0,12/(3)0,18$ mm/rev, $a_p = 0,25$ mm, wet

C45, Hub
Good chip control and 2 times longer tool life when used the NLB breaker.  Insert: VBMT 160408 NLB (T1500Z) Cutting Conditions: $v_c = 240$ m/min, $f = 0,25-0,28$ mm/rev, $a_p = 0,60$ mm, wet

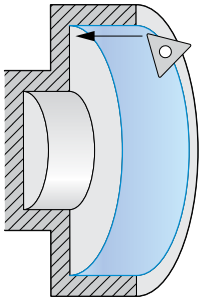
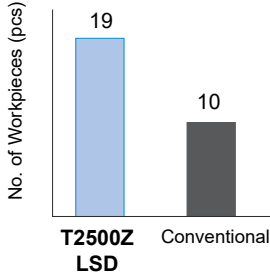
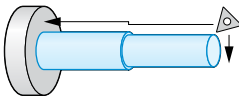
Application Examples of T2500Z

Iron Sheet, Automotive Parts	SAPH440, Deep-Drawing Sheet, Automotive Parts						
Brilliant Coat™ suppresses wear, 2,5 times longer tool life.  No. of Workpieces (pcs) <table border="1"> <thead> <tr> <th>Tool</th> <th>No. of Workpieces (pcs)</th> </tr> </thead> <tbody> <tr> <td>T2500Z NLU</td> <td>200</td> </tr> <tr> <td>Conventional</td> <td>80</td> </tr> </tbody> </table>  Insert: DCMT 11T308 NLU (T2500Z) Cutting Conditions: $v_c = 450$ m/min, $f = 0,10$ mm/rev, $a_p = 0,30-0,35$ mm, wet	Tool	No. of Workpieces (pcs)	T2500Z NLU	200	Conventional	80	Suppresses notch wear, 2 times longer tool life.  Insert: VBMT 160408 NLB (T2500Z) Cutting Conditions: $v_c = 170$ m/min, $f = 0,16$ mm/rev, $a_p = 0,15$ mm, wet
Tool	No. of Workpieces (pcs)						
T2500Z NLU	200						
Conventional	80						

For Steel Turning

T1500Z/T2500Z

Application Examples of T2500Z

34CrMo4, Bar Material	C45, Bolts
Good wear resistance due to Brilliant Coat™, 1,9 times longer tool life.   No. of Workpieces (pcs) T2500Z LSD 19 Conventional 10	Greater fracture resistance due to new tough substrate, 2,5 times longer tool life.  T2500Z RFY (500 pcs)  Conventional (350 pcs)  Conventional (200 pcs) 
Insert: TPGT 110302 LSD (T2500Z) Cutting Conditions: $v_c = 115$ m/min, $f = 0,07$ mm/rev, $a_p = 0,03$ mm, wet	Insert: TNGG 160404 RFY (T2500Z) Cutting Conditions: $v_c = 150$ m/min, $f = 0,14$ mm/rev, $a_p = 0,30$ mm, wet

Recommended Cutting Conditions

Min. - Optimum - Max.

Work Material	Cutting Process	Grades	Cutting Conditions		
			Depth of Cut (mm)	Feed Rate (mm/rev)	Cutting Speed (m/min)
Soft Steel (ST44-2, etc.)	Continuous	T1500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,25	50– 250 –400
	Interrupted	T1500Z T2500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,30	50– 200 –350
	Heavy Interrupted	T2500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,35	50– 200 –300
Low Carbon Steel, Low Alloy Steel (C10, 15CrMo5, etc.)	Continuous	T1500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,25	50– 200 –350
	Interrupted	T1500Z T2500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,30	50– 180 –300
	Heavy Interrupted	T2500Z	0,2– 1,0 –2,5	0,05–0,15–0,35	50– 180 –280
High Carbon Steel, High Alloy Steel (C45, 24CrMo5, etc.)	Continuous	T1500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,25	50– 180 –300
	Interrupted	T1500Z T2500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,30	50– 150 –280
	Heavy Interrupted	T2500Z	0,2– 1,0 –2,5	0,05– 0,15 –0,35	50– 150 –250



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