

# TURNLINE

New grooving and parting off tools

# TUNG

Extended version  
with items

The complete grooving solution !



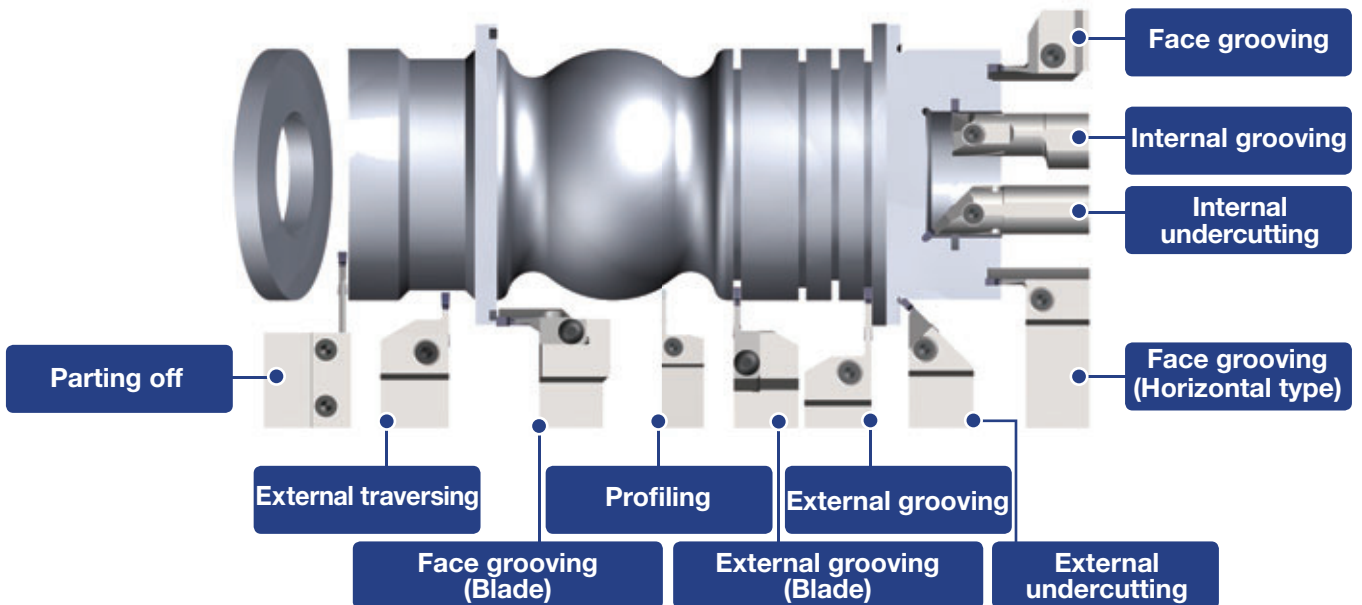
# New insert grades expand the application range

## Multifunctional system for grooving needs !

### Features

● Suited for a wide variety of grooving operations

#### ■ Multi-functional grooving system



● High clamping rigidity

For stable tool life and accuracy

#### ■ Clamping system

● Stable and safe contact points !

#### ■ Limited cutting edge displacement

Load (N)	Competitor Displacement (mm)	Conventional Displacement (mm)	TUNG CUT Displacement (mm)
0	0.000	0.000	0.000
500	0.005	0.003	0.002
1000	0.015	0.010	0.005
1500	0.030	0.020	0.008

Measuring point

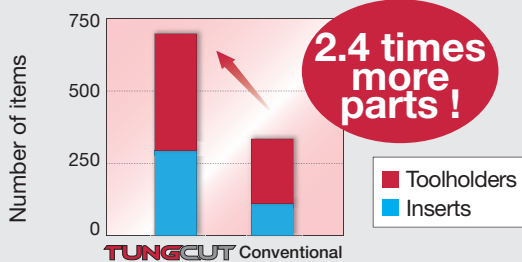


**Great selection of standard items**

*HOLDERS AND INSERTS APPLICABLE FOR ALL GROOVING DEMANDS !*

**Comparison of items**

Expands the internal grooving tools with new 2 mm wide inserts



**Line-up of width in TungCut**

Type	Application	TUNG CUT (mm)	Conventional (mm)
CTE	External grooving	2 - 8	2 - 5
CTI	Internal grooving	<b>NEW</b> 2 - 8	3 - 5
CTF	Face grooving	3 - 6	3 - 5
JCTE	Small lathe tools	1.4 - 3	2
CGP	Parting off (Blade type)	1.4 - 8	3 - 5
CGE	Parting off (Shank type)	1.4 - 4	2 - 5

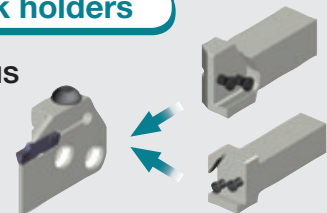
**Mono block toolholders**

High rigidity !



**Blades with shank holders**

Available for various machining !



**Blades with tool blocks**

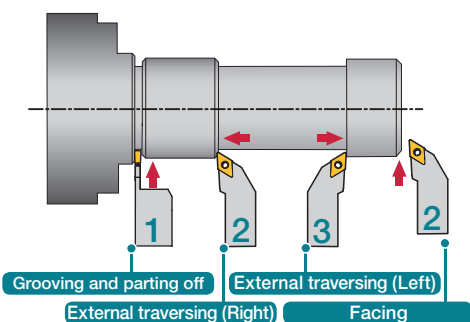
Suitable for large diameter machining !



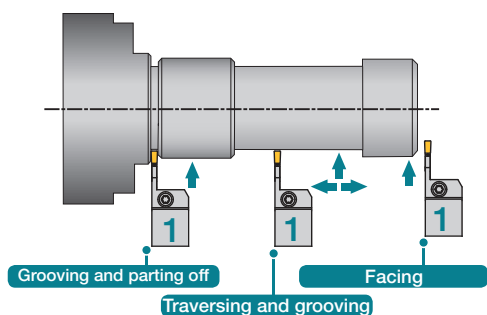
**Economical**

*MULTI-FUNCTIONAL TOOL REDUCES TOOL SET-UPS*

**Conventional**



**TUNG CUT**

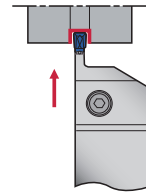


## Cutting performance

### ● Chip control

Unique chipbreaker provides excellent chip control in various conditions !

Cutting condition	Carbon steels (S45C)					Stainless steels (SUS304)			
	Feed $f$ (mm/rev)					Feed $f$ (mm/rev)			
	0.10	0.15	0.20	0.25	0.30	0.10	0.15	0.20	0.25
TUNG CUT	Good					Good			
Competitor A	Unstable			With vibration	Unstable				



Insert : DGM4-030  
 Toolholder : CTER2525-4T25  
 Groove width :  $W = 4$  mm  
 Cutting speed:  $V_c = 100$  m/min  
 Feed :  $f = 0.1 \sim 0.3$  mm/rev  
 Coolant : Water soluble

## Grades

### AH725



- Recommended grade for general purpose machining
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

### T9125 **NEW**



- Suitable grade for steel machining at high speed
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

### NS9530 **NEW**



- Advanced cermet grade for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

### GH130



- Recommended grade for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness and wear resistance

### AH905 **NEW**



- Remarkable grade for machining of heat resistant alloy
- Exclusive coating layer improves adhesion strength and wear resistance

### TH10



- Recommended grade for non-ferrous alloy cutting

### BX360 **NEW**



- Suitable grade for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

Grade	Substrate		Coating layer		Features
	Specific gravity	Hardness	Main Composition	Thickness ( $\mu$ m)	
AH725	14.4	91.5 HRA	(Ti,Al)N	2	PVD coated "Flash-coating" fine grain cemented carbide
<b>NEW</b> T9125	13.7	90.0 HRA	TiCN + Al <sub>2</sub> O <sub>3</sub>	16	This versatile grade dramatically improves chipping resistance
<b>NEW</b> NS9530	6.8	91.7 HRA	-	-	Versatile cermet grade with incredible fracture and wear resistance.
GH130	14.1	89.5 HRA	TiCNO	3	Superior resistance to chipping and fracture. Excels in interrupted cutting
<b>NEW</b> AH905	15.0	93.0 HRA	(Al,Ti)N	1.5	Excels in both cutting edge sharpness and wear resistance
TH10	14.7	92.0 HRA	-	-	Carbide grade with excellent wear resistance and toughness
<b>NEW</b> BX360	-	3200 - 3400 Hv	-	-	CBN grade with exceptional balance of wear and chipping resistance

## Insert application

Insert	Application						
	Grooving			Parting off	Traversing		
	External	Internal	Face		External	Internal	Face
DGM / SGM	●		●	●			
DGS / SGS	●		●	●			
DTE	●		●		●		●
DGE	●						
DTX	●	●	●	●	●	●	●
DTI		●				●	
<b>NEW</b> DGIM / DGIS		●					
DTF			●				●
DTR	●		●		●		●
DTIU	● Undercutting	● Undercutting					
DTA					● AI wheel machining	● AI wheel machining	
<b>NEW</b> SGN	●						


## Standard cutting conditions

Work materials	Hardness	Priority	Grade	Cutting speed Vc (m/min)
Steels (S45C / C45, SCM435 / 34CrMo4 etc.)	< 300 HB	First choice	<b>AH725</b>	50 - 180
		Priority for wear resistance	<b>T9125</b>	80 - 200
		Priority for impact resistance	<b>GH130</b>	50 - 120
		Priority for surface finish	<b>NS9530</b>	80 - 220
Stainless steels (SUS303 / X10CrNiS18-9 etc.)	< 200 HB	First choice	<b>AH725</b>	50 - 120
		Priority for impact resistance	<b>GH130</b>	50 - 120
Grey cast irons (FC250 / GG25 / 250 etc.)	-	First choice	<b>GH130</b>	50 - 180
Ductile cast irons (FCD450 / GGG45 / 450-10S etc.)	-	First choice	<b>GH130</b>	50 - 120
Aluminium alloys (Si < 12%)	-	First choice	<b>TH10</b>	100 - 500
Titanium alloys (Ti-6Al-4V etc.)	< 40 HRC	First choice	<b>AH905</b>	20 - 80
		Priority for impact resistance	<b>AH725</b>	
Hardened steels (SCM435 / 34CrMo4)	> 50 HRC	First choice	<b>BX360</b>	80 - 150

## Features of inserts

### External grooving and parting off

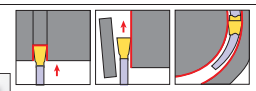
**DGM type (2 corner)**  
**SGM type (1 corner)**



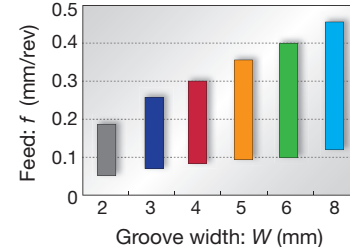
**1st choice for external grooving and parting off**

- Smooth chip evacuation
- Well designed edge with high strength
- Handed insert available

■ Standard feed




Feed:  $f$  (mm/rev)



Groove width: $W$ (mm)	Feed: $f$ (mm/rev)
2	0.18
3	0.25
4	0.30
5	0.35
6	0.40
8	0.45

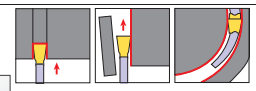
**DGS type (2 corner)**  
**SGS type (1 corner)**



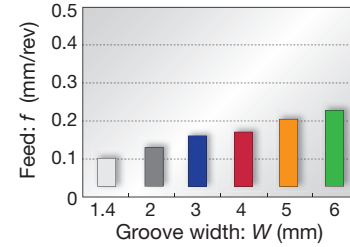
**Lower cutting force and superior sharpness**

- Unique designed edge and chipbreaker
- Handed insert available

■ Standard feed




Feed:  $f$  (mm/rev)



Groove width: $W$ (mm)	Feed: $f$ (mm/rev)
1.4	0.08
2	0.12
3	0.15
4	0.18
5	0.22
6	0.25

### External, face grooving and traversing

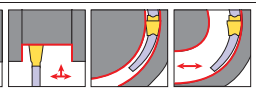
**DTE type (2 corner)**



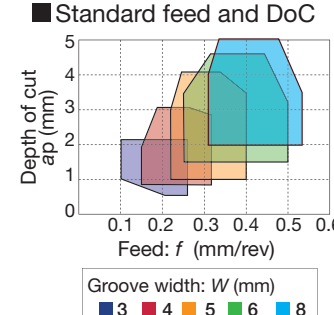
**For general purpose**

- Unique chipbreaker makes chips shorter
- Molded and ground insert available

■ Standard feed and DoC



Depth of cut  $a_p$  (mm)

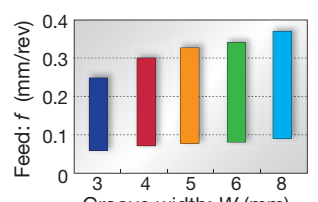


Feed:  $f$  (mm/rev)

Groove width:  $W$  (mm)

- 3
- 4
- 5
- 6
- 8


Feed:  $f$  (mm/rev)



Groove width: $W$ (mm)	Feed: $f$ (mm/rev)
3	0.25
4	0.30
5	0.35
6	0.40
8	0.45

### External, internal, face grooving and traversing

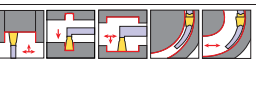
**DTX type (2 corner)**



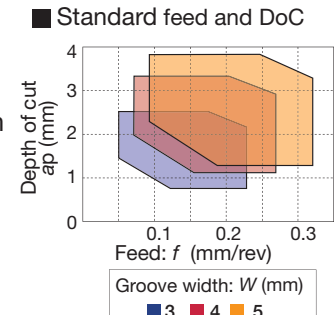
**Multi-functional type**

- Well balanced sharpness and strength
- Multi functional insert

■ Standard feed and DoC



Depth of cut  $a_p$  (mm)

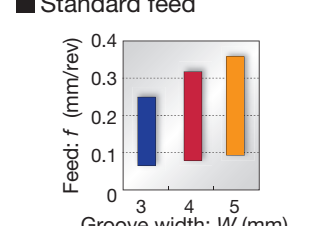


Feed:  $f$  (mm/rev)

Groove width:  $W$  (mm)

- 3
- 4
- 5


Feed:  $f$  (mm/rev)



Groove width: $W$ (mm)	Feed: $f$ (mm/rev)
3	0.25
4	0.30
5	0.35

### External grooving


**DGE type (2 corner)**



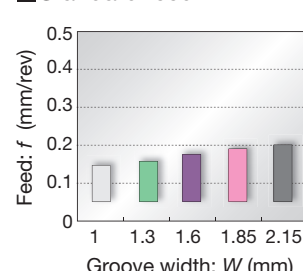
**For high accurate and shallow groove**

- Excellent chip control

■ Standard feed



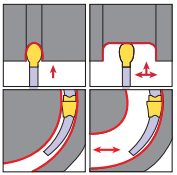
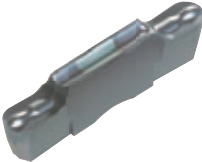
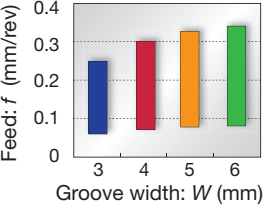
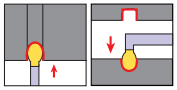


Feed:  $f$  (mm/rev)


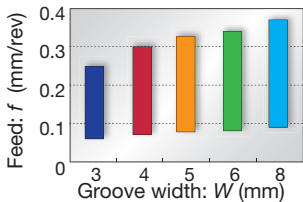
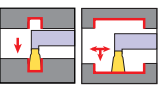


Groove width: $W$ (mm)	Feed: $f$ (mm/rev)
1	0.15
1.3	0.18
1.6	0.20
1.85	0.22
2.15	0.25


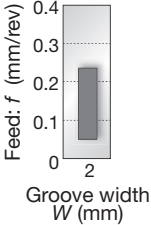


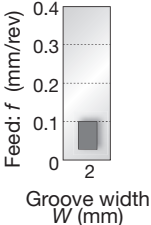

## Profiling and undercutting

<p><b>DTR type (2 corner)</b></p> <p>Molded</p>  <p>Ground</p> 	<p><b>Full radius type</b></p> <ul style="list-style-type: none"> <li>● Excellent chip control</li> <li>● Molded and ground insert available</li> </ul>	<p>■ Standard feed and DoC</p> 
<p><b>DTIU type (2 corner)</b></p> 	<p><b>Full radius type</b></p> <ul style="list-style-type: none"> <li>● Excellent chip control</li> <li>● For undercutting</li> </ul>	<p>■ Standard feed and DoC</p>  

## Internal grooving and traversing


<p><b>DTI type (2 corner)</b></p> 	<p><b>1st choice for internal grooving</b></p> <ul style="list-style-type: none"> <li>● Unique chipbreaker makes chips shorter</li> <li>● Molded and ground insert available</li> </ul>	<p>■ Standard feed and DoC</p> <p>■ Standard feed</p>  
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## Small diameter internal grooving

<p><b>DGIM type (2 corner)</b></p> <p><b>NEW</b></p> 	<p><b>2 mm insert width only (For general purpose)</b></p> <ul style="list-style-type: none"> <li>● Unique chipbreaker for excellent chip control</li> <li>● Excellent fracture resistance due to optimum land on the cutting edge</li> <li>● For general applications on steels &amp; stainless steels</li> </ul>	<p>■ Standard feed</p>  
<p><b>DGIS type (2 corner)</b></p> <p><b>NEW</b></p> 	<p><b>2 mm insert width only (Lower cutting force)</b></p> <ul style="list-style-type: none"> <li>● Low cutting force due to a unique land geometry</li> <li>● Applicable for low carbon steels &amp; stainless steels</li> </ul>	<p>■ Standard feed</p>  

## Face grooving and traversing

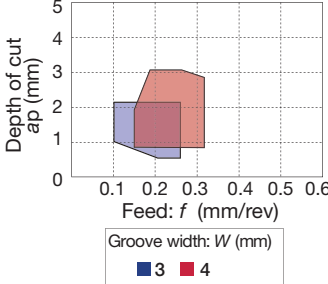
**DTF type (2 corner)**



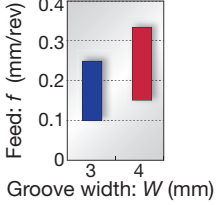
**1st choice for face grooving**

- Unique chipbreaker makes chips shorter
- Handed insert

■ Standard feed and DoC




■ Standard feed



## Aluminium wheel machining

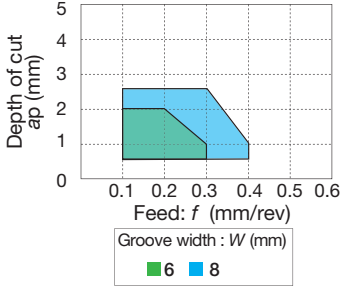
**DTA type (2 corner)**



**Full radius type**


- Excellent chip control
- For aluminium wheel profiling
- Ground insert

■ Standard feed and DoC



## External grooving of hardened steels

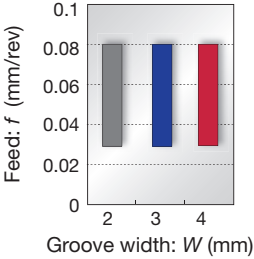
**SGN-QBN type (1 corner)**



**For hardened steel cutting**

- Optimum cutting edge shape for grooving of hardened steels
- High tolerance width for finishing ( $W = \pm 0.025$  mm)

■ Standard feed

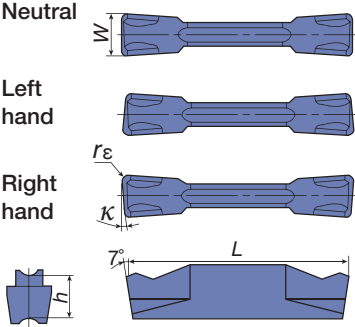


## Inserts

### ■ Notation of "insert seat size"

Seat size and grooving width are different. The seat size measurement is for the specification of the setting insert. Please note this point.

### DGM External grooving and parting off, 2 corner



Insert seat size	Cat. No.	Grades										Dimensions (mm)						
		Coated					Cermet					W±0.05	r <sub>E</sub>	L	h	κ		
		NEW T9125		NEW AH725		NEW AH905		GH130		NS530							NEW NS9530	
R	L	R	L	R	L	R	L	R	L	R	L	R	L					
2	DGM2-020	●		●				●		●		★		2	0.2	20	5	-
	DGM2-020-6R/L			●	●			●	●					2	0.2	19.8	5	6°
	DGM2-020-8R/L			●	●			●	●					2	0.2	19.8	5	8°
	DGM2-020-15R/L			●	●			●	●					2	0.2	19.8	5	15°
	DGM2-002-15R/L			●	●			●	●					2	0.02	19.35	5	15°
3	DGM3-020	●		●		●		●		●		★		3	0.2	20	5	-
	DGM3-020-6R/L			●	●			●	●					3	0.2	19.9	5	6°
	DGM3-002-6R/L			●	●			●	●					3	0.02	19.45	5	6°
	DGM3-020-15R/L			●	●			●	●					3	0.2	19.9	5	15°
4	DGM4-030	●		●		●		●		●		★		4	0.3	20	5	-
	DGM4-030-4R/L			●	●			●	●					4	0.3	19.8	5	4°
	DGM4-030-15R/L			●	●			●	●					4	0.3	19.8	5	15°
5	DGM5-030	●		●		●		●		●		★		5	0.3	25	5.5	-
	DGM5-030-4R			●		●		●						5	0.3	24.9	5.5	4°
6	DGM6-030	●		●		●		●						6	0.3	25	5.5	-
8	DGM8-040	●		●				●						8	0.4	30	6.7	-

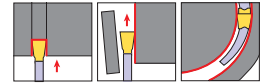
● : Stocked items

★ : Available in 2013



## SGM

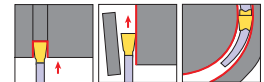
### External deep grooving and parting off, 1 corner



Neutral Left hand Right hand		Insert seat size	Cat. No.	Grades				Dimensions (mm)				
				Coated				W±0.05	r <sub>E</sub>	L	h	κ
				AH725		GH130						
				R	L	R	L					
2	SGM2-020	●	●			2	0.2	20	5	-		
	SGM2-020-6R/L	●	●	●	●	2	0.2	19.8	5	6°		
3	SGM3-020	●	●			3	0.2	20	5	-		
	SGM3-020-6R/L	●	●	●	●	3	0.2	19.6	5	6°		
	SGM3-020-15R/L	●	●	●	●	3	0.2	19.6	5	15°		
4	SGM4-030	●	●			4	0.3	20	5	-		
	SGM4-030-4R/L	●	●	●	●	4	0.3	19.65	5	4°		
	SGM5-030	●	●			5	0.3	25	5.5	-		
	SGM6-030	●	●			6	0.3	25	5.5	-		

## DGS

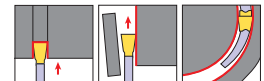
### External grooving and parting off, 2 corner



Neutral Left hand Right hand		Insert seat size	Cat. No.	Grades								Dimensions (mm)				
				Coated						Cermet		W±0.05	r <sub>E</sub>	L	h	κ
				NEW T9125		AH725		GH130		NEW NS9530						
				R	L	R	L	R	L	R	L					
1	DGS1.4-016	★	●	●				★		1.4	0.16	16	4.3	-		
2	DGS2-020	★	●	●				★		2	0.2	20	5	-		
	DGS2-020-6R/L		●	●	●	●				2	0.02	19.95	5	6°		
	DGS2-002-6R/L		●	●	●	●				2	0.2	19.8	5	6°		
	DGS2-020-15R/L		●	●	●	●				2	0.2	19.95	5	15°		
	DGS2-002-15R/L		●	●	●	●				2	0.02	19.8	5	15°		
3	DGS3-020	★	●	●				★		3	0.2	20	5	-		
	DGS3-020-6R/L		●	●	●	●				3	0.2	19.9	5	6°		
	DGS3-002-6R/L		●	●	●	●				3	0.02	19.6	5	6°		
	DGS3-020-15R/L		●	●	●	●				3	0.2	19.9	5	15°		
	DGS3-002-15R/L		●	●	●	●				3	0.02	19.45	5	15°		
4	DGS4-030	★	●	●				★		4	0.3	20	5	-		
	DGS4-030-4R/L		●	●	●	●				4	0.3	19.8	5	4°		
5	DGS5-030	★	●	●				★		5	0.3	25	5.5	-		
6	DGS6-030	★	●	●				★		6	0.3	25	5.5	-		

## SGS

### External deep grooving and parting off, 1 corner

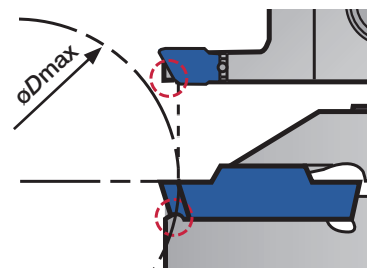


Neutral Left hand Right hand		Insert seat size	Cat. No.	Grades				Dimensions (mm)				
				Coated				W±0.05	r <sub>E</sub>	L	h	κ
				AH725		GH130						
				R	L	R	L					
2	SGS2-020	●	●			2	0.2	20	5	-		
	SGS2-020-6R/L	●	●	●	●	2	0.2	19.8	5	6°		
	SGS2-020-15R/L	●	●	●	●	2	0.2	19.8	5	15°		
3	SGS3-020	●	●			3	0.2	20	5	-		
	SGS3-020-6R/L	●	●	●	●	3	0.2	19.64	5	6°		
	SGS3-002-6R/L	●	●	●	●	3	0.02	19.8	5	6°		
	SGS3-020-15R/L	●	●	●	●	3	0.2	19.64	5	15°		
	SGS3-002-15R/L	●	●	●	●	3	0.02	19.8	5	15°		
4	SGS4-030	●	●			4	0.3	20	5	-		
5	SGS5-030	●	●			5	0.3	25	5.5	-		
6	SGS6-030	●	●			6	0.3	25	5.5	-		

### Caution

Cat. No.	øDmax (mm)	Cat. No.	øDmax (mm)
DGM2-002-15R/L	28	DGS2-002-15R/L	28
DGM3-002-15R/L	29	DGS3-002-15R/L	29
DGM4-030-15R/L	30	SGS3-020-15R/L	103
SGM3-020-15R/L	103	SGS3-002-15R/L	34

The tool will interfere with the workpiece when grooving larger diameter than øDmax.



● : Stocked items  
★ : Available in 2013



## DGE External grooving (Ground)

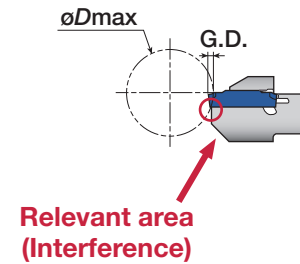
	Insert seat size	Cat. No.	Grades			Dimensions (mm)				
			Coated		Cermet	W±0.02	rε±0.05	L1	L	h
			AH725	GH130	NEW NS9530					
	2	DGE100-000	●	●	★	1	0	2.5	20	5
		DGE130-000	●	●	★	1.3	0	2.5	20	5
		DGE160-010	●	●	★	1.6	0.1	2.5	20	5
		DGE185-010	●	●	★	1.85	0.1	3.5	20	5
		DGE215-015	●	●	★	2.15	0.15	3.5	20	5

### Caution

øDmax is limited as shown in the picture to the right according to the groove depth, G.D. Please refer to the following table.

G.D = Groove depth

Cat. No.	Max. groove depth (mm)	øDmax (mm)				
		G.D. = 1	G.D. = 1.5	G.D. = 2	G.D. = 2.5	G.D. = 3
DGE100-000	2	∞	18.6	11.5	-	-
DGE130-000					-	-
DGE160-010					-	-
DGE185-010	3				8.8	7
DGE215-015						



## DTE External, face grooving and traversing (Ground)

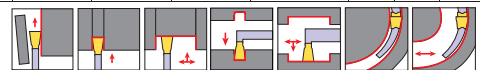


	Insert seat size	Cat. No.	Grades					Dimensions (mm)			
			Coated			Cermet		W±0.02	rε±0.05	L	h
			NEW T9125	AH725	GH130	NS530	NEW NS9530				
	3	DTE265-015	●	●	●	●	★	2.65	0.15	20	5
		DTE300-020	●	●	●	●	★	3	0.2	20	5
		DTE300-040	●	●	●	●	★	3	0.4	20	5
		DTE315-015	●	●	●	●	★	3.15	0.15	20	5
	4	DTE400-040	●	●	●	●	★	4	0.4	20	5
		DTE400-080	●	●	●	●	★	4	0.8	20	5
		DTE415-015	●	●	●	●	★	4.15	0.15	20	5
	5	DTE478-055	●	●	●	●	★	4.78	0.55	25	5.5
		DTE500-040	●	●	●	●	★	5	0.4	25	5.5
		DTE500-080	●	●	●	●	★	5	0.8	25	5.5
		DTE515-015	●	●	●	●		5.15	0.15	25	5.5
	6	DTE600-080	●	●	●			6	0.8	25	5.5
		DTE600-120	●	●	●			6	1.2	25	5.5
	8	DTE800-080	●	●	●			8	0.8	30	6.7
		DTE800-120	●	●	●			8	1.2	30	6.7

## External, face grooving and traversing (Molded)

	Insert seat size	Cat. No.	Grades					Dimensions (mm)			
			Coated			Cermet		W±0.05	rε	L	h
			NEW T9125	AH725	GH130	NS530	NEW NS9530				
	3	DTE3-040	●	●	●	●	★	3	0.4	20	5
		DTE4-040	●	●	●	●	★	4	0.4	20	5

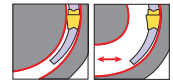
## DTX External, internal, face grooving and traversing



	Insert seat size	Cat. No.	Grades				Dimensions (mm)			
			Coated		Cermet		W±0.05	rε	L	h
			NEW T9125	AH725	GH130	NEW NS9530				
	3	DTX3-030	★	●	●	★	3	0.3	20	5
		DTX4-040	★	●	●	★	4	0.4	20	5
		DTX5-040	★	●	●	★	5	0.4	25	5.5

● : Stocked items

★ : Available in 2013

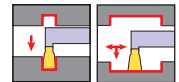


## DTF Face grooving and traversing

	Insert seat size	Cat. No.	Grades								Dimensions (mm)				
			Coated						Cermet		W±0.05	r <sub>ε</sub>	L	h	L <sub>1</sub>
			NEW T9125		AH725		GH130		NEW NS9530						
			R	L	R	L	R	L	R	L					
3	DTF3-040-R/L	★	★	●	●	●	●	★	★	3	0.4	20	5	16	
4	DTF4-040-R/L	★	★	●	●	●	●	★	★	4	0.4	20	5	16	

Right hand (R) shown.

Apply right hand inserts on right hand holders and left hand inserts on left hand holders.



## DTI Internal grooving and traversing (Ground)

	Insert seat size	Cat. No.	Grades				Dimensions (mm)			
			Coated			Cermet	W±0.02	r <sub>ε</sub> ±0.05	L	h
			NEW T9125	AH725	GH130	NEW NS9530				
			★	●	●	★				
3	DTI300-040	★	●	●	★	3	0.4	20	5	
4	DTI400-040	★	●	●	★	4	0.4	20	5	
	DTI400-080	★	●	●	★	4	0.8	20	5	
5	DTI500-040	★	●	●	★	5	0.4	25	5.5	
	DTI500-080	★	●	●	★	5	0.8	25	5.5	
6	DTI600-080	★	●	●		6	0.8	25	5.5	
	DTI600-120	★	●	●		6	1.2	25	5.5	
8	DTI800-080	★	●	●		8	0.8	30	6.7	
	DTI800-120	★	●	●		8	1.2	30	6.7	

## Internal grooving and traversing (Molded)

	Insert seat size	Cat. No.	Grades				Dimensions (mm)			
			Coated			Cermet	W±0.05	r <sub>ε</sub>	L	h
			NEW T9125	AH725	GH130	NEW NS9530				
			★	●	●	★				
3	DTI3-040	★	●	●	★	3	0.4	20	5	
4	DTI4-040	★	●	●	★	4	0.4	20	5	

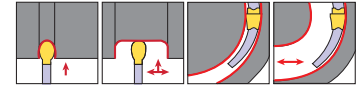
## DGIM Small diameter internal grooving

	Insert seat size	Cat. No.	Grades				Dimensions (mm)			
			Coated			Cermet	W±0.02	r <sub>ε</sub> ±0.05	L	h
			NEW T9125	AH725	GH130	NEW NS9530				
			★	★	★	★				
2	DGIM2-020	★	★	★	★	2	0.2	20	5	

## DGIS Small diameter internal grooving

	Insert seat size	Cat. No.	Grades				Dimensions (mm)			
			Coated			Cermet	W±0.02	r <sub>ε</sub> ±0.05	L	h
			NEW T9125	AH725	GH130	NEW NS9530				
			★	★	★	★				
2	DGIS2-020	★	★	★	★	2	0.2	20	5	

● : Stocked items  
★ : Available in 2013

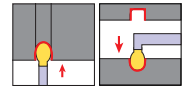


## DTR Profiling and undercutting (Ground)

	Insert seat size	Cat. No.	Grades				Dimensions (mm)			
			Coated			Cermet	W±0.02	rε	L	h
			<b>NEW</b> T9125	AH725	GH130	<b>NEW</b> NS9530				
3	DTR300-150	★	●	●	★	3	1.5	20	5	
4	DTR400-200	★	●	●	★	4	2	20	5	
5	DTR478-239	★	●	●	★	4.78	2.39	25	5.5	
	DTR500-250	★	●	●	★					
6	DTR600-300	★	●	●		6	3	25	5.5	

## Profiling and undercutting (Molded)

	Insert seat size	Cat. No.	Grades					Dimensions (mm)			
			Coated				Cermet	W±0.05	rε	L	h
			<b>NEW</b> T9125	AH725	<b>NEW</b> AH905	GH130	<b>NEW</b> NS9530				
3	DTR3-150	★	●	★	●	★	3	1.5	20	5	
4	DTR4-200	★	●	★	●	★	4	2	20	5	
5	DTR5-250	★	●	★	●	★	5	2.5	25	5.5	
6	DTR6-300	★	●		●		6	3	25	5.5	
8	DTR8-400	★	●		●		8	4	30	6.7	

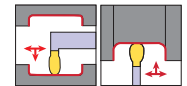


## DTIU Profiling and undercutting (Ground)

	Insert seat size	Cat. No.	Grades		Dimensions (mm)			
			Coated		W±0.02	rε	L	h
			AH725	GH130				
3	DTIU300-150		●	●	3	1.5	20	5
4	DTIU400-200		●	●	4	2	20	5
5	DTIU500-250		●	●	5	2.5	25	5.5
6	DTIU600-300		●	●	6	3	25	5.5

## DTA Aluminium wheel machining (Ground)

	Insert seat size	Cat. No.	Grades	Dimensions (mm)				
			Carbide	W±0.02	rε	L	h	A
			TH10					
6	DTA600-300		●	6	3	25	5.5	7°
8	DTA800-400		●	8	4	30	6.7	10°



## SGN External grooving of hardened steels

	Insert seat size	Cat. No.	Grades	Dimensions (mm)			
			CBN	W±0.025	rε	L	h
			BX360				
<b>NEW</b>	2	SGN200-020	★	2	0.2	20	5
	3	SGN300-020	★	3	0.2	20	5
	4	SGN400-020	★	4	0.2	20	5

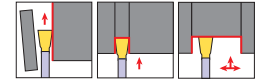
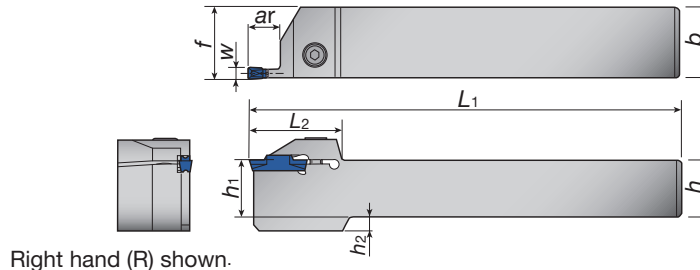
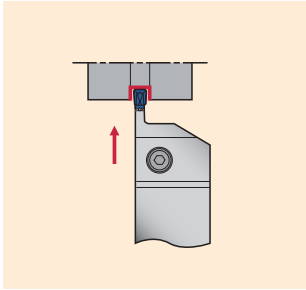


# Toolholders

## ● Mono block type

### CTE R/L

### External grooving and traversing



Right hand (R) shown.

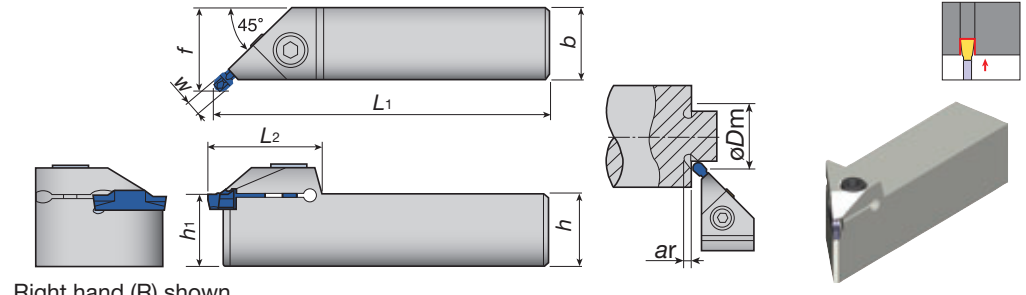
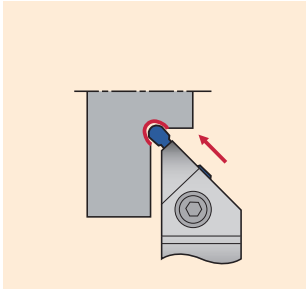
Insert seat size	Cat. No.	Stock		Max. groove depth <sup>(1)</sup> ar (mm)	Dimensions (mm)							Inserts	Parts		
		R	L		h <sub>1</sub>	b	h	L <sub>1</sub>	f <sup>(2)</sup>	W	h <sub>2</sub>		L <sub>2</sub>	Clamping screw	Wrench
2	CTER/L1616-2T08	●	●	8	16	16	16	110	16.1	2	4	33	DGM/SGM DGS/SGS DGE DTX DTE DTR DTA SGN	CM5x0.8x16-A	P-4
	CTER/L2020-2T08	●	●	8	20	20	20	125	20.1	2	-	33		CM5x0.8x20-A	
	CTER/L2525-2T08	●	●	8	25	25	25	150	25.1	2	-	33		CM5x0.8x25-A	
	CTER/L1616-2T12	●	●	12	16	16	16	110	16.1	2	4	32		CM5x0.8x16-A	
	CTER/L2020-2T12	●	●	12	20	20	20	125	20.1	2	-	32		CM5x0.8x20-A	
	CTER/L2525-2T12	●	●	12	25	25	25	150	25.1	2	-	32		CM5x0.8x25-A	
	CTER/L1616-2T17	●	●	17	16	16	16	110	16.1	2	4	37		CM5x0.8x16-A	
	CTER/L2020-2T17	●	●	17	20	20	20	125	20.1	2	-	37		CM5x0.8x20-A	
	CTER/L2525-2T17	●	●	17	25	25	25	150	25.1	2	-	37		CM5x0.8x25-A	
3	CTER/L1616-3T09	●	●	9	16	16	16	110	16.3	3	4	32	DGM/SGM DGS/SGS	CM5x0.8x16-A	P-4
	CTER/L2020-3T09	●	●	9	20	20	20	125	20.3	3	-	32		CM5x0.8x20-A	
	CTER/L2525-3T09	●	●	9	25	25	25	150	25.3	3	-	32		CM5x0.8x25-A	
	CTER/L1616-3T20	●	●	20	16	16	16	110	16.3	3	4	38.5		CM5x0.8x16-A	
	CTER/L2020-3T20	●	●	20	20	20	20	125	20.3	3	-	38.5		CM5x0.8x20-A	
	CTER/L2525-3T20	●	●	20	25	25	25	150	25.3	3	-	38.5		CM5x0.8x25-A	
	CTER/L2525-3T25	●	●	25	25	25	25	150	25.3	3	-	44.5		CM5x0.8x25-A	
4	CTER/L1616-4T10	●	●	10	16	16	16	110	16.5	4	4	32	DGE DTX DTE DTR DTA SGN	CM6x1x16-A	P-5
	CTER/L2020-4T10	●	●	10	20	20	20	125	20.5	4	-	32		CM6x1x20-A	
	CTER/L2525-4T10	●	●	10	25	25	25	150	25.5	4	-	32		CM6x1x25-A	
	CTER/L1616-4T25	●	●	25	16	16	16	110	16.5	4	4	45		CM6x1x16-A	
	CTER/L2020-4T25	●	●	25	20	20	20	125	20.5	4	-	45		CM6x1x20-A	
	CTER/L2525-4T25	●	●	25	25	25	25	150	25.5	4	-	45		CM6x1x25-A	
	CTER/L3232-4T25	●	●	25	32	32	32	170	32.5	4	-	45		CM6x1x25-A	
5	CTER/L2020-5T12	●	●	12	20	20	20	125	20.6	5	-	37	DGE DTX DTE DTR DTA SGN	CM6x1x20-A	P-5
	CTER/L2525-5T12	●	●	12	25	25	25	150	25.6	5	-	37		CM6x1x25-A	
	CTER/L2525-5T32	●	●	32	25	25	25	150	25.5	5	-	56		CM6x1x25-A	
	CTER/L3232-5T32	●	●	32	32	32	32	170	32.5	5	-	56		CM6x1x25-A	
6	CTER/L2020-6T12	●	●	12	20	20	20	125	20.6	6	-	37	DGE DTX DTE DTR DTA SGN	CM6x1x20-A	P-6
	CTER/L2525-6T12	●	●	12	25	25	25	150	25.6	6	7	37		CM8x1.25x20-A	
	CTER/L2525-6T32	●	●	32	25	25	25	150	25.5	6	7	56		CM8x1.25x20-A	
	CTER/L3232-6T32	●	●	32	32	32	32	170	32.5	6	-	56		CM8x1.25x20-A	
8	CTER/L2525-8T16	●	●	16	25	25	25	150	26.1	8	7	47	DGE DTX DTE DTR DTA SGN	CM8x1.25x20-A	P-6
	CTER/L2525-8T25	●	●	25	25	25	25	150	26.1	8	7	47		CM8x1.25x20-A	
	CTER/L3232-8T25	●	●	25	32	32	32	170	33.1	8	-	47		CM8x1.25x20-A	
	CTER/L2525-8T36	●	●	36	25	25	25	150	26.1	8	7	60		CM8x1.25x20-A	
	CTER/L3232-8T36	●	●	36	32	32	32	170	33.1	8	-	60		CM8x1.25x20-A	

(1) When depth is deeper than insert length, 1 corner type is recommended.

(2) "f" value in the above table is calculated with groove width "W" shown in the table.

## CGEUR/L

## External undercutting



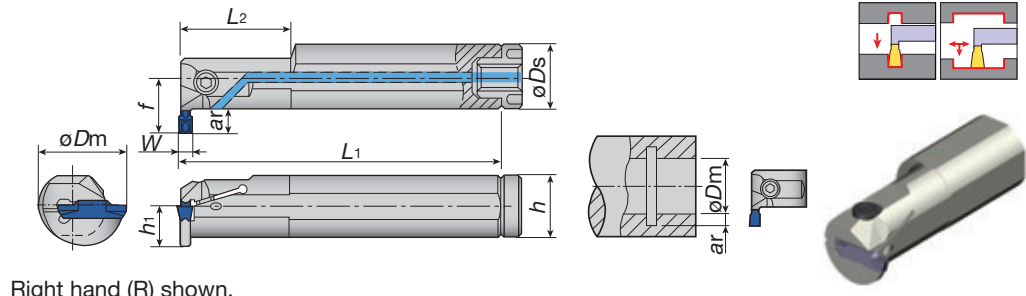
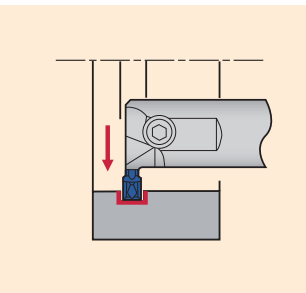
Right hand (R) shown.

Insert seat size	Cat. No.	Stock		Min. dia. øDm (mm)	Max. groove depth ar (mm)	Dimensions (mm)						Inserts	Parts		
		R	L			b	h	L1	f <sup>(1)</sup>	W	h1		L2	Clamping screw	Wrench
3	CGEUR/L 1616-3T02	●	●	32	2.8	16	16	110	19.3	3	16	30	DTIU	CM5x0.8x16-A	P-4
	CGEUR/L 2020-3T02	●	●	32	2.8	20	20	125	23.3	3	20	30			
	CGEUR/L 2525-3T02	●	●	32	2.8	25	25	150	28.3	3	25	30			
4	CGEUR/L 1616-4T02	●	●	32	2.8	16	16	110	19.5	4	16	31		CM6x1x16-A	P-5
	CGEUR/L 2020-4T02	●	●	32	2.8	20	20	125	23.5	4	20	31		CM6x1x20-A	
	CGEUR/L 2525-4T02	●	●	32	2.8	25	25	150	28.5	4	25	31		CM6x1x25-A	
5, 6	CGEUR/L 2525-6T03	●	●	34	3.4	25	25	150	28.9	6	25	35	CM6x1x25-A	P-5	

(1) "f" value in the above table is calculated with groove width "W" shown in the table.

## CTI R/L

## Internal grooving and traversing



Right hand (R) shown.

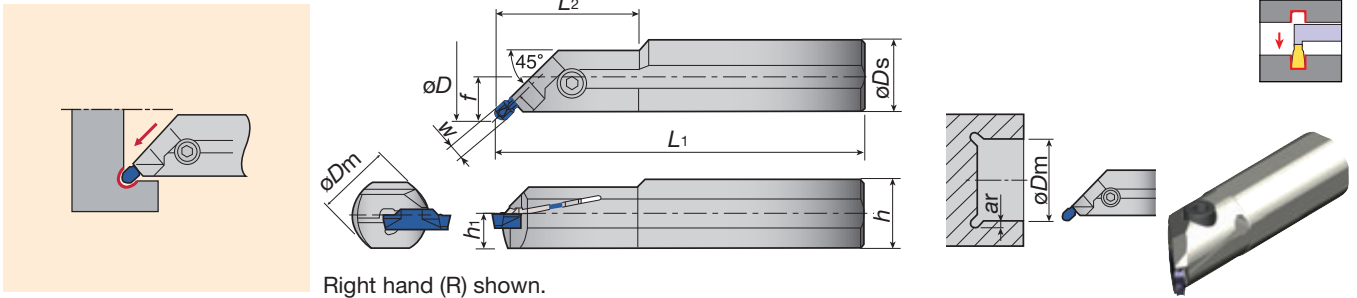
Insert seat size	Cat. No.	Stock		Min. dia. øDm (mm)	Max. groove depth ar (mm)	Dimensions (mm)						Inserts	Parts					
		R	L			øDs	h1	h	L1 <sup>(1)</sup>	f	W		L2	Clamping screw	Wrench	Seal cap	Internal screw	
2	CTIR/L16-2T08-D250	★	★	25	8	16	7.5	14	125	16.5	2	-	DGIM	CM5x0.8x10-A	P-4	CA-16	M6	
	CTIR/L20-2T06-D250	★	★	25	6	20	9	18	160	15.8	2	-						DGIS
3	CTIR/L20-3T06-D250	●	●	25	6	20	9	18	160	15.8	3	40	DTI DTX	CM5x0.8x12-A	P-4	CA-20	M6	
	CTIR/L25-3T05-D250	●	●	25	5.1	25	11.5	23	200	17.5	3	40						CM5x0.8x16-A
	CTIR/L25-3T08-D320	●	●	32	8	25	11.5	23	200	21.5	3	40						
4	CTIR/L32-3T10-D400	●	●	40	10	32	15	30	250	27	3	60		CM5x0.8x12-A	P-4	CA-20	M6	
	CTIR/L20-4T06-D250	●	●	25	6	20	9	18	160	15.8	4	40						CM5x0.8x16-A
	CTIR/L25-4T08-D320	●	●	32	8	25	11.5	23	200	21.5	4	40						
5	CTIR/L32-4T04-D310	●	●	31	4	32	15	30	250	20.8	4	60	CM5x0.8x16-A	P-4	CA-25	R1/8"		
	CTIR/L32-4T10-D400	●	●	40	10	32	15	30	250	27	4	60						
6	CTIR/L25-5T05-D310	●	●	31	5	25	11.5	23	200	17.3	5	60	CM6x1x16-A	P-5	CA-25	R1/8"		
	CTIR/L32-5T10-D400	●	●	40	10	32	15	30	250	27	5	60					CM6x1x20-A	
8	CTIR/L32-6T04-D310	●	●	31	4	32	15	30	250	20.8	6	60	CM6x1x20-A	P-5	CA-32	R1/8"		
	CTIR/L32-6T10-D400	●	●	40	10	32	15	30	250	27	6	60						
8	CTIR/L32-8T05-D370	●	●	37	5	32	15	30	250	21.3	8	60	CM6x1x25-A	P-5	CA-32	R1/8"		
	CTIR/L40-8T05-D420	●	●	42	5.8	40	19	38	300	25.8	8	65					CA-40	

(1) "L1" value in the above table is calculated with groove width "W" shown in the table.

● : Stocked items

## CGIUR/L

## Internal undercutting



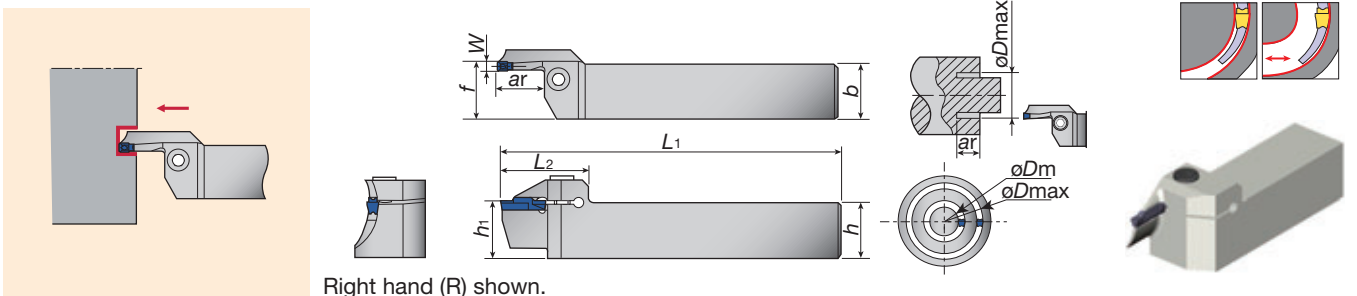
Right hand (R) shown.

Insert seat size	Cat. No.	Stock		Min. dia. $\phi D_m$ (mm)	Max. groove depth $ar$ (mm)	Dimensions (mm)						Inserts	Parts		
		R	L			$\phi D_s$	$h_1$	$h$	$L_1$	$f^{(1)}$	$W$		$L_2$	Clamping screw	Wrench
3	CGIUR/L 20-3T02-D380	●	●	38	2.8	20	9.5	19	160	12.8	3	-	DTIU	CM5x0.8x12-A	P-4
	CGIUR/L 25-3T02-D380	●	●	38	2.8	25	11.5	23	200	14.8	3	40		CM5x0.8x16-A	
4	CGIUR/L 20-4T02-D380	●	●	38	2.8	20	9.5	19	160	12.9	4	-		CM5x0.8x16-A	
	CGIUR/L 25-4T02-D460	●	●	46	2.8	25	11.5	23	200	14.9	4	40		CM6x1x16-A	P-5
5, 6	CGIUR/L 25-6T02-D460	●	●	46	2.8	25	11.5	23	200	15.2	6	-	CM6x1x16-A	P-5	

(1) "f" value in the above table is calculated with groove width "W" shown in the table.

## CTF R/L

## Face grooving and traversing



Right hand (R) shown.

Insert seat size	Cat. No.	Stock		Min. dia. $\phi D_m$ (mm)	Max. dia. $\phi D_m$ (mm)	Max. groove depth <sup>(1)</sup> $ar$ (mm)	Dimensions (mm)						Inserts <sup>(4)</sup>	Parts		
		R	L				$h_1$	$b$	$h$	$L_1$	$f^{(3)}$	$W$		$L_2$	Clamping screw	Wrench
3	CTFR/L2525-3T10-024035	●	●	24	35	10	25	25	25	150		3	38	DTF / DTX	CM6x1x25-A	P-5
	CTFR/L2525-3T10-029040	●	●	29	40	10	25	25	25	150		3	38			
	CTFR/L2525-3T10-034050	●	●	34	50	10	25	25	25	150	25.5	3	38			
	CTFR/L2525-3T15-044070	●	●	44	70	15	25	25	25	150		3	38			
	CTFR/L2525-3T15-064100	●	●	64	100	15	25	25	25	150		3	38			
4	CTFR/L2525-4T10-022036	●	●	22	36	10	25	25	25	150		4	39	DTF / DTX	CM6x1x25-A	P-5
	CTFR/L2525-4T20-028042	●	●	28	42	20 <sup>(2)</sup>	25	25	25	150		4	39			
	CTFR/L2525-4T20-034050	●	●	34	50	20 <sup>(2)</sup>	25	25	25	150	25.6	4	39			
	CTFR/L2525-4T20-042070	●	●	42	70	20	25	25	25	150		4	39			
	CTFR/L2525-4T20-062120	●	●	62	120	20	25	25	25	150		4	39			
	CTFR/L2525-4T20-112200	●	●	112	200	20	25	25	25	150		4	39			
5	CTFR/L2525-5T25-050080	●	●	50	80	25	25	25	25	150		5	49	DTX / DTE / DGM / DGS / DTR	CM8x1.25x25-A	P-6
	CTFR/L2525-5T25-070110	●	●	70	110	25	25	25	25	150	25.6	5	49			
	CTFR/L2525-5T25-100150	●	●	100	150	25	25	25	25	150		5	49			
	CTFR/L2525-5T25-140200	●	●	140	200	25	25	25	25	150		5	49			
6	CTFR/L2525-6T25-048070	●	●	48	70	25	25	25	25	150		6	49	DTE / DGM / DGS / DTR	CM8x1.25x25-A	P-6
	CTFR/L2525-6T25-058100	●	●	58	100	25	25	25	25	150	25.6	6	49			
	CTFR/L2525-6T25-088180	●	●	88	180	25	25	25	25	150		6	49			
	CTFR/L2525-6T25-168400	●	●	168	400	25	25	25	25	150		6	49			

(1) When depth is deeper than insert length, 1 corner type is recommended.

(2) When DTF insert is installed, Max. "ar" should be 15 mm.

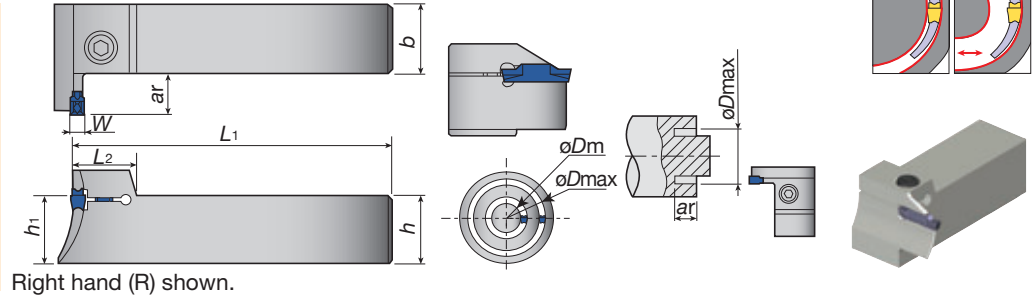
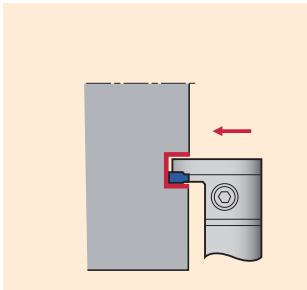
(3) "f" value in the above table is calculated with groove width "W" shown in the table.

(4) Please see "Caution" on page 16.

● : Stocked items

## CTFV R/L

## Face grooving and traversing



Right hand (R) shown.

Insert seat size	Cat. No.	Stock		Min. dia. $\phi Dm$ (mm)	Max. dia. $\phi Dm$ (mm)	Max. groove depth ar (mm)	Dimensions (mm)					Inserts <sup>(1)</sup>	Parts		
		R	L				$h_1$	$b$	$h$	$L_1$	$W$		$L_2$	Clamping screw	Wrench
3	CTFVR/L 2525-3T10-024035	●	●	24	35	10	25	25	25	150	3	18	DTF / DTX	CM5x0.8x25-A	P-4
	CTFVR/L 2525-3T10-029040	●	●	29	40	10	25	25	25	150	3	18			
	CTFVR/L 2525-3T10-034050	●	●	34	50	10	25	25	25	150	3	18			
	CTFVR/L 2525-3T15-044060	●	●	44	60	15	25	25	25	150	3	18			
4	CTFVR/L 2525-3T15-054085	●	●	54	85	15	25	25	25	150	3	18	DTE / DGM / DGS / DTR	CM6x1x25-A	P-5
	CTFVR/L 2525-4T12-022040	●	●	22	40	12	25	25	25	150	4	18.5			
	CTFVR/L 2525-4T15-032050	●	●	32	50	15	25	25	25	150	4	18.5			
	CTFVR/L 2525-4T15-042060	●	●	42	60	15	25	25	25	150	4	18.5			
5	CTFVR/L 2525-4T15-052085	●	●	52	85	15	25	25	25	150	4	18.5	DTE / DGM / DGS / DTR	CM8x1.25x25-A	P-6
	CTFVR/L 2525-5T20-050080	●	●	50	80	20	25	25	25	150	5	22			
	CTFVR/L 2525-5T20-070110	●	●	70	110	20	25	25	25	150	5	22			
	CTFVR/L 2525-5T20-100150	●	●	100	150	20	25	25	25	150	5	22			
6	CTFVR/L 2525-5T20-140200	●	●	140	200	20	25	25	25	150	5	22	DGS / DTR	CM8x1.25x25-A	P-6
	CTFVR/L 2525-6T20-048085	●	●	48	85	20	25	25	25	150	6	22			
	CTFVR/L 2525-6T20-073150	●	●	73	150	20	25	25	25	150	6	22			
6	CTFVR/L 2525-6T20-138250	●	●	138	250	20	25	25	25	150	6	22	DTE / DGM / DGS / DTR	CM8x1.25x25-A	P-6

### Caution

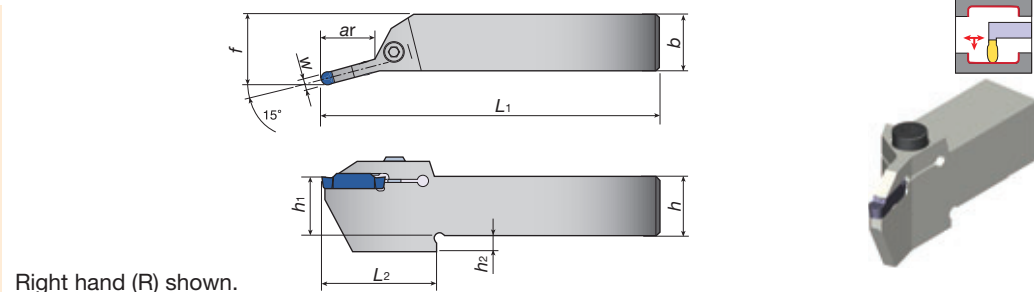
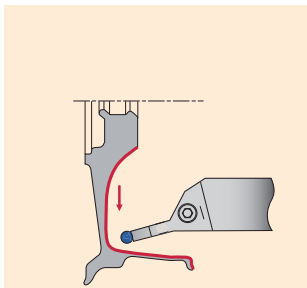
In DTF and DTX insert types, seat size "6" inserts are not available. When 6 size insert is required, the DTE, DGM or DGS type is recommended.

(1) Min. diameter  $\phi Dm$  of DTE, DGS and DGM insert

Inserts	$\phi Dm$ (mm)	Note
DTE 3 / DGS 3 / DGM 3	$\phi 44$	When diameter is smaller than $\phi Dm$ , DTF or DTX type insert is recommended.
DTE 4 / DGS 4 / DGM 4	$\phi 42$	When diameter is smaller than $\phi Dm$ , DTF or DTX type insert is recommended.

## CTER/L-15A

## Internal profiling for aluminium wheel machining



Right hand (R) shown.

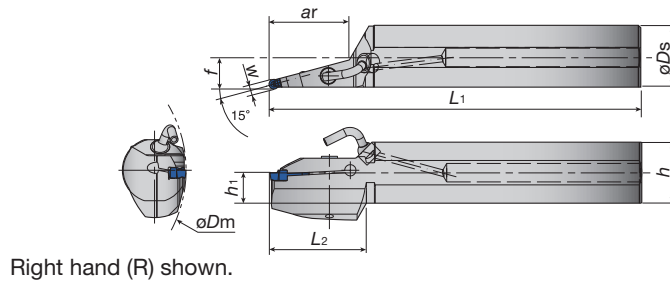
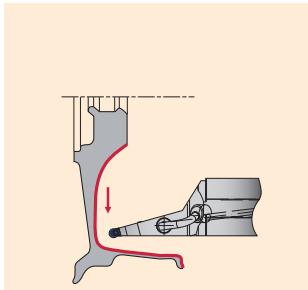
Insert seat size	Cat. No.	Stock		Max. groove depth ar (mm)	Dimensions (mm)							Inserts	Parts		
		R	L		$h_1$	$b$	$h$	$h_2$	$L_1$	$f$	$W$		$L_2$	Clamping screw	Wrench
6	CTER/L 2525-6T25-15A	●	●	25	25	25	25	7	150	30	6	50.5	DTA	CM6x1x25-A	P-5
8	CTER/L 2525-8T30-15A	●	●	30	25	25	25	7	150	30	8	55			

● : Stocked items

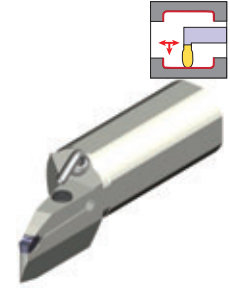


## CGIUR/L-15A

## Internal profiling for aluminium wheel machining



Right hand (R) shown.



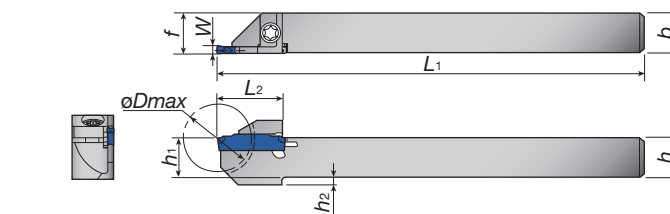
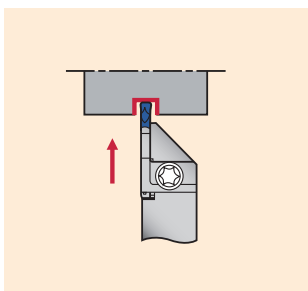
Insert seat size	Cat. No.	Stock		Min. dia. øDm (mm)	Max. groove depth ar (mm)	Dimensions (mm)						Inserts	Parts				
		R	L			øDs	h <sub>1</sub>	h	L <sub>1</sub>	f	W		L <sub>2</sub>	Clamping screw	Wrench	Seal cap	Internal screw
6	CGIUR/L 40-6T50-D160-15A	●	●	160	50	40	19	38.5	320	19.7	6	60	DTA	CM6x1x25-A	P-5	CA-40	R1/8"
8	CGIUR/L 40-8T83-D160-15A	●	●	160	83	40	19	38.5	320	20.5	8	85					
6	CGIUR/L 50-6T85-D200-15A	●	●	200	85	50	23.5	48.5	350	25.2	6	85					
8	CGIUR/L 50-8T85-D200-15A	●	●	200	85	50	23.5	48.5	350	25.9	8	85					

### Nozzle parts

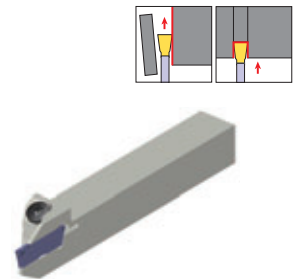
Coolant pipe	Coolant nozzle
PNZ5	CNZ125

## JCTE R/L

## Grooving for small lathes



Right hand (R) shown.



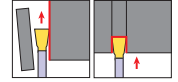
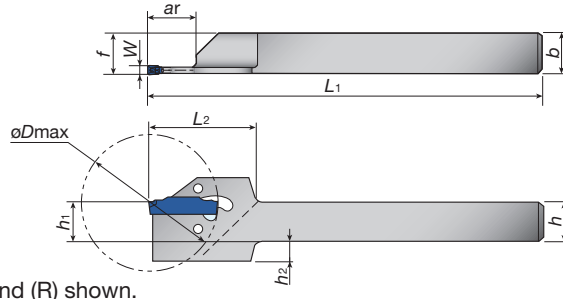
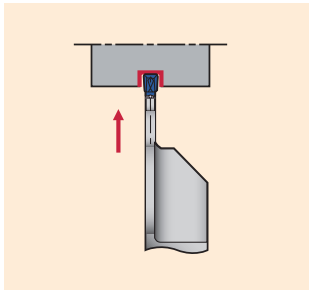
Insert seat size	Cat. No.	Stock		Max. dia. øDm (mm)	Dimensions (mm)							Inserts	Parts		
		R	L		h <sub>1</sub>	b	h	L <sub>1</sub>	f <sup>(1)</sup>	W	h <sub>2</sub>		L <sub>2</sub>	Clamping screw	Wrench
1	JCTER/L1010-1.4T10	●	●	20	10	10	10	125	10.2	1.4	-	18	DGS1.4-016	CSHB-4-A	T-15F
	JCTER/L1212-1.4T12	●	●	24	12	12	12	125	12.2	1.4	-	19.5			
	JCTER/L1414-1.4T12	●	●	24	14	14	14	125	14.2	1.4	-	19.5			
	JCTER/L1616-1.4T16	●	●	32	16	16	16	125	16.2	1.4	-	24			
2	JCTER/L1010-2T10	●	●	20	10	10	10	125	10.1	2	2	19	DGM/SGM DGS/SGS	CSHB-4-A	T-15F
	JCTER/L1212-2T12	●	●	24	12	12	12	125	12.1	2	2	19			
	JCTER/L1414-2T12	●	●	24	14	14	14	125	14.1	2	-	19			
	JCTER/L1616-2T16	●	●	32	16	16	16	125	16.1	2	-	24			
3	JCTER/L1212-3T12	●	●	24	12	12	12	125	12.3	3	-	19	DGE DTE	CSHB-4-A	T-15F
	JCTER/L1616-3T16	●	●	32	16	16	16	125	16.3	3	-	24			
	JCTER/L2020-3T16	●	●	32	20	20	20	125	20.3	3	-	24			

(1) "f" value in the above table is calculated with groove width "W" shown in the table.

● : Stocked items

## CGE R/L

## Deep grooving and parting off



Right hand (R) shown.

Insert seat size	Cat. No.	Stock		Max. dia. øDm (mm)		Max. groove depth ar (mm)	Dimensions (mm)							Inserts	Parts Wrench <sup>(2)</sup>	
		R	L	DGS/M	SGS/M		h <sub>1</sub>	b	h	L <sub>1</sub>	f <sup>(1)</sup>	W	h <sub>2</sub>			L <sub>2</sub>
1	CGER/L2020-1.4T14	●	●	29	29	9.7	20	20	20	125	20.2	1.4	-	30	DGS1.4-016	CRW23
2	CGER/L1212-2T17	●	●	35	35	11.8	12	12	12	150	12.1	2	6	30	DGM/SGM	CRW33
	CGER/L1616-2T17	●	●	35	35	11.8	16	16	16	150	16.1	2	2	30		
	CGER/L2020-2T17	●	●	35	35	9.8	20	20	20	125	20.1	2	-	30		
3	CGER/L1212-3T19	●	●	38	40	12	12	12	12	150	12.3	3	6	30	DGS/SGS	CRW33
	CGER/L1616-3T19	●	●	38	45	14.9	16	16	16	150	16.3	3	2	30		
	CGER/L2020-3T19	●	●	38	45	13.2	20	20	20	125	20.3	3	-	30		
4	CGER/L2020-4T19	●	●	38	55	20.3	20	20	20	125	20.4	4	-	32	SGN-QBN	CRW33

(1) "f" value in the above table is calculated with groove width "W" shown in the table.

(2) Wrench, CRW□□, should be ordered separately. Please see information below about wrench usage.

## CGP blades

## CGP

## Deep grooving and parting off

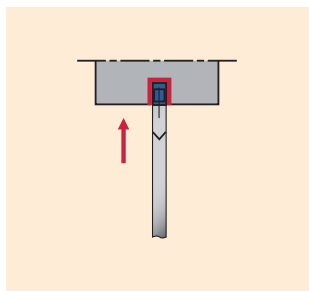


Fig. 1

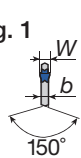


Fig. 3

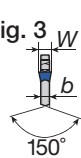
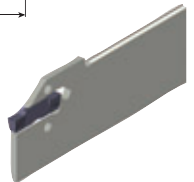
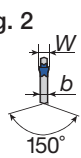


Fig. 2



Insert seat size	Cat. No.	Stock	*Max. parting off dia. øDm (mm)	Dimensions (mm)					Inserts	Parts		Shape
				h <sub>1</sub>	b	h	L <sub>1</sub>	W		Clamping screw	Wrench	
1	CGP 26-1.4S	●	26	21.4	1	26	150	1.4	DGS1.4-016	-	CRW23	Fig. 1
	CGP 32-1.4D	●	26	24.8	1	32	150	1.4				Fig. 2
2	CGP 26-2S	●	40	21.4	1.8	26	150	2	SGM	-	CRW33	Fig. 1
	CGP 32-2D	●	50	24.8	1.8	32	150	2				Fig. 2
3	CGP 26-3S	●	50	21.4	2.4	26	150	3	SGS	-	CRW33	Fig. 1
	CGP 32-3D	●	100	24.8	2.4	32	150	3				Fig. 2
4	CGP 26-4S	●	80	21.4	3.2	26	150	4	DGM <sup>(2)</sup>	-	CRW33	Fig. 1
	CGP 32-4D	●	100	24.9	3.2	32	150	4				Fig. 2
	CGP 45-4D	●	120	38.1	3.2	45	150	4				Fig. 2
5	CGP 32-5D	●	120	24.9	4	32	150	5	DTX <sup>(2)</sup>	-	CRW33	Fig. 2
6	CGP 32-6D	●	120	24.9	5.2	32	150	6				Fig. 2
8	CGP 32-8S-CL <sup>(1)</sup>	●	80	24.9	6.2	32	150	8	DGM8-040	CM4x0.7x20-M0-A	P-3	Fig. 3

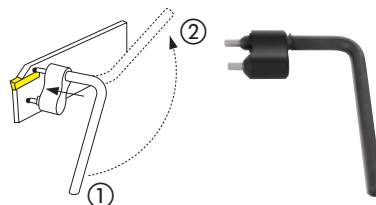
(1) Max groove depth is 28.5 mm.

(2) When depth is deeper than insert length, 1 corner type is recommended.

## Caution

### Newly developed wrench

Insert is clamped by the elastic deformation of upper jaw. Low clamping stress increases the stability and tool life.



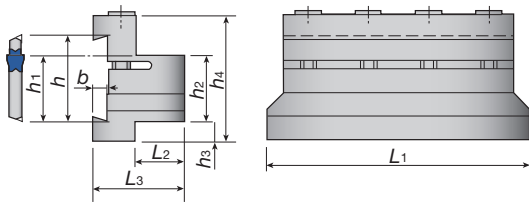
① → ② : unclamp  
② → ① : clamp

● : Stocked items

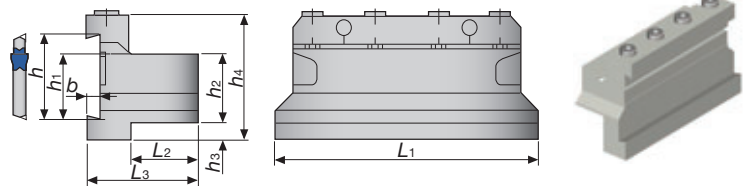
# ● Tool block for CGP blades

## CTBF / CTBU Deep grooving and parting off

CTBF type



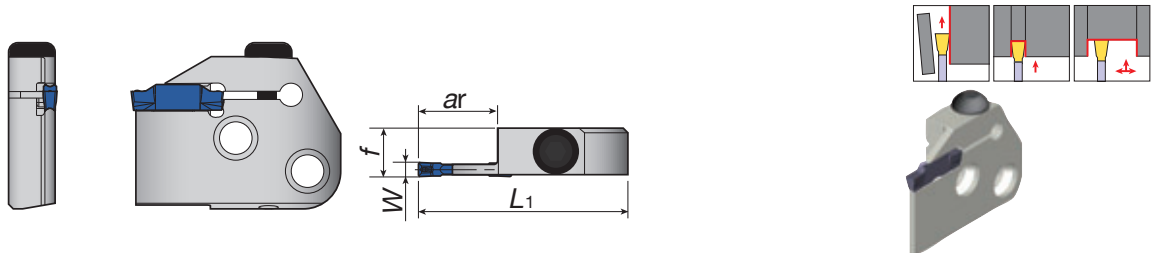
CTBU type



Cat. No.	Stock	Dimensions (mm)									Blade	Parts		
		$h_1$	$b$	$h$	$L_1$	$h_2$	$h_3$	$h_4$	$L_2$	$L_3$		Clamping screw	Clamp	Wrench
CTBF25-45	●	38.1	5.5	45	110	25	25	66	22	40	CGP	CM6x1.0x40-A	-	P-5
CTBF32-45	●	38.1	5.5	45	120	32	18	66	28	45		CM6x1.0x40-A	-	
CTBU20-26	●	21.4	4	26	86	20	9	43	21	38		CM6x30-S	CT-86	
CTBU20-26	●	21.4	4	26	110	25	5	45	23	42		CM6x30-S	CT-100	
CTBU20-32	●	24.8	5.3	32	100	20	13	50	19	38		CM6x30-S	CT-105	
CTBU25-32	●	24.8	5.3	32	110	25	8	50	23	42		CM6x30-S	CT-110	
CTBU32-32	●	24.8	5.3	32	110	32	5	54	29	48		CM6x30-S	CT-110	

# ● Blades (For general purpose)

## CAE R/L External grooving and traversing

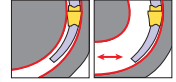
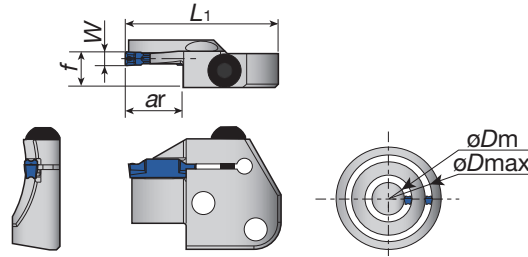


Right hand (R) shown.

Insert seat size	Cat. No.	Stock		*Max. groove depth ar (mm)	Dimensions (mm)			Inserts	Shank	Parts	
		R	L		$L_1$	$f$	$W$			Clamping screw	Wrench
3	CAER/L-3T16	●	●	16	45	10.4	3	DGS / SGS DGM / SGM DTX, DTE, DTR, SGN-QBN	CHFVR/L CHSR/L	BHM6-20-A	P-4
4	CAER/L-4T16	●	●	16	45	10.5	4				
5	CAER/L-5T20	●	●	20	49	10.5	5				
6	CAER/L-6T20	●	●	20	49	10.5	6				

● : Stocked items

## CAF R/L Face grooving and traversing



Right hand (R) shown.

Insert seat size	Cat. No.	Stock		Min. dia. øDm (mm)	Max. dia. øDm (mm)	Max. groove depth ar (mm)	Dimensions (mm)			Inserts <sup>(3)</sup>	Shank	Parts	
		R	L				L1	f <sup>(2)</sup>	W			Clamping screw	Wrench
3	CAFR/L-3T12-040055	●	●	40	55	12	45	10.4	3	DTF	CHFVR/L	BHM6-20-A	P-4
	CAFR/L-3T12-055075	●	●	55	75	12	45	10.4	3				
	CAFR/L-3T12-075100	●	●	75	100	12	45	10.4	3				
	CAFR/L-3T12-100140	●	●	100	140	12	45	10.4	3				
	CAFR/L-3T12-140200	●	●	140	200	12	45	10.4	3				
4	CAFR/L-4T16-050070	●	●	50	70	16	45	10.5	4	DTF DTE DTX DGS DGM DTR	CHSR/L	BHM6-20-A	P-4
	CAFR/L-4T16-070100	●	●	70	100	16	45	10.5	4				
	CAFR/L-4T16-100150	●	●	100	150	16	45	10.5	4				
	CAFR/L-4T16-150250	●	●	150	250	16	45	10.5	4				
5	CAFR/L-5T20-055080	●	●	55	80	20	49	10.5	5	DTF DTE DTX DGS DGM DTR	CHSR/L	BHM6-20-A	P-4
	CAFR/L-5T20-080120	●	●	80	120	20	49	10.5	5				
	CAFR/L-5T20-120180	●	●	120	180	20	49	10.5	5				
	CAFR/L-5T20-180300	●	●	180	300	20	49	10.5	5				
6	CAFR/L-5T20-300000	●	●	300	∞	20	49	10.5	5	DTF DTE DTX DGS DGM DTR	CHSR/L	BHM6-20-A	P-4
	CAFR/L-6T25-060090	●	●	60	90	25 <sup>(1)</sup>	55	10.5	6				
	CAFR/L-6T25-090150	●	●	90	150	25 <sup>(1)</sup>	55	10.5	6				
	CAFR/L-6T25-150250	●	●	150	250	25 <sup>(1)</sup>	55	10.5	6				
6	CAFR/L-6T25-250400	●	●	250	400	25 <sup>(1)</sup>	55	10.5	6	DTF DTE DTX DGS DGM DTR	CHSR/L	BHM6-20-A	P-4

(1) When depth is deeper than insert length, 1 corner type is recommended.

(2) "f" value in the above table is calculated with groove width "W" shown in the table.

### Caution

In DTF and DTX insert types, seat size "6" inserts are not available. When 6 size insert is required, the DTE, DGM or DGS type is recommended.

(3) Min. diameter øDm of DTE, DGS and DGM insert

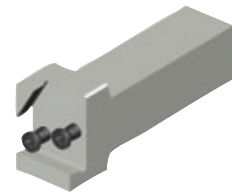
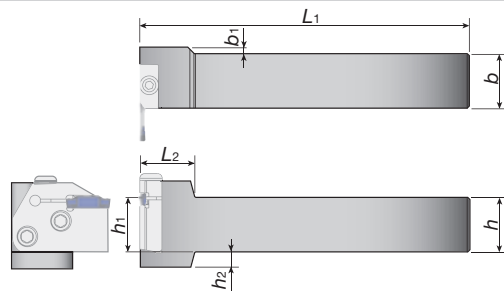
Inserts	øDm (mm)	Note
DTE 3 / DGS 3 / DGM 3	ø44	When diameter is smaller than øDm, DTF or DTX type insert is recommended.
DTE 4 / DGS 4 / DGM 4	ø42	
DTE 5 / DGS 5 / DGM 5	ø50	
DTE 6 / DGS 6 / DGM 6	ø48	

● : Stocked items

# ● Toolholders for blades

## CHFV R/L

### Horizontal type

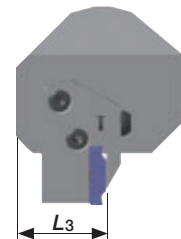
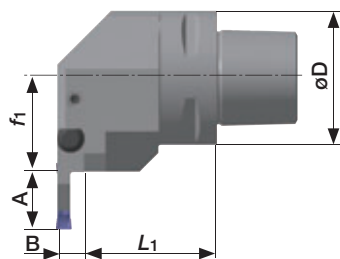
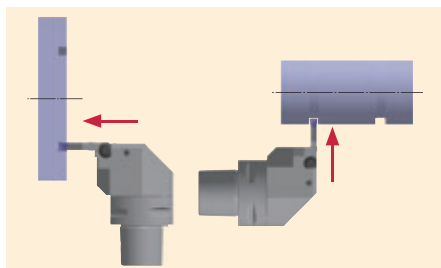


Right hand (R) shown.

Cat. No.	Stock		Dimensions (mm)							Blades	Parts	
	R	L	$h_1$	$b$	$h$	$L_1$	$b_1$	$h_2$	$L_2$		Clamping screw	Wrench
CHFVR/L2020	●	●	20	20	20	150	8	12	25	CAER/L CAFR/L	CSHB-6-A	P-4
CHFVR/L2525	●	●	25	25	25	150	3	7	25			
CHFVR/L3232	●	●	32	32	32	170	-	-	25			

## C-CHFVR/L

### TUNGCAP Horizontal type



### TUNGCAP



Right hand (R) shown

Cat. No.	Stock		Dimensions (mm)							Applicable inserts	Blade	Clamping screw	Wrench	Coolant nozzle	Coolant pipe
	R	L	$\phi D$	$L_1$	*A	$L_3$	$f_1$	*B							
C4CHFVR/L27050N <sup>(2)</sup>	★	★	40	42.5	Table 1	36	27	Table 1	DTF, DTE, DTX DGS, DGM, DTR	CAER/L CAFR/L	CSHB-6-A	P-4	(4)	-	
C5CHFVR/L35060 <sup>(1)</sup>	●	●	50	49.5		36	35						(3)	PNZ25	
C5CHFVR/L35060N <sup>(2)</sup>	●	●	50	49.5		36	35						(4)	-	
C6CHFVR/L45065 <sup>(1)</sup>	●	●	63	54.5		41	45						(3)	PNZ25	
C6CHFVR/L45065N <sup>(2)</sup>	●	●	63	54.5		41	45						(4)	-	

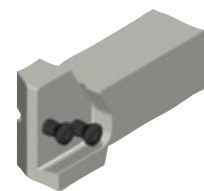
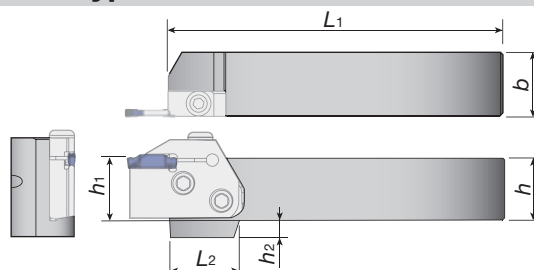
(1) Capable for normal pressure coolant (2) Capable for 7Mpa coolant pressure (3) CNZ125 (4) SATZ-M10X1-M5

## ■ Combination of blade and toolholder

Toolholders	Blades			
	CAER□□□	CAEL□□□	CAFR□□□	CAFL□□□
CHFVR***		●	●	
CHFVL***	●			●

## CHS R/L

### Vertical type



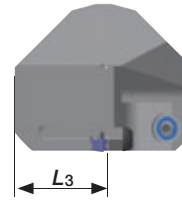
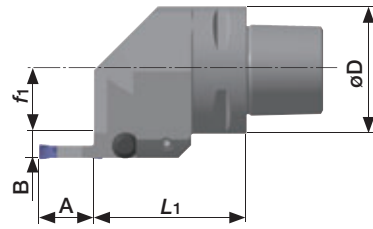
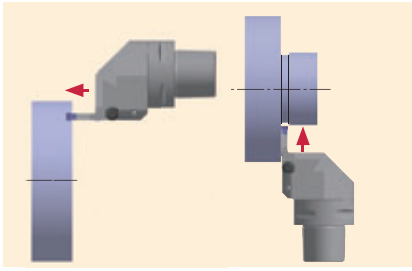
Right hand (R) shown.

Cat. No.	Stock		Dimensions (mm)						Blades	Parts	
	R	L	$h_1$	$b$	$h$	$L_1$	$h_2$	$L_2$		Clamping screw	Wrench
CHSR/L2020	●	●	20	20	20	133	12	35	CAER/L CAFR/L	CSHB-6-A	P-4
CHSR/L2525	●	●	25	25	25	133	7	28			
CHSR/L3232	●	●	32	32	32	153	-	28			

● : Stocked items  
★ : Available in 2013

## C-CHSR/L TUNGCAP Vertical type

TUNGCAP



Right hand (R) shown

Cat. No.	Stock		Dimensions (mm)						Applicable inserts	Blade	Clamping screw	Wrench	Coolant nozzle	Coolant pipe		
	R	L	øD	L1	A	L3	f1	B								
C4CHSR/L27050N <sup>(2)</sup>	★	★	40	50	Table 1	36	16.5	Table 1	DGS/SGS, DGM/SGM, DTX, DTE, DTR	CAER/L CAFR/L	CSHB-6-A	P-4	(4)	-		
C5CHSR/L35060 <sup>(1)</sup>	●	●	50	60									36	24.5	(3)	PNZ25
C5CHSR/L35060N <sup>(2)</sup>	●	●	50	60									36	24.5	(4)	-
C6CHSR/L45065 <sup>(1)</sup>			63	65									41	34.5	(3)	PNZ25
C6CHSR/L45065N <sup>(2)</sup>	●	●	63	65									41	34.5	(4)	-

(1) Capable for normal pressure coolant (2) Capable for 7Mpa coolant pressure (3) CNZ125 (4) SATZ-M10X1-M5

● : Stocked items  
★ : Available in 2013

### Combination of blade and toolholder

Toolholders	Blades			
	CAER□□□	CAEL□□□	CAFR□□□	CAFL□□□
CHSR***	●			●
CHSL***		●	●	

### Offset dimensions for blade

Table 1

Application	Blades	Dimensions (mm)	
		A	B
For external grooving	CAER/L-3T16	16	10.4
	CAER/L-4T16	16	10.5
	CAER/L-5T20	20	10.5
	CAER/L-6T20	20	10.5
For face grooving	CAFR/L-3T12-*	12	10.4
	CAFR/L-4T16-*	16	10.5
	CAFR/L-5T20-*	20	10.5
	CAFR/L-6T20-*	25	10.5

### Notice in "traversing"

When traversing, the insert is pushed by the directional cutting force feed. As a result of this condition the diameter of the workpiece may change. (see Fig. 1) In such cases, trial cutting is essential to measure the actual diameter. For your reference, sample of compensated values are shown in Fig.2.

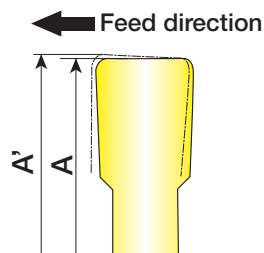
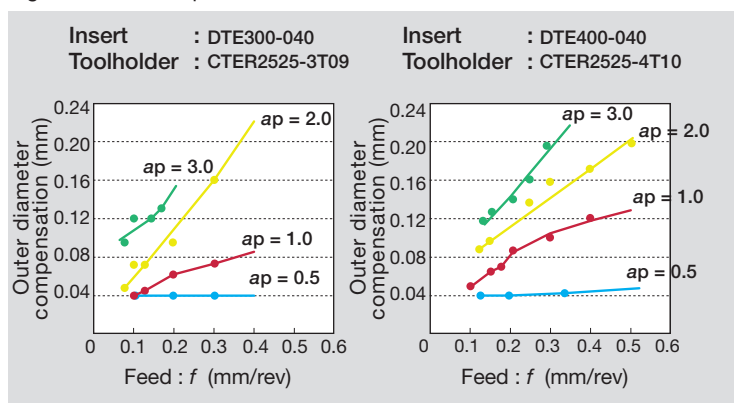


Fig. 1

Fig. 2 Value of compensation



# Guideline for ordering special inserts

*Specially designed inserts are available upon request.*

## Acceptable specification

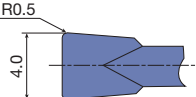
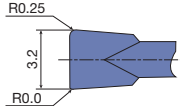
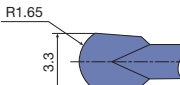
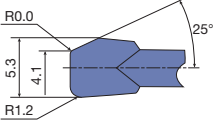
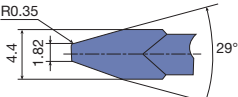
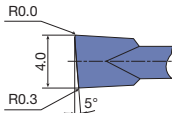
- Specialized inserts must be manufactured from the main insert styles shown below.
- AH725, GH130 and TH10 grades are available.
- ※ Please contact Tungaloy for more details.

External grooving & traversing		Internal grooving & traversing		Profiling & undercutting	
<b>DTE (Ground)</b>	<b>DGE (Ground)</b>	<b>DTI (Ground)</b>	<b>DTR (Ground)</b>	<b>DTIU (Ground)</b>	
					

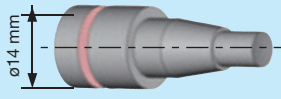
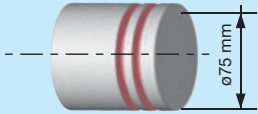
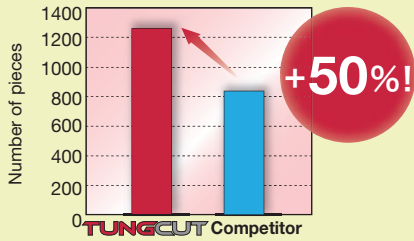
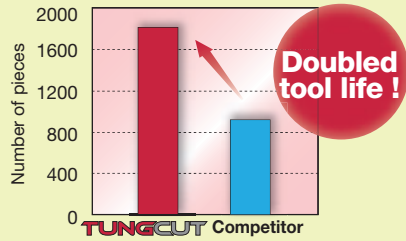
## Designation system for special inserts (sample)

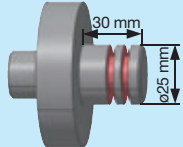
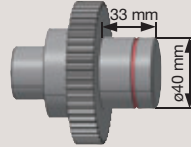
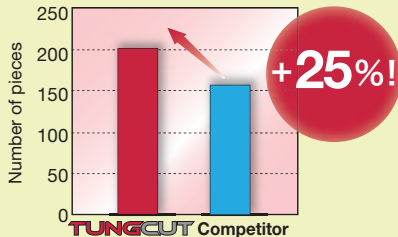
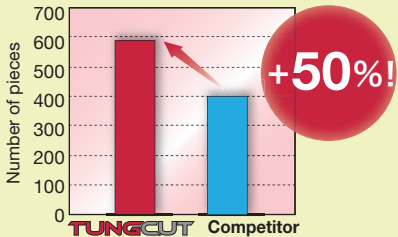
<b>DTE</b>	<b>320</b>	<b>- 000R-025L</b>	<b>AH725</b>
1 Main style of insert	2 Max. width of insert	3 Additional codes	4 Grade

## Sample of shape

Shape	Samples of designation	Note
	<b>DTE400-050 GH130</b>	Main style: DTE type Special corner radius
	<b>DTE320-000R 025L AH725</b>	Main style: DTE type Special corner radius, asymmetric type
	<b>DTR330-165 TH10</b>	Main style: DTR type Full radius type with special insert width
	<b>DTE530-120R-25LA TH10</b>	Main style: DTE type Special figure of groove, asymmetric type
	<b>DTE440-035-29A TH10</b>	Main style: DTE type Special figure of groove
	<b>DTE400-030R-005RA TH10</b>	Main style: DTE type Right handed insert with special angle and corner radius.

# Practical examples

Workpiece type		Automotive parts	Machine parts
Toolholder		CTER1616-2T08	CTER2525-4T10
Insert		DGM2-020	DGM4-030
Grade		AH725	AH725
Workpiece material		SCr440, 41Cr4	SCr440, 41Cr4
			
Cutting conditions	Grooving width : W (mm)	2	4
	Cutting speed : Vc (m/min)	94	150
	Feed : f (mm/rev)	0.08	0.10
	Machining	Parting off	Grooving
	Cutting edge depth (mm)	-	6
Coolant		Water soluble	Water soluble
Results		 TungCut has higher wear resistance and achieves tool life improvements of 150%.	 TungCut provides better chip control and doubles tool life.

Workpiece type		Machine parts	Gear
Toolholder		CTEL2020-3T09	CTER2525-2T08
Insert		DTE3-040	SGN200-020-QBN
Grade		T9125	BX360
Workpiece material		S53C	SCM415H (58HRC)
			
Cutting conditions	Grooving width: W (mm)	3	2
	Cutting speed: Vc (m/min)	200	120
	Feed: f (mm/rev)	0.2	0.05
	Machining	Grooving	Grooving
	Cutting edge depth (mm)	5	0.8
Coolant		Water soluble	Water soluble
Results		 The excellent wear resistance of TungCut improves tool life by 25%, even when machining at high speed.	 TungCut extends tool life by 1.5 times when hardened steel cutting. This is a result of the extremely stable CBN grade.



# Tungaloy Corporation

<http://www.tungaloy.co.jp/>

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