

Coated Cermet Grades for Steel Turning

# T1500Z / *New* T2500Z



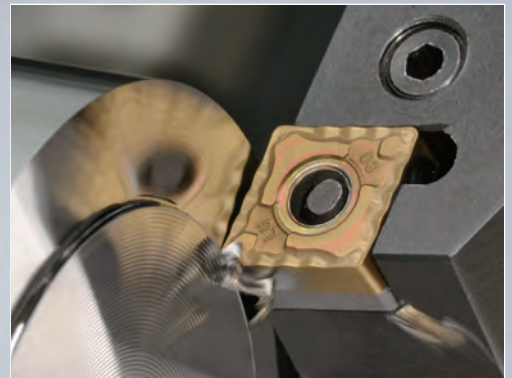
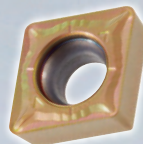
STA 2013-001  
ECO PRODUCT  
日本機械工業会認定 STA 環境対応品  
(T1500Z)

A glossy surface finish with exceptional stability

## Coated cermet series with Brilliant Coat™

*New* **New T2500Z**  
A tough grade with exceptional stability

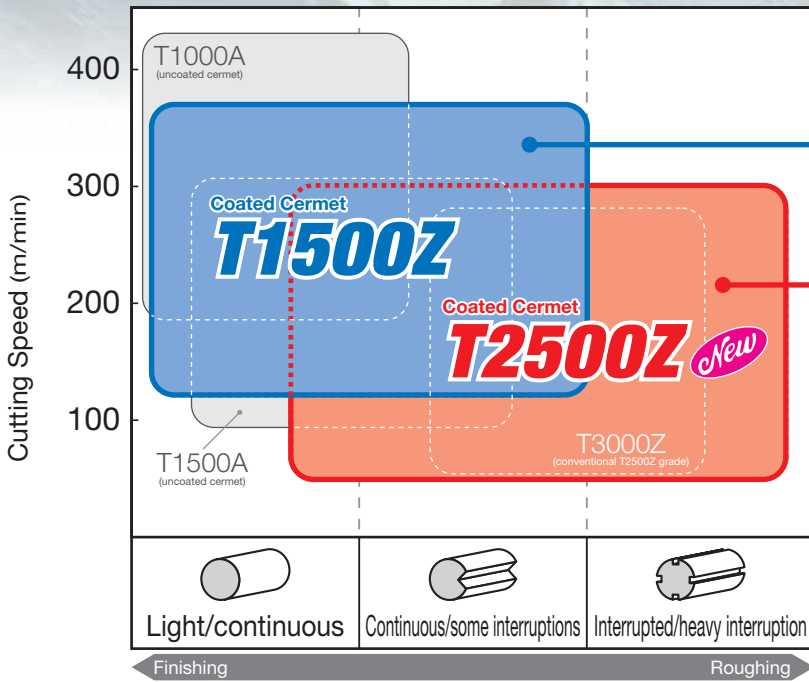
*New* **GU Series**  
General-purpose positive  
M-class chipbreaker



# Coated Cermet Grades for Steel Turning

## T1500Z / T2500Z

### Application Range



**T1500Z** Coated

Excellent **Wear Resistance**

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

**T2500Z** Coated *New*

Exceptional **Stability**

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

Highly economical with reliable finish quality

- Designed for wear resistance → Uncoated Cermet **T1000A** Un Coated
- General-purpose → Uncoated Cermet **T1500A** Un Coated

### Benefits of T1500Z and T2500Z

#### Brilliant Coat™

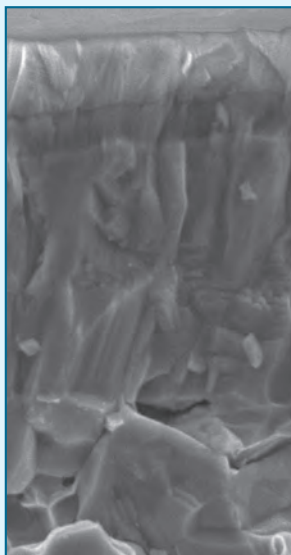
AlN is applied as the top coat to provide excellent lubricity and an outstanding shine

#### High-lubricity layer

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

#### Wear-resistant layer

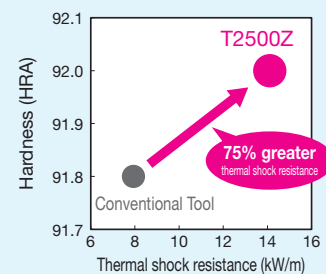
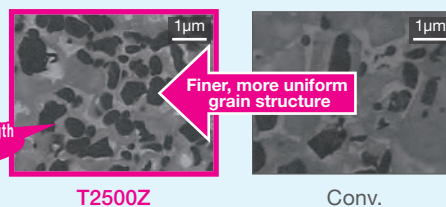
A fine grained coating is used to provide resistance to chipping and improve wear resistance



Work material: SCM415  
Cutting conditions:  $v_c=100\text{m/min}$   
 $f=0.15\text{mm/rev}$   
 $a_p=1.00\text{mm}$   
Wet

#### Cermet substrate with high thermal conductivity

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

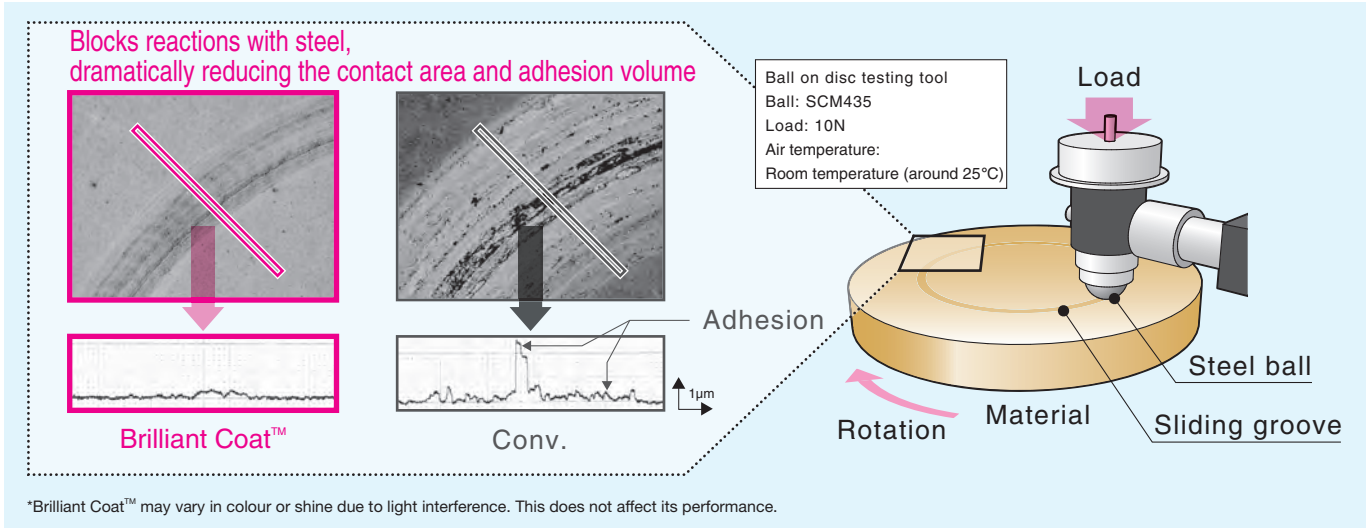


## Benefits of Brilliant Coat™ Cermet

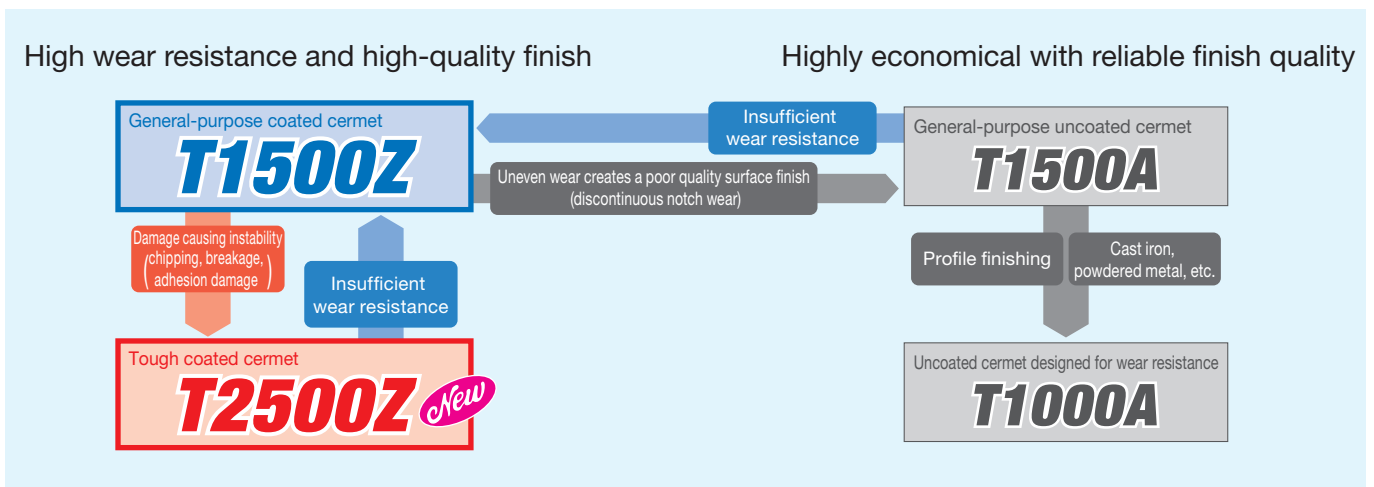
Brilliant Coat™\* is used in the PVD process

-PVD coating with excellent wear resistance and lubricity

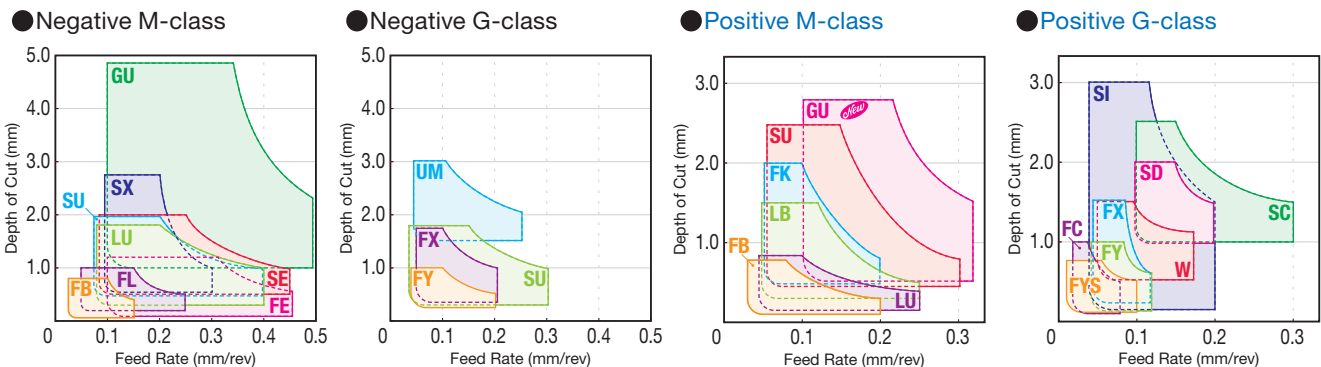
-Suppresses reactions with the work material, achieving a beautiful finish on the machined surface



## Choosing a Cermet Grade (Example)



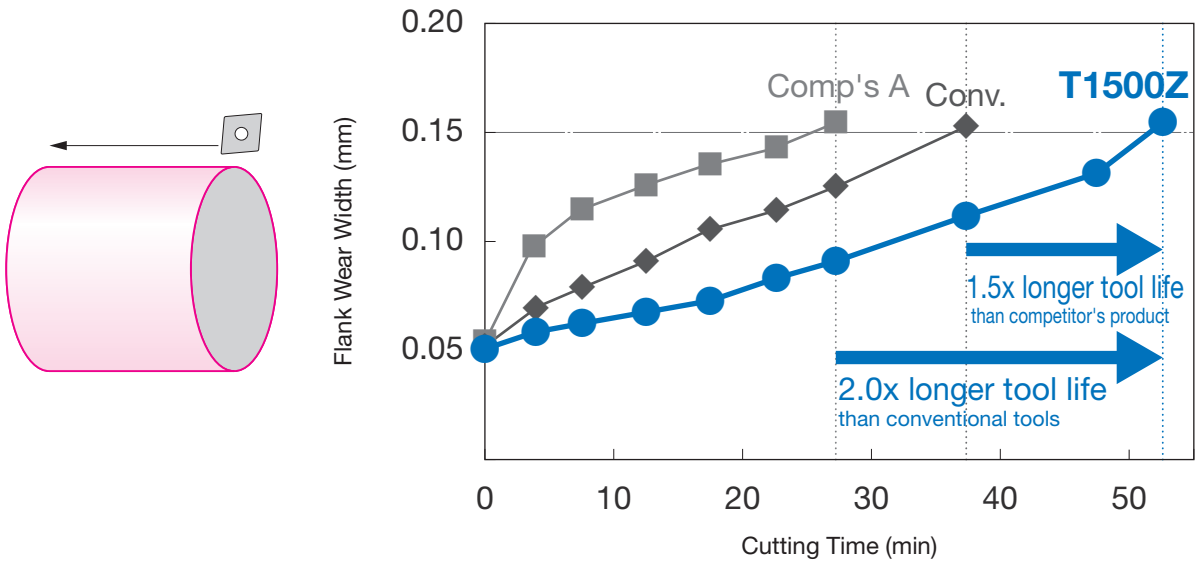
## Chipbreaker Application Range





## Comparison of Wear Resistance for T1500Z

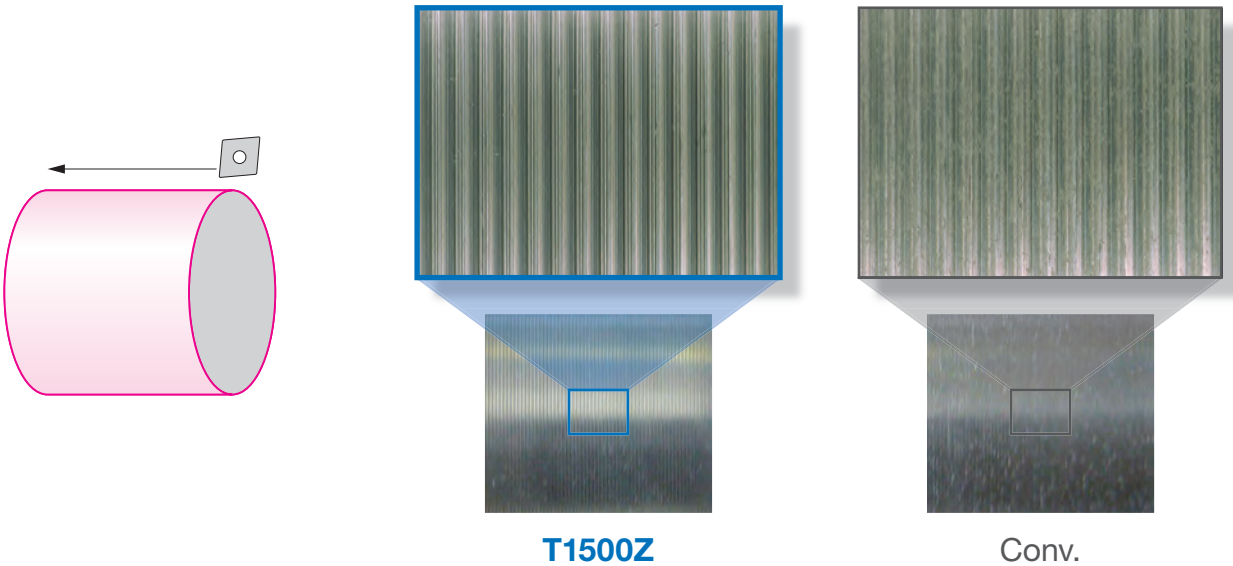
Excellent wear resistance for stable machining and a long tool life



Work Material: SCM435 (continuous machining) Insert: CNMG120408N-SU (T1500Z)  
 Cutting Conditions:  $v_c=250\text{m/min}$   $f=0.20\text{mm/rev}$   $a_p=1.00\text{mm}$  Wet

## Comparison of Machined Surface for T1500Z

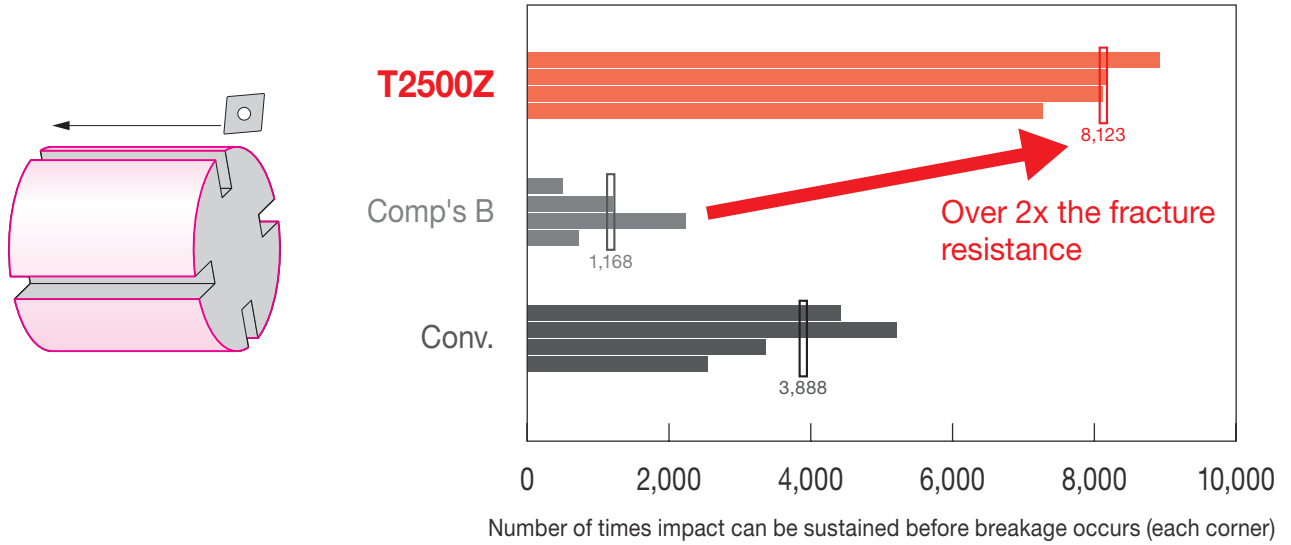
Brilliant Coat™ prevents the white blemishes caused by tearing, giving machined surfaces a beautiful finish



Work Material: STKM13A (continuous machining) Insert: CNMG120408N-LU (T1500Z)  
 Cutting Conditions:  $v_c=100\text{m/min}$   $f=0.15\text{mm/rev}$   $a_p=1.00\text{mm}$  Wet

## Comparison of Fracture Resistance for T2500Z

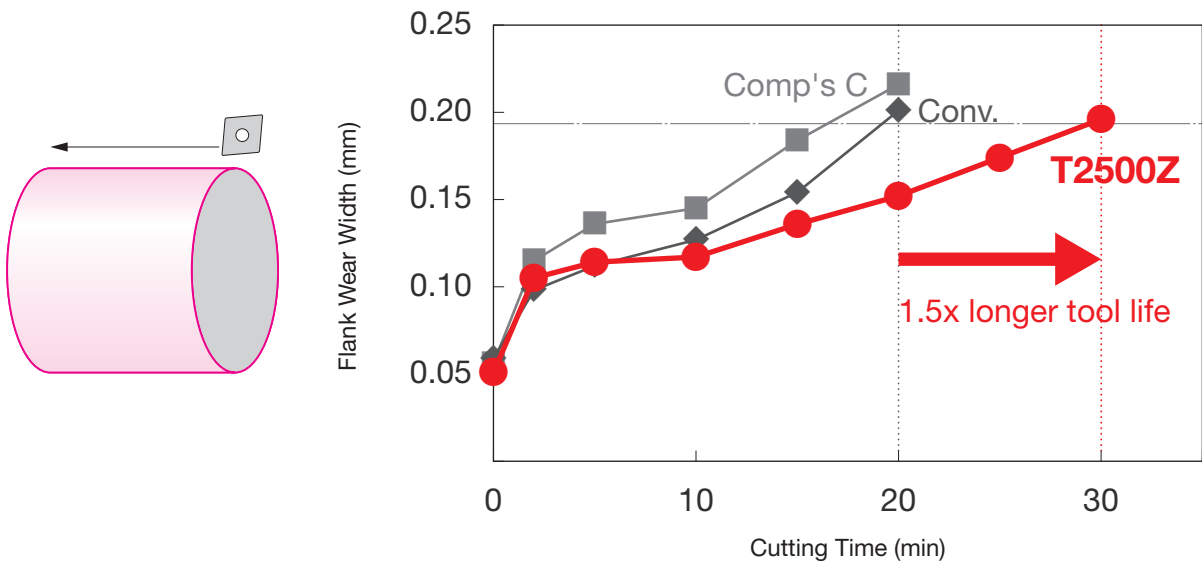
Newly developed tough substrate achieves stable machining



Work Material: SCM435 (interrupted machining) Insert: CNMG120408N-SU (T2500Z)  
 Cutting Conditions:  $v_c=260\text{m/min}$   $f=0.23\text{mm/rev}$   $a_p=1.50\text{mm}$  Wet












## Comparison of Wear Resistance for T2500Z

Brilliant Coat™ suppresses wear




Work Material: SCM435 (continuous machining) Insert: CNMG120408N-SU (T2500Z)  
 Cutting Conditions:  $v_c=260\text{m/min}$   $f=0.23\text{mm/rev}$   $a_p=1.50\text{mm}$  Wet












**Negative 80° diamond type/M-class**

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
	CNMG 090304N-FB	●	●	9.525	3.18	3.81	0.4
	090308N-FB	●	●				0.8
	CNMG 090404N-FB	●	●				9.525
090408N-FB	●	●	0.8				
CNMG 120402N-FB	●	●	12.7	4.76	5.16	0.2	
120404N-FB	●	●				0.4	
120408N-FB	●	●				0.8	
	CNMG 120402N-FA	●	●	12.7	4.76	5.16	0.2
	120404N-FA	●	●				0.4
	120408N-FA	●	●				0.8
	CNMG 120404N-FL	●	●	12.7	4.76	5.16	0.4
	120408N-FL	●	●				0.8
	CNMG 090304N-FE	●	●	9.525	3.18	3.81	0.4
	090308N-FE	●	●				0.8
	CNMG 090404N-FE	●	●				9.525
	090408N-FE	●	●	0.8			
	CNMG 120402N-FE	●	●	12.7	4.76	5.16	
	120404N-FE	●	●				0.4
120408N-FE	●	●	0.8				
	CNMG 090304N-LU	●	●	9.525	3.18	3.81	0.4
	090308N-LU	●	●				0.8
	CNMG 120402N-LU	●	●				12.7
120404N-LU	●	●	0.4				
120408N-LU	●	●	0.8				
	CNMG 120404N-LUW	●	●	12.7	4.76	5.16	0.4
	120408N-LUW	●	●				0.8
	120412N-LUW	●	●				1.2
	CNMG 090404N-SU	●	●	9.525	4.76	3.81	0.4
	090408N-SU	●	●				0.8
	090412N-SU	●	●				1.2
	CNMG 120402N-SU	●	●	12.7	4.76	5.16	0.2
	120404N-SU	●	●				0.4
120408N-SU	●	●	0.8				
	CNMG 120404N-SE	●	●	12.7	4.76	5.16	0.4
	120408N-SE	●	●				0.8
	CNMG 120404N-SEW	●	●	12.7	4.76	5.16	0.4
	120408N-SEW	●	●				0.8
	CNMG 120404N-SX	●	●	12.7	4.76	5.16	0.4
	120408N-SX	●	●				0.8
	CNMG 090404N-GU	●	●	9.525	4.76	3.81	0.4
	090408N-GU	●	●				0.8
	090412N-GU	●	●				1.2
	CNMG 120404N-GU	●	●	12.7	4.76	5.16	0.4
120408N-GU	●	●	0.8				


**Negative 80° diamond type/G-class**

	CNMG 120402N-SU	●	●	12.7	4.76	5.16	0.2
	120404N-SU	●	●				0.4
	120408N-SU	●	●				0.8








**Negative 55° diamond type/M-class**

Shape	Cat. No.	Stock		Dimensions (mm)						
		T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius			
	DNMG 110404N-FB	●	●	9.525	4.76	3.81	0.4			
	110408N-FB	●	●				0.8			
	DNMG 150404N-FB	●	●				12.7	4.76	5.16	0.4
150408N-FB	●	●	0.8							
DNMG 150604N-FB	●	●	12.7	6.35	5.16	0.4				
150608N-FB	●	●				0.8				
	DNMG 150404N-FA	●	●	12.7	4.76	5.16	0.4			
	150408N-FA	●	●				0.8			
	DNMG 150604N-FA	●	●				12.7	6.35	5.16	0.4
150608N-FA	●	●	0.8							
	DNMG 150404N-FL	●	●	12.7	4.76	5.16	0.4			
	150408N-FL	●	●				0.8			
	DNMG 110404N-FE	●	●	9.525	4.76	3.81	0.4			
	110408N-FE	●	●				0.8			
	110412N-FE	●	●				1.2			
	DNMG 150402N-FE	●	●	12.7	4.76	5.16	0.2			
	150404N-FE	●	●				0.4			
	150408N-FE	●	●				0.8			
	DNMG 150412N-FE	●	●	1.2						
	DNMG 150602N-FE	●	●	12.7	6.35	5.16	0.2			
	150604N-FE	●	●				0.4			
	150608N-FE	●	●				0.8			
150612N-FE	●	●	1.2							
	DNMG 150402N-LU	●	●	12.7	4.76	5.16	0.2			
	150404N-LU	●	●				0.4			
	150408N-LU	●	●				0.8			
	150412N-LU	●	●				1.2			
	DNMG 110404N-SU	●	●	9.525	4.76	3.81	0.4			
	110408N-SU	●	●				0.8			
	110412N-SU	●	●				1.2			
	DNMG 150402N-SU	●	●	12.7	4.76	5.16	0.2			
	150404N-SU	●	●				0.4			
	150408N-SU	●	●				0.8			
DNMG 150412N-SU	●	●	1.2							
DNMG 150604N-SU	●	●	12.7	6.35	5.16	0.4				
150608N-SU	●	●				0.8				
	DNMG 150404N-SE	●	●	12.7	4.76	5.16	0.4			
	150408N-SE	●	●				0.8			
	150412N-SE	●	●				1.2			
	DNMG 150404N-SEW	●	●	12.7	4.76	5.16	0.4			
	150408N-SEW	●	●				0.8			
	DNMG 150404N-SX	●	●	12.7	4.76	5.16	0.4			
	150408N-SX	●	●				0.8			
	DNMG 150604N-SX	●	●				12.7	6.35	5.16	0.4
150608N-SX	●	●	0.8							
	DNMG 110412N-GU	●	●	9.525	4.76	3.81	1.2			
	DNMG 150404N-GU	●	●				12.7	4.76	5.16	0.4
	150408N-GU	●	●							0.8
	150412N-GU	●	●							1.2
	DNMG 150404R-UM	●	●	12.7	4.76	5.16	0.4			
	150404L-UM	●	●				0.4			
	150408R-UM	●	●				0.8			
	150408L-UM	●	●				0.8			











**Negative 55° diamond type/G-class**

	DNMG 150402N-SU	●	●	12.7	4.76	5.16	0.2
	150404N-SU	●	●				0.4
	150408N-SU	●	●				0.8





○ Negative square type/M-class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
 FB	SNMG 120404N-FB	●	●	12.7	4.76	5.16	0.4
	120408N-FB	●	●				0.8
 FL	SNMG 120408N-FL	●	●	12.7	4.76	5.16	0.8
 FE	SNMG 120404N-FE	●	●	12.7	4.76	5.16	0.4
	120408N-FE	●	●				0.8
	120412N-FE	●	●				1.2
 LU	SNMG 120408N-LU	●	●	12.7	4.76	5.16	0.8
	120412N-LU	●	●				1.2
 SU	SNMG 120408N-SU	●	●	12.7	4.76	5.16	0.8
 SX	SNMG 120404N-SX	●	●	12.7	4.76	5.16	0.4
	120408N-SX	●	●				0.8
 GU	SNMG 090308N-GU	●	●	9.525	3.18	3.81	0.8
	SNMG 120404N-GU	●	●				0.4
	120408N-GU	●	●				0.8

△ Negative triangular type/M-class










Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
 FB	TNMG 160402N-FB	●	●	9.525	4.76	3.81	0.2
	160404N-FB	●	●				0.4
	160408N-FB	●	●				0.8
 FA	TNMG 160402N-FA	●	●	9.525	4.76	3.81	0.2
	160404N-FA	●	●				0.4
	160408N-FA	●	●				0.8
 FL	TNMG 160404N-FL	●	●	9.525	4.76	3.81	0.4
	160408N-FL	●	●				0.8
 FE	TNMG 160402N-FE	●	●	9.525	4.76	3.81	0.2
	160404N-FE	●	●				0.4
	160408N-FE	●	●				0.8
	160412N-FE	●	●				1.2
 LU	TNMG 160402N-LU	●	●	9.525	4.76	3.81	0.2
	160404N-LU	●	●				0.4
	160408N-LU	●	●				0.8
	160412N-LU	●	●				1.2
 SU	TNMG 160402N-SU	●	●	9.525	4.76	3.81	0.2
	160404N-SU	●	●				0.4
	160408N-SU	●	●				0.8
	160412N-SU	●	●				1.2
 SE	TNMG 160404N-SE	●	●	9.525	4.76	3.81	0.4
	160408N-SE	●	●				0.8
 SX	TNMG 160404N-SX	●	●	9.525	4.76	3.81	0.4
	160408N-SX	●	●				0.8
 GU	TNMG 160404N-GU	●	●	9.525	4.76	3.81	0.4
	160408N-GU	●	●				0.8
 UM	TNMG 160404R-UM	●	●	9.525	4.76	3.81	0.4
	160404L-UM	●	●				0.4
	160408R-UM	●	●				0.8
	160408L-UM	●	●				0.8

△ Negative triangular type/G-class

 SU	TNGG 160402N-SU	●	●	9.525	4.76	3.81	0.2
	160404N-SU	●	●				0.4
	160408N-SU	●	●				0.8
 FY	TNGG 160401R-FY	●	●	9.525	4.76	3.81	0.1
	160401L-FY	●	●				0.1
	160402R-FY	●	●				0.2
	160402L-FY	●	●				0.2
	160404R-FY	●	●				0.4
	160404L-FY	●	●				0.4
	160408R-FY	●	●				0.8
	160408L-FY	●	●				0.8
	160412R-FY	●	●				1.2
	160412L-FY	●	●				1.2
 FX	TNGG 160402R-FX	●	●	9.525	4.76	3.81	0.2
	160402L-FX	●	●				0.2
	160404R-FX	●	●				0.4
	160404L-FX	●	●				0.4
 UM	TNGG 160402R-UM	●	●	9.525	4.76	3.81	0.2
	160402L-UM	●	●				0.2
	160404R-UM	●	●				0.4
	160404L-UM	●	●				0.4
	160408R-UM	●	●				0.8
	160408L-UM	●	●				0.8

●: Standard stocked item    Blank: Made-to-order item















 **Negative 35° diamond type/M-class**

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
 FB	VNMG 160404N-FB	●	●	9.525	4.76	3.81	0.4
	160408N-FB	●	●				0.8
 FA	VNMG 160404N-FA	●	●	9.525	4.76	3.81	0.4
	160408N-FA	●	●				0.8
 FL	VNMG 160404N-FL	●	●	9.525	4.76	3.81	0.4
	160408N-FL	●	●				0.8
 FE	VNMG 160402N-FE	●	●	9.525	4.76	3.81	0.2
	160404N-FE	●	●				0.4
	160408N-FE	●	●				0.8
	160412N-FE	●	●				1.2
 LU	VNMG 160402N-LU	●	●	9.525	4.76	3.81	0.2
	160404N-LU	●	●				0.4
	160408N-LU	●	●				0.8
 SU	VNMG 160402N-SU	●	●	9.525	4.76	3.81	0.2
	160404N-SU	●	●				0.4
	160408N-SU	●	●				0.8
 SE	VNMG 160404N-SE	●	●	9.525	4.76	3.81	0.4
	160408N-SE	●	●				0.8
 SX	VNMG 160404N-SX	●	●	9.525	4.76	3.81	0.4
	160408N-SX	●	●				0.8
 GU	VNMG 160404N-GU	●	●	9.525	4.76	3.81	0.4
	160408N-GU	●	●				0.8


 **Negative 35° diamond type/G-class**

 SU	VNMG 160402N-SU	●	●	9.525	4.76	3.81	0.2
	160404N-SU	●	●				0.4
	160408N-SU	●	●				0.8

 **Negative trigon type/M-class**















Shape	Cat. No.	Stock		Dimensions (mm)						
		T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius			
 FB	WNMG 060404N-FB	●	●	9.525	4.76	3.81	0.4			
	060408N-FB	●	●				0.8			
 FA	WNMG 080402N-FB	●	●	12.7	4.76	5.16	0.2			
	080404N-FB	●	●				0.4			
	080408N-FB	●	●				0.8			
 FL	WNMG 080402N-FA	●	●	12.7	4.76	5.16	0.2			
	080404N-FA	●	●				0.4			
	080408N-FA	●	●				0.8			
 FE	WNMG 080404N-FL	●	●	12.7	4.76	5.16	0.4			
	080408N-FL	●	●				0.8			
 LU	WNMG 060404N-FE	●	●	9.525	4.76	3.81	0.4			
	060408N-FE	●	●				0.8			
	WNMG 080402N-FE	●	●				12.7	4.76	5.16	0.2
	080404N-FE	●	●							0.4
 SU	080408N-FE	●	●	9.525	4.76	3.81	0.8			
	080412N-FE	●	●				1.2			
	WNMG 060404N-LU	●	●				9.525	4.76	3.81	0.4
060408N-LU	●	●	0.8							
 LU	WNMG 060412N-LU	●	●	12.7	4.76	5.16	1.2			
	WNMG 080404N-LU	●	●				12.7	4.76	5.16	0.4
	080408N-LU	●	●							0.8
 LUW	WNMG 080412N-LU	●	●	9.525	4.76	3.81	1.2			
	WNMG 060404N-LUW	●	●				9.525	4.76	3.81	0.4
	060408N-LUW	●	●							0.8
 SU	WNMG 080404N-LUW	●	●	12.7	4.76	5.16	0.4			
	080408N-LUW	●	●				0.8			
	080412N-LUW	●	●				1.2			
	WNMG 060404N-SU	●	●				9.525	4.76	3.81	0.4
060408N-SU	●	●	0.8							
060412N-SU	●	●	1.2							
 SE	WNMG 080404N-SU	●	●	12.7	4.76	5.16	0.4			
	080408N-SU	●	●				0.8			
	080412N-SU	●	●				1.2			
 SE	WNMG 080404N-SE	●	●	12.7	4.76	5.16	0.4			
	080408N-SE	●	●				0.8			
 SEW	WNMG 080404N-SEW	●	●	12.7	4.76	5.16	0.4			
	080408N-SEW	●	●				0.8			
 SX	WNMG 080404N-SX	●	●	12.7	4.76	5.16	0.4			
	080408N-SX	●	●				0.8			
 GU	WNMG 060404N-GU	●	●	9.525	4.76	3.81	0.4			
	060408N-GU	●	●				0.8			
	060412N-GU	●	●				1.2			
	WNMG 080404N-GU	●	●				12.7	4.76	5.16	0.4
080408N-GU	●	●	0.8							

 **Negative trigon type/G-class**









 SU	WNGG 080404N-SU	●	●	12.7	4.76	5.16	0.4
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Positive 80° diamond type/M-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)						
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius			
	7°	CCMT 060202N-FB	●	●	6.35	2.38	2.8	0.2			
		060204N-FB	●	●				0.4			
	7°	CCMT 09T302N-FB	●	●	9.525	3.97	4.4	0.2			
		09T304N-FB	●	●				0.4			
		09T308N-FB	●	●				0.8			
	7°	CCMT 060202N-LU	●	●	6.35	2.38	2.8	0.2			
		060204N-LU	●	●				0.4			
		CCMT 09T304N-LU	●	●	9.525	3.97	4.4	0.4			
	7°	09T308N-LU	●	●				0.8			
		CCMT 09T304N-LUW	●	●	9.525	3.97	4.4	0.4			
	7°	09T308N-LUW	●	●				0.8			
	7°	CCMT 060202N-LB	●	●	6.35	2.38	2.8	0.2			
		060204N-LB	●	●				0.4			
		060208N-LB	●	●				0.8			
		CCMT 09T302N-LB	●	●				9.525	3.97	4.4	0.2
		09T304N-LB	●	●							0.4
09T308N-LB	●	●	0.8								
	7°	CCMT 060202N-SU	●	●	6.35	2.38	2.8	0.2			
		060204N-SU	●	●				0.4			
		060208N-SU	●	●				0.8			
		CCMT 09T302N-SU	●	●	9.525	3.97	4.4	0.2			
09T304N-SU	●	●	0.4								
09T308N-SU	●	●	0.8								
	7°	CCMT 060204N-GU	●	●	6.35	2.38	2.8	0.4			
		060208N-GU	●	●				0.8			
		CCMT 09T304N-GU	●	●				9.525	3.97	4.4	0.4
		09T308N-GU	●	●							0.8
	11°	CPMT 080204N-FB	●	●	7.94	2.38	3.4	0.4			
		CPMT 090304N-FB	●	●	9.525	3.18	4.4	0.4			
		090308N-FB	●	●				0.8			
	11°	CPMT 080204N-LU	●	●	7.94	2.38	3.4	0.4			
		CPMT 090304N-LU	●	●	9.525	3.18	4.4	0.4			
		090308N-LU	●	●				0.8			
	11°	CPMT 090304N-LUW	●	●	9.525	3.18	4.4	0.4			
		090308N-LUW	●	●				0.8			
	11°	CPMT 080204N-LB	●	●	7.94	2.38	3.4	0.4			
		CPMT 090304N-LB	●	●	9.525	3.18	4.4	0.4			
		090308N-LB	●	●				0.8			
	11°	CPMT 080204N-SU	●	●	7.94	2.38	3.4	0.4			
		080208N-SU	●	●				0.8			
		CPMT 090304N-SU	●	●	9.525	3.18	4.4	0.4			
090308N-SU	●	●	0.8								
	11°	CPMT 090304N-GU	●	●	9.525	3.18	4.4	0.4			
		090308N-GU	●	●				0.8			











Positive 80° diamond type/G-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)						
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius			
	7°	CCGT 060201R-FX	●	●	6.35	2.38	2.8	0.1			
		060201L-FX	●	●				0.1			
		060202R-FX	●	●				0.2			
		060202L-FX	●	●				0.2			
		060204L-FX	●	●				0.4			
		CCGT 09T301R-FX	●	●				9.525	3.97	4.4	0.1
09T301L-FX	●	●	0.1								
09T302R-FX	●	●	0.2								
09T302L-FX	●	●	0.2								
	7°	CCGT 03X101R-FY	●	●	3.5	1.4	1.8				0.1
		03X101L-FY	●	●							0.1
		03X102R-FY	●	●				0.2			
		03X102L-FY	●	●				0.2			
		03X104R-FY	●	●				0.4			
		03X104L-FY	●	●				0.4			
		CCGT 04X101R-FY	●	●				4.3	1.8	2.3	0.1
		04X101L-FY	●	●							0.1
		04X102R-FY	●	●							0.2
		04X102L-FY	●	●							0.2
04X104R-FY	●	●	0.4								
04X104L-FY	●	●	0.4								
	7°	CCGT 09T301MN-SI	●	●	9.525	3.97	4.4	<0.1			
		09T302MN-SI	●	●				<0.2			
		09T304MN-SI	●	●				<0.4			
	7°	CCGT 060201MN-SC	●	●	6.35	2.38	2.8	<0.1			
		060202MN-SC	●	●				<0.2			
		060204MN-SC	●	●				<0.4			
		CCGT 080201MN-SC	●	●				7.94	2.38	3.4	<0.1
		080202MN-SC	●	●							<0.2
		CCGT 090301MN-SC	●	●				9.525	3.18	4.4	<0.1
090302MN-SC	●	●	<0.2								
	11°	CCGT 09T301MN-SC	●	●	9.525	3.97	4.4	<0.1			
		09T302MN-SC	●	●				<0.2			
	11°	CPTG 060204L-FX	●	●	6.35	2.38	2.8	0.4			
	11°	CPTG 080204N-SD	●	●	7.94	2.38	3.4	0.4			
		080208N-SD	●	●				0.8			
	11°	CPTG 090304N-SD	●	●	9.525	3.18	4.4	0.4			
		090308N-SD	●	●				0.8			
		CPTG 120404N-SD	●	●				12.7	4.76	5.5	0.4







A "<" next to the corner radius indicates a negative tolerance.

●: Standard stocked item    Blank: Made-to-order item    : Wiper insert


**Positive 55° diamond type/M-class**

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
	7°	DCMT 070202N-FB	●	●	6.35	2.38	2.8	0.2
		070204N-FB	●	●				0.4
		070208N-FB	●	●				0.8
	7°	DCMT 11T302N-FB	●	●	9.525	3.97	4.4	0.2
		11T304N-FB	●	●				0.4
		11T308N-FB	●	●				0.8
	7°	DCMT 070202N-LU	●	●	6.35	2.38	2.8	0.2
		070204N-LU	●	●				0.4
		DCMT 11T302N-LU	●	●				0.2
	7°	11T304N-LU	●	●	9.525	3.97	4.4	0.4
		11T308N-LU	●	●				0.8
		DCMT 070202N-LB	●	●				0.2
	7°	070204N-LB	●	●	6.35	2.38	2.8	0.4
		070208N-LB	●	●				0.8
		DCMT 11T302N-LB	●	●				0.2
	7°	11T304N-LB	●	●	9.525	3.97	4.4	0.4
		11T308N-LB	●	●				0.8
		DCMT 070202N-SU	●	●				0.2
	7°	070204N-SU	●	●	6.35	2.38	2.8	0.4
		070208N-SU	●	●				0.8
		DCMT 11T302N-SU	●	●				0.2
	7°	11T304N-SU	●	●	9.525	3.97	4.4	0.4
		11T308N-SU	●	●				0.8
		DCMT 070204N-GU	●	●				0.4
	7°	070208N-GU	●	●	6.35	2.38	2.8	0.8
		DCMT 11T302N-GU	●	●				0.2
		11T304N-GU	●	●				0.4
	7°	11T308N-GU	●	●	9.525	3.97	4.4	0.8








**Positive square type/M-class**

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
	7°	SCMT 09T304N-FB	●	●	9.525	3.97	4.4	0.4
		09T308N-FB	●	●				0.8
	7°	SCMT 09T304N-LU	●	●	9.525	3.97	4.4	0.4
		09T308N-LU	●	●				0.8
	7°	SCMT 09T304N-LB	●	●	9.525	3.97	4.4	0.4
		09T308N-LB	●	●				0.8
	11°	SPMT 090304N-FB	●	●	9.525	3.18	3.4	0.4
		090308N-FB	●	●				0.8
	11°	SPMT 090304N-LU	●	●	9.525	3.18	3.4	0.4
		090308N-LU	●	●				0.8
	11°	SPMT 090304N-LB	●	●	9.525	3.18	3.4	0.4
		090308N-LB	●	●				0.8

**Positive square type/G-class**

	11°	SPGT 090302R-SD	●	●	9.525	3.18	3.4	0.2
		090302L-SD	●	●				0.2
		090304R-SD	●	●				0.4
		090304L-SD	●	●				0.4
		090308R-SD	●	●				0.8
		090308L-SD	●	●				0.8






**Positive 55° diamond type/G-class**

	7°	DCGT 070201R-FX	●	●	6.35	2.38	2.8	0.1
		070201L-FX	●	●				0.1
		070202R-FX	●	●				0.2
		070202L-FX	●	●				0.2
	7°	DCGT 11T302R-FX	●	●	9.525	3.97	4.4	0.2
		11T302L-FX	●	●				0.2
		DCGT 070202R-SD	●	●				0.2
		070202L-SD	●	●				0.2
	7°	070204R-SD	●	●	6.35	2.38	2.8	0.4
		070204L-SD	●	●				0.4
		DCGT 11T304R-SD	●	●				0.4
		11T304L-SD	●	●				0.4
	7°	11T308R-SD	●	●	9.525	3.97	4.4	0.8
		11T308L-SD	●	●				0.8
		DCGT 070201MN-SI	●	●				0.2
		070202MN-SI	●	●				0.2
	7°	070204MN-SI	●	●	6.35	2.38	2.8	<0.4
		DCGT 11T301MN-SI	●	●				<0.1
		11T302MN-SI	●	●				<0.2
		11T304MN-SI	●	●				<0.4
	7°	11T308MN-SI	●	●	9.525	3.97	4.4	<0.8
		DCGT 070201MN-SC	●	●				<0.1
		070202MN-SC	●	●				<0.2
		070204MN-SC	●	●				<0.4
	7°	DCGT 11T301MN-SC	●	●	6.35	2.38	2.8	<0.1
		11T302MN-SC	●	●				<0.2
		11T304MN-SC	●	●				<0.4
		11T308MN-SC	●	●				<0.8









A "<" next to the corner radius indicates a negative tolerance.

●: Standard stocked item    Blank: Made-to-order item

**△ Positive triangular type/M-class**

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
	7°	TCMT 110204N-FB 110208N-FB	●	●	6.35	2.38	2.8	0.4
								0.8
	7°	TCMT 110204N-LU 110208N-LU	●	●	6.35	2.38	2.8	0.4
								0.8
	7°	TCMT 110204N-LB 110208N-LB	●	●	6.35	2.38	2.8	0.4
								0.8
	7°	TCMT 110204N-SU	●		6.35	2.38	2.8	0.4
	11°	TPMT 080202N-FB	●	●	4.76	2.38	2.4	0.2
		080204N-FB	●	●				0.4
		TPMT 090202N-FB	●	●				5.56
		090204N-FB	●	●	0.4			
		TPMT 110302N-FB	●	●	6.35	3.18	3.4	
		110304N-FB	●	●				0.4
		110308N-FB	●	●				0.8
		TPMT 160304N-FB	●	●	9.525	3.18	4.4	0.4
		160308N-FB	●	●				0.8
		TPMT 160404N-FB	●	●				9.525
		160408N-FB	●	●	0.8			






**△ Positive triangular type G-class**

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
	5°	TBGT 060102R-FW	●		3.97	1.59	2.2	0.2
		060102L-FW	●					0.2
		060104R-FW	●					0.4
	5°	TBGT 060102R-W	●	●	3.97	1.59	2.2	0.2
		060102L-W	●	●				0.2
		060104R-W	●	●				0.4
	7°	TCGT 110204MN-SI	●	●	6.35	2.38	2.8	<0.4
	11°	TPGT 080202R-FW	●		4.76	2.38	2.4	0.2
		080202L-FW	●					0.2
		080204R-FW	●	●				0.4
		TPGT 110202R-FW	●		6.35	2.38	2.8	0.2
		110202L-FW	●					0.2
110204R-FW	●		0.4					
	11°	TPGT 110302R-FY	●	●	6.35	3.18	3.4	0.2
		110302L-FY	●	●				0.2
		110304R-FY	●	●				0.4
	11°	TPGT 080202R-W	●	●	4.76	2.38	2.4	0.2
		080202L-W	●	●				0.2
		080204R-W	●	●				0.4
		080204L-W	●	●				0.4
	11°	TPGT 110302R-SD	●	●	6.35	3.18	3.4	0.2
		110302L-SD	●	●				0.2
		110304R-SD	●	●				0.4
		110304L-SD	●	●				0.4
		TPGT 110308R-SD	●	●	9.525	4.76	4.4	0.8
		110308L-SD	●	●				0.8
		TPGT 160404R-SD	●	●				0.4
		160404L-SD	●	●				0.4
TPGT 160408R-SD	●	●	0.8					
TPGT 160408L-SD	●	●	0.8					
	11°	TPGX 110304R-SDW	●	●	6.35	3.18	3.4	0.4
		110304L-SDW	●	●				0.4
		110308R-SDW	●	●				0.8
		TPGX 160404R-SDW	●	●	9.525	4.76	4.4	0.4
		160404L-SDW	●	●				0.4
		160408R-SDW	●	●				0.8
TPGX 160408L-SDW	●	●	0.8					




A "<" next to the corner radius indicates a negative tolerance.

●: Standard stocked item    Blank: Made-to-order item    Wiper: Wiper insert


 **Positive 35° diamond type/M-class**

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
	5°	VBMT 110302N-FB	●	●	6.35	3.18	2.8	0.2
		110304N-FB	●	●				0.4
		110308N-FB	●	●				0.8
FB	5°	VBMT 160404N-FB	●	●	9.525	4.76	4.4	0.4
		160408N-FB	●	●				0.8
	5°	VBMT 110302N-LU	●	●	6.35	3.18	2.8	0.2
		110304N-LU	●	●				0.4
		110308N-LU	●	●				0.8
LU	5°	VBMT 160404N-LU	●	●	9.525	4.76	4.4	0.4
		160408N-LU	●	●				0.8
	5°	VBMT 110302N-LB	●	●	6.35	3.18	2.8	0.2
		110304N-LB	●	●				0.4
		110308N-LB	●	●				0.8
LB	5°	VBMT 160404N-LB	●	●	9.525	4.76	4.4	0.4
		160408N-LB	●	●				0.8
	5°	VBMT 110304N-SU	●	●	6.35	3.18	2.8	0.4
		160404N-SU	●	●				0.4
		160408N-SU	●	●				0.8
	5°	VBMT 110304N-GU	●	●	6.35	3.18	2.8	0.4
		110308N-GU	●	●				0.8
		VBMT 160404N-GU	●	●				0.4
GU	5°	160408N-GU	●	●	9.525	4.76	4.4	0.8
		VCMT 080202N-FB	●	●	4.76	2.38	2.3	0.2
080204N-FB	●	●	0.4					
VCMT 160404N-FB	●	●	9.525	4.76				4.4
FB	7°	160408N-FB	●	●	0.8			
		VCMT 080202N-LB	●	●	4.76	2.38	2.3	0.2
080204N-LB	●	●	0.4					
VCMT 160404N-LB	●	●	9.525	4.76				4.4
LB	7°	160408N-LB	●	●	0.8			
		VCMT 160404N-LU	●	●	9.525	4.76	4.4	0.4
160408N-LU	●	●	0.8					
LU	7°	160404N-LU	●	●	0.4			
		160408N-LU	●	●	0.8			


 **Positive 35° diamond type/G-class**

	5°	VBGT 110301R-FX	●	●	6.35	3.18	2.8	0.1
		110301L-FX	●	●				0.1
		110302R-FX	●	●				0.2
		110302L-FX	●	●				0.2
		110304R-FX	●	●				0.4
		110304L-FX	●	●				0.4
	5°	VBGT 110301R-FY	●	●	6.35	3.18	2.8	0.1
		110301L-FY	●	●				0.1
		110302R-FY	●	●				0.2
		110302L-FY	●	●				0.2
	7°	VCGT 110301MN-SI	●	●	6.35	3.18	2.8	<0.1
		110302MN-SI	●	●				<0.2
		110304MN-SI	●	●				<0.4
		110308MN-SI	●	●				<0.8
		VCGT 160401MN-SI	●	●				<0.1
		160402MN-SI	●	●				<0.2
160404MN-SI	●	●	<0.4					


 **Positive trigon type/M-class**

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1500Z	T2500Z	Inscribed Circle	Thickness	Hole Diameter	Nose Radius
	11°	WPMT 110204N-LB	●	●	6.35	2.38	2.8	0.4
		WPMT 160308N-LB	●	●	9.525	3.18	4.4	0.8


 **Positive trigon type/G-class**

	5°	WBGT 060102R-FW	●	●	3.97	1.59	2.2	0.2		
		060102L-FW	●	●				0.2		
		060104R-FW	●	●				0.4		
		060104L-FW	●	●				0.4		
		FW	5°	WBGT 080202R-FW	●	●	4.76	2.38	2.4	0.2
				080202L-FW	●	●				0.2
				080204R-FW	●	●				0.4
				080204L-FW	●	●				0.4


 **Positive square type/M-class (no hole)**

	11°	SPMR 090304N-FK	●	●	9.525	3.18	—	0.4
		090308N-FK	●	●			0.8	
		SPMR 120304N-FK	●	●	12.7	3.18	—	0.4
		120308N-FK	●	●			0.8	

 **Positive triangular type/M-class (no hole)**

	11°	TPMR 110304N-FK	●	●	6.35	3.18	—	0.4
		110308N-FK	●	●			0.8	
		TPMR 160304N-FK	●	●	9.525	3.18	—	0.4
		160308N-FK	●	●			0.8	

 **Positive triangular type/G-class (no hole)**

	11°	TPGR 110302R-W	●	●	6.35	3.18	—	0.2		
		110302L-W	●	●				0.2		
		110304R-W	●	●				0.4		
		110304L-W	●	●				0.4		
		110308L-W	●	●				0.8		
		W	11°	TPGR 160302R-W	●	●	9.525	3.18	—	0.2
				160302L-W	●	●				0.2
				160304R-W	●	●				0.4
				160304L-W	●	●				0.4
				160308R-W	●	●				0.8
160308L-W	●	●	0.8							

A "<" next to the corner radius indicates a negative tolerance.

●: Standard stocked item    Blank: Made-to-order item



For SEC-Grooving Tool (GWC Type)

TGA Type (insert for square grooves)

Dimensions (mm)

Cat. No.	NEW T2500Z		Width of Cut CW	Maximum Depth of Cut		Maximum Groove Depth CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	* Group No.
	R	L		External Turning	I.D.					
TGA R/L3033	●	●	0.33	0.8	0.5	1.0	0.05	9.525	3.18	1
TGA R/L3050	●	●	0.50	1.2	0.8	1.4	0.05	9.525	3.18	1
TGA R/L3075	●	●	0.75							
TGA R/L3095	●	●	0.95							
TGA R/L3100	●	●	1.00							
TGA R/L3110	●	●	1.10							
TGA R/L3125	●	●	1.25							
TGA R/L3135	●	●	1.35	2.0	1.5	2.5	0.1	9.525	3.18	1
TGA R/L3145	●	●	1.45							
TGA R/L3150	●	●	1.50							
TGA R/L3165	●	●	1.65							
TGA R/L3175	●	●	1.75							
TGA R/L3185	●	●	1.85							
TGA R/L3200	●	●	2.00							
TGA R/L3220	●	●	2.20							
TGA R/L3230	●	●	2.30							
TGA R/L3250	●	●	2.50	2.5	2.0	3.0	0.1	9.525	3.18	1
TGA R/L3265	●	●	2.65							
TGA R/L3270	●	●	2.70							
TGA R/L3280	●	●	2.80							
TGA R/L4125	●	●	1.25	2.0	1.7	2.5	0.2	12.70	4.76	2
TGA R/L4145	●	●	1.45							
TGA R/L4150	●	●	1.50							
TGA R/L4165	●	●	1.65							
TGA R/L4175	●	●	1.75							
TGA R/L4185	●	●	1.85	3.5	2.5	3.9	0.2	12.70	4.76	3
TGA R/L4200	●	●	2.00							
TGA R/L4220	●	●	2.20							
TGA R/L4230	●	●	2.30							
TGA R/L4250	●	●	2.50							
TGA R/L4265	●	●	2.65	5.0	2.5	5.4	0.3	12.70	4.76	4
TGA R/L4270	●	●	2.70							
TGA R/L4280	●	●	2.80							
TGA R/L4300	●	●	3.00	5.0	2.5	5.4	0.3	12.70	4.76	4
TGA R/L4320	●	●	3.20							
TGA R/L4330	●	●	3.30	5.0	2.5	5.4	0.3	12.70	4.76	4
TGA R/L4350	●	●	3.50				0.3			
TGA R/L4370	●	●	3.70							
TGA R/L4390	●	●	3.90							
TGA R/L4400	●	●	4.00							
TGA R/L4410	●	●	4.10	5.0	2.5	5.4	0.4	12.70	4.76	4
TGA R/L4420	●	●	4.20							
TGA R/L4430	●	●	4.30							
TGA R/L4440	●	●	4.40							
TGA R/L4450	●	●	4.50							
TGA R/L4480	●	●	4.80						5.00	

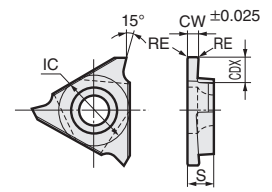


Diagram shows right hand (R) type.

\*Refer to the group numbers in the General Catalogue for information on the holders that can be used. Select applicable inserts for the holders by using matching group numbers.

TGA Type (insert for round grooves)

Dimensions (mm)

Cat. No.	NEW T2500Z		Width of Cut CW	Maximum Depth of Cut		Maximum Groove Depth CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	* Group No.
	R	L		External Turning	I.D.					
TGA R/L4050R	●		1.00	2.0	1.7	2.5	0.50	12.70	4.76	2
TGA R/L4075R	●		1.50				0.75			
TGA R/L4100R	●		2.00	3.5	2.5	3.9	1.00	12.70	4.76	3
TGA R/L4125R	●		2.50				1.25			
TGA R/L4150R	●		3.00	5.0	2.5	5.4	1.50	12.70	4.76	4
TGA R/L4200R	●		4.00				2.00			

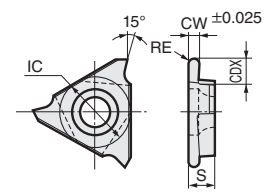


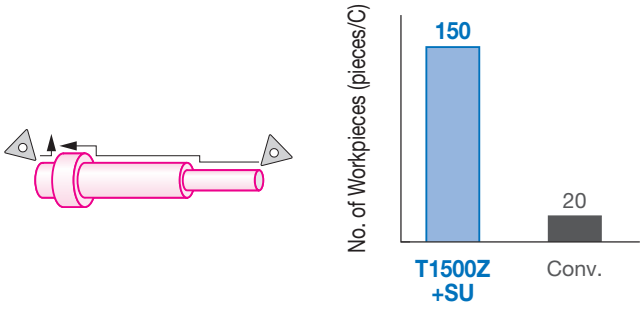
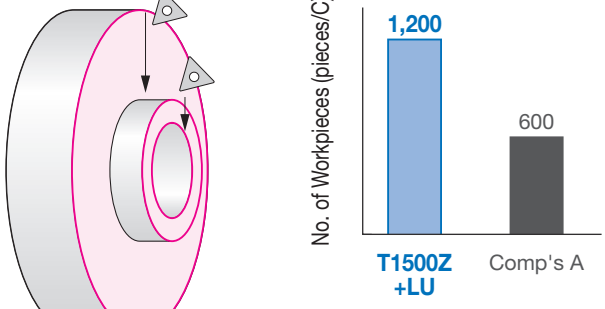
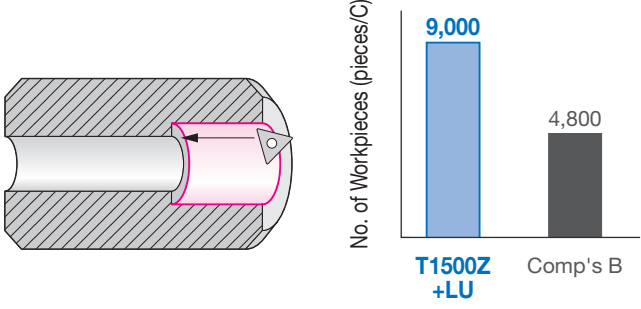
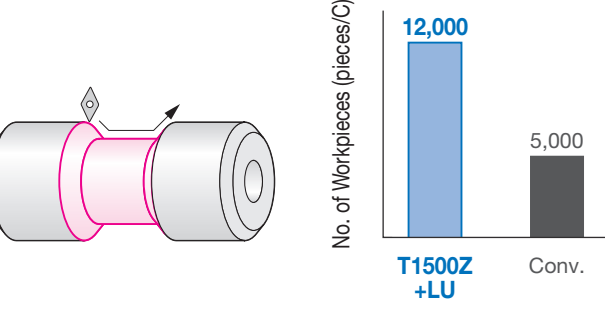
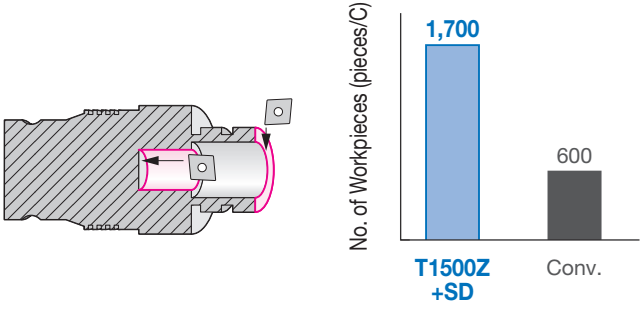
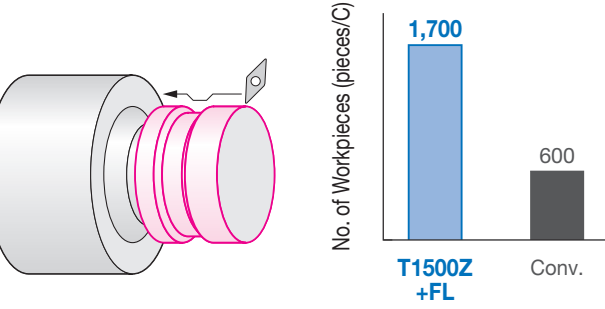
Diagram shows right hand (R) type.

\*Refer to the group numbers in the General Catalogue for information on the holders that can be used. Select applicable inserts for the holders by using matching group numbers.

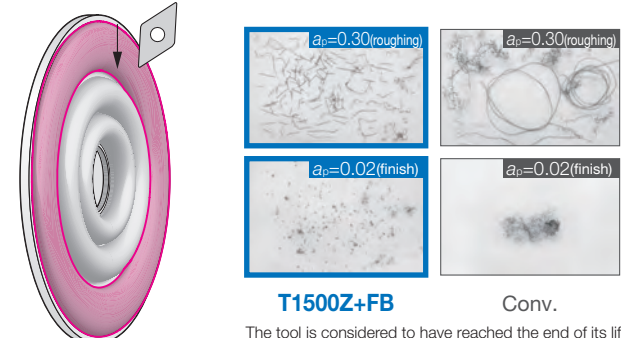
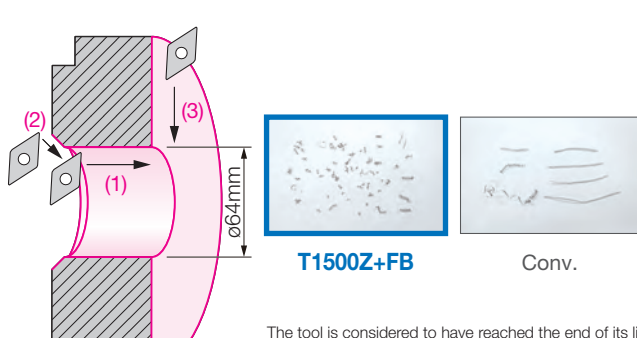
Refer to the General Catalogue for details on the holders of the products indicated on this page.

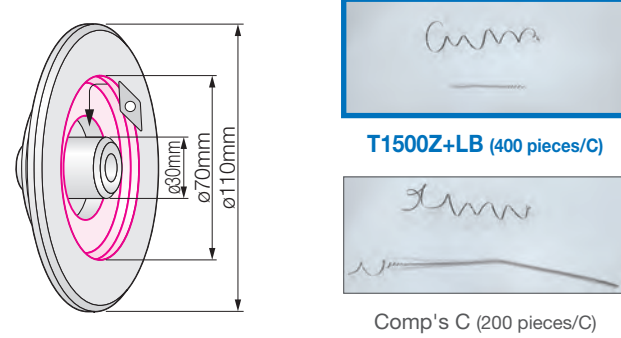
●: Standard stocked item    Blank: Made-to-order item

■ Example Use of T1500Z

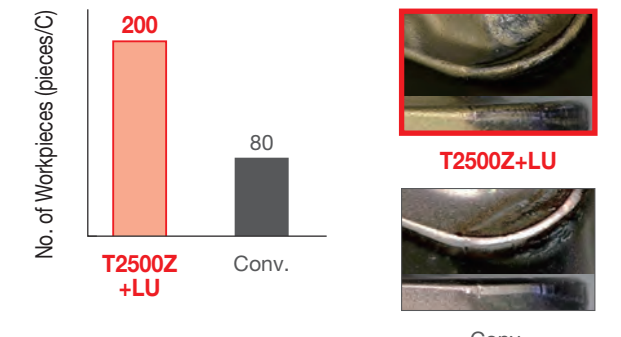
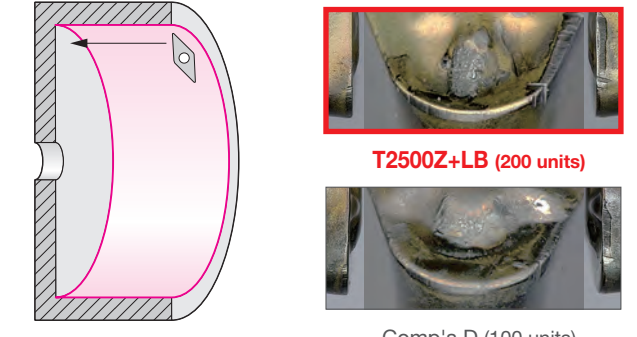
<p><b>SCM415 Shaft</b></p> <p>Outstanding wear resistance, 7.5x longer tool life</p>  <p>No. of Workpieces (pieces/C)</p> <p><b>150</b> T1500Z +SU</p> <p><b>20</b> Conv.</p>	<p><b>SCM420H Automotive Parts</b></p> <p>Suppresses wear, 2x longer tool life</p>  <p>No. of Workpieces (pieces/C)</p> <p><b>1,200</b> T1500Z +LU</p> <p><b>600</b> Comp's A</p>
<p>Insert: TNMG160408N-SU (T1500Z)            Cutting Conditions: <math>v_c=220\text{m/min}</math> <math>f=0.26</math> to <math>0.34\text{mm/rev}</math>  <math>a_p=0.20</math> to <math>0.25\text{mm}</math> Wet</p>	<p>Insert: TNMG160408N-LU (T1500Z)            Cutting Conditions: <math>v_c=200\text{m/min}</math> <math>f=0.15\text{mm/rev}</math>  <math>a_p=1.00\text{mm}</math> Wet</p>
<p><b>S48C Guide</b></p> <p>Good wear resistance, 1.9x longer tool life</p>  <p>No. of Workpieces (pieces/C)</p> <p><b>9,000</b> T1500Z +LU</p> <p><b>4,800</b> Comp's B</p>	<p><b>S45C Sleeve</b></p> <p>Suppresses wear, 2.4x longer tool life</p>  <p>No. of Workpieces (pieces/C)</p> <p><b>12,000</b> T1500Z +LU</p> <p><b>5,000</b> Conv.</p>
<p>Insert: TPMT090204N-LU (T1500Z)            Cutting Conditions: <math>v_c=162\text{m/min}</math> <math>f=0.13\text{mm/rev}</math> <math>a_p=0.55\text{mm}</math>            Wet</p>	<p>Insert: DCMT11T304N-LU (T1500Z)            Cutting Conditions: <math>v_c=230\text{m/min}</math> <math>f=0.10\text{mm/rev}</math> <math>a_p=0.50\text{mm}</math>            Wet</p>
<p><b>S43C Lower Shaft</b></p> <p>Good wear resistance, 2.8x longer tool life</p>  <p>No. of Workpieces (pieces/C)</p> <p><b>1,700</b> T1500Z +SD</p> <p><b>600</b> Conv.</p>	<p><b>S43C Mechanical Parts</b></p> <p>Suppresses wear, 2.8x longer tool life</p>  <p>No. of Workpieces (pieces/C)</p> <p><b>1,700</b> T1500Z +FL</p> <p><b>600</b> Conv.</p>
<p>Insert: CPGT080208N-SD (T1500Z)            Cutting Conditions: <math>v_c=140\text{m/min}</math> <math>f=0.15\text{mm/rev}</math> <math>a_p=0.50\text{mm}</math>            Wet</p>	<p>Insert: VNMG160408N-FL (T1500Z)            Cutting Conditions: <math>v_c=180\text{m/min}</math> <math>f=0.20\text{mm/rev}</math>  <math>a_p=0.20</math> to <math>0.90\text{mm}</math> Wet</p>

**Example Use of T1500Z**

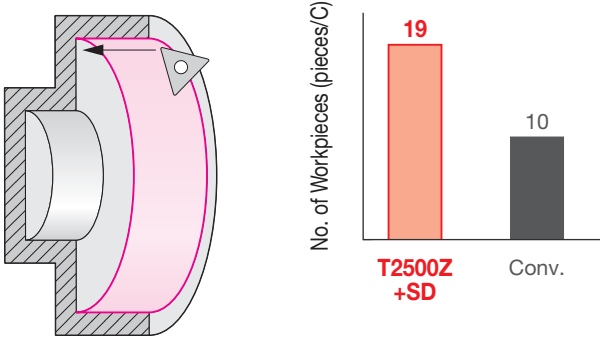
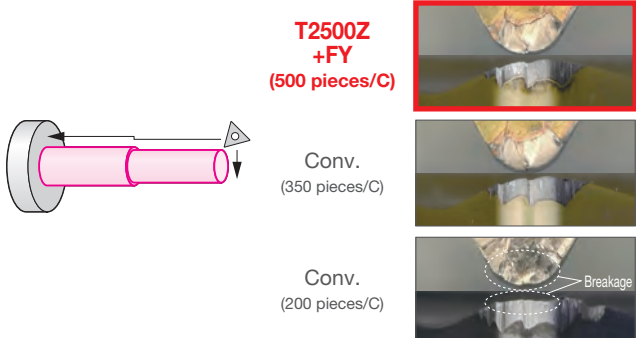
SAPH440 (Press Material) Piston Part	SCM420H Clutch Part
<p>Good chip control when used with the FB breaker</p>  <p><b>T1500Z+FB</b>      Conv.</p> <p>The tool is considered to have reached the end of its life when undulations occur in the surface finish</p>	<p>Good chip control when used with the FB breaker</p>  <p><b>T1500Z+FB</b>      Conv.</p> <p>The tool is considered to have reached the end of its life when the quality of the surface finish deteriorates (white blemishes, burrs, etc.)</p>
<p>Insert: DCMT11T308N-FB (T1500Z)            Cutting Conditions: <math>v_c=360\text{m/min}</math> <math>f=0.14\text{mm/rev}</math>  <math>a_p=0.30\text{mm}</math> (roughing) <math>0.02\text{mm}</math> (finish) Wet</p>	<p>Insert: DCMT11T304N-FB (T1500Z)            Cutting Conditions: <math>v_c=220\text{m/min}</math> <math>f=(1)0.15/(2)0.12/(3)0.18\text{mm/rev}</math>  <math>a_p=0.25\text{mm}</math> Wet</p>

S45C Hub
<p>Good chip control and 2x longer tool life when used with the LB breaker</p>  <p><b>T1500Z+LB (400 pieces/C)</b></p> <p>Comp's C (200 pieces/C)</p>
<p>Insert: VBMT160408N-LB (T1500Z)            Cutting Conditions: <math>v_c=240\text{m/min}</math> <math>f=0.25</math> to <math>0.28\text{mm/rev}</math>  <math>a_p=0.60\text{mm}</math> Wet</p>

**Example Use of T2500Z**

Iron Sheet Automotive Parts	SAPH440 Automotive Parts
<p>Brilliant Coat™ suppresses wear, 2.5x longer tool life</p>  <p><b>T2500Z+LU</b>      Conv.</p>	<p>Suppresses notch wear, 2x longer tool life</p>  <p><b>T2500Z+LB (200 units)</b></p> <p>Comp's D (100 units)</p>
<p>Insert: DCMT11T308N-LU (T2500Z)            Cutting Conditions: <math>v_c=450\text{m/min}</math> <math>f=0.10\text{mm/rev}</math>  <math>a_p=0.30</math> to <math>0.35\text{mm}</math> Wet</p>	<p>Insert: VBMT160408N-LB (T2500Z)            Cutting Conditions: <math>v_c=170\text{m/min}</math> <math>f=0.16\text{mm/rev}</math> <math>a_p=0.15\text{mm}</math>            Wet</p>

## Example Use of T2500Z

SCM435 Bar Material	S45C Bolts
<p>Good wear resistance due to Brilliant Coat™, 1.9x longer tool life</p>  <p>Insert: TPGT110302L-SD (T2500Z)            Cutting Conditions: <math>v_c=115\text{m/min}</math> <math>f=0.07\text{mm/rev}</math> <math>a_p=0.03\text{mm}</math>            Wet</p>	<p>Greater fracture resistance due to new tough substrate, 2.5x longer tool life</p>  <p>Insert: TNGG160404R-FY (T2500Z)            Cutting Conditions: <math>v_c=150\text{m/min}</math> <math>f=0.14\text{mm/rev}</math> <math>a_p=0.30\text{mm}</math>            Wet</p>

## Recommended Cutting Conditions for T1500Z/T2500Z

(Min.-Optimum-Max.)

Work Material	Application	Grade	Cutting Conditions		
			Depth of Cut $a_p$ (mm)	Feed Rate $f$ (mm/rev)	Cutting Speed $v_c$ (m/min)
Mild Steel (SS400, etc.)	Continuous to General	<b>T1500Z</b>	0.2-1.0-2.5	0.05-0.15-0.25	50-250-400
	Interrupted	<b>T1500Z</b> T2500Z	0.2-1.0-2.5	0.05-0.15-0.30	50-200-350
	Heavy Interrupted	<b>T2500Z</b>	0.2-1.0-2.5	0.10-0.15-0.35	50-200-300
Low Carbon Steel, Low Alloy steel (S10C, SCM415, etc.)	Continuous to General	<b>T1500Z</b>	0.2-1.0-2.5	0.05-0.15-0.25	50-200-350
	Interrupted	<b>T1500Z</b> T2500Z	0.2-1.0-2.5	0.05-0.15-0.30	50-180-300
	Heavy Interrupted	<b>T2500Z</b>	0.2-1.0-2.5	0.10-0.15-0.35	50-180-280
High Carbon Steel, High Alloy Steel (S45C, SCM440H, etc.)	Continuous to General	<b>T1500Z</b>	0.2-1.0-2.5	0.05-0.15-0.25	50-180-300
	Interrupted	<b>T1500Z</b> T2500Z	0.2-1.0-2.5	0.05-0.15-0.30	50-150-280
	Heavy Interrupted	<b>T2500Z</b>	0.2-1.0-2.5	0.10-0.15-0.35	50-150-250

### < SAFETY NOTES >



- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.

- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.

- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

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