

Tungaloy

Member IMC Group

Keeping the Customer First

Tungaloy Report No. 391-E

TURNLINE

New grooving and parting off tools

TUNGCUT



The complete grooving solution !

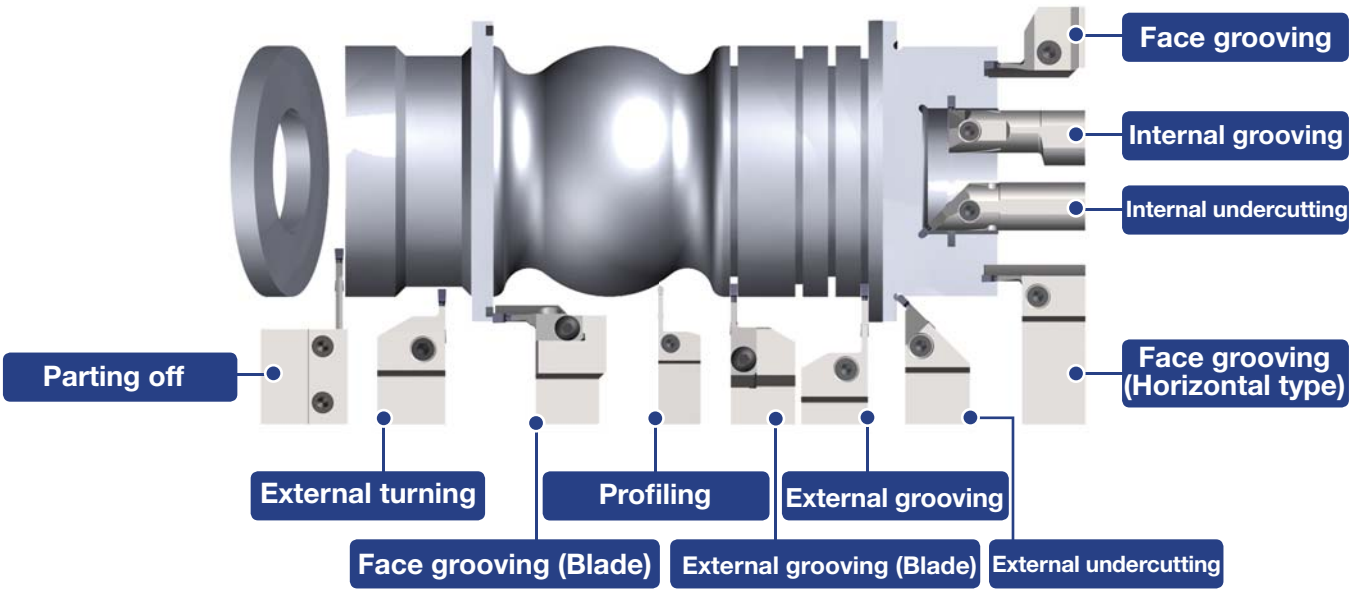


Multifunctional system diverse grooving ne

Features

● Suited to 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 !

High repeatability and durability due to long pocket !

■ Limited cutting edge displacement

Load (N)	Competitor (mm)	Conventional (mm)	TUNG CUT (mm)
0	0.000	0.000	0.000
500	0.005	0.003	0.002
1000	0.010	0.006	0.004
1500	0.030	0.018	0.008

Direction of load

Measuring point

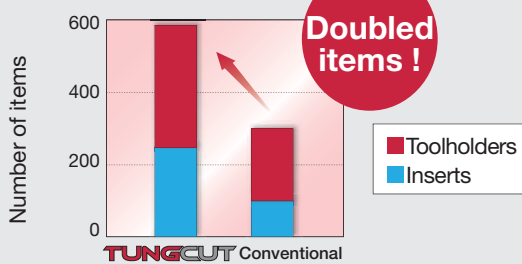
em for eds!



● Great selection of standard items

HOLDERS and inserts applicable for all grooving demands !

■ Comparison of items

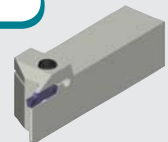


■ Line-up of width in TungCut

type	Application	TUNG CUT (mm)	Conventional (mm)
CTE	External grooving	2 - 8	2 - 5
CTI	Internal grooving	3 - 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)	3 - 6	2 - 5

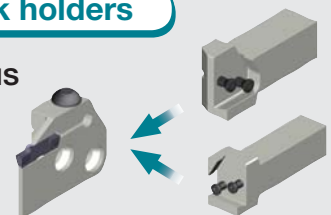
Mono block toolholders

High rigidity !



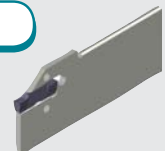
Blades with shank holders

Available for various machining !



Blades with tool blocks

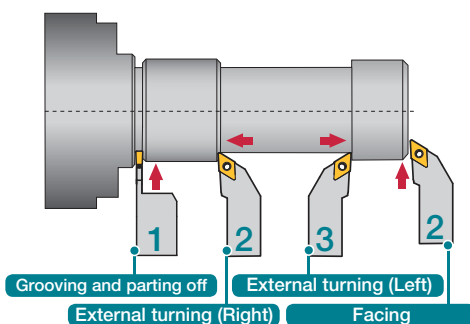
Suitable for large diameter machining !



● Economical

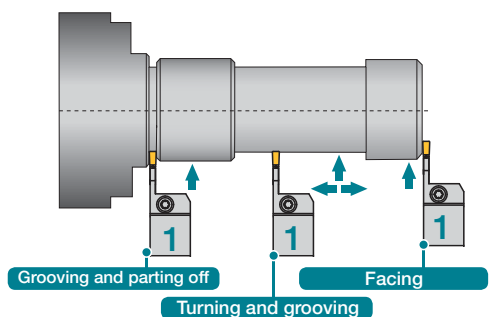
Multi-functional tool reduces tool set-ups

Conventional



3 in 1!

TUNG CUT

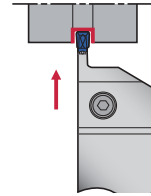


Cutting performance

● 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			

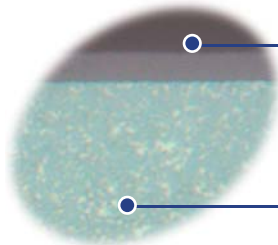


Insert : DGM4-030
 Toolholder : CTER2525-4T25
 Groove width : $W = 4$ mm
 Cutting speed: $V_c = 100$ m/min
 Feed : $f = 0.1 \sim 0.3$ mm/rev
 Coolant : Water soluble

Grades

● AH725

An all-round grade for most materials !



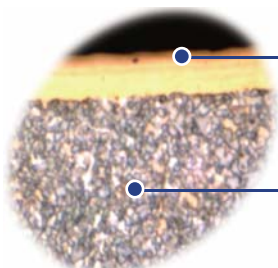
(Ti, Al)N PVD “Super-Flash” coating

Well controlled structure, and very strong coating layer !!
 Improved adhesion strength!!

Fine grain cemented carbide with high toughness and plastic deformation strength

● GH130

Best use for interrupted or tough cutting !



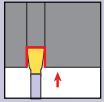
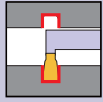
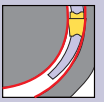
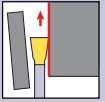
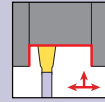
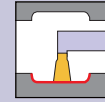
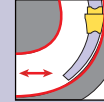
TiCNO PVD coating layer

High hardness and wear resistance

Unique substrate with super high toughness and fracture strength

Grade	Substrate		Coating layer		Features
	Specific gravity	HRA	Main Composition	Thickness (μm)	
AH725	14.4	91.5	(Ti, Al)N	2	Well balanced grade with wear and chipping resistance.
GH130	14.1	89.5	TiCNO	3	High toughness and excellent chipping resistance. Suitable for heavy machining and roughing.

Insert application

Insert	Application						
	Grooving			Parting off	Turning		
	External	Internal	Face		External	Internal	Face
							
DGS / SGS	●		●	●			
DGM / SGM	●		●	●			
DTE	●		●		●		●
DGE	●						
DTX	●	●	●	●	●	●	●
DTI		●				●	
DTF			●				●
DTR	●				●		

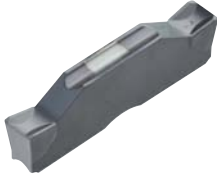
Standard cutting conditions

Work materials	Hardness	Cutting speed	
		AH725	Vc (m/min) GH130
Steels S45C, SCM435 etc. (C45, 34CrMo4 etc.)	< 300 HB	50 ~ 180	40 ~ 150
Stainless steels SUS303, SUS304 etc. (X10CrNiS18-9 etc.)	< 200 HB	50 ~ 120	50 ~ 120
Grey cast irons, Ductile cast irons FC250, FCD450 etc. (GG25, GGG45 etc.)	-	-	50 ~ 180
Titanium, Titanium alloys (Ti-6Al-4V etc.)	< 40 HRC	-	20 ~ 80

Features of Inserts

External grooving and parting off

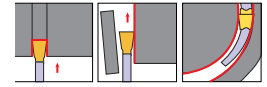
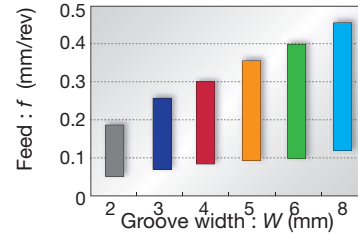
DGM type (2 corner)
SGM type (1 corner)



1st choice for external grooving and parting-off

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

■ Standard feed



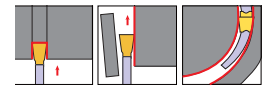
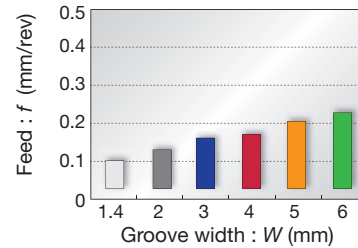
DGS type (2 corner)
SGS type (1 corner)



Lower cutting force and superior sharpness

- Unique designed edge and chipbreaker
- Handed insert available

■ Standard feed



External, face grooving and turning

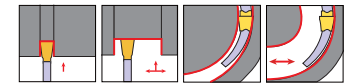
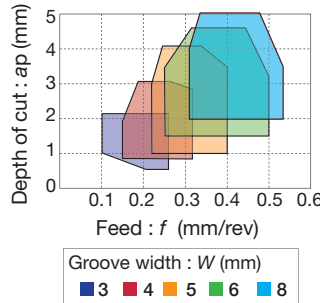
DTE type (2 corner)



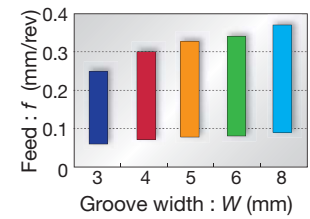
For general purpose

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

■ Standard feed and DoC



■ Standard feed



External, internal, face grooving and turning

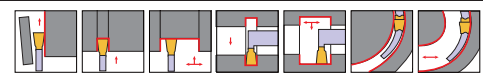
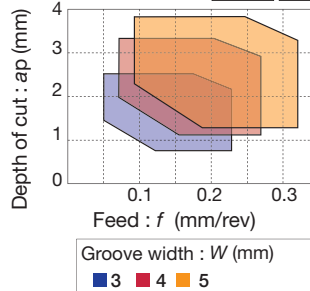
DTX type (2 corner)



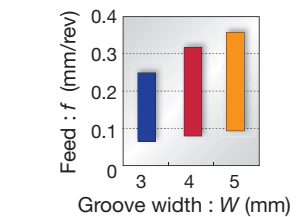
Multi-functional type

- Well balanced sharpness and strength
- Multi functional insert

■ Standard feed and DoC



■ Standard feed



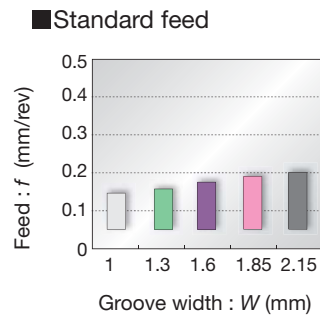
External grooving

DGE type (2 corner)



For high accurate and shallow groove

- Excellent chip control



Profiling and Undercutting

DTR type (2 corner)

Molded

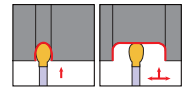
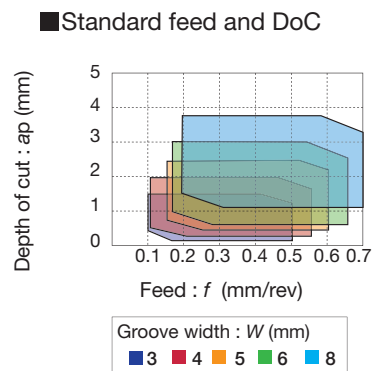


Ground



Full radius type

- Excellent chip control
- Molded and ground insert available



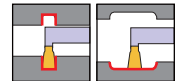
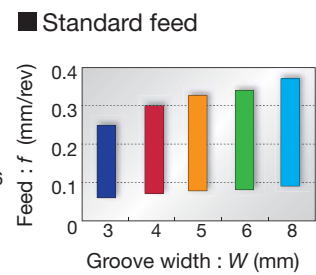
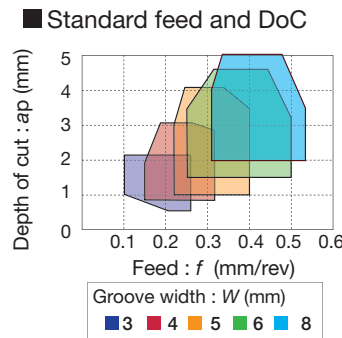
Internal grooving and turning

DTI type (2 corner)



1st choice for internal grooving

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



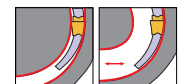
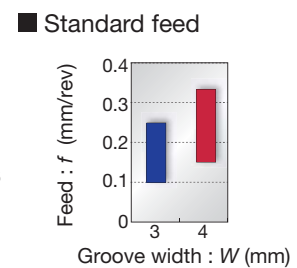
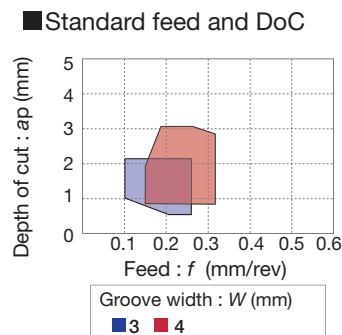
Face grooving and turning

DTF type (2 corner)



1st choice for face grooving

- Unique chipbreaker makes chips shorter
- Handed insert

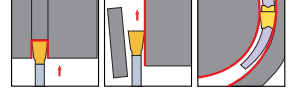


Inserts

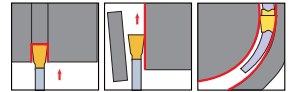
Notation of "insert seat size"

Seat size and grooving width are different. The seat size measure 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				$W_{\pm 0.05}$	r_{ϵ}	L	h	κ
			AH725		GH130						
			R	L	R	L					
Neutral	2	DGM 2-020	●		●		2	0.2	20	5	-
		DGM 2-020-6R/L	●	●	●	●	2	0.2	20	5	6°
Left hand	2	DGM 2-020-8R/L	●	●	●	●	2	0.2	20	5	8°
		DGM 2-020-15R/L	●	●	●	●	2	0.2	20	5	15°
		DGM 2-002-15R/L	●	●	●	●	2	0.02	19.6	5	15°
Right hand	3	DGM 3-020			●	●	3	0.2	20	5	-
		DGM 3-020-6R/L	●	●	●	●	3	0.2	20	5	6°
		DGM 3-002-6R/L	●	●	●	●	3	0.02	19.6	5	6°
		DGM 3-020-15R/L	●	●	●	●	3	0.2	20	5	15°
7°	4	DGM 4-030			●	●	4	0.3	20	5	-
		DGM 4-030-4R/L	●	●	●	●	4	0.3	20	5	4°
		DGM 4-030-15R/L	●	●	●	●	4	0.3	20	5	15°
5	5	DGM 5-030			●	●	5	0.3	25	5.5	-
		DGM 5-030-4R	●		●		5	0.3	25	5.5	4°
6	6	DGM 6-030			●	●	6	0.3	25	5.5	-
		DGM 8-040			●	●	8	0.4	30	6.7	-



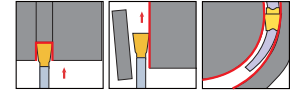
SGM External deep grooving and parting off, 1 corner

	Insert seat size	Cat. No.	Grades				Dimensions (mm)				
			Coated				$W_{\pm 0.05}$	r_{ϵ}	L	h	κ
			AH725		GH130						
			R	L	R	L					
Neutral	2	SGM 2-020	●		●		2	0.2	20	5	-
		SGM 2-020-6R/L	●	●	●	●	2	0.2	20	5	6°
Left hand	3	SGM 3-020			●	●	3	0.2	20	5	-
		SGM 3-020-6R/L	●	●	●	●	3	0.2	20	5	6°
		SGM 3-020-15R/L	●	●	●	●	3	0.2	20	5	15°
Right hand	4	SGM 4-030			●	●	4	0.3	20	5	-
		SGM 4-030-4R/L	●	●	●	●	4	0.3	20	5	4°
5	5	SGM 5-030			●	●	5	0.3	25	5.5	-
		SGM 6-030			●	●	6	0.3	25	5.5	-

● : Stocked items

DGS

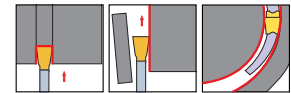
External grooving and parting off, 2 corner



	Insert seat size	Cat. No.	Grades				Dimensions (mm)				
			Coated				$W \pm 0.05$	r_ϵ	L	h	κ
			AH725		GH130						
			R	L	R	L					
Neutral	1	DGS1.4-016				1.4	0.16	16	4.3	-	
Left hand	2	DGS2-020	●		●		2	0.2	20	5	-
		DGS2-020-6R/L	●	●	●	●	2	0.2	20	5	6°
		DGS2-002-6R/L	●	●	●	●	2	0.02	19.6	5	6°
		DGS2-020-15R/L	●	●	●	●	2	0.2	20	5	15°
Right hand	3	DGS2-002-15R/L	●	●	●	●	2	0.02	19.6	5	15°
		DGS3-020	●		●		3	0.2	20	5	-
		DGS3-020-6R/L	●	●	●	●	3	0.2	20	5	6°
		DGS3-002-6R/L	●	●	●	●	3	0.02	19.6	5	6°
	4	DGS3-020-15R/L	●	●	●	●	3	0.2	20	5	15°
		DGS3-002-15R/L	●	●	●	●	3	0.02	19.6	5	15°
		DGS4-030	●		●		4	0.3	20	5	-
		DGS4-030-4R/L	●	●	●	●	4	0.3	20	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



	Insert seat size	Cat. No.	Grades				Dimensions (mm)				
			Coated				$W \pm 0.05$	r_ϵ	L	h	κ
			AH725		GH130						
			R	L	R	L					
Neutral	2	SGS 2-020	●		●		2	0.2	20	5	-
Left hand		SGS 2-020-6R/L	●	●	●	●	2	0.2	20	5	6°
		SGS 2-020-15R/L	●	●	●	●	2	0.2	20	5	15°
Right hand	3	SGS 3-020	●		●		3	0.2	20	5	-
		SGS 3-020-6R/L	●	●	●	●	3	0.2	20	5	6°
		SGS 3-002-6R/L	●	●	●	●	3	0.02	19.8	5	6°
		SGS 3-020-15R/L	●	●	●	●	3	0.2	20	5	15°
	4	SGS 3-002-15R/L	●	●	●	●	3	0.02	20	5	15°
SGS 4-030		●		●		4	0.3	20	5	-	
	5	SGS 5-030	●		●		5	0.3	25	5.5	-
	6	SGS 6-030	●		●		6	0.3	25	5.5	-

DGE

External grooving (Ground)

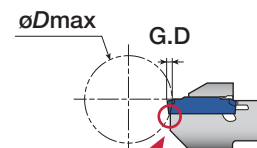


	Insert seat size	Cat. No.	Grades		Dimensions (mm)				
			Coated		$W \pm 0.02$	$r_\epsilon \pm 0.05$	L_1	L	h
			AH725	GH130					
	2	DGE100-000	●	●	1	0	2.5	20	5
		DGE130-000	●	●	1.3	0	2.5	20	5
		DGE160-010	●	●	1.6	0.1	2.5	20	5
		DGE185-010	●	●	1.85	0.1	3.5	20	5
		DGE215-015	●	●	2.15	0.15	3.5	20	5

Caution

ϕD_{max} is limited as shown in picture in right according to groove depth, G.D. Please refer to the following table. G.D = Groove depth

Cat. No.	Max. groove depth (mm)	ϕD_{max} (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	∞	18.6	11.5	8.8	7
DGE215-015						

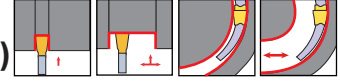


Relevant area (Interference)

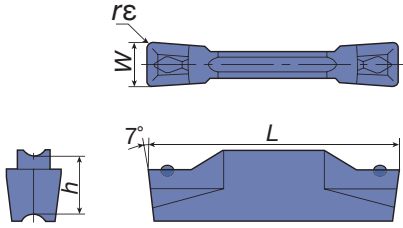
● : Stocked items

DTE

External, face grooving and turning (Ground)

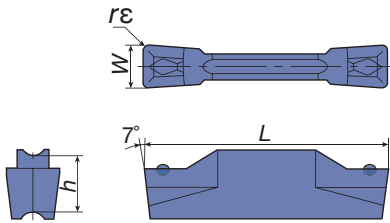


Insert seat size	Cat. No.	Grades Coated		Dimensions (mm)			
		AH725	GH130	$W \pm 0.02$	$r_{\epsilon} \pm 0.05$	L	h
3	DTE265-015	●	●	2.65	0.15	20	5
	DTE300-020	●	●	3	0.2	20	5
	DTE300-040	●	●	3	0.4	20	5
	DTE315-015	●	●	3.15	0.15	20	5
4	DTE400-040	●	●	4	0.4	20	5
	DTE400-080	●	●	4	0.8	20	5
	DTE415-015	●	●	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



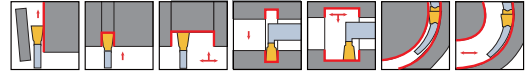
External, face grooving and turning (Molded)

Insert seat size	Cat. No.	Grades Coated		Dimensions (mm)			
		AH725	GH130	$W \pm 0.05$	r_{ϵ}	L	h
3	DTE3-040	●	●	3	0.4	20	5
4	DTE4-040	●	●	4	0.4	20	5

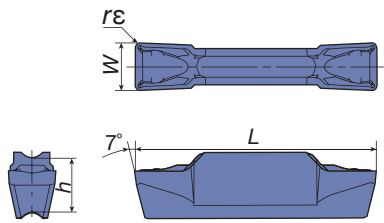


DTX

External, internal, face grooving and turning

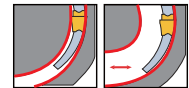


Insert seat size	Cat. No.	Grades Coated		Dimensions (mm)			
		AH725	GH130	$W \pm 0.05$	r_{ϵ}	L	h
3	DTX3-030	●	●	3	0.3	20	5
4	DTX4-040	●	●	4	0.4	20	5
5	DTX5-040	●	●	5	0.4	25	5.5

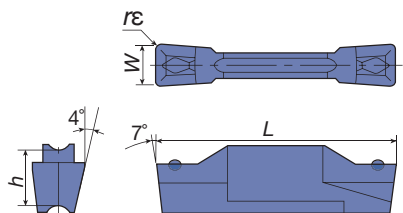


DTF

Face grooving and turning



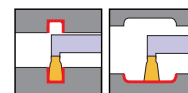
Insert seat size	Cat. No.	Grades Coated				Dimensions (mm)			
		AH725		GH130		$W \pm 0.05$	r_{ϵ}	L	h
		R	L	R	L				
		3	DTF3-040-R/L	●	●	●	●	3	0.4
4	DTF4-040-R/L	●	●	●	●	4	0.4	20	5



Right hand (R) shown.

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

● : Stocked items

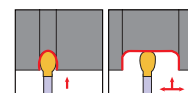


DTI Internal grooving and turning (Ground)

	Insert seat size	Cat. No.	Grades		Dimensions (mm)			
			Coated		$W \pm 0.02$	$r\epsilon \pm 0.05$	L	h
			AH725	GH130				
	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 turning (Molded)

	Insert seat size	Cat. No.	Grades		Dimensions (mm)			
			Coated		$W \pm 0.05$	$r\epsilon$	L	h
			AH725	GH130				
	3	DTI3-040	●	●	3	0.4	20	5
	4	DTI4-040	●	●	4	0.4	20	5



DTR Profiling and Undercutting (Molded)

	Insert seat size	Cat. No.	Grades		Dimensions (mm)			
			Coated		$W \pm 0.05$	$r\epsilon$	L	h
			AH725	GH130				
	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

Profiling and Undercutting (Ground)

	Insert seat size	Cat. No.	Grades		Dimensions (mm)			
			Coated		$W \pm 0.02$	$r\epsilon$	L	h
			AH725	GH130				
	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	●	●	5	2.5	25	5.5
	6	DTR600-300	●	●	6	3	25	5.5

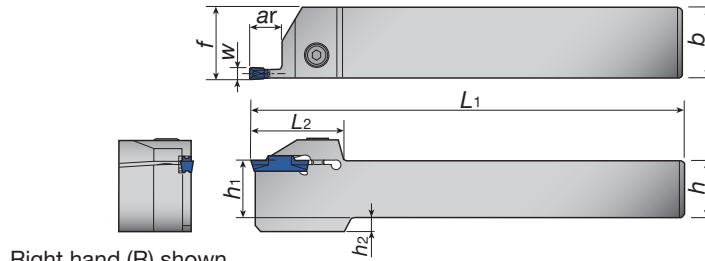
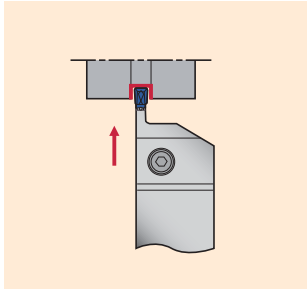
● : Stocked items

Toolholders

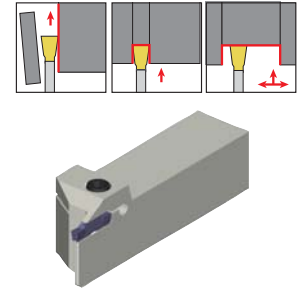
● Mono block type

CTE R/L

External grooving and turning



Right hand (R) shown.



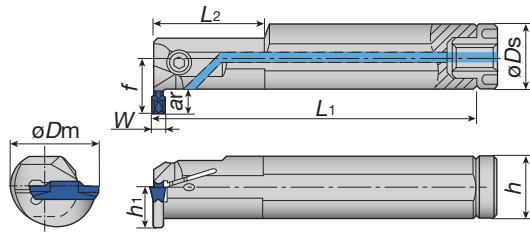
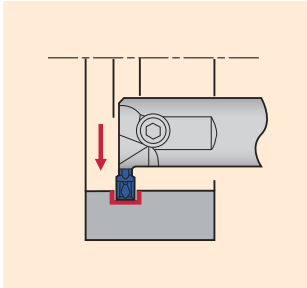
Insert seat size	Cat. No.	Stock		*Max. groove depth ar (mm)	Dimensions (mm)								Inserts	Parts	
		R	L		h ₁	b	h	L ₁	**f	W	h ₂	L ₂		Clamping screw	Wrench
2	CTER/L1616-2T08	●	●	8	16	16	16	110	16.1	2	4	33	DGM/SGM DGS/SGS	CM5x0.8x16-A	P-4
	CTER/L2020-2T08	●	●	8	20	20	20	125	20.1	2	-	33		CM5x0.8x20-A	
	CTER/L2525-2T08	●	●	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	
	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	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	
	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	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	
	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	CM8x1.25x20-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	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	

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

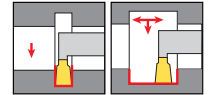
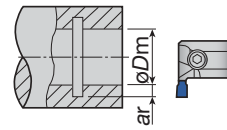
** "f" value in the above table is calculated with groove width "W" shown in the table.

CTI R/L

Internal grooving and turning



Right hand (R) shown.



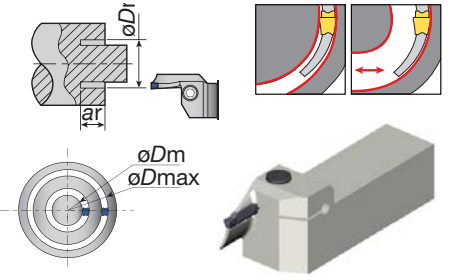
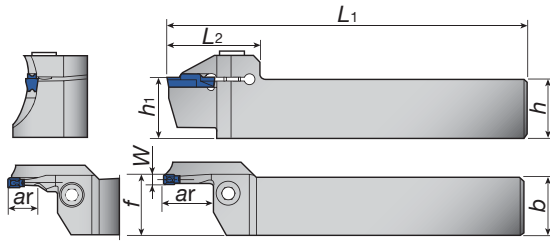
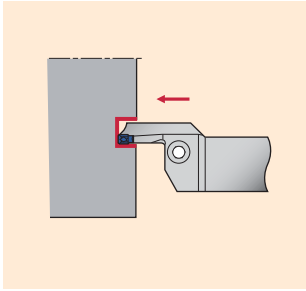
Insert seat size	Cat. No.	Stock		Min. dia. øDm (mm)	Max. groove depth ar (mm)	Dimensions (mm)							Inserts	Parts			
		R	L			øDs	h ₁	h	*L ₁	f	W	L ₂		Clamping screw	Wrench	Seal cap	Internal screw
3	CTIR/L20-3T06-D250	●	●	25	6	20	9	18	160	15.8	3	40	DTI DTX	CM5x0.8x12-A	P-4	CA-20	M6
	CTIR/L25-3T05-D250	●	●	25	5.1	25	11.5	23	200	17.5	3	40				CM5x0.8x16-A	CA-25
	CTIR/L25-3T08-D320	●	●	32	8	25	11.5	23	200	21.5	3	40		CA-32			
	CTIR/L32-3T10-D400	●	●	40	10	32	15	30	250	27	3	60					
4	CTIR/L20-4T06-D250	●	●	25	6	20	9	18	160	15.8	4	40		CM5x0.8x12-A	P-4	CA-20	M6
	CTIR/L25-4T08-D320	●	●	32	8	25	11.5	23	200	21.5	4	40				CM5x0.8x16-A	CA-25
	CTIR/L32-4T04-D310	●	●	31	4	32	15	30	250	20.8	4	60		CA-32			
	CTIR/L32-4T10-D400	●	●	40	10	32	15	30	250	27	4	60					
5	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	
6	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		

* "L₁" value in the above table is calculated with groove width "W" shown in the table.

● : Stocked items

CTF R/L

Deep face grooving and turning



Right hand (R) shown.

Insert seat size	Cat. No.	Stock		Min. dia. ϕD_m (mm)	Max. dia. ϕD_m (mm)	*Max. groove depth ar (mm)	Dimensions (mm)						*** Inserts	Parts		
		R	L				h_1	b	h	L_1	**f	W		L_2	Clamping screw	Wrench
3	CTFR/L2525-3T10-024035	●	●	24	35	10	25	25	25	150	25.5	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		3	38	DTF / DTX / DTE / DGM / DGS		
	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	25.6	4	39	DTF / DTX	CM6x1x25-A	P-5
	CTFR/L2525-4T20-028042	●	●	28	42	20	25	25	25	150		4	39			
	CTFR/L2525-4T20-034050	●	●	34	50	20	25	25	25	150		4	39	DTF / DTX / DTE / DGM / DGS		
	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	25.6	5	49	DTX / DTE / DGM / DGS	CM8x1.25x25-A	P-6
	CTFR/L2525-5T25-070110	●	●	70	110	25	25	25	25	150		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	25.6	6	49	DTE / DGM / DGS	CM8x1.25x25-A	P-6
	CTFR/L2525-6T25-058100	●	●	58	100	25	25	25	25	150		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			

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

** "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.

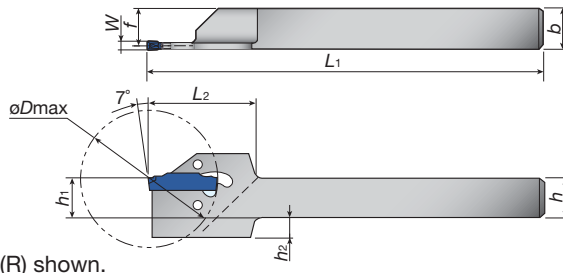
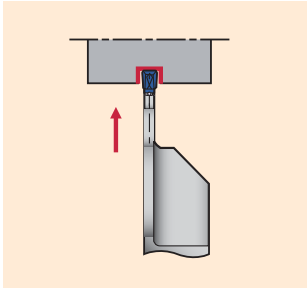
*** Min. diameter ϕD_m of DTE, DGS and DGM insert

Inserts	ϕD_m (mm)	Note
DTE 3 / DGS 3 / DGM 3	$\phi 44$	When diameter is smaller than ϕD_m , DTF or DTX type insert is recommended.
DTE 4 / DGS 4 / DGM 4	$\phi 42$	
DTE 5 / DGS 5 / DGM 5	$\phi 50$	
DTE 6 / DGS 6 / DGM 6	$\phi 48$	

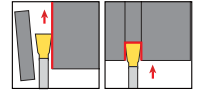
● : Stocked items

CGE R/L

Deep grooving and parting off



Right hand (R) shown.

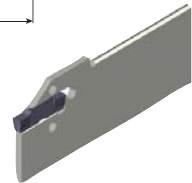
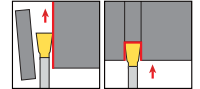
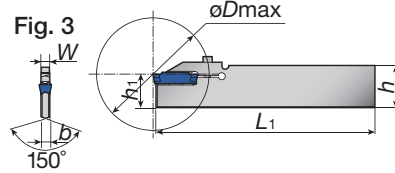
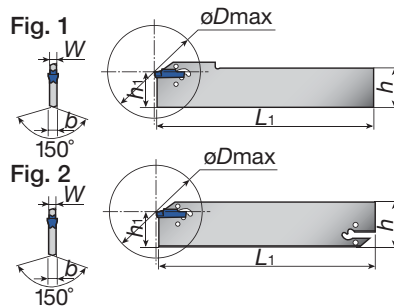
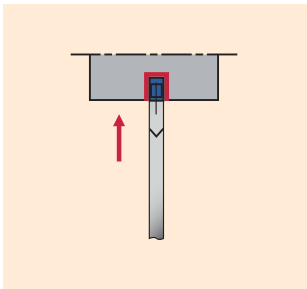


Insert seat size	Cat. No.	Stock		Max. dia. ϕD_m (mm)		Max. groove depth ar (mm)	Dimensions (mm)							Inserts	Parts Wrench	
		R	L	DGS/M	SGS/M		h_1	b	h	L_1	*f	W	h_2			L_2
1	CGER/L2020-1.4T14			29	29	9.7	20	20	20	125	20.2	1.4	-	30	DGS1.4-016	CRW23
2	CGER/L1212-2T17	●	●	35	35	11.8	12	12	12	150	12.1	2	6	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		CRW33

* "f" value in the above table is calculated with groove width "W" shown in the table.

CGP

Deep grooving and parting off



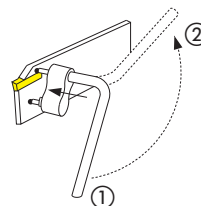
Insert seat size	Cat. No.	Stock	*Max. parting off dia. ϕD_m (mm)	Dimensions (mm)					Inserts	Parts		Shape	
				h_1	b	h	L_1	W		Clamping screw	Wrench		
1	CGP 26-1.4S		26	21.4	1	26	150	1.4	DGS1.4-016	-	CRW23	Fig. 1	
	CGP 32-1.4D		25	24.8	1	32	150	1.4		-	CRW23	Fig. 2	
2	CGP 26-2S	●	40	21.4	1.8	26	150	2	DGS1.4-016	-	CRW33	Fig. 1	
	CGP 32-2D	●	50	24.8	1.8	32	150	2		-	CRW33	Fig. 2	
3	CGP 26-3S	●	50	21.4	2.4	26	150	3	DGS1.4-016	-	CRW33	Fig. 1	
	CGP 32-3D	●	100	24.8	2.4	32	150	3		-	CRW33	Fig. 2	
4	CGP 26-4S	●	80	21.4	3.2	26	150	4	DGS1.4-016	-	CRW33	Fig. 1	
	CGP 32-4D	●	100	24.9	3.2	32	150	4		SGM	-	CRW33	Fig. 1
	CGP 45-4D	●	120	38.1	3.2	45	150	4			SGS	-	CRW33
5	CGP 32-5D	●	120	24.9	4	32	150	5		-		CRW33	Fig. 2
6	CGP 32-6D	●	120	24.9	5.2	32	150	6		-	CRW33	Fig. 2	
8	CGP 32-8S-CL		80	24.9	6.2	32	150	8		CM4x0.7x20-MO-A	P-3	Fig. 3	

Caution

Wrench, CRW□□, should be ordered separately.

Newly developed wrench

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



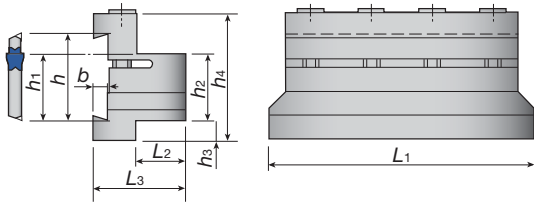
① → ② : unclamp
② → ① : clamp

● : Stocked items

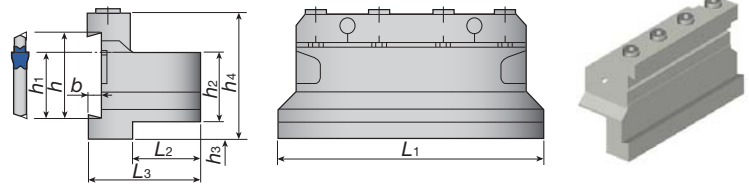
● Tool block for CGP blades

CTBF / CTBU Deep grooving and parting off

CTBF type

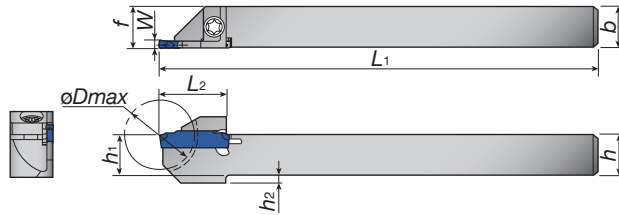
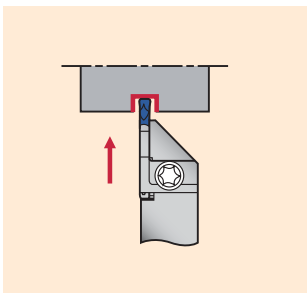


CTBU type



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	
CTBU25-26	●	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	

JCTE R/L For small lathe



Right hand (R) shown.



Insert seat size	Cat. No.	Stock		Max. dia. ϕD_m (mm)	Dimensions (mm)							Inserts	Parts		
		R	L		h_1	b	h	L_1	*f	W	h_2		L_2	Clamping screw	Wrench
1	JCTER/L1010-1.4T10			20	10	10	10	125	10.2	1.4	-	18	DGM/SGM	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	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	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			

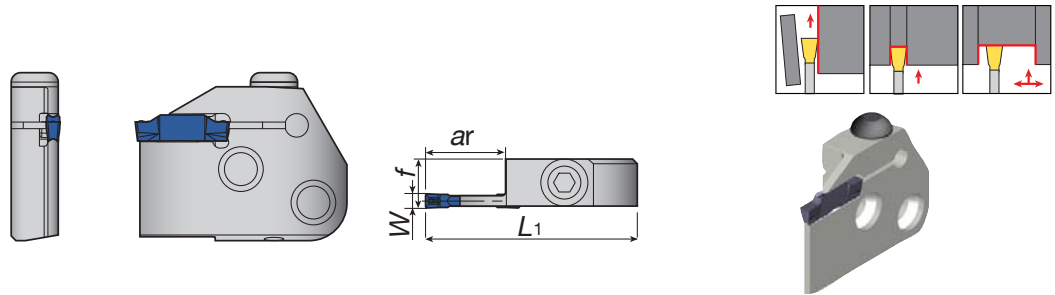
* "f" value in the above table is calculated with groove width "W" shown in the table.

● : Stocked items

● Blades (For general purpose)

CAE R/L

External grooving and turning

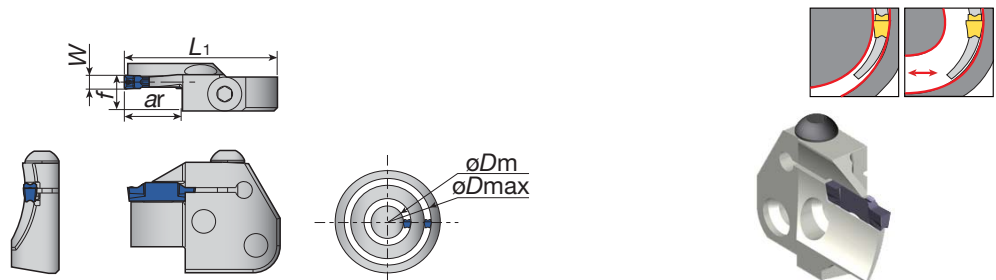


Right hand (R) shown.

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	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				

CAF R/L

Face grooving and turning



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	Shank	Parts	
		R	L				L ₁	f	W			Clamping screw	Wrench
3	CAFR/L-3T12-040055	●	●	40	55	12	45	10.4	3	DTF	CHFVR/L CHSR/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	CHFVR/L 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	CHFVR/L 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				
	CAFR/L-5T20-300000	●	●	300	∞	20	49	10.5	5				
6	CAFR/L-6T25-060090	●	●	60	90	25	55	10.5	6	DTF DTE DTX DGS DGM	CHFVR/L CHSR/L	BHM6-20-A	P-4
	CAFR/L-6T25-090150	●	●	90	150	25	55	10.5	6				
	CAFR/L-6T25-150250	●	●	150	250	25	55	10.5	6				
	CAFR/L-6T25-250400	●	●	250	400	25	55	10.5	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.

*** Min. diameter øDm of DTE, DGS and DGM insert

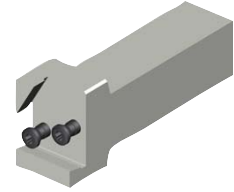
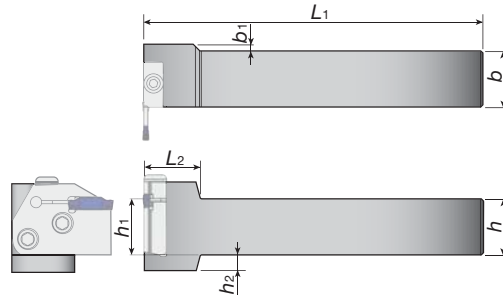
Inserts	øDm (mm)	Note
DTE 3 / DGS 3 / DGM 3	ø44	When diameter is smaller than øDm, DTF or DTX type insert is recommended.
DTE 4 / DGS 4 / DGM 4	ø42	
DTE 5 / DGS 5 / DGM 5	ø50	
DTE 6 / DGS 6 / DGM 6	ø48	

● : Stocked items

● Toolholders for blades

CHFV R/L

Horizontal type



Right hand (R) shown.

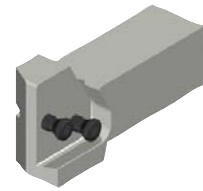
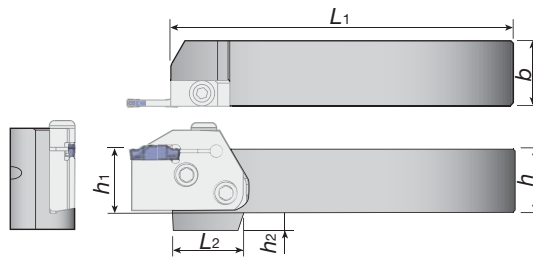
Cat. No.	Stock		Dimensions (mm)							Blades	Parts	
	R	L	h_1	b	h	L_1	b_1	h_2	L_2		Clamping screw	Wrench
CHFVR/L2020	●	●	20	20	20	150	8	12	25	CAER/L CAFR/L	CSHB-6-A	P-4
CHFVR/L2525	●	●	25	25	25	150	3	7	25			
CHFVR/L3232	●	●	32	32	32	170	-	-	25			

■ 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			

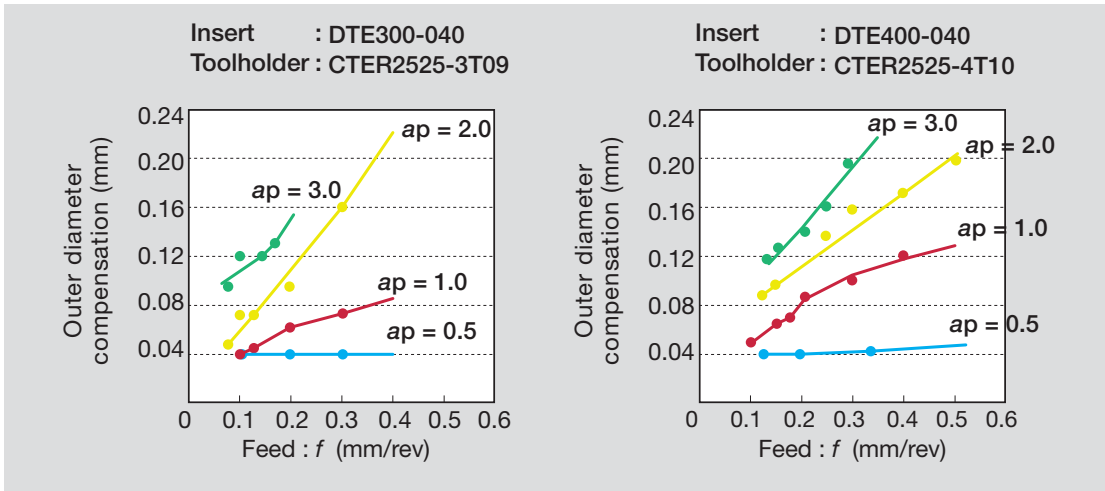
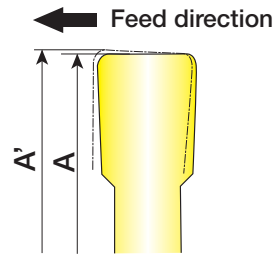
■ Combination of blade and toolholder

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

● : Stocked items

Notice in “turning”

When turning, the insert is pushed by the directional cutting force feed. As a result of this condition the diameter of the workpiece may change. (see picture on right) In such cases, trial cutting is essential to measure the actual diameter. For your reference, the compensated values (SAMPLES) are shown in the following graph.



Practical Examples

Work piece type		Automotive parts	Machine parts
Toolholder		CTER1616-2T08	CTER2525-4T10
Insert		DGM2-020	DGM4-030
Grade		AH725	AH725
Work material		SCr440, 41Cr4	SCr440, 41Cr4
Cutting conditions	Cutting speed: V_c (m/min)	2	4
	Feed : f (mm/rev)	94	150
	Depth of cut: ap (mm)	0.08	0.10
	Machining	Parting off	Grooving (Depth 6 mm)
	Coolant	Water soluble	Water soluble
Results		<p>+50%!</p> <p>TungCut has higher wear resistance and achieves tool life improvements of 150%.</p>	<p>Doubled tool life!</p> <p>TungCut provides better chip control and doubles tool life.</p>



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