

**TURNLINE** Stainless steel turning series

**T6100 SERIES** CVD coated grade

**AH600 SERIES** PVD coated grade

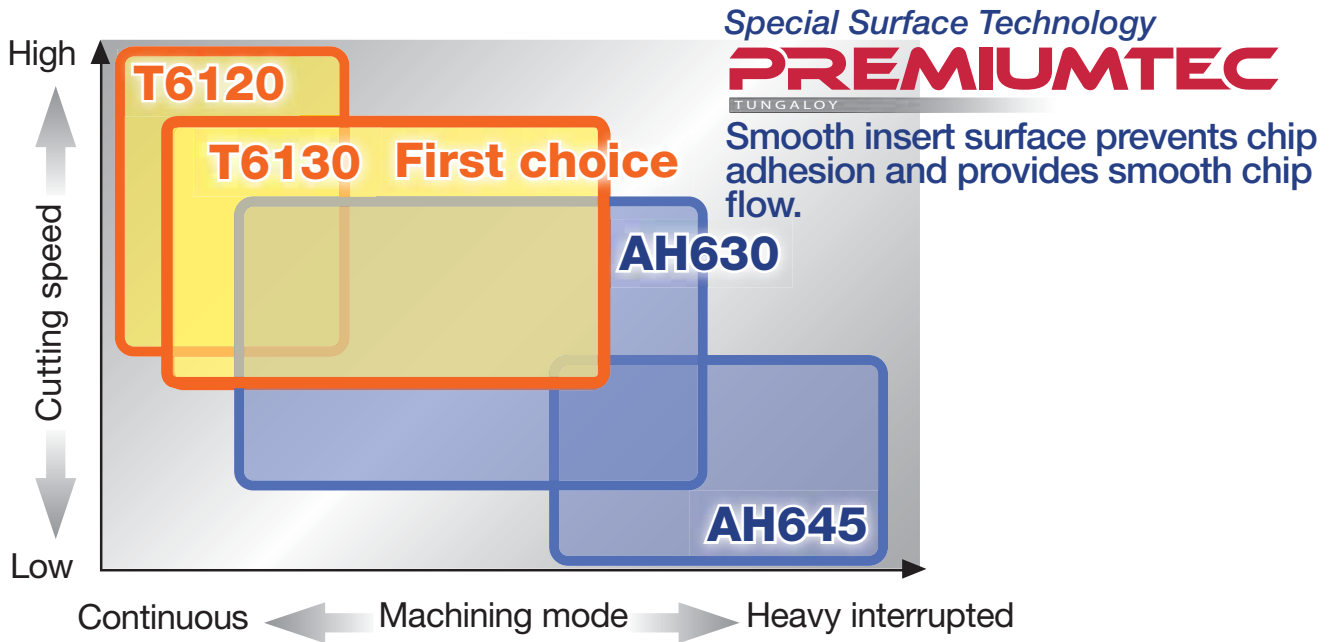
**PREMIUMTEC**  
TUNGALOY

Most efficient grades for stainless steel turning



# Incredible reliability in stainless steel turning !

■ Application range of T6100 & AH600



## T6100 SERIES

New CVD coated grade



### Columnar Stabilization Technology

Excellent fracture and chipping resistance for extended tool life.

### Unique substrate with improved adhesion strength

High adhesion strength significantly improves chipping and fracture resistance.

#### T6120

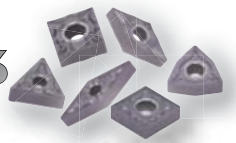
- Suitable for high speed cutting.
- Delivers excellent plastic deformation resistance.
- Especially suitable for austenite and precipitation hardened stainless steel machining.

#### T6130

- Provides excellent wear resistance in medium to high speed machining.
- Ideal grade especially for ferrite and martensite stainless steel machining.
- Thicker layer than PVD leads to outstanding wear resistance.

## AH600 SERIES

New PVD coated grade



### Advanced wear and fracture resistance

This innovative coating layer reduces cracks while keeping a high level of wear resistance that enhances fracture resistance.

### Extremely high reliability !

Newly developed substrate with high adhesion strength on the coating layer.

#### AH630

- Recommended grade for general machining with its perfect balance of fracture and wear resistance
- High chipping resistance with excellent adhesion strength

#### AH645

- Excellent fracture resistance when machining at low to medium cutting speed
- Suitable grade for interrupted and heavy machining of stainless steel



# M Stainless

Stainless

## Negative type

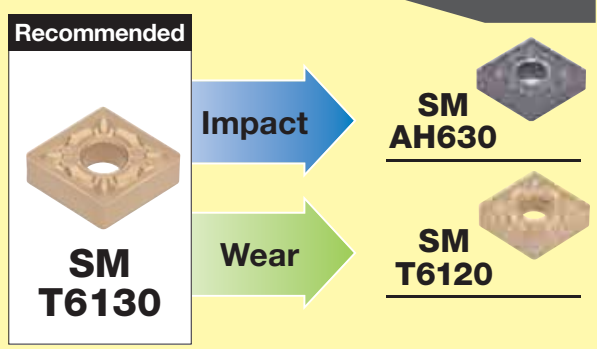
### Finishing

Continuous to light interrupted



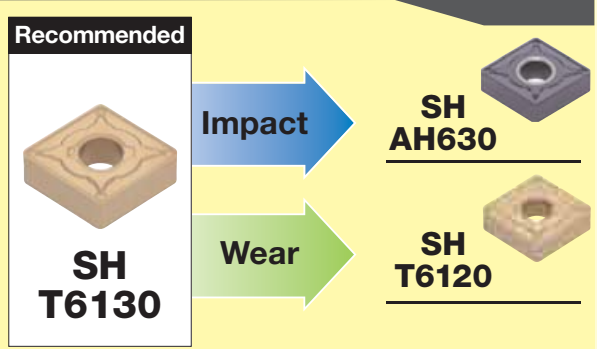
### Medium cutting

Continuous to light interrupted



### Medium to heavy cutting

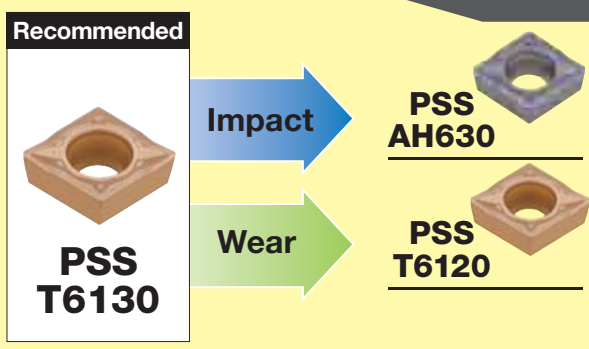
Continuous to light interrupted



## Positive type

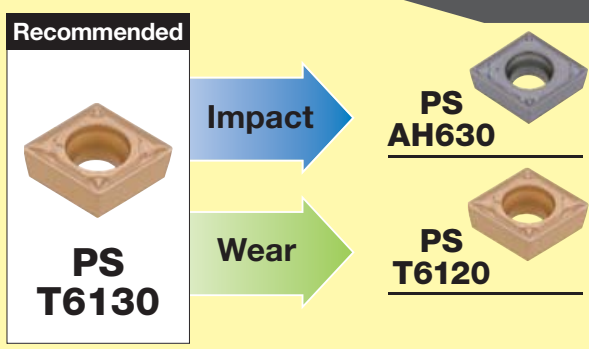
### Finishing

Continuous to light interrupted



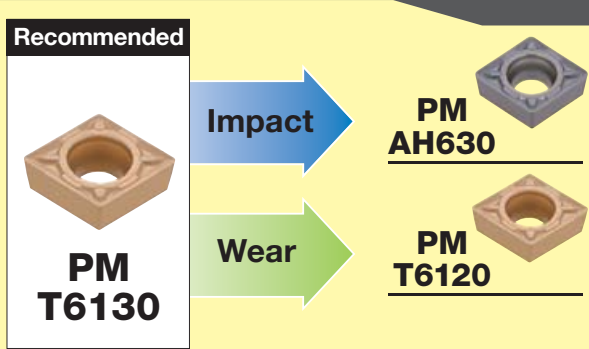
### Medium cutting

Continuous to light interrupted



### Medium to heavy cutting

Continuous to light interrupted

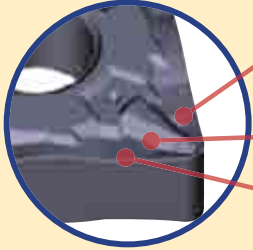


## Chipbreaker

### Negative type

For finishing operations

**SF** type



- Excellent chip control for finish machining
- Outstanding chip control when high feed turning at small depths of cut.
- Sharp edge reduces cutting forces and burrs

**Low cutting force**

- ➔ Large rake angle

**Reduces chip adhesion**

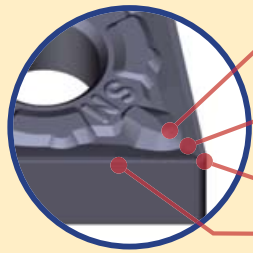
- ➔ Dimples around protrusion reduces contact with chips

**Excellent chip evacuation**

- ➔ Large inclination

For medium cutting

**SM** type



- Versatile chipbreaker applicable to a wide range of cutting conditions.
- Sharp cutting edge leads the excellent chip control

**Outstanding control of chips**

- ➔ Well-designed protrusion curls chips smoothly

**Low cutting force**

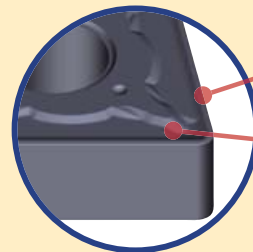
- ➔ Created by the large rake angle and deep chipbreaker

**Tough cutting edge with excellent sharpness offers stable machining**

- ➔ Sharp positive-land on the corner
- ➔ Toughness with wide land at the main cutting edge

For medium to heavy cutting

**SH** type



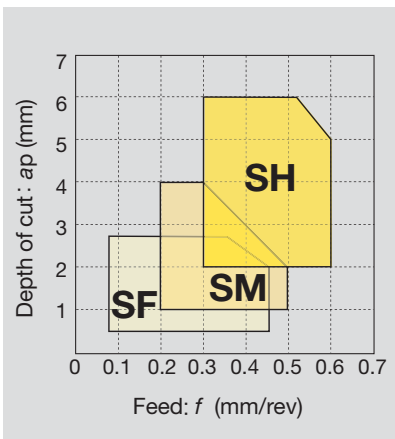
- Suitable for roughing operations and interrupted machining with tough cutting edges
- Applicable for a wide range of cutting conditions and ideal for machining with a fluctuating depth of cut
- Newly designed cutting edges increase the fracture resistance

**Incredible fracture resistance**

- ➔ Provided from advanced cutting edges

**Low cutting forces and excellent chip control**

- ➔ Credit to a unique chipbreaker geometry



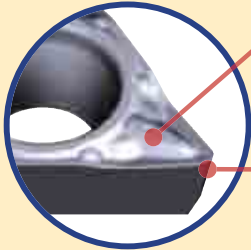
Operation	Machining mode	Chip-breaker	Grades	Depth of cut ap (mm)	Feed f (mm/rev)
Finishing	Continuous	<b>SF</b>	<b>T6120</b>	0.5 ~ 2.5	0.08 ~ 0.45
	Continuous to Light interrupted		<b>T6130</b>		
	Heavy interrupted		<b>AH630</b>		
Medium cutting	Continuous	<b>SM</b>	<b>T6120</b>	1.0 ~ 4.0	0.2 ~ 0.5
	Continuous to Light interrupted		<b>T6130</b>		
	Light interrupted		<b>AH630</b>		
	Heavy interrupted		<b>AH645</b>		
Medium to heavy cutting	Continuous	<b>SH</b>	<b>T6130</b>	2.0 ~ 6.0	0.3 ~ 0.6
	Continuous to Light interrupted		<b>AH630</b>		
	Heavy interrupted		<b>AH645</b>		

Note: Conditions in above table are for regular sized inserts.

# Positive type

Finishing to light cutting

**PSS** type



- Optimum chipbreaker for finish cutting of stainless steel
- Provides excellent chip control at small depths of cut

**Remarkable chip breaking**

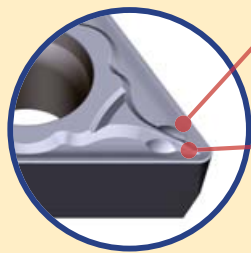
➔ Arc shaped protrusion allows stable chip control even at small depths of cut

**Stable machining with low cutting force**

➔ Optimized inclination and rake angle reduces cutting forces and controls the chip flow when finish cutting

Finishing to medium cutting

**PS** type



- Recommended chipbreaker for finish to medium cutting of stainless steel

**Provides high reliability with low cutting force**

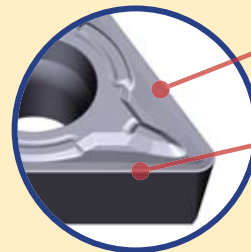
➔ Ideal combination of optimum rake angle and tough cutting edge

**Stable chip control in a wide range of cutting conditions**

➔ Uniquely designed protrusion creates smooth chip curling

Heavy cutting

**PM** type



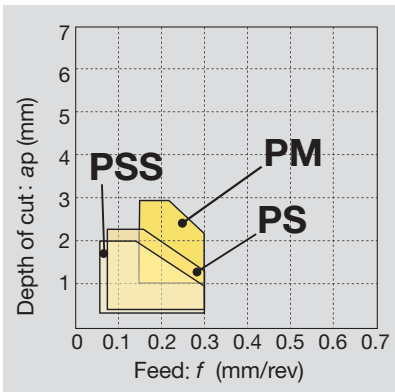
- Sharp and tough cutting edge provides high reliability for stainless steel machining

**Allows exceptional chip control with low cutting force**

➔ Sharp cutting edges with optimum rake angle

**Reduces chipping and notch wear**

➔ Flexible land width along the cutting edge prevents chipping



Operation	Chipbreaker	Grades	Depth of cut ap (mm)	Feed f (mm/rev)
Finishing to Light cutting	<b>PSS</b>	T6120	0.3 ~ 2.0	0.08 ~ 0.3
		T6130		
		AH630		
		AH645		
Finishing to Medium cutting	<b>PS</b>	T6120	0.5 ~ 2.5	0.08 ~ 0.3
		T6130		
		AH630		
		AH645		
Heavy cutting	<b>PM</b>	T6120	1.0 ~ 3.0	0.15 ~ 0.3
		T6130		
		AH630		
		AH645		

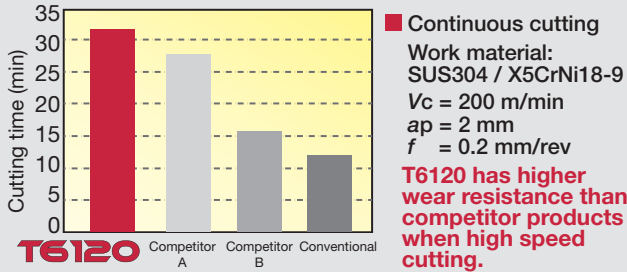
Note: Conditions in above table are for regular sized inserts.



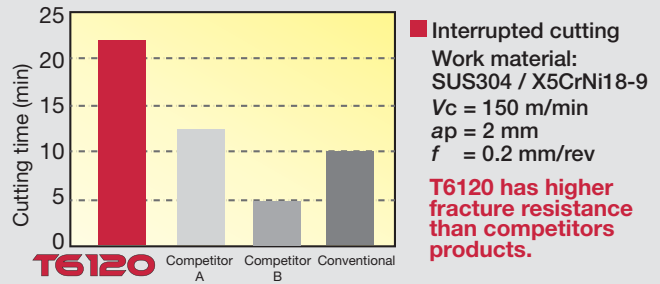
## Cutting performance

### T6120

#### Wear resistance test

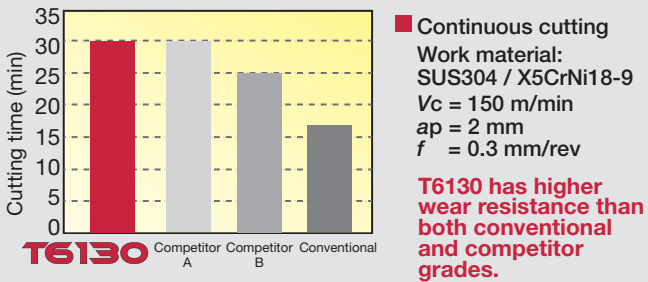


#### Fracture resistance test

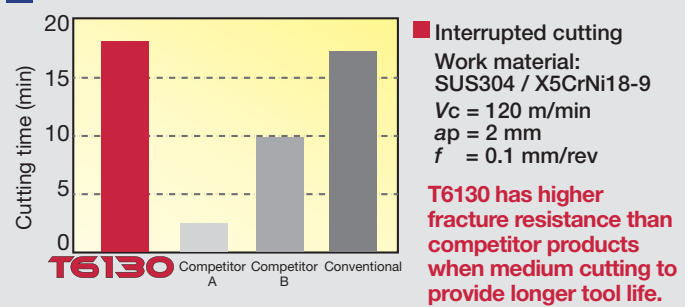


### T6130

#### Wear resistance test

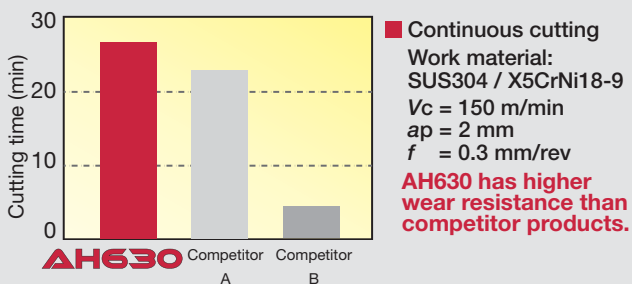


#### Fracture resistance test

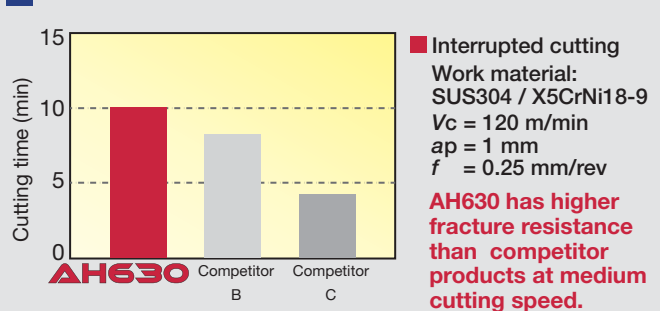


### AH630

#### Wear resistance test

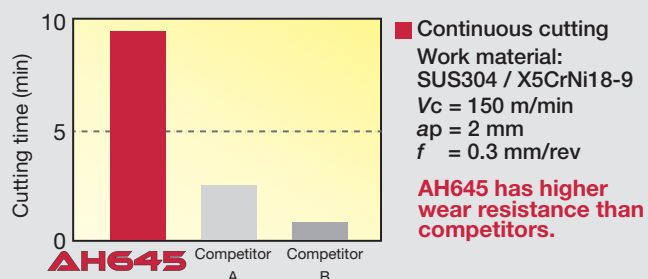


#### Fracture resistance test

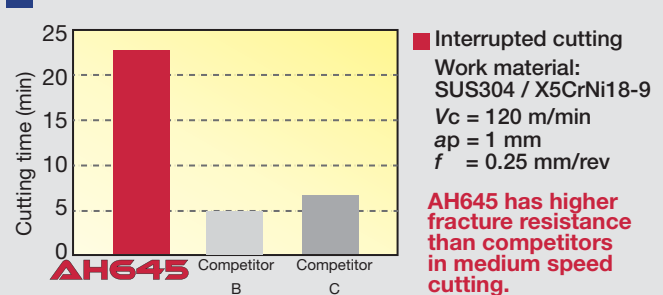


### AH645

#### Wear resistance test



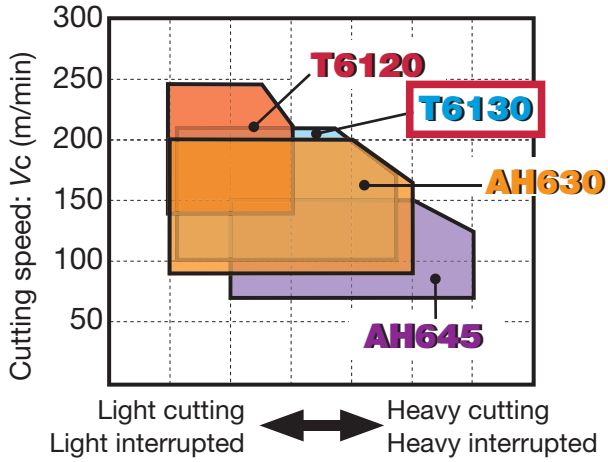
#### Fracture resistance test



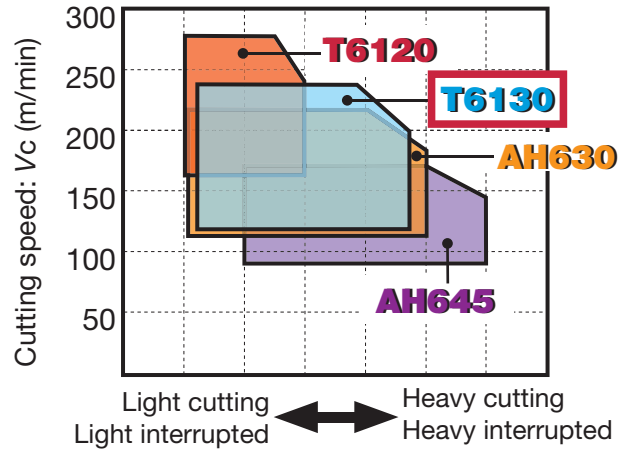
# Standard cutting conditions

## Standard cutting condition depending on work material

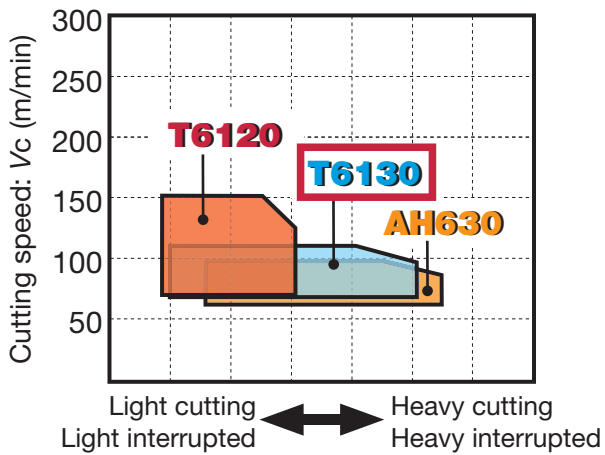
### Austenitic stainless steel



### Ferritic / martensite stainless steel



### Precipitation hardened stainless steel



Work materials	Grades	Cutting speed: Vc (m/min)
Austenitic SUS304, SUS316 etc. (X5CrNi18-9, X5CrNiMo17-12-2 etc.) *AH630: First choice	T6120	140 - 240
	T6130	100 - 200
	AH630	90 - 190
	AH645	70 - 150
Ferrite / Martensite SUS430 / SUS410 etc. (X6Cr17, X12Cr13 etc.)	T6120	160 - 280
	T6130	120 - 240
	AH630	110 - 210
	AH645	90 - 170
Precipitation hardened SUS631 etc. (X7CrNiAl17-7 etc.)	T6120	80 - 150
	T6130	70 - 110
	AH630	60 - 90

  :1st choice

## Inserts Negative type

Rhombic, 80°

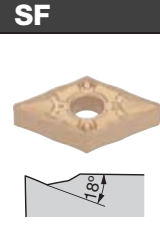
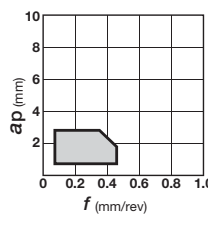
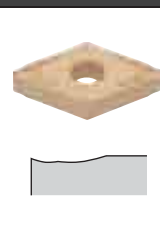
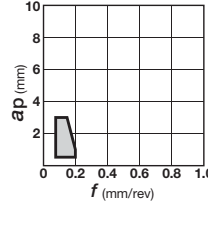
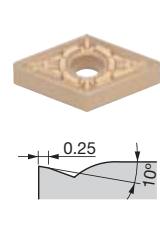
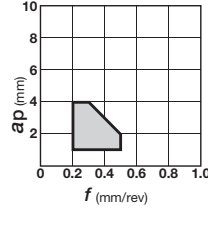
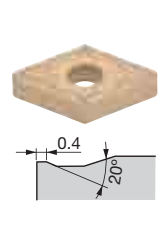
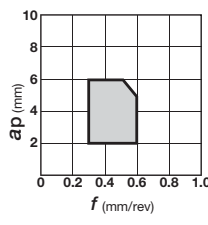
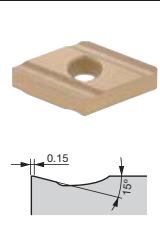
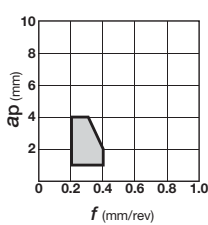
Application	Chipbreaker	$f - a_p$	Cat. No.	Stocked grades				Dimensions (mm)				
	Appearance (Cross section)			Coated				I.C. dia $\phi d$	Thick- ness S	Hole dia $\phi d_1$	Corner radius $r_\epsilon$	
				T6120	T6130	AH630	AH645					
Finishing	<b>SF</b>		CNMG090304-SF	●	●	●		9.525	3.18	3.81	0.4	
	CNMG090308-SF		●	●	●		0.8					
	CNMG120404-SF		●	●	●		12.7	4.76	5.16	0.4		
	* CNMG120408-SF		●	●	●					0.8		
	CNMG120412-SF		●	●	●					1.2		
	<b>SS</b>		CNMG120404-SS	●	●	●	●	12.7	4.76	5.16	0.4	
	* CNMG120408-SS		●	●	●	●	0.8					
	CNMG120412-SS		●	●	●	●	1.2					
	Medium cutting	<b>SM</b>		CNMG120404-SM	●	●	●	●	12.7	4.76	5.16	0.4
		* CNMG120408-SM		●	●	●	●	0.8				
CNMG120412-SM		●		●	●	●	1.2					
<b>SA</b>			CNMG120404-SA	●	●	●	●	12.7	4.76	5.16	0.4	
* CNMG120408-SA			●	●	●	●	0.8					
CNMG120412-SA			●	●	●	●	1.2					
Medium to heavy cutting	<b>SH</b>		CNMG120408-SH		●	●	●	12.7	4.76	5.16	0.8	
	CNMG120412-SH			●	●	●	1.2					
	CNMG120416-SH			●	●	●	1.6					
	* CNMG160612-SH			●	●	●	15.875	6.35	6.35	1.2		
	CNMG160616-SH			●	●	●				1.6		
	CNMG190612-SH			●	●	●	19.05	6.35	7.93	1.2		
	CNMG190616-SH		●	●	●	1.6						
	<b>S</b>		CNMG120404R-S		●	●	●	12.7	4.76	5.16	0.4	
	CNMG120404L-S			●	●	●	0.4					
	* CNMG120408R-S			●	●	●	0.8					
CNMG120408L-S			●	●	●	0.8						

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items



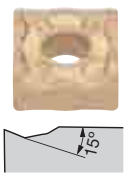
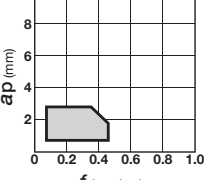

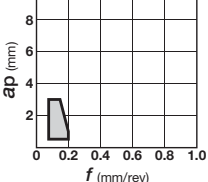
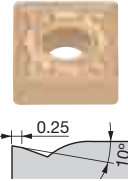
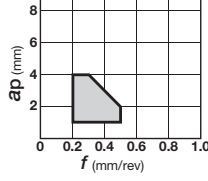
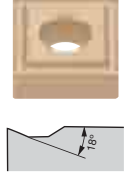
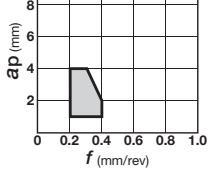
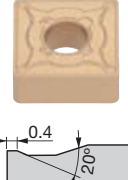
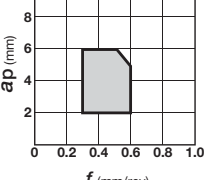

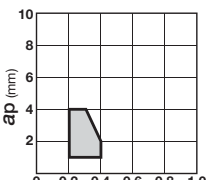
Rhombic, 55°

Application	Chipbreaker Appearance (Cross section)	f - ap	Cat. No.	Stocked grades				Dimensions (mm)			
				Coated				I.C.dia ød	Thick- ness s	Hole dia ød1	Corner radius rε
				T6120	T6130	AH630	AH645				
Finishing	<b>SF</b> 		DNMG150404-SF	●	●	●		12.7	4.76	5.16	0.4
			* DNMG150408-SF	●	●	●					0.8
			DNMG150604-SF	●	●	●		12.7	6.35	5.16	0.4
			DNMG150608-SF	●	●	●					0.8
			<b>SS</b> 		DNMG150404-SS	●	●	●	●	12.7	4.76
	DNMG150408-SS	●			●	●	●	0.8			
	* DNMG150412-SS	●			●	●	●	12.7	6.35	5.16	1.2
	DNMG150604-SS	●			●	●	●				0.4
	DNMG150608-SS	●			●	●	●				0.8
	DNMG150612-SS	●	●	●	●	1.2					
Medium cutting	<b>SM</b> 		DNMG150404-SM	●	●	●	●	12.7	4.76	5.16	0.4
			* DNMG150408-SM	●	●	●	●				0.8
			DNMG150412-SM	●	●	●	●				1.2
			DNMG150604-SM	●	●	●	●	12.7	6.35	5.16	0.4
			DNMG150608-SM	●	●	●	●				0.8
			DNMG150612-SM	●	●	●	●				1.2
Medium to heavy cutting	<b>SH</b> 		DNMG150408-SH		●	●	●	12.7	4.76	5.16	0.8
			* DNMG150412-SH		●	●	●				1.2
			DNMG150416-SH		●	●	●				1.6
			DNMG150608-SH		●	●	●	12.7	6.35	5.16	0.8
			DNMG150612-SH		●	●	●				1.2
	<b>S</b> 		DNMG150404R-S		●	●	●	12.7	4.76	5.16	0.4
			DNMG150404L-S		●	●	●				0.4
			* DNMG150408R-S		●	●	●				0.8
			DNMG150408L-S		●	●	●	12.7	6.35	5.16	0.8
			DNMG150604R-S		●	●	●				0.4
DNMG150604L-S		●	●	●	12.7	6.35	5.16	0.4			
DNMG150608R-S		●	●	●				0.8			
DNMG150608L-S		●	●	●	0.8						

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

### Square, 90°

Applica- tion	Chipbreaker Appearance (Cross section)	f - ap	Cat. No.	Stocked grades				Dimensions (mm)					
				Coated				I.C.dia ød	Thick- ness s	Hole dia ød1	Corner radius rε		
				T6120	T6130	AH630	AH645						
Finishing	<b>SF</b>			<b>SNMG120404-SF</b>	●	●	●		12.7	4.76	5.16	0.4	
				<b>*SNMG120408-SF</b>	●	●	●					0.8	
		<b>SS</b>			<b>SNMG120404-SS</b>	●	●	●	●	12.7	4.76	5.16	0.4
					<b>*SNMG120408-SS</b>	●	●	●	●				0.8
					<b>SNMG120412-SS</b>	●	●	●	●				1.2
Medium cutting	<b>SM</b>			<b>*SNMG120408-SM</b>	●	●	●	●	12.7	4.76	5.16	0.8	
				<b>SNMG120412-SM</b>	●	●	●	●				1.2	
		<b>SA</b>			<b>*SNMG120404-SA</b>	●	●	●	●	12.7	4.76	5.16	0.4
					<b>SNMG120408-SA</b>	●	●	●	●				0.8
					<b>SNMG120412-SA</b>	●	●	●	●				1.2
Medium to heavy cutting	<b>SH</b>			<b>SNMG120408-SH</b>		●	●	●	12.7	4.76	5.16	0.8	
				<b>SNMG120412-SH</b>		●	●	●				1.2	
									15.875	6.35	6.35	<b>*SNMG150612-SH</b>	1.2
												<b>SNMG150616-SH</b>	1.6
									19.05	6.35	7.93	<b>SNMG190612-SH</b>	1.2
												<b>SNMG190616-SH</b>	1.6
		<b>S</b>			<b>SNMG120404R-S</b>		●	●	●	12.7	4.76	5.16	0.4
					<b>SNMG120404L-S</b>		●	●	●				0.4
					<b>*SNMG120408R-S</b>		●	●	●				0.8
				<b>SNMG120408L-S</b>		●	●	●	0.8				

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

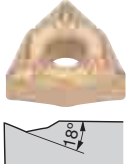
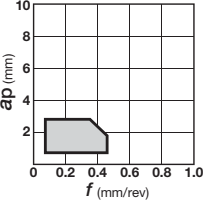

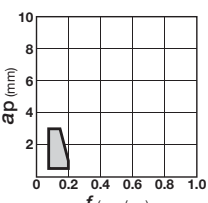
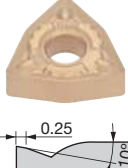
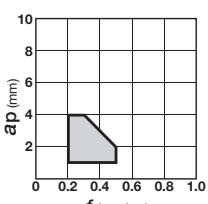
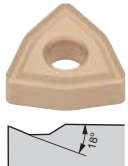
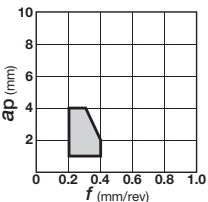
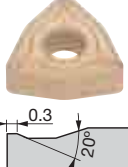
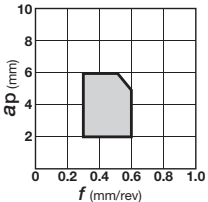
Triangular, 60°

Application	Chipbreaker	$f - a_p$	Cat. No.	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C. dia $\phi d$	Thick- ness s	Hole dia $\phi d_1$	Corner radius $r_\epsilon$
				T6120	T6130	AH630	AH645				
Finishing	<b>SF</b>		TNMG160404-SF	●	●	●		9.525	4.76	3.81	0.4
	* TNMG160408-SF		●	●	●		0.8				
	TNMG160412-SF		●	●	●		1.2				
	<b>SS</b>		TNMG160404-SS	●	●	●	●	9.525	4.76	3.81	0.4
	TNMG160408-SS		●	●	●	●	0.8				
	TNMG160412-SS		●	●	●	●	1.2				
* TNMG220404-SS	●		●	●	●	12.7	4.76	5.16	0.4		
TNMG220408-SS	●		●	●	●				0.8		
TNMG220412-SS	●	●	●	●	1.2						
Medium cutting	<b>SM</b>		TNMG160404-SM	●	●	●	●	9.525	4.76	3.81	0.4
	* TNMG160408-SM		●	●	●	●	0.8				
	TNMG160412-SM		●	●	●	●	1.2				
	TNMG220408-SM		●	●	●	●	12.7	5.16		0.8	
	TNMG220412-SM		●	●	●	●				1.2	
	<b>SA</b>		TNMG160404-SA	●	●	●	●	9.525	4.76	3.81	0.4
	* TNMG160408-SA		●	●	●	●	0.8				
	TNMG160412-SA		●	●	●	●	1.2				
	TNMG220408-SA		●	●	●	●	12.7	5.16		0.8	
	TNMG220412-SA		●	●	●	●				1.2	
	<b>S</b>		TNMG160404R-S		●	●	●	9.525	4.76	3.81	0.4
	TNMG160404L-S			●	●	●	0.4				
	* TNMG160408R-S			●	●	●	0.8				
	TNMG160408L-S			●	●	●	0.8				
	TNMG220404R-S			●	●	●	12.7	5.16			0.4
TNMG220404L-S			●	●	●	0.4					
TNMG220408R-S			●	●	●	0.8					
TNMG220408L-S		●	●	●	0.8						

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

### Trigon, 80°

Applica- tion	Chipbreaker	$f - ap$	Cat. No.	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C.dia $\phi d$	Thick- ness s	Hole dia $\phi d1$	Corner radius r $\epsilon$
				T6120	T6130	AH630	AH645				
Finishing	<b>SF</b>	 	WNMG060404-SF	●	●	●		9.525	4.76	3.81	0.4
	WNMG060408-SF		●	●	●		0.8				
	WNMG080404-SF		●	●	●		12.7	4.76	5.16	0.4	
	* WNMG080408-SF		●	●	●					0.8	
Medium cutting	<b>SS</b>	 	WNMG080404-SS	●	●	●	●	12.7	4.76	5.16	0.4
	* WNMG080408-SS		●	●	●	●	0.8				
	WNMG080412-SS		●	●	●	●	1.2				
	<b>SM</b>	 	WNMG080404-SM	●	●	●	●	12.7	4.76	5.16	0.4
	* WNMG080408-SM		●	●	●	●	0.8				
	WNMG080412-SM		●	●	●	●	1.2				
Medium to heavy cutting	<b>SA</b>	 	* WNMG080408-SA	●	●	●	●	12.7	4.76	5.16	0.8
	WNMG080412-SA		●	●	●	●	1.2				
	<b>SH</b>	 	WNMG080408-SH		●	●	●	12.7	4.76	5.16	0.8
	* WNMG080412-SH			●	●	●	1.2				

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

Rhombic, 35°

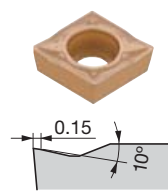
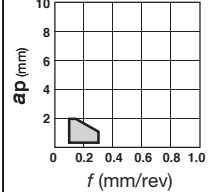
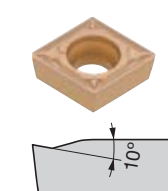
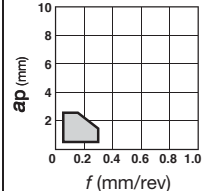
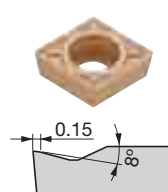
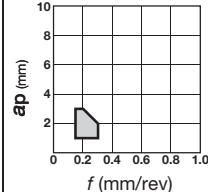
Applica- tion	Chipbreaker	$f - a_p$	Cat. No.	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C.dia $\varnothing d$	Thick- ness s	Hole dia $\varnothing d1$	Corner radius $r_{\epsilon}$
				T6120	T6130	AH630	AH645				
Finishing	<b>SF</b>		VNMG160404-SF	●	●	●		9.525	4.76	3.81	0.4
			*VNMG160408-SF	●	●	●					0.8
	<b>SS</b>		*VNMG160404-SS	●	●	●	●	9.525	4.76	3.81	0.4
			VNMG160408-SS	●	●	●	●				0.8
			VNMG160412-SS	●	●	●	●				1.2
Medium cutting	<b>SM</b>		VNMG160404-SM	●	●	●	●	9.525	4.76	3.81	0.4
			*VNMG160408-SM	●	●	●	●				0.8
			VNMG160412-SM	●	●	●	●				1.2

\*Note: Chipbreaker cross sections are of the inserts marked \*

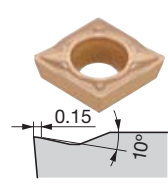
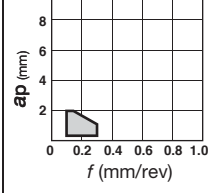
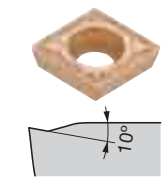
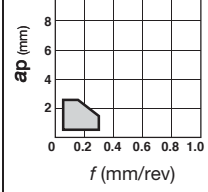
● : Stocked items

## Inserts Positive type

### Rhombic, 80° (7°)

Application	Chipbreaker Appearance (Cross section)	f - ap	Cat. No	Stocked grades				Dimensions (mm)			
				Coated				I.C.dia ød	Thick- ness s	Hole dia ød1	Corner radius rε
				T6120	T6130	AH630	AH645				
Finishing to light cutting	<b>PSS</b> 		CCMT060204-PSS	●	●	●	●	6.35	2.38	2.8	0.4
			CCMT060208-PSS	●	●	●	●				0.8
			*CCMT09T304-PSS	●	●	●	●	9.525	3.97	4.4	0.4
			CCMT09T308-PSS	●	●	●	●				0.8
			CCMT120404-PSS	●	●	●	●	12.7	4.76	5.5	0.4
			CCMT120408-PSS	●	●	●	●				0.8
			CCMT120412-PSS	●	●	●	●				1.2
Finishing to medium cutting	<b>PS</b> 		CCMT060202-PS	●	●	●	●	6.35	2.38	2.8	0.2
			CCMT060204-PS	●	●	●	●				0.4
			*CCMT060208-PS	●	●	●	●	9.525	3.97	4.4	0.8
			CCMT09T302-PS	●	●	●	●				0.2
			CCMT09T304-PS	●	●	●	●	12.7	4.76	5.5	0.4
			CCMT09T308-PS	●	●	●	●				0.8
			CCMT120404-PS	●	●	●	●				0.4
CCMT120408-PS	●	●	●	●	0.8						
CCMT120412-PS	●	●	●	●	1.2						
Medium cutting	<b>PM</b> 		CCMT060204-PM	●	●	●	●	6.35	2.38	2.8	0.4
			CCMT060208-PM	●	●	●	●				0.8
			CCMT09T304-PM	●	●	●	●	9.525	3.97	4.4	0.4
			*CCMT09T308-PM	●	●	●	●				0.8
			CCMT09T312-PM	●	●	●	●	12.7	4.76	5.5	1.2
			CCMT120408-PM	●	●	●	●				0.8
			CCMT120412-PM	●	●	●	●				1.2

### Rhombic, 80° (11°)

Application	Chipbreaker Appearance (Cross section)	f - ap	Cat. No	Stocked grades				Dimensions (mm)			
				Coated				I.C.dia ød	Thick- ness s	Hole dia ød1	Corner radius rε
				T6120	T6130	AH630	AH645				
Finishing to light cutting	<b>PSS</b> 		CPMT080204-PSS	●	●	●	●	7.94	2.38	3.4	0.4
			CPMT080208-PSS	●	●	●	●				0.8
			*CPMT090304-PSS	●	●	●	●	9.525	3.18	4.4	0.4
			CPMT090308-PSS	●	●	●	●				0.8
Finishing to medium cutting	<b>PS</b> 		CPMT080202-PS	●	●	●	●	7.94	2.38	3.4	0.2
			CPMT080204-PS	●	●	●	●				0.4
			CPMT080208-PS	●	●	●	●				0.8
			*CPMT090304-PS	●	●	●	●	9.525	3.18	4.4	0.4
			CPMT090308-PS	●	●	●	●				0.8

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items



Rhombic, 80° (11°)

Application	Chipbreaker	$f - a_p$	Cat. No	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C.dia $\varnothing d$	Thick- ness S	Hole dia $\varnothing d1$	Corner radius $r\epsilon$
				T6120	T6130	AH630	AH645				
Medium cutting	<b>PM</b>		CPMT060204-PM	●	●	●	●	6.35	2.38	2.8	0.4
	CPMT060208-PM		●	●	●	●	0.8				
	*CPMT090304-PM		●	●	●	●	9.525	3.18	4.4	0.4	
	CPMT090308-PM		●	●	●	●				0.8	

Rhombic, 55° (7°)

Application	Chipbreaker	$f - a_p$	Cat. No	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C.dia $\varnothing d$	Thick- ness S	Hole dia $\varnothing d1$	Corner radius $r\epsilon$
				T6120	T6130	AH630	AH645				
Finishing to light cutting	<b>PSS</b>		DCMT070204-PSS	●	●	●	●	6.35	2.38	2.8	0.4
	DCMT070208-PSS		●	●	●	●	0.8				
	*DCMT11T304-PSS		●	●	●	●	9.525	3.97	4.4	0.4	
	DCMT11T308-PSS		●	●	●	●				0.8	
	DCMT11T312-PSS		●	●	●	●				1.2	
Finishing to medium cutting	<b>PS</b>		DCMT070202-PS	●	●	●	●	6.35	2.38	2.8	0.2
	*DCMT070204-PS		●	●	●	●	0.4				
	DCMT11T302-PS		●	●	●	●	9.525	3.97	4.4	0.2	
	*DCMT11T304-PS		●	●	●	●				0.4	
	DCMT11T308-PS		●	●	●	●				0.8	
DCMT11T312-PS	●	●	●	●	1.2						
Medium cutting	<b>PM</b>		DCMT070204-PM	●	●	●	●	6.35	2.38	2.8	0.4
	DCMT070208-PM		●	●	●	●	0.8				
	DCMT11T304-PM		●	●	●	●	9.525	3.97	4.4	0.4	
	*DCMT11T308-PM		●	●	●	●				0.8	
	DCMT11T312-PM		●	●	●	●				1.2	

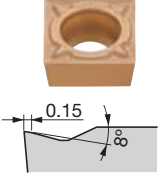
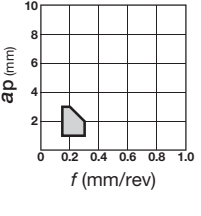
Square, 90° (7°)

Application	Chipbreaker	$f - a_p$	Cat. No	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C.dia $\varnothing d$	Thick- ness S	Hole dia $\varnothing d1$	Corner radius $r\epsilon$
				T6120	T6130	AH630	AH645				
Finishing to medium cutting	<b>PS</b>		*SCMT09T304-PS	●	●	●	●	9.525	3.97	4.4	0.4
	SCMT09T308-PS		●	●	●	●	0.8				
	SCMT120404-PS		●	●	●	●	12.7	4.76	5.5	0.4	
	SCMT120408-PS		●	●	●	●				0.8	

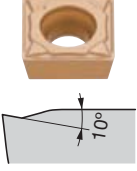
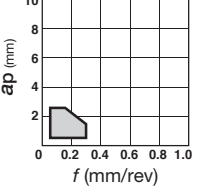
\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

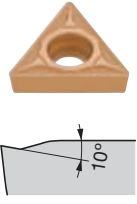
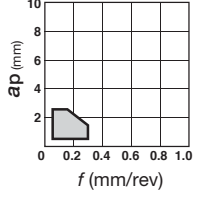
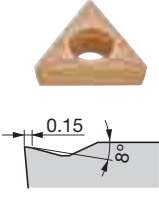
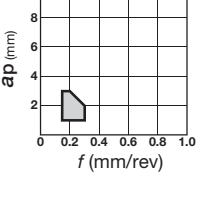
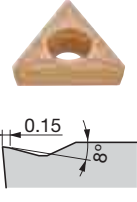
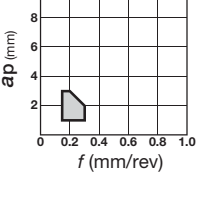
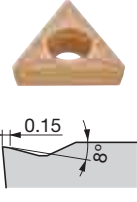
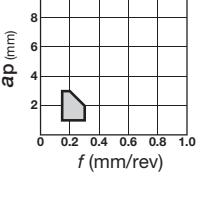
### Square, 90° (7°)

Application	Chipbreaker Appearance (Cross section)	f - ap	Cat. No	Stocked grades				Dimensions (mm)			
				Coated				I.C.dia ød	Thick- ness S	Hole dia ød1	Corner radius rE
				T6120	T6130	AH630	AH645				
Medium cutting	<b>PM</b> 		*SCMT09T304-PM	●	●	●	●	9.525	3.97	4.4	0.4
			SCMT09T308-PM	●	●	●	●				0.8
			SCMT120408-PM	●	●	●	●	12.7	4.76	5.5	0.8
			SCMT120412-PM	●	●	●	●				1.2

### Square, 90° (11°)

Application	Chipbreaker Appearance (Cross section)	f - ap	Cat. No	Stocked grades				Dimensions (mm)			
				Coated				I.C.dia ød	Thick- ness S	Hole dia ød1	Corner radius rE
				T6120	T6130	AH630	AH645				
Finishing to medium cutting	<b>PS</b> 		SPMT090304-PS	●	●	●	●	9.525	3.97	4.4	0.4
			SPMT090308-PS	●	●	●	●				0.8
			SPMT120404-PS	●	●	●	●	12.7	4.76	5.5	0.4
			*SPMT120408-PS	●	●	●	●				0.8

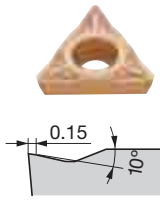
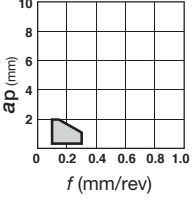
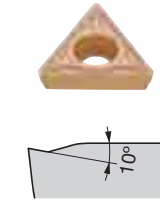
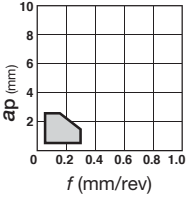
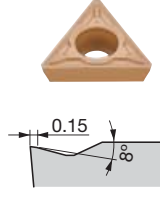
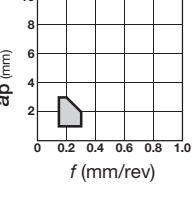
### Triangular, 60° (7°)

Application	Chipbreaker Appearance (Cross section)	f - ap	Cat. No	Stocked grades				Dimensions (mm)						
				Coated				I.C.dia ød	Thick- ness S	Hole dia ød1	Corner radius rE			
				T6120	T6130	AH630	AH645							
Finishing to medium cutting	<b>PS</b> 		TCMT110202-PS	●	●	●	●	6.35	2.38	2.8	0.2			
			*TCMT110204-PS	●	●	●	●				0.4			
			TCMT110208-PS	●	●	●	●				0.8			
			Medium cutting	<b>PM</b> 		TCMT110302-PS	●	●	●	●	6.35	3.18	2.8	0.2
						TCMT110304-PS	●	●	●	●				0.4
						TCMT110308-PS	●	●	●	●	9.525	3.97	4.4	0.8
						TCMT16T302-PS	●	●	●	●				0.2
TCMT16T304-PS	●	●				●	●	0.4						
TCMT16T308-PS	●	●				●	●	0.8						
Medium cutting	<b>PM</b> 					TCMT110202-PM	●	●	●	●	6.35	2.38	2.8	0.2
			TCMT110204-PM	●	●	●	●	0.4						
			TCMT110208-PM	●	●	●	●	0.8						
			Medium cutting	<b>PM</b> 		TCMT110302-PM	●	●	●	●	6.35	3.18	2.8	0.2
						TCMT110304-PM	●	●	●	●				0.4
						TCMT110308-PM	●	●	●	●	9.525	3.97	4.4	0.8
						*TCMT16T304-PM	●	●	●	●				0.4
TCMT16T308-PM	●	●	●	●	0.8									
TCMT16T312-PM	●	●	●	●	1.2									

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

Triangular, 60° (11°)

Application	Chipbreaker Appearance (Cross section)	f - ap	Cat. No	Stocked grades				Dimensions (mm)						
				Coated				I.C.dia ød	Thick- ness s	Hole dia ød1	Corner radius rε			
				T6120	T6130	AH630	AH645							
Finishing to light cutting			TPMT090204-PSS	●	●	●	●	5.56	2.38	2.5	0.4			
			TPMT090208-PSS	●	●	●	●				0.8			
			*TPMT110204-PSS	●	●	●	●	6.35	2.38	2.8	0.4			
			TPMT110208-PSS	●	●	●	●				0.8			
			TPMT110304-PSS	●	●	●	●	6.35	3.18	3.4	0.4			
			TPMT110308-PSS	●	●	●	●				0.8			
			TPMT130304-PSS	●	●	●	●	7.94	3.18	3.4	0.4			
			TPMT130308-PSS	●	●	●	●				0.8			
			TPMT16T304-PSS	●	●	●	●	9.525	3.97	4.4	0.4			
			TPMT16T308-PSS	●	●	●	●				0.8			
			Finishing to medium cutting			TPMT090202-PS	●	●	●	●	5.56	2.38	2.5	0.2
						TPMT090204-PS	●	●	●	●				0.4
TPMT090208-PS	●	●				●	●	0.8						
TPMT110202-PS	●	●				●	●	6.35	2.38	2.8	0.2			
*TPMT110204-PS	●	●				●	●				0.4			
TPMT110208-PS	●	●				●	●	0.8						
TPMT110304-PS	●	●				●	●	6.35	3.18	3.4	0.4			
TPMT110308-PS	●	●				●	●				0.8			
TPMT130304-PS	●	●				●	●	7.94	3.18	3.4	0.4			
TPMT130308-PS	●	●				●	●				0.8			
TPMT16T304-PS	●	●				●	●	9.525	3.97	4.4	0.4			
TPMT16T308-PS	●	●				●	●				0.8			
Medium cutting			TPMT090204-PM	●	●	●	●	5.56	2.38	2.5	0.4			
			TPMT090208-PM	●	●	●	●				0.8			
			TPMT110204-PM	●	●	●	●	6.35	2.38	2.8	0.4			
			TPMT110208-PM	●	●	●	●				0.8			
			TPMT110304-PM	●	●	●	●	6.35	3.18	3.4	0.4			
			TPMT110308-PM	●	●	●	●				0.8			
			TPMT130304-PM	●	●	●	●	7.94	3.18	3.4	0.4			
			TPMT130308-PM	●	●	●	●				0.8			
			*TPMT16T304-PM	●	●	●	●	9.525	3.97	4.4	0.4			
			TPMT16T308-PM	●	●	●	●				0.8			
			TPMT16T312-PM	●	●	●	●				1.2			

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

### Rhombic, 35° (5°)

Application	Chipbreaker	$f - ap$	Cat. No	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C. dia ød	Thick- ness s	Hole dia ød1	Corner radius r $\epsilon$
				T6120	T6130	AH630	AH645				
Finishing to light cutting	<b>PSS</b>		VBMT110304-PSS	●	●	●	●	6.35	3.18	2.8	0.4
	VBMT110308-PSS		●	●	●	●	0.8				
	*VBMT160404-PSS		●	●	●	●	9.525	4.76	4.4	0.4	
	VBMT160408-PSS		●	●	●	●				0.8	
Finishing to medium cutting	<b>PS</b>		*VBMT110302-PS	●	●	●	●	6.35	3.18	2.8	0.2
	VBMT110304-PS		●	●	●	●	0.4				
	VBMT110308-PS		●	●	●	●	0.8				
	VBMT160402-PS		●	●	●	●	9.525	4.76	4.4	0.2	
	VBMT160404-PS		●	●	●	●				0.4	
	VBMT160408-PS		●	●	●	●				0.8	

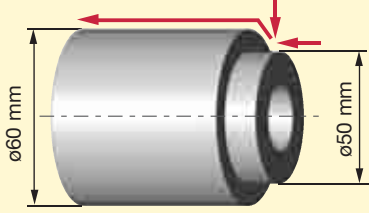
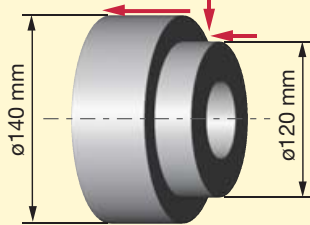
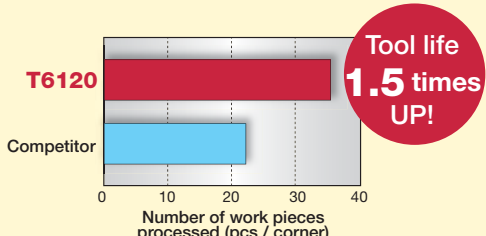
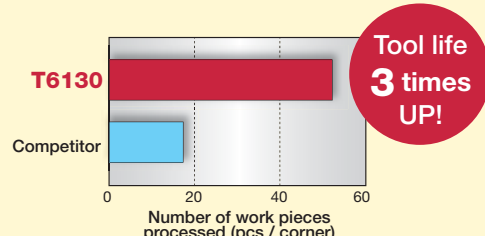
### Rhombic, 35° (7°)

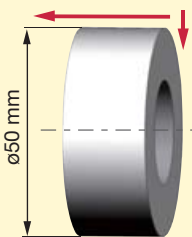
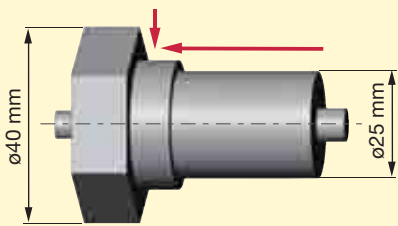
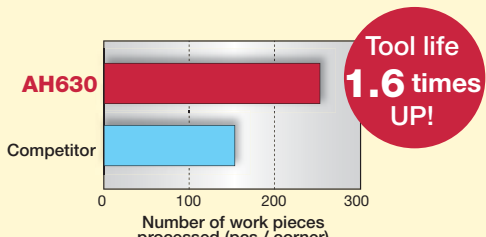
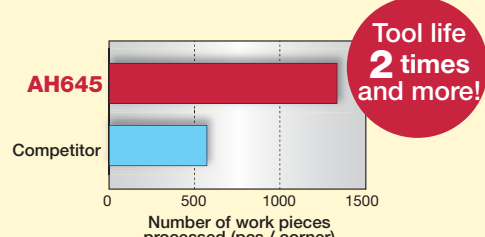
Application	Chipbreaker	$f - ap$	Cat. No	Stocked grades				Dimensions (mm)			
	Appearance (Cross section)			Coated				I.C. dia ød	Thick- ness s	Hole dia ød1	Corner radius r $\epsilon$
				T6120	T6130	AH630	AH645				
Finishing to light cutting	<b>PSS</b>		VCMT110304-PSS	●	●	●	●	6.35	3.18	2.8	0.4
	VCMT110308-PSS		●	●	●	●	0.8				
	*VCMT160404-PSS		●	●	●	●	9.525	4.76	4.4	0.4	
	VCMT160408-PSS		●	●	●	●				0.8	
Finishing to medium cutting	<b>PS</b>		VCMT110302-PS	●	●	●	●	6.35	3.18	2.8	0.2
	VCMT110304-PS		●	●	●	●	0.4				
	*VCMT110308-PS		●	●	●	●	0.8				
	VCMT160404-PS		●	●	●	●	9.525	4.76	4.4	0.4	
	VCMT160408-PS		●	●	●	●				0.8	

\*Note: Chipbreaker cross sections are of the inserts marked \*

● : Stocked items

# Practical examples

Workpiece type		Shaft	Machine parts
Insert		CNMG120408-SM	WNMG080412-SM
Grade		T6120	T6130
Work material		SUS304 / X5CrNi18-9	SUS303 / X10CrNiS18-9
			
Cutting conditions	Cutting speed: $V_c$ (m/min)	120	125
	Feed: $f$ (mm/rev)	0.5	0.3
	Depth of cut: $a_p$ (mm)	1.5	1.3
	Machining	Continuous	Continuous
Coolant		Wet	Wet
Results		 <p><b>T6120</b> has excellent wear resistance, achieving 1.5 times longer tool life than competitor CVD grades.</p>	 <p><b>T6130</b> allows better surface finish and 3 times longer tool life than competitor inserts due to its high wear and chipping resistance.</p>

Workpiece type		Shaft	Machine parts
Insert		CNMG120408-SM	CNMG120404-SM
Grade		AH630	AH645
Work material		SUS304 / X5CrNi18-9	SUS304 / X5CrNi18-9
			
Cutting conditions	Cutting speed: $V_c$ (m/min)	150	100
	Feed: $f$ (mm/rev)	0.3	0.15
	Depth of cut: $a_p$ (mm)	2	1 ~ 2.5
	Machining	Continuous	Interrupted
Coolant		Wet	Wet
Results		 <p><b>AH630</b> has a good balance of wear and chipping resistance, achieving 1.6 times longer tool life than competitor grades.</p>	 <p><b>AH645</b> has excellent fracture resistance, achieving 2 times longer tool life than competitor grades.</p>



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