Tungaloy
Member IMC Group

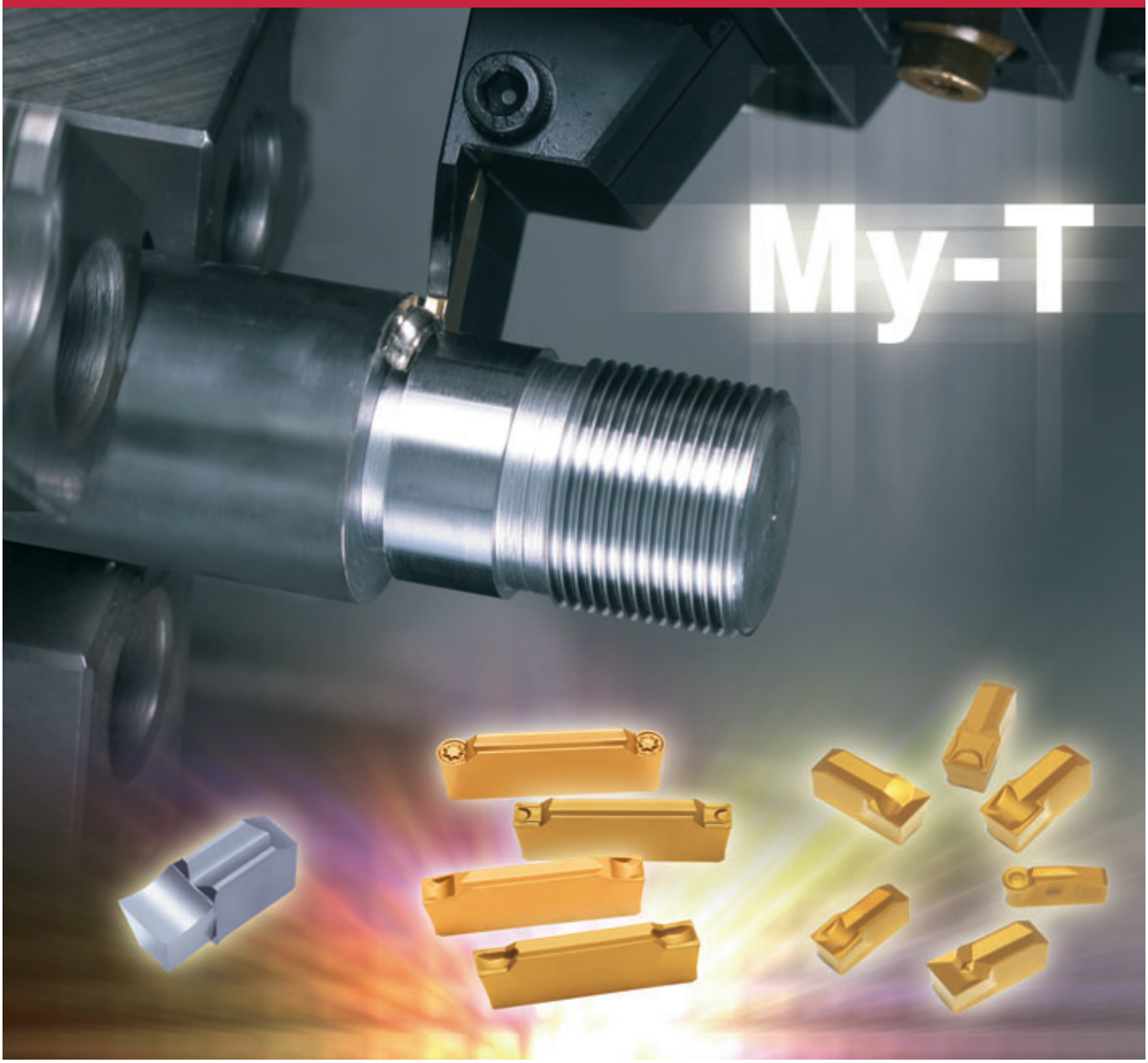
Tungaloy Report No. 344-E5

TURNLINE New grooving and parting off tools

MY-T SERIES

Extended version with new items

Wide variety of tools drastically reduce set up time!



Features

My-T G series

For aluminium

GE-AL Width: 2.0 ~ 4.0 mm

Reduce cutting force and chip welding due to the combination of sharp chipbreaker and fine grain cemented carbide.

For internal grooving

GN Width: 3.0 ~ 5.0 mm

Lower cutting resistance and better cutting action than GE type. Used for internal grooving when problems with chip control and chattering occur.

For face grooving

GF Width: 3.0 ~ 5.0 mm

Larger width of chipbreaker than GE type and with good chip control. Used for face grooving when problems with chip control and chattering occur.

For traversing

WGT • GT Width: 3.0 ~ 5.0 mm

Lower cutting resistance and better cutting action for traversing. Suitable for external, internal grooving and extending face slots etc.

For profiling

WGT • GR

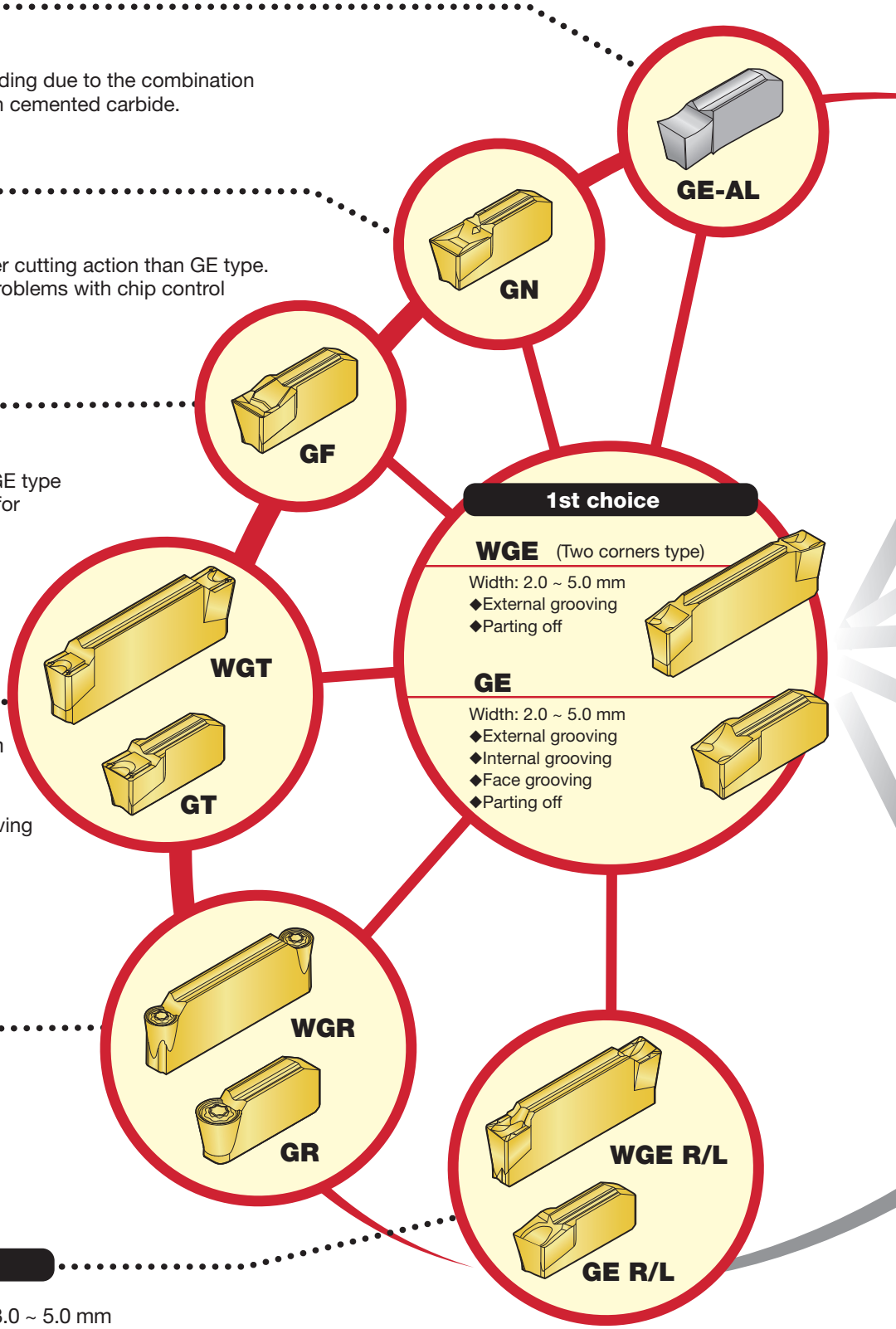
Width: 3.0 (1.5R) ~ 5.0 (2.5R) mm

Lower cutting resistance and better chip control for profiling.

For parting off

WGE R/L • GE R/L Width: 3.0 ~ 5.0 mm

A chipbreaker with good chip control for parting off. These inserts are effective to minimize burr generation when workpiece is cut off.



My-T G series

■WGE, GE type inserts almighty chipbreaker

- Excellent chip control for external grooving, internal grooving and face grooving.

■Specialist of grooving

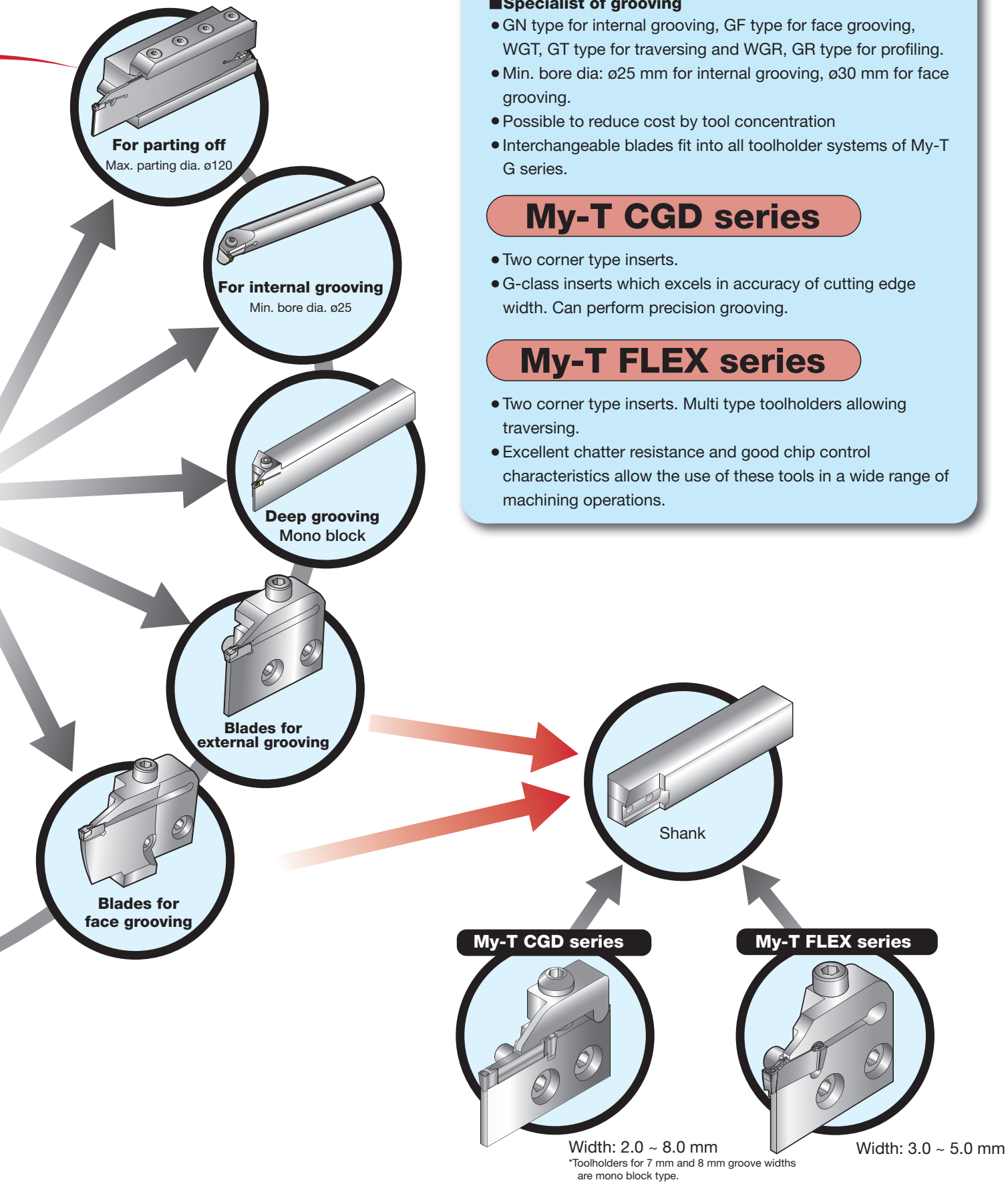
- GN type for internal grooving, GF type for face grooving, WGT, GT type for traversing and WGR, GR type for profiling.
- Min. bore dia: ø25 mm for internal grooving, ø30 mm for face grooving.
- Possible to reduce cost by tool concentration
- Interchangeable blades fit into all toolholder systems of My-T G series.

My-T CGD series

- Two corner type inserts.
- G-class inserts which excels in accuracy of cutting edge width. Can perform precision grooving.

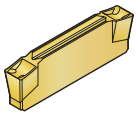
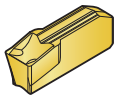
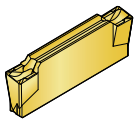
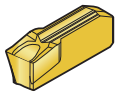
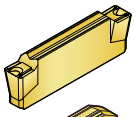
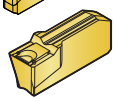
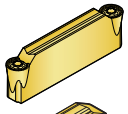
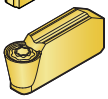
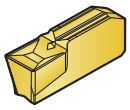
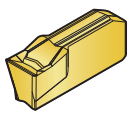
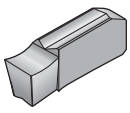
My-T FLEX series

- Two corner type inserts. Multi type toolholders allowing traversing.
- Excellent chatter resistance and good chip control characteristics allow the use of these tools in a wide range of machining operations.

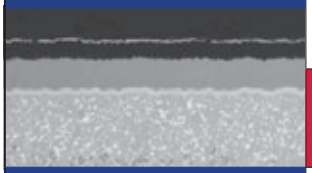
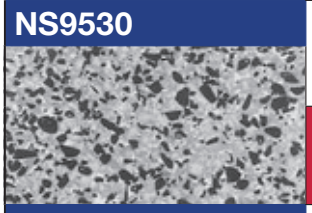


Chipbreaker recommendation for applications

◎···Basic recommendation ○···Complementary recommendation

Type	Cat. No.	Shape	Grooving width *W* (mm)	External	Internal	Face	Parting off	Traversing	Profiling
For general	WGE20 GE20		2	◎			○		
	WGE30 GE30		3	◎	○ GE type only	○ GE type only	○		
	WGE40 GE40		4	◎	○ GE type only	○ GE type only	○		
	WGE50 GE50		5	◎	○ GE type only	○ GE type only	○		
Parting off	WGE20R/L		2				◎		
	WGE30R/L GE30R/L		3				◎		
	WGE40R/L GE40R/L		4				◎		
	WGE50R/L GE50R/L		5				◎		
Traversing	WGT30 GT30		3	○	○ GT type only	○ GT type only	○	◎	○
	WGT40 GT40		4	○	○ GT type only	○ GT type only	○	◎	○
	WGT50 GT50		5	○	○ GT type only	○ GT type only	○	◎	○
Profiling	WGR30 GR30		3	○	○	○		○	◎
	WGR40 GR40		4	○	○	○		○	◎
	WGR50 GR50		5	○	○	○		○	◎
Internal grooving	GN30		3	○	◎	○	○		
	GN40		4	○	◎	○	○		
	GN50		5	○	◎	○	○		
Face grooving	GF30		3	○	○	◎	○		
	GF40		4	○	○	◎	○		
	GF50		5	○	○	◎	○		
For Aluminium alloys, Non-ferrous metals	GE20-AL		2	◎			○		
	GE30-AL		3	◎	○	○	○		
	GE40-AL		4	◎	○	○	○		

Grades

Grades	Substrate			Coating layer	
	Specific gravity	Hardness (Hv)	Transverse rupture strength (GPa)	Main composition	Thickness (μm)
T9125 	13.7	90.0	2.5	CVD coated grade, Continuously formed columnar crystal TiCN + Al_2O_3	14
Features	Coating layer demonstrates the incredible adhesion strength due to the Double-Bridge effect. Exclusive substrate delivers an outstanding balance of wear and chipping resistance.				
GH730 	14.4	91.5	3.0	PVD coated grade, Ti (C,N,O)	3
Features	"Premium – Coat" PVD coated grade combined with tough and fine carbide substrate. Provides high reliability and stable long tool life in small parts machining at the lower cutting speed condition.				
NS9530 	15.0	93.0	2.9	—	—
Features	Versatile cermet grade with incredible fracture and wear resistance for steel machining.				
KS05F 	15.0	93.0	2.9	—	—
Features	Fine cemented carbide grade for non-ferrous metal cutting. Demonstrates improved wear and fracture resistance due to the high hardness and strength.				

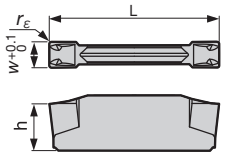
Standard cutting conditions

		Cutting speed: *Vc* (m/min) 0 100 200 300 400
P Steel	Low carbon steels, Alloy steels (~ 150HB) S10C, SCM415, SS400, SCr420H / C10E, E275A, 20Cr4H etc.	80 T9125 200 150 NS9530 250 50 GH730 180
	Medium carbon steels, Alloy steels (150 ~ 250HB) S45C, SCM440 / C45, 42CrMo4 etc.	80 T9125 180 80 NS9530 220 50 GH730 150
	High carbon steels, Alloy steels (250HB ~) S55C, SNCM439 / C55, C60 etc.	80 T9125 150 80 NS9530 180 50 GH730 120
M Stainless	Stainless steels SUS304, SUS316 / X5CrNi18-9, X5CrNiMo17-12-3 etc.	80 T9125 150 50 GH730 120
K Cast Iron	Grey cast irons, Ductile cast irons FC250, FCD400 / GG25, GGG40 etc.	80 T9125 200 50 GH730 180
N Non-ferrous	Aluminium alloys, Non-ferrous A2000, AC4C / AlCu4SiMg, AlSi7Mg etc.	200 KS05F 300

Inserts

2 corner

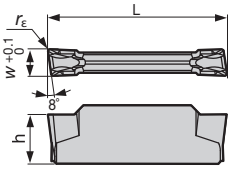
For external grooving and parting off



Cat. No.	Grades			Dimensions (mm)			
	Coated		Cermet				
	T9125	GH730	NS9530	w	L	h	r_ε
WGE20	●	●	●	2	20	4.7	0.2
WGE30	●	●	●	3		5.5	
WGE40	●	●	●	4	25	5.7	
WGE50	●	●	●	5		5.9	

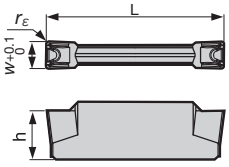
For parting off (handed insert)

Right hand (R) shown.



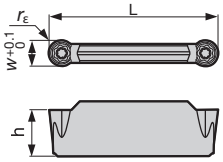
Cat. No.	Grades		Dimensions (mm)			
	Coated					
	GH730					
	R	L	w	L	h	r_ε
WGE20R/L	●	●	2	20	4.7	0.2
WGE30R/L	●	●	3		5.5	
WGE40R/L	●	●	4	25	5.7	
WGE50R/L	●	●	5		5.9	

For grooving and traversing



Cat. No.	Grades			Dimensions (mm)			
	Coated		Cermet				
	T9125	GH730	NS9530	w	L	h	r_ε
WGT30	●	●	●	3	20	5.5	0.4
WGT40	●	●	●	4	25	5.7	
WGT50	●	●	●	5		5.9	

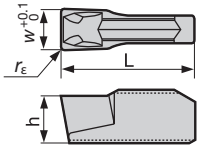
For profiling



Cat. No.	Grades			Dimensions (mm)			
	Coated		Cermet				
	T9125	GH730	NS9530	w	L	h	r_ε
WGR30	●	●	●	3	20	5.5	1.5
WGR40	●	●	●	4	25	5.7	2.0
WGR50		●	●	5		5.9	2.5

1 corner

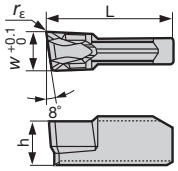
For grooving and parting off



Cat. No.	Grades			Dimensions (mm)			
	Coated		Cermet				
	T9125	GH730	NS9530	w	L	h	r_ε
GE20		●	●	2	10	3.5	0.2
GE30	●	●	●	3			
GE40	●	●	●	4		4.0	
GE50	●	●	●	5	12	4.5	

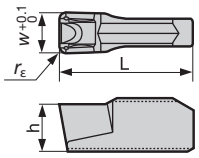
For parting off (handed insert)

Right hand (R) shown.



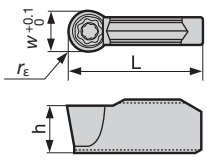
Cat. No.	Grades		Dimensions (mm)			
	Coated					
	GH730					
	R	L	w	L	h	r_ε
GE30R/L	●	●	3	10	3.5	0.2
GE40R/L	●	●	4		4.0	
GE50R/L	●	●	5	12	4.5	

For grooving and traversing



Cat. No.	Grades			Dimensions (mm)			
	Coated		Cermet				
	T9125	GH730	NS9530	w	L	h	r_ε
GT30		●	●	3	10	3.5	0.2
GT40		●	●	4		4.0	
GT50	●	●	●	5	12	4.5	

For profiling

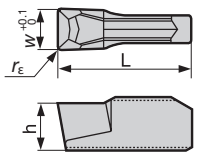


Cat. No.	Grades			Dimensions (mm)			
	Coated		Cermet				
	T9125	GH730	NS9530	w	L	h	r_ε
GR30		●	●	3	10	3.5	1.5
GR40	●	●	●	4		4.0	2.0
GR50	●	●	●	5	12	4.5	2.5

●: Stocked items.

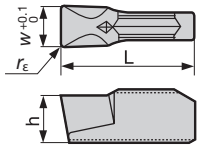
1 corner

For face grooving
(Improved chip control)



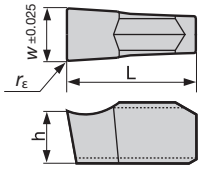
Cat. No.	Grades		Dimensions (mm)			
	Coated	Cermet				
	GH730	NS9530	w	L	h	rε
GF30	●	●	3	10	3.5	0.2
GF40	●	●	4		4.0	
GF50	●	●	5	12	4.5	

For internal
grooving



Cat. No.	Grades		Dimensions (mm)			
	Coated	Cermet				
	GH730	NS9530	w	L	h	rε
GN30	●	●	3	10	3.5	0.2
GN40	●	●	4		4.0	
GN50	●	●	5	12	4.5	

For aluminium
and non-ferrous
metals



Cat. No.	Grades	Dimensions (mm)			
	Uncoated				
	KS05F	w	L	h	rε
GE20-AL	●	2	10	3.5	0.2
GE30-AL	●	3			
GE40-AL	●	4		4.0	

Parts

(Mono block type)

Cat. No.	Clamping screw	Wrench
		
CGWSR/L□□□□-□□-W	CHHM5-18	P-4
CGWSR/L□□□□-□□-W-L		

(Blade type)

Cat. No.	Clamping screw	Blade fixing screw	Wrench
			
CGWSR/L□□□□-□□WGR/L	CHHM5-18	CSHB-6	P-4
CGWSR/L□□□□-□□WGR/L-L			

Standard cutting conditions

Work materials	Recommended grade	Cutting speed Vc (m/min)
Low carbon steels Alloy steels (~ 150HB)	T9125	80 ~ 200
	NS9530	100 ~ 200
	GH730	50 ~ 180
Medium carbon steels Alloy steels (150 ~ 250HB)	T9125	80 ~ 180
	NS9530	80 ~ 180
	GH730	50 ~ 150
High carbon steels Alloy steels (250HB ~)	T9125	80 ~ 150
	NS9530	80 ~ 150
	GH730	50 ~ 120
Stainless steels	T9125	80 ~ 150
	GH730	50 ~ 120
Grey and ductile cast irons	T9125	80 ~ 200
	GH730	50 ~ 180
Aluminium alloys, Non-ferrous metals	KS05F	200 ~ 300

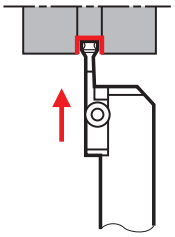
Operation	Feed: f (mm/rev) Groove width: W (mm)			
	2	3	4	5
Grooving (GE□□)	0.06 ~ 0.20	0.06 ~ 0.25	0.07 ~ 0.27	0.07 ~ 0.30
Parting off (GE□□R/L)	0.04 ~ 0.10	0.04 ~ 0.14	0.04 ~ 0.14	0.04 ~ 0.14
Traversing (GT□□)	-	ap = 0.5 ~ 1.5 f = 0.06 ~ 0.2	ap = 0.5 ~ 2.0 f = 0.06 ~ 0.25	ap = 0.5 ~ 2.5 f = 0.06 ~ 0.27
Profiling (GR□□)	-	ap = 0.5 ~ 1.4 f = 0.05 ~ 0.25	ap = 0.5 ~ 1.5 f = 0.05 ~ 0.26	ap = 0.5 ~ 1.6 f = 0.05 ~ 0.3
Grooving for Aluminium alloys (GE□□-AL)	0.03 ~ 0.1	0.03 ~ 0.1	0.03 ~ 0.1	-

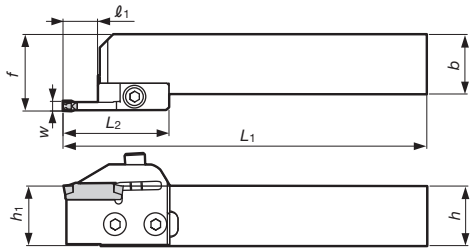
● : Stocked items.

Toolholders

External grooving

CGWS R/L-WG External grooving — Blade type

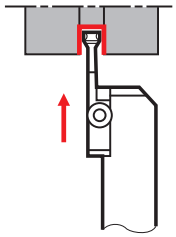


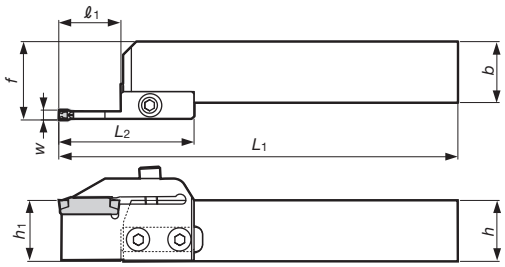


Right hand (R) shown.

Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h1	b	h	L1	f	ℓ1	L2	Parts: Shank	Stock R	Stock L	Blade set	Stock R	Stock L
3	CGWSR/L2020-W30GR/L	●	●	WGE30 WGE30R/L WGT30 WGR30	12	20	20	20	150.5	26.9	13.5	43.5	CGWSR/L2020	●	●	W30G R/L	●	●
	CGWSR/L2525-W30GR/L	●	●			25	25	25		31.9			CGWSR/L2525	●	●			
4	CGWSR/L2020-W40GR/L	●	●	WGE40 WGE40R/L WGT40 WGR40	13	20	20	20	151.5	26.9	14.5	44.5	CGWSR/L2020	●	●	W40G R/L	●	
	CGWSR/L2525-W40GR/L	●	●			25	25	25		31.9			CGWSR/L2525	●	●			
5	CGWSR/L2020-W50GR/L	●	●	WGE50 WGE50R/L WGT50 WGR50	13	20	20	20		26.9			CGWSR/L2020	●	●	W50G R/L		
	CGWSR/L2525-W50GR/L	●	●			25	25	25		31.9			CGWSR/L2525	●	●			

CGWS R/L-WG-L External grooving — Blade type





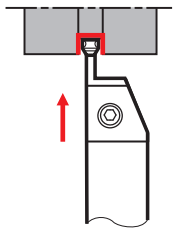
Right hand (R) shown.

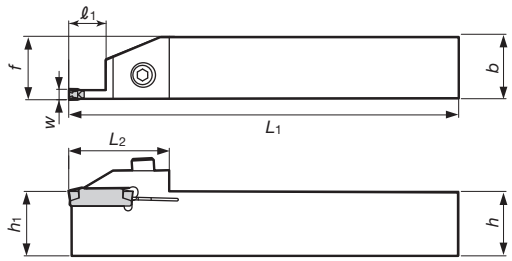
Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h1	b	h	L1	f	ℓ1	L2	Parts: Shank	Stock R	Stock L	Blade set	Stock R	Stock L
2	CGWSR/L2020-W20GR/L-L	●	●	WGE20 WGE20R/L	15	20	20	20	153.5	26.7	16.5	46.5	CGWSR/L2020	●	●	W20G R/L-L	●	
	CGWSR/L2525-W20GR/L-L	●	●			25	25	25		31.7			CGWSR/L2525	●	●			
3	CGWSR/L2020-W30GR/L-L	●	●	WGE30 WGE30R/L WGT30 WGR30	16.5 16.5 16.5 17.5	20	20	20	157.5	26.9	20.5	50.5	CGWSR/L2020	●	●	W30G R/L-L	●	●
	CGWSR/L2525-W30GR/L-L	●	●			25	25	25		31.9			CGWSR/L2525	●	●			
4	CGWSR/L2020-W40GR/L-L	●	●	WGE40 WGE40R/L WGT40 WGR40	21 21 21 21.5	20	20	20	162.5	26.9	25.5	55.5	CGWSR/L2020	●	●	W40G R/L-L	●	
	CGWSR/L2525-W40GR/L-L	●	●			25	25	25		31.9			CGWSR/L2525	●	●			
5	CGWSR/L2020-W50GR/L-L	●	●	WGE50 WGE50R/L WGT50 WGR50	21	20	20	20		26.9			CGWSR/L2020	●	●	W50G R/L-L	●	
	CGWSR/L2525-W50GR/L-L	●	●			25	25	25		31.9			CGWSR/L2525	●	●			

Notes: • Max. groove depth may differ by using inserts.
• When ordering, shank and blade set Cat. No. or shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

● : Stocked items.

CGWS-W External grooving — Mono block without offset

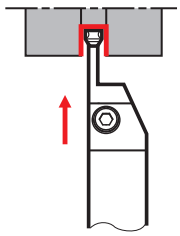


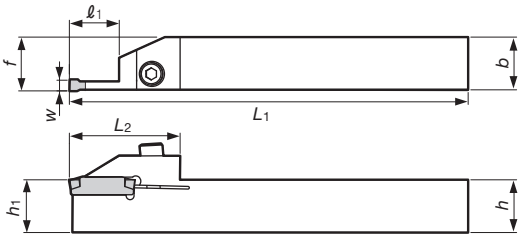


Right hand (R) shown.

Groove width W (mm)	Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	h1	b	h	L1	f	ℓ1	L2
3	CGWSR/L1616-W30	●		WGE30 WGE30R/L WGT30 WGR30	12	16	16	16	125	16.4	13.5	34
	CGWSR/L2020-W30	●	●			20	20	20	150	20.4		
	CGWSR/L2525-W30	●				25	25	25		25.4		
4	CGWSR/L2020-W40	●		WGE40 WGE40R/L WGT40 WGR40	13	20	20	20	150	20.4	14.5	39
	CGWSR/L2525-W40	●				25	25	25		25.4		
5	CGWSR/L2020-W50	●	●	WGE50 WGE50R/L WGT50 WGR50	13	20	20	20	150	20.4	14.5	39
	CGWSR/L2525-W50		●			25	25	25		25.4		

CGWS R/L-W-L External deep grooving — Mono block without offset





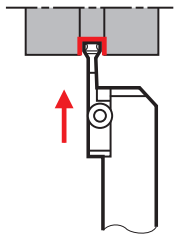
Right hand (R) shown.

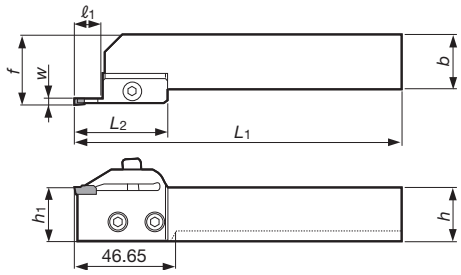
Groove width W (mm)	Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	h1	b	h	L1	f	ℓ1	L2
2	CGWSR/L1616-W20-L	●		WGE20 WGE20R/L	15	16	16	16	125	16.2	16.5	37
	CGWSR/L2020-W20-L	●	●			20	20	20	150	20.2		
	CGWSR/L2525-W20-L	●	●			25	25	25		25.2		
3	CGWSR/L1616-W30-L	●		WGE30 WGE30R/L WGT30 WGR30	16.5 16.5 16.5 17.5	16	16	16	125	16.4	20.5	37
	CGWSR/L2020-W30-L	●	●			20	20	20	150	20.4		
	CGWSR/L2525-W30-L	●	●			25	25	25		25.4		
4	CGWSR/L2020-W40-L	●		WGE40 WGE40R/L WGT40 WGR40	21 21 21 21.5	20	20	20	150	20.4	25.5	42
	CGWSR/L2525-W40-L	●				25	25	25		25.4		
5	CGWSR/L2020-W50-L	●	●	WGE50 WGE50R/L WGT50 WGR50	21	20	20	20	150	20.4	25.5	42
	CGWSR/L2525-W50-L	●	●			25	25	25		25.4		

Note: Max. groove depth may differ by using inserts.

● : Stocked items.

CGWS R/L-G External grooving — Toolholders (S: Vertical type)



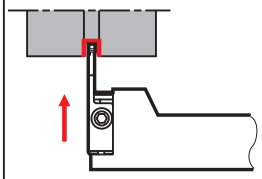


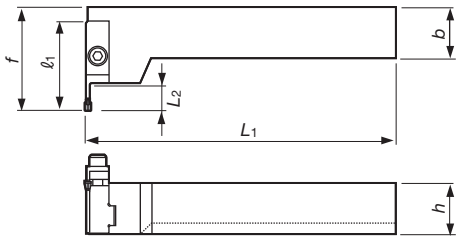
Right hand (R) shown.
The dashed line shows 20 mm-square shank tools .

Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	h1	b	h	L1	f	ℓ1	L2	Parts: Shank	Shank Stock R	Shank Stock L	Blade set	Blade set Stock R	Blade set Stock L
2	CGWSR/L2020-20GR/L	●	●	GE20 GE20-AL	12	20	20	20	150.2	26.8	13.15	43.15	CGWSR/L2020	●	●	20GR/L	●	●
	CGWSR/L2525-20GR/L	●	●			25	25	25		31.8			CGWSR/L2525	●	●			
3	CGWSR/L2020-30GR/L	●	●	GE30 GE30R/L GT30 GR30 GE30-AL	12	20	20	20	150.2	27	13.15	43.15	CGWSR/L2020	●	●	30GR/L	●	●
	CGWSR/L2525-30GR/L	●	●			25	25	25		32			CGWSR/L2525	●	●			
4	CGWSR/L2020-40GR/L	●	●	GE40 GE40R/L GT40 GR40 GE40-AL	12	20	20	20	150.2	27.1	13.15	43.15	CGWSR/L2020	●	●	40GR/L	●	●
	CGWSR/L2525-40GR/L	●	●			25	25	25		32.1			CGWSR/L2525	●	●			
5	CGWSR/L2020-50GR/L	●		GE50 GE50R/L GT50 GR50	12	20	20	20	150.2	27.2	13.15	43.15	CGWSR/L2020	●	●	50GR/L	●	●
	CGWSR/L2525-50GR/L	●				25	25	25		32.2			CGWSR/L2525	●	●			

Notes: • When ordering, shank and blade set Cat. No. or shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

CGWT R/L-G External grooving — Toolholders (T: Horizontal type)





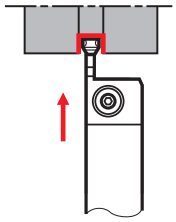
Right hand (R) shown.
The dashed line shows 20 mm-square shank tools .

Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	b	h	L1	f	ℓ1	L2	Parts: Shank	Shank Stock R	Shank Stock L	Blade set	Blade set Stock R	Blade set Stock L
3	CGWTR/L2020-30GL/R			GE30 GE30R/L GT30 GR30 GE30-AL	12	20	20	150	49.9	43.15	12.9	CGWTR/L2020	●	●	30GL/R	●	●
	CGWTR/L2525-30GL/R					25	25					CGWTR/L2525	●	●			
4	CGWTR/L2020-40GL/R			GE40 GE40R/L GT40 GR40 GE40-AL	12	20	20	150.1	49.9	43.15	12.9	CGWTR/L2020	●	●	40GL/R	●	●
	CGWTR/L2525-40GL/R					25	25					CGWTR/L2525	●	●			
5	CGWTR/L2020-50GL/R			GE50 GE50R/L GT50 GR50	12	20	20	150.2	49.9	43.15	12.9	CGWTR/L2020	●	●	50GL/R	●	●
	CGWTR/L2525-50GL/R					25	25					CGWTR/L2525	●	●			

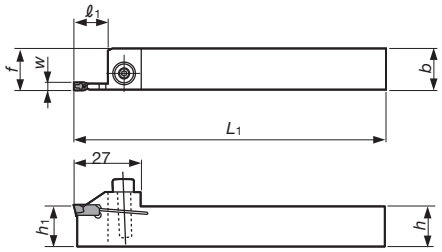
Notes: • When ordering, shank and blade set Cat. No. or shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with left hand shank and the left hand blade set is used with right hand shank.

● : Stocked items.

CGSS R/L External grooving — Toolholders (Mono block type)



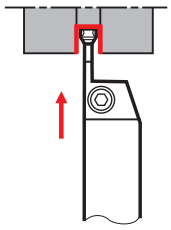
● Without offset



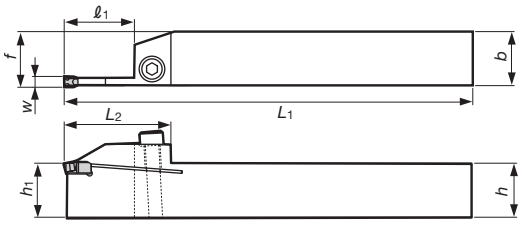
Right hand (R) shown.

Groove width W (mm)	Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h_1	b	h	L_1	f	ℓ_1
2	CGSSR/L1616-20	●	●	GE20 GE20-AL	16	16	16	16	125	16.2	17
	CGSSR/L2020-20	●	●			20	20	20	150	20.2	
	CGSSR/L2525-20	●	●			25	25	25		25.2	
3	CGSSR/L1616-30	●	●	GE30 GE30R/L GT30 GR30 GE30-AL	12	16	16	16	125	16.5	13.5
	CGSSR/L2020-30	●	●			20	20	20	150	20.5	
	CGSSR/L2525-30	●	●			25	25	25		25.5	
4	CGSSR/L1616-40			GE40 GE40R/L GT40 GR40 GE40-AL	12	16	16	16	125	16.6	13.5
	CGSSR/L2020-40	●	●			20	20	20	150	20.6	
	CGSSR/L2525-40	●	●			25	25	25		25.6	
5	CGSSR/L1616-50			GE50 GE50R/L GT50 GR50	12	16	16	16	125	16.7	13.5
	CGSSR/L2020-50	●	●			20	20	20	150	20.7	
	CGSSR/L2525-50	●	●			25	25	25		25.7	

CGSS R/L-D External deep grooving — Toolholders (Mono block type)



● Without offset



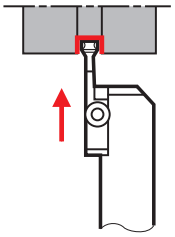
Right hand (R) shown.

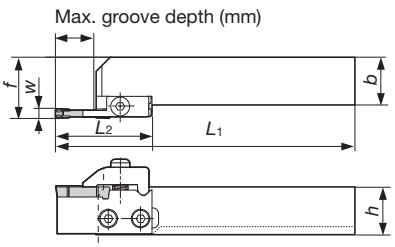
Groove width W (mm)	Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h_1	b	h	L_1	f	ℓ_1	L_2
3	CGSSR/L1616-30D	●	●	GE30 GE30R/L GE30-AL	22	16	16	16	125	16.5	23	36.2
	CGSSR/L2020-30D	●	●			20	20	20	150	20.5		
	CGSSR/L2525-30D	●	●			25	25	25		25.5		
4	CGSSR/L1616-40D			GE40 GE40R/L GE40-AL	25	16	16	16	125	16.6	26	39.5
	CGSSR/L2020-40D	●	●			20	20	20	150	20.6		
	CGSSR/L2525-40D	●	●			25	25	25		25.6		
5	CGSSR/L1616-50D			GE50 GE50R/L	25	16	16	16	125	16.7	26	39.5
	CGSSR/L2020-50D	●	●			20	20	20	150	20.7		
	CGSSR/L2525-50D	●	●			25	25	25		25.7		

Note: Max. groove depth may differ by using inserts.

● : Stocked items.

CGWS R/L External grooving — Toolholders (S: Vertical type)



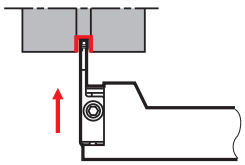


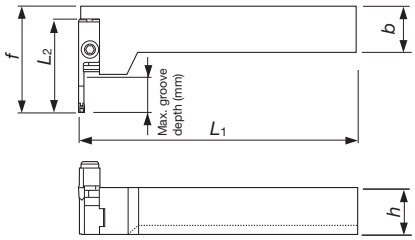
Right hand (R) shown.
The dashed line shows 20 mm square shank tools.

Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Max. parting off dia. (mm)	b	h	L_1	f	L_2	Parts: Shank	Stock R	Stock L	Parts: Blade set	Stock R	Stock L
2	CGWSR/L2020-CGDR/L2	●	●	CGD200	16	35	20	20	152	26.45	45	CGWSR/L2020	●	●	CGDR/L2	●	
	CGWSR/L2525-CGDR/L2		●				25	25		31.45		CGWSR/L2525	●	●			
3	CGWSR/L2020-CGDR/L3		●	CGD300	21.6	46	20	20	157.6	26.45	50.6	CGWSR/L2020	●	●	CGDR/L3	●	●
	CGWSR/L2525-CGDR/L3	●					25	25		31.45		CGWSR/L2525	●	●			
4	CGWSR/L2020-CGDR/L4	●	●	CGD400	21.6	46	20	20	157.6	26.65	50.6	CGWSR/L2020	●	●	CGDR/L4	●	
	CGWSR/L2525-CGDR/L4	●	●				25	25		31.65		CGWSR/L2525	●	●			
5	CGWSR/L2020-CGDR/L5	●	●	CGD500	21.6	46	20	20	157.6	26.95	50.6	CGWSR/L2020	●	●	CGDR/L5	●	
	CGWSR/L2525-CGDR/L5		●				25	25		31.95		CGWSR/L2525	●	●			
6	CGWSR/L2020-CGDR/L6	●	●	CGD600	21.6	46	20	20	157.6	27.1	50.6	CGWSR/L2020	●	●	CGDR/L6		●
	CGWSR/L2525-CGDR/L6	●	●				25	25		32.1		CGWSR/L2525	●	●			
7·8	CGWSR/L2525-8	●		CGD700	21.6	50	25	25	150	26.35	–	–			–		
	CGWSR/L3232-8	●		CGD800			32	32	170	33.35							

Notes: • When ordering, shank and blade set Cat. No. or shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

CGWT R/L External grooving — Toolholders (T: Horizontal type)





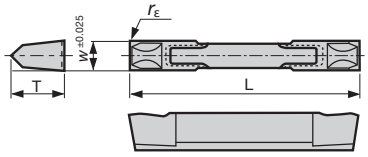
Max. parting off dia. is different than CGWSR/L type.
Right hand (R) shown.
The dashed line shows 20 mm square shank tools.

Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Max. parting off dia. (mm)	b	h	L_1	f	L_2	Parts: Shank	Stock R	Stock L	Parts: Blade set	Stock R	Stock L
2	CGWTR/L2020-CGDL/R2			CGD200	13.5	27	20	20	149.4	51.75	45	CGWTR/L2020	●	●	CGDL/ R2	●	
	CGWTR/L2525-CGDL/R2						25	25				CGWTR/L2525	●	●			
3	CGWTR/L2020-CGDL/R3			CGD300	19.5	39	20	20	149.4	57.35	50.6	CGWTR/L2020	●	●	CGDL/ R3	●	●
	CGWTR/L2525-CGDL/R3						25	25				CGWTR/L2525	●	●			
4	CGWTR/L2020-CGDL/R4			CGD400	19.5	39	20	20	149.6	57.35	50.6	CGWTR/L2020	●	●	CGDL/ R4	●	
	CGWTR/L2525-CGDL/R4						25	25				CGWTR/L2525	●	●			
5	CGWTR/L2020-CGDL/R5			CGD500	19.5	39	20	20	149.9	57.35	50.6	CGWTR/L2020	●	●	CGDL/ R5	●	
	CGWTR/L2525-CGDL/R5						25	25				CGWTR/L2525	●	●			
6	CGWTR/L2020-CGDL/R6			CGD600	19.5	39	20	20	150.1	57.35	50.6	CGWTR/L2020	●	●	CGDL/ R6		●
	CGWTR/L2525-CGDL/R6						25	25				CGWTR/L2525	●	●			

Notes: • When ordering, shank and blade set Cat. No. or shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with left hand shank and the left hand blade set is used with right hand shank.

● : Stocked items.

Applicable inserts

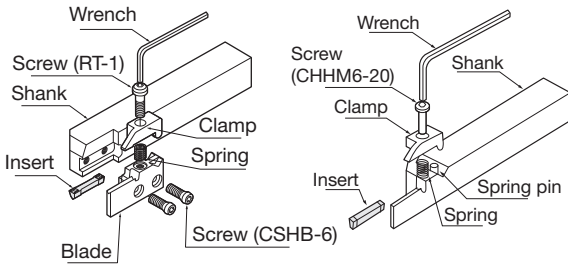


Dimensions (mm)				Cat. No.	Grades		
					Coated	Cermet	Uncoated
$w \pm 0.025$	L	T	r_ε		GH330	NS9530	UX30
2	20	3.25	0.2	CGD200	●	★	●
3	28.6	6.3		CGD300	●	★	●
4				CGD400	●	★	●
5				CGD500	●	★	●
6		8.5		CGD600	●	★	●
7				CGD700	●	★	●
8				CGD800	●	★	●

Note: Please contact us when ordering special sizes (2.0 - 8.5 mm).

Packing : 5 pcs.

Parts

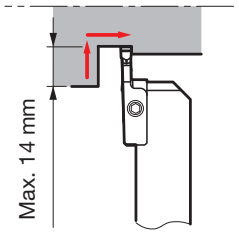


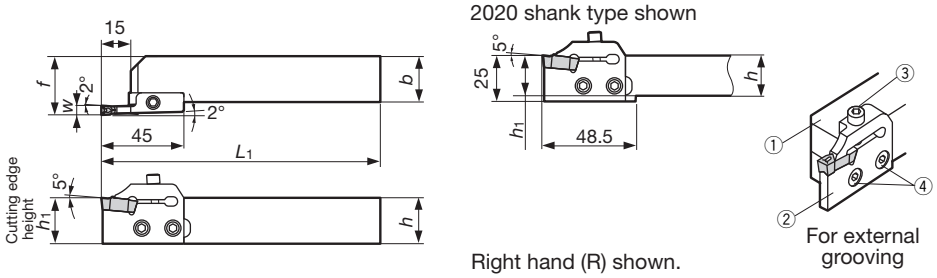
Cat. No.	Parts						Applicable insert
	Blade	Clamp	Clamping screw	Spring pin	Spring	Wrench	
CGDR/L2	TCR/L2	CCR/L2	CSHB-6 (2 pieces) RT-1 (1 piece)	–	BP-9	P-4	CGD200
CGDR/L3	TCR/L3	CCR/L3					CGD300
CGDR/L4	TCR/L4	CCR/L4					CGD400
CGDR/L5	TCR/L5	CCR/L5					CGD500
CGDR/L6	TCR/L6	CCR/L6					CGD600
CGWSR/L2525-8	–	CCR/L8	CHHM6-20	5×14AW	BP-9	P-5	CGD700
CGWSR/L3232-8							CGD800

Standard cutting conditions

Operation	Cutting speed v_c (m/min)	Groove width: W (mm) Feed: f (mm/rev)						
		2	3	4	5	6	7	8
Grooving Low carbon steels	100 ~ 200	0.08 ~ 0.20	0.08 ~ 0.25	0.08 ~ 0.25	0.08 ~ 0.25	0.08 ~ 0.25	0.08 ~ 0.25	0.08 ~ 0.25
Grooving Medium carbon steels				0.08 ~ 0.30	0.08 ~ 0.30	0.08 ~ 0.30	0.08 ~ 0.30	0.08 ~ 0.30
Parting off	100 ~ 150	0.08 ~ 0.15	0.08 ~ 0.15	0.08 ~ 0.15	0.08 ~ 0.15	0.08 ~ 0.15	0.08 ~ 0.15	0.08 ~ 0.15

CGWS R/L External grooving — Toolholders (S: Vertical type)



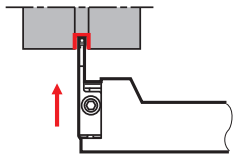


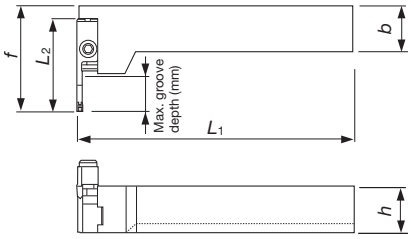
Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h_1	b	h	L_1	f	Parts: Shank	Stock R	Stock L	Blade set	Stock R	Stock L
3	CGWSR/L2020-FLR/L3GP	●	●	FLEX30R/L	10	20	20	20	152	27	CGWSR/L2020	●	●	FLR/L3GP	●	
4	CGWSR/L2020-FLR/L4GP		●	FLEX40R/L	12									FLR/L4GP	●	●
5	CGWSR/L2020-FLR/L5GP	●	●	FLEX50R/L	14									FLR/L5GP	●	●
3	CGWSR/L2525-FLR/L3GP	●	●	FLEX30R/L	10	25	25	25	152	32	CGWSR/L2525	●	●	FLR/L3GP	●	
4	CGWSR/L2525-FLR/L4GP			FLEX40R/L	12									FLR/L4GP	●	●
5	CGWSR/L2525-FLR/L5GP	●	●	FLEX50R/L	14									FLR/L5GP	●	●

Notes: • When ordering, shank and blade set Cat. No. or shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

● : Stocked items.

CGWT R/L External grooving — Toolholders (T: Horizontal type)



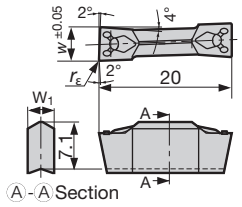


Right hand (R) shown.

Groove width W (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) b	h	L_1	f	L_2	Parts: Shank	Shank Stock R	Shank Stock L	Blade set	Blade set Stock R	Blade set Stock L
3	CGWTR/L2020-FLL/R3GP			FLEX30L/R	10	20	20	150	52	45	CGWTR/L2020	●	●	FLL/R3GP	●	
4	CGWTR/L2020-FLL/R4GP			FLEX40L/R	12									FLL/R4GP	●	
5	CGWTR/L2020-FLL/R5GP			FLEX50L/R	14									FLL/R5GP	●	
3	CGWTR/L2525-FLL/R3GP			FLEX30L/R	10						CGWTR/L2525	●	●	FLL/R3GP	●	
4	CGWTR/L2525-FLL/R4GP			FLEX40L/R	12									FLL/R4GP	●	
5	CGWTR/L2525-FLL/R5GP			FLEX50L/R	14									FLL/R5GP	●	

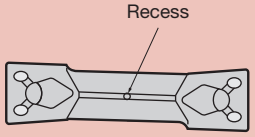
Notes: • When ordering, shank and blade set Cat. No. or shank and blade-set are required.
• When using a right or left hand blade set, the right hand blade set is used with left hand shank and the left hand blade set is used with right hand shank.

Applicable inserts



Right hand (R) shown.

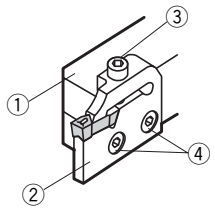
Dimensions (mm) W	r_ε	W_1	Hand	Cat. No.	Grades: Coated T9125	Cermet NS9530	Uncoated UX30
3	0.4	2.15	R	FLEX30R		★	
			L	FLEX30L		★	
4		3.1	R	FLEX40R		★	
			L	FLEX40L		★	
5		4	R	FLEX50R	●	★	●
			L	FLEX50L	●	★	●



Left hand inserts are identified with a recessed dot.

Note: When using a right or left insert,the right hand insert is used with right hand blade set and the left hand insert is used with left hand blade set.

Parts



Cat. No.	Clamping screw ③	Blade fixing screw ④	Wrench
CGWSR/L□□□□–FLR/L□GP	CHHM5-18	CSHB-6	P-4
CGWTR/L□□□□–FLL/R□GP			

● : Stocked items.

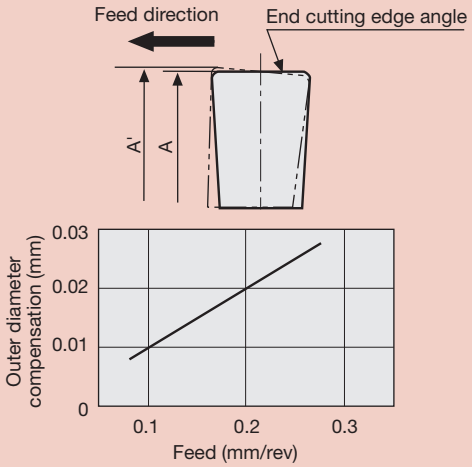
Standard cutting conditions

Insert grades		Insert Cat. No.	Grooving		Lateral feed machining			Coolant
			Cutting speed v_c (m/min)	Feed f (mm/rev)	Cutting speed v_c (m/min)	Feed f (mm/rev)	Depth of cut a_p (mm)	
T9125	Coated	FLEX50R/L	80 ~ 150	0.05 ~ 0.3	80 ~ 250	0.1 ~ 0.3	1.0 ~ 2.5	Necessary
NS9530	Cermet	FLEX30R/L	80 ~ 200	0.05 ~ 0.2	80 ~ 200	0.1 ~ 0.2	0.8 ~ 1.5	
		FLEX40R/L		0.05 ~ 0.25			0.8 ~ 2.0	
		FLEX50R/L		0.05 ~ 0.3		0.1 ~ 0.3	1.0 ~ 2.5	
UX30	Uncoated	FLEX50R/L	60 ~ 150	0.05 ~ 0.3	60 ~ 150	0.1 ~ 0.3	1.0 ~ 2.5	

Notes: • The cutting conditions given above are based on cutting medium carbon steel (S48C, 200HB).
• When the 20 mm square shank tools are used, machining should be perfomed at approximately 80% of the values shown above.

Cautionary Notes

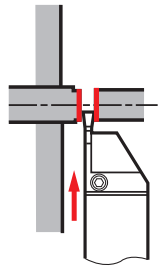
- When performing OD machining, the tool point must be set at a right angle to the axial direction of the work.
- When replacing an insert, the replacement should be made only after completely removing any chips or other foreign matter from the tool clamping area on the holder by using compressed air, etc.
- Never tighten the insert mounting screws when an insert has not been installed since doing so can deform the screws and prevent the future installation of an insert.
- Flex-Tool has a mechanism in which the end cutting edge angle is formed by accepting a cutting force. In external grooving, there is a possibility that if the cutting conditions (feed and depth of cut) are set too high, the programmed diameter will not be achieved. To prevent this problem, it is necessary to perform a compensation in the program by an amount that is equal to the amount A'-A that is shown in the drawing on the right. The values of compensation corresponding to the feeds are also shown in the graph.

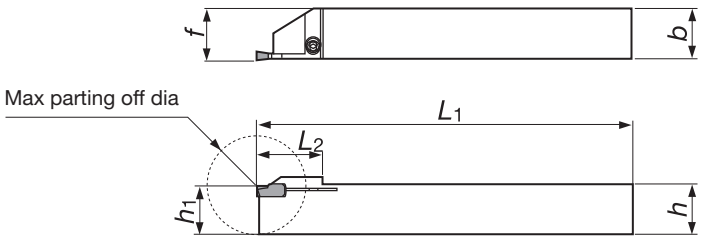


Guidelines for compensating outer diameter

Parting off

JCGSS R/L Parting off — Toolholders for parting off on small lathes



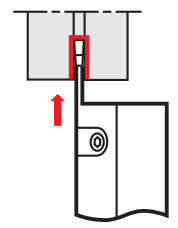


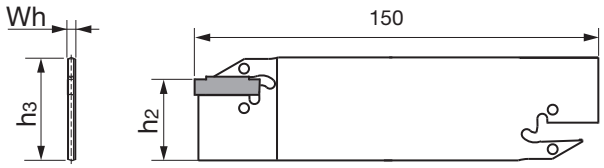
Right hand (R) shown.

Groove width W (mm)	Cat. No.	Stock R	Stock L	Applicable inserts	Max. parting off dia. (mm)	Dimensions (mm) b	h	h1	L1	f	L2
2	JCGSSR/L1010-20	●	●	GE20 GE20-AL	20	10	10	10	125	10.2	15
	JCGSSR/L1212-20	●	●		25	12	12	12		12.2	19
	JCGSSR/L1616-20	●	●		32	16	16	16		16.2	22.5

NEW

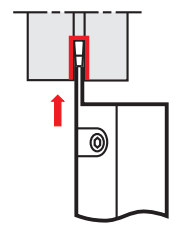
CCH-W Parting off — Blades for parting off (2 corner)

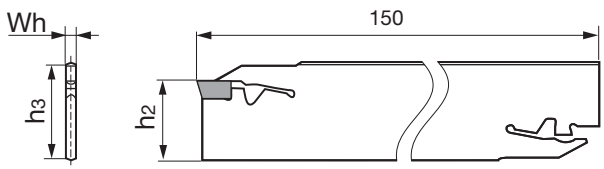




Groove width W (mm)	Cat. No.	Stock	Applicable inserts	Max. parting off dia. (mm)	Dimensions (mm) Wh	h2	h3
2	CCH32-W20	●	WGE20 WGE20R/L	33	1.6	24.6	(32)
3	CCH32-W30	●	WG*30 WGE30R/L	33	2.2	24.6	(32)
4	CCH32-W40	●	WG*40 WGE40R/L	42	3.2	24.5	(32)
5	CCH32-W50	●	WG*50 WGE50R/L	42	4.2	24.3	(32)

CCH Parting off — Blades for parting off (1 corner)

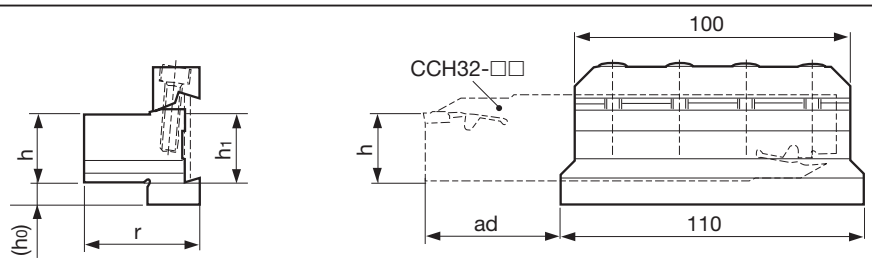




Groove width W (mm)	Cat. No.	Stock	Applicable inserts	Max. parting off dia. (mm)	Dimensions (mm) Wh	h2	h3
3	CCH32-30	●	GE30 GE30R/L GE30-AL	100	2.2	24.6	(32)
4	CCH32-40	●	GE40 GE40R/L GE40-AL	100	3.2	24.5	(32)
5	CCH32-50	●	GE50 GE50R/L	120	4.2	24.3	(32)

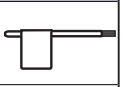
● : Stocked items.

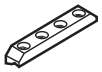
Tool blocks



Cat. No.	Stock	Suitable blade	Overhang ad (mm)	Dimensions (mm)			
				h_1	ℓ	h	h_0
CCBS20-32	●	CCH32-W□□ CCH32-□□	Groove width *W* = 3 ~ 4: 50 *W* = 5: 60	20	38	20	13
CCBS25-32	●			25	42	25	8
CCBS32-32	●			32		32	5

Parts

Cat. No.	Clamping screw	Wrench
		
JCGSSR/L□□□□–□□	CSTB-3	T-9F

Cat. No.	Wedge	Screw	Wrench for screw	Wrench for blade	Wrench
					
CCH□□–W□□	-	-	-	-	CRW33*
CCH□□–□□	-	-	-	CTL-2	-
CCBS□□–□□	CC-32	CM6×2	P-5	-	-

* Wrench (CRW33) should be ordered separately.

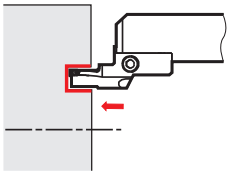
Standard cutting conditions

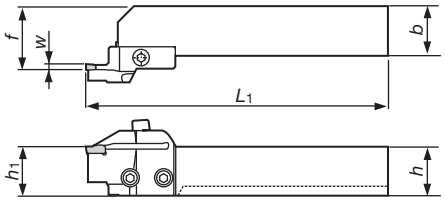
Work materials	Recommended grade	Cutting speed v_c (m/min)
Low carbon steels Alloy steels (~ 150HB)	T9125	80 ~ 200
	NS9530	100 ~ 200
	GH730	50 ~ 180
Medium carbon steels Alloy steels (150 ~ 250HB)	T9125	80 ~ 180
	NS9530	80 ~ 180
	GH730	50 ~ 150
High carbon steels Alloy steels (250HB ~)	T9125	80 ~ 150
	NS9530	80 ~ 150
	GH730	50 ~ 120
Stainless steels	T9125	80 ~ 150
	GH730	50 ~ 120
Grey and ductile cast irons	T9125	80 ~ 200
	GH730	50 ~ 180
Aluminium alloys, Non-ferrous metals	KS05F	200 ~ 300

Operation	Feed: *f* (mm/rev) Groove width: *W* (mm)			
	2	3	4	5
Parting off (GE□□R/L)	–	0.04 ~ 0.14	0.04 ~ 0.14	0.04 ~ 0.14
Grooving, Parting off (GE□□)	0.05 ~ 0.14	0.05 ~ 0.15	0.05 ~ 0.16	0.05 ~ 0.17
Grooving, Parting off for Aluminium alloys (GE□□-AL)	0.03 ~ 0.1	0.03 ~ 0.1	0.03 ~ 0.1	

Face grooving

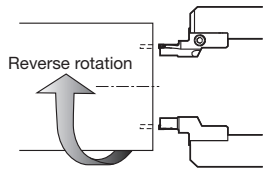
CGWS R/L Face grooving — Toolholders (S: Vertical type)





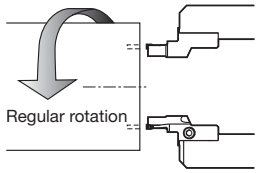
Right hand (R) shown.
The dashed line shows 20 mm square shank tools.

Right hand CGWSRR□□□□-□□□R



Shank: Right hand
Blade: Right hand

Left hand CGWSL□□□□-□□□L



Shank: Left hand
Blade: Left hand

Groove width W (mm)	Min. bore dia. øD (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h_1	b	h	L_1	f	Parts: Shank	Shank Stock R	Shank Stock L	Blade set	Blade set Stock R	Blade set Stock L
3	30 ~ 40	CGWSR/L2020-30S3040R/L			GE30 GF30 GT30 GR30 GE30-AL	10	20	20	20	152.5	27	CGWSR/L2020	●	●	30S3040R/L	●	●
	40 ~ 50	CGWSR/L2020-30S4050R/L													30S4050R/L	●	●
	50 ~ 65	CGWSR/L2020-30S5065R/L													30S5065R/L	●	●
	65 ~ 90	CGWSR/L2020-30S6590R/L													30S6590R/L	●	●
	90 ~ 150	CGWSR/L2020-30S90150R/L													30S90150R/L	●	●
	150 ~ 500	CGWSR/L2020-30S150500R/L													30S150500R/L	●	●
	30 ~ 40	CGWSR/L2525-30S3040R/L					25	25	25	152.5	32	CGWSR/L2525	●	●	30S3040R/L	●	●
	40 ~ 50	CGWSR/L2525-30S4050R/L													30S4050R/L	●	●
	50 ~ 65	CGWSR/L2525-30S5065R/L													30S5065R/L	●	●
	65 ~ 90	CGWSR/L2525-30S6590R/L													30S6590R/L	●	●
	90 ~ 150	CGWSR/L2525-30S90150R/L													30S90150R/L	●	●
	150 ~ 500	CGWSR/L2525-30S150500R/L													30S150500R/L	●	●
	30 ~ 40	CGWSR/L2020-30D3040R/L			GE30 GF30 GT30 GR30 GE30-AL	14	20	20	20	160.5	27	CGWSR/L2020	●	●	30D3040R/L		
	40 ~ 50	CGWSR/L2020-30D4050R/L													30D4050R/L		
	50 ~ 65	CGWSR/L2020-30D5065R/L													30D5065R/L		
	65 ~ 90	CGWSR/L2020-30D6590R/L													30D6590R/L		
	90 ~ 150	CGWSR/L2020-30D90150R/L													30D90150R/L		
	150 ~ 500	CGWSR/L2020-30D150500R/L													30D150500R/L		
	30 ~ 40	CGWSR/L2525-30D3040R/L					25	25	25	160.5	32	CGWSR/L2525	●	●	30D3040R/L		
	40 ~ 50	CGWSR/L2525-30D4050R/L													30D4050R/L		
	50 ~ 65	CGWSR/L2525-30D5065R/L													30D5065R/L		
	65 ~ 90	CGWSR/L2525-30D6590R/L													30D6590R/L		
	90 ~ 150	CGWSR/L2525-30D90150R/L													30D90150R/L		
	150 ~ 500	CGWSR/L2525-30D150500R/L													30D150500R/L		
4	35 ~ 45	CGWSR/L2020-40S3545R/L			GE40 GF40 GT40 GR40 GE40-AL	14	20	20	20	152.5	27	CGWSR/L2020	●	●	40S3545R/L		●
	45 ~ 55	CGWSR/L2020-40S4555R/L													40S4555R/L		●
	55 ~ 80	CGWSR/L2020-40S5580R/L													40S5580R/L		●
	80 ~ 140	CGWSR/L2020-40S80140R/L													40S80140R/L		●
	140 ~ 500	CGWSR/L2020-40S140500R/L													40S140500R/L		●

Notes: • When ordering, shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

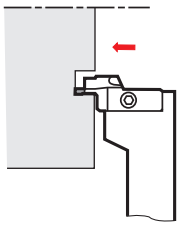
● : Stocked items.

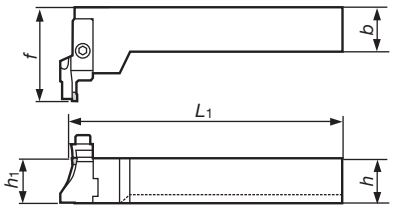
Groove width *W* (mm)	Min. bore dia. ø*D* (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h_1	*b*	*h*	L_1	*f*	Parts: Shank	Stock R	Stock L	Parts: Blade set	Stock R	Stock L
4	35 ~ 45	**CGWSR/L2525-40S3545R/L**			GE40 GF40 GT40 GR40 GE40-AL	14	25	25	25	152.5	32	CGWSR/L2525	●	●	40S3545R/L		●
	45 ~ 55	**CGWSR/L2525-40S4555R/L**													40S4555R/L		●
	55 ~ 80	**CGWSR/L2525-40S5580R/L**													40S5580R/L		●
	80 ~ 140	**CGWSR/L2525-40S80140R/L**													40S80140R/L		●
	140 ~ 500	**CGWSR/L2525-40S140500R/L**													40S140500R/L		●
	35 ~ 45	**CGWSR/L2020-40D3545R/L**			GE40 GF40 GT40 GR40 GE40-AL	22	20	20	20	160.5	27	CGWSR/L2020	●	●	40D3545R/L		●
	45 ~ 55	**CGWSR/L2020-40D4555R/L**													40D4555R/L		
	55 ~ 80	**CGWSR/L2020-40D5580R/L**													40D5580R/L		●
	80 ~ 140	**CGWSR/L2020-40D80140R/L**													40D80140R/L	●	●
	140 ~ 500	**CGWSR/L2020-40D140500R/L**													40D140500R/L		●
	35 ~ 45	**CGWSR/L2525-40D3545R/L**					25	25	25	160.5	32	CGWSR/L2525	●	●	40D3545R/L		●
	45 ~ 55	**CGWSR/L2525-40D4555R/L**													40D4555R/L		
	55 ~ 80	**CGWSR/L2525-40D5580R/L**													40D5580R/L		●
	80 ~ 140	**CGWSR/L2525-40D80140R/L**													40D80140R/L	●	●
	140 ~ 500	**CGWSR/L2525-40D140500R/L**													40D140500R/L		●
5	35 ~ 45	**CGWSR/L2020-50S3545R/L**			GE50 GF50 GT50 GR50	14	20	20	20	152.5	27	CGWSR/L2020	●	●	50S3545R/L	●	●
	45 ~ 55	**CGWSR/L2020-50S4555R/L**													50S4555R/L	●	●
	55 ~ 75	**CGWSR/L2020-50S5575R/L**													50S5575R/L		
	75 ~ 130	**CGWSR/L2020-50S75130R/L**													50S75130R/L	●	●
	130 ~ 500	**CGWSR/L2020-50S130500R/L**													50S130500R/L		
	35 ~ 45	**CGWSR/L2525-50S3545R/L**					25	25	25	152.5	32	CGWSR/L2525	●	●	50S3545R/L	●	●
	45 ~ 55	**CGWSR/L2525-50S4555R/L**													50S4555R/L	●	●
	55 ~ 75	**CGWSR/L2525-50S5575R/L**													50S5575R/L		
	75 ~ 130	**CGWSR/L2525-50S75130R/L**													50S75130R/L	●	●
	130 ~ 500	**CGWSR/L2525-50S130500R/L**													50S130500R/L		
	35 ~ 45	**CGWSR/L2020-50D3545R/L**			GE50 GF50 GT50 GR50	22	20	20	20	160.5	27	CGWSR/L2020	●	●	50D3545R/L		
	45 ~ 55	**CGWSR/L2020-50D4555R/L**													50D4555R/L	●	
	55 ~ 75	**CGWSR/L2020-50D5575R/L**													50D5575R/L	●	●
	75 ~ 130	**CGWSR/L2020-50D75130R/L**													50D75130R/L		
	130 ~ 500	**CGWSR/L2020-50D130500R/L**													50D130500R/L		●
	35 ~ 45	**CGWSR/L2525-50D3545R/L**					25	25	25	160.5	32	CGWSR/L2525	●	●	50D3545R/L		
	45 ~ 55	**CGWSR/L2525-50D4555R/L**													50D4555R/L	●	
	55 ~ 75	**CGWSR/L2525-50D5575R/L**													50D5575R/L	●	●
	75 ~ 130	**CGWSR/L2525-50D75130R/L**													50D75130R/L		
	130 ~ 500	**CGWSR/L2525-50D130500R/L**													50D130500R/L		●

Notes: • When ordering, shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

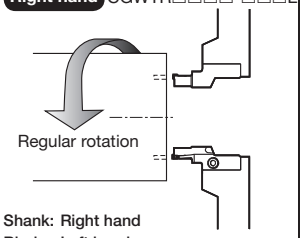
● : Stocked items.

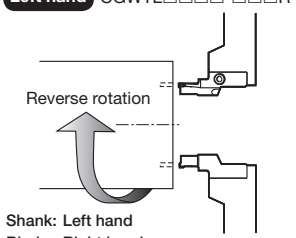
CGWS R/L Face grooving — Toolholders (T: Horizontal type)





Right hand (R) shown.
The dashed line shows 20 mm square shank tools.





Groove width W (mm)	Min. bore dia. øD (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h_1	b	h	L_1	f	Parts: Shank	Stock R	Stock L	Blade set	Stock R	Stock L
3	30 ~ 40	CGWTR/L2020-30S3040L/R			GE30 GF30 GT30 GR30 GE30-AL	10	20	20	20	150	52.25	CGWTR/L2020	●	●	30S3040L/R	●	●
	40 ~ 50	CGWTR/L2020-30S4050L/R													30S4050L/R	●	●
	50 ~ 65	CGWTR/L2020-30S5065L/R													30S5065L/R	●	●
	65 ~ 90	CGWTR/L2020-30S6590L/R													30S6590L/R	●	●
	90 ~ 150	CGWTR/L2020-30S90150L/R													30S90150L/R	●	●
	150 ~ 500	CGWTR/L2020-30S150500L/R													30S150500L/R	●	●
	30 ~ 40	CGWTR/L2525-30S3040L/R					25	25	25	150	52.25	CGWTR/L2525	●	●	30S3040L/R	●	●
	40 ~ 50	CGWTR/L2525-30S4050L/R													30S4050L/R	●	●
	50 ~ 65	CGWTR/L2525-30S5065L/R													30S5065L/R	●	●
	65 ~ 90	CGWTR/L2525-30S6590L/R													30S6590L/R	●	●
	90 ~ 150	CGWTR/L2525-30S90150L/R													30S90150L/R	●	●
	150 ~ 500	CGWTR/L2525-30S150500L/R													30S150500L/R	●	●
	30 ~ 40	CGWTR/L2020-30D3040L/R			GE30 GF30 GT30 GR30 GE30-AL	14	20	20	20	150	60.25	CGWTR/L2020	●	●	30D3040L/R		
	40 ~ 50	CGWTR/L2020-30D4050L/R													30D4050L/R		
	50 ~ 65	CGWTR/L2020-30D5065L/R													30D5065L/R		
	65 ~ 90	CGWTR/L2020-30D6590L/R													30D6590L/R		
	90 ~ 150	CGWTR/L2020-30D90150L/R													30D90150L/R		
	150 ~ 500	CGWTR/L2020-30D150500L/R													30D150500L/R		
	30 ~ 40	CGWTR/L2525-30D4050L/R					25	25	25	150	60.25	CGWTR/L2525	●	●	30D3040L/R		
	40 ~ 50	CGWTR/L2525-30D4050L/R													30D4050L/R		
	50 ~ 65	CGWTR/L2525-30D5065L/R													30D5065L/R		
	65 ~ 90	CGWTR/L2525-30D6590L/R													30D6590L/R		
	90 ~ 150	CGWTR/L2525-30D90150L/R													30D90150L/R		
	150 ~ 500	CGWTR/L2525-30D150500L/R													30D150500L/R		
4	35 ~ 45	CGWTR/L2020-40S3545L/R			GE40 GF40 GT40 GR40 GE40-AL	14	20	20	20	150	52.25	CGWTR/L2020	●	●	40S3545L/R		●
	45 ~ 55	CGWTR/L2020-40S4555L/R													40S4555L/R		●
	55 ~ 80	CGWTR/L2020-40S5580L/R													40S5580L/R		●
	80 ~ 140	CGWTR/L2020-40S80140L/R													40S80140L/R		●
	140 ~ 500	CGWTR/L2020-40S140500L/R													40S140500L/R		●

Notes: • When ordering, shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with left hand shank and the left hand blade set is used with right hand shank.

● : Stocked items.

Groove width *W* (mm)	Min. bore dia. ø*D* (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable inserts	Max. groove depth (mm)	Dimensions (mm) h_1	*b*	*h*	L_1	*f*	Parts: Shank	Stock R	Stock L	Blade set	Stock R	Stock L
4	35 ~ 45	**CGWTR/L2525-40S3545L/R**			GE40 GF40 GT40 GR40 GE40-AL	14	25	25	25	150	52.25	CGWTR/L2525	●	●	40S3545L/R		●
	45 ~ 55	**CGWTR/L2525-40S4555L/R**													40S4555L/R		●
	55 ~ 80	**CGWTR/L2525-40S5580L/R**													40S5580L/R		●
	80 ~ 140	**CGWTR/L2525-40S80140L/R**													40S80140L/R		●
	140 ~ 500	**CGWTR/L2525-40S140500L/R**													40S140500L/R		●
	35 ~ 45	**CGWTR/L2020-40D3545L/R**			GE40 GF40 GT40 GR40 GE40-AL	22	20	20	20	150	60.25	CGWTR/L2020	●	●	40D3545L/R		●
	45 ~ 55	**CGWTR/L2020-40D4555L/R**													40D4555L/R		
	55 ~ 80	**CGWTR/L2020-40D5580L/R**													40D5580L/R		●
	80 ~ 140	**CGWTR/L2020-40D80140L/R**													40D80140L/R	●	●
	140 ~ 500	**CGWTR/L2020-40D140500L/R**													40D140500L/R		●
	35 ~ 45	**CGWTR/L2525-40D3545L/R**					25	25	25	150	60.25	CGWTR/L2525	●	●	40D3545L/R		●
	45 ~ 55	**CGWTR/L2525-40D4555L/R**													40D4555L/R		
	55 ~ 80	**CGWTR/L2525-40D5580L/R**													40D5580L/R		●
	80 ~ 140	**CGWTR/L2525-40D80140L/R**													40D80140L/R	●	●
	140 ~ 500	**CGWTR/L2525-40D140500L/R**													40D140500L/R		●
5	35 ~ 45	**CGWTR/L2020-50S3545L/R**			GE50 GF50 GT50 GR50	14	20	20	20	150	52.25	CGWTR/L2020	●	●	50S3545L/R	●	●
	45 ~ 55	**CGWTR/L2020-50S4555L/R**													50S4555L/R	●	●
	55 ~ 75	**CGWTR/L2020-50S5575L/R**													50S5575L/R		
	75 ~ 130	**CGWTR/L2020-50S75130L/R**													50S75130L/R	●	●
	130 ~ 500	**CGWTR/L2020-50S130500L/R**													50S130500L/R		
	35 ~ 45	**CGWTR/L2525-50S3545L/R**					25	25	25	150	52.25	CGWTR/L2525	●	●	50S3545L/R	●	●
	45 ~ 55	**CGWTR/L2525-50S4555L/R**													50S4555L/R	●	●
	55 ~ 75	**CGWTR/L2525-50S5575L/R**													50S5575L/R		
	75 ~ 130	**CGWTR/L2525-50S75130L/R**													50S75130L/R	●	●
	130 ~ 500	**CGWTR/L2525-50S130500L/R**													50S130500L/R		
	35 ~ 45	**CGWTR/L2020-50D3545L/R**			GE50 GF50 GT50 GR50	22	20	20	20	150	60.25	CGWTR/L2020	●	●	50D3545L/R		
	45 ~ 55	**CGWTR/L2020-50D4555L/R**													50D4555L/R	●	●
	55 ~ 75	**CGWTR/L2020-50D5575L/R**													50D5575L/R	●	●
	75 ~ 130	**CGWTR/L2020-50D75130L/R**													50D75130L/R		
	130 ~ 500	**CGWTR/L2020-50D130500L/R**													50D130500L/R		●
	35 ~ 45	**CGWTR/L2525-50D3545L/R**					25	25	25	150	60.25	CGWTR/L2525	●	●	50D3545L/R		
	45 ~ 55	**CGWTR/L2525-50D4555L/R**													50D4555L/R	●	●
	55 ~ 75	**CGWTR/L2525-50D5575L/R**													50D5575L/R	●	●
	75 ~ 130	**CGWTR/L2525-50D75130L/R**													50D75130L/R		
	130 ~ 500	**CGWTR/L2525-50D130500L/R**													50D130500L/R	●	●

Notes: • When ordering, shank and blade set are required.
• **When using a right or left hand blade set, the right hand blade set is used with left hand shank and the left hand blade set is used with right hand shank.**

● : Stocked items.

Parts

Cat. No.	Clamping screw	Blade fixing screw	Wrench
			
CGWTR/L□□□□–□□S/D□□□□L/R	S:CHHM5-18 D:CM5×0.8×16	CSHB-6	P-4

Example: CGWTR2020-30 S 3040L
S:CHHM5-18
D:CM5×0.8×16

Standard cutting conditions

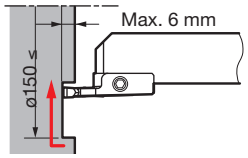
Work materials	Recommended grade	Cutting speed v_c (m/min)
Low carbon steels Alloy steels (~ 150HB)	T9125	80 ~ 200
	NS9530	100 ~ 200
	GH730	50 ~ 180
Medium carbon steels Alloy steels (150 ~ 250HB)	T9125	80 ~ 180
	NS9530	80 ~ 180
	GH730	50 ~ 150
High carbon steels Alloy steels 250HB	T9125	80 ~ 150
	NS9530	80 ~ 150
	GH730	50 ~ 120
Stainless steels	T9125	80 ~ 150
	GH730	50 ~ 120
Grey and ductile cast irons	T9125	80 ~ 200
	GH730	50 ~ 180
Aluminium alloys, Non-ferrous metals	KS05F	200 ~ 300

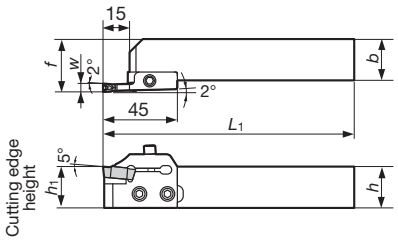
Operation	Feed: *f* (mm/rev) Groove width: *W* (mm)		
	3	4	5
Face grooving (GE□□)	0.06 ~ 0.22	0.06 ~ 0.24	0.07 ~ 0.26
Face grooving (GF□□)	0.04 ~ 0.25	0.05 ~ 0.26	0.05 ~ 0.30
Face traversing (GT□□)	*a*p = 0.5 ~ 1.5 *f* = 0.06 ~ 0.2	*a*p = 0.5 ~ 2.0 *f* = 0.06 ~ 0.25	*a*p = 0.5 ~ 2.5 *f* = 0.06 ~ 0.27
Face traversing (GR□□)	*a*p = 0.5 ~ 1.4 *f* = 0.05 ~ 0.25	*a*p = 0.5 ~ 1.5 *f* = 0.05 ~ 0.26	*a*p = 0.5 ~ 1.6 *f* = 0.05 ~ 0.3
Face grooving for aluminium alloys (GE□□-AL)	0.03 ~ 0.1	0.03 ~ 0.1	-

Notes: • For diameter compensation values in traversing, see page 28.
• For occurrence of vibrations in face traversing, set the feed to the lower side of the values show in the above table.

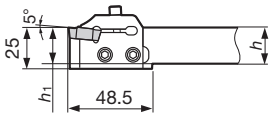
● : Stocked items.

CGWS R/L Face grooving

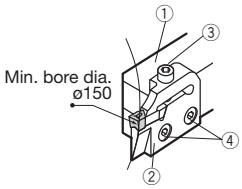




2020 shank type shown



Right hand (R) shown.

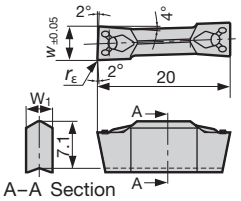


For face grooving

Groove width w (mm)	Min. bore dia. øD (mm)	Max. groove depth (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable insert	Dimensions (mm) b	h	L_1	h_1	f	Parts: Shank①	Stock R	Stock L	Blade set	Stock R	Stock L
5	>150	6	**CGWSR/L2020-FLR/L5TP**	●	●	FLEX50R/L	20	20	152	20	27	CGWSR/L2020	●	●	FLR/L5TP		●
			CGWSR/L2525-FLR/L5TP	●	●	FLEX50R/L	25	25		25	32	CGWSR/L2525	●	●			

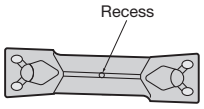
Notes: • When ordering, shank and blade set Cat. No. or shank and blade set are required.
• When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

Applicable inserts



Right hand (R) shown.

Dimensions (mm) W	rε	W1	Hand	Cat. No.	Grades: Coated T9125	Cermet NS9530	Uncoated UX30
5	0.4	4	R	**FLEX50R**	●	★	●
			L	**FLEX50L**	●	★	●



Left hand inserts are identified with a recessed dot.

Note: When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.

Parts

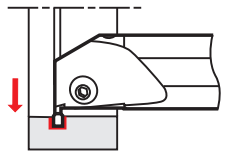
Cat. No.	Clamping screw③	Blade fixing screw④	Wrench
CGWSR/L□□□□-FLR/L□TP	CHHM5-18	CSHB-6	P-4

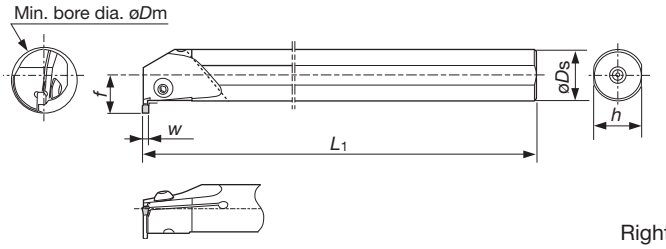
Cautionary notes

- When facing, the operation should proceed from the OD toward the center in order to prevent tool breakage.
- When facing, depth of cut and feed should be performed at approximately 70% of the values shown above.

Internal grooving

CGT R/L Internal grooving — Toolholders for parting off on small lathes





Right hand (R) shown.

Groove width *w* (mm)	Min. bore dia. ø*D*m (mm)	Cat. No.	Stock		Applicable inserts	Max. groove depth (mm)	Dimensions (mm)			
			R	L			ø*D*s	*f*	*L*1	*h*
3	25	S20Q-CGTR/L30	●	●	GE30,GN30,GT30 GR30,GE30-AL	3.5	20	14.5	180	18
	32	S25R-CGTR/L30	●	●		5	25	18.5	200	23
4	32	S25R-CGTR/L40	●	●	GE40,GN40,GT40 GR40,GE40-AL	5				
	40	S32S-CGTR/L40	●	●		6	32	23	250	30
5	32	S25R-CGTR/L50	●	●	GE50,GN50 GT50,GR50	5	25	18.5	200	23
	40	S32S-CGTR/L50	●	●		6	32	23	250	30

Parts

Cat. No.	Clamping screw	Wrench
		
S□□□-CGTR/L□□	BHM5-14	P-3

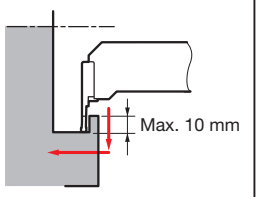
Standard cutting conditions

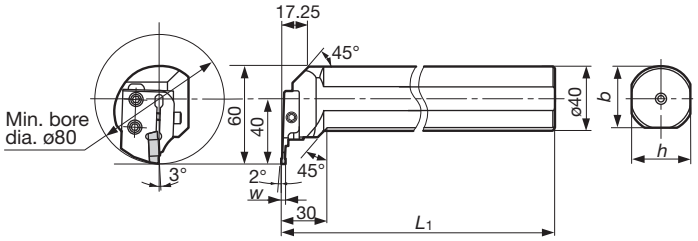
Work materials	Recommended grade	Cutting speed *v*c (m/min)
Low carbon steels Alloy steels (~ 150HB)	T9125	80 ~ 200
	NS9530	100 ~ 200
	GH730	50 ~ 180
Medium carbon steels Alloy steels (150 ~ 250HB)	T9125	80 ~ 180
	NS9530	80 ~ 180
	GH730	50 ~ 150
High carbon steels Alloy steels (250HB ~)	T9125	80 ~ 150
	NS9530	80 ~ 150
	GH730	50 ~ 120
Stainless steels	T9125	80 ~ 150
	GH730	50 ~ 120
Grey and ductile cast irons	T9125	80 ~ 200
	GH730	50 ~ 180
Aluminium alloys, Non-ferrous metals	KS05F	200 ~ 300

Operation	Feed: *f* (mm/rev) Groove width: *W* (mm)		
	3	4	5
Internal Grooving (GE□□)	0.04 ~ 0.14	0.05 ~ 0.15	0.05 ~ 0.16
Internal Grooving (GN□□)	0.04 ~ 0.16 *a*p = 0.5 ~ 1.5	0.05 ~ 0.18 *a*p = 0.5 ~ 2.0	0.05 ~ 0.20 *a*p = 0.5 ~ 2.5
Internal Traversing (GT□□)	*f* = 0.06 ~ 0.2 *a*p = 0.5 ~ 1.4 *f* = 0.05 ~ 0.25	*f* = 0.06 ~ 0.25 *a*p = 0.5 ~ 1.5 *f* = 0.05 ~ 0.26	*f* = 0.06 ~ 0.27 *a*p = 0.5 ~ 1.6 *f* = 0.05 ~ 0.3
Internal Traversing (GR□□)			
Internal Grooving for Aluminium alloys (GE□□-AL)	0.03 ~ 0.1	0.03 ~ 0.1	-

Notes: • For diameter compensation values in traversing, see page 28.
• For occurrence of vibrations in traversing, set the feed to the lower side of the values show in the above table.

● : Stocked items.



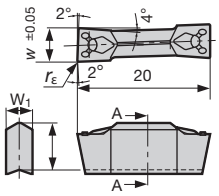


Right hand (R) shown.

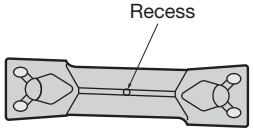
Groove width *W* (mm)	Min. bore dia. ø*Dm* (mm)	Shank and blade set Cat. No.	Stock R	Stock L	Applicable insert	Max. groove depth (mm)	Dimensions (mm) *f*	*h*	*b*	L_1	*ℓ*	Parts: Shank①	Stock R	Stock L	Blade set②	Stock R	Stock L
3	80	**CGWTR/L0040-FLL/R3NP**	●	●	FLEX30L/R	10	–	37.5	37	180	–	CGWTR/L0040	●	●	FLL/R3NP	●	●

Notes: • Special shank and blade for FLEX type.
• When using a right or left hand blade set, the right hand blade set is used with left hand shank and the left hand blade set is used with right hand shank.

Applicable inserts



Right hand (R) shown.



Left hand inserts are identified with a recessed dot.

Dimensions (mm) *W*	r_ε	W_1	Hand	Cat. No.	Grades: Coated T9125	Cermet NS9530	
3	0.4	2.15	R	**FLEX30R**		★	
			L	**FLEX30L**		★	

Note: When using a right or left insert, the right hand insert is used with right hand blade set and the left hand insert is used with left hand blade set.

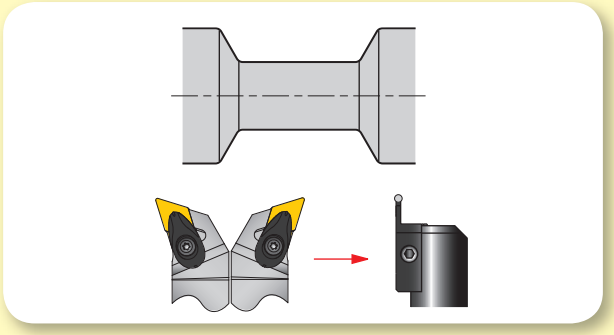
Parts

Cat. No.	Clamping screw	Blade fixing screw	Wrench
CGWTR/L0040-FLL/R3NP	CHHM5-18	CSHB-6	P-4

Recommended tool path

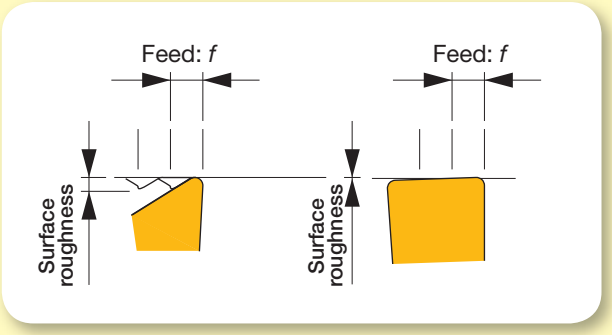
Example of tool integration

WGT/GT type or WGR/GR type inserts can replace the several numbers of handed tools for both side cutting.



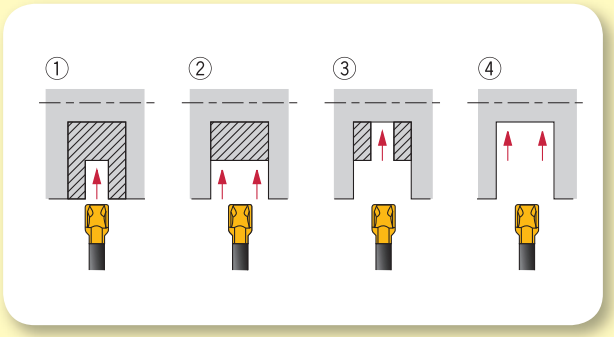
Comparison of surface roughness in My-T and conventional tool

WGR/GT type inserts can work like a wiper edge when traversing, and may improve the surface roughness.



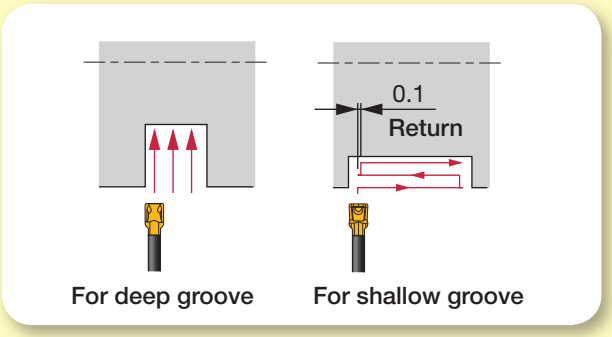
Machining deep groove

When machining a deep groove, the following process is recommended.



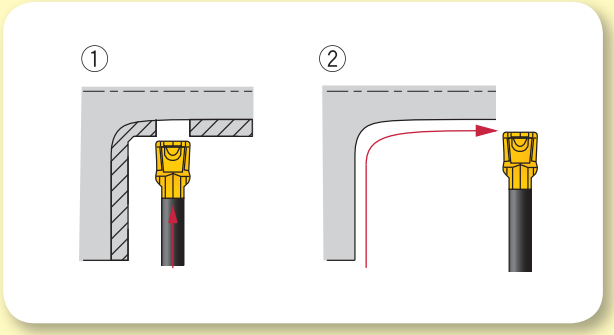
Machining wide groove

When machining a wide groove, the following two types of processes can be selected depending on the groove depth.



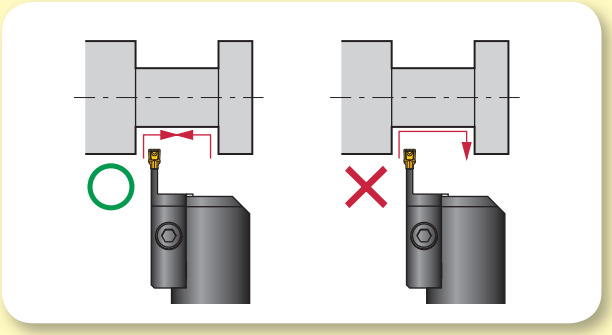
Machining radius shape or chamfering

When making a radius shape or chamfer at the bottom, the following process is recommended.



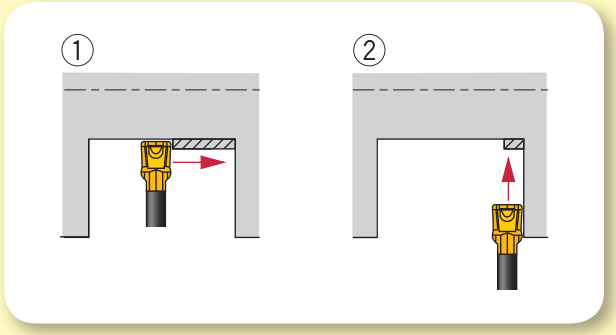
Machining the wall of groove

When finishing the wall with WGT/GT type, pull cutting is not recommended. Plunge cutting for both sides is recommended.



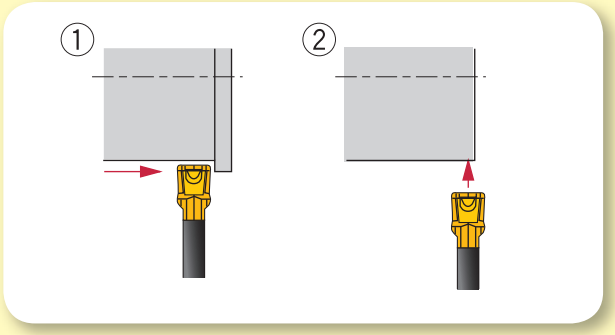
Machining the bottom

When machining the bottom, chip re-cutting may occur at the corner. To prevent this, stop cutting before the end and remove remaining portion by plunging.



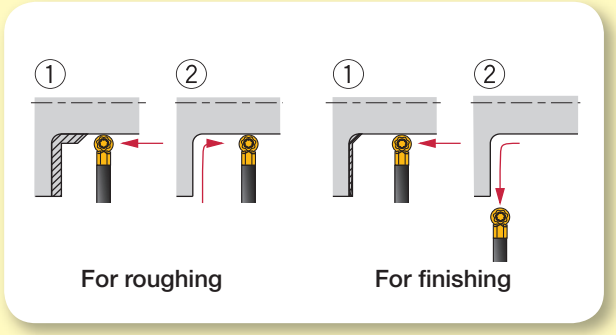
Preventing the ring burr

When traversing, ring burr may be left at the end. To prevent this, stop cutting before the end and remove remaining portion by plunging.



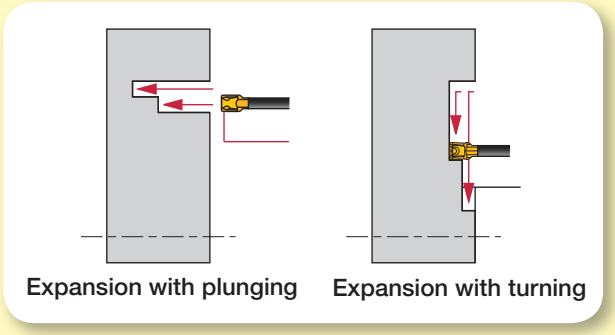
Machining with full radius insert

For roughing operation, groove wall should be cut by plunging. When finishing, if ap is less than 5% of insert radius, pull machining can be applied.



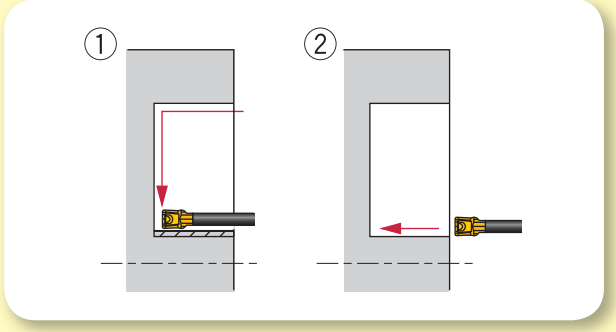
Expanding the face groove

When expanding the face groove, the blade should be selected depend on the outer diameter. And the machining direction should be from outside to inside.



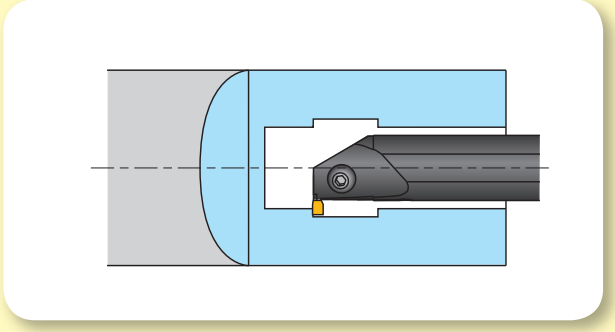
Face profiling

When profiling on the face, the tool path should be from outside to inside. And the inside wall should be cut by plunging.



Expanding the internal groove

When expanding the internal groove, the tool path should be referred to paths in external grooving.

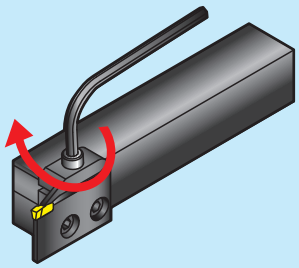


Precautions for use

1

Clamping torque for screw

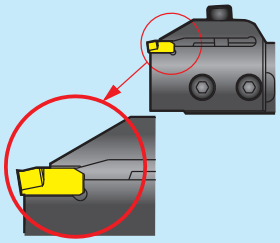
Recommended torque for clamping screw is 4 – 5 N·m.



2

When installing the insert

Install the insert until it touches the end of seat.



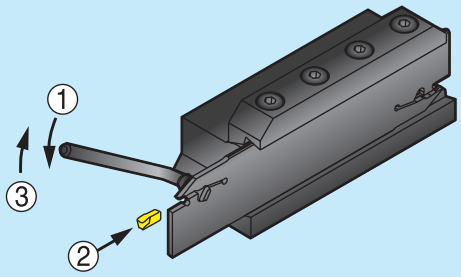
3

When installing insert into the blade

① Insert the wrench (CTL-2) into the blade and twist in CW.

② Install the insert until it touches the end of seat.

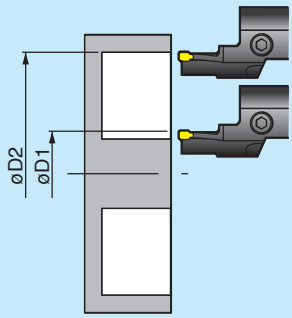
③ When twisting the wrench in CCW, the insert is clamped.



4

Definition of Max and Min diameter of face grooving

In face grooving, a specific blade should be selected depending on the diameter. Please check the catalog for details. øD2 shows the max diameter and øD1 shows the min diameter in the range. In diameters of this range, the tool doesn't interfere with groove. If expanding the groove to larger diameter than øD2, there is no interference. If expanding groove to smaller diameter than øD1, the tool may interfere with groove wall.

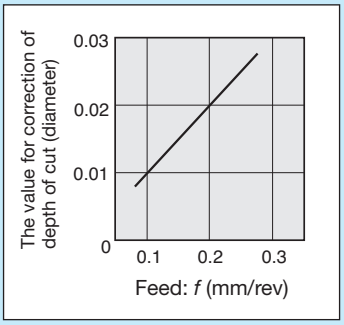


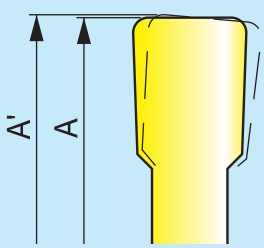
5

Precautions for turning

When traversing, the tool is bent by cutting force and the end cutting edge angle is formed.
If traversing with large depth of cut or high feed rate, the flexure of tool becomes larger and the machined diameter may be different from programmed value.
To prevent this, trial machining and correcting the condition based on the difference between programmed and machined values are required. For your reference, the corrected value when machining carbon steel are shown in the graph.

Reference: the value for correction of depth of cut

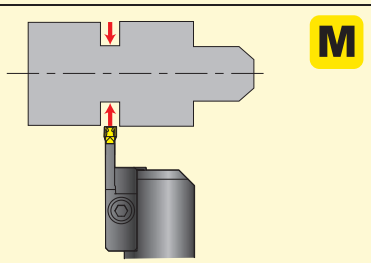
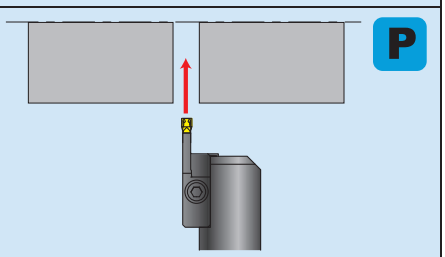


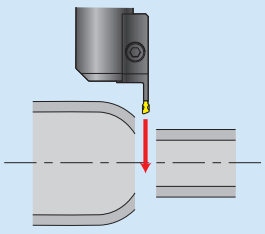
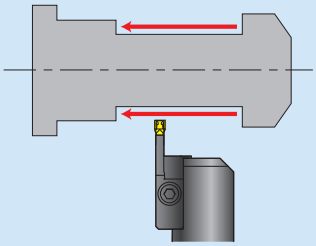


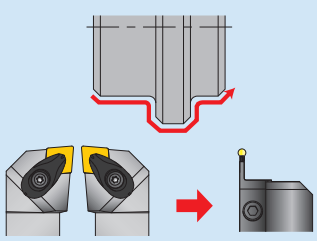
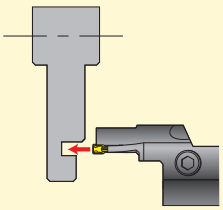
Troubleshooting

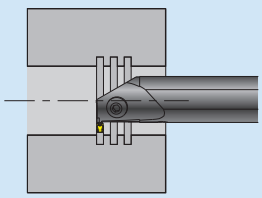
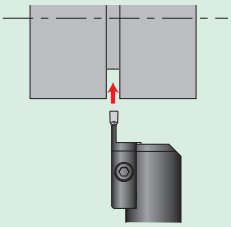
Trouble / Countermeasure	Long and uncontrolled chips (When grooving)	Long and uncontrolled chips (When traversing)	Chattering	Rough surface	Behind or beyond the programmed value	Unstable wear on the edge	Fractures on the edge
Increase the feed	●	●	●				
Decrease the feed				●		●	●
Increase the depth of cut		●					
Decrease the depth of cut			●	●		●	●
Increase the cutting speed				●			
Decrease the cutting speed	●	●	●		●	●	●
Change to Cermet grade				●			
Change to coated grade							●
Feed with the pecking	●						
Apply coolant				●		●	
Check the corrected value by bent tool					●		
Check the damages on edge				●	●		
Change to optimum chipbreaker	●	●	●	●	●	●	●
Shorten the tool overhang			●				
(For traversing operation) Use both sides of edge as equal as possible						●	●

Practical examples

Workpiece type		Machine parts	Machine parts
Toolholder		CGWSR2525-W30GR	CGWSR2525-W30GR-L
Insert		WGE30	WGE30
Grade		GH730	GH730
Workpiece material		SUS316 / X5CrNiMo17-12-3	S43C / C43
			
Cutting conditions	Grooving width: *W* (mm)	3	3
	Cutting speed: *Vc* (m/min)	75	75
	Feed: *f* (mm/rev)	0.1	0.08
	Machining	External grooving	Parting off
	Coolant	Water soluble	Water soluble
Results		My-T tool offers lower cutting forces providing higher accuracy and better surface finish rather than competitor's tool.	My-T tool provides excellent chip control, achieving doubled the tool life.

Workpiece type		Hydraulic component	Automotive parts
Toolholder		CGWSR2020-30GR	CGWSR2525-W50GR
Insert		GE30L	WGT50
Grade		GH730	T9125
Workpiece material		STKM15A / R50	S45C / C45
			
Cutting conditions	Grooving width: *W* (mm)	3	5
	Cutting speed: *Vc* (m/min)	100	180
	Feed: *f* (mm/rev)	0.05	0.1
	Machining	Parting off	Traversing
	Coolant	Water soluble	Water soluble
Results		Due to the higher impact resistance of grade GH730, the number of workpiece processed can be increased by 40%.	Large chattering with competitor's tool. When machining with My-T tool, there is no chattering and tool life is 7 times longer.

Workpiece type		Automotive parts	Gear
Toolholder		CGWSR2525-50GR	CGWSL2525-50S5575L
Insert		GT50	GT50
Grade		T9125	T9125
Workpiece material		S45C / C45	SUS304 / X5CrNi18-9
			
Cutting conditions	Grooving width: *W* (mm)	5	5
	Cutting speed: *Vc* (m/min)	150	115
	Feed: *f* (mm/rev)	0.25	0.13
	Machining	Profiling	Face grooving
	Coolant	Water soluble	Water soluble
Results		Previously, both right and left hand tools were needed. Instead of handed tools, only one My-T tool with GR type insert can machine, reducing the number of tools.	My-T tool can drastically improve the chip control and increase the number of workpiece processed by 40%.

Workpiece type		Machine parts	Machine parts
Toolholder		S25R-CGTR40	CGWSR2525-30GR
Insert		GE40	GE30-AL
Grade		NS9530	KS05F
Workpiece material		S45C / C45	A2017 / AlCu4SiMg
			
Cutting conditions	Grooving width: *W* (mm)	4	3
	Cutting speed: *Vc* (m/min)	120	300
	Feed: *f* (mm/rev)	0.1	0.1
	Machining	Internal grooving	Aluminium wheel machining
	Coolant	Water soluble	Water soluble
Results		By using My-T tool, the number of workpiece is increased by 25%.	My-T tool with AL type insert can drastically improve the surface finish.

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