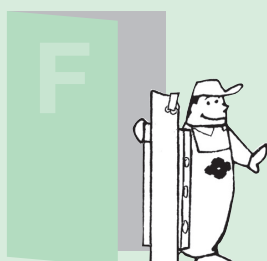


Grooving / Cut-Off Threading Tools

F1 to F54

F



Grooving Tools

Triangular Type Insert for Shallow Grooves
(External/Internal)

External

Facing

Internal

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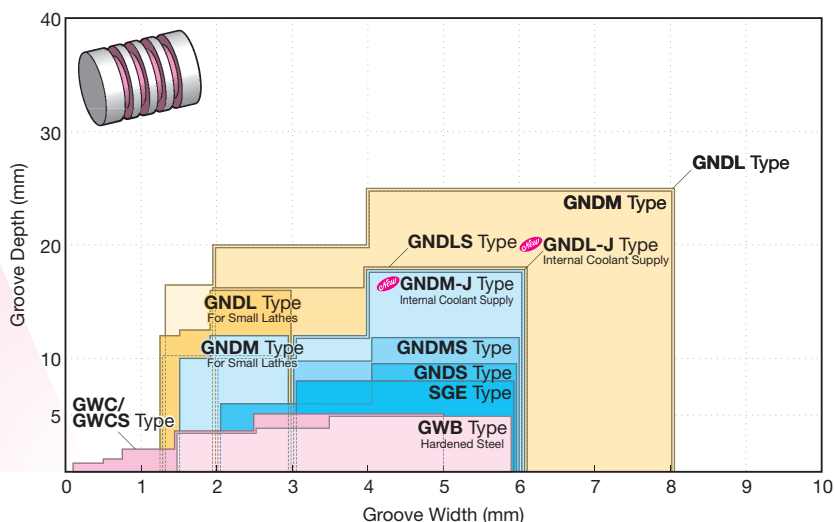
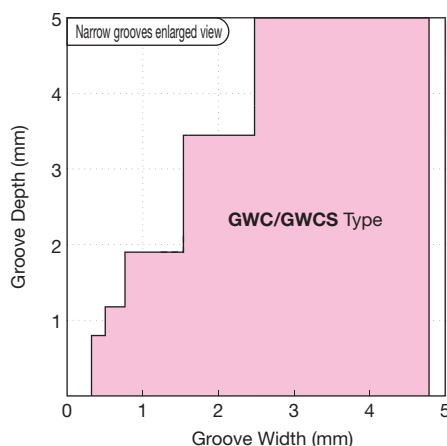
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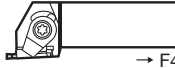
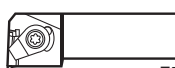
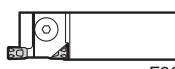
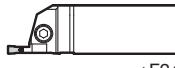
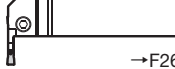
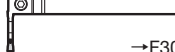
Selection Guide

External Grooving



External Grooving Tools

* mark: For groove depths and width combinations, refer to the above figures or the relevant page.

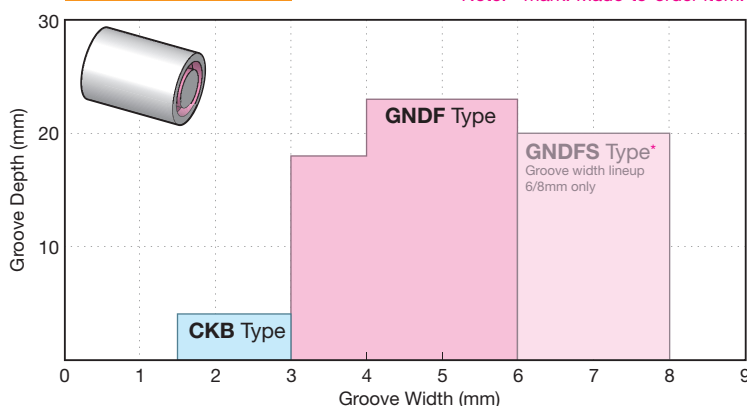
Applications	Series	Shape	Structure			Insert Shape (): indicates no. of cutting edges	Groove Depth* 10 20 30 40 (mm)					Features
			Screw-on Clamp	on Clamp	Double Clamp		Groove Width* 2 4 6 8 10 (mm)					
For Shallow Grooves	GWC		●		●		5.0	4.8				· High rigidity double clamping (Screw-on for MINI Holders) · Triangular type insert with 3 usable corners · Inserts with chipbreakers now in stock
	GWCS				●	(3) (Standard, with Chipbreaker)	5.0	4.8				· "L-shaped" (side cut) GWC holder
	GWB Hardened Steel				●	 Enables Traverse Cutting (1)	5.0	6.0				· High rigidity double clamping · Employs Coated SUMIBORON for interrupted cutting of hardened steel
For Shallow Grooves to General Grooves	SGE			●		 Enables Traverse Cutting (2)	8.0	6.0				· Enables traverse cutting (wider grooves)
	GNDS			●			10.0	6.0				· High-rigidity design reduces vibration. · Enables high-efficiency grooving and traverse cutting thanks to its short tool overhang length
	GNDM For Small Lathes			●			12.0	3.0				· High-rigidity design reduces vibration. · 16mm square shank is available.
	GNDM			●		 (2)	18.0	8.0				· High-rigidity design reduces vibration. · Perfect for traverse cutting and profiling.
	GNDM-J Internal Coolant Supply New			●		 Enables Traverse Cutting (2)	18.0	6.0				· GNDM type internal coolant supply
	GNDMS			●			23.0	6.0				· "L-shaped" (side cut) GNDM type
	GNDL For Small Lathes			●			16.0	3.0				· High-rigidity design reduces vibration. · 10 x 10, 12 x 12, 16 x 16mm shank lineup available
For Deep Grooves	GNDL			●		 (2)	25.0	8.0				· High-rigidity design reduces vibration. · Perfect for grooving, deep grooving and cut-off applications.
	GNDL-J Internal Coolant Supply New			●		 (2)	25.0	6.0				· GNDL type internal coolant supply
	GNDLS			●			25.0	6.0				· "L-shaped" (side cut) GNDL type

For hardened steel, refer to page F54 for SUMIBORON Grooving Holder BNGG Type.

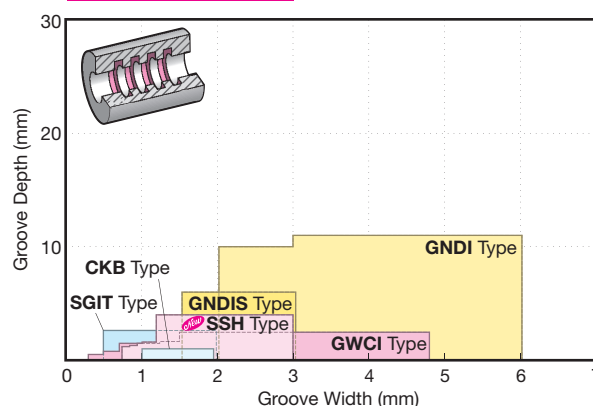
Selection Guide

Face Grooving

Note: * mark: Made-to-order item.



Internal Grooving



Face Grooving Tools

Note: * mark: For groove depths and width combinations, refer to the above figures or the relevant page.

Applications	Series	Shape	Structure			Insert Shape (): indicates no. of cutting edges	Groove Depth* Groove Width*				Work Diameter (mm)	Features
			Screw-on	Clamp-on	Double Clamp		10	20	30 (mm)	8 (mm)		
Very Small Diameter For General Grooves to Deep Grooves	CKB	 →F38	●			 (1)	4.0 1.5	3.0			ø6 to	· Face grooving for small lathes
	GNDF	 →F40	●			 (2)	23 3.0	6.0			ø35 to ø1,000	· High-rigidity design reduces vibration.
	GNDFS (Made-to-order item)	 →F43	●			 (2) Enables Traverse Cutting	20 16.0	18.0			ø70 to	· L-shape (horizontal) type · For wide grooves

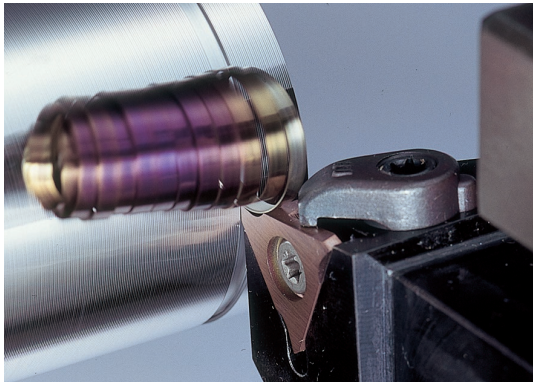
Internal Grooving Tools

* mark: For groove depths and width combinations, refer to the above figures or the relevant page.

Applications	Series	Shape	Structure			Insert Shape (): indicates no. of cutting edges	Groove Depth* Groove Width*				Min. bore diameter (mm)	Features
			Screw-on	Clamp-on	Double Clamp		10	20	30 (mm)	8 (mm)		
For Small Diameter Grooves	CKB	 →F44	●			 (1)	1.0 1.0	2.0			ø4	· Very small diameter grooving · High clamping force · Wide variety of tool holders
	SGIT	 →F45	●			 (3)	3.2 0.5	2.0			ø10	· 3-cornered type
	SSH (New)	 →F46	●			 (1) Enables Traverse Cutting	4.0 0.74	3.0			ø8	· Internal coolant supply specification for outstanding chip evacuation · Wide variety of grooving widths · Tough carbide body for stable machining
For Shallow Grooves	GWCI	 →F5	●			 (3) (Standard, with Chipbreaker)	2.5 0.33	4.8			ø35	· Using same inserts as GWC type holders · Inserts with chipbreakers now in stock
For General Grooves to Deep Grooves	GNDIS	 →F48	●			 (2) Enables Traverse Cutting	6.6 2.0	3.0			ø14	· Supports machining with minimum bore diameter from ø14
	GNDI	 →F50	●			 (2) Enables Traverse Cutting	11.0 2.0	6.0			ø32	· High-rigidity design reduces vibration.

Necking Tools

Applications	Series	Shape	Structure			Insert Shape (): indicates no. of cutting edges	Groove Depth* Groove Width*				Work Diameter (mm)	Features
			Screw-on	Clamp-on	Double Clamp		10	20	30 (mm)	8 (mm)		
Face Undercutting	GNDN	 →F37	●			 (2)	4.0 2.0	6.0			ø20 to	· Necking at corners possible



Features of GWC Type Series for Shallow Groove

- The same insert can be used for both external and internal grooving
- Full range of insert grades to cover a wide range of work materials
Coated Carbide AC530U, Carbide H1,
Coated Cermet T3000Z,
Cermet T1500A,
SUMIBORON BN2000, and
SUMIDIA DA2200 are now in stock.
- A wide variety of grooving widths from 0.33mm to 4.8mm
- **SumiTurn B-Groove** inserts with chipbreaker are now in stock
- Customers can modify the width of cut, nose radius and rake angle according to their own requirements with the blank inserts in stock.

Customized edge shapes can be made-to-order.

(Sumitomo Electric Hardmetal also accepts such orders)



Double Clamp / Screw-on
for External Shallow Grooves



Fig 1

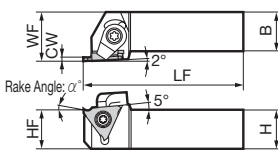


Fig 2

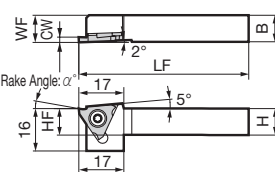


Fig 3

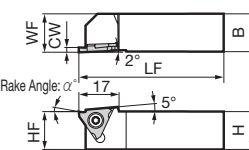
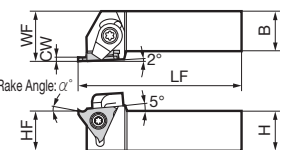


Fig 4



Note 1: Rake angle α° varies depending on the insert grade. Refer to the insert table on page F5 for details.
Note 2: Figures show right hand (R) tools.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Width of Cut CW	Max. Groove Depth	Applicable Number	Fig	Dimensions (mm)				
	R	L										Flat Screw	Wrench	Clamp	Double Screw	Wrench
GWC R/L1010-3	●	●	10	10	125	10	10	0.33 to 2.80	0.8 to 2.5	1	2	BFTX0409N	3.4	TRX15	—	—
GWC R/L1212-3	●	●	12	12	125	12	12	0.33 to 2.80	0.8 to 2.5	1	2				—	—
GWC R/L1616-3	●	●	16	16	125	16	16	0.33 to 2.80	0.8 to 2.5	1	3				—	—
GWC R/L2020-3	●	●	20	20	125	20	20	0.33 to 2.80	0.8 to 2.5	1	1				—	—
GWC R/L2525-3	●	●	25	25	150	30	25	0.33 to 2.80	0.8 to 2.5	1	1				CCM6B R/L	WB6-20 TL/T
GWC R/L2020-15	●	●	20	20	125	25	20	1.00 to 1.45	2.0	2	4	BFTX0511N	5.0	TRX20	—	—
GWC R/L2020-25	●	●	20	20	125	25	20	1.50 to 2.30	3.5	3	1				—	—
GWC R/L2020-35	●	●	20	20	125	25	20	2.50 to 4.80	5.0	4	1				—	—
GWC R/L2525-15	●	●	25	25	150	30	25	1.00 to 1.45	2.0	2	4				CCM8U R/L	WB8-22 TL/T
GWC R/L2525-25	●	●	25	25	150	30	25	1.50 to 2.30	3.5	3	1				—	—
GWC R/L2525-35	●	●	25	25	150	30	25	2.50 to 4.80	5.0	4	1				—	—

* mark: Cermet inserts have a recommended tightening torque of 4N·m.

Right-handed (R) tool holders can be used with right-handed (R) inserts.

* Refer to TGA type insert group numbers on pages F6, F7 and F8 for applicable inserts. Select applicable inserts for the holders by using matching group numbers.

* Right-handed (R) tool holders are compatible with left-handed clamps (CCM○□L) and right-handed double screws (WB○-2○T)

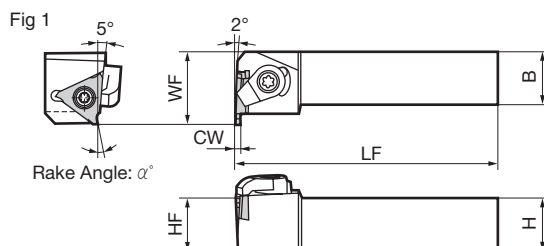
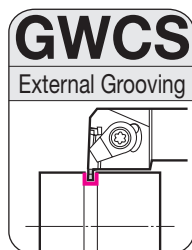
Left-handed (L) tool holders are compatible with right-handed clamps (CCM○□R) and left-handed double screws (WB○-2○TL).



GWCS Type / GWCI Type



Double Clamp for External L-Shaped
(Side Cut) Shallow Grooves



Note 1: Rake angle α° varies depending on the insert grade.
Refer to the insert table at the bottom of this page for details.

Note 2: Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Width of Cut	Max. Groove Depth	Applicable Number	Fig	Flat Screw	Wrench	Clamp	Double Screw	Wrench		
	R	L										H	B	LF	WF	HF	CW	BFTX0409N
GWCS R/L2020-3	●	●	20	20	125	25	20	0.33 to 2.80	0.8 to 2.5	1	1	BFTX0409N	3.4	TRX15	CCM6B R/L	WB6-20 TL/T	5.0*	LT20
GWCS R/L2525-3	●	●	25	25	150	30	25	0.33 to 2.80	0.8 to 2.5	1	1							
GWCS R/L2020-15	●	●	20	20	125	27	20	1.00 to 1.45	2.0	2	1	BFTX0511N	5.0	TRX20	CCM8U R/L	WB8-22 TL/T	5.0*	LT27
GWCS R/L2020-25	●	●	20	20	125	27	20	1.50 to 2.30	3.5	3	1							
GWCS R/L2020-35	●	●	20	20	125	27	20	2.50 to 4.80	5.0	4	1							
GWCS R/L2525-15	●	●	25	25	150	32	25	1.00 to 1.45	2.0	2	1							
GWCS R/L2525-25	●	●	25	25	150	32	25	1.50 to 2.30	3.5	3	1							
GWCS R/L2525-35	●	●	25	25	150	32	25	2.50 to 4.80	5.0	4	1							

* mark: Cermet inserts have a recommended tightening torque of 4N·m.

Right-handed (R) tool holders can be used with left-handed (L) inserts.

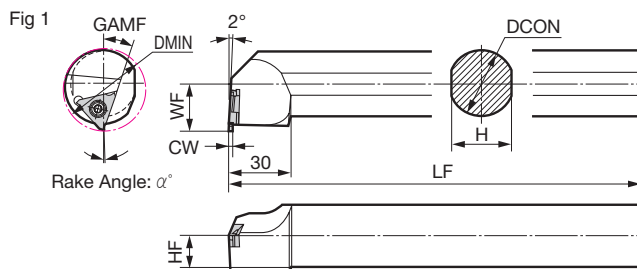
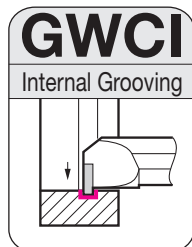
* Refer to TGA type insert group numbers on pages F6, F7 and F8 for GWCS type holder applicable inserts. Select applicable inserts for the holders by using matching group numbers.

* Right-handed (R) tool holders are compatible with right-handed clamps (CCM○□R) and left-handed double screws (WB○-2○TL).

Left-handed (L) tool holders are compatible with left-handed clamps (CCM○□L) and right-handed double screws (WB○-2○T).



Screw-on for Internal Diameter
Shallow Grooving



Note 1: Rake angle α° varies depending on the insert grade.
Refer to the insert table at the bottom of this page for details.

Note 2: Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Diameter	Height	Overall Length	Cutting Edge Distance	Cutting Edge Height	Min. Bore Diameter	Rake Angle	Width of Cut	Max. Groove Depth	Applicable Number	Fig	Parts		
	R	L												Flat Screw	Wrench	
GWCI R/L325	●	●	25	23	220	17.5	11.5	35	14°	0.33 to 2.80	0.5 to 2.0	1	1	BFTX0409N	3.4	TRX15
GWCI R/L432	●	●	32	30	250	23.0	15.0	40	16°	1.25 to 4.80	1.7 to 2.5	2/3/4	1	BFTX0511N	5.0	TRX20

Right-handed (R) tool holders can be used with left-handed (L) inserts.

*Refer to TGA type insert group numbers on pages F6, F7 and F8 for GWCI type holder applicable inserts.

● Rake angle when fitted on a holder (α°)

	Coated Carbide	Carbide	Coated Cermet	Cermet	SUMIBORON	SUMIDIA
	AC530U	H1	T3000Z	T1500A	BN2000	DA2200
External Grooving GWC GWCS	10°	20°	10°	5°	0°	10°
Internal Grooving GWCI R/L325	1°	11°	1°	-4°	-9°	1°
Internal Grooving GWCI R/L432	-1°	9°	-1°	-6°	-11°	-1°

Grooving Insert TGA Type

Fig 1

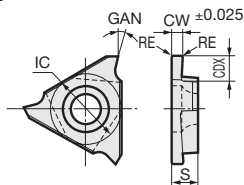


Figure shows right hand (R) tool.

(Coated Carbide / Cermet / Carbide / SUMIBORON / SUMIDIA)

Grade	Cutting Edge	GAN
Coated Carbide	AC530U	Honing 15°
Carbide	H1	Sharp Edge 25°
Coated Cermet	T3000Z	Honing 15°
Cermet	T1500A	Sharp Edge 10°
SUMIBORON	BN2000	Negative Land 5°
SUMIDIA	DA2200	Sharp Edge 15°

* For the rake angle when fitted on the holder, refer to page F5.

Square Edged Grooving Insert

Dimensions (mm)

Cat. No.	AC530U		H1		T3000Z		T1500A		BN2000		DA2200		Width of Cut CW	Maximum Depth of Cut		Maximum Groove Depth (mm) CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	*Group No.	Fig
	R	L	R	L	R	L	R	L	R	L	R	L		O.D.	Internal Diameter						
TGA R/L3033(E)	●	●	●	●	●	●	●	●	—	—	—	—	0.33	0.8	0.5	1.0	0.05	9.525	3.18	1	1
TGA R/L3050(E)	●	●	●	●	●	●	●	●	—	—	—	—	0.50	1.2	0.8	1.4	0.05	9.525	3.18	1	1
TGA R/L3075(E)	●	●	●	●	●	●	●	●					0.75	2.0	1.5	2.5	³0.1	9.525	3.18	1	1
TGA R/L3095(E)	●	●	●	●	●	●	●	●					0.95								1
TGA R/L3100(E)	●	●	●	●	●	●	●	●					1.00								1
TGA R/L3110(E)	●	●	●	●	●	●	●	●					1.10								1
TGA R/L3125(E)	●	●	●	●	●	●	●	●					1.25								1
TGA R/L3135(E)	●	●	●	●	●	●	●	●					1.35								1
TGA R/L3145(E)	●	●	●	●	●	●	●	●					1.45								1
TGA R/L3150(E)	●	●	●	●	●	●	●	●					1.50								1
TGA R/L3165(E)	●	●	●	●	●	●	●	●					1.65								1
TGA R/L3175(E)	●	●	●	●	●	●	●	●					1.75								1
TGA R/L3185(E)	●	●	●	●	●	●	●	●					1.85								1
TGA R/L3200(E)	●	●	●	●	●	●	●	●					2.00	2.5	2.0	3.0	³0.1	9.525	3.18	1	1
TGA R/L3220(E)	●	●	●	●	●	●	●	●					2.20								1
TGA R/L3230(E)	●	●	●	●	●	●	●	●					2.30								1
TGA R/L3250(E)	●	●	●	●	●	●	●	●					2.50								1
TGA R/L3265(E)	●	●	●	●	●	●	●	●					2.65								1
TGA R/L3270(E)	●	●	●	●	●	●	●	●					2.70								1
TGA R/L3280(E)	●	●	●	●	●	●	●	●					2.80								1
TGA R/L4125(E)	●	●	●	●	●	●	●	●	●		●		1.25	2.0	1.7	2.5	²0.2	12.70	4.76	2	1
TGA R/L4145(E)	●	●	●	●	●	●	●	●	●			●	1.45								1
TGA R/L4150(E)	●	●	●	●	●	●	●	●	●	●		●	1.50	3.5	2.5	3.9	²0.2	12.70	4.76	3	1
TGA R/L4165(E)	●	●	●	●	●	●	●	●	●			●	1.65								1
TGA R/L4175(E)	●	●	●	●	●	●	●	●	●				1.75								1
TGA R/L4185(E)	●	●	●	●	●	●	●	●	●				1.85								1
TGA R/L4200(E)	●	●	●	●	●	●	●	●	●	●		●	2.00								1
TGA R/L4220(E)	●	●	●	●	●	●	●	●	●				2.20								1
TGA R/L4230(E)	●	●	●	●	●	●	●	●	●				2.30								1
TGA R/L4250(E)	●	●	●	●	●	●	●	●	●	●		●	2.50	¹5.0	2.5	¹5.4	²0.3	12.70	4.76	4	1
TGA R/L4265(E)	●	●	●	●	●	●	●	●	●				2.65								1
TGA R/L4270(E)	●	●	●	●	●	●	●	●	●				2.70								1
TGA R/L4280(E)	●	●	●	●	●	●	●	●	●	●		●	2.80	¹5.0	2.5	¹5.4	²0.3	12.70	4.76	4	1
TGA R/L4300(E)	●	●	●	●	●	●	●	●	●	●		●	3.00								1
TGA R/L4320(E)	●	●	●	●	●	●	●	●	●				3.20	¹5.0	2.5	5.4	²0.3	12.70	4.76	4	1
TGA R/L4330(E)	●	●	●	●	●	●	●	●	●				3.30								1
TGA R/L4350(E)	●	●	●	●	●	●	●	●	●	●		●	3.50	5.0	2.5	5.4	²0.3	12.70	4.76	4	1
TGA R/L4370(E)	●	●	●	●	●	●	●	●	●				3.70								1
TGA R/L4390(E)	●	●	●	●	●	●	●	●	●				3.90								1
TGA R/L4400(E)	●	●	●	●	●	●	●	●	●	●		●	4.00								1
TGA R/L4410(E)	●	●	●	●	●	●	●	●	●				4.10								1
TGA R/L4420(E)	●	●	●	●	●	●	●	●	●				4.20				1				
TGA R/L4430(E)	●	●	●	●	●	●	●	●	●				4.30				1				
TGA R/L4440(E)	●	●	●	●	●	●	●	●	●				4.40				1				
TGA R/L4450(E)	●	●	●	●	●	●	●	●	●				4.50				1				
TGA R/L4480(E)	●	●	●	●	●	●	●	●	●				4.80				1				

* Add E as the part number suffix for T1500A.

* Refer to pages F4 and F5 for group numbers of holders that can be used with the GWC, GWCS and GWCI types.

Select applicable inserts for the holders by using matching group numbers.

*1: CDX = 4.4 (maximum groove depth 4.0) for SUMIBORON and SUMIDIA (2.5 for internal diameter machining)

*2: RE = 0.2 for SUMIBORON; RE = 0.1 for SUMIDIA

*3: T1500A is RE = 0.2

Fig 1

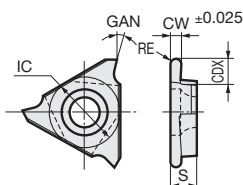


Figure shows right hand (R) tool.

(Coated Carbide / Cermet / Carbide)

Grade	Cutting Edge	GAN
Coated Carbide AC530U	Honing	15°
Carbide H1	Sharp Edge	25°
Coated Cermet T3000Z	Honing	15°
SUMIBORON BN2000	Negative Land	5°
SUMIDIA DA2200	Sharp Edge	15°

* For the rake angle when fitted on the holder, refer to page F5.

Round Edged Grooving Insert

Dimensions (mm)

Cat. No.	AC530U		H1		T3000Z		Width of Cut CW	Maximum Depth of Cut		Maximum Groove Depth (mm) CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	*Group No.	Fig
	R	L	R	L	R	L		O.D.	Internal Diameter						
TGA R/L4050R	●	●	●	●	●	●	1.00	2.0	1.7	2.5	0.50	12.70	4.76	2	1
TGA R/L4075R	●	●	●	●	●	●	1.50	3.5	2.5	3.9	0.75	12.70	4.76	3	1
TGA R/L4100R	●	●	●	●	●	●	2.00				1.00				1
TGA R/L4125R	●	●	●	●	●	●	2.50				1.25				1
TGA R/L4150R	●	●	●	●	●	●	3.00	5.0	2.5	5.4	1.50	12.70	4.76	4	1
TGA R/L4200R	●	●	●	●	●	●	4.00				2.00				1

* Refer to pages F4 and F5 for group numbers of holders that can be used with the GWC, GWCS and GWCI types.

Select applicable inserts for the holders by using matching group numbers.

Recommended Cutting Conditions

Work Material	P General Steel			M Stainless Steel			N Non-ferrous Metal		H Hardened Steel
Insert Grade	AC530U	T3000Z	T1500A	AC530U	T3000Z	T1500A	H1	DA2200	BN2000
Cutting Speed v_c (m/min)	50 to 200	100 to 180	100 to 180	50 to 200	80 to 150	80 to 120	200 to 300	200 to 300	80 to 120
Feed Rate f (mm/rev)	0.02 to 0.10	0.05 to 0.10	0.05 to 0.08	0.02 to 0.10	0.05 to 0.08	0.05 to 0.08	0.05 to 0.15	0.05 to 0.15	0.03 to 0.07

Fig 1

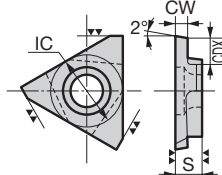
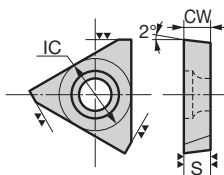


Fig 2



Blank Insert

(Uncompleted inserts: Width of cut, nose radius and rake face modification required.)

(Cermet / Carbide)

Dimensions (mm)

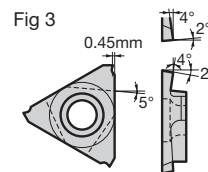
Cat. No.	KH03		H1		EH510		T1500A		Width of Cut CW	Maximum Groove Depth (mm) CDX	Inscribed Circle IC	Thickness S	Fig
	R	L	R	L	R	L	R	L					
TGA R/L3-T18	●	●	●	●	●	●	●	●	1.85	(3.4)	9.525	3.18	1
TGA R/L3-T23	●	●	●	●	●	●	●	●	2.35	(3.4)	9.525	3.18	1
TGA R/L3-T31	●	●	●	●	●	●	●	●	3.18	—	9.525	3.18	2
TGA R/L4-T22	●	●	●	●	●	●	●	●	2.20	(4.8)	12.70	4.76	1
TGA R/L4-T37	●	●	●	●	●	●	●	●	3.75	(6.2)	12.70	4.76	1
TGA R/L4-T47	●	●	●	●	●	●	●	●	4.76	—	12.70	4.76	2

<Note> Figures in () for CDX are reference values

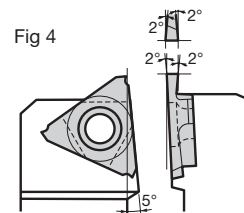
Precautions when Modifying Inserts

When modifying the cutting edge, refer to the shapes in Fig. 3 for the rake face, back taper, etc. Cutting edge specifications shown in Fig. 4 are when the insert is mounted on the holder.

Recommended Modification



Cutting Edge Specifications When Mounted



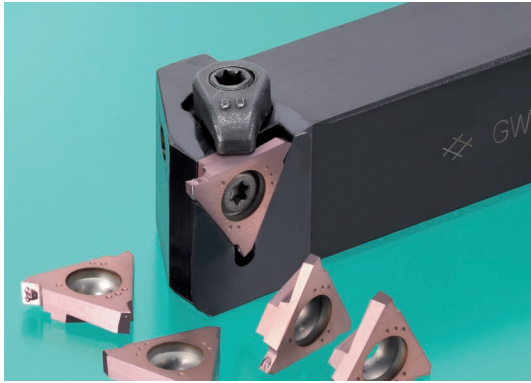
Ordering TGA Type Blanks / Special Inserts

Sumitomo Electric Hardmetal also accepts orders for blank inserts. Use the "Special Grooving Insert Request Form" on page F9 when ordering.

Use the "Special Grooving Insert Request Form" on page F9 when ordering special inserts (with different shapes, widths of cut, and cutting edge lengths).

Make a copy of the form, fill it out and send it to a Sumitomo Electric Hardmetal dealer or distributor.

SumiTurn B-Groove



General Features

SumiTurn B-Groove (BF Type) inserts with chipbreaker have been added to the TGA Type grooving insert lineup to solve chip control problems.

- Achieves good chip control in a wide range of grooving processes
- Good chip control during final wide groove touch-up with traverse cutting
- Series expansion of 14 items for circlip groove machining, covering grooving widths from 1.4mm to 4.5mm for a total of 60 stocked items.
- The AC530U grade with Super ZX Coat for a longer tool life is now in stock to cover various work materials from steel and stainless steel to non-ferrous metals

Fig 1

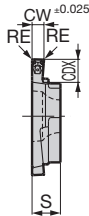
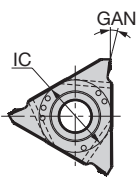


Fig 2



Grade	Cutting Edge	GAN
Coated Carbide AC530U	Honing	15°

* For the rake angle when fitted on the holder, refer to page F5.

Note 1: Please note that inserts with edge width (CW) less than 1.85mm have different cutting edge distance (E2).

Note 2: Figure shows right hand (R) tool.



Chipbreaker Insert for Square Grooves BF Type (Coated Carbide) Dimensions (mm)

Cat. No.	AC530U		Width of Cut CW	Maximum Depth of Cut O.D.	Internal Diameter	Maximum Groove Depth (mm) CDX	Nose Radius RE	Inscribed Circle IC	Thickness S	Cutting Edge Distance E2	Group No.	Fig
	R	L										
TGA R/L4140BF01	●	●	1.40	2.0	1.7	2.5	0.1	12.70	4.76	0.300	2	2
TGA R/L4165BF01	●	●	1.65							0.175		2
TGA R/L4190BF01	●	●	1.90	3.5	2.5	3.9	0.1	12.70	4.76		3	1
TGA R/L4220BF01	●	●	2.20							0		1
TGA R/L4270BF02	●	●	2.70									1
TGA R/L4320BF02	●	●	3.20	5.0	2.5	5.4	0.1	12.70	4.76	0	4	1
TGA R/L4420BF02	●	●	4.20									1
TGA R/L4150BF	●	●	1.50							0.250		2
TGA R/L4165BF	●	●	1.65							0.175		2
TGA R/L4175BF	●	●	1.75							0.125		2
TGA R/L4185BF	●	●	1.85	3.5	2.5	3.9	0.2	12.70	4.76	0.075	3	2
TGA R/L4200BF	●	●	2.00									1
TGA R/L4220BF	●	●	2.20							0		1
TGA R/L4230BF	●	●	2.30									1
TGA R/L4250BF	●	●	2.50									1
TGA R/L4265BF	●	●	2.65									1
TGA R/L4270BF	●	●	2.70									1
TGA R/L4280BF	●	●	2.80									1
TGA R/L4300BF	●	●	3.00	5.0	2.5	5.4	0.3	12.70	4.76	0	4	1
TGA R/L4320BF	●	●	3.20									1
TGA R/L4330BF	●	●	3.30									1
TGA R/L4350BF	●	●	3.50									1
TGA R/L4370BF	●	●	3.70									1
TGA R/L4390BF	●	●	3.90									1
TGA R/L4400BF	●	●	4.00									1
TGA R/L4410BF	●	●	4.10									1
TGA R/L4420BF	●	●	4.20	5.0	2.5	5.4	0.4	12.70	4.76	0	4	1
TGA R/L4430BF	●	●	4.30									1
TGA R/L4440BF	●	●	4.40									1
TGA R/L4450BF	●	●	4.50									1

Recommended Cutting Conditions

Work Material	Machining Details	Cutting Conditions	Groove Width CW (mm)		
			1.4 to 2.3	2.5 to 3.3	3.5 to 4.5
General Steel	Grooving	Cutting Speed v_c (m/min)	50 to 180	50 to 180	50 to 180
		Feed Rate f (mm/rev)	0.03 to 0.12	0.04 to 0.12	0.05 to 0.12
		Depth of Cut a_p (mm)	O.D. up to 3.5 Internal Diameter up to 2.5	up to 5.0	up to 5.0
	Traverse Cutting	Feed Rate f (mm/rev)	0.03 to 0.10	0.05 to 0.10	0.07 to 0.12
		Depth of Cut a_p (mm)	up to 0.3	up to 0.5	up to 0.7
Stainless Steel	Grooving	Cutting Speed v_c (m/min)	50 to 160	50 to 160	50 to 160
		Feed Rate f (mm/rev)	0.03 to 0.12	0.04 to 0.12	0.05 to 0.12
		Depth of Cut a_p (mm)	O.D. up to 3.5 Internal Diameter up to 2.5	up to 5.0	up to 2.5
	Traverse Cutting	Feed Rate f (mm/rev)	0.03 to 0.10	0.05 to 0.10	0.07 to 0.12
		Depth of Cut a_p (mm)	up to 0.3	up to 0.5	up to 0.7

* Refer to pages F4 and F5 for group numbers of holders that can be used with the GWC, GWCS and GWCI types.
Select applicable inserts for the holders by using matching group numbers.

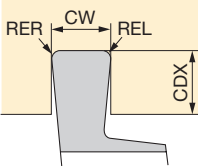
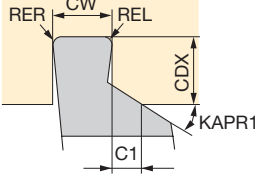
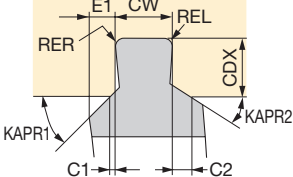
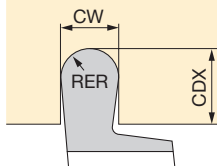
Special Grooving Insert Request Form

This form applies to the GWC Type (page F4), GWCS Type (page F5) and GWCI Type (page F5) inserts.

To order special grooving inserts, fill out the form below (indicate preference by circling the item or specify dimensions), and send it to a Sumitomo Electric Hardmetal dealer or distributor. (Make a copy of this form.)

For grooving insert shapes, widths of cut, cutting edge lengths and grades not listed below, contact your nearest dealer or distributor.

Your Company / Contact Information (Phone / Fax / Address, etc.)

Cat. No.	①	②	③	④
Shape				
Uses	Internal Grooving / External Grooving			
Holders	GWC Type (page F4) / GWCS Type (page F5) / GWCI Type (page F5)			
Direction	Right Hand (R) / Left Hand (L)			
Insert Size	"3": ø9.525 "4": ø12.70			
CW				
CDX				
C1				
C2				
E1				
RER				
REL				
KAPR1				
KAPR2				
Grade				
Quantity				
Remarks				

Form instructions

1. The above illustration shows only external right-hand and internal left-hand inserts. (The external left-hand and internal right-hand inserts will be opposite to the above illustration.)

2. The following two insert sizes are available.

3: Inscribed circle 9.525mm

4: Inscribed circle 12.70mm

3. Dimension limits for groove width and groove depth.

(1) Maximum Width of Cut (CW): 4.8mm

• For Models ① and ④ : $CW \leq 4.8$ (SumiTurn B-Groove (BF Type) is 4.5mm)

• For Model ② : $CW + C1 \leq 4.8$ (SumiTurn B-Groove (BF Type) is 4.5mm)

• For Model ③ : $CW + E1$ (or $C1 + C2 \leq 4.8$ (SumiTurn B-Groove (BF Type) is 4.5mm)

(2) Minimum Width of Cut (CW) • For Insert Size "3": $CW \geq 0.33\text{mm}$

• For Insert Size "4": $CW \geq 0.75\text{mm}$

(3) Groove Depth (CDX)

• For Insert Size "3": $CDX \leq 0.8$ to $CDX \leq 2.5\text{mm}$ (For I.D.: $CDX \leq 0.8$ to $CDX \leq 2.0$)

• For Insert Size "4": $CDX \leq 2.0$ to $CDX \leq 5.0\text{mm}$ (For I.D.: $CDX \leq 2.0$ to $CDX \leq 2.5$)

4. SumiTurn B-Groove (BF Type) grooving inserts with chipbreaker are limited to insert size 4 and AC530U grade.

For shape details, please contact us directly.

5. The following shows the standard tolerance for inserts.

Symbol	Standard Tolerance
CW	$\pm 0.025\text{mm}$
CDX	$\pm 0.05\text{mm}$
KAPR1, KAPR2	$\pm 1^\circ$

Unless otherwise specified, inserts are made to standard tolerances.

6. Insert grades are based on the catalogue numbers in stock.

7. The applicable tool holders for Models ① , ② and ④ should match the CW dimension. Contact us for Model ③ .



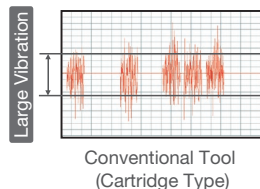
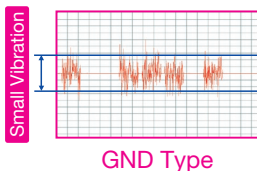
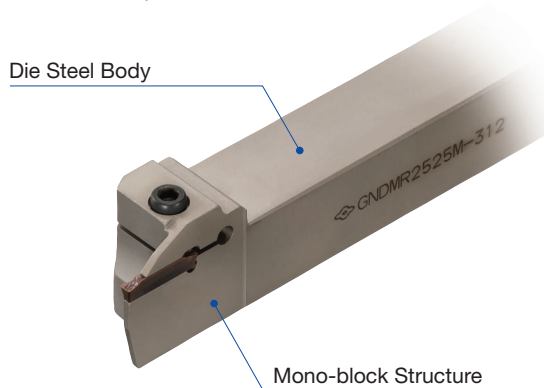
Features

- **Wide application range**
Applicable for grooving, traverse cutting, profiling, necking, facing and internal boring.
- **Stable tool life**
A variety of chipbreakers improve chip control in various applications. Prevents sudden breakages due to chip clogging.
- **Achieving high efficiency machining with reduced chattering**
The mono-block structure and die steel body reduce vibration during machining around 30% compared to conventional tools
- **Higher edge width precision even with unground inserts**
High-precision sintering technology achieves cutting edge width precision of $\pm 0.03\text{mm}$ for widths from 1.25 to 6.0mm (front cutting edge angle of 0° or 5°)

Cutting Performance

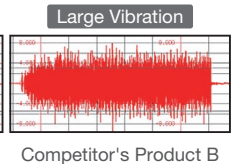
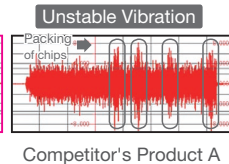
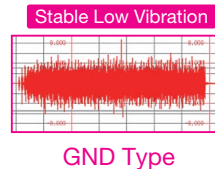
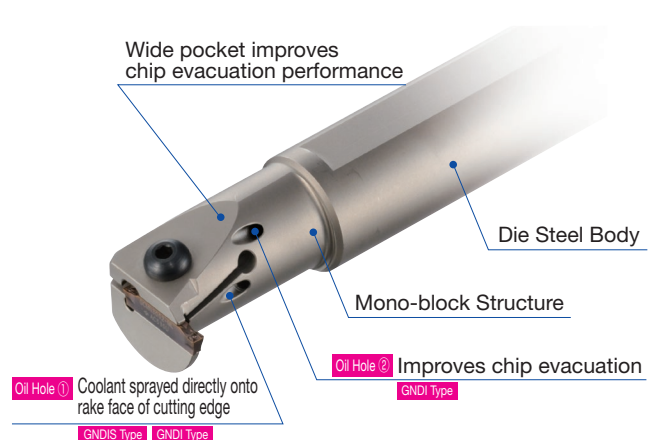
Reduce Chattering

High rigidity design reduces chattering by up to 30% as compared to conventional tools.



Work Material: SCM415
Holder: GNDL R2525M-220 Insert: GCM N2002-GG
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.10\text{mm/rev}$, $a_p = 20.0\text{mm Wet}$

Both high rigidity and good chip evacuation performance Internal

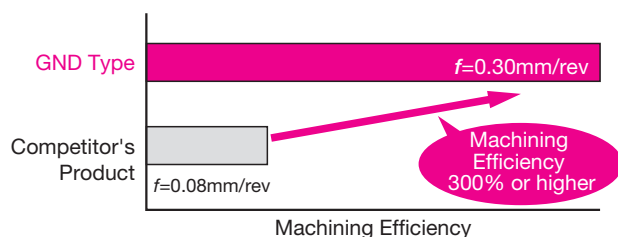


Work Material: SCM415
Holder: GNDI R2532-T306 Insert: GCM N3002-GG
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.05\text{mm/rev}$, $a_p = 3.0\text{mm Wet}$

Application Examples

Substantially improved machining efficiency

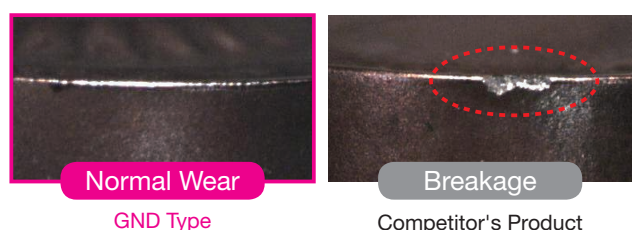
High-rigidity holder enables machining at high feed rates.



Work Material: SCM435
Holder: GNDL R2525M-320 Insert: GCM N3002-GG (AC530U)
Cutting Conditions: $v_c=130\text{m/min}$, $f=0.30\text{mm/rev Wet}$

Long, stable tool life ensures reliable functionality even on automatic production lines!

Reduction of chattering prevents unexpected breakage.



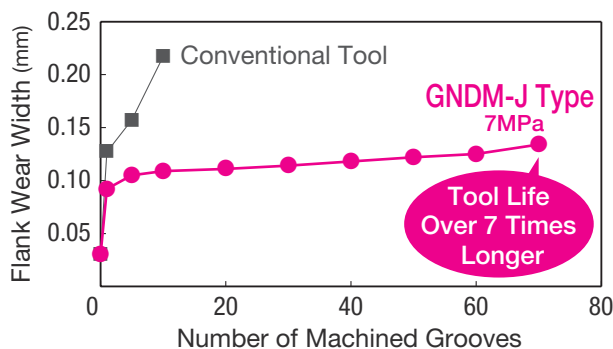
Work Material: S53C
Holder: GNDM L2525M-618 Insert: GCM N6030-RG (AC530U)
Cutting Conditions: $v_c=130\text{m/min}$, $f=0.3\text{mm/rev Wet}$

Internal Coolant Holder GNDM-J Type / GNDL-J Type *New*

- Series expansion of SEC-Grooving Tool GND Type with internal coolant holder series
- Available grooving widths from 2.0 to 6.0mm
- Effective coolant supply to the cutting edge during grooving, achieving both high-efficiency high-speed machining and longer insert tool life
- Improved chip control through direct coolant supply around the cutting edge



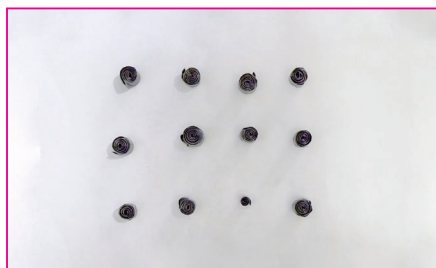
Wear Resistance



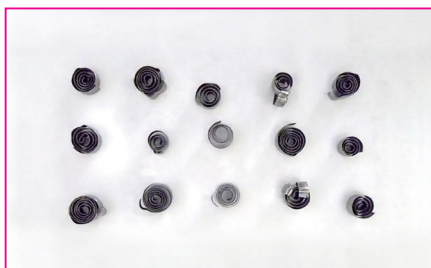
Coolant hole at the top improves chip control

Coolant hole at the bottom effectively suppresses wear

Chip control



Coolant Pressure: 7MPa



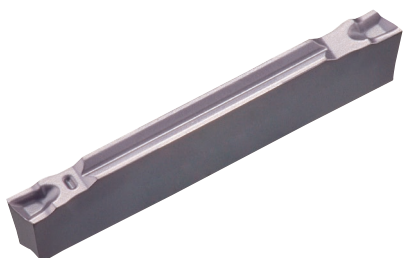
Coolant Pressure: 1MPa



External Coolant Supply

Work Material: Ti-6Al-4V Holder: GNDM R2525K-312J Insert: GCMN3002-GG (AC530U) Cutting Conditions: $v_c = 60\text{m/min}$, $f = 0.1\text{mm/rev}$, $a_p = 5.0\text{mm}$ Wet

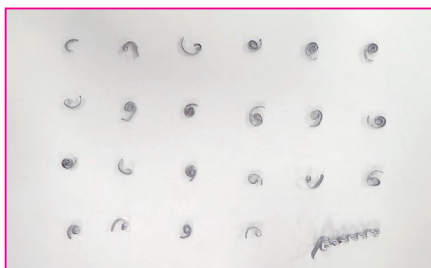
CF Type Chipbreakers for Cut-Off Machining *New*



- Chipbreakers with front cutting edge angles $10^\circ/15^\circ$ for cut-off machining now available
- Asymmetric breaker design demonstrates outstanding chip control even on inserts with front cutting edge angles, where chip control is typically difficult



GCMR20003-CF-10



GCMR20003-CF-15



Competitor's Product

Work Material: SS400 Holder: GNDM R2525M-220 Insert: GCMR20003-CF-10,15 (AC1030U) Cutting Conditions: $n = 2,000\text{min}^{-1}$, $f = 0.08\text{mm/rev}$ Wet

GND Type

■ Achieving stability and longer tool life ... A variety of chipbreakers ensure outstanding chip control performance in many different types of applications.

Grooving Tools

F

Grooving / Traverse Cutting			Grooving / Cut-off			Cut-off		Profiling	Profiling Necking	For Non-Ferrous Metals
General-purpose	Low Feed		General-purpose	Low Feed	Low Resistance	General-purpose	Low Resistance	General-purpose	General-purpose	General-purpose
MG Type	ML Type		GG Type	GL Type	GF Type	CG Type	CF Type <i>New</i>	RG Type	RN Type	GA Type
Standard chipbreaker for traverse cutting	For low-feed chip control		1st recommendation for grooving	For low-feed chip control	For low-feed and low resistance chip control	1st recommendation for cut-off machining	For low-feed chip control	For external profiling and radius grooving	For face/internal profiling, radius grooving and necking	Ideal for aluminum alloy machining
Edge Widths in Stock (mm)	Edge Widths in Stock (mm)		Edge Widths in Stock (mm)	Edge Widths in Stock (mm)	Edge Widths in Stock (mm)	Edge Widths in Stock (mm)	Edge Widths in Stock (mm)	Edge Widths in Stock (mm)	Edge Widths in Stock (mm)	Edge Widths in Stock (mm)
1.25 1.5 2.0	1.25 1.5 2.0		1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0	1.25 1.5 2.0
3.0 4.0 5.0	3.0 4.0 5.0		3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0	3.0 4.0 5.0
6.0 7.0 8.0	6.0 7.0 8.0		6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0	6.0 7.0 8.0
Grades in Stock	Grades in Stock		Grades in Stock	Grades in Stock	Grades in Stock	Grades in Stock	Grades in Stock	Grades in Stock	Grades in Stock	Grades in Stock
AC830P AC425K	AC830P AC425K		AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K	AC830P AC425K
AC520U AC530U	AC520U AC530U		AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U	AC520U AC530U
AC1030U T2500A	*AC1030U T2500A		AC1030U T2500A	AC1030U T2500A	*AC1030U T2500A	AC1030U T2500A	AC1030U T2500A	AC1030U T2500A	AC1030U T2500A	AC1030U T2500A
H10	H10		H10	H10	H10	H10	H10	H10	H10	H10

*: GNDIS Type Only

Improved chip control

Grooving

GND Type
(GG Type Chipbreaker)

Conventional Tool

Work Material: SCM415
Holder: GNDL R2525M-320, Insert: GCM N3002-GG
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.15\text{mm/rev}$, $a_p = 12.0\text{mm Wet}$

Traverse cutting

GND Type
(ML Type Chipbreaker)

Conventional Tool

Work Material: SCM415
Holder: GNDM R2525M-312, Insert: GCM N3002-ML
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.10\text{mm/rev}$, $a_p = 0.5\text{mm Wet}$

Cut-off

GND Type
(CG Type Chipbreaker)

Competitor's Product

Work Material: SUS316 ($\phi 30\text{mm}$)
Holder: GNDL R2525M-220, Insert: GCM R2002-CG-05
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.15\text{mm/rev Wet}$

Profiling

GND Type
(RG Type Chipbreaker)

Conventional Tool

Work Material: SCM415
Holder: GNDM R2525M-312, Insert: GCM N3015-RG
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.15\text{mm/rev}$, $a_p = 0.1\text{mm Wet}$

Chipbreaker Selection

	Grooving/Traverse Cutting	Grooving	Cut-off
1st Recommendation	MG Type General-purpose 	GG Type General-purpose 	GG Type General-purpose
2nd Recommendation	Improved Chip Control (blue arrow down) / Chipping Prevention (pink arrow up) ML Type Low Feed Chip control emphasised 	Improved Chip Control (blue arrow down) / Chipping Prevention (pink arrow up) GL Type General-purpose Chip control emphasised 	Pip or Burr Reduction (orange arrow down) / Improved Chip Control (blue arrow up) / Chipping Prevention (pink arrow up) CG Type General-purpose Feed Direction Front Cutting Edge Angle 5°
		Improved Chip Control (blue arrow down) / Reduction of Chattering (green arrow down) / Chipping Countermeasures (pink arrow up) GF Type Low Resistance 	Improved Chip Control (blue arrow down) / Reduction of Chattering (green arrow down) / Chipping Prevention (pink arrow up) GL Type General-purpose Chip control emphasised
		Pip or Burr Reduction (orange arrow down) / Chipping Prevention (pink arrow up) CF Type <i>New</i> Low Resistance Feed Direction Front Cutting Edge Angle 10°/15° 	Improved Chip Control (blue arrow down) / Reduction of Chattering (green arrow down) / Chipping Prevention (pink arrow up) GF Type Low Resistance

	External Profiling/External Radius Grooving	Facing/Internal Profiling/Radius Grooving/Necking	For Non-Ferrous Metals
Recommendation	RG Type General-purpose 1st Recommended 	RN Type General-purpose 2nd Recommended 2mm Width Supported 	GA Type General-purpose For Non-Ferrous Metals

Insert Grade Selection

	P Steel	M Stainless Steel	K Cast Iron	S Exotic Alloy	N Non-ferrous Metal
1st Recommendation	AC530U / AC1030U PVD Insufficient Wear Resistance (blue arrow down) / Surface Finish Emphasised Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up)	AC530U / AC1030U PVD Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up)	AC425K CVD Chipping Prevention (pink arrow up) / Insufficient Wear Resistance (blue arrow down)	AC520U PVD Chipping Prevention (pink arrow up) / Insufficient Wear Resistance (blue arrow down)	H10 Uncoated Carbide
2nd Recommendation	Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up) AC520U PVD Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up)	Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up) AC520U PVD Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up)	Chipping Prevention (pink arrow up) / Insufficient Wear Resistance (blue arrow down) AC520U PVD Chipping Prevention (pink arrow up) / Insufficient Wear Resistance (blue arrow down)	Insufficient Wear Resistance (blue arrow down) AC530U / AC1030U PVD Insufficient Wear Resistance (blue arrow down)	
	Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up) AC830P CVD Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up)	Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up) AC830P CVD Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up)	Insufficient Wear Resistance (blue arrow down) AC530U / AC1030U PVD Insufficient Wear Resistance (blue arrow down)	Insufficient Wear Resistance (blue arrow down) AC530U / AC1030U PVD Insufficient Wear Resistance (blue arrow down)	
	Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up) T2500A Cermet Insufficient Wear Resistance (blue arrow down) / Chipping Prevention (pink arrow up)				

Only AC520U and AC1030U are in stock for GNDIS Type holders. Only AC1030U is in stock for CF Type chipbreakers.

For External Machining (Straight Type)

Traverse Cutting / Profiling

Grooving / Cut-off

GNDM Type Straight Type		For Small Lathes	GNDS Type Straight Type		For Shallow Grooves	GNDM Type Straight Type		Shank Size (Height x Width) □20 x 20mm □32 x 25mm □32 x 32mm	GNDM-J Type Straight Type		Internal Coolant Supply	GNDL Type Straight Type		For Small Lathes	GNDL Type Straight Type		Shank Size (Height x Width) □20 x 20mm □25 x 25mm □32 x 32mm	GNDL-J Type Straight Type		Internal Coolant Supply
Shank Size (Height x Width) □16 x 16mm		F22	Shank Size (Height x Width) □20 x 20mm □25 x 25mm		F24	Shank Size (Height x Width) □20 x 20mm □25 x 25mm		F26	Shank Size (Height x Width) □20 x 20mm □25 x 25mm		F28	Shank Size (Height x Width) □10 x 10mm □12 x 12mm □16 x 16mm		F22	Shank Size (Height x Width) □20 x 20mm □25 x 25mm □32 x 32mm		F30	Shank Size (Height x Width) □20 x 20mm □25 x 25mm		F32
Available Edge Widths (mm)		1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Available Edge Widths (mm)		1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Available Edge Widths (mm)		1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Available Edge Widths (mm)		1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Available Edge Widths (mm)		1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Available Edge Widths (mm)		1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0	Available Edge Widths (mm)		1.25 1.5 2.0 3.0 4.0 5.0 6.0 7.0 8.0
Applicable Chipbreaker		MG/ML GG GL GF CG CF RG RN GA	Applicable Chipbreaker		MG/ML GG GL GF CG CF RG RN GA	Applicable Chipbreaker		MG/ML GG GL GF CG CF RG RN GA	Applicable Chipbreaker		MG/ML GG GL GF CG CF RG RN GA	Applicable Chipbreaker		MG/ML GG GL GF CG CF RG RN GA	Applicable Chipbreaker		MG/ML GG GL GF CG CF RG RN GA	Applicable Chipbreaker		MG/ML GG GL GF CG CF RG RN GA

For External Machining
Straight Type Series Overview

MG: Multi-Functional/General-Purpose Type ML: Multi-Functional/Low-Feed Type GG: Grooving/General-Purpose Type GL: Grooving/Low-Feed Type GF: Grooving/Low-Resistance Type
 CG: Cut-Off/General-Purpose Type CF: Cut-Off/Low-Resistance Type RG: Profiling/General-Purpose Type RN: Facing/Necking/General-Purpose Type GA: Non-Ferrous Metal/General-Purpose Type

Type	Shank Size (mm) Height (H) x Width (B)	Width of Cut (mm)							Series	Maximum Groove Depth (mm)						Ref. Page	Applicable Chipbreaker									
		1.25	1.5	2	3	4	5	6		5	10	15	20	25	30		MG	ML	GG	GL	GF	CG	CF	RG	RN	GA
For Small Lathes	10 10	1.25	1.5						GNDL Small Lathes	10						F22										
				2						10						F22										
					3					10						F22										
	12 12	1.25	1.5						GNDL Small Lathes	12						F22										
				2						12.5						F22										
					3					12.5						F22										
	16 16	1.25	1.5						GNDM Small Lathes	8						F22										
		1.25	1.5							12.5						F22										
		1.5							GNDM Small Lathes	10						F22										
				2						12						F22										
					2				GNDL Small Lathes	16						F22										
					3					12						F22										
Straight Type	20 20								GNDM Small Lathes	12						F22										
										16						F22										
									GNDL Small Lathes	16						F22										
										12						F22										
									GNDM Small Lathes	12						F22										
										16						F22										
									GNDL Small Lathes	16						F22										
										10						F26										
									GNDL Small Lathes	16						F30										
									GNDS	6						F24										
										10						F26										
									GNDM-J Internal Coolant Supply	10						F28										
										20						F30										
									GNDL-J Internal Coolant Supply	20						F32										
										20						F32										
									GNDS	6						F24										
										12						F26										
									GNDM-J Internal Coolant Supply	12						F28										
										20						F30										
									GNDL-J Internal Coolant Supply	20						F32										
										25						F32										
	25 25								GNDS	10						F24										
										18						F26										
									GNDM-J Internal Coolant Supply	18						F28										
										25						F30										
									GNDL-J Internal Coolant Supply	25						F32										
										25						F32										
									GNDS	10						F24										
										18						F26										
									GNDM-J Internal Coolant Supply	18						F28										
										25						F30										
									GNDL-J Internal Coolant Supply	25						F32										
										25						F32										
									GNDS	10						F24										
										18						F26										
									GNDM-J Internal Coolant Supply	18						F28										
										25						F30										
									GNDL-J Internal Coolant Supply	25						F32										
										25						F32										
	32 25								GNDS	12						F26										
										20						F30										
									GNDM	18						F26										
										25						F30										
									GNDL	18						F26										
										25						F30										
	32 32								GNDS	18						F26										
										25						F30										
									GNDM	18						F26										
										25						F30										
									GNDL	18						F26										
										25						F30										

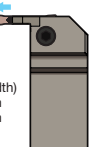
■: In stock * : Made-to-order item (Shank size □32 x 25mm)

◎: Best ○: Suitable Red text: Expanded item

For External Machining (L Type)

Traverse Cutting / Profiling

GNDMS Type
L Type



Shank Size
(Height x Width)
□ 20 x 20mm
□ 25 x 25mm

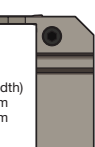
F26

1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

Grooving / Cut-off

GNDLS Type
L Type



Shank Size
(Height x Width)
□ 20 x 20mm
□ 25 x 25mm

F30

1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

For External Machining L-Shape
Series Overview

MG: Multi-Functional/General-Purpose Type ML: Multi-Functional/Low-Feed Type GG: Grooving/General-Purpose Type GL: Grooving/Low-Feed Type GF: Grooving/Low-Resistance Type
CG: Cut-Off/General-Purpose Type CF: Cut-Off/Low-Resistance Type RG: Profiling/General-Purpose Type RN: Facing/Necking/General-Purpose Type GA: Non-Ferrous Metal/General-Purpose Type

Series Overview																																
Type	Shank Size (mm)		Width of Cut (mm)								Series	Maximum Groove Depth (mm)						Ref. Page	Applicable Chipbreaker													
	Height (H)	Width (B)	1	2	3	4	5	6	7	8		5	10	15	20	25	30		MG	ML	GG	GL	GF	CG	CF	RG	RN	GA				
L Type	20	20			2							GNDLS	16						F30													
					3								GNDMS	10						F26												
					3								GNDLS	16						F30												
						4							GNDMS	12						F26												
							5						GNDMS	12						F26												
	25	25			2							GNDLS	18						F30													
					3								GNDMS	12						F26												
					3								GNDLS	18						F30												
						4							GNDMS	14						F26												
						4							GNDLS	23						F30												
							5	6					GNDMS	14						F26												
				5	6					GNDLS	23						F30															

In Stock

◎: Best ○: Suitable Red text: Expanded item

For External Machining (SUMIBORON Cassette)

Grooving

GNDCM Type
Cassette



Applicable Holder
SumiPolygon
GND00 (Straight)
GND90 (L-Shaped)

F34

1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

SumiPolygon Cassette
Series Overview

MG: Multi-Functional/General-Purpose Type ML: Multi-Functional/Low-Feed Type GG: Grooving/General-Purpose Type GL: Grooving/Low-Feed Type GF: Grooving/Low-Resistance Type
CG: Cut-Off/General-Purpose Type CF: Cut-Off/Low-Resistance Type RG: Profiling/General-Purpose Type RN: Facing/Necking/General-Purpose Type GA: Non-Ferrous Metal/General-Purpose Type

Type	Applicable SumiPolygon Holders	Width of Cut (mm)								Series	Maximum Groove Depth (mm)						Ref. Page	Applicable Chipbreaker												
		1.25	1.5	2	3	4	5	6	7		8	5	10	15	20	25		30	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA		
Cassette	GND00			2							GNDCM	12						F34		○	◎	◎	◎	◎	◎	◎		◎	◎	
	GND90			3								12						F34	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎
				4								18						F34	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎
					5	6						18						F34	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎

In Stock

◎: Best ○: Suitable Red text: Expanded item



For Necking

Necking

GNDN Type
Straight Type



Shank Size
(Height x Width)
□ 20 x 20mm
□ 25 x 25mm

F37

Available Edge Widths (mm)		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

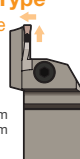
Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA



For Facing

Grooving / Traverse Cutting / Profiling

GNDF Type
Straight Type



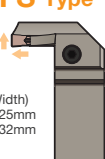
Shank Size
(Height x Width)
□ 20mm x 20mm
□ 25mm x 25mm

F40

Available Edge Widths (mm)		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

GNDFS Type
L Type



Shank Size
(Height x Width)
□ 25mm x 25mm
□ 32mm x 32mm

F42

Available Edge Widths (mm)		
1.25	1.5	2.0
3.0	4.0	5.0
6.0	7.0	8.0

Applicable Chipbreaker
MG ML GG GL GF CG CF RG RN GA

Undercutting Series Overview

MG : Multi-Functional/General-Purpose Type ML : Multi-Functional/Low-Feed Type GG : Grooving/General-Purpose Type GL : Grooving/Low-Feed Type GF : Grooving/Low-Resistance Type
CG : Cut-Off/General-Purpose Type CF : Cut-Off/Low-Resistance Type RG : Profiling/General-Purpose Type RN : Facing/Necking/General-Purpose Type GA : Non-Ferrous Metal/General-Purpose Type

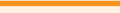
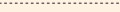
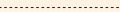
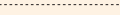
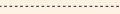
Type	Shank Size (mm)		Width of Cut (mm)					Series	Necking Depth (mm)						Min. bore diameter (mm)	Ref. Page	Applicable Chipbreaker																		
	Height H	Width B	2	3	4	5	6		5	10	15	20	25	30			MG	ML	GG	GL	GF	CG	CF	RG	RN	GA									
Straight Type			2					GNDN	1.5							ø20	F37																		
	20	20		3																	ø20	F37													
					4																	ø30	F37												
	25	25				5																ø30	F37												
						6			4.0						ø30	F37																			

In Stock

Best

For Facing Straight / L-Shaped Series Overview

MG : Multi-Functional/General-Purpose Type ML : Multi-Functional/Low-Feed Type GG : Grooving/General-Purpose Type GL : Grooving/Low-Feed Type GF : Grooving/Low-Resistance Type
CG : Cut-Off/General-Purpose Type CF : Cut-Off/Low-Resistance Type RG : Profiling/General-Purpose Type RN : Facing/Necking/General-Purpose Type GA : Non-Ferrous Metal/General-Purpose Type

Type	Shank Size (mm)		Width of Cut (mm)					Series	Maximum Groove Depth (mm)						Max. Work Diameter (mm)						Ref. Page	Applicable Chipbreaker															
	Height H	Width B	3	4	5	6	7		8	5	10	15	20	25	30	50	100	150	200	250		300	1,000	MG	ML	GG	GL	GF	CG	CF	RG	RN	GA				
Straight Type	20	20	3						GNDF		12						ø35	ø45																			
			3									12							ø40	ø55																	
			3									18								ø50	ø70																
			3									18									ø65	ø100															
			3									18									ø90	ø150															
			3									18										ø140	ø200														
			3									18										ø180	ø300														
			4							GNDF		18									ø40	ø55															
			4									23										ø50	ø70														
			4									23										ø65	ø90														
			4									23										ø85	ø130														
			4									23										ø125	ø200														
			4									23											ø180	ø300													
	25	25	4						GNDF		23										ø280	ø1,000															
			5								23										ø50	ø70															
			5								23											ø65	ø90														
			5								23											ø85	ø130														
			5								23											ø125	ø200														
			5								23												ø180	ø300													
	20	20	6						GNDF		23										ø50	ø75															
			6								23											ø70	ø110														
			6								23											ø100	ø200														
			6								23												ø180	ø300													
			6								23												ø280	ø1,000													
			6								23													ø450 up													
L Type	20	20				6		GNDFS		20										ø70	ø100																
				20									ø100	ø200																							
				20										ø180	ø300																						
				20											ø280	ø1,000																					
				20												ø450 up																					
				20													ø450 up																				
	25	25						8	GNDFS		20										ø70	ø100															
				20									ø100	ø200																							
				20										ø180	ø300																						
				20											ø280	ø1,000																					
				20												ø450 up																					
				20													ø450 up																				

In Stock Made-to-order item

Best Suitable

For Internal Diameter Machining (Work Dia.: $\phi 14\text{mm}$ up)

Grooving / Traverse Cutting / Profiling



Available Edge Widths (mm)

1.5 2.0 3.0

Applicable Chipbreaker

ML GF

Inserts are dedicated products.

For Internal Diameter Machining (Work Dia.: $\phi 32\text{mm}$ up)

Grooving / Traverse Cutting / Profiling



Available Edge Widths (mm)

1.25 1.5 2.0
3.0 4.0 5.0
6.0 7.0 8.0

Applicable Chipbreaker

MG ML GG GL GF CG CF RG RN GA

Internal Diameter Machining Series Overview (Work Dia.: $\phi 14\text{mm}$ up)

ML: Multi-Functional/Low-Feed Type GF: Grooving/Low-Resistance Type

Type	Shank Size DCON (mm)	Width of Cut (mm)			Series	Maximum Groove Depth (mm)						Ref. Page	Applicable Chipbreaker (GNDIS Type Dedicated)	
		1.5	2	3		5	10	15	20	25	30		ML (GNDIS Type Dedicated)	GF (GNDIS Type Dedicated)
Straight Type	$\phi 12$	1.5			GNDIS	2.6						F48		◎
		1.5				3.6						F48		◎
			2	3		2.6						F48	◎	◎
			2	3		3.6						F48	◎	◎
	$\phi 16$	1.5			GNDIS	3.6						F48		◎
		1.5				4.6						F48		◎
			2	3		3.6						F48	◎	◎
			2	3		4.6						F48	◎	◎
	$\phi 20$	1.5			GNDIS	6.6						F48		◎
			2	3		6.6						F48	◎	◎
			2	3										
			2	3										

: In Stock

Note: Only dedicated GXM inserts can be used for GNDIS types.

◎: Best

Internal Diameter Machining

Series Overview (Work Dia.: $\phi 32\text{mm}$ up)MG: Multi-Functional/General-Purpose Type ML: Multi-Functional/Low-Feed Type GG: Grooving/General-Purpose Type GL: Grooving/Low-Feed Type GF: Grooving/Low-Resistance Type
CG: Cut-Off/General-Purpose Type CF: Cut-Off/Low-Resistance Type RG: Profiling/General-Purpose Type RN: Facing/Necking/General-Purpose Type GA: Non-Ferrous Metal/General-Purpose Type

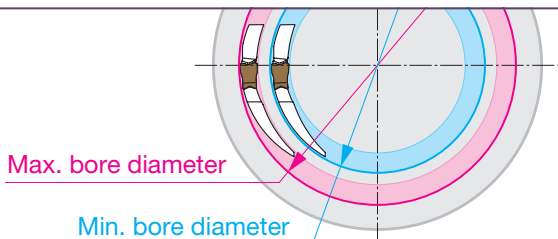
Type	Shank Size DCON (mm)	Width of Cut (mm)					Series	Min. Groove Diameter (mm)						Min. Bore Diameter (mm)	Ref. Page	Applicable Chipbreaker										
		2	3	4	5	6		5	10	15	20	25	30			MG	ML	GG	GL	GF	CG	CF	RG	RN	GA	
Straight Type	ø25	2					GNDI	 6					ø32 	F50												
			3	4	5			 6						ø32 	F50											
	ø32	2					GNDI	 6					ø32 	F50												
			3	4	5			 10						ø40 	F50											
	ø40		3	4	5	6	GNDI	 11					ø50 	F50												
			3	4	5	6																				

: In Stock

◎: Best ○: Suitable

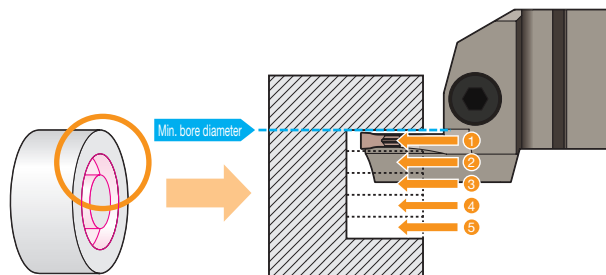
Key Points for Facing

Holder Selection



- Select a holder with which the outer diameter of the first groove to be machined is between the **maximum** and **minimum** grooving diameters of the holder.
- If the machining start point is within the effective work diameter range, the work diameter will not be limited for subsequent passes.

Precautions for Groove Expansion Recommended Chipbreakers **MG ML GG GL GF GA**



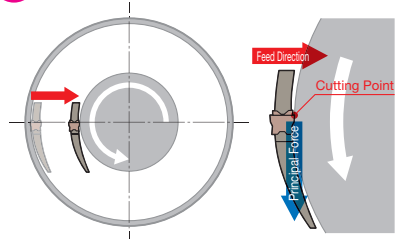
- If the first groove is within the effective work diameter range during groove expansion via plunging, the work diameter will not be limited for subsequent passes.

Precautions for Traverse Cutting

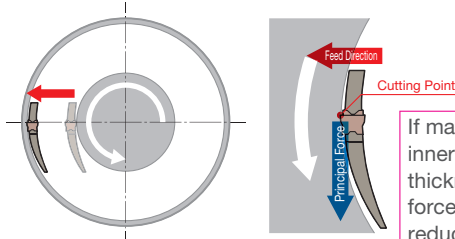
Recommended Chipbreakers **MG ML RN**

Considering the rigidity of the holder, we recommend machining from the outside to the inside.

○ External → Internal



✗ Internal → External



If machining is performed from the inner to the outer diameter, the wall thickness remaining on the principal force side will become thinner, reducing the rigidity of the holder.

- If the machining start point for traverse face cutting operation is within the effective work diameter range, the work diameter will not be limited for subsequent passes.
- Select the lower limit of the recommended cutting conditions for the chipbreaker and **lengthen the chips for evacuation**. (In face grooving, **broken chips easily get stuck in grooves**, which causes problems.)
- When breaking chips, step feed is required.



Key Points in Internal Diameter Machining

Precautions for Internal Diameter Machining

Recommended Chipbreakers **ML GL GF**

If the prepared hole diameter is small, use an **ML** type or **GL** type low-feed chipbreaker, both of which reduce chip curl diameter, to ensure adequate chip evacuation.

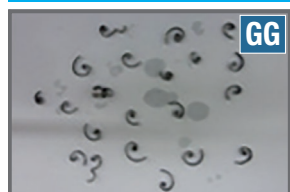


Work Material: SCM415 Prepared Hole Diameter: $\phi 25\text{mm}$ Holder: GNDI R2532-T306 Insert: GCM N300○-○○
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.1\text{mm/rev}$, $a_p = 3.0\text{mm}$ Wet

Internal Diameter Machining



External Machining



Chip shapes differ between internal and external machining even under the same cutting conditions.

Work Material: SCM415
Holder: GNDL R2525M-320, Insert: GCM N3002-GG
Cutting Conditions: $v_c = 100\text{m/min}$, $f = 0.10\text{mm/rev}$, $a_p = 5.0\text{mm}$ Wet



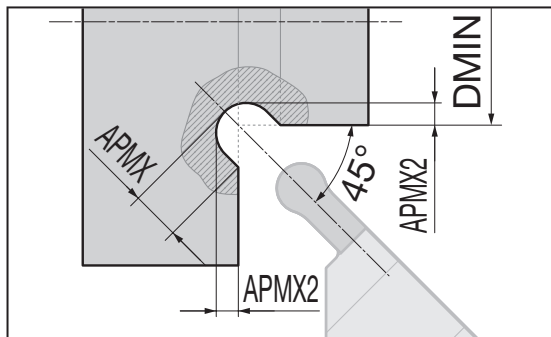
Key Points for Necking

Precautions for Necking

Recommended Chipbreaker

RN

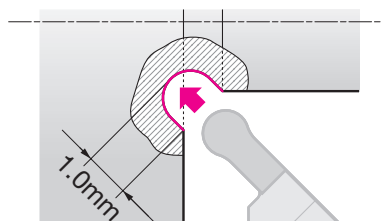
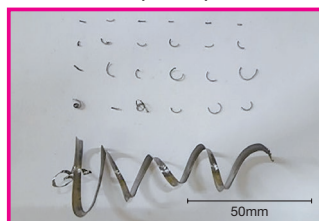
Distance from Work Material to Necking Depth



Width of Cut CW (mm)	Necking Depth APMX (mm)	Distance from Work Material to Necking Depth APMX2 (mm)
2.0	1.5	0.64
3.0	2.0	0.79
4.0	3.0	1.29
5.0	3.5	1.44
6.0	4.0	1.59

- For necking, these conditions are recommended for each width of cut when grooving with RN type chipbreakers.
- To prevent interference with the work material, the work diameter for each GNDN type holder should be set to the minimum machining diameter (DMIN) or less.

Chip Shape

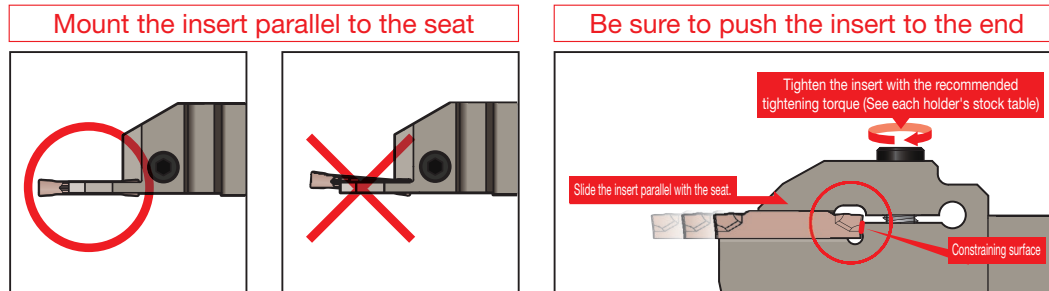


Work Material : SCM435 Groove Width: 3.0mm
 Holder : GNDN R2020K-325-020 Insert: GCMN3015-RN
 Cutting Conditions: $v_c=100\text{m/min}$, $f=0.1\text{mm/rev}$
 Undercut Depth = 1.0mm Wet

Precautions for SEC-Grooving Tool Holders GND Type

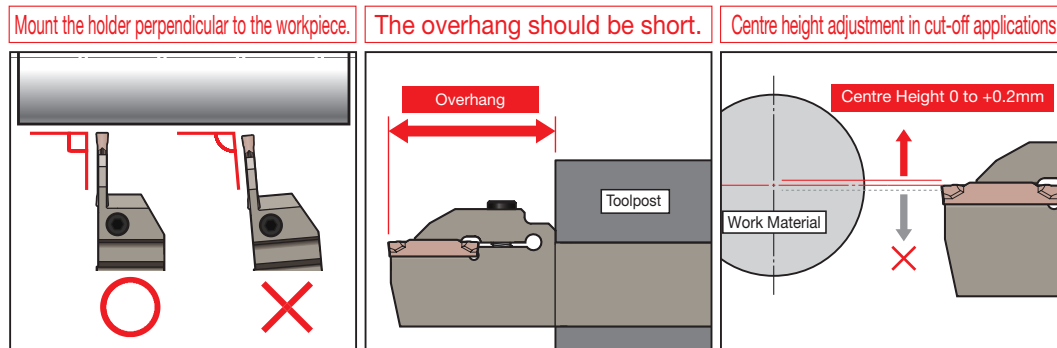
■ Insert Mounting Precautions

- ① Remove any dust and oil from the insert seat before attaching the insert.
- ② If there are scratches or burrs on the insert seat, scrape them away.
- ③ Mount the insert by sliding it parallel to the seat.
- ④ Clamp the insert with the opposite side (holder side) of the cutting edge secured on the constraining surface.
- ⑤ **Tighten the insert with the recommended tightening torque.** If the insert is tightened with excessive torque, it may be damaged, leading to injury.



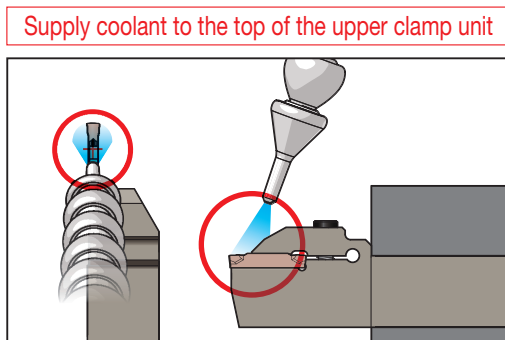
■ Precautions when Mounting Holders

- ① Remove any dust and oil from the toolpost before setting the holder.
- ② If there are scratches or burrs on the toolpost, scrape them away.
- ③ Place the holder so that the insert is perpendicular to the workpiece. Failure to do so may bend the machined surface or cause chattering.
- ④ The overhang of the holder should be as short as possible.
- ⑤ When grooving or traverse cutting, adjust the centre height of the cutting edge to as close to $\pm 0\text{mm}$ as possible. (Within $\pm 0.1\text{mm}$ is recommended.) Incorrect centre height adjustment may cause chattering. In cut-off applications, adjust the center height of the cutting edge to a value from 0 to $+0.2\text{mm}$. A lower centre height will result in a larger pip at the center.

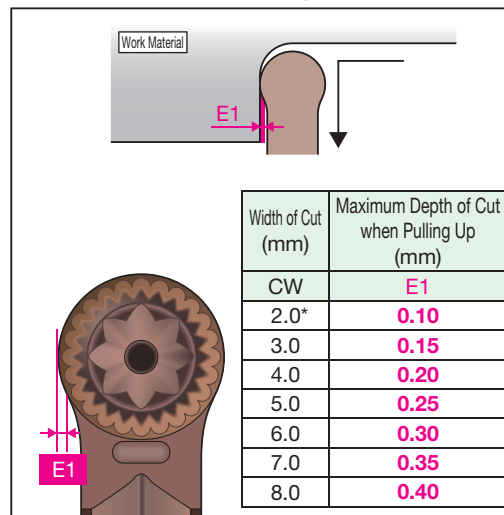


■ Precautions when Mounting the Oil Supply Nozzle

- ① Set the oil supply nozzle so that coolant can be supplied from the top of the upper clamp unit.

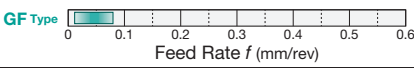
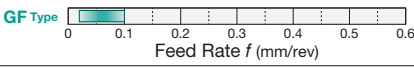
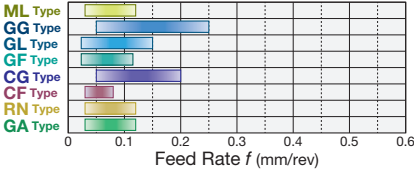
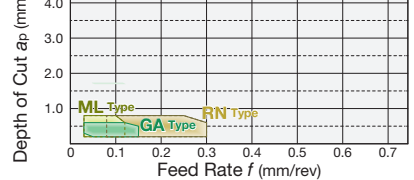
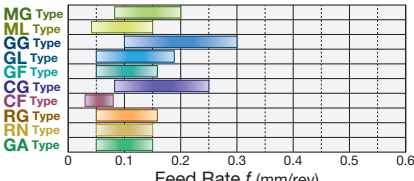
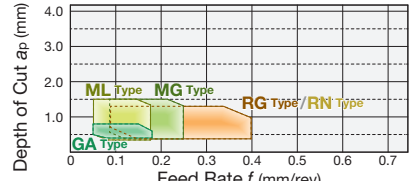
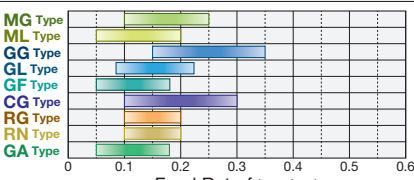
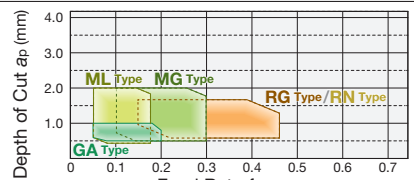
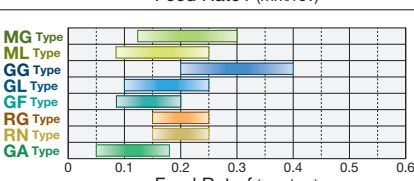
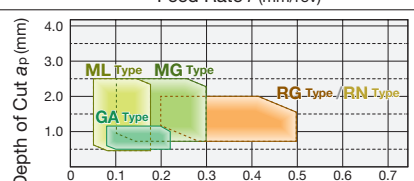
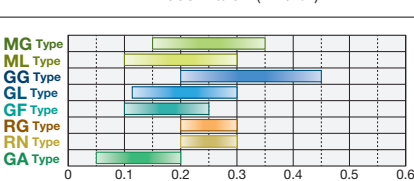
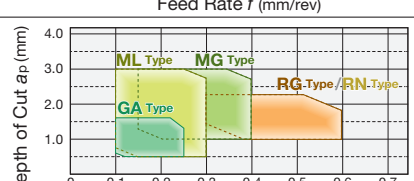
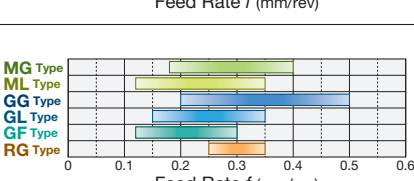
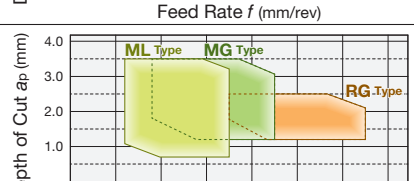
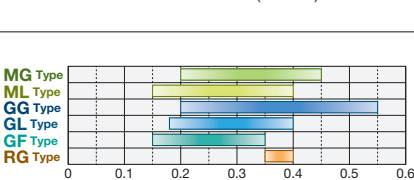
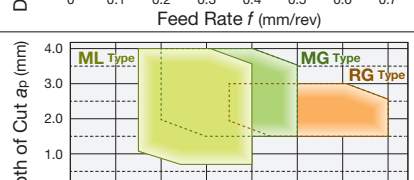


■ Depth of Cut when Pulling Up with RG/RN Type Chipbreakers



*: CW = 2.0 is RN type chipbreakers only

GND Type Recommended Cutting Conditions

Width of Cut (mm)	Recommended Cutting Condition		Nose Radius (mm)	Insert Cat. No.
	Grooving / Cut-Off (Necking)	Traverse Cutting		
1.25	Chipbreaker GF Type 	—	0.05	GCM N125005-GF
1.5	Chipbreaker GF Type 	—	0.05	GCM N150005-GF
2.0	Chipbreaker ML Type GG Type GL Type GF Type CG Type CF Type RN Type GA Type 		0.03	GCM R/L20003-CF-10 GCM R/L20003-CF-15
			0.2	GCM N2002-ML GCM N2002-GG GCM N2002-GL GCM N2002-GF GCM R/L2002-CG-05 GCG N2002-GA
			1.0	GCM N2010-RN
			0.03	GCM R/L30003-CF-10 GCM R/L30003-CF-15
3.0	Chipbreaker MG Type ML Type GG Type GL Type GF Type CG Type CF Type RG Type RN Type GA Type 		0.2	GCM N3002-ML GCM N3002-GG GCM N3002-GL GCM N3002-GF GCM R/L3002-CG-05 GCG N3002-GA
			0.4	GCM N3004-MG GCM N3004-GG GCM N3015-RG GCM N3015-RN
			1.5	
			0.03	GCM R/L30003-CF-10 GCM R/L30003-CF-15
4.0	Chipbreaker MG Type ML Type GG Type GL Type GF Type CG Type CF Type RG Type RN Type GA Type 		0.2	GCM N4002-GG GCM N4002-GL GCM N4002-GF GCM R/L4002-CG-05
			0.4	GCM N4004-ML GCM N4004-GG GCG N4004-GA
			0.8	GCM N4008-MG
			2.0	GCM N4020-RG GCM N4020-RN
5.0	Chipbreaker MG Type ML Type GG Type GL Type GF Type CG Type CF Type RG Type RN Type GA Type 		0.2	GCM N5002-GG GCM N5002-GL GCM N5002-GF
			0.4	GCM N5004-ML GCM N5004-GG GCG N5004-GA
			0.8	GCM N5008-MG
			2.5	GCM N5025-RG GCM N5025-RN
6.0	Chipbreaker MG Type ML Type GG Type GL Type GF Type CG Type CF Type RG Type RN Type GA Type 		0.2	GCM N6002-GG GCM N6002-GL GCM N6002-GF
			0.4	GCM N6004-ML GCM N6004-GG GCG N6004-GA
			0.8	GCM N6008-MG
			3.0	GCM N6030-RG GCM N6030-RN
7.0	Chipbreaker MG Type ML Type GG Type GL Type GF Type CG Type CF Type RG Type RN Type GA Type 		0.2	GCM N7002-GF
			0.4	GCM N7004-ML GCM N7004-GG GCM N7004-GL GCM N7004-GF
			0.8	GCM N7008-MG
			3.5	GCM N7035-RG
8.0	Chipbreaker MG Type ML Type GG Type GL Type GF Type CG Type CF Type RG Type RN Type GA Type 		0.2	GCM N8002-GF
			0.4	GCM N8004-ML GCM N8004-GG GCM N8004-GL GCM N8004-GF
			0.8	GCM N8008-MG
			4.0	GCM N8040-RG

For face grooving, use cutting conditions closer to the lower limit of the recommended cutting conditions to ensure that chips are long.

In cut-off applications, reduce the feed rate to around 30% to 50% near the centre of the workpiece.

As there is less space for chip evacuation when machining internal diameters (particularly small bore diameters), ML/GL/GF Type chipbreakers are recommended.

Modifications to inserts and holders are required to perform machining such as radius grooving when using the RG type chipbreaker with the GND type holder for facing.

Recommended Cutting Conditions for GNDIS Type  F49

Recommended Cutting Conditions

Work Material	P Carbon Steel / Alloy Steel				M Stainless Steel				K Cast Iron				S Exotic Alloy		N Non-ferrous Metal
Insert Grade	AC830P	AC520U	AC530U AC1030U	T2500A	AC830P	AC520U	AC530U AC1030U	AC425K	AC520U	AC530U AC1030U	AC520U	AC530U AC1030U	AC520U	AC530U AC1030U	H10
Cutting Speed v_c (m/min)	80 to 200	80 to 200	50 to 200	50 to 200	70 to 150	70 to 150	50 to 150	80 to 200	60 to 200	50 to 200	20 to 80	20 to 80	20 to 80	20 to 60	150 to 300

GNDM / GNDL Type



Zero Offset

* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function Clamp-on for Small Lathes (Grooving, Traverse Cutting and Profiling)

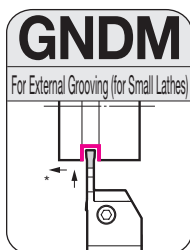


Fig 1

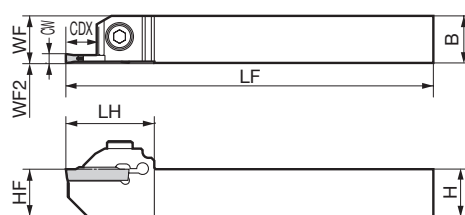


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Off Set WF2	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L														
GNDM R/L1616JX-1.2508	●	●	16	16	120	(16)	16	26	0	1.25	8.0	GCM N125005-GF	1	BX0515	4.0	LH040
GNDM R/L1616JX-1.510	●	●	16	16	120	(16)	16	26	0	1.50	10.0	GCM N150005-GF	1			
GNDM R/L1616JX-212	●	●	16	16	120	(16)	16	30	0	2.00	12.0	GC □ □20○□-□ □	1			
GNDM R/L1616JX-312	●	●	16	16	120	(16)	16	30	0	3.00	12.0	GC □ □30○□-□ □	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F23 for applicable inserts.



Zero Offset

External Grooving & Cut-Off Clamp-on for Small Lathes

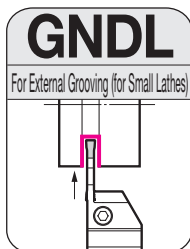


Fig 1

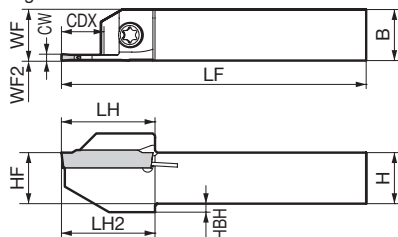


Fig 2

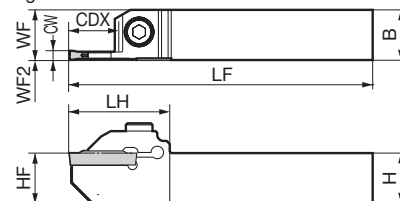


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Step HBH	Head LH	Head LH2	Off Set WF2	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Flat Screw/ Cap Screw		Wrench
	R	L																
GNDL R/L1010JX-1.2510	●	●	10	10	120	(10)	10	2.0	18	18.3	0	1.25	10.0	GCM N125005-GF	1	BFTX0412N	3.0	LT15-10
GNDL R/L1010JX-1.510	●	●	10	10	120	(10)	10	2.0	18	18.3	0	1.50	10.0	GCM N150005-GF	1			
GNDL R/L1010JX-210	●	●	10	10	120	(10)	10	2.0	22	22.3	0	2.00	10.0	GC □ □20○□-□ □	1			
GNDL R/L1010JX-310	●	●	10	10	120	(10)	10	2.0	22	22.3	0	3.00	10.0	GC □ □30○□-□ □	1			
GNDL R/L1212JX-1.2512	●	●	12	12	120	(12)	12	2.0	19	19.3	0	1.25	12.0	GCM N125005-GF	1	BFTX0412N	3.0	LT15-10
GNDL R/L1212JX-1.512	●	●	12	12	120	(12)	12	2.0	19	19.3	0	1.50	12.0	GCM N150005-GF	1			
GNDL R/L1212JX-212.5	●	●	12	12	120	(12)	12	2.0	22	22.3	0	2.00	12.5	GC □ □20○□-□ □	1			
GNDL R/L1212JX-312.5	●	●	12	12	120	(12)	12	2.0	22	22.3	0	3.00	12.5	GC □ □30○□-□ □	1			
GNDL R/L1616JX-1.2512.5	●	●	16	16	120	(16)	16	—	28	—	0	1.25	12.5	GCM N125005-GF	2	BX0515	4.0	LH040
GNDL R/L1616JX-1.512.5	●	●	16	16	120	(16)	16	—	28	—	0	1.50	12.5	GCM N150005-GF	2			
GNDL R/L1616JX-216	●	●	16	16	120	(16)	16	—	32	—	0	2.00	16.0	GC □ □20○□-□ □	2			
GNDL R/L1616JX-316	●	●	16	16	120	(16)	16	—	32	—	0	3.00	16.0	GC □ □30○□-□ □	2			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F23 for applicable inserts.

GNDM / GNDL Type

Expansion

GNDM Type (For Small Lathes) / GNDL Type (For Small Lathes) Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

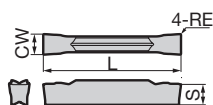


Fig 2

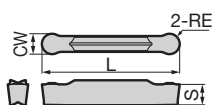


Fig 3

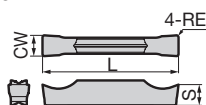
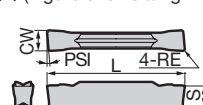


Fig. 4 (Figure shows a right-handed (R) tool.)



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length		Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance		L	S			
MG General-purpose	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1	
ML Low Feed	GCM N2002-ML	—	—	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1	
	N3002-ML	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1	

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length		Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance		L	S			
RG General-purpose	GCM N3015-RG	●	●	●	●	●	3.0	±0.03	1.5	21.1	3.8	5	2	

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length		Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance		L	S			
GG General-purpose	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1	
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1	
GL Low Feed	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1	
	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1	
GF Low Resistance	GCM N125005-GF	—	—	●	—	1.25	±0.03	0.05	17.4	3.2	5	1	
	N150005-GF	—	—	●	—	1.5	±0.03	0.05	17.4	3.7	5	1	
	GCM N2002-GF	—	—	●	●	2.0	±0.03	0.2	21.1	3.6	5	1	
	N3002-GF	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1	

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length		Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance		L	S			
RN General-purpose	GCM N2010-RN	—	—	●	●	2.0	±0.03	1.0	21.7	3.6	5	2	
	N3015-RN	●	●	●	●	3.0	±0.03	1.5	22.4	3.8	5	2	

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10	Width of Cut CW		Nose Radius RE	Overall Length		Thickness S	Pcs/Pack	Fig
			Width of Cut	Tolerance		L	S			
GA General-purpose	GCM N2002-GA	●	2.0	±0.025	0.2	21.1	3.6	5	3	
	N3002-GA	●	3.0	±0.025	0.2	21.1	3.8	5	3	

Cut-Off (Handed Edge)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	AC1030U	Front Cutting Edge Angle PSI	Width of Cut CW		Nose Radius RE	Overall Length		Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance		L	S			
CG General-purpose	GCM R2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4	
	L2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4	
	R3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4	
	L3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4	
CF Low Resistance	GCM R20003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4	
	L20003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4	
	R30003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4	
	L30003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4	
	GCM R20003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4	
	L20003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4	
	R30003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4	
	L30003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4	

GCMR: Right Handed, GCML: Left Handed

Combine the insert with a holder such that the width of cut (CW) matches. Not usable with GNDIS type holders. Recommended Cutting Conditions **F21**

● mark: Standard stocked item (new product/expanded item)

SEC-Grooving Tools

GNDS Type



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function Clamp-on for Shallow Grooves (Grooving, Traverse Cutting and Profiling)

Grooving Tools

F

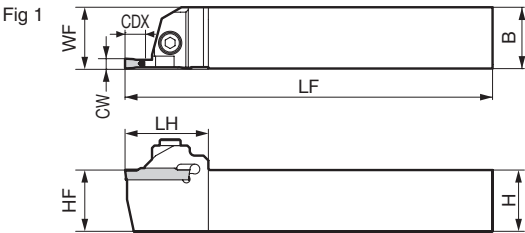
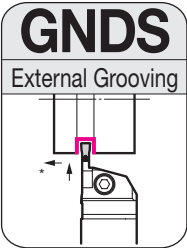


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw			Wrench
	R	L														
GNDS R/L2020K-206	●	●	20	20	125	20	20	30	2.0	6	GC□□20○○-□□	1	BX0520	5.0	LH040	
GNDS R/L2020K-306	●	●	20	20	125	20	20	30	3.0	6	GC□□30○○-□□	1				
GNDS R/L2020K-410	●	●	20	20	125	20	20	34	4.0	10	GC□□40○○-□□	1				
GNDS R/L2020K-510	●	●	20	20	125	20	20	34	5.0	10	GC□ N50○○-□□	1				
GNDS R/L2020K-610	●	●	20	20	125	20	20	34	6.0	10	GC□ N60○○-□□	1				
GNDS R/L2525M-206	●	●	25	25	150	25	25	30	2.0	6	GC□□20○○-□□	1	BX0520	5.0	LH040	
GNDS R/L2525M-306	●	●	25	25	150	25	25	30	3.0	6	GC□□30○○-□□	1				
GNDS R/L2525M-410	●	●	25	25	150	25	25	34	4.0	10	GC□□40○○-□□	1				
GNDS R/L2525M-510	●	●	25	25	150	25	25	34	5.0	10	GC□ N50○○-□□	1				
GNDS R/L2525M-610	●	●	25	25	150	25	25	34	6.0	10	GC□ N60○○-□□	1				

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F25 for applicable inserts.

GNDS Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

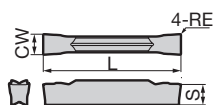


Fig 2

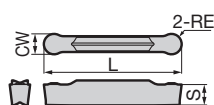


Fig 3

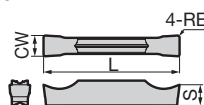
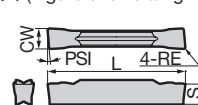


Fig. 4 (Figure shows a right-handed (R) tool.)



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
MG General-purpose	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	5	1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	5	1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	5	1
ML General-purpose up to 4.0mm Low Feed	GCM N2002-ML	—	—	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-ML	—	—	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	GCM N4004-ML	—	—	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-ML	—	—	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-ML	—	—	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
RG General-purpose	GCM N3015-RG	●	●	●	●	—	3.0	±0.03	1.5	21.1	3.8	5	2
	N4020-RG	●	●	●	●	—	4.0	±0.03	2.0	26.4	4.0	5	2
	N5025-RG	●	●	●	●	—	5.0	±0.03	2.5	27.2	4.1	5	2
	N6030-RG	●	●	●	●	—	6.0	±0.03	3.0	27.5	4.5	5	2

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG General-purpose	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
GL General-purpose Low Feed	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
GF Low Resistance	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N2002-GF	—	—	●	●	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-GF	—	—	●	●	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GF	—	—	●	●	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GF	—	—	●	●	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GF	—	—	●	●	6.0	±0.03	0.2	26.4	4.5	5	1

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN General-purpose	GCM N2010-RN	—	—	●	●	2.0	±0.03	1.0	21.7	3.6	5	2
	N3015-RN	—	—	●	●	3.0	±0.03	1.5	22.4	3.8	5	2
	N4020-RN	—	—	●	●	4.0	±0.03	2.0	28.0	4.0	5	2
	N5025-RN	—	—	●	●	5.0	±0.03	2.5	28.1	4.1	5	2
	N6030-RN	—	—	●	●	6.0	±0.03	3.0	28.1	4.5	5	2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10				Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GA General-purpose	GCG N2002-GA	●	—	—	—	2.0	±0.025	0.2	21.1	3.6	5	3
	N3002-GA	●	—	—	—	3.0	±0.025	0.2	21.1	3.8	5	3
	GCG N4004-GA	●	—	—	—	4.0	±0.025	0.4	26.4	4.0	5	3
	N5004-GA	●	—	—	—	5.0	±0.025	0.4	26.4	4.1	5	3
	N6004-GA	●	—	—	—	6.0	±0.025	0.4	26.4	4.5	5	3

Cut-Off (Handed Edge)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	AC1030U	Front Cutting Edge Angle PSI	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
CG General-purpose	GCM R2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4
	L2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4
	R3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4
	L3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4
	GCM R4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	5	4
	L4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	5	4
	GCM R2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4
	L2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4
CF Low Resistance	R3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4
	L3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4
	GCM R2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4
	L2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4
	R3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4
	L3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4
	GCM R2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4
	L2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4

GCMR: Right Handed, GCMR: Left Handed

GNDM Type / GNDMS Type



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function Clamp-on
(Grooving, Traverse Cutting and Profiling)

Grooving Tools

F

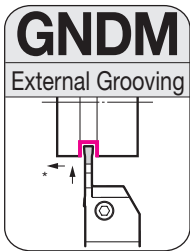


Fig 1

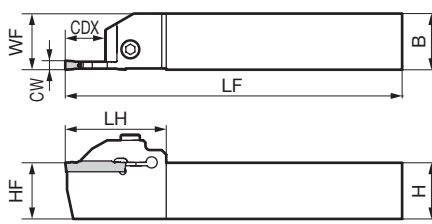


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520 BX0620	N-m	
GNDM R/L2020K-1.2510	●	●	20	20	125	20	20	34.0	1.25	10	GCM N125005-GF	1	BX0520	5.0	LH040
GNDM R/L2020K-1.510	●	●	20	20	125	20	20	34.0	1.50	10	GCM N150005-GF	1			
GNDM R/L2020K-210	●	●	20	20	125	20	20	33.6	2.00	10	GC □ 20 ○ ○ - □ □	1			
GNDM R/L2020K-312	●	●	20	20	125	20	20	36.6	3.00	12	GC □ 30 ○ ○ - □ □	1			
GNDM R/L2020K-418	●	●	20	20	125	20	20	45.0	4.00	18	GC □ 40 ○ ○ - □ □	1			
GNDM R/L2020K-518	●	●	20	20	125	20	20	45.0	5.00	18	GC □ N50 ○ ○ - □ □	1			
GNDM R/L2020K-618	●	●	20	20	125	20	20	45.0	6.00	18	GC □ N60 ○ ○ - □ □	1	BX0520	5.0	LH040
GNDM R/L2525M-1.2510	●	●	25	25	150	25	25	36.0	1.25	10	GCM N125005-GF	1			
GNDM R/L2525M-1.510	●	●	25	25	150	25	25	36.0	1.50	10	GCM N150005-GF	1			
GNDM R/L2525M-210	●	●	25	25	150	25	25	33.6	2.00	10	GC □ 20 ○ ○ - □ □	1			
GNDM R/L2525M-312	●	●	25	25	150	25	25	36.6	3.00	12	GC □ 30 ○ ○ - □ □	1			
GNDM R/L2525M-418	●	●	25	25	150	25	25	45.0	4.00	18	GC □ 40 ○ ○ - □ □	1			
GNDM R/L2525M-518	●	●	25	25	150	25	25	45.0	5.00	18	GC □ N50 ○ ○ - □ □	1	BX0620	6.0	LH050
GNDM R/L2525M-618	●	●	25	25	150	25	25	45.0	6.00	18	GC □ N60 ○ ○ - □ □	1			
GNDM R/L3225P-312	●	●	32	25	170	25	32	36.6	3.00	12	GC □ 30 ○ ○ - □ □	1	BX0520	5.0	LH040
GNDM R/L3225P-418	●	●	32	25	170	25	32	45.0	4.00	18	GC □ 40 ○ ○ - □ □	1			
GNDM R/L3225P-518	●	●	32	25	170	25	32	45.0	5.00	18	GC □ N50 ○ ○ - □ □	1			
GNDM R/L3225P-618	●	●	32	25	170	25	32	45.0	6.00	18	GC □ N60 ○ ○ - □ □	1	BX0620	6.0	LH050
GNDM R/L3225P-718	●	●	32	25	170	25	32	50.0	7.00	18	GCM N70 ○ ○ - □ □	1			
GNDM R/L3225P-818	●	●	32	25	170	25	32	50.0	8.00	18	GCM N80 ○ ○ - □ □	1			
GNDM R/L3232P-312	●	●	32	32	170	32	32	36.6	3.00	12	GC □ 30 ○ ○ - □ □	1	BX0620	6.0	LH050
GNDM R/L3232P-418	●	●	32	32	170	32	32	45.0	4.00	18	GC □ 40 ○ ○ - □ □	1			
GNDM R/L3232P-518	●	●	32	32	170	32	32	45.0	5.00	18	GC □ N50 ○ ○ - □ □	1			
GNDM R/L3232P-618	●	●	32	32	170	32	32	45.0	6.00	18	GC □ N60 ○ ○ - □ □	1			
GNDM R/L3232P-718	●	●	32	32	170	32	32	50.0	7.00	18	GCM N70 ○ ○ - □ □	1			
GNDM R/L3232P-818	●	●	32	32	170	32	32	50.0	8.00	18	GCM N80 ○ ○ - □ □	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F27 for applicable inserts.



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External L-Shaped (Side Cut) Multi-Function
Clamp-on (Grooving, Traverse Cutting and Profiling)

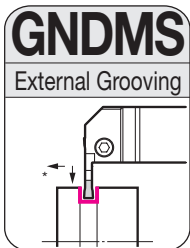


Fig 1

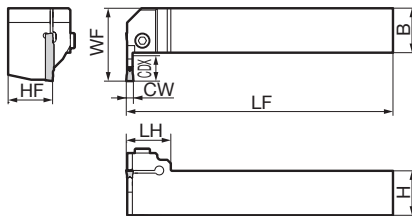


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520 BX0620	N-m	
GNDMS R/L2020K-310	●	●	20	20	125	32	20	25.0	3.0	10	GC □ 30 ○ ○ - □ □	1	BX0520	5.0	LH040
GNDMS R/L2020K-412	●	●	20	20	125	34	20	25.0	4.0	12	GC □ 40 ○ ○ - □ □	1			
GNDMS R/L2020K-512	●	●	20	20	125	34	20	25.0	5.0	12	GC □ N50 ○ ○ - □ □	1			
GNDMS R/L2525M-312	●	●	25	25	150	39	25	25.0	3.0	12	GC □ 30 ○ ○ - □ □	1	BX0520	5.0	LH040
GNDMS R/L2525M-414	●	●	25	25	150	41	25	25.0	4.0	14	GC □ 40 ○ ○ - □ □	1			
GNDMS R/L2525M-514	●	●	25	25	150	41	25	25.0	5.0	14	GC □ N50 ○ ○ - □ □	1			
GNDMS R/L2525M-614	●	●	25	25	150	41	25	25.0	6.0	14	GC □ N60 ○ ○ - □ □	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F27 for applicable inserts.

GNDM Type / GNDMS Type

Expansion

GNDM Type / GNDMS Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

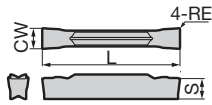


Fig 2

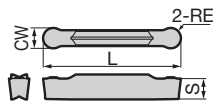


Fig 3

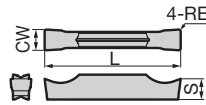
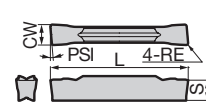


Fig. 4 (Figure shows a right-handed (R) tool.)



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
MG 	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	1	1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	1	1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	1	1
	GCM N7008-MG	●	●	●	●	—	7.0	±0.04	0.8	28.75	5.5	1	1
ML  General-purpose up to 4.0mm up to 5.0mm Low Feed	N8008-MG	●	●	●	●	—	8.0	±0.04	0.8	28.75	6.0	1	1
	GCM N2002-ML	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-ML	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	GCM N4004-ML	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1	1
	N5004-ML	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1	1
	N6004-ML	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1	1
	GCM N7004-ML	●	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	1	1
	N8004-ML	●	●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG 	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	1	1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1	1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1	1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1	1
	GCM N7004-GG	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	1	1
GL 	N8004-GG	●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1
	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1	1
	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	GCM N7004-GL	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	1	1
	N8004-GL	●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1
	GCM N125005-GF	—	—	—	—	1.25	±0.03	0.05	17.4	3.2	1	1
	N150005-GF	—	—	—	—	1.5	±0.03	0.05	17.4	3.7	1	1
GF 	GCM N2002-GF	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GF	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GF	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	1	1
	N5002-GF	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GF	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	N7002-GF	●	●	●	—	7.0	±0.04	0.2	28.75	5.5	1	1
	N8002-GF	●	●	●	—	8.0	±0.04	0.2	28.75	6.0	1	1
	GCM N7004-GF	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	1	1
	N8004-GF	●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1
		●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
RG 	GCM N3015-RG	●	●	●	●	—	3.0	±0.03	1.5	21.1	3.8	2	2
	N4020-RG	●	●	●	●	—	4.0	±0.03	2.0	26.4	4.0	2	2
	N5025-RG	●	●	●	●	—	5.0	±0.03	2.5	27.2	4.1	2	2
	N6030-RG	●	●	●	●	—	6.0	±0.03	3.0	27.5	4.5	2	2
	GCM N7035-RG	●	●	●	●	—	7.0	±0.04	3.5	29.05	5.5	2	2
General-purpose	N8040-RG	●	●	●	●	—	8.0	±0.04	4.0	29.25	6.0	2	2

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN 	GCM N2010-RN	—	—	—	—	2.0	±0.03	1.0	21.7	3.6	2	2
	N3015-RN	●	●	●	●	3.0	±0.03	1.5	22.4	3.8	2	2
	N4020-RN	●	●	●	●	4.0	±0.03	2.0	28.0	4.0	5	2
	N5025-RN	●	●	●	●	5.0	±0.03	2.5	28.1	4.1	2	2
	N6030-RN	●	●	●	●	6.0	±0.03	3.0	28.1	4.5	2	2
General-purpose												

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10				Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GA 	GCG N2002-GA	●				2.0	±0.025	0.2	21.1	3.6	3	3
	N3002-GA	●				3.0	±0.025	0.2	21.1	3.8	3	3
	GCG N4004-GA	●				4.0	±0.025	0.4	26.4	4.0	5	3
	N5004-GA	●				5.0	±0.025	0.4	26.4	4.1	3	3
	N6004-GA	●				6.0	±0.025	0.4	26.4	4.5	3	3
General-purpose												

Cut-Off (Handed Edge)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	AC1030U	From Cutting Edge Angle PSI	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
CG 	GCM R2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	4	4
	L2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	4	4
	R3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	4	4
	L3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	4	4
	GCM R4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	4	4
CF 	L4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	4	4
	GCM R20003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	4	4
	L20003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	4	4
	R30003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	4	4
	L30003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	4	4
General-purpose	GCM R20003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	4	4
	L20003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	4	4
	R30003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	4	4
	L30003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	4	4
		—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	4	4

GCMR: Right Handed, GCML: Left Handed

Combine the insert with a holder such that the width of cut (CW) matches. Not usable with GNDIS type holders. Recommended Cutting Conditions **F21**

● mark: Standard stocked item (new product/expanded item)

F27

GNDM-J Type

New

External

Internal Coolant

* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

External Multi-Function
Internal Coolant Supply Clamp-on
(Grooving, Traverse Cutting and Profiling)

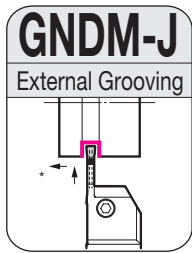


Fig 1

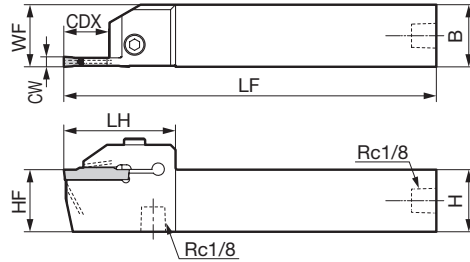


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw			Plug	Wrench
	R	L												Nm			
GNDM R/L2020K-210J	●	●	20	20	125	20	20	33.6	2.00	10	GC □ □ 20 ○ ○ - □ □	1	BX0520	6.0	XP02	LH040	
R/L2020K-312J	●	●	20	20	125	20	20	36.6	3.00	12	GC □ □ 30 ○ ○ - □ □	1					
R/L2020K-418J	●	●	20	20	125	20	20	45	4.00	18	GC □ □ 40 ○ ○ - □ □	1					
R/L2020K-518J	●	●	20	20	125	20	20	45	5.00	18	GC □ N50 ○ ○ - □ □	1					
R/L2020K-618J	●	●	20	20	125	20	20	45	6.00	18	GC □ N60 ○ ○ - □ □	1					
GNDM R/L2525K-210J	●	●	25	25	125	25	25	33.6	2.00	10	GC □ □ 20 ○ ○ - □ □	1	BX0520	6.0	XP02	LH040	
R/L2525K-312J	●	●	25	25	125	25	25	36.6	3.00	12	GC □ □ 30 ○ ○ - □ □	1					
R/L2525K-418J	●	●	25	25	125	25	25	45	4.00	18	GC □ □ 40 ○ ○ - □ □	1					
R/L2525K-518J	●	●	25	25	125	25	25	45	5.00	18	GC □ N50 ○ ○ - □ □	1					
R/L2525K-618J	●	●	25	25	125	25	25	45	6.00	18	GC □ N60 ○ ○ - □ □	1					

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F29 for applicable inserts.

Fig 1

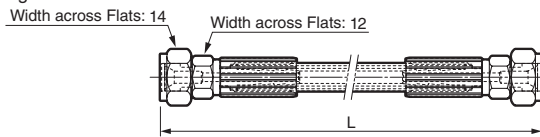


Fig 1

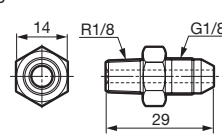
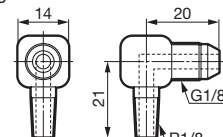


Fig 2



Parts (Hose)

Dimensions (mm)

Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
J-HOSE-G1/8-G1/8-200	●	200	G1/8	G1/8	1
J-HOSE-G1/8-G1/8-300	●	300	G1/8	G1/8	1

Hoses are sold separately.

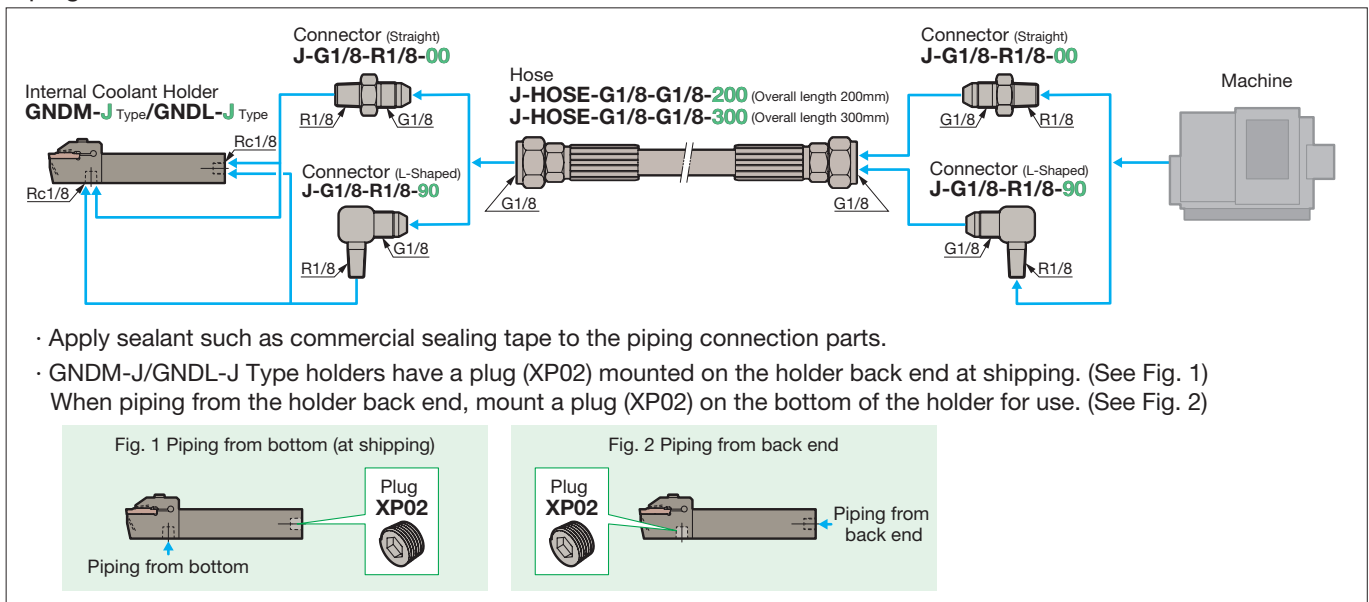
Parts (Connector)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	Screw Standard	Fig
J-G1/8-R1/8-00	●	G1/8	R1/8	1
J-G1/8-R1/8-90	●	G1/8	R1/8	2

Connectors are sold separately.

Piping Method for Hoses and Connectors





GNDM-J Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

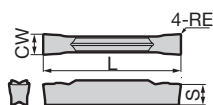


Fig 2

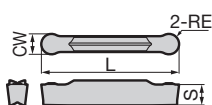


Fig 3

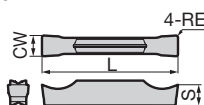
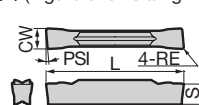


Fig. 4 (Figure shows a right-handed (R) tool.)



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
MG  General-purpose	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	5	1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	5	1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	5	1
ML  General-purpose CW up to 4.0mm Low Feed	GCM N2002-ML	—	—	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-ML	—	—	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	GCM N4004-ML	—	—	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-ML	—	—	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-ML	—	—	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG  General-purpose	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
GL  General-purpose Low Feed	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
GF  Low Resistance	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N2002-GF	—	—	●	●	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-GF	—	—	●	●	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GF	—	—	●	●	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GF	—	—	●	●	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GF	—	—	●	●	6.0	±0.03	0.2	26.4	4.5	5	1

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
RG  General-purpose	GCM N3015-RG	●	●	●	●	—	3.0	±0.03	1.5	21.1	3.8	5	2
	N4020-RG	●	●	●	●	—	4.0	±0.03	2.0	26.4	4.0	5	2
	N5025-RG	●	●	●	●	—	5.0	±0.03	2.5	27.2	4.1	5	2
	N6030-RG	●	●	●	●	—	6.0	±0.03	3.0	27.5	4.5	5	2

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN  General-purpose	GCM N2010-RN	—	—	●	●	2.0	±0.03	1.0	21.7	3.6	5	2
	N3015-RN	—	—	●	●	3.0	±0.03	1.5	22.4	3.8	5	2
	N4020-RN	—	—	●	●	4.0	±0.03	2.0	28.0	4.0	5	2
	N5025-RN	—	—	●	●	5.0	±0.03	2.5	28.1	4.1	5	2
	N6030-RN	—	—	●	●	6.0	±0.03	3.0	28.1	4.5	5	2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10				Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GA  General-purpose	GCG N2002-GA	●				2.0	±0.025	0.2	21.1	3.6	5	3
	N3002-GA	●				3.0	±0.025	0.2	21.1	3.8	5	3
	GCG N4004-GA	●				4.0	±0.025	0.4	26.4	4.0	5	3
	N5004-GA	●				5.0	±0.025	0.4	26.4	4.1	5	3
	N6004-GA	●				6.0	±0.025	0.4	26.4	4.5	5	3

Cut-Off (Handed Edge)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	AC1030U	Front Cutting Edge Angle PSI	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
CG  General-purpose	GCM R2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4
	L2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4
	R3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4
	L3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4
	GCM R4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	5	4
	L4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	5	4
CF  Low Resistance	GCM R2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4
	L2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4
	R3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4
	L3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4
	GCM R2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4
	L2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4
	R3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4
	L3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4

GCMR: Right Handed, GCM: Left Handed

Combine the insert with a holder such that the width of cut (CW) matches. Not usable with GNDIS type holders. Recommended Cutting Conditions F21

● mark: Standard stocked item (new product/expanded item)

GNDL Type / GNDLS Type



Clamp-on
for External Deep Grooving & Cut-Off

Grooving
Tools

F

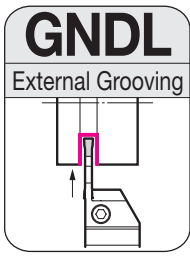


Fig 1

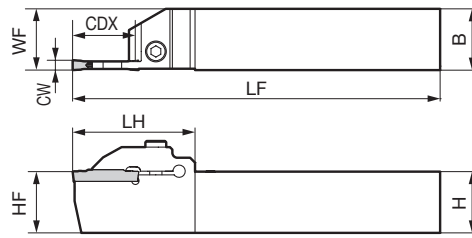


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520	N-m	
GNDL R/L2020K-1.2516	●	●	20	20	125	20	20	38.0	1.25	16	GCM N125005-GF	1	BX0520	5.0	LH040
GNDL R/L2020K-1.516	●	●	20	20	125	20	20	38.0	1.50	16	GCM N150005-GF	1			
GNDL R/L2020K-220	●	●	20	20	125	20	20	44.5	2.00	20(18)	GC □ 20○-□	1			
GNDL R/L2020K-320	●	●	20	20	125	20	20	44.5	3.00	20(18)	GC □ 30○-□	1			
GNDL R/L2020K-425	●	●	20	20	125	20	20	50.0	4.00	25(23)	GC □ 40○-□	1			
GNDL R/L2020K-525	●	●	20	20	125	20	20	50.0	5.00	25(23)	GC □ N50○-□	1			
GNDL R/L2020K-625	●	●	20	20	125	20	20	50.0	6.00	25(23)	GC □ N60○-□	1			
GNDL R/L2525M-1.2516	●	●	25	25	150	25	25	40.0	1.25	16	GCM N125005-GF	1	BX0520	5.0	LH040
GNDL R/L2525M-1.516	●	●	25	25	150	25	25	40.0	1.50	16	GCM N150005-GF	1			
GNDL R/L2525M-220	●	●	25	25	150	25	25	44.5	2.00	20(18)	GC □ 20○-□	1			
GNDL R/L2525M-320	●	●	25	25	150	25	25	44.5	3.00	20(18)	GC □ 30○-□	1			
GNDL R/L2525M-425	●	●	25	25	150	25	25	50.0	4.00	25(23)	GC □ 40○-□	1			
GNDL R/L2525M-525	●	●	25	25	150	25	25	50.0	5.00	25(23)	GC □ N50○-□	1			
GNDL R/L2525M-625	●	●	25	25	150	25	25	50.0	6.00	25(23)	GC □ N60○-□	1			
GNDL R/L3225P-320			32	25	170	25	32	44.5	3.00	20(18)	GC □ 30○-□	1	BX0520	5.0	LH040
GNDL R/L3225P-425			32	25	170	25	32	50.0	4.00	25(23)	GC □ 40○-□	1			
GNDL R/L3225P-525			32	25	170	25	32	50.0	5.00	25(23)	GC □ N50○-□	1			
GNDL R/L3225P-625			32	25	170	25	32	50.0	6.00	25(23)	GC □ N60○-□	1			
GNDL R/L3225P-725			32	25	170	25	32	50.0	7.00	25(23)	GCM N70○-□	1	BX0620	6.0	LH050
GNDL R/L3225P-825			32	25	170	25	32	50.0	8.00	25(23)	GCM N80○-□	1			
GNDL R/L3232P-320	●	●	32	32	170	32	32	44.5	3.00	20(18)	GC □ 30○-□	1	BX0620	6.0	LH050
GNDL R/L3232P-425	●	●	32	32	170	32	32	50.0	4.00	25(23)	GC □ 40○-□	1			
GNDL R/L3232P-525	●	●	32	32	170	32	32	50.0	5.00	25(23)	GC □ N50○-□	1			
GNDL R/L3232P-625	●	●	32	32	170	32	32	50.0	6.00	25(23)	GC □ N60○-□	1			
GNDL R/L3232P-725	●	●	32	32	170	32	32	50.0	7.00	25(23)	GCM N70○-□	1			
GNDL R/L3232P-825	●	●	32	32	170	32	32	50.0	8.00	25(23)	GCM N80○-□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type/RN type chipbreakers). Refer to F31 for applicable inserts.



Clamp-on
for External L-Shaped (Side Cut) Grooving

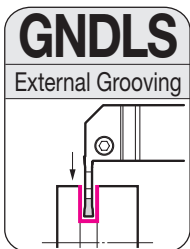


Fig 1

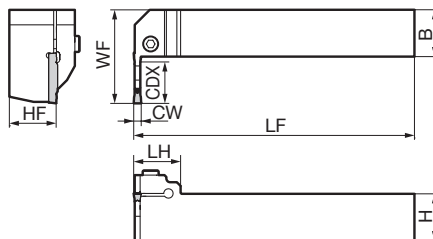


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L											BX0520	N-m	
GNDLS R/L2020K-216	●	●	20	20	125	38	20	25	2.0	16	GC □ 20○-□	1	BX0520	5.0	LH040
GNDLS R/L2020K-316	●	●	20	20	125	38	20	25	3.0	16	GC □ 30○-□	1			
GNDLS R/L2525M-218	●	●	25	25	150	45	25	25	2.0	18	GC □ 20○-□	1	BX0520	5.0	LH040
GNDLS R/L2525M-318	●	●	25	25	150	45	25	25	3.0	18	GC □ 30○-□	1			
GNDLS R/L2525M-423	●	●	25	25	150	50	25	25	4.0	23	GC □ 40○-□	1			
GNDLS R/L2525M-523	●	●	25	25	150	50	25	25	5.0	23	GC □ N50○-□	1			
GNDLS R/L2525M-623	●	●	25	25	150	50	25	25	6.0	23	GC □ N60○-□	1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F31 for applicable inserts.

GNDL Type / GNDLS Type

Expansion

GNDL Type / GNDLS Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

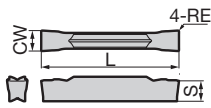


Fig 2

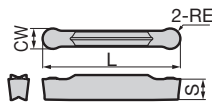


Fig 3

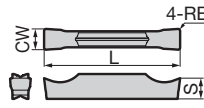
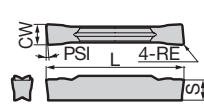


Fig. 4 (Figure shows a right-handed (R) tool.)



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
MG 	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	1	1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	5	1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	1	1
	GCM N7008-MG	●	●	●	●	—	7.0	±0.04	0.8	28.75	5.5	1	1
ML  CW up to 4.0mm CW = 5.0mm up	GCM N2002-ML	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-ML	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	GCM N4004-ML	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-ML	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1	1
	N6004-ML	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1	1
Low Feed	GCM N7004-ML	●	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	1	1
	N8004-ML	●	●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG 	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1	1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	1	1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	1	1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1	1
	GCM N7004-GG	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	1	1
GL 	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	1	1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	GCM N7004-GL	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	1	1
	N8004-GL	●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1
GF 	GCM N125005-GF	—	—	●	—	1.25	±0.03	0.05	17.4	3.2	1	1
	N150005-GF	—	—	●	—	1.5	±0.03	0.05	17.4	3.7	1	1
	GCM N2002-GF	—	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GF	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GF	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	1	1
	N5002-GF	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	1	1
	N6002-GF	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	GCM N7002-GF	●	●	●	—	7.0	±0.04	0.2	28.75	5.5	1	1
	N8002-GF	●	●	●	—	8.0	±0.04	0.2	28.75	6.0	1	1
	GCM N7004-GF	●	●	●	—	7.0	±0.04	0.4	28.75	5.5	5	1
Low Resistance	N8004-GF	●	●	●	—	8.0	±0.04	0.4	28.75	6.0	1	1

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
RG 	GCM N3015-RG	●	●	●	●	—	3.0	±0.03	1.5	21.1	3.8	2	2
	N4020-RG	●	●	●	●	—	4.0	±0.03	2.0	26.4	4.0	2	2
	N5025-RG	●	●	●	●	—	5.0	±0.03	2.5	27.2	4.1	2	2
	N6030-RG	●	●	●	●	—	6.0	±0.03	3.0	27.5	4.5	2	2
	GCM N7035-RG	●	●	●	●	—	7.0	±0.04	3.5	29.05	5.5	2	2
General-purpose	N8040-RG	●	●	●	●	—	8.0	±0.04	4.0	29.25	6.0	2	2

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN 	GCM N2010-RN	—	—	—	—	2.0	±0.03	1.0	21.7	3.6	2	2
	N3015-RN	●	●	●	●	3.0	±0.03	1.5	22.4	3.8	2	2
	N4020-RN	●	●	●	●	4.0	±0.03	2.0	28.0	4.0	5	2
	N5025-RN	●	●	●	●	5.0	±0.03	2.5	28.1	4.1	2	2
	N6030-RN	●	●	●	●	6.0	±0.03	3.0	28.1	4.5	2	2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10				Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GA 	GCG N2002-GA	●				2.0	±0.025	0.2	21.1	3.6	3	3
	N3002-GA	●				3.0	±0.025	0.2	21.1	3.8	5	3
	GCG N4004-GA	●				4.0	±0.025	0.4	26.4	4.0	3	3
	N5004-GA	●				5.0	±0.025	0.4	26.4	4.1	3	3
	N6004-GA	●				6.0	±0.025	0.4	26.4	4.5	3	3

Cut-Off (Handed Edge)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	AC1030U	From Cutting Edge Angle PSI	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
CG 	GCM R2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	4	4
	L2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	4	4
	R3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	4	4
	L3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	4	4
	GCM R4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	4	4
CF 	L4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	4	4
	GCM R20003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	4	4
	L20003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	4	4
	R30003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	4	4
	L30003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	4	4
	GCM R20003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	4	4
	L20003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	4	4
	R30003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	4	4
	L30003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	4	4

GCMR: Right Handed, GCML: Left Handed

Combine the insert with a holder such that the width of cut (CW) matches. Not usable with GNDIS type holders. Recommended Cutting Conditions  F21

● mark: Standard stocked item (new product/expanded item)

GNDL-J Type

New

External

Internal Coolant

Internal Coolant Supply
Clamp-on
for External Deep Grooving & Cut-Off

Grooving Tools

F

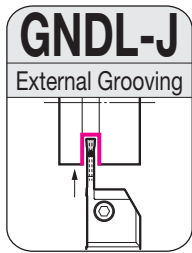


Fig 1

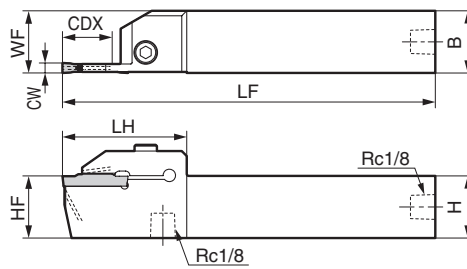


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Plug	Wrench
	R	L														
GNDL R/L2020K-220J	●	●	20	20	125	20	20	44.5	2.00	20(18)	GC □ 20○○-□□	1	BX0520	6.0	XP02	LH040
R/L2020K-320J	●	●	20	20	125	20	20	44.5	3.00	20(18)	GC □ 30○○-□□	1				
R/L2020K-425J	●	●	20	20	125	20	20	50	4.00	25(23)	GC □ 40○○-□□	1				
R/L2020K-525J	●	●	20	20	125	20	20	50	5.00	25(23)	GC □ N50○○-□□	1				
R/L2020K-625J	●	●	20	20	125	20	20	50	6.00	25(23)	GC □ N60○○-□□	1				
GNDL R/L2525K-220J	●	●	25	25	125	25	25	44.5	2.00	20(18)	GC □ 20○○-□□	1	BX0520	6.0	XP02	LH040
R/L2525K-320J	●	●	25	25	125	25	25	44.5	3.00	20(18)	GC □ 30○○-□□	1				
R/L2525K-425J	●	●	25	25	125	25	25	50	4.00	25(23)	GC □ 40○○-□□	1				
R/L2525K-525J	●	●	25	25	125	25	25	50	5.00	25(23)	GC □ N50○○-□□	1				
R/L2525K-625J	●	●	25	25	125	25	25	50	6.00	25(23)	GC □ N60○○-□□	1				

Combine the insert with a holder such that the width of cut (CW) matches.

Dimensions in parentheses under maximum groove depth are for profiling inserts (RG type/RN type chipbreakers).

Refer to F33 for applicable inserts.

Fig 1

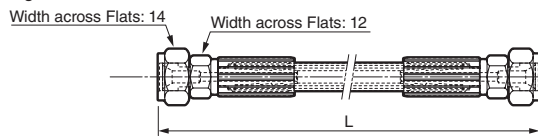


Fig 1

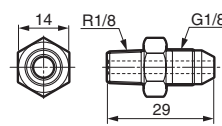
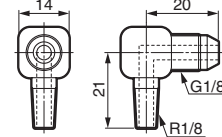


Fig 2



Parts (Hose)

Dimensions (mm)

Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
J-HOSE-G1/8-G1/8-200	●	200	G1/8	G1/8	1
J-HOSE-G1/8-G1/8-300	●	300	G1/8	G1/8	1

Hoses are sold separately.

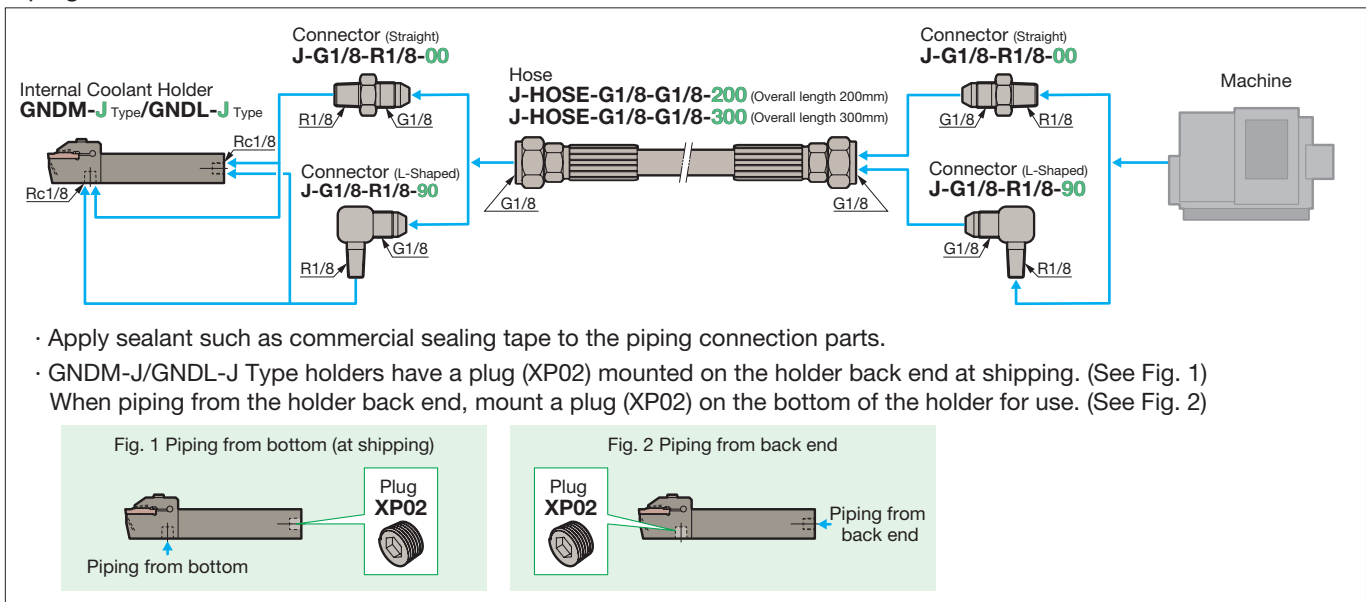
Parts (Connector)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	Screw Standard	Fig
J-G1/8-R1/8-00	●	G1/8	R1/8	1
J-G1/8-R1/8-90	●	G1/8	R1/8	2

Connectors are sold separately.

Piping Method for Hoses and Connectors



- Apply sealant such as commercial sealing tape to the piping connection parts.
- GNDL-J/GNDL-J Type holders have a plug (XP02) mounted on the holder back end at shipping. (See Fig. 1) When piping from the holder back end, mount a plug (XP02) on the bottom of the holder for use. (See Fig. 2)

Fig. 1 Piping from bottom (at shipping)

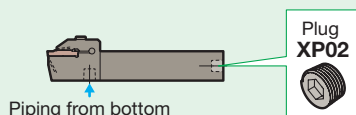
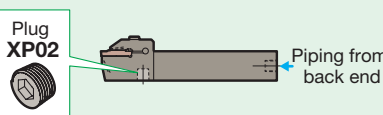


Fig. 2 Piping from back end





GNDL-J Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

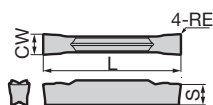


Fig 2

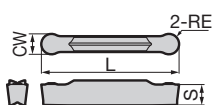


Fig 3

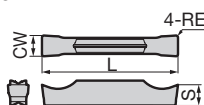
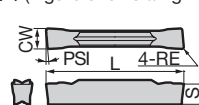


Fig. 4 (Figure shows a right-handed (R) tool.)



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
MG  General-purpose	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	5	1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	5	1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	5	1
ML  CW = up to 4.0mm Low Feed	GCM N2002-ML	—	—	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-ML	—	—	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	GCM N4004-ML	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-ML	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-ML	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG  General-purpose	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	5	1
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
GL  Low Feed	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
GF  Low Resistance	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
GF  Low Resistance	GCM N2002-GF	—	—	●	●	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GF	—	—	●	●	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GF	—	—	●	●	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GF	—	—	●	●	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GF	—	—	●	●	6.0	±0.03	0.2	26.4	4.5	5	1

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
RG  General-purpose	GCM N3015-RG	●	●	●	●	—	3.0	±0.03	1.5	21.1	3.8	5	2
	N4020-RG	●	●	●	●	—	4.0	±0.03	2.0	26.4	4.0	5	2
	N5025-RG	●	●	●	●	—	5.0	±0.03	2.5	27.2	4.1	5	2
	N6030-RG	●	●	●	●	—	6.0	±0.03	3.0	27.5	4.5	5	2

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN  General-purpose	GCM N2010-RN	—	—	●	●	2.0	±0.03	1.0	21.7	3.6	5	2
	N3015-RN	—	—	●	●	3.0	±0.03	1.5	22.4	3.8	5	2
	N4020-RN	—	—	●	●	4.0	±0.03	2.0	28.0	4.0	5	2
	N5025-RN	—	—	●	●	5.0	±0.03	2.5	28.1	4.1	5	2
	N6030-RN	—	—	●	●	6.0	±0.03	3.0	28.1	4.5	5	2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10				Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GA  General-purpose	GCG N2002-GA	●				2.0	±0.025	0.2	21.1	3.6	5	3
	N3002-GA	●				3.0	±0.025	0.2	21.1	3.8	5	3
	GCG N4004-GA	●				4.0	±0.025	0.4	26.4	4.0	5	3
	N5004-GA	●				5.0	±0.025	0.4	26.4	4.1	5	3
	N6004-GA	●				6.0	±0.025	0.4	26.4	4.5	5	3

Cut-Off (Handed Edge)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	AC1030U	Front Cutting Edge Angle PSI	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
CG  General-purpose	GCM R2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4
	L2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	5	4
	R3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4
	L3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	5	4
CF  Low Resistance	GCM R4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	5	4
	L4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	5	4
	GCM R2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4
	L2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	5	4
CF  Low Resistance	R3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4
	L3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	5	4
	GCM R2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4
	L2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	5	4
CF  Low Resistance	R3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4
	L3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	5	4

GCMR: Right Handed, GCML: Left Handed

Combine the insert with a holder such that the width of cut (CW) matches. Not usable with GNDIS type holders. Recommended Cutting Conditions F21

● mark: Standard stocked item (new product/expanded item)

GNDCM Type



SumiPolygon Cassette Clamp-on for External Grooving

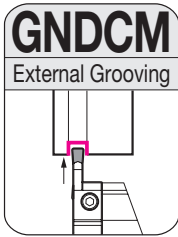
Grooving Tools
F

Fig 1

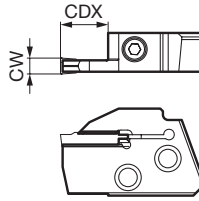


Figure shows right hand (R) tool.

SumiPolygon GND Type Cassette

Parts

Dimensions (mm)

Cat. No.	Stock		Width of Cut CW	Maximum Groove Depth (mm) CDX	Applicable Insert	Applicable Holder	Fig	Dimensions (mm)		
	R	L						Cap Screw	N-m	Wrench
GNDCM R/L 212	●	●	2	12	GC□□20○□-□□	PSC□□GND□□□□□□00 R/L	1	BX0512	5.0	LH040
GNDCM R/L 312	●	●	3	12	GC□□30○□-□□		1			
GNDCM R/L 418	●	●	4	18	GC□□40○□-□□	PSC□□GND□□□□□□90 R/L	1			
GNDCM R/L 518	●	●	5	18	GC□N50○□-□□		1			
GNDCM R/L 618	●	●	6	18	GC□N60○□-□□		1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F35 for applicable inserts.

Identification Code Cassette

GNDCM R 2 12

Series Feed Direction Width of Cut (mm) Maximum Groove Depth (mm)

Fig 1

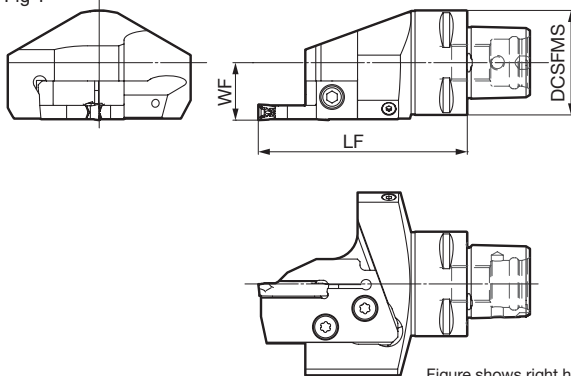


Figure shows right hand (R) tool.

Fig 1

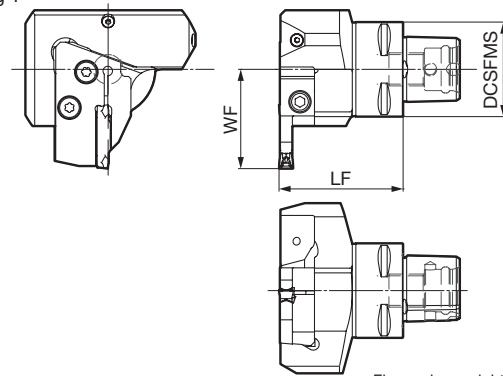


Figure shows right hand (R) tool.

SumiPolygon GND Type Tool Holder (Straight)

Parts

Dimensions (mm)

Cat. No.	Stock		Cutting Edge WF	Overhang LF	Mounting DCS-FMS	Applicable Cassette	Fig	Dimensions (mm)		
	R	L						Flat Screw	N-m	Wrench
PSC40 GND 228000 R/L	●	●	22	80	40	GNDCM R/L□□□□	1	BFTX0619N	7.5	TT25
PSC50 GND 278000 R/L	●	●	27	80	50		1			
PSC63 GND 338000 R/L	●	●	33	80	63		1			

Inserts and cassettes are not embedded into tool holders.

SumiPolygon GND Type Tool Holder (L Type)

Parts

Dimensions (mm)

Cat. No.	Stock		Cutting Edge WF	Overhang LF	Mounting DCS-FMS	Applicable Cassette	Fig	Dimensions (mm)		
	R	L						Flat Screw	N-m	Wrench
PSC40 GND 425290 R/L	●	●	42	52.5	40	GNDCM R/L□□□□	1	BFTX0619N	7.5	TT25
PSC50 GND 475590 R/L	●	●	47	55	50		1			
PSC63 GND 545790 R/L	●	●	54	57	63		1			

Inserts and cassettes are not embedded into tool holders.

Identification Code Holder

PSC40 GND 42 52 90 R

SumiPolygon Shank Size Series: GND Type WF Dimensions (mm) LF Dimensions (mm) 00: Straight 90: L Type Feed Direction



GNDCM Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

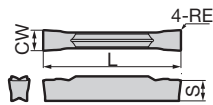


Fig 2

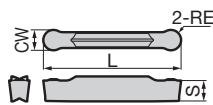


Fig 3

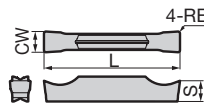
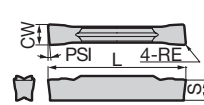


Fig. 4 (Figure shows a right-handed (R) tool.)



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
MG General-purpose	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	5	1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	1	1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	1	1
ML CW = up to 4.0mm Low Feed	GCM N2002-ML	—	—	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-ML	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	GCM N4004-ML	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-ML	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1	1
	N6004-ML	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1	1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG General-purpose	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	1	1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
GL Low Feed	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	1	1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	1	1
	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
GF Low Resistance	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	1	1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1
	GCM N2002-GF	—	—	●	●	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GF	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GF	●	●	●	●	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GF	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	1	1
	N6002-GF	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	1	1

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
RG General-purpose	GCM N3015-RG	●	●	●	●	●	3.0	±0.03	1.5	21.1	3.8	2	2
	N4020-RG	●	●	●	●	—	4.0	±0.03	2.0	26.4	4.0	5	2
	N5025-RG	●	●	●	●	—	5.0	±0.03	2.5	27.2	4.1	2	2
	N6030-RG	●	●	●	●	—	6.0	±0.03	3.0	27.5	4.5	2	2

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN General-purpose	GCM N2010-RN	—	—	●	●	2.0	±0.03	1.0	21.7	3.6	2	2
	N3015-RN	●	●	●	●	3.0	±0.03	1.5	22.4	3.8	2	2
	N4020-RN	●	●	●	●	4.0	±0.03	2.0	28.0	4.0	5	2
	N5025-RN	●	●	●	●	5.0	±0.03	2.5	28.1	4.1	2	2
	N6030-RN	●	●	●	●	6.0	±0.03	3.0	28.1	4.5	2	2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
			Width of Cut	Tolerance					
GA General-purpose	GCG N2002-GA	●	2.0	±0.025	0.2	21.1	3.6	3	3
	N3002-GA	●	3.0	±0.025	0.2	21.1	3.8	3	3
	GCG N4004-GA	●	4.0	±0.025	0.4	26.4	4.0	5	3
	N5004-GA	●	5.0	±0.025	0.4	26.4	4.1	3	3
	N6004-GA	●	6.0	±0.025	0.4	26.4	4.5	3	3

Cut-Off (Handed Edge)

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	AC1030U	Front Cutting Edge Angle PSI	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
CG General-purpose	GCM R2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	4	4
	L2002-CG-05	●	●	●	—	5°	2.0	±0.03	0.2	21.1	3.6	4	4
	R3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	4	4
	L3002-CG-05	●	●	●	—	5°	3.0	±0.03	0.2	21.3	3.8	4	4
	GCM R4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	4	4
	L4002-CG-05	●	●	●	—	5°	4.0	±0.04	0.2	26.7	4.0	4	4
CF Low Resistance	GCM R2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	4	4
	L2003-CF-10	—	—	—	●	10°	2.0	±0.08	0.03	22.4	3.6	4	4
	R3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	4	4
	L3003-CF-10	—	—	—	●	10°	3.0	±0.08	0.03	22.4	3.8	4	4
	GCM R2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	4	4
	L2003-CF-15	—	—	—	●	15°	2.0	±0.08	0.03	22.4	3.6	4	4
	R3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	4	4
	L3003-CF-15	—	—	—	●	15°	3.0	±0.08	0.03	22.4	3.8	4	4

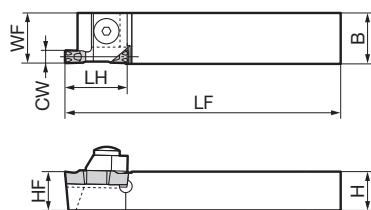
GCMR: Right Handed, GCM: Left Handed



Clamp-on
for External Shallow Grooving



Fig 1



Effective Depth of Cut

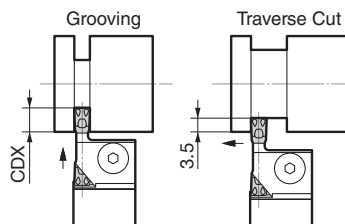


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Head	Width of Cut	Max. Groove Depth	Applicable Insert	Fig	Clamp	Bolt	Spring	Wrench
	R	L	H	B	LF	WF	HF	LH	CW	CDX						
SGE R/L1016-3	●	●	10	16	120	15.7	10	19.5	3.0	6.2	GEN30○○	1	GCL R/L-3	FBH 0516NT	GSP-5	LH025NT
SGE R/L1216-3	●	●	12	16	120	15.7	12	19.5				1				
SGE R/L1616-3	●	●	16	16	120	15.7	16	22.0				1				
SGE R/L2020-3	●	●	20	20	120	19.7	20	22.0				1				
SGE R/L1016-45	●	●	10	16	120	15.7*	10	19.5	4.0	6.2	GEN40○○ GEN50○○	1	GCL R/L-4	FBH 0516NT	GSP-5	LH025NT
SGE R/L1216-45	●	●	12	16	120	15.7*	12	19.5				1				
SGE R/L1616-45	●	●	16	16	120	15.7*	16	22.0				1				
SGE R/L2020-45	●	●	20	20	120	19.7*	20	22.0				1				
SGE R/L1020-6	●	●	10	20	120	19.7	10	19.5	6.0	6.2	GEN60○○	1	GCL R/L-6	FBH 0516NT	GSP-5	LH025NT
SGE R/L1220-6	●	●	12	20	120	19.7	12	19.5				1				
SGE R/L1620-6	●	●	16	20	120	19.7	16	22.0				1				
SGE R/L2020-6	●	●	20	20	120	19.7	20	22.0				1				

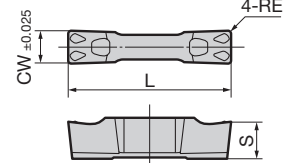
* Width of cut CW = 4mm is the dimension with insert mounted. When width of cut CW = 5mm, the dimension is 0.5mm larger with insert mounted.

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	ACZ150	Width of Cut	Overall Length	Thickness	Nose Radius	Applicable Holder	Fig
		CW	L	S	RE		
GEN 3002	●	3.0	20	4.64	0.2	SGE R/L ○○○○-3	1
GEN 3004	●	3.0	20	4.64	0.4		1
GEN 4002	●	4.0	20	4.50	0.2	SGE R/L ○○○○-45	1
GEN 4004	●	4.0	20	4.50	0.4		1
GEN 5002	●	5.0	20	4.50	0.2	SGE R/L ○○○○-45	1
GEN 5004	●	5.0	20	4.50	0.4		1
GEN 6002	●	6.0	20	4.50	0.2	SGE R/L ○○○○-6	1
GEN 6004	●	6.0	20	4.50	0.4		1

Fig 1



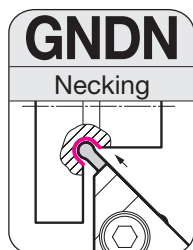
Clamp-on
for Necking

Fig 1

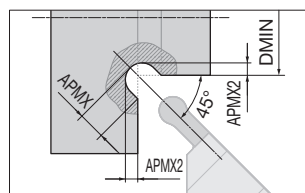
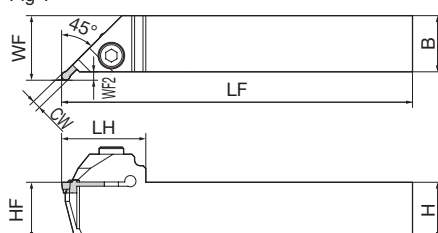


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Off Set WF2	Min. Work Diameter DMIN	Width of Cut CW	APMX	APMX2	Applicable Insert	Fig	Cap Screw		Wrench
	R	L																
GNDN R/L2020K-215-020	●	●	20	20	125	23	20	35	3.0	20	2.0	1.5	0.64	GCM N2010-RN	1	BX0520	5.0	LH040
GNDN R/L2020K-320-020	●	●	20	20	125	23	20	35	3.0	20	3.0	2.0	0.79	GCM N3015-RN	1			
GNDN R/L2020K-430-030	●	●	20	20	125	24	20	37	4.0	30	4.0	3.0	1.29	GCM N4020-RN	1			
GNDN R/L2020K-535-030	●	●	20	20	125	25	20	40	5.0	30	5.0	3.5	1.44	GCM N5025-RN	1			
GNDN R/L2020K-640-030	●	●	20	20	125	25	20	40	5.0	30	6.0	4.0	1.59	GCM N6030-RN	1			
GNDN R/L2525M-215-020	●	●	25	25	150	28	25	35	3.0	20	2.0	1.5	0.64	GCM N2010-RN	1	BX0520	5.0	LH040
GNDN R/L2525M-320-020	●	●	25	25	150	28	25	35	3.0	20	3.0	2.0	0.79	GCM N3015-RN	1			
GNDN R/L2525M-430-030	●	●	25	25	150	29	25	37	4.0	30	4.0	3.0	1.29	GCM N4020-RN	1			
GNDN R/L2525M-535-030	●	●	25	25	150	30	25	40	5.0	30	5.0	3.5	1.44	GCM N5025-RN	1			
GNDN R/L2525M-640-030	●	●	25	25	150	30	25	40	5.0	30	6.0	4.0	1.59	GCM N6030-RN	1			

Combine the insert with a holder such that the width of cut (CW) matches.

Identification Code

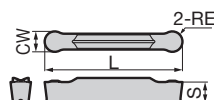
GND N R 20 20 K - 2 15 - 020

Series	Application Symbol: Direction Necking	Feed	Shank Height (mm)	Shank Width (mm)	Shank Length (mm)	Width of Cut (mm)	APMX × 10 (mm)	Min. bore diameter (mm)
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GNDN Type Inserts

(Coated Carbide)

Fig 1



Profiling / Radius Grooving / Necking



Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
	GCM N2010-RN	—	—	●	●	2.0	±0.03	1.0	21.7	3.6	5	1
	N3015-RN	●	●	●	●	3.0	±0.03	1.5	22.4	3.8		1
	N4020-RN	●	●	●	●	4.0	±0.03	2.0	28.0	4.0		1
	N5025-RN	●	●	●	●	5.0	±0.03	2.5	28.1	4.1		1
	N6030-RN	●	●	●	●	6.0	±0.03	3.0	28.1	4.5		1



Clamp-on
for Very Small Diameter Face Grooving

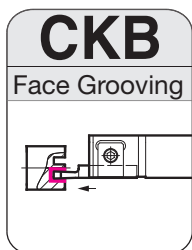
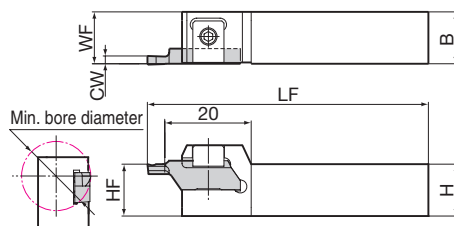


Fig 1



Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Fig	Parts		
		H	B	LF	WF	HF		Clamp	Double Screw	Wrench
CKBR 1010-16	●	10	10	111	10	10	1	 CKBW16	 WB4-8	 LH020
CKBR 1212-16	●	12	12	136	12	12	1			
CKBR 1616-16	●	16	16	136	16	16	1			
CKBR 2020-16	●	20	20	136	20	20	1			
CKBR 2525-16	●	25	25	161	25	25	1			

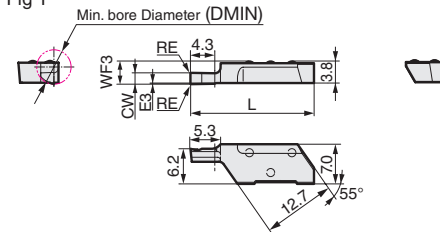
*For round shank holders, refer to page E58.

Insert (Coated Carbide)

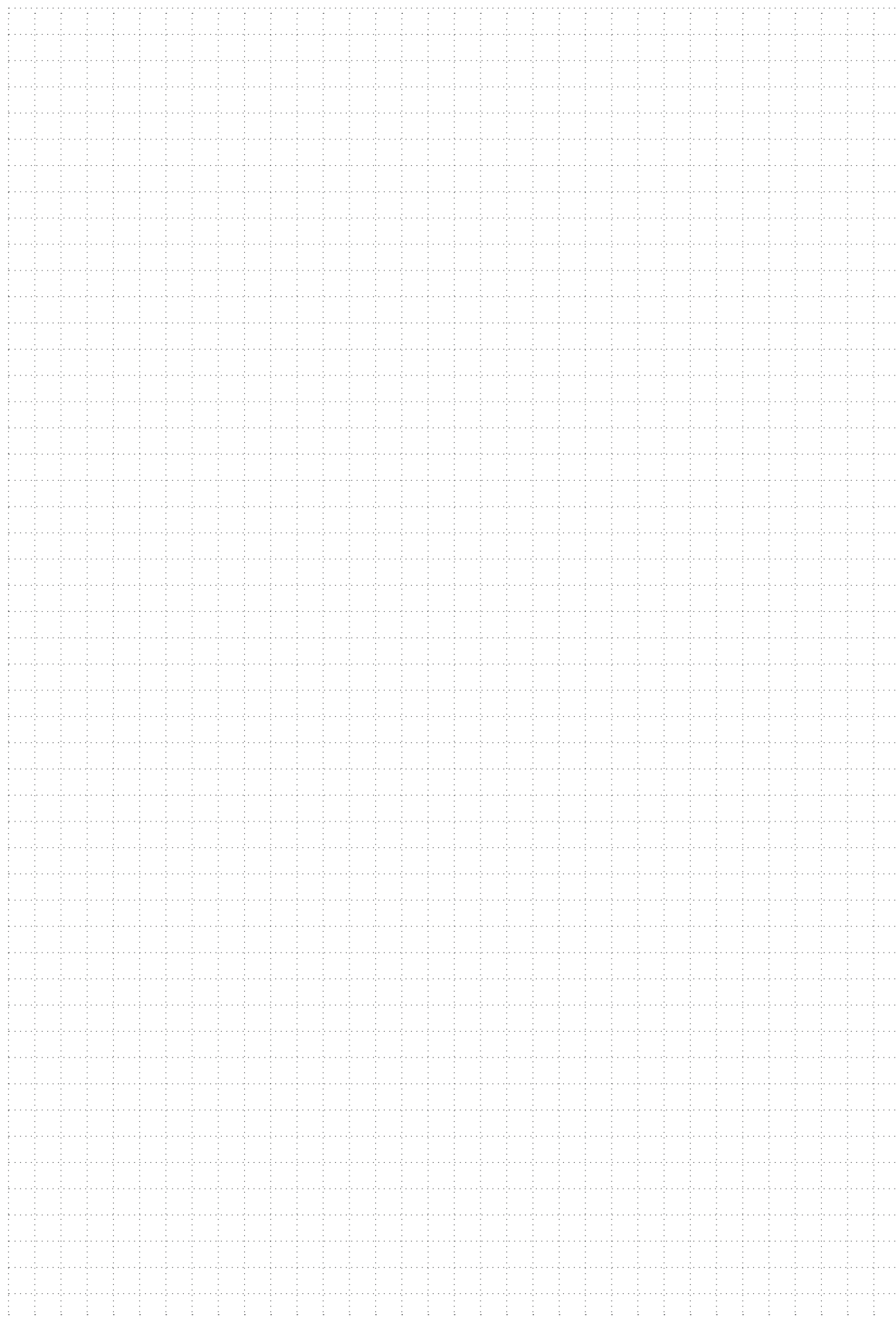
Dimensions (mm)

Cat. No.	ACZ150	Min. Work Diameter	Cutting Edge Distance	Cutting Edge Distance	Width of Cut	Nose Radius	Overall Length	Max. Groove Depth	Fig
		DMIN	WF3	E3	CW	RE	L	CDX	
KBMF R0615-05	●	6.0	4.0	0.2	1.5	0.05	21.8	4.0	1
KBMF R0620-05	●	6.0	4.0	0.2	2.0	0.05	21.8	4.0	1
KBMF R0630-05	●	6.0	4.0	0.2	3.0	0.05	21.8	4.0	1

Fig 1



MEMO



GNDF Type



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

Clamp-on
for Face Grooving

Grooving
Tools

F

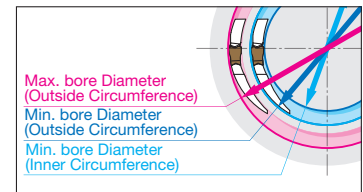
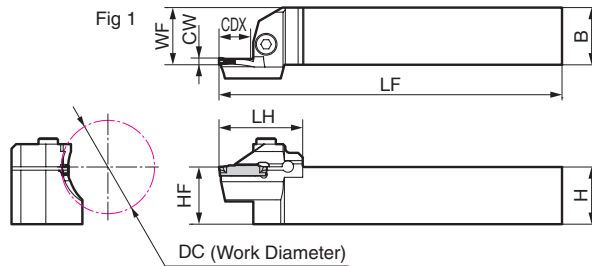
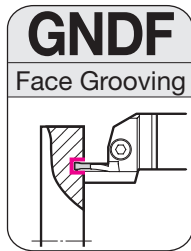


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head Length LH	Work Diameter DC	Min. bore Diameter Inner Circumference	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L															
GNDF R/L2020K-312-035	●	●	20	20	125	20	20	35.6	35 to 45	29	3.0	12	GC□ N30□□-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-312-040	●	●	20	20	125	20	20	35.6	40 to 55	34	3.0	12		1			
GNDF R/L2020K-318-050	●	●	20	20	125	20	20	41.6	50 to 70	44	3.0	18		1			
GNDF R/L2020K-318-065	●	●	20	20	125	20	20	41.6	65 to 100	59	3.0	18		1			
GNDF R/L2020K-318-090	●	●	20	20	125	20	20	41.6	90 to 150	84	3.0	18		1			
GNDF R/L2020K-318-140	●	●	20	20	125	20	20	41.6	140 to 200	134	3.0	18		1			
GNDF R/L2020K-318-180	●	●	20	20	125	20	20	41.6	180 to 300	174	3.0	18	GC□ N40□□-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-418-040	●	●	20	20	125	20	20	41.6	40 to 55	32	4.0	18		1			
GNDF R/L2020K-423-050	●	●	20	20	125	20	20	46.6	50 to 70	42	4.0	23		1			
GNDF R/L2020K-423-065	●	●	20	20	125	20	20	46.6	65 to 90	57	4.0	23		1			
GNDF R/L2020K-423-085	●	●	20	20	125	20	20	46.6	85 to 130	77	4.0	23		1			
GNDF R/L2020K-423-125	●	●	20	20	125	20	20	46.6	125 to 200	117	4.0	23		1			
GNDF R/L2020K-423-180	●	●	20	20	125	20	20	46.6	180 to 300	172	4.0	23	GC□ N50□□-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-423-280	●	●	20	20	125	20	20	46.6	280 to 1000	272	4.0	23		1			
GNDF R/L2020K-523-050	●	●	20	20	125	20	20	46.6	50 to 70	40	5.0	23		1			
GNDF R/L2020K-523-065	●	●	20	20	125	20	20	46.6	65 to 90	55	5.0	23		1			
GNDF R/L2020K-523-085	●	●	20	20	125	20	20	46.6	85 to 130	75	5.0	23		1			
GNDF R/L2020K-523-125	●	●	20	20	125	20	20	46.6	125 to 200	115	5.0	23		1			
GNDF R/L2020K-523-180	●	●	20	20	125	20	20	46.6	180 to 300	170	5.0	23	GC□ N60□□-□□	1	BX0520	5.0	LH040
GNDF R/L2020K-523-280	●	●	20	20	125	20	20	46.6	280 to 1000	270	5.0	23		1			
GNDF R/L2020K-623-050	●	●	20	20	125	20	20	46.6	50 to 75	38	6.0	23		1			
GNDF R/L2020K-623-070	●	●	20	20	125	20	20	46.6	70 to 110	58	6.0	23		1			
GNDF R/L2020K-623-100	●	●	20	20	125	20	20	46.6	100 to 200	88	6.0	23		1			
GNDF R/L2020K-623-180	●	●	20	20	125	20	20	46.6	180 to 300	168	6.0	23		1			
GNDF R/L2020K-623-280	●	●	20	20	125	20	20	46.6	280 to 1000	268	6.0	23	GC□ N30□□-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-312-035	●	●	25	25	150	25	25	35.6	35 to 45	29	3.0	12		1			
GNDF R/L2525M-312-040	●	●	25	25	150	25	25	35.6	40 to 55	34	3.0	12		1			
GNDF R/L2525M-318-050	●	●	25	25	150	25	25	41.6	50 to 70	44	3.0	18		1			
GNDF R/L2525M-318-065	●	●	25	25	150	25	25	41.6	65 to 100	59	3.0	18		1			
GNDF R/L2525M-318-090	●	●	25	25	150	25	25	41.6	90 to 150	84	3.0	18		1			
GNDF R/L2525M-318-140	●	●	25	25	150	25	25	41.6	140 to 200	134	3.0	18	GC□ N40□□-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-318-180	●	●	25	25	150	25	25	41.6	180 to 300	174	3.0	18		1			
GNDF R/L2525M-418-040	●	●	25	25	150	25	25	41.6	40 to 55	32	4.0	18		1			
GNDF R/L2525M-423-050	●	●	25	25	150	25	25	46.6	50 to 70	42	4.0	23		1			
GNDF R/L2525M-423-065	●	●	25	25	150	25	25	46.6	65 to 90	57	4.0	23		1			
GNDF R/L2525M-423-085	●	●	25	25	150	25	25	46.6	85 to 130	77	4.0	23		1			
GNDF R/L2525M-423-125	●	●	25	25	150	25	25	46.6	125 to 200	117	4.0	23	GC□ N50□□-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-423-180	●	●	25	25	150	25	25	46.6	180 to 300	172	4.0	23		1			
GNDF R/L2525M-423-280	●	●	25	25	150	25	25	46.6	280 to 1000	272	4.0	23		1			
GNDF R/L2525M-523-050	●	●	25	25	150	25	25	46.6	50 to 70	40	5.0	23		1			
GNDF R/L2525M-523-065	●	●	25	25	150	25	25	46.6	65 to 90	55	5.0	23		1			
GNDF R/L2525M-523-085	●	●	25	25	150	25	25	46.6	85 to 130	75	5.0	23		1			
GNDF R/L2525M-523-125	●	●	25	25	150	25	25	46.6	125 to 200	115	5.0	23	GC□ N60□□-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-523-180	●	●	25	25	150	25	25	46.6	180 to 300	170	5.0	23		1			
GNDF R/L2525M-523-280	●	●	25	25	150	25	25	46.6	280 to 1000	270	5.0	23		1			
GNDF R/L2525M-623-050	●	●	25	25	150	25	25	46.6	50 to 75	38	6.0	23		1			
GNDF R/L2525M-623-070	●	●	25	25	150	25	25	46.6	70 to 110	58	6.0	23		1			
GNDF R/L2525M-623-100	●	●	25	25	150	25	25	46.6	100 to 200	88	6.0	23		1			
GNDF R/L2525M-623-180	●	●	25	25	150	25	25	46.6	180 to 300	168	6.0	23	GC□ N60□□-□□	1	BX0520	5.0	LH040
GNDF R/L2525M-623-280	●	●	25	25	150	25	25	46.6	280 to 1000	268	6.0	23		1			

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F41 for applicable inserts.

Recommended Cutting Conditions F21

GNDF Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

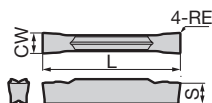


Fig 2

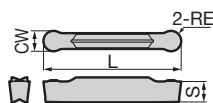
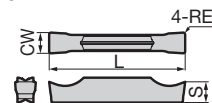


Fig 3



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius	Overall Length	Thickness	Pcs/Pack	Fig
		●	●	●	●	—	Width of Cut	Tolerance	RE	L	S		
 General-purpose	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0		1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1		1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5		1
 CW = up to 4.0mm CW = 5.0mm up Low Feed	GCM N3002-ML	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1
	GCM N4004-ML	●	●	●	●	●	4.0	±0.03	0.4	26.4	4.0		1
	N5004-ML	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1		1
	N6004-ML	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5		1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut		Nose Radius	Overall Length	Thickness	Pcs/Pack	Fig
						Width of Cut	Tolerance					
 General-purpose	GCM N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0		1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1		1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5		1
	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0		1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1		1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5		1
 Low Feed	GCM N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0		1
	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1		1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5		1
 Low Resistance	GCM N3002-GF	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1
	N4002-GF	●	●	●	●	4.0	±0.03	0.2	26.4	4.0		1
	N5002-GF	●	●	●	—	5.0	±0.03	0.2	26.4	4.1		1
	N6002-GF	●	●	●	—	6.0	±0.03	0.2	26.4	4.5		1

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius	Overall Length	Thickness	Pcs/Pack	Fig
						Width of Cut	Tolerance					
 General-purpose	GCM N3015-RG	●	●	●	●	3.0	±0.03	1.5	21.1	3.8	5	2
	N4020-RG	●	●	●	●	4.0	±0.03	2.0	26.4	4.0		2
	N5025-RG	●	●	●	●	5.0	±0.03	2.5	27.2	4.1		2
	N6030-RG	●	●	●	●	6.0	±0.03	3.0	27.5	4.5		2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10			Width of Cut CW		Nose Radius	Overall Length		Thickness	Pcs/Pack	Fig
					Width of Cut	Tolerance	RE	L	S			
 General-purpose	GCG N3002-GA	●			3.0	±0.025	0.2	21.1	3.8	5		3
	GCG N4004-GA	●			4.0	±0.025	0.4	26.4	4.0			3
	N5004-GA	●			5.0	±0.025	0.4	26.4	4.1			3
	N6004-GA	●			6.0	±0.025	0.4	26.4	4.5			3

Combine the insert with a holder such that the width of cut (CW) matches. Not usable with GNDIS type holders. Recommended Cutting Conditions



* For traverse cutting (groove expansion), use a multifunctional insert for profiling.

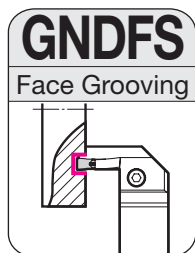
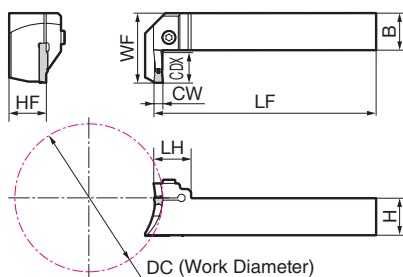
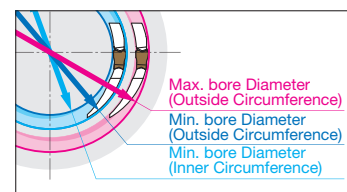


Fig 1



Clamp-on
for Face L-Shaped (Side Cut) Deep Grooving



Holder

Figure shows right hand (R) tool.

Parts

Dimensions (mm)

Cat. No.	Stock		Height H	Width B	Overall Length LF	Cutting Edge Distance WF	Cutting Edge Height HF	Head LH	Work Diameter DC	Min. bore Diameter Inner Circumference	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Cap Screw		Wrench
	R	L													BX0520  BX0620		
GNDFS R/L2525M-620-070			25	25	150	47	25	25	70 to 100	58	6.0	20	GC□ N60○○-□□	1	BX0520	5.0	LH040
GNDFS R/L2525M-620-100			25	25	150	47	25	25	100 to 200	88	6.0	20		1			
GNDFS R/L2525M-620-180			25	25	150	47	25	25	180 to 300	168	6.0	20		1			
GNDFS R/L2525M-620-280			25	25	150	47	25	25	280 to 1000	268	6.0	20		1			
GNDFS R/L2525M-620-450			25	25	150	47	25	25	450 up	438	6.0	20		1			
GNDFS R/L3232P-620-070			32	32	170	54	32	25	70 to 100	58	6.0	20	GC□ N60○○-□□	1	BX0620	6.0	LH050
GNDFS R/L3232P-620-100			32	32	170	54	32	25	100 to 200	88	6.0	20		1			
GNDFS R/L3232P-620-180			32	32	170	54	32	25	180 to 300	168	6.0	20		1			
GNDFS R/L3232P-620-280			32	32	170	54	32	25	280 to 1000	268	6.0	20		1			
GNDFS R/L3232P-620-450			32	32	170	54	32	25	450 up	438	6.0	20		1			
GNDFS R/L2525M-820-070			25	25	150	47	25	30	70 to 100	54	8.0	20	GCM N80○○-□□	1	BX0620	6.0	LH050
GNDFS R/L2525M-820-100			25	25	150	47	25	30	100 to 200	84	8.0	20		1			
GNDFS R/L2525M-820-180			25	25	150	47	25	30	180 to 300	164	8.0	20		1			
GNDFS R/L2525M-820-280			25	25	150	47	25	30	280 to 1000	264	8.0	20		1			
GNDFS R/L2525M-820-450			25	25	150	47	25	30	450 up	434	8.0	20		1			
GNDFS R/L3232P-820-070			32	32	170	54	32	30	70 to 100	54	8.0	20	GCM N80○○-□□	1	BX0620	6.0	LH050
GNDFS R/L3232P-820-100			32	32	170	54	32	30	100 to 200	84	8.0	20		1			
GNDFS R/L3232P-820-180			32	32	170	54	32	30	180 to 300	164	8.0	20		1			
GNDFS R/L3232P-820-280			32	32	170	54	32	30	280 to 1000	264	8.0	20		1			
GNDFS R/L3232P-820-450			32	32	170	54	32	30	450 up	434	8.0	20		1			

Combine the insert with a holder such that the width of cut (CW) matches.

GNDFS Type Inserts

(■ Coated Carbide / □ Carbide)

Fig 1

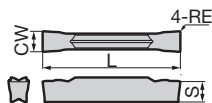


Fig 2

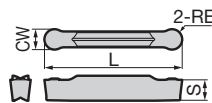
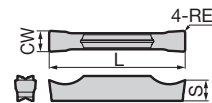


Fig 3



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
MG General-purpose	GCM N6008-MG	●	●	●	●	6.0	±0.03	0.8	26.4	4.5	5	1
	N8008-MG	●	●	●	●	8.0	±0.04	0.8	28.75	6.0	5	1
ML Low Feed	GCH N6004-ML	●	●	●	●	6.0	±0.03	0.4	26.4	4.5	5	1
	N8004-ML	●	●	●	●	8.0	±0.04	0.4	28.75	6.0	5	1

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN General-purpose	GCMN6030-RN	●	●	●	●	6.0	±0.03	3.0	28.1	4.5	5	2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10				Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GA General-purpose	GCG N6004-GA	●				6.0	±0.025	0.4	26.4	4.5	5	3

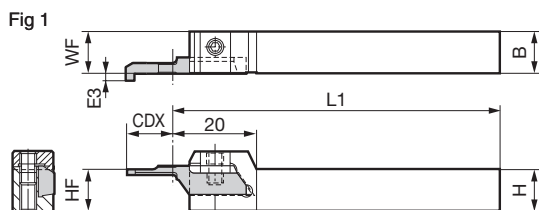
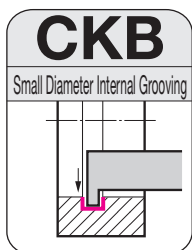
Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG General-purpose	GCM N6002-GG	●		●	●	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N6004-GG	●		●	●	6.0	±0.03	0.4	26.4	4.5	5	1
GL Low Feed	N8004-GG	●		●	●	8.0	±0.04	0.4	28.75	6.0	5	1
	GCM N6002-GL	●		●	●	6.0	±0.03	0.2	26.4	4.5	5	1
GF Low Resistance	GCM N8004-GL	●		●	●	8.0	±0.04	0.4	28.75	6.0	5	1
	GCM N6002-GF	●		●	●	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N8002-GF	●		●	●	8.0	±0.04	0.2	28.75	6.0	5	1
	N8004-GF	●		●	●	8.0	±0.04	0.4	28.75	6.0	5	1



Clamp-on
for Internal Diameter Narrow Grooving



Refer to the insert table for E3 and CDX values.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Fig	Dimensions (mm)		
		H	B	L1	WF	HF		Clamp	Double Screw	Wrench
CKB R1010-16	●	10	10	100	10	10	1	CKBW16	WB4-8	LH020
CKB R1212-16	●	12	12	125	12	12	1			
CKB R1616-16	●	16	16	125	16	16	1			
CKB R2020-16	●	20	20	125	20	20	1			
CKB R2525-16	●	25	25	150	25	25	1			

Refer to the insert table for E3 and CDX values.

Insert (Coated Carbide)

Dimensions (mm)

Cat. No.	AC1030U	Min. Bore Diameter	Width of Cut	Cutting Edge Distance	Cutting Edge Distance	Nose Radius	Overall Length	Maximum Groove Depth (mm)	Fig	Fig 1
		DMIN	CW	WF3	E3	RE	L	CDX		
KBMG R0411-05	●	4.0	1.00	4.90	1.1	0.05	28.5	11	1	
KBMG R0411-10	●	4.0	2.00	4.90	1.1	0.10	28.5	11	1	
KBMG R0511-05	●	5.0	1.00	5.10	1.3	0.05	28.5	11	1	
KBMG R0511-10	●	5.0	2.00	5.10	1.3	0.10	28.5	11	1	

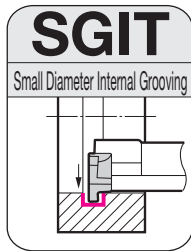
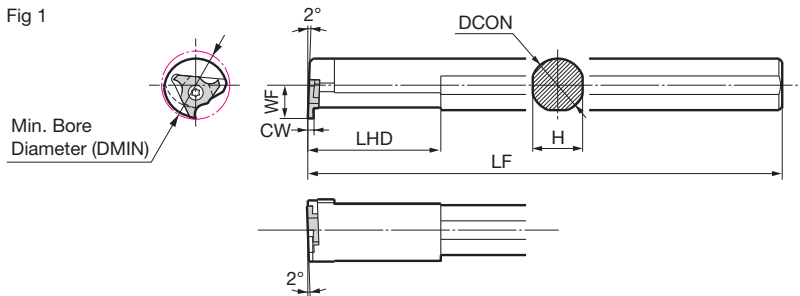
Screw-on
for Internal Diameter Narrow Grooving

Fig 1



Holder

Parts Dimensions (mm)

Cat. No.	Stock	Diameter DCON	Height H	Overall Length LF	Cutting Edge Distance WF	Head LHD	Min. Bore Diameter	Width of Cut CW	Max. Groove Depth	Applicable Insert	Fig	Parts	
												Flat Screw	Wrench
SGIT R08	●	8	7.0	125	5.0	20	10.0	0.50 to 2.00	0.8*	GITL3○○○	1		
SGIT R10	●	10	9.0	150	6.0	25	12.0	0.50 to 2.00	0.8*	GITL3○○○	1		
SGIT R12	●	12	11.0	180	7.0	30	14.0	1.00 to 2.00	1.8	GITL5○○○	1		
SGIT R14	●	14	13.0	180	8.0	35	16.0	1.00 to 2.00	1.8	GITL5○○○	1		
SGIT R16	●	16	15.0	200	10.0	40	20.0	1.50 to 2.00	2.8	GITL6○○○	1		
SGIT R20	●	20	19.0	200	12.0	40	25.0	1.50 to 2.00	2.8	GITL6○○○	1		

* The maximum groove depth is 0.5mm when GITL3050 is set. (Cutting edge CW = 0.5mm)

Insert (Coated Carbide)

Dimensions (mm)

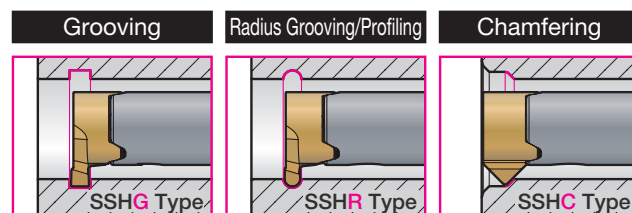
Cat. No.	ACZ150	Width of Cut CW	Cutting Edge Distance E3	Nose Radius RE	Inscribed Circle IC	Applicable Holder	Fig	
GIT L3050	●	0.50	1.2	0.05	5.56	SGIT R08 SGIT R10	1	
GIT L3065	●	0.65	1.2	0.05	5.56		1	
GIT L3075	●	0.75	1.2	0.05	5.56		1	
GIT L3100	●	1.00	1.2	0.05	5.56		1	
GIT L3125	●	1.25	1.2	0.20	5.56		1	
GIT L3145	●	1.45	1.2	0.20	5.56		1	
GIT L3150	●	1.50	1.2	0.05	5.56		1	
GIT L3200	●	2.00	1.2	0.10	5.56		1	
GIT L5100	●	1.00	2.2	0.05	7.94	SGIT R12 SGIT R14	1	
GIT L5145	●	1.45	2.2	0.20	7.94		1	
GIT L5150	●	1.50	2.2	0.05	7.94		1	
GIT L5175	●	1.75	2.2	0.20	7.94		1	
GIT L5200	●	2.00	2.2	0.10	7.94		1	
GIT L6150	●	1.50	3.2	0.20	9.525	SGIT R16 SGIT R20	1	
GIT L6175	●	1.75	3.2	0.20	9.525		1	
GIT L6200	●	2.00	3.2	0.20	9.525		1	



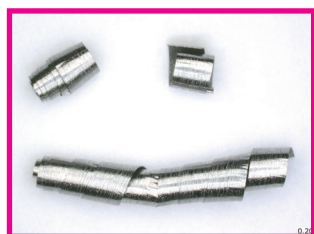
Features

- Internal coolant supply for outstanding chip evacuation
- Tough carbide body for stable machining even with small diameters
- Adopts AC1030U for excellent machined surface quality
- Min. bore diameter of $\phi 8\text{mm}$ and up supported
- Wide variety of widths of cut

In addition to grooving applications, we have a lineup of 12 catalogue items for circlip groove machining



Chip Control

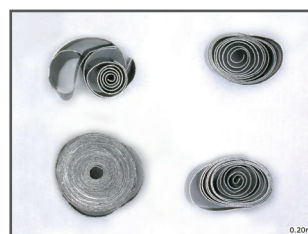


Easy chip removal

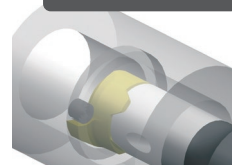


Stable and smooth evacuation of curled chips even on small bore diameters

SSH Type



No Chip Evacuation Space

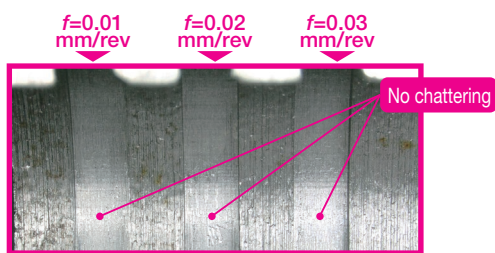


Evacuation from grooves is poor, inviting sudden breakage

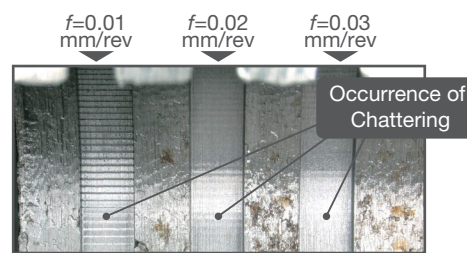
Competitor's Product

Work Material: S45C Work Diameter: $\phi 13\text{mm}$ Cutting Conditions: $v_c=50\text{m/min}$, $f=0.02\text{mm/rev}$, $a_p=1.0\text{mm}$ Wet (Oil-based)

SSH Type Chatter Resistance Outstanding sharpness and carbide shank suppress chatter



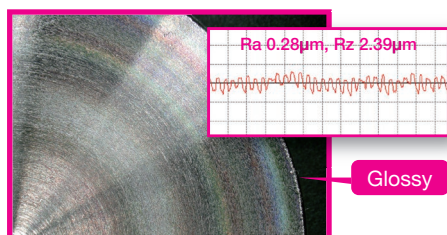
SSH Type



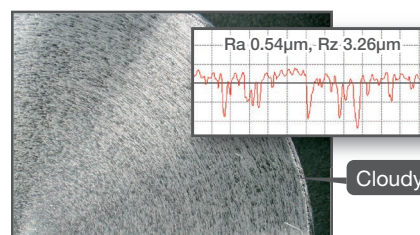
Competitor's Product

Work Material: S45C Work Diameter: $\phi 13\text{mm}$ Cutting Conditions: $v_c=100\text{m/min}$, $f=0.01, 0.02, 0.03\text{mm/rev}$, $a_p=0.2\text{mm}$ Wet (Oil-based)

SSH Type Machined Surface Quality Glossy, Beautiful Surface Finish



SSH Type

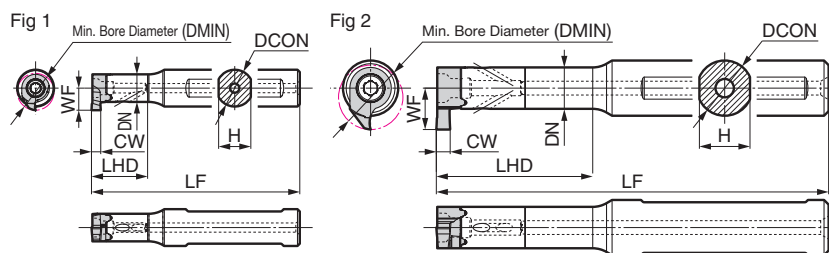


Competitor's Product

Work Material: SCM440 Work Diameter: $\phi 30\text{mm}$ Cutting Conditions: $v_c=180\text{m/min}$, $f=0.02\text{mm/rev}$, $a_p=0.2\text{mm}$ Wet (Oil-based)

SEC-Grooving Tools

SSH Type



Holder

Parts

Dimensions (mm)

Cat. No.	Stock	Diameter DCON	Head Dia. DN	Height H	Overall Length LF	Head Length LHD	Min. Bore Diameter DMIN	Width of Cut CW	Applicable Insert	Fig	Flat Screw		Wrench	
												(N·m)		
E08D-SSH M N125-08	●	8	6	7	60	12.5	8	0.74 to 2.00	SSH□ R/L 08...	1	BFTX02608IPS	1.2	TRX08IP	
E08E-SSH M N210-08	●	8	6	7	70	21.0	8	0.74 to 2.00		1				
E12E-SSH M N125-08	●	12	6	11	70	12.5	8	0.74 to 2.00		1				
E12F-SSH M N210-08	●	12	6	11	80	21.0	8	0.74 to 2.00		1				
E12G-SSH M N300-08	●	12	6	11	90	30.0	8	0.74 to 2.00		1				
E12H-SSH M N420-08	●	12	6	11	100	42.0	8	0.74 to 2.00	SSH□ R/L 14...	1	BFTX0412IPS	5.0	LT15IP	
E12X-SSH M N195-14	●	12	9	11	75	19.5	14	0.74 to 3.00		2				
E12H-SSH M N340-14	●	12	9	11	100	34.0	14	0.74 to 3.00		2				
E12J-SSH M N450-14	●	12	9	11	110	45.0	14	0.74 to 3.00		2				
E12X-SSH M N640-14	●	12	9	11	130	64.0	14	0.74 to 3.00		2				
E16F-SSH M N195-14	●	16	9	14	80	19.5	14	0.74 to 3.00		2				
E16H-SSH M N340-14	●	16	9	14	100	34.0	14	0.74 to 3.00		2				
E16J-SSH M N450-14	●	16	9	14	110	45.0	14	0.74 to 3.00		2				
E16X-SSH M N640-14	●	16	9	14	130	64.0	14	0.74 to 3.00		2				

*The LF dimensions above are dimensions with SSHG/SSHR type insert mounted. For WF dimensions, see the table below.

Insert (Coated Carbide)

Dimensions (mm)

Applications	Cat. No.	AC1000		Width of Cut CW	Max. Groove Depth CDX	Nose Radius RE	Cutting Edge Distance WF3	Cutting Edge Thickness WF	Cutting Edge Distance S	Cutting Edge Thickness E2	Applicable Holder	Fig	Fig 1 (For Grooving)
		R	L										
Grooving	SSHG R/L 0807400	●	●	0.74	1.0	—	3.2	4.80	3.6	0.4	E08□-SSHMN○○○-08 E12□-SSHMN○○○-08	1	
	SSHG R/L 0808400	●	●	0.84	1.0	—	3.2	4.80	3.6	0.4		1	
	SSHG R/L 0809400	●	●	0.94	1.0	—	3.2	4.80	3.6	0.4		1	
	SSHG R/L 0810000	●	●	1.00	1.0	—	3.2	4.80	3.1	—		1	
	SSHG R/L 0811900	●	●	1.19	1.0	—	3.2	4.80	3.1	—		1	
	SSHG R/L 0813900	●	●	1.39	1.0	—	3.2	4.80	3.0	—		1	
	SSHG R/L 0815000	●	●	1.50	1.0	—	3.2	4.80	3.0	—		1	
	SSHG R/L 0816900	●	●	1.69	1.0	—	3.2	4.80	3.0	—		1	
Radius Grooving/Profiling	SSHHR R/L 08080	●	●	0.80	1.0	0.40	3.2	4.80	3.1	—	E12□-SSHMN○○○-14 E16□-SSHMN○○○-14	2	
	SSHHR R/L 08120	●	●	1.20	1.0	0.60	3.2	4.80	3.1	—		2	
	SSHHR R/L 08180	●	●	1.80	1.0	0.90	3.2	4.80	3.0	—		2	
Chamfering	SSHC R/L 08454502	●	●	—	1.4	0.20	1.8	4.65	3.6	—	E12□-SSHMN○○○-14 E16□-SSHMN○○○-14	3	
Grooving	SSHG R/L 1407400	●	●	0.74	1.2	—	5.3	9.00	5.5	0.2		1	
	SSHG R/L 1408400	●	●	0.84	1.3	—	5.3	9.00	5.5	0.2		1	
	SSHG R/L 1409400	●	●	0.94	1.5	—	5.3	9.00	5.5	0.2		1	
	SSHG R/L 1410000	●	●	1.00	1.6	—	5.3	9.00	5.5	0.2		1	
	SSHG R/L 1411900	●	●	1.19	4.0	—	5.3	9.00	5.2	—		1	
	SSHG R/L 1413900	●	●	1.39	4.0	—	5.3	9.00	5.1	—		1	
	SSHG R/L 1415000	●	●	1.50	4.0	—	5.3	9.00	5.1	—		1	
	SSHG R/L 1416900	●	●	1.69	4.0	—	5.3	9.00	5.1	—		1	
	SSHG R/L 1420000	●	●	2.00	4.0	—	5.3	9.00	5.1	—		1	
	SSHG R/L 1425000	●	●	2.50	4.0	—	5.3	9.00	5.1	—		1	
Radius Grooving/Profiling	SSHHR R/L 1430000	●	●	3.00	4.0	—	5.3	9.00	5.1	—		1	
	SSHHR R/L 14120	●	●	1.20	4.0	0.60	5.3	9.00	5.2	—		2	
	SSHHR R/L 14180	●	●	1.80	4.0	0.90	5.3	9.00	5.1	—		2	
	SSHHR R/L 14200	●	●	2.00	4.0	1.00	5.3	9.00	5.1	—		2	
	SSHHR R/L 14220	●	●	2.20	4.0	1.10	5.3	9.00	5.1	—		2	
	SSHHR R/L 14300	●	●	3.00	4.0	1.50	5.3	9.00	5.1	—		2	

Recommended Cutting Conditions

Work Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron
Cutting Speed v_c (m/min)	20-200	15-80	20-160
Feed Rate f (mm/rev)	0.01-0.03	0.01-0.03	0.01-0.03



Recommended Tightening Torque (N·m) ● mark: Standard stocked item (new product/expanded item)



Clamp-on
for Internal Diameter Grooving

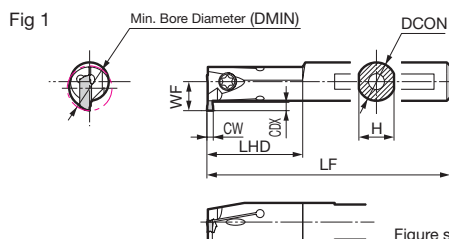
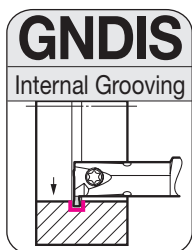


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Diameter DCON	Height H	Overall Length LF	Head LHD	Cutting Edge Distance WF	Min. Bore Diameter DMIN	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Dimensions (mm)		
	R	L											Flat Screw	N·m	Wrench
GNDIS R/L1214-T1526	●	●	12	11	150	30	9.0	14	1.5	2.6	GXM N150005S-GF	1	BFTX0409N	3.4	LT15
GNDIS R/L1214-T1536	●	●	12	11	150	30	10.0	14	1.5	3.6		1			
GNDIS R/L1616-T1536	●	●	16	15	160	35	11.5	16	1.5	3.6		1	BFTX0511N	5.0	LT20
GNDIS R/L1620-T1546	●	●	16	15	160	40	14.5	20	1.5	4.6	GXM N2002S-□□	1			
GNDIS R/L2025-T1566	●	●	20	19	180	40	19.0	25	1.5	6.6		1	BFTX0409N	3.4	LT15
GNDIS R/L1214-T2026	●	●	12	11	150	30	9.0	14	2.0	2.6		1			
GNDIS R/L1214-T2036	●	●	12	11	150	30	10.0	14	2.0	3.6	GXM N3002S-□□	1	BFTX0409N	3.4	LT15
GNDIS R/L1616-T2036	●	●	16	15	160	35	11.5	16	2.0	3.6		1			
GNDIS R/L1620-T2046	●	●	16	15	160	40	14.5	20	2.0	4.6		1	BFTX0511N	5.0	LT20
GNDIS R/L2025-T2066	●	●	20	19	180	40	19.0	25	2.0	6.6	GXM N3002S-□□	1			
GNDIS R/L1214-T3026	●	●	12	11	150	30	9.0	14	3.0	2.6		1	BFTX0409N	3.4	LT15
GNDIS R/L1214-T3036	●	●	12	11	150	30	10.0	14	3.0	3.6		1			
GNDIS R/L1616-T3036	●	●	16	15	160	35	11.5	16	3.0	3.6	GXM N3002S-□□	1	BFTX0409N	3.4	LT15
GNDIS R/L1620-T3046	●	●	16	15	160	40	14.5	20	3.0	4.6		1			
GNDIS R/L2025-T3066	●	●	20	19	180	40	19.0	25	3.0	6.6		1	BFTX0511N	5.0	LT20

Combine the insert with a holder such that the width of cut (CW) matches. Only GXM inserts can be used.

Identification Code

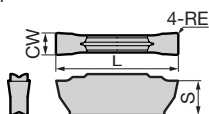
GND IS R 12 14 - T 15 26

Series	Application	Feed	Shank	Min.	For	Width	Maximum Groove
	Symbol: Direction		Dia.	Bore	Internal	of Cut x	Depth x 10
	Internal		(mm)	Diameter	Diameter	10	(mm)
	Diameter			(mm)	Machining	(mm)	
	Machining						

GNDIS Type Inserts

(Coated Carbide)

Fig 1



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC520U	AC1030U			Width of Cut CW	Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance				
ML	GXM N2002S-ML	●	●			2.0	±0.03	0.2	11.1	3.1	1
	N3002S-ML	●	●			3.0	±0.03	0.2	11.1	3.1	1

Low Feed

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC520U	AC1030U			Width of Cut CW	Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance				
GF	GXM N150005S-GF	—	●			1.5	±0.03	0.05	11.1	3.1	1
	GXM N2002S-GF	●	●			2.0	±0.03	0.2	11.1	3.1	5
	N3002S-GF	●	●			3.0	±0.03	0.2	11.1	3.1	1

Low Resistance

Combine the insert with a holder such that the width of cut (CW) matches. GCM/GCG inserts are not mutually compatible.

Recommended Cutting Conditions (GNDIS)

Work Material	P Carbon Steel / Alloy Steel	M Stainless Steel	K Cast Iron	S Exotic Alloy
Insert Grade	AC520U	AC1030U	AC520U	AC1030U
Cutting Speed v_c (m/min)	80-200	50-200	60-200	20-80

Grooving / Cut-Off / Necking

Chipbreaker		Feed Rate f (mm/rev)	
		ML	GF
Width of Cut CW (mm)	1.5	—	0.02 to 0.10
	2.0	0.03 to 0.12	0.03 to 0.12
	3.0	0.05 to 0.15	0.05 to 0.15

Traverse Cutting

Chipbreaker		ML	
		Feed Rate f (mm/rev)	Depth of Cut a_p (mm/rev)
Width of Cut CW (mm)	2.0	0.03 to 0.12	0.2 to 0.8
	3.0	0.05 to 0.15	0.3 to 1.2



Clamp-on
for Internal Diameter Grooving

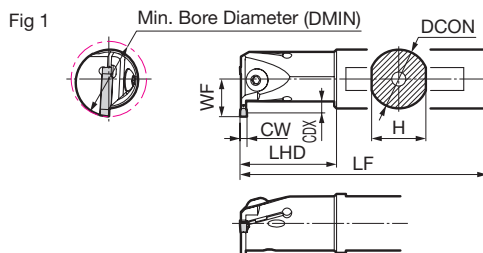
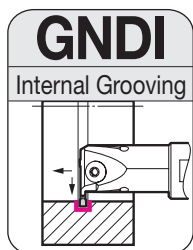


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

Cat. No.	Stock		Diameter DCON	Height H	Head LHD	Overall Length LF	Cutting Edge Distance WF	Min. Bore Diameter DMIN	Width of Cut CW	Max. Groove Depth CDX	Applicable Insert	Fig	Dimensions (mm)		
	R	L											Screw	N·m	Wrench
GNDI R/L2532-T206	●	●	25	23	40	200	16	32	2.0	6	GC□ N20○○-□□	1	BH0516	5.0	LH030
GNDI R/L3240-T210	●	●	32	30	50	250	26	40	2.0	10		1	BH0616	6.0	LH040
GNDI R/L2532-T306	●	●	25	23	40	200	16	32	3.0	6		1	BH0516	5.0	LH030
GNDI R/L3240-T310	●	●	32	30	50	250	26	40	3.0	10	GC□ N30○○-□□	1			
GNDI R/L4050-T311	●	●	40	38	60	300	31	50	3.0	11		1	BH0616	6.0	LH040
GNDI R/L2532-T406	●	●	25	23	40	200	19	32	4.0	6		1	BH0516	5.0	LH030
GNDI R/L3240-T410	●	●	32	30	50	250	26	40	4.0	10	GC□ N40○○-□□	1			
GNDI R/L4050-T411	●	●	40	38	60	300	31	50	4.0	11		1	BH0616	6.0	LH040
GNDI R/L2532-T506	●	●	25	23	40	200	19	32	5.0	6		1	BH0516	5.0	LH030
GNDI R/L3240-T510	●	●	32	30	50	250	26	40	5.0	10	GC□ N50○○-□□	1			
GNDI R/L4050-T511	●	●	40	38	60	300	31	50	5.0	11		1	BH0616	6.0	LH040
GNDI R/L4050-T611	●	●	40	38	60	300	31	50	6.0	11	GC□ N60○○-□□	1	BH0616	6.0	LH040

Combine the insert with a holder such that the width of cut (CW) matches. Refer to F51 for applicable inserts.

GNDI Type Inserts

(Coated Carbide / Cermet / Carbide)

Fig 1

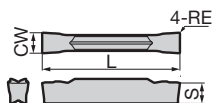


Fig 2

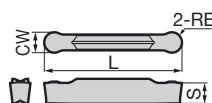
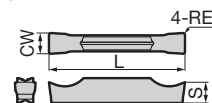


Fig 3



Grooving / Traverse Cutting

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
MG General-purpose	GCM N3004-MG	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	5	1
	GCM N4008-MG	●	●	●	●	—	4.0	±0.03	0.8	26.4	4.0	5	1
	N5008-MG	●	●	●	●	—	5.0	±0.03	0.8	26.4	4.1	5	1
	N6008-MG	●	●	●	●	—	6.0	±0.03	0.8	26.4	4.5	5	1
ML General-purpose CW = up to 40mm CW = 5.0mm up Low Feed	GCM N2002-ML	—	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-ML	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	GCM N4004-ML	●	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-ML	●	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-ML	●	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1

Grooving / Cut-Off Machining

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GG General-purpose	GCM N2002-GG	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GG	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GG	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GG	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GG	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N3004-GG	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	1	1
GL General-purpose Low Feed	N4004-GG	●	●	●	—	4.0	±0.03	0.4	26.4	4.0	5	1
	N5004-GG	●	●	●	—	5.0	±0.03	0.4	26.4	4.1	5	1
	N6004-GG	●	●	●	—	6.0	±0.03	0.4	26.4	4.5	5	1
	GCM N2002-GL	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	1	1
GF General-purpose Low Resistance	N3002-GL	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GL	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GL	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GL	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1
	GCM N2002-GF	—	—	—	—	2.0	±0.03	0.2	21.1	3.6	1	1
	N3002-GF	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	1	1
	N4002-GF	●	●	●	—	4.0	±0.03	0.2	26.4	4.0	5	1
	N5002-GF	●	●	●	—	5.0	±0.03	0.2	26.4	4.1	5	1
	N6002-GF	●	●	●	—	6.0	±0.03	0.2	26.4	4.5	5	1

External Profiling / External Radius Grooving

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	T2500A	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
							Width of Cut	Tolerance					
RG General-purpose	GCM N3015-RG	●	●	●	●	—	3.0	±0.03	1.5	21.1	3.8	5	2
	N4020-RG	●	●	●	●	—	4.0	±0.03	2.0	26.4	4.0	5	2
	N5025-RG	●	●	●	●	—	5.0	±0.03	2.5	27.2	4.1	5	2
	N6030-RG	●	●	●	●	—	6.0	±0.03	3.0	27.5	4.5	5	2

Profiling / Radius Grooving / Necking

Dimensions (mm)

Appearance	Cat. No.	AC830P	AC425K	AC520U	AC530U	Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
RN General-purpose	GCM N2010-RN	—	—	—	—	2.0	±0.03	1.0	21.7	3.6	2	2
	N3015-RN	●	●	●	●	3.0	±0.03	1.5	22.4	3.8	2	2
	N4020-RN	●	●	●	●	4.0	±0.03	2.0	28.0	4.0	5	2
	N5025-RN	●	●	●	●	5.0	±0.03	2.5	28.1	4.1	5	2
	N6030-RN	●	●	●	●	6.0	±0.03	3.0	28.1	4.5	5	2

Non-Ferrous Metals

Dimensions (mm)

Appearance	Cat. No.	H10				Width of Cut CW		Nose Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
						Width of Cut	Tolerance					
GA General-purpose	GCG N2002-GA	●				2.0	±0.025	0.2	21.1	3.6	3	3
	N3002-GA	●				3.0	±0.025	0.2	21.1	3.8	3	3
	GCG N4004-GA	●				4.0	±0.025	0.4	26.4	4.0	5	3
	N5004-GA	●				5.0	±0.025	0.4	26.4	4.1	5	3
	N6004-GA	●				6.0	±0.025	0.4	26.4	4.5	5	3

SEC-Grooving Tool GND Type Special Grooving Insert Request Form

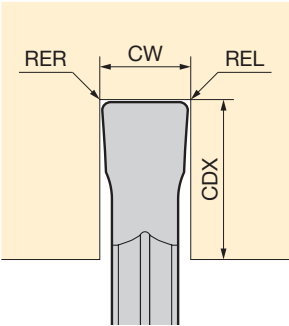
Applicable Tool Holders (Width of Cut 2 to 6mm)
External Diameter Machining: GND S Type (→F24), GND M Type (→F22, F26, F28), GND MS Type (→F26), GND L Type (→F22, F30, F32), GND LS Type (→F30), GND CM Type (→F34)
Internal Diameter Machining: GND I Type (→F50) *GND IS types cannot be used as the insert shape is different
Facing: GND F Type (→F40), GND FS Type (→F42)

Grooving Tools

F

Special inserts with ground chipbreaker (customized width of cut and insert nose radius) can be made-to-order. To order, fill out the form below (indicate preference by circling the item or specify dimensions), and send it to a Sumitomo Electric Hardmetal dealer or distributor. (Make a copy of this form.)
For grooving inserts with shape, width of cut or grade other than those listed below, contact your nearest Sumitomo Electric Hardmetal sales office (refer to the back of this catalog)

Your Company / Contact Information (Phone / Fax / Address, etc.)

Shape	Items	Description
	Width of Cut CW (mm) (2.00 to 6.59mm)	
	Nose Radius RER (mm)	
	Nose Radius REL (mm)	
	Grade (Select from right)*1	AC530U / AC520U / EH520 / H10 / KH03
	Grooving Depth CDX (mm)*2	
*1 If H10 is selected as the grade, the cutting edge will have a sharp edge. *2 Set the breaker width based on CDX. The actual groove depth can only be less than or equal to the maximum groove depth configurable by each holder.		

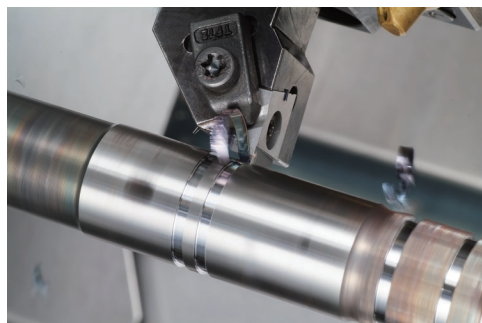
Form instructions

- The applicable standard holder depends on the width of cut. Refer to the chart on the right for manufacturable widths of cut and nose radius range for facing. (If using a nose radius exceeding this for facing, modification is required to prevent the holder from interfering with the work material.)
- The nose radius maximum value for external/internal diameter machining is 1/2 the width of cut.
- Width of cut (CW) tolerance is ±0.025mm when manufactured.
- WF dimensions for each holder are the CWS value for the applicable holder standard insert width of cut as follows.
(Standard holder dimension WF) + (WF - CWS) / 2
- For inch widths of cut, inserts can also be supplied partially unground.

Contact your local sales office for details.

Width of Cut CW (Nominal Value)	Applicable Standard Holder	Nose radius (RER, REL) maximum value when used for facing (standard holder applicable)
2.00 to 2.59mm	2mm Width Holder	0.2mm
2.60 to 3.59mm	3mm Width Holder	0.4mm
3.60 to 4.59mm	4mm Width Holder	0.8mm
4.60 to 5.59mm	5mm Width Holder	
5.60 to 6.59mm	6mm Width Holder	

GWB Type



Features

- Vertically-mounted insert enhances tool rigidity
- Double clamping holder design improves stability during continuous and interrupted cutting. Can also be used for traverse cutting
- Long tool life for interrupted cutting applications with the new Coated SUMIBORON BNC30G grade for grooving (BN2000 recommended for continuous cutting)
- Suited for grooving various types of hardened steel. Variety of widths available from 1.5 to 6.0mm



Double Clamp
for Hardened Steel Shallow Grooves

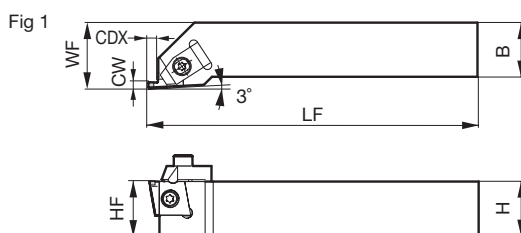
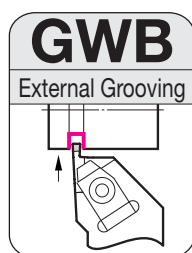


Figure shows right hand (R) tool.

Holder

Parts

Dimensions (mm)

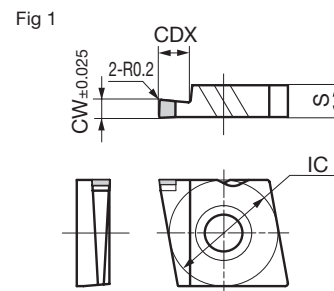
Cat. No.	Stock		Height	Width	Overall Length	Cutting Edge Distance	Cutting Edge Height	Width of Cut	Max. Groove Depth	Group No.	Fig	Clamp	Cap Screw		Flat Screw	Spring	Wrench
	R	L	H	B	LF	WF	HF	CW	CDX								
GWB R/L 2525-45	●	●	25	25	151 (150)	30	25	1.5 ≤ CW ≤ 4.5	3.5 to 5.0	1	1	TF72/TF73	BX0520T	5.0	BFTX0511N	GSP06	TRX20
GWB R/L 2525-60	●	●	25	25	151	30	25	4.5 < CW ≤ 6.0	5.0	2	1						

Dimensions in () are for width of cut (CW) of 3.0 or less. Right-handed (R) tool holders are applicable with right-handed (R) inserts and clamps (TF72).

Insert (SUMIBORON)

Dimensions (mm)

Cat. No.	BN2000		BNC30G		Width of Cut	Groove Depth	Inscribed Circle	Thickness	Group No.	Applicable Holder	Fig
	R	L	R	L							
CGA R/L 1504150	●	●	●	●	1.5	3.5	15.875	4.76	1	GWB R/L 2525-45	1
CGA R/L 1504200	●	●	●	●	2.0	3.5	15.875	4.76			1
CGA R/L 1504250	●	●	●	●	2.5	4.0	15.875	4.76			1
CGA R/L 1504300	●	●	●	●	3.0	4.0	15.875	4.76			1
CGA R/L 1504350	●	●	●	●	3.5	5.0	15.875	4.76			1
CGA R/L 1504400	●	●	●	●	4.0	5.0	15.875	4.76			1
CGA R/L 1504450	●	●	●	●	4.5	5.0	15.875	4.76			1
CGA R/L 1506500	●	●	●	●	5.0	5.0	15.875	6.35	2	GWB R/L 2525-60	1
CGA R/L 1506550	●	●	●	●	5.5	5.0	15.875	6.35			1
CGA R/L 1506600	●	●	●	●	6.0	5.0	15.875	6.35			1



* It is also possible to manufacture widths of cut other than those listed above (CW = 1.5 to 6.0mm).

Grade Features

Grade	Application Range	Features	HV(GPa)	TRS(GPa)
BN2000	Continuous Grooving	General-purpose grade with superior wear resistance	31 to 34	1.0 to 1.1
BNC30G	Interrupted Grooving	Grade suited to interrupted grooving. Features tough substrate and special ceramic coating that exhibits both peel-off and wear resistance.	33 to 35	1.1 to 1.2

Recommended Cutting Conditions

Cutting Conditions	H Hardened Steel
Cutting Speed v_c (m/min)	80 to 120
Feed Rate f (mm/rev)	0.04 to 0.08

* In order to avoid thermal cracking of the SUMIBORON cutting edge during interrupted cutting, ensure that the work material is thoroughly dry before cutting.

Application Examples

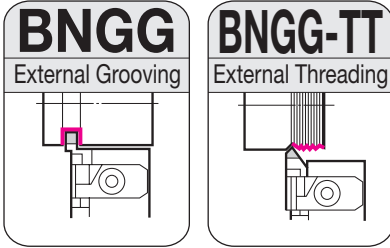
Tooling	Work Material	Tool Cat. No.	Cutting Condition	Tool Life Comparison
Shaft Grooving: Continuous Required Surface Roughness for Groove Sides: Ra0.4μm	Carburised steel 58 to 62HRC	CGAR1504200 BN2000	v_c : 120m/min f : 0.05mm/rev Groove Depth: 2mm Dry	GWB Type BN2000 No Chipping Conventional Tool Chipping
Spline Grooving: Interrupted 	Carburised steel 58 to 62HRC	CGAR1504200 BNC30G	v_c : 100m/min f : 0.05mm/rev Groove Depth: 1.6mm Dry	GWB Type BNC30G No Chipping Competitor's Product Chipping

SUMIBORON Grooving Tools

BNGG Type

Grooving Tools

F



Features

- Improved rigidity for longer tool life
Strong clamping reduces insert breakage and holder chatter
- Enhanced tooling for 2mm fine grooves or threading
Grooving and threading can be done by changing the support

Clamp-on
for Hardened Steel Shallow Grooves

Fig 1 (Grooving)

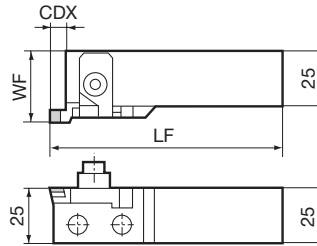
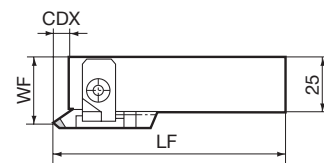


Fig. 2 (Threading)



Holder

Dimensions (mm)

	Cat. No.	Stock		Cutting Edge Distance WF	Groove Depth CDX	Overall Length LF	Applicable Insert	Fig
		R	L					
Grooving	BNGG R/L2525-200	●		30.5	4	150	BNGNT0200 R/L	1
	BNGG R/L2525-250	●		30.5	4	150	BNGNT0250 R/L	1
	BNGG R/L2525-300	●		30.5	5	150	BNGNT0300 R/L	1
	BNGG R/L2525-400	●		30.5	6	151	BNGNT0400 R/L	1
	BNGG R/L2525-500	●		30.5	6	151	BNGNT0500 R/L	1
	BNGG R/L2525-600	●		30.5	7	152	BNGNT0600 R/L	1
Threading	BNGG R/L2525-TT	●		28.5	5	150	BNTT1020 R/L, BNTT1530 R/L	2

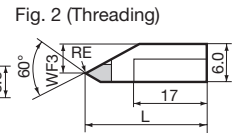
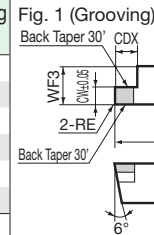
Inserts are not embedded into tool holders.

* Holder body is universal. The holder can be configured for different groove widths or threading by changing the support.

Insert (□)SUMIBORON

Dimensions (mm)

	Cat. No.	BN250		BNX20		BN350		BNX25		Width of Cut CW	Groove Depth CDX	Nose Radius RE	Overall Length L	Cutting Edge Distance WF3	Applicable Holder	Fig
		R	L	R	L	R	L	R	L							
Grooving	BNGNT0200 R/L	●				●				2.0	4.0	0.2	25	6.0	BNGG R/L 2525-200	1
	BNGNT0250 R/L	●				●				2.5	4.0	0.2	25	6.0	BNGG R/L 2525-250	1
	BNGNT0300 R/L	●				●				3.0	5.0	0.4	25	6.0	BNGG R/L 2525-300	1
	BNGNT0400 R/L	●				●				4.0	6.0	0.4	26	6.0	BNGG R/L 2525-400	1
	BNGNT0500 R/L	●				●				5.0	6.0	0.4	26	6.0	BNGG R/L 2525-500	1
	BNGNT0600 R/L	●				●				6.0	7.0	0.4	27	6.0	BNGG R/L 2525-600	1
Threading	BNTT1020 R/L	●								Pitch 1.0 to 2.0	0.14	25	4.0		BNGG R/L 2525-TT	2
	BNTT1530 R/L	●								Pitch 1.5 to 3.0	0.2	25	4.0		BNGG R/L 2525-TT	2



Parts

Applicable Holder	Support	Clamp	Adjustment Screw	Spring	Cap Screw	Wrench
BNGG R/L2525-200	BNGS R/L 200					
BNGG R/L2525-250	BNGS R/L 250					
BNGG R/L2525-300	BNGS R/L 300					
BNGG R/L2525-400	BNGS R/L 400	BNGC R/L	FMJ	GSP06	BX0615 (For Clamp) BX0414 (For Support)	LH050 (For Clamp) LH030 (For Support)
BNGG R/L2525-500	BNGS R/L 500					
BNGG R/L2525-600	BNGS R/L 600					
BNGG R/L2525-TT	BNGS R/L TT					

Recommended Cutting Conditions

● Grooving

Cutting Conditions	H Hardened Steel
Cutting Speed v_c (m/min)	80 to 120
Feed Rate f (mm/rev)	0.03 to 0.07

● Threading

Cutting Conditions	H Hardened Steel
Cutting Speed v_c (m/min)	80 to 120
Feed Rate f (mm)	Maximum Pitch 3.0