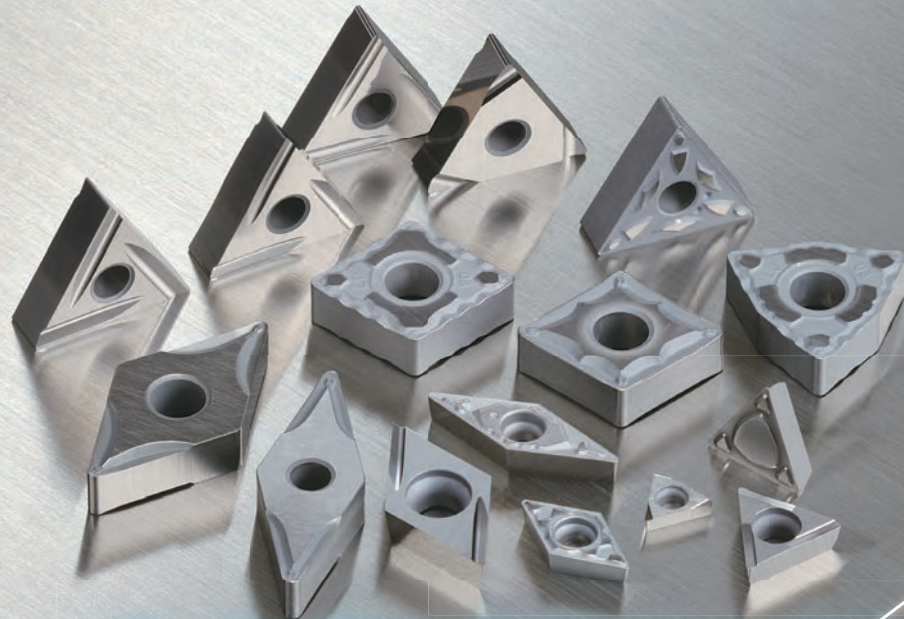
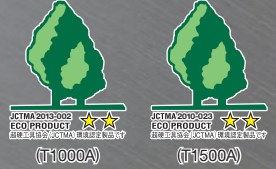


# T1000A/T1500A

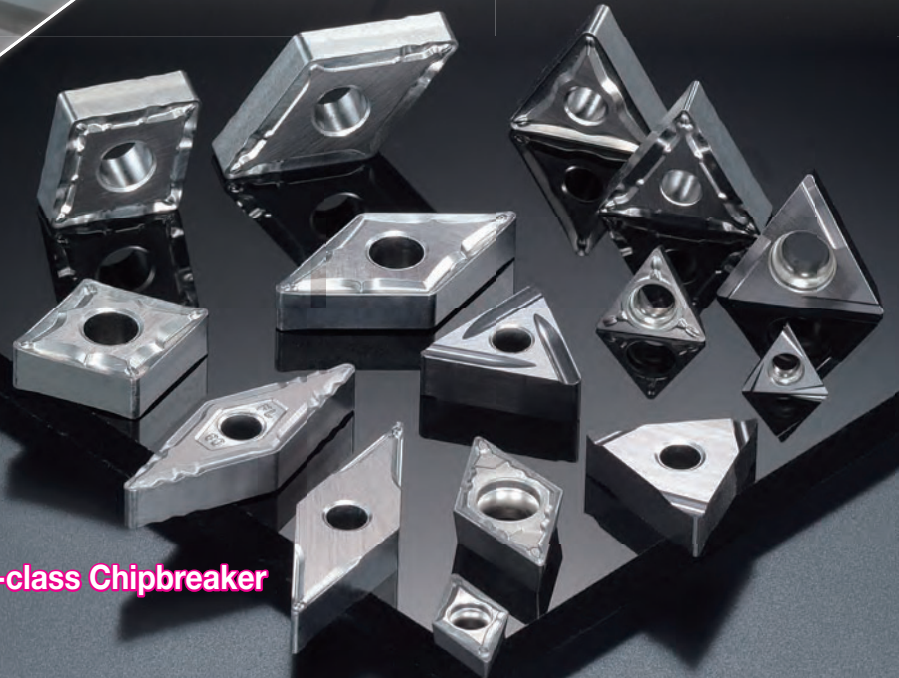
Rev. 5



**T1000A**  
Continuous & High-speed

Creating Beautiful Finishes with High Toughness  
**New Pretty, Tough Cermet Grade Series**

**T1500A**  
General Purpose



**New** General-purpose Positive M-class Chipbreaker  
**GU Type**  
**T1500A**

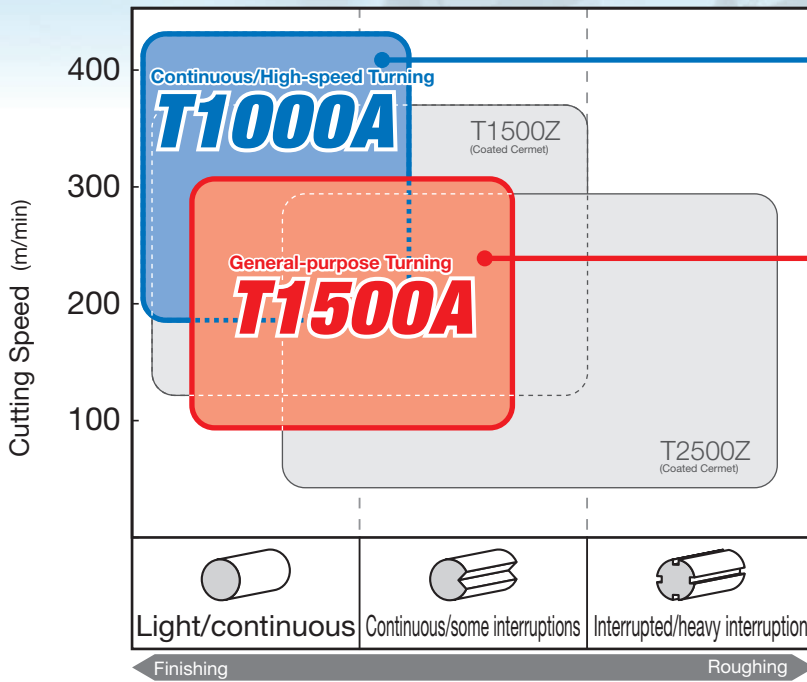
VIDEO OF CUTTING



Uncoated Cermet Grades for Steel Machining

# T1000A / T1500A

## Application Range



### T1000A

Un Coated P K Powdered Metal

An uncoated cermet grade that emphasizes wear resistance to achieve long tool life in continuous finishing and profile turning applications

### T1500A

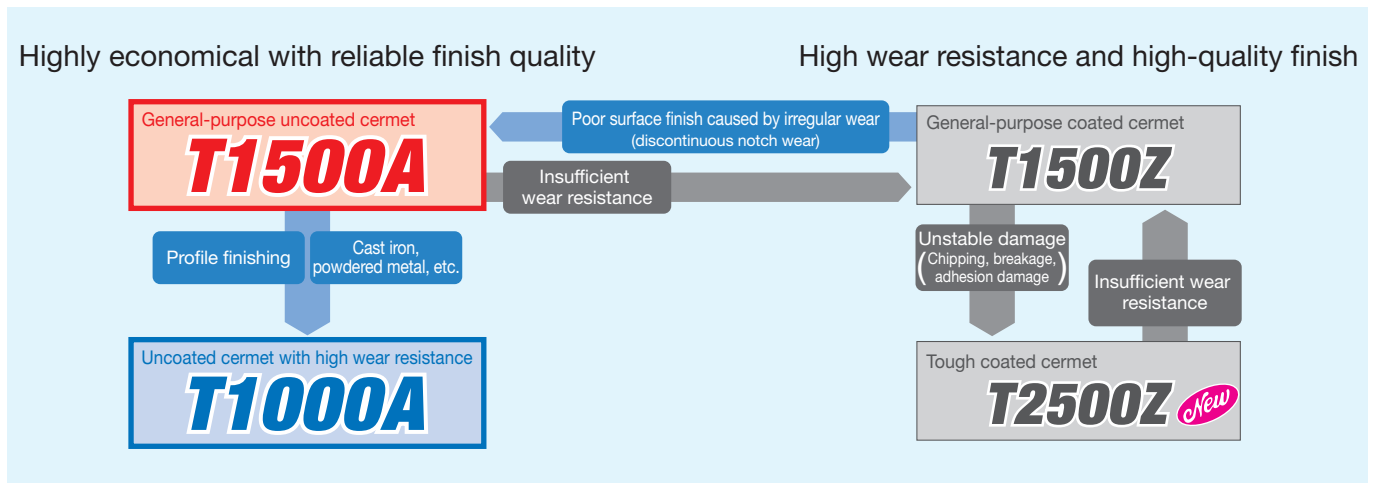
Un Coated P

General-purpose uncoated cermet grade with both excellent surface finish quality and cost performance

High wear resistance and high-quality finish

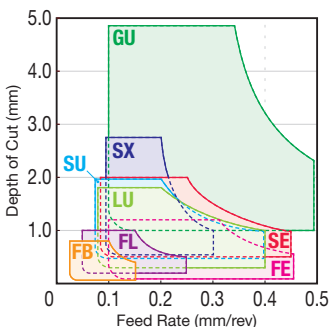
Tough Coated Cermet **T1500Z** Coated P  
 General-purpose Coated Cermet **T2500Z** Coated P

## Choosing a Cermet Grade (example)

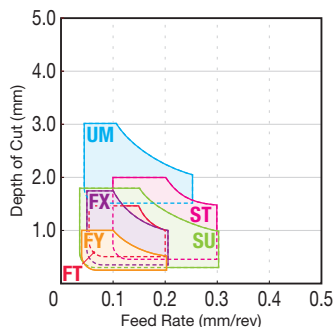


## Chipbreaker Application Range

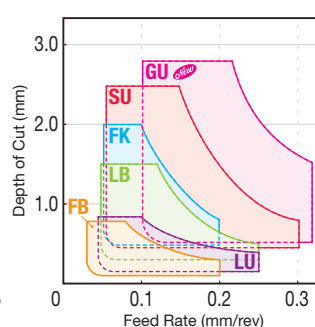
### ● Negative M-class



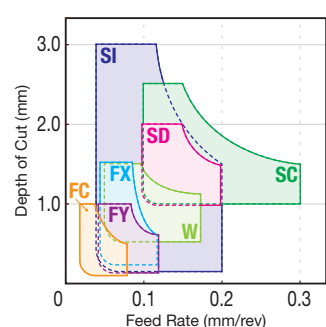
### ● Negative G-class



### ● Positive M-class



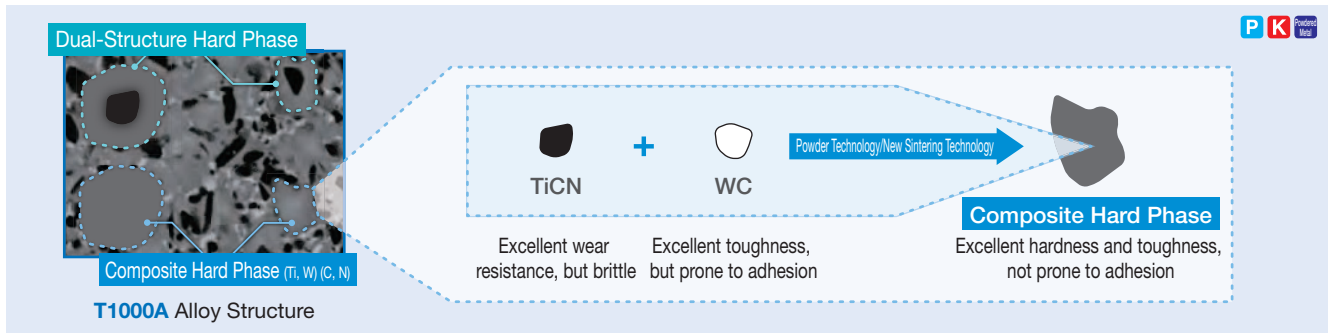
### ● Positive G-class





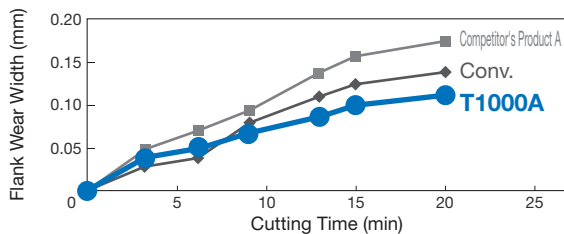
**Features of T1000A** Emphasis on ideal wear resistance for profiling and continuous high-speed machining

High-hardness cermet grade with excellent toughness and adhesion resistance due to composite hard phase  
 Ideal for fine finishing with ground type inserts  
 Meeting diverse needs with a wide selection that focuses on ground type inserts



**Comparison of Wear Resistance for T1000A**

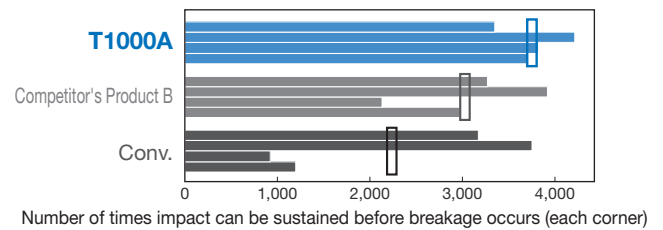
Exhibits excellent wear resistance



Work Material: SCM435 (Continuous Machining) Insert: CNMG120408N-SU (T1000A)  
 Cutting Conditions:  $v_c=320\text{m/min}$   $f=0.2\text{mm/rev}$   $a_p=1.5\text{mm}$  Dry

**Comparison of Fracture Resistance for T1000A**

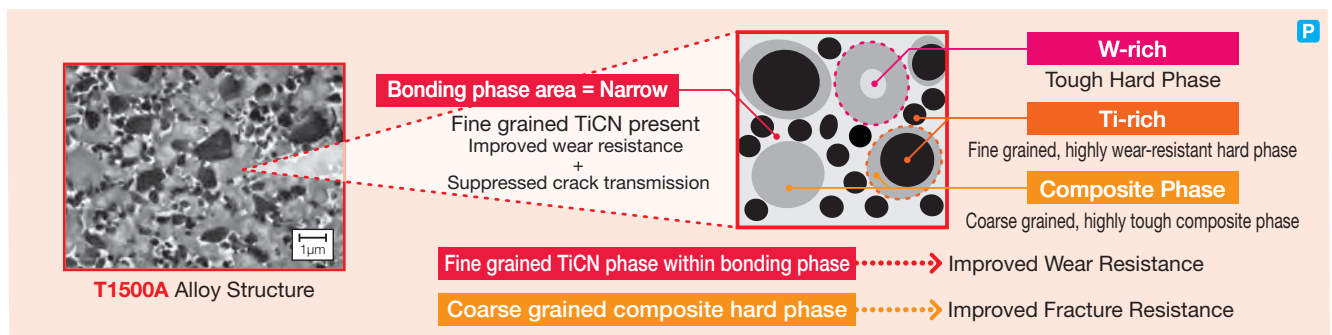
Excellent fracture resistance in addition to wear resistance



Work Material: SCM435 (Interrupted Machining) Insert: CNMG120408N-SU (T1000A)  
 Cutting Conditions:  $v_c=230\text{m/min}$   $f=0.2\text{mm/rev}$   $a_p=1.0\text{mm}$  Wet

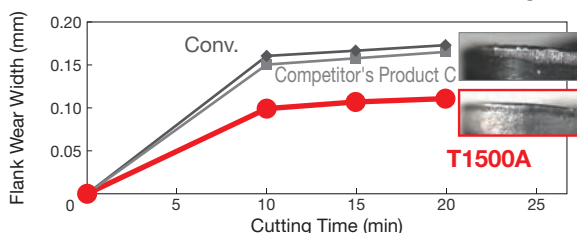
**Features of T1500A** Stable finish quality in finishing to medium cutting applications

Composite structure with varying grain sizes enables cermet with unprecedented fracture and wear resistance  
 3D chipbreaker exhibits superiority in applications where chip control is essential  
 Expanded lineup meets an even wider range of needs



**Comparison of Wear Resistance for T1500A**

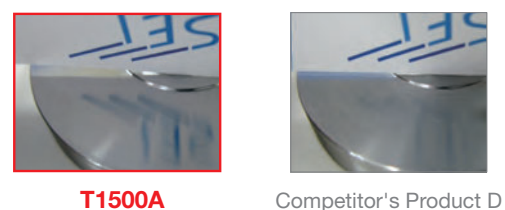
1.5x better wear resistance than conventional grades



Work Material: SCM435 (Continuous Machining) Insert: CNMG120408N-SU (T1500A)  
 Cutting Conditions:  $v_c=230\text{m/min}$   $f=0.2\text{mm/rev}$   $a_p=1.0\text{mm}$  Wet

**Comparison of Machined Surface for T1500A**












Excellent fracture resistance in addition to wear resistance




Work Material: S45C (Continuous Machining) Insert: DNMG150404N-LU (T1500A)  
 Cutting Conditions:  $v_c=150\text{m/min}$   $f=0.12\text{mm/rev}$   $a_p=0.10\text{mm}$  Wet

# T1000A/T1500A














## Negative 80° Diamond Type /M-class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	CNMG 090304N-FB	●	●	9.525	3.18	3.81	0.4
	090308N-FB	●	●				0.8
	CNMG 090404N-FB	●	●	9.525	4.76	3.81	0.4
	090408N-FB	●	●				0.8
	CNMG 120402N-FB	●	●				12.7
120404N-FB	●	●	0.4				
120408N-FB	●	●	0.8				
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	4.76	3.81	0.4
	090408N-FE	●	●				0.8
	CNMG 120402N-FE	●	●				12.7
	120404N-FE	●	●	0.4			
	120408N-FE	●	●	0.8			
120412N-FE	●	●	1.2				
	CNMG 090304N-LU	●	●	9.525	3.18	3.81	0.4
	090308N-LU	●	●				0.8
	CNMG 120402N-LU	●	●	12.7	4.76	5.16	0.2
	120404N-LU	●	●				0.4
	120408N-LU	●	●				0.8
	CNMG 120412N-LU	●	●	12.7	4.76	5.16	1.2
	CNMG 120404N-LUW	●	●				12.7
120408N-LUW	●	●	0.8				
120412N-LUW	●	●	1.2				
	CNMG 090404N-SU	●	●	9.525	4.76	3.81	0.4
	090408N-SU	●	●				0.8
	CNMG 120402N-SU	●	●	12.7	4.76	5.16	0.2
	120404N-SU	●	●				0.4
	120408N-SU	●	●				0.8
	120412N-SU	●	●	12.7	4.76	5.16	1.2
	CNMG 120404N-SE	●	●				12.7
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
	CNMG 120402N-GU	●	●	12.7	4.76	5.16	1.2
	090412N-GU	●	●				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)					
		T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	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
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		
	DNMG 110412N-FE	●	●	12.7	4.76	5.16	1.2		
	DNMG 150402N-FE	●	●				0.2		
	150404N-FE	●	●				0.4		
	150408N-FE	●	●	0.8					
	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 110404N-LU	●	●	9.525	4.76	3.81	0.4		
	110408N-LU	●	●				0.8		
	DNMG 150402N-LU	●	●	12.7	4.76	5.16	0.2		
	150404N-LU	●	●				0.4		
	150408N-LU	●	●				0.8		
	150412N-LU	●	●	12.7	4.76	5.16	1.2		
	DNMG 150402N-SU	●	●				12.7	4.76	5.16
150404N-SU	●	●	0.4						
150408N-SU	●	●	0.8						
	150412N-SU	●	●	12.7	4.76	5.16	1.2		
	DNMG 150604N-SU	●	●				12.7	6.35	5.16
150608N-SU	●	●	0.8						
	DNMG 150404N-SE	●	●	12.7	4.76	5.16			
	150408N-SE	●	●				0.8		
	150412N-SE	●	●	12.7	6.35	5.16	1.2		
	DNMG 150604N-SE	●	●				0.4		
	150608N-SE	●	●				0.8		
	150612N-SE	●	●	12.7	6.35	5.16	1.2		
	DNMX 150404N-SEW	●	●				12.7	4.76	5.16
150408N-SEW	●	●	0.8						
	DNMX 150604N-SEW	●	●	12.7	6.35	5.16			
	150608N-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 110404N-GU	●	●				9.525	4.76	3.81
110408N-GU	●	●	0.8						
	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		

## Negative 55° Diamond Type /G-class




	DNGG 150402N-SU	●	●	12.7	4.76	5.16	0.2
	150404N-SU	●	●				0.4
	150408N-SU	●	●				0.8
	DNGG 110404R-UM	●	●	9.525	4.76	3.81	0.4
	110404L-UM	●	●				0.4
	110408R-UM	●	●				0.8
	110408L-UM	●	●	0.8			
		DNGG 150404R-UM	●	●	12.7	4.76	5.16
150404L-UM		●	●	0.4			
150408R-UM		●	●	0.8			
150408L-UM		●	●	0.8			
	DNGA 150404	●	●	12.7	4.76	5.16	0.4
	150408	●	●				0.8

# T1000A/T1500A











## ○ Negative Square Type /M-class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	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
 SJ	SNMG 090304N-SJ		●	9.525	3.18	3.81	0.4
	SNMG 120404N-SJ		●	12.7	4.76	5.16	0.4
 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		●	12.7	4.76	5.16	0.4
	120408N-GU		●				0.8
 UM	SNMG 120404R-UM		●	12.7	4.76	5.16	0.4
	120404L-UM		●				0.4
	120408R-UM		●				0.8
	120408L-UM		●				0.8
	120412R-UM		●				1.2
	120412L-UM		●	1.2			

## ○ Negative Square Type /G-class

 ST	SNGG 090304R-ST	●	●	9.525	3.18	3.81	0.4
	090304L-ST	●	●				0.4
	090308R-ST	●	●				0.8
	090308L-ST	●	●				0.8
 UM	SNGG 120404R-UM	●	●	12.7	4.76	5.16	0.4
	120404L-UM	●	●				0.4
	120408R-UM	●	●				0.8
	120408L-UM	●	●				0.8
	120412R-UM	●	●				1.2
 UM	SNGA 120412	●		12.7	4.76	5.16	1.2








## △ Negative Triangular Type /M-class

Shape	Cat. No.	Stock		Dimensions (mm)				
		T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	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	●	●	12.7	4.76	5.16	0.8
	TNMG 220404R-UM	●	●	0.4				
	220404L-UM	●	●	0.4				
	220408R-UM	●	●	0.8				
	220408L-UM	●	●	0.8				


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

# T1000A/T1500A













## Negative Triangular Type/G-class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	TNGG 160402N-SU	●	●				0.2
	160404N-SU	●	●	9.525	4.76	3.81	0.4
	160408N-SU	●	●				0.8
	TNGG 160401R-FY	●	●				0.1
	160401L-FY	●	●				0.1
	160402R-FY	●	●				0.2
	160402L-FY	●	●				0.2
	160404R-FY	●	●	9.525	4.76	3.81	0.4
	160404L-FY	●	●				0.4
	160408R-FY	●	●				0.8
	160408L-FY	●	●				0.8
	160412R-FY	●	●				1.2
160412L-FY	●	●				1.2	
	TNGG 160402R-FX	●	●				0.2
	160402L-FX	●	●				0.2
	160404R-FX	●	●	9.525	4.76	3.81	0.4
	160404L-FX	●	●				0.4
	TNGG 110302R-FT	●	●				0.2
	110302L-FT	●	●				0.2
	110304R-FT	●	●	6.35	3.18	2.26	0.4
	110304L-FT	●	●				0.4
	TNGG 160302R-ST	●	●				0.2
	160302L-ST	●	●				0.2
	160304R-ST	●	●	9.525	3.18	3.81	0.4
	160304L-ST	●	●				0.4
	160308R-ST	●	●				0.8
	160308L-ST	●	●				0.8
	TNGG 160402R-ST	●	●				0.2
	160402L-ST	●	●				0.2
	160404R-ST	●	●	9.525	4.76	3.81	0.4
	160404L-ST	●	●				0.4
	160408R-ST	●	●				0.8
	160408L-ST	●	●				0.8
	160412R-ST	●	●				1.2
160412L-ST	●	●				1.2	
	TNGG 160402R-UM	●	●				0.2
	160402L-UM	●	●				0.2
	160404R-UM	●	●	9.525	4.76	3.81	0.4
	160404L-UM	●	●				0.4
	160408R-UM	●	●				0.8
	160408L-UM	●	●				0.8
	160412R-UM	●	●				1.2
	160412L-UM	●	●				1.2
	TNGG 220404R-UM	●	●				0.4
	220404L-UM	●	●	12.7	4.76	5.16	0.4
	220408R-UM	●	●				0.8
	220408L-UM	●	●				0.8
		TNGA 110308	●	●	6.35	3.18	2.26
TNGA 160404		●	●	9.525	4.76	3.81	0.4
160408		●	●				0.8


## Negative 35° Diamond Type/G-class

Shape	Cat. No.	Stock		Dimensions (mm)			
		T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	VNGG 160402N-SU	●	●				0.2
	160404N-SU	●	●	9.525	4.76	3.81	0.4
	160408N-SU	●	●				0.8


## Negative Trigon Type/M-class

	WNMG 060404N-FB	●	●	9.525	4.76	3.81	0.4
	060408N-FB	●	●				0.8
	WNMG 080402N-FB	●	●				0.2
	080404N-FB	●	●	12.7	4.76	5.16	0.4
	080408N-FB	●	●				0.8
	WNMG 080402N-FA	●	●				0.2
	080404N-FA	●	●	12.7	4.76	5.16	0.4
	080408N-FA	●	●				0.8
	WNMG 080404N-FL	●	●	12.7	4.76	5.16	0.4
	080408N-FL	●	●				0.8
	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
	080408N-FE	●	●				0.8
	080412N-FE	●	●				1.2
	WNMG 080404N-LU	●	●	12.7	4.76	5.16	0.4
	080408N-LU	●	●				0.8
	080412N-LU	●	●				1.2
	WNMG 060404N-LUW	●	●	9.525	4.76	3.81	0.4
	060408N-LUW	●	●				0.8
	WNMG 080404N-LUW	●	●	12.7	4.76	5.16	0.4
	080408N-LUW	●	●				0.8
	080412N-LUW	●	●				1.2
	WNMG 080404N-SU	●	●	12.7	4.76	5.16	0.4
	080408N-SU	●	●				0.8
	080412N-SU	●	●				1.2
	WNMG 080404N-SE	●	●	12.7	4.76	5.16	0.4
	080408N-SE	●	●				0.8
	WNMG 080404N-SEW	●	●	12.7	4.76	5.16	0.4
	080408N-SEW	●	●				0.8
	WNMG 080404N-SX	●	●	12.7	4.76	5.16	0.4
	080408N-SX	●	●				0.8
	WNMG 080404N-GU	●	●	12.7	4.76	5.16	0.4
	080408N-GU	●	●				0.8


## Negative Trigon Type/G-class

	VNGG 080404N-SU	●	●	12.7	4.76	5.16	0.4
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





## Negative Square Type/M-class (Without Hole)

	SNMN 120408	●	●	12.7	4.76		0.8
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## Negative Square Type/G-class (Without Hole)

	SNGN 120408	●	●	12.7	4.76		0.8
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## Negative 35° Diamond Type/M-class






















	VNMG 160404N-FB	●	●	9.525	4.76	3.81	0.4
	160408N-FB	●	●				0.8
	VNMG 160404N-FA	●	●	9.525	4.76	3.81	0.4
	160408N-FA	●	●				0.8
	VNMG 160404N-FL	●	●	9.525	4.76	3.81	0.4
	160408N-FL	●	●				0.8
	VNMG 160402N-FE	●	●				0.2
	160404N-FE	●	●	9.525	4.76	3.81	0.4
	160408N-FE	●	●				0.8
	160412N-FE	●	●				1.2
	VNMG 160402N-LU	●	●				0.2
	160404N-LU	●	●	9.525	4.76	3.81	0.4
	160408N-LU	●	●				0.8
	VNMG 160402N-SU	●	●				0.2
	160404N-SU	●	●	9.525	4.76	3.81	0.4
	160408N-SU	●	●				0.8
	VNMG 160404N-SE	●	●	9.525	4.76	3.81	0.4
	160408N-SE	●	●				0.8
	VNMG 160404N-SX	●	●	9.525	4.76	3.81	0.4
	160408N-SX	●	●				0.8
	VNMG 160404N-GU	●	●	9.525	4.76	3.81	0.4
	160408N-GU	●	●				0.8

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











# T1000A/T1500A

## Positive 80° Diamond Type/M-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
 FB	7°	CCMT 060202N-FB	●	●	6.35	2.38	2.8	0.2
		060204N-FB	●	●				0.4
		CCMT 09T302N-FB	●	●	9.525	3.97	4.4	0.2
		09T304N-FB	●	●				0.4
 LU	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
 LUW	7°	09T308N-LU	●	●				0.8
		CCMT 09T304N-LUW	●	●	9.525	3.97	4.4	0.4
 FP	7°	09T308N-LUW	●	●				0.8
		CCMT 060202N-FP	●	●	6.35	2.38	2.8	0.2
 FP	7°	060208N-FP	●	●				0.8
		CCMT 09T302N-FP	●	●	9.525	3.97	4.4	0.2
 FP	7°	09T304N-FP	●	●				0.4
		CCMT 120404N-FP	●	●	12.7	4.76	5.5	0.4
 FP	7°	120408N-FP	●	●				0.8
		CCMT 060202N-LB	●	●	6.35	2.38	2.8	0.2
 LB	7°	060204N-LB	●	●				0.4
		060208N-LB	●	●				0.8
		CCMT 09T302N-LB	●	●	9.525	3.97	4.4	0.2
		09T304N-LB	●	●				0.4
 SU	7°	09T308N-LB	●	●				0.8
		CCMT 060202N-SU	●	●	6.35	2.38	2.8	0.2
		060204N-SU	●	●				0.4
 SU	7°	060208N-SU	●	●				0.8
		CCMT 09T302N-SU	●	●	9.525	3.97	4.4	0.2
		09T304N-SU	●	●				0.4
 GU	7°	09T308N-SU	●	●				0.8
		CCMT 060204N-GU	●	●	6.35	2.38	2.8	0.4
 GU	7°	060208N-GU	●	●				0.8
		CCMT 09T304N-GU	●	●	9.525	3.97	4.4	0.4
 GU	7°	09T308N-GU	●	●				0.8
		CPMT 080204N-FB	●	●	7.94	2.38	3.4	0.4
 FB	11°	090304N-FB	●	●	9.525	3.18	4.4	0.4
		090308N-FB	●	●				0.8
 LU	11°	CPMT 080204N-LU	●	●	7.94	2.38	3.4	0.4
		090304N-LU	●	●	9.525	3.18	4.4	0.4
 LU	11°	090308N-LU	●	●				0.8
		CPMT 090304N-LUW	●	●	9.525	3.18	4.4	0.4
 LUW	11°	090308N-LUW	●	●				0.8
		CPMT 080204N-LB	●	●	7.94	2.38	3.4	0.4
 LB	11°	090304N-LB	●	●	9.525	3.18	4.4	0.4
		090308N-LB	●	●				0.8
 SU	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
 SU	11°	090308N-SU	●	●				0.8
		CPMT 090304N-GU	●	●	9.525	3.18	4.4	0.4
 GU	11°	090308N-GU	●	●				0.8

## Positive 80° Diamond Type/G-class


Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
 FC	7°	CCGT 060201MN-FC	●	●	6.35	2.38	2.8	< 0.1
		060202MN-FC	●	●				< 0.2
		060204MN-FC	●	●				< 0.4
		CCGT 09T301MN-FC	●	●	9.525	3.97	4.4	< 0.1
 FX	7°	09T302MN-FC	●	●				< 0.2
		09T304MN-FC	●	●				< 0.4
		CCGT 0602003R-FX	●	●	6.35	2.38	2.8	0.03
		0602003L-FX	●	●				0.03
		060201R-FX	●	●				0.1
		060201L-FX	●	●				0.1
		060202R-FX	●	●				0.2
		060202L-FX	●	●				0.2
		060204R-FX	●	●				0.4
		060204L-FX	●	●				0.4
 FY	7°	CCGT 09T3003R-FX	●	●	9.525	3.97	4.4	0.03
		09T3003L-FX	●	●				0.03
		09T301R-FX	●	●				0.1
		09T301L-FX	●	●				0.1
		09T302R-FX	●	●				0.2
		09T302L-FX	●	●				0.2
		CCGT 03X101R-FY	●	●	3.5	1.4	1.8	0.1
		03X101L-FY	●	●				0.1
		03X102R-FY	●	●				0.2
		03X102L-FY	●	●				0.2
 FY	7°	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
 SI	7°	CCGT 09T301MN-SI	●	●	9.525	3.97	4.4	< 0.1
		09T302MN-SI	●	●				< 0.2
		09T304MN-SI	●	●				< 0.4
 SC	7°	CCGT 0602003N-SC	●	●	6.35	2.38	2.8	0.03
		CCGT 060201MN-SC	●	●				< 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
		CCGT 09T3003N-SC	●	●	9.525	3.97	4.4	0.03
		CCGT 09T301MN-SC	●	●	9.525	3.97	4.4	< 0.1
 FX	11°	09T302MN-SC	●	●				< 0.2
		CPGT 060204L-FX	●	●	6.35	2.38	2.8	0.4
 SD	11°	CPGT 080202N-SD	●	●	7.94	2.38	3.4	0.2
		080204N-SD	●	●				0.4
		080208N-SD	●	●				0.8
		CPGT 090302N-SD	●	●	9.525	3.18	4.4	0.2
		090304N-SD	●	●				0.4
		090308N-SD	●	●				0.8
		CPGT 120402N-SD	●	●	12.7	4.76	5.5	0.2
		120404N-SD	●	●				0.4
120408N-SD	●	●				0.8		

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











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

# T1000A/T1500A













## Positive 80° Diamond Type/E-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	7°	CCET 03X1003R-FY	●	●	3.5	1.4	1.8	0.03
		03X1003L-FY	●	●				0.03
		03X101R-FY	●	●				0.1
		03X101L-FY	●	●				0.1
		03X102R-FY	●	●				0.2
		03X102L-FY	●	●				0.2
		03X104R-FY	●	●	0.4			
		03X104L-FY	●	●	0.4			
		CCET 04X1003R-FY	●	●	4.3	1.8	2.3	0.03
		04X1003L-FY	●	●				0.03
		04X101R-FY	●	●				0.1
		04X101L-FY	●	●				0.1
04X102R-FY	●	●	0.2					
04X102L-FY	●	●	0.2					
04X104R-FY	●	●	0.4					
04X104L-FY	●	●	0.4					
CCET 060201R-FY	●	●	6.35	2.38	2.8	0.1		
060201L-FY	●	●				0.1		
060202R-FY	●	●				0.2		
060202L-FY	●	●				0.2		
CCET 09T301R-FY	●	●	9.525	3.97	4.4	0.1		
09T301L-FY	●	●				0.1		
09T302R-FY	●	●				0.2		
09T302L-FY	●	●				0.2		

## Positive 55° Diamond Type/M-class

	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			
		070208N-LU	●	●				0.8			
	7°	DCMT 11T302N-LU	●	●	9.525	3.97	4.4	0.2			
		11T304N-LU	●	●				0.4			
		11T308N-LU	●	●				0.8			
	7°	DCMT 070202N-FP	●	●	6.35	2.38	2.8	0.2			
		070204N-FP	●	●				0.4			
		070208N-FP	●	●				0.8			
	7°	DCMT 11T308N-FP	●	●	9.525	3.97	4.4	0.8			
		DCMT 070202N-LB	●	●				6.35	2.38	2.8	0.2
		070204N-LB	●	●							0.4
070208N-LB	●	●	0.8								
	7°	DCMT 11T302N-LB	●	●	9.525	3.97	4.4	0.2			
		11T304N-LB	●	●				0.4			
		11T308N-LB	●	●				0.8			
	7°	DCMT 070202N-SU	●	●	6.35	2.38	2.8	0.2			
		070204N-SU	●	●				0.4			
		070208N-SU	●	●				0.8			
	7°	DCMT 11T302N-SU	●	●	9.525	3.97	4.4	0.2			
		11T304N-SU	●	●				0.4			
		11T308N-SU	●	●				0.8			
	7°	DCMT 070204N-GU	●	●	6.35	2.38	2.8	0.4			
		070208N-GU	●	●				0.8			
		DCMT 11T302N-GU	●	●				9.525	3.97	4.4	0.2
11T304N-GU	●	●	0.4								
11T308N-GU	●	●	0.8								

## Positive 55° Diamond Type/G-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)								
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius					
	7°	DCGT 070201MN-FC	●	●	6.35	2.38	2.8	< 0.1					
		070202MN-FC	●	●				< 0.2					
		070204MN-FC	●	●				< 0.4					
	7°	DCGT 11T301MN-FC	●	●	9.525	3.97	4.4	< 0.1					
		11T302MN-FC	●	●				< 0.2					
		11T304MN-FC	●	●				< 0.4					
	7°	DCGT 0702003R-FX	●	●	6.35	2.38	2.8	0.03					
		0702003L-FX	●	●				0.03					
		070201R-FX	●	●				0.1					
		070201L-FX	●	●				0.1					
		070202R-FX	●	●				0.2					
		070202L-FX	●	●				0.2					
		070204R-FX	●	●	0.4								
		070204L-FX	●	●	0.4								
			7°	DCGT 11T3003R-FX	●	●	9.525	3.97	4.4	0.03			
				11T3003L-FX	●	●				0.03			
				11T301R-FX	●	●				0.1			
				11T301L-FX	●	●				0.1			
11T302R-FX	●			●	0.2								
11T302L-FX	●			●	0.2								
	7°	DCGT 070201R-FY	●	●	6.35	2.38	2.8	0.1					
		070201L-FY	●	●				0.1					
		070202R-FY	●	●				0.2					
		070202L-FY	●	●				0.2					
		070204R-FY	●	●				0.4					
		070204L-FY	●	●				0.4					
			7°	DCGT 11T301R-FY	●	●	9.525	3.97	4.4	0.1			
				11T301L-FY	●	●				0.1			
				11T302R-FY	●	●				0.2			
				11T302L-FY	●	●				0.2			
				11T304R-FY	●	●				0.4			
				11T304L-FY	●	●				0.4			
	7°	DCGT 070202R-SD	●	●	6.35	2.38	2.8	0.2					
		070202L-SD	●	●				0.2					
		070204R-SD	●	●				0.4					
		070204L-SD	●	●				0.4					
			7°	DCGT 11T304R-SD				●	●	9.525	3.97	4.4	0.4
				11T304L-SD				●	●				0.4
11T308R-SD	●			●	0.8								
11T308L-SD	●	●	0.8										
	7°	DCGT 070201MN-SI	●	●	6.35	2.38	2.8	< 0.1					
		070202MN-SI	●	●				< 0.2					
		070204MN-SI	●	●				< 0.4					
			7°	DCGT 11T301MN-SI				●	●	9.525	3.97	4.4	< 0.1
				11T302MN-SI				●	●				< 0.2
				11T304MN-SI				●	●				< 0.4
11T308MN-SI	●	●	< 0.8										
	7°	DCGT 0702003N-SC	●	●	6.35	2.38	2.8	0.03					
		DCGT 070201MN-SC	●	●				< 0.1					
		070202MN-SC	●	●				< 0.2					
		070204MN-SC	●	●				< 0.4					
		DCGT 090201MN-SC	●	●				< 0.1					
		090202MN-SC	●	●				< 0.2					
			7°	DCGT 110301MN-SC	●	●	9.525	3.18	4.4	< 0.1			
				110302MN-SC	●	●				< 0.2			
				DCGT 11T3003N-SC	●	●				9.525	3.97	4.4	0.03
				DCGT 11T301MN-SC	●	●				< 0.1			
				11T302MN-SC	●	●				< 0.2			
				11T304MN-SC	●	●				< 0.4			
11T308MN-SC	●	●	< 0.8										

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

● mark: Standard stocked item ● mark: Standard stocked item (expanded item) Blank: Made-to-order item



# T1000A/T1500A

## Positive Square Type/M-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	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-FP	●	●	9.525	3.97	4.4	0.4
		09T308N-FP	●	●				0.8
		SCMT 120404N-FP	●	●				12.7
	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

Shape	Relief Angle	Cat. No.	Stock		Inscribed Circle	Thickness	Hole Dia.	Nose Radius			
			T1000A	T1500A							
	7°	SCGT 070201MN-SC	●	●	7.94	2.38	3.4	< 0.1			
		070202MN-SC	●	●				< 0.2			
		SCGT 090301MN-SC	●	●				9.525	3.18	4.4	< 0.1
		090302MN-SC	●	●							< 0.2
		SCGT 09T301MN-SC	●	●							< 0.1
	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 Triangular Type/M-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	7°	TCMT 110204N-FB	●	●	6.35	2.38	2.8	0.4
		110208N-FB	●	●				0.8
	7°	TCMT 110204N-LU	●	●	6.35	2.38	2.8	0.4
		110208N-LU	●	●				0.8
	7°	TCMT 110204N-FP	●	●	6.35	2.38	2.8	0.4
		110208N-FP	●	●				0.8
		TCMT 16T304N-FP	●	●				9.525
	7°	TCMT 110204N-LB	●	●	6.35	2.38	2.8	0.4
		110208N-LB	●	●				0.8
	11°	TPMT 080202N-FB	●	●	4.76	2.38	2.4	0.2
		080204N-FB	●	●				0.4
		TPMT 090202N-FB	●	●	5.56	2.38	2.8	0.2
		090204N-FB	●	●				0.4
		TPMT 110302N-FB	●	●	6.35	3.18	3.4	0.2
		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	4.76	4.4	0.4
160408N-FB	●	●	0.8					
	11°	TPMT 080202N-LU	●	●	4.76	2.38	2.4	0.2
		080204N-LU	●	●				0.4
		TPMT 090202N-LU	●	●	5.56	2.38	2.8	0.2
		090204N-LU	●	●				0.4
	11°	TPMT 110302N-LU	●	●	6.35	3.18	3.4	0.2
		110304N-LU	●	●				0.4
		110308N-LU	●	●				0.8
	11°	TPMT 110308N-FK	●	●	6.35	3.18	3.4	0.8
		TPMT 160404N-FK	●	●				9.525
		160408N-FK	●	●	0.8			
		TPMT 080202N-LB	●	●	4.76	2.38	2.4	0.2
		080204N-LB	●	●				0.4
		TPMT 090202N-LB	●	●	5.56	2.38	2.8	0.2
		090204N-LB	●	●				0.4
		TPMT 110302N-LB	●	●	6.35	3.18	3.4	0.2
		110304N-LB	●	●				0.4
		110308N-LB	●	●				0.8
TPMT 160304N-LB	●	●	9.525	3.18	4.4	0.4		
160308N-LB	●	●				0.8		
TPMT 160404N-LB	●	●	9.525	4.76	4.4	0.4		
160408N-LB	●	●				0.8		
	11°	TPMT 080202N-SU	●	●	4.76	2.38	2.4	0.2
		080204N-SU	●	●				0.4
		TPMT 110302N-SU	●	●	6.35	3.18	3.4	0.2
		110304N-SU	●	●				0.4
110308N-SU	●	●	0.8					
TPMT 160404N-SU	●	●	9.525	4.76	4.4	0.4		
160408N-SU	●	●				0.8		
	11°	TPMT 110304N-GU	●	●	6.35	3.18	3.4	0.4
		110308N-GU	●	●				0.8
		TPMT 160404N-GU	●	●	9.525	4.76	4.4	0.4
		160408N-GU	●	●				0.8

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

● mark: Standard stocked item ● mark: Standard stocked item (expanded item) Blank: Made-to-order item

# T1000A/T1500A

## Positive Triangular Type/G-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)						
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius			
	5°	TBGT 060102R-FW	●	●	3.97	1.59	2.2	0.2			
		060102L-FW	●	●				0.2			
		060104R-FW	●	●				0.4			
		060104L-FW	●	●				0.4			
	5°	TBGT 060102R-FY	●	●	3.97	1.59	2.2	0.2			
		060102L-FY	●	●				0.2			
		060104R-FY	●	●				0.4			
		060104L-FY	●	●				0.4			
	5°	TBGT 060102R-W	●	●	3.97	1.59	2.2	0.2			
		060102L-W	●	●				0.2			
		060104R-W	●	●				0.4			
		060104L-W	●	●				0.4			
	5°	TBGW 060102	●	●	3.97	1.59	2.2	0.2			
		060104	●	●				0.4			
	7°	TCGT 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			
	7°	TCGT 110204MN-SI	●	●	6.35	2.38	2.8	< 0.4			
	7°	TCGT 080201MN-SC	●	●	5.56	2.38	2.5	< 0.1			
		080202MN-SC	●	●				< 0.2			
		TCGT 090201MN-SC	●	●				< 0.1			
		090202MN-SC	●	●				< 0.2			
		TCGT 110201MN-SC	●	●				< 0.1			
		110202MN-SC	●	●				< 0.2			
	11°	TPGT 110302MN-FC	●	●	6.35	3.18	3.4	< 0.2			
		110304MN-FC	●	●				< 0.4			
	11°	TPGT 080202R-FW	●	●	4.76	2.38	2.4	0.2			
		080202L-FW	●	●				0.2			
		080204R-FW	●	●				0.4			
		080204L-FW	●	●				0.4			
		TPGT 110202R-FW	●	●				6.35	2.38	2.8	0.2
		110202L-FW	●	●							0.2
110204R-FW	●	●	0.4								
	11°	TPGT 090204L-FX	●	●	5.56	2.38	2.3	0.4			
	11°	TPGT 080202R-FY	●	●	4.76	2.38	2.4	0.2			
		080202L-FY	●	●				0.2			
		080204R-FY	●	●				0.4			
		080204L-FY	●	●				0.4			
		TPGT 090202R-FY	●	●				5.56	2.38	2.3	0.2
		090202L-FY	●	●							0.2
		090204R-FY	●	●	0.4						
		TPGT 110202R-FY	●	●	6.35	2.38	2.8	0.2			
			110202L-FY	●				●	0.2		
			110204R-FY	●				●	0.4		
			110204L-FY	●				●	0.4		
			110208R-FY	●				●	0.8		
			110208L-FY	●				●	0.8		
		TPGT 110302R-FY	●	●	6.35	3.18	3.4	0.2			
			110302L-FY	●				●	0.2		
			110304R-FY	●				●	0.4		
			110304L-FY	●				●	0.4		
			110308R-FY	●				●	0.8		
110308L-FY	●		●	0.8							
	11°	TPGT 080202R-W	●	●	4.76	2.38	2.4	0.2			
		080202L-W	●	●				0.2			
		080204R-W	●	●				0.4			
		080204L-W	●	●				0.4			

## Positive Triangular Type/G-class (continued)

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)				
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius	
	11°	TPGT 110302R-SD	●	●	6.35	3.18	3.4	0.2	
		110302L-SD	●	●				0.2	
		110304R-SD	●	●				0.4	
		110304L-SD	●	●				0.4	
		110308R-SD	●	●				0.8	
		110308L-SD	●	●	0.8				
		TPGT 160402R-SD	●	●	9.525	4.76	4.4	0.2	
			160402L-SD	●				●	0.2
			160404R-SD	●				●	0.4
			160404L-SD	●				●	0.4
160408R-SD	●		●	0.8					
160408L-SD	●	●	0.8						
	11°	TPGX 160404R-SDW	●	●	9.525	4.76	4.4	0.4	
		160404L-SDW	●	●				0.4	
		160408R-SDW	●	●				0.8	
		160408L-SDW	●	●				0.8	
	11°	TPGW 080202	●	●	4.76	2.38	2.4	0.2	
		TPGW 110304	●	●	6.35	3.18	3.4	0.4	
		110308	●	●	6.35	3.18	3.4	0.8	

## Positive 35° Diamond Type/M-class




Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	5°	VBMT 110302N-FB	●	●	6.35	3.18	2.8	0.2
		110304N-FB	●	●				0.4
		110308N-FB	●	●				0.8
	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
	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
		VBMT 160404N-LB	●	●				9.525
160408N-LB	●	●	0.8					
	5°	VBMT 160404N-SU	●	●	9.525	4.76	4.4	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	●	●				9.525
160408N-GU	●	●	0.8					
	7°	VCMT 080202N-FB	●	●	4.76	2.38	2.3	0.2
		080204N-FB	●	●				0.4
		VCMT 160404N-FB	●	●				9.525
160408N-FB	●	●	0.8					
	7°	VCMT 160404N-LU	●	●	9.525	4.76	4.4	0.4
		160408N-LU	●	●				0.8
	7°	VCMT 080202N-LB	●	●	4.76	2.38	2.3	0.2
		080204N-LB	●	●				0.4
		VCMT 160404N-LB	●	●				9.525
160408N-LB	●	●	0.8					

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


● mark: Standard stocked item ● mark: Standard stocked item (expanded item) Blank: Made-to-order item : Wiper insert

# T1000A/T1500A


## Positive 35° Diamond Type/G-class

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)								
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius					
	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					
FX	5°	VBGT 160402R-FX	●	●	9.525	4.76	4.4	0.2					
		160402L-FX	●	●				0.2					
		160404R-FX	●	●				0.4					
		160404L-FX	●	●				0.4					
			5°	VBGT 110301R-FY				●	●	6.35	3.18	2.8	0.1
				110301L-FY				●	●				0.1
110302R-FY	●			●	0.2								
FY	5°	110302L-FY	●	●	0.2								
			7°	VCGT 110301R-FC	●	●	6.35	3.18	2.8	< 0.1			
				110302MN-FC	●	●				< 0.2			
110304MN-FC	●			●	< 0.4								
FC	7°	VCGT 110301R-FX	●	●	6.35	3.18	2.8	0.1					
		110301L-FX	●	●				0.1					
		110302R-FX	●	●				0.2					
		110302L-FX	●	●				0.2					
SI	7°	VCGT 110301MN-SI	●	●	6.35	3.18	2.8	< 0.1					
		110302MN-SI	●	●				< 0.2					
		110304MN-SI	●	●				< 0.4					
		110308MN-SI	●	●				< 0.8					
	7°	VCGT 160401MN-SI	●	●	9.525	4.76	4.4	< 0.1					
		160402MN-SI	●	●				< 0.2					
		160404MN-SI	●	●				< 0.4					
		160404MN-SI	●	●				< 0.4					



## Positive Trigon Type/M-class

Shape	Relief Angle	Cat. No.	T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	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

Shape	Relief Angle	Cat. No.	T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius			
	5°	WBGT 060102R-FW	●	●	3.97	1.59	2.2	0.2			
		060102L-FW	●	●				0.2			
		060104R-FW	●	●				0.4			
		060104L-FW	●	●				0.4			
		WBGT 080202R-FW	●	●				4.76	2.38	2.4	0.2
		080202L-FW	●	●							0.2
080204R-FW	●	●	0.4								
080204L-FW	●	●	0.4								
FY	5°	WBGT 0601003L-FY	●	●	3.97	1.59	2.2	0.03			
		060101R-FY	●	●				0.1			
		060101L-FY	●	●				0.1			
		060102R-FY	●	●				0.2			
		060102L-FY	●	●				0.2			
		060104R-FY	●	●				0.4			
	060104L-FY	●	●	0.4							
	5°	WBGT 080201R-FY	●	●	4.76	2.38	2.4	0.1			
		080201L-FY	●	●				0.1			
		080202R-FY	●	●				0.2			
		080202L-FY	●	●				0.2			
		080204R-FY	●	●				0.4			
080204L-FY		●	●	0.4							
W	5°	WBGT 060102R-W	●	●	3.97	1.59	2.2	0.2			
		060102L-W	●	●				0.2			
		060104R-W	●	●				0.4			
		060104L-W	●	●				0.4			



## Positive Square Type/M-class (Without Hole)

Shape	Relief Angle	Cat. No.	Stock		Dimensions (mm)			
			T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	11°	SPMR 090304N-FK	●	●	9.525	3.18	—	0.4
		090308N-FK	●	●				0.8
		SPMR 120304N-FK	●	●				12.7
120308N-FK	●	●	0.8					
	11°	SPMN 090304	●	●	9.525	3.18	—	0.4
		090308	●	●				0.8
		SPMN 120308	●	●				12.7
120312	●	●	1.2					



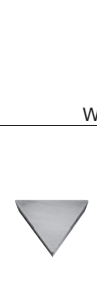

## Positive Square Type/G-class (Without Hole)

Shape	Relief Angle	Cat. No.	T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	11°	SPGN 090304	●	●	9.525	3.18	—	0.4
		090308	●	●				0.8
		SPGN 120304	●	●	12.7	3.18	—	0.4
		120308	●	●				0.8

## Positive Triangular Type/M-class (Without Hole)

Shape	Relief Angle	Cat. No.	T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius		
	11°	TPMR 090204N-FK	●	●	5.56	2.38	—	0.4		
		TPMR 110302N-FK	●	●				0.2		
		110304N-FK	●	●	6.35	3.18	—	0.4		
		110308N-FK	●	●				0.8		
		FK	11°	TPMR 160304N-FK	●	●	9.525	3.18	—	0.4
				160308N-FK	●	●				0.8
160312N-FK	●			●	1.2					
	11°	TPMN 160308	●	●	9.525	3.18	—	0.8		
		TPMN 220408	●	●	12.7	4.76	—	0.8		

## Positive Triangular Type/G-class (Without Hole)

Shape	Relief Angle	Cat. No.	T1000A	T1500A	Inscribed Circle	Thickness	Hole Dia.	Nose Radius
	5°	TBGR 060104L-W	●	●	3.97	1.59	—	0.4
		TBGN 060104	●	●				0.4
	11°	TPGR 090202R-W	●	●	5.56	2.38	—	0.2
		090202L-W	●	●				0.2
		090204R-W	●	●				0.4
		090204L-W	●	●				0.4
		090208R-W	●	●				0.8
		090208L-W	●	●				0.8
	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
		TPGR 160302R-W	●	●				9.525
	160302L-W	●	●	0.2				
	160304R-W	●	●	0.4				
	160304L-W	●	●	0.4				
	160308R-W	●	●	0.8				
	160308L-W	●	●	0.8				
		11°	TPGN 090202	●	●	5.56	2.38	—
090204			●	●	0.4			
090208			●	●	0.8			
11°		TPGN 110302	●	●	6.35	3.18	—	0.2
		110304	●	●				0.4
		110308	●	●				0.8
11°	TPGN 160302	●	●	9.525	3.18	—	0.2	
	160304	●	●				0.4	
	160308	●	●				0.8	
	20°	TEGN 160308	●	●	9.525	3.18	—	0.8

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

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



For SEC-Grooving Tool (GWC Type)

### TGA Type (insert for square grooves)

Dimensions (mm)

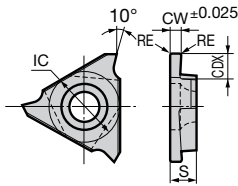


Figure shows right hand (R) tool.

Cat. No.	T1500A		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 Grooving	Internal Grooving					
TGA R/L3033E	●	●	0.33	0.8	0.5	1.0	0.05	9.525	3.18	1
TGA R/L3050E	●	●	0.50	1.2	0.8	1.4	0.05	9.525	3.18	1
TGA R/L3075E	●	●	0.75							
TGA R/L3095E	●	●	0.95							
TGA R/L3100E	●	●	1.00							
TGA R/L3110E	●	●	1.10							
TGA R/L3125E	●	●	1.25							
TGA R/L3135E	●	●	1.35	2.0	1.5	2.5	0.2	9.525	3.18	1
TGA R/L3145E	●	●	1.45							
TGA R/L3150E	●	●	1.50							
TGA R/L3165E	●	●	1.65							
TGA R/L3175E	●	●	1.75							
TGA R/L3185E	●	●	1.85							
TGA R/L3200E	●	●	2.00							
TGA R/L3220E	●	●	2.20							
TGA R/L3230E	●	●	2.30							
TGA R/L3250E	●	●	2.50	2.5	2.0	3.0	0.2	9.525	3.18	1
TGA R/L3265E	●	●	2.65							
TGA R/L3270E	●	●	2.70							
TGA R/L3280E	●	●	2.80							
TGA R/L4125E	●	●	1.25	2.0	1.7	2.5	0.2	12.70	4.76	2
TGA R/L4145E	●	●	1.45							
TGA R/L4150E	●	●	1.50							
TGA R/L4165E	●	●	1.65							
TGA R/L4175E	●	●	1.75							
TGA R/L4185E	●	●	1.85	3.5	2.5	3.9	0.2	12.70	4.76	3
TGA R/L4200E	●	●	2.00							
TGA R/L4220E	●	●	2.20							
TGA R/L4230E	●	●	2.30							
TGA R/L4250E	●	●	2.50	5.0	2.5	5.4	0.3	12.70	4.76	4
TGA R/L4265E	●	●	2.65							
TGA R/L4270E	●	●	2.70							
TGA R/L4280E	●	●	2.80	5.0	2.5	5.4	0.3	12.70	4.76	4
TGA R/L4300E	●	●	3.00							
TGA R/L4320E	●	●	3.20	5.0	2.5	5.4	0.3	12.70	4.76	4
TGA R/L4330E	●	●	3.30							
TGA R/L4350E	●	●	3.50				0.3			
TGA R/L4370E	●	●	3.70							
TGA R/L4390E	●	●	3.90							
TGA R/L4400E	●	●	4.00							
TGA R/L4410E	●	●	4.10	5.0	2.5	5.4		12.70	4.76	4
TGA R/L4420E	●	●	4.20				0.4			
TGA R/L4430E	●	●	4.30							
TGA R/L4440E	●	●	4.40							
TGA R/L4450E	●	●	4.50							
TGA R/L4480E	●	●	4.80						5.00	

\*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.

For SEC-Grooving Tool (GWC Type)

### TGA Type (insert blank)

Dimensions (mm)

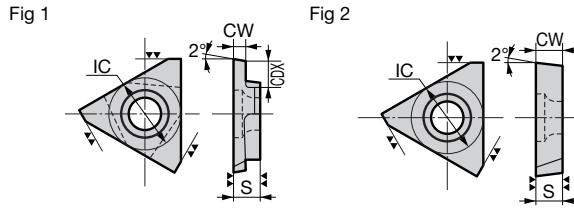


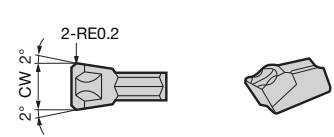
Figure shows right hand (R) tool.

Cat. No.	T1500A		Width of Cut CW	Maximum Groove Depth CDX	Inscribed Circle IC	Thickness S	Fig
	R	L					
TGA R/L3-T18	●	●	1.85	(3.4)	9.525	3.18	1
TGA R/L3-T23	●	●	2.35	(3.4)	9.525	3.18	1
TGA R/L3-T31	●	●	3.18	—	9.525	3.18	2
TGA R/L4-T22	●	●	2.20	(4.8)	12.70	4.76	1
TGA R/L4-T37	●	●	3.75	(6.2)	12.70	4.76	1
TGA R/L4-T47	●	●	4.76	—	12.70	4.76	2

\*Figures in ( ) for CDX are reference values  
\*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.  
\*Blank inserts are uncompleted products. Grooving width, nose radius and rake angle modification are required. We accept modification requests, please consult a sales office or distributor.

For SEC-Cut-off Tool Holders SumiGrip STF Type/WCF Type

Dimensions (mm)

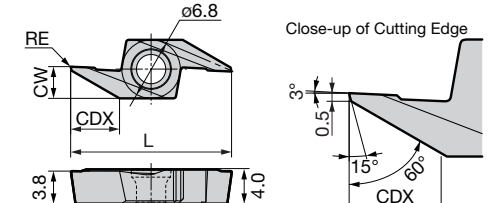


Cat. No.	T1500A	Width of Cut CW	Applicable Holders
WCF N3A	●	3.0	STFH○○-3,STFS R/○○○○-3,WCFH○○-3 WCF S R/○○○○-3,WCF S R/○○-3
WCF N4A	●	4.0	STFH○○-4,STFS R/○○○○-4,WCFH○○-4 WCF S R/○○-4

\*Refer to the General Catalogue for information on the holders that can be used.

For SEC-MINI Tool Holders SBT Type/PBT Type

Dimensions (mm)

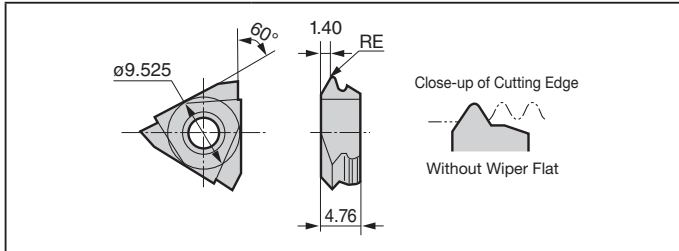


Cat. No.	T1500A	Overall Length L	Maximum Depth of Cut CDX	Width of Cut CW	Nose Radius RE	Applicable Holders
BT R3505	●	15	3.5	2.5	0.05	SBT35R○○○○
BT R3515	●	15	3.5	2.5	0.15	PBT35R○○○○

\*Refer to the General Catalogue for information on the holders that can be used.

For SEC-Threading Tools THE Type

Dimensions (mm)

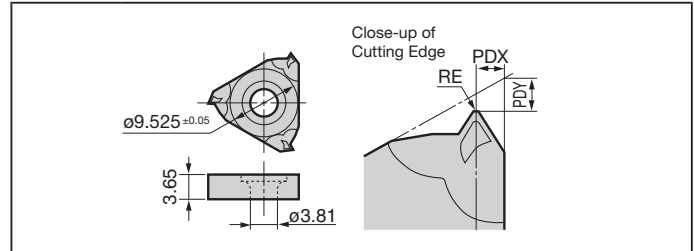


Cat. No.	T1500A	Pitch		Nose Radius RE	Included Angle CDX
		mm	Threads/Inch		
NE R0815	●	0.80 to 1.50	—	0.08	60
NE R1530	●	1.50 to 3.00	—	0.18	60
WE R1410	●	—	14 to 10	0.21	55
WE R2416	●	—	24 to 16	0.11	55

\*Refer to the General Catalogue for information on the holders that can be used.

For SEC-Threading Tools STI Type

Dimensions (mm)

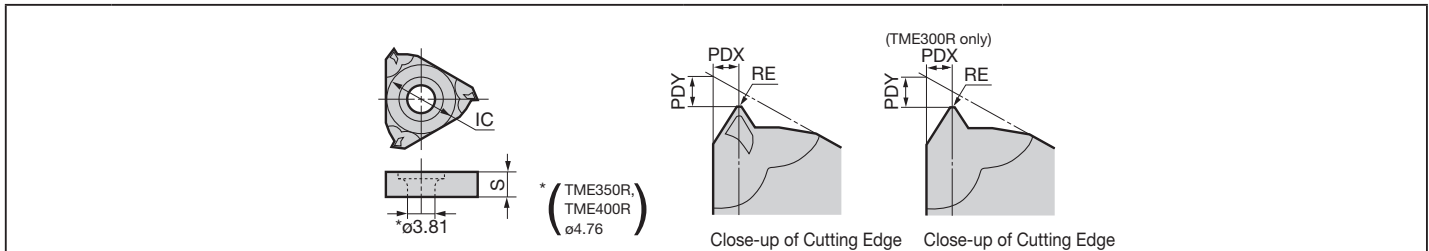


Cat. No.	Reference Cat. No.	T1500A	Pitch		Nose Radius RE	Included Angle PNA	X Direction PDX	Y Direction PDY
			mm	Threads/Inch				
TMI 100R	16R100ISO-TI	●	1.00	—	0.04	60	0.8	1.2
TMI 125R	16R125ISO-TI	●	1.25	—	0.05	60	0.8	1.2
TMI 150R	16R150ISO-TI	●	1.50	—	0.07	60	1.0	1.2
TMI 175R	16R175ISO-TI	●	1.75	—	0.09	60	1.2	1.2
TMI 200R	16R200ISO-TI	●	2.00	—	0.10	60	1.4	1.2
TMI 250R	16R250ISO-TI	●	2.50	—	0.14	60	1.4	1.2
TMI 300R	16R300ISO-TI	●	3.00	—	0.18	60	1.8	1.2
TMI 1020R	16R102060-TI	●	1.00 to 2.00	24 to 12	0.04	60	1.0	1.2
TMI 1530R	16R153060-TI	●	1.50 to 3.00	16 to 8	0.07	60	1.5	1.2

\*Refer to the General Catalogue for information on the holders that can be used.

For SEC-External Threading Tools LTE Type/STE Type

Dimensions (mm)



Type	Cat. No.	T1500A	Reference Cat. No.	Pitch		Nose Radius RE	X Direction PDX	Y Direction PDY	Inscribed Circle IC	Thickness S	Wiper Flat	Applicable Holders
				mm	Threads/Inch							
60° Metric Thread	TME 100R	●	16ER100ISO-TE	1.00	—	0.11	0.8	1.2	9.525	3.65	Yes	LTE R2020 LTE R2525 STE R1212 STE R1616
	TME 125R	●	16ER125ISO-TE	1.25	—	0.15	0.8	1.2	9.525	3.65	Yes	
	TME 150R	●	16ER150ISO-TE	1.50	—	0.19	1.0	1.2	9.525	3.65	Yes	
	TME 175R	●	16ER175ISO-TE	1.75	—	0.22	1.2	1.2	9.525	3.65	Yes	
	TME 200R	●	16ER200ISO-TE	2.00	—	0.26	1.4	1.2	9.525	3.65	Yes	
	TME 250R	●	16ER250ISO-TE	2.50	—	0.33	1.4	1.2	9.525	3.65	Yes	
	TME 300R	●	16ER300ISO-TE	3.00	—	0.40	1.8	1.2	9.525	3.65	Yes	
	TME 350R	●	22ER350ISO-TE	3.50	—	0.47	2.5	1.7	12.70	4.60	Yes	LTE R2525M22 LTE R3232P22
	TME 400R	●	22ER400ISO-TE	4.00	—	0.54	2.5	1.7	12.70	4.60	Yes	
55° Whitworth Thread	TME 1020R	●	16ER102060-TE	1.00 to 2.00	24 to 12	0.11	1.1	1.2	9.525	3.65	No	LTE R2020 LTE R2525 STE R1212 STE R1616
	TME 1530R	●	16ER153060-TE	1.50 to 3.00	16 to 8	0.19	1.6	1.0	9.525	3.65	No	
60° Unified Thread	TWE 1410R	●	16ER141055-TE	—	14 to 10	0.21	1.4	1.2	9.525	3.65	No	
	TWE 2416R	●	16ER241655-TE	—	24 to 16	0.11	1.1	1.2	9.525	3.65	No	
55° Taper Thread for Pipe	TUE 24R	●	16ER24UN-TE	—	24	0.12	0.8	1.2	9.525	3.65	Yes	
	TUE 16R	●	16ER16UN-TE	—	16	0.20	1.2	1.2	9.525	3.65	Yes	
	TUE 14R	●	16ER14UN-TE	—	14	0.23	1.2	1.2	9.525	3.65	Yes	
	TUE 12R	●	16ER12UN-TE	—	12	0.28	1.4	1.2	9.525	3.65	Yes	
55° Taper Thread for Pipe	TPE 19R	●	16ER19BSPT-TE	—	19	0.15	0.9	0.7	9.525	3.65	Yes	
	TPE 14R	●	16ER14BSPT-TE	—	14	0.22	1.6	1.2	9.525	3.65	Yes	
	TPE 11R	●	16ER11BSPT-TE	—	11	0.29	1.6	1.2	9.525	3.65	Yes	

\*Refer to the General Catalogue for information on the holders that can be used.

For Cutters (Indexable Endmills)

Dimensions (mm)

Applications	Cat. No.	T1500A	Inscribed Circle	Thickness	Nose Radius	Relief Angle	Dimensional Figure	Applicable Cutter
Face Milling	<b>SDEX 42MT</b>	●	12.7	3.18	—	15°		SEC-ACE Mill FPG4000 Type SEC-Multi Use Endmill FPE4000 Type
	<b>SDKN 42MT</b>	●	12.7	3.18	—	15°		
	<b>CSNH 43MT</b>	●	12.7	4.8	—	0°		
	<b>CSN 43MT</b>	●	12.7	4.8	—	0°		
	<b>SNMN 432</b>	●	12.7	4.76	0.8	0°		SEC-ACE Mill DNF4000 Type
	<b>NW 100</b>	●	—	4.8	—	0°		
	<b>APW 4R</b>	●	—	3.18	—	15°		SEC-ACE Mill APG4000 Type
	<b>SPCH 42TR-R</b>	●	12.7	3.18	—	11°		SEC-ACE Mill DPG4000 Type/DPGF4000 Type
	<b>SPMN 422</b>	●	12.7	3.18	—	11°		
	<b>SPMN 423</b>	●	12.7	3.18	—	11°		
<b>SPG 422</b>	●	12.7	3.18	0.8	11°		SEC-ACE Mill DPG4000 Type/DPGF4000 Type	
<b>DPW 500R</b>	●	—	3.2	—	11°			
<b>SPCH 53TR-R</b>	●	15.875	4.76	—	11°		SEC-ACE Mill DPG5000 Type	
<b>GW 500R</b>	●	—	4.8	—	11°			
Shoulder Milling	<b>TPMN 322</b>	●	9.525	3.18	0.8	11°		SEC-Light Endmill FMS330 / FMS332 / FMS335
	<b>TPCH 43TR</b>	●	12.7	4.76	—	11°		SEC-ACE Mill CPG4000 Type SEC-Light Endmill FMS440 / FMS450 / FMS160 FMS440B
	<b>TPMN 432</b>	●	12.7	4.76	0.8	11°		

● mark: Standard stocked item Refer to the General Catalogue for details on the cutters (indexable endmills) of the products indicated on this page.



**T1000A Application Examples (M-class Inserts)**

SCM440 Shaft	S30C Automotive Component	FCD450 Differential Case
Insert : DNMG150408N-SU (T1000A) Cutting Conditions : $v_c=180\text{m/min}$ $f=0.10$ to $0.25\text{mm/rev}$ $a_p=0.40\text{mm}$ Wet	Insert : DCMT070208N-SU (T1000A) Cutting Conditions : $v_c=230\text{m/min}$ $f=0.05\text{mm/rev}$ $a_p=0.30$ to $0.70\text{mm}$ Wet	Insert : TPMR110304N-FK (T1000A) Cutting Conditions : $v_c=100\text{m/min}$ $f=0.1\text{mm/rev}$ $a_p=0.5\text{mm}$ Wet

**T1000A Application Examples (G-class Inserts)**

S45C Flange	S25C Automotive Component	SMF4040 (Powdered Metal) Automotive Component
Insert : TPGT110304L-SD (T1000A) Cutting Conditions : $v_c=180\text{m/min}$ $f=0.08\text{mm/rev}$ $a_p=0.15\text{mm}$ Wet	Insert : TNGG160404L-FX (T1000A) Cutting Conditions : $v_c=80$ to $170\text{m/min}$ $f=0.10\text{mm/rev}$ $a_p=0.20\text{mm}$ Dry	Insert : TPGN160308 (T1000A) Cutting Conditions : $v_c=85$ to $170\text{m/min}$ $f=0.10\text{mm/rev}$ $a_p=0.50\text{mm}$ Wet

**T1500A Application Examples (M-class Inserts)**

SCM415 Arbor	SCM435 Shaft	SCM435 Gear Shaft
Insert : DNMG150408N-LU (T1500A) Cutting Conditions : $v_c=200\text{m/min}$ $f=0.25\text{mm/rev}$ $a_p=0.30\text{mm}$ Wet	Insert : DNMG150408N-SU (T1500A) Cutting Conditions : $v_c=200\text{m/min}$ $f=0.18\text{mm/rev}$ $a_p=0.15\text{mm}$ Wet	Insert : DNMG150404N-LU (T1500A) Cutting Conditions : $v_c=90$ to $140\text{m/min}$ $f=0.15\text{mm/rev}$ $a_p=0.25\text{mm}$ Wet
S45C Shaft	SUS316 Valve	STKM (Pipe) Material
Insert : TNMG160404N-FL (T1500A) Cutting Conditions : $v_c=200\text{m/min}$ $f=0.12\text{mm/rev}$ $a_p=0.35\text{mm}$ Wet	Insert : TNMG160408N-SU (T1500A) Cutting Conditions : $v_c=140\text{m/min}$ $f=0.12\text{mm/rev}$ $a_p=0.15\text{mm}$ Wet	Insert : TNMG160404N-SU (T1500A) Cutting Conditions : $v_c=150\text{m/min}$ $f=0.07\text{mm/rev}$ $a_p=0.10\text{mm}$ Wet

### T1500A Application Examples (G-class Inserts)

SAPH400 Rolled Steel	S45C Transmission Component	SPH440 Drum Brake Component
Insert : T1500A Cutting Conditions : $v_c=180\text{m/min}$ $f=0.25\text{mm/rev}$ $a_p=0.25\text{mm}$ Wet	Insert : T1500A Cutting Conditions : $v_c=300\text{m/min}$ $f=0.05\text{mm/rev}$ $a_p=0.10\text{mm}$ Wet	Insert : T1500A Cutting Conditions : $v_c=280\text{m/min}$ $f=0.07\text{mm/rev}$ $a_p=0.25\text{mm}$ Wet
SCM435 Pump Component	S45C Sleeve	S45C Machine Component
Insert : T1500A Cutting Conditions : $v_c=100\text{m/min}$ $f=0.25\text{mm/rev}$ $a_p=1.00\text{mm}$ Wet	Insert : T1500A Cutting Conditions : $v_c=200\text{m/min}$ $f=0.15\text{mm/rev}$ $a_p=0.20\text{mm}$ Wet	Insert : T1500A Cutting Conditions : $v_c=240\text{m/min}$ $f=0.03\text{mm/rev}$ $a_p=0.05\text{mm}$ Wet

### T1000A/T1500A Recommended Cutting Conditions

Work Material	Application	Chipbreaker	Grade	Cutting Conditions		
				Depth of Cut $a_p$ (mm)	Feed Rate $f$ (mm/rev)	Cutting Speed $V_c$ (m/min)
Mild Steel (S25C, SS400, etc.)	Fine Finishing	FY/FX	T1000A	0.1-0.4-0.8	0.04-0.10-0.20	150-280-400
	Fine to Finishing	FL	T1500A	0.2-0.5-1.0	0.05-0.15-0.25	150-280-400
Carbon Steel / Alloy Steel (S45C, SCM435, etc.)	Fine Finishing	FY/FA	T1000A	0.1-0.4-0.8	0.04-0.10-0.20	100-200-300
	Finishing	SU/SE	T1500A	0.5-1.0-2.0	0.08-0.20-0.35	100-200-300
	Medium	GU	T1500A	0.8-2.2-4.0	0.15-0.25-0.50	100-200-300
Hard Steel / Alloy Steel (SCM440H, etc.)	Fine Finishing	FA	T1000A	0.2-0.5-1.0	0.05-0.15-0.25	50-150-250
	Finishing	SU/SE	T1500A	0.5-1.0-2.0	0.08-0.20-0.35	50-150-250
	Medium	GU	T1500A	0.8-2.2-4.0	0.15-0.25-0.50	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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