

Milling Cutters (Special Purpose)

H273 to H287

H

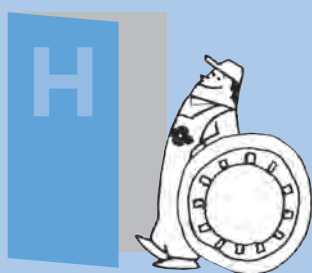
Milling Cutters
(Special Purpose)

H

Goal Mill

High-Feed

Quick
Change



For High Feed Cast Iron Milling	SEC-Goal Mill series	H274
	GFX(C) 13000 type	H276
	GFX 16000 type	H277
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For High Feed Cast Iron Milling	SEC-High-Feed Mill series	H280
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QC System	IGETALLOY Quick Change System	H286
	Applicable Cutters for QC-System	H287

Stock Markings and Symbols

- mark: Standard stocked item
- mark: To be replaced with the new item featured on the same page
- ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

- * mark: Semi-standard stock (please confirm stock availability)
- mark: Stock or planned stock (please confirm stock availability)
- Blank: Made-to-order item
- mark: Not available

H273



■ Features

SEC-Goal Mill series cutters have been developed for high-efficiency roughing and finishing of cast iron parts (such as engine cylinder blocks and transmission cases).

■ Product Range

- Special cutters for high-feed milling of cast iron
- Multi-teeth design (approx. 3 teeth per inch)
- Equipped with an easy-to-use edge runout fine-adjustment mechanism for finishing
- Highly reliable cutter with tangential inserts for finishing
- Chipbreaker type inserts for low cutting force

Series Code	GFX	GRHN
Applications	Finishing	Roughing
Surface Roughness	< Ra3.2	< Ra12.5
Appearance		

Refer to the QC system on pages H286 and H287 for details and specifications on the two-piece mounting system and adapter.

Work Material	Applications	High-speed Finishing			Finishing to General Cutting			Interrupted Cutting			Applicable Cutter
	Finishing	BN7000			ACK260			ACK280			GFX series

Work Material	Applications	Light Cutting			General Cutting			Heavy Interrupted Cutting			Applicable Cutter
	For Roughing	ACK100			ACK200			ACK300			GRHN series

■ Grade Characteristics

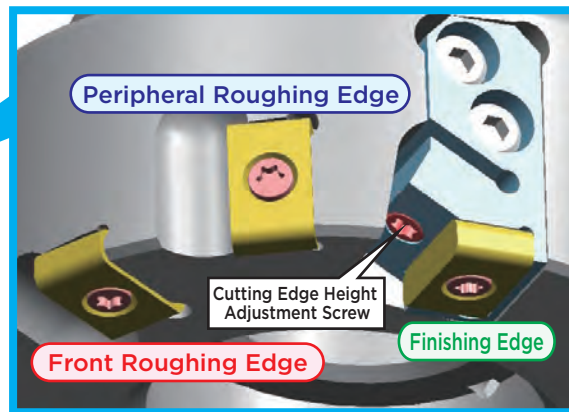
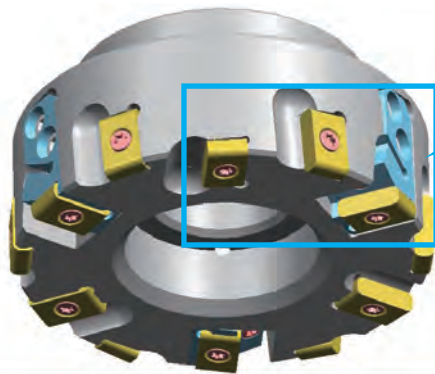
Work Material	Grade	Hardness	TRS (GPa)	Main Coating Components	Coating Thickness (μm)	Features	
	Coated Carbide	ACK100	92.0HRA	2.4	Super FF Coat	6	· High-speed milling grade that combines a high-strength carbide substrate and Super FF Coat for outstanding wear resistance.
		ACK200	91.7HRA	2.5	Super FF Coat	6	· High-speed milling grade that utilizes a tough carbide substrate with a thin Super FF Coat for excellent thermal crack and wear resistance.
		ACK260	92.6HRA	2.6	Super ZX Coat	3	· For finishing to general milling of cast iron and ductile cast iron. · Employs new super multi-layered PVD coating consisting of nanometre-thin layers of TiAlN and AlCrN. Combines with a tough, thermal-resistant substrate for long and stable tool life.
		ACK280	91.7HRA	3.0	Super ZX Coat	3	· For heavy interrupted cutting or wet cutting of cast iron and ductile cast iron. · Employs new super multi-layered PVD coating consisting of nanometre-thin layers of TiAlN and AlCrN. Coupled with an ultra-tough substrate for superior fracture resistance and thermal crack resistance during wet cutting.
		ACK300	91.4HRA	3.3	Super ZX Coat	3	· General-purpose to interrupted milling of cast iron and ductile cast iron. · Employs a super multi-layered PVD coating consisting of nanometre-thin layers. Provides excellent fracture resistance when combined with a fine-grained tough substrate.
	CBN	BN7000	41.0HV to 44.0HV	1.8 up to 1.9	—	—	· Grade exhibiting improved wear and fracture resistance in cutting of cast iron and exotic alloys.

BN7000 Characteristic Values 

ACK100, ACK200, ACK300 Characteristic Values 

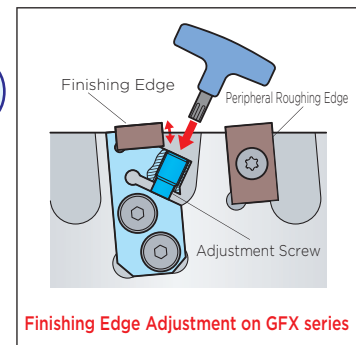
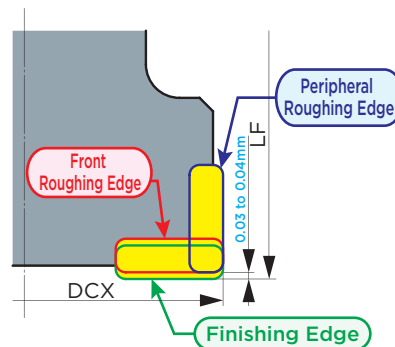
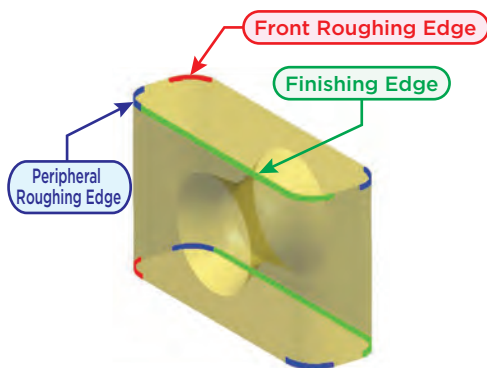
■ GFX series Features

● Simple Runout Adjustment



Finishing edge runout can be adjusted by 5 μm or less simply by turning the adjustment screw.

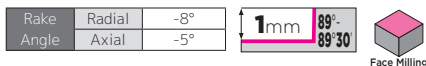
● Economical 8-Cornered Insert



Arranging the same number of vertical and horizontal inserts allows 8-corner configuration.

■ GFX series Finishing Edge Runout Adjustment Procedure

(1) Insert Assembly Attach insert to cutter body. When doing so, check that the cartridge adjustment screw is completely loose.	Adjustment Screw Peripheral Roughing Edge (Direct-Mounted) Front Roughing Edge (Direct-Mounted) Finishing Edge (Cartridge)	(4) Adjust Finishing Edge Height Select a finishing edge and adjust with the adjustment screw so that the edge protrudes around 0.03 to 0.04mm further than (3).	+0.03 to 0.04mm
(2) Check Roughing Edge Runout Measure face runout of the roughing edge and identify the cutting edge that protrudes the most.		(5) Adjust Runout With the finishing edge from (4) as a reference, adjust the position of the other finishing edges so that runout is equal to or less than 5 μm.	Runout: 5 μm or less.
(3) Set Reference Roughing Edge Set the cutting edge height of the insert identified in (2) as "0".	Highest Roughing Edge 0	! - Always adjust finishing edge height before use. Adjust the height in the screw tightening directions. - Using the tool with the adjustment screw loosened may cause damage to the tool. * Adjusting finishing edge runout to 2 μm or less will result in a better machined surface.	



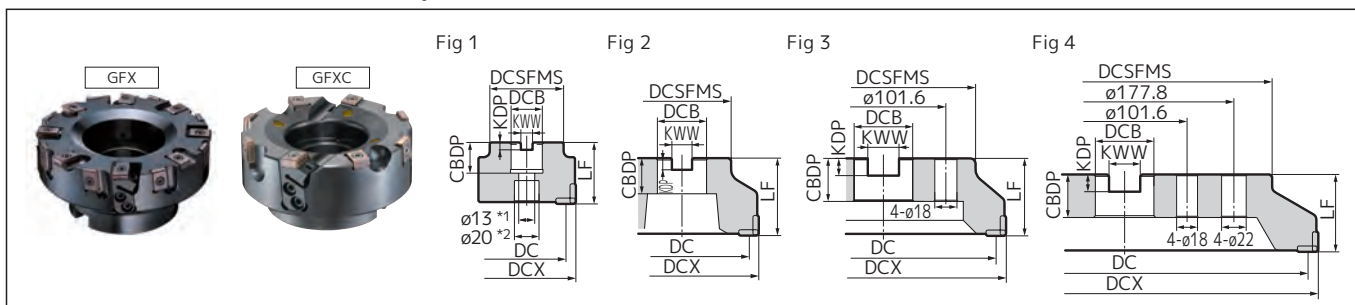
Face Milling

Milling Cutters
(Special Purpose)

H

Goal Mill

High-Feed

Quick
Change

Body (Standard Pitch)

Dimensions (mm)

Cat. No.	Stock		Max. Dia. DCX	Dia. DC	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CBBDP	Total No. of Teeth	Number of Finishing Teeth	Effective No. of Teeth	Weight (kg)	Fig
	R	L													
GFX 13080R/L	●		80	67.3	60	50	25.4	9.5	6	25	8	2	8	1.4	1
13100R/L	●		100	87.3	70	50	31.75	12.7	8	32	12	3	12	1.9	2
13125R/L	●		125	112.3	80	63	38.1	15.9	10	38	16	4	16	3.3	2
13160R/L	●		160	147.3	120	63	50.8	19.1	11	38	20	5	20	6.4	2
13200R/L	●		200	187.3	150	63	47.625	25.4	14	35	28	7	28	7.8	3
13250R/L	●		250	237.3	200	63	47.625	25.4	14	35	36	9	36	12.6	3
13315R/L	●		315	302.3	240	80	47.625	25.4	14	35	44	11	44	20.2	4

Body (Coarse Pitch)

Dimensions (mm)

Cat. No.	Stock		Max. Dia. DCX	Dia. DC	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CBBDP	Total No. of Teeth	Number of Finishing Teeth	Effective No. of Teeth	Weight (kg)	Fig
	R	L													
GFXC13063RS/LS	●		63	50.3	50	50	22	10.4	6.3	20	4	1	4	0.9	1
GFXC13080R/L	●		80	67.3	60	50	25.4	9.5	6	25	6	1	6	1.4	1
13100R/L	●		100	87.3	70	50	31.75	12.7	8	32	8	2	8	1.9	2
13125R/L	●		125	112.3	80	63	38.1	15.9	10	38	10	2	10	3.3	2
13160R/L	●		160	147.3	120	63	50.8	19.1	11	38	12	3	12	5.9	2
13200R/L	●		200	187.3	150	63	47.625	25.4	14	35	16	4	16	7.8	3
13250R/L	●		250	237.3	184	63	47.625	25.4	14	35	20	5	20	9.4	3
13315R/L	●		315	302.3	240	80	47.625	25.4	14	35	24	6	24	17.9	4

*1: In GFXC13063RS/LS, it is $\phi 11$. (Fig 1) *2: In GFXC13063RS/LS, it is $\phi 18$. (Fig 1) Inserts are sold separately.**Note** For mounting the cutters marked with * to an arbor, use a JIS B1176 hex socket bolt (M12 x 30 to 35mm).

Insert

Dimensions (mm)

Fig 1		Fig 2				
Grade Classification		Coated Carbide	Carbide	CBN		
Process	High-speed Finishing			K		
	Finishing/Medium Cutting	K				
	Roughing	K	K			
Cat. No.		ACK260	H10E	BN7125	Corner Radius RE	Fig
		ACK280		BN7000		
LNGX 130508PNFN-W		●	●	—	0.8	1
		●	●	—	1.6	1
130516PNFN-W		—	●	—	1.6	1
130516PNTN-W		—	—	○ ●	1.6	2

Parts **H277**

● Allowable Spindle Speed for CBN Inserts by Size

H277

Precautions for Use of GFXC type

GFXC type can be used with fewer teeth attached. In this case, only mount inserts to the mounting positions with markings. Remove the screws from the mounting positions where inserts will not be mounted.



Only mount inserts to the mounting positions with markings

GFXC type with total no. of teeth and when mounting reduced no. of teeth.

Cat. No.	Dia. DC	Total No. of Teeth	Reduced No. of Teeth	Cat. No.	Dia. DC	Total No. of Teeth	Reduced No. of Teeth
GFXC 13063RS/LS	63mm	4	2	GFXC 13160R/L	160mm	12	6
13080R/L	80mm	6	2	13200R/L	200mm	16	8
13100R/L	100mm	8	4	13250R/L	250mm	20	10
13125R/L	125mm	10	4	13315R/L	315mm	24	12

The number of inserts mounted should always match either the "Total No. of Teeth" or "Reduced No. of Teeth" quantities.

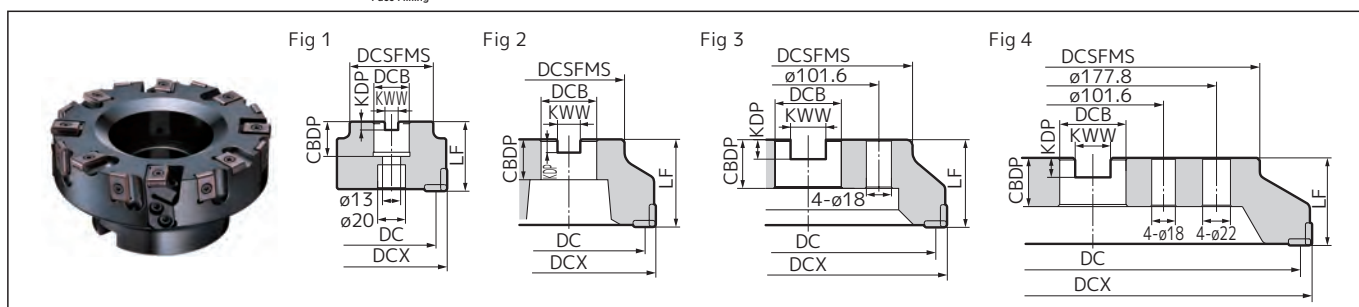
Recommended Cutting Conditions

ISO	Work Material	Hardness	Cutting Speed vc (m/min) Min. - Optimum - Max.	Feed Rate fz (mm/t) Min. - Optimum - Max.	Insert Grades
K	Cast Iron	250HB	200- 250 - 350	0.1- 0.3 -0.5	ACK260
K	Cast Iron	250HB	800- 1,000 -1,200	0.1- 0.3 -0.5	BN7125

Note Calculate cutting conditions based on effective no. of teeth.

The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

Rake Angle	Radial	-8°
	Axial	-5°
		1mm
		89°-89°30'



Body

Dimensions (mm)

Cat. No.	Stock		Max. Dia. DCX	Dia. DC	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CDBP	Total No. of Teeth	Number of Finishing Teeth	Effective No. of Teeth	Weight (kg)	Fig
	R	L													
GFX 16080R/L			80	64.1	60	50	25.4	9.5	6	25	8	2	8	1.4	1
16100R/L	●		100	84.125	70	50	31.75	12.7	8	32	12	3	12	1.9	2
16125R/L	●		125	109.125	80	63	38.1	15.9	10	38	16	4	16	3.3	2
16160R/L	●		160	144.125	120	63	50.8	19.1	11	38	20	5	20	6.4	2
16200R/L	●		200	184.125	150	63	47.625	25.4	14	35	28	7	28	7.8	3
16250R/L			250	234.1	130	63	47.625	25.4	14	35	36	9	36	12.6	3
16315R/L			315	299.125	240	80	47.625	25.4	14	35	44	11	44	20.8	4

Inserts are sold separately.

Note For mounting the cutters marked with * to an arbor, use a JIS B1176 hex socket bolt (M12 x 30 to 35mm).

Insert

Dimensions (mm)

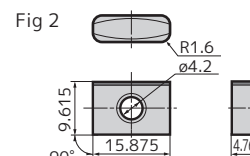
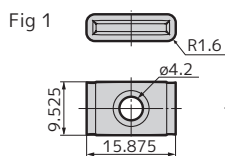
Grade Classification		Coated Carbide	Carbide	CBN				
Process	High-speed Finishing			K				
	Finishing/Medium Cutting	K						
	Roughing		K K					
Cat. No.		ACK260	ACK280	ACK300	H10E	BN7125	BN7000	Fig
LNGX 160516PNFN-W		●	●		●	—	—	1
160516PNTN-W		—	—	—	—	—	—	2

Fig 1

9.525
15.875
4.2
R1.6
4.76

Fig 2

9.615
15.875
4.2
R1.6
4.76
90°



Parts

Cartridges		Wrench	Adjustment	Wrench	Flat	Wrench	Cap Screw/Radial Cartridge		Anti-seizure
(For 13000)	(For 16000)	(For Cartridges)	Screw	(For Adjustment Screw)	Insert Screw		(For GFXX4R/L)	(For GFVK5R/L)	Cream
GFXX4R/L	GFVK5R/L	TH030	BTD05F09	LT15	BFTX03588	3.0 TTX15W	BX0414	BX0418	SUMI-P

Finishing cartridges do not come assembled with inserts.

● Allowable Spindle Speed for CBN Inserts by Size

Max. Dia. (mm) DCX	Allowable Spindle Speed (min) ⁻¹ n max.	Max. Dia. (mm) DCX	Allowable Spindle Speed (min) ⁻¹ n max.
ø63	6,000	ø160	2,300
ø80	4,700	ø200	1,900
ø100	3,800	ø250	1,500
ø125	3,000	ø315	1,200

Recommended Cutting Conditions

ISO	Work Material	Hardness	Cutting Speed vc (m/min) Min. - Optimum - Max.	Feed Rate fz (mm/t) Min. - Optimum - Max.	Insert Grades
K	Cast Iron	250HB	200- 250 - 350	0.1- 0.3 - 0.5	ACK260
K	Cast Iron	250HB	800- 1,000 - 1,200	0.1- 0.3 - 0.5	BN7125

Note Calculate cutting conditions based on effective no. of teeth.
The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

Rake Angle	Radial	-6°30' to -5°
	Axial	-6°

6mm 60°



Face Milling

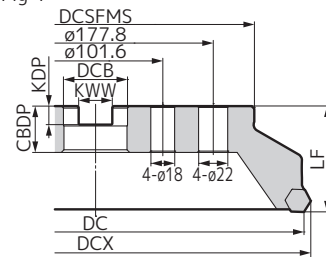
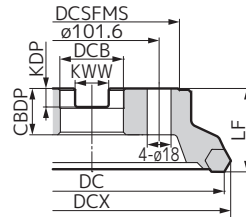
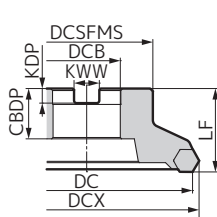
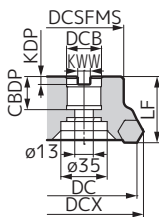
GRHNM 1700

Fig 1

Fig 2

Fig 3

Fig 4



Body

Dimensions (mm)

Cat. No.	Stock		Dia. DC	Max. Dia. DCX	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CBDBP	Total No. of Teeth	Weight (kg)	Fig
	R	L											
GRHNM 17080R/L	●		*80	90.5	60	50	25.4	9.5	6	25	8	1.2	1
17100R/L	●		100	110.5	70	50	31.75	12.7	8	32	10	1.7	2
17125R/L	●		125	135.5	80	63	38.1	15.9	10	38	12	2.9	2
17160R/L	●		160	170.5	100	63	50.8	19.1	11	38	16	4.5	2
17200R/L	●		200	210.5	130	63	47.625	25.4	14	35	20	7.3	3
17250R/L	●		250	260.5	130	63	47.625	25.4	14	35	24	13.1	3
17315R/L	●		315	325.5	240	80	47.625	25.4	14	40	28	24.5	4

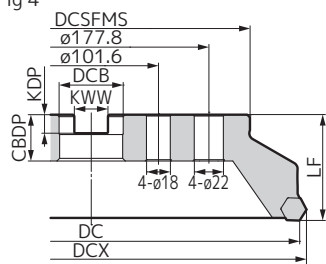
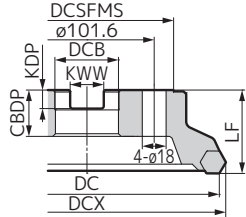
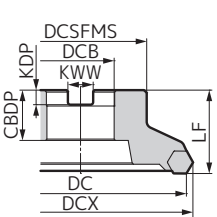
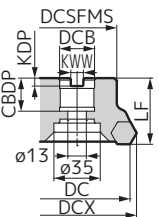
GRHNF 1700

Fig 1

Fig 2

Fig 3

Fig 4



Body

Dimensions (mm)

Cat. No.	Stock		Dia. DC	Max. Dia. DCX	Boss DCSFMS	Height LF	Hole Dia. DCB	Keyway Width KWW	Keyway Depth KDP	Mounting Depth CBDBP	Total No. of Teeth	Weight (kg)	Fig
	R	L											
GRHNF 17080R/L	●		*80	90.5	60	50	25.4	9.5	6	25	10	1.2	1
17100R/L	●		100	110.5	70	50	31.75	12.7	8	32	14	1.8	2
17125R/L	●		125	135.5	80	63	38.1	15.9	10	38	18	2.9	2
17160R/L	●		160	170.5	100	63	50.8	19.1	11	38	22	4.5	2
17200R/L	●		200	210.5	130	63	47.625	25.4	14	35	28	7.3	3
17250R/L	●		250	260.5	130	63	47.625	25.4	14	35	36	13.1	3
17315R/L	●		315	325.5	240	80	47.625	25.4	14	40	44	24.5	4

Inserts are sold separately.

Note For mounting the cutters marked with * to an arbor, use a JIS B1176 hex socket bolt (M12 x 30 to 35mm).

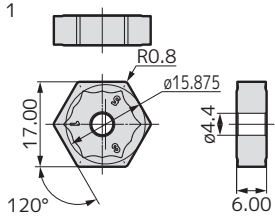
Note: The values in red have been changed from the 2023-2024 General Catalogue.

Insert

Dimensions (mm)

Grade Classification		Coated Carbide		
Process	High-speed/Light Cutting	K	K	
	Medium Cutting	K	K	
	Roughing			K
Cat. No.		ACK100	ACK200	ACK300
HNEF 100608DNEN-G		●	●	●
		Fig		
		1		

Fig 1



Parts

Double Screw	Clamp Plate	Wrench	Anti-seize Cream
WB6-20T	6.0 GRHNW	TTX20	SUMI-P

Recommended Cutting Conditions

ISO	Work Material	Hardness	Cutting Speed vc (m/min) Min. - Optimum - Max.	Feed Rate fz (mm/t) Min. - Optimum - Max.	Insert Grades
K	Cast Iron	250HB	200-250-300	0.15-0.23-0.30	ACK200

Note Calculate cutting conditions based on effective no. of teeth.
The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

DNX series Multi-tooth type

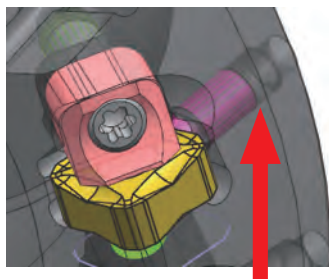
Edge Chipping/Surface Roughness Countermeasures Cutter Design Inquiry Sheet

Select a cutter design and enter the dimensions in .

After completion, send the sheet to our nearest sales office or distributor.

Feel free to contact us for other shapes or dimensions or with other requests.

Company Name/Contact



Multi-tooth design via wedge clamp (3.5 teeth/inch)

Adjustment mechanism via adjustment screw

Compatible diameters: $\phi 63$ to $\phi 400$ mm
(Contact us for diameters over $\phi 400$ mm)

*Maximum number of teeth is the same as GRHNF type.
(Contact us for sizes not listed in the catalogue.)



Competitor's Cutter: Large Edge Chipping



DNX series Cutter: No Edge Chipping

Parts

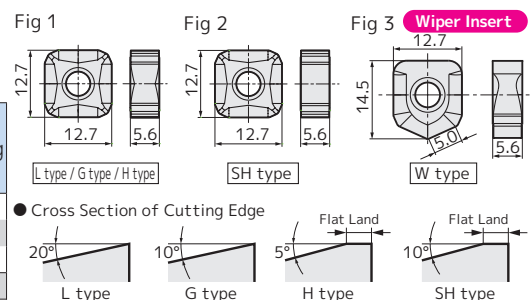
Double Screw	Clamp Plate	Wrench	Anti-seizure Cream	Adjustment Screw	Wrench
WB6-20T	6.0	DNXW	TTX20	SUMI-P	BTD05F09 LT15

Dimensions (mm)

Insert

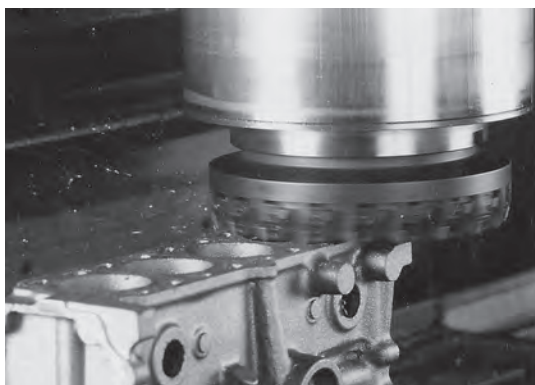
Grade Classification		Coated Carbide					Cutting Edge Shape	Applications	Fig
Process		High-speed/Light Cutting	Medium Cutting	Roughing					
		K	K		P	M			
		K	K		P	M			
				K	P	M			
Cat. No.		ACK100	ACK200	ACK300	ACP200	ACP300			
SNMT 1205ZNEN-L		●	●	●	●		V-shaped Edge type	Light Cutting	1
1205ZNEN-G		●	●	●	●			General-purpose	1
1205ZNEN-H		●	●	●	●			Heavy Cutting	1
SNMT 1205ZNEN-SH		●	●	●	●	●	Straight type	Improved Chip Control	2
XNGT 1205ZNEN-W		●	●	●	●			Improved Surface Roughness	3
							Wiper Insert		

Refer to page H42 "Precautions When Using Wiper Inserts With Holes" (Mounting Precautions).



Effective No. of Teeth	Type 1. $\phi 63$ to $\phi 200$ mm	Type 2. $\phi 250$ mm up
Desired:		
Feed Direction:		
Right-handed ☐		
Left-handed ☐		

High-Feed Face Mills



■ Features

Sumitomo Electric Hardmetal SEC-High-Feed Face Mills achieve high-performance milling particularly suited for cast irons, aluminum and light alloys. Cutting edge reference system design is rugged, simple and easy to maintain. A range of face mills are available to suit various applications.

■ Series Common Features

- Dedicated cutter for high-feed milling of cast iron and light alloys.
- Cutting edge reference system provides simple, easy and fast runout management. (→ page H281)
- Fine-pitched cutter design (3 teeth per inch) is ideal for high-efficiency machining. *Cutting edge to O.D. inch conversion (example: $\phi 100 \approx 4 \text{ inches} \times 3 = 12 \text{ teeth}$)
- An excellent range of cutter designs and insert grades to suit various applications.
- Quick change system enables fast replacement of cutter. (→ page H286)

	Cat. No.	Specifications	Applicable Cutter Size
(1)	F type / NF type*	Quick Change System	$\phi 160\text{mm}$ and below
(2)	2-piece type	2-piece system	$\phi 200\text{mm}$ and above
(3)		Two-piece cutter with centre bolt	

* The Quick Change System NF type is a made-to-order item. For details, please contact us directly.

■ Type / Specifications

Applications		Cat. No.	Approach Angle & Maximum Depth of Cut () for 5000 type	Rake Angle		Insert Cat. No.	Page
Applications	Surface Roughness			Axial Rake	Radial Rake		
Roughing	25S	NRV 4000 type		-5°	-6°	SNC43MW	H282
		NRV 5000 type				SNC535	
Roughing / Finishing	18S	DPV 4000 type		+10°	+5°	SDCN42R/L	H283
		DPV 5000 type				SDCN53R/L	
Finishing	12.5S	NFV 4000 type		-5°	-6°	6SS43M	H284
		NFV 5000 type				6SS53M	
Roughing/ Finishing of Light Alloy	12.5S	APV 5000 type		+18°	-2°	SDC53R/L	H285

■ Recommended Cutting Conditions

Cat. No.	Insert Cat. No.	Insert Grades	Cutting Conditions (Min. - Optimum - Max.)		
			vc(m /min)	fz(mm/t)	ap(mm)
NRV 4000 type	SNC43MW	ACK200	80 - 100 - 120	0.1 - 0.15 - 0.2	up to 3
NRV 5000 type	SNC535	ACK200	80 - 100 - 120	0.1 - 0.15 - 0.2	up to 3
DPV 4000 type	SDCN42R/L	G10E	80 - 100 - 120	0.1 - 0.15 - 0.2	up to 3
DPV 5000 type	SDCN53R/L	G10E	80 - 100 - 120	0.1 - 0.15 - 0.2	up to 5
NFV 4000 type	6SS43M	H10E	120 - 160 - 200	0.1 - 0.15 - 0.2	up to 0.5
NFV 5000 type	6SS53M	H10E	120 - 160 - 200	0.1 - 0.15 - 0.2	up to 0.5
APV 5000 type	SDC53R/L	H1	< 400	0.1 - 0.20 - 0.3	up to 3

Note The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

Cutting Edge Reference System



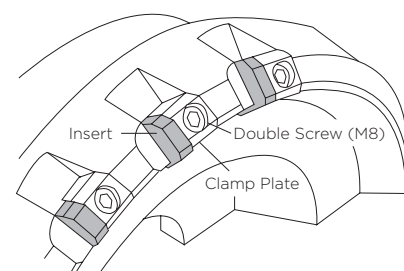
■ Features

Conventional indexable cutters are designed to position and clamp two or three faces of the insert with locators, etc. The cutting edge reference cutter, on the other hand, retains the insert only with a clamp plate. (See Fig 1) This system is adopted for our entire high-feed cutter series.

■ Features of the Cutting Edge Reference Cutter

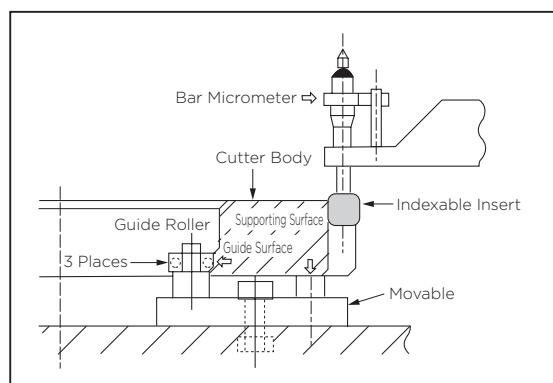
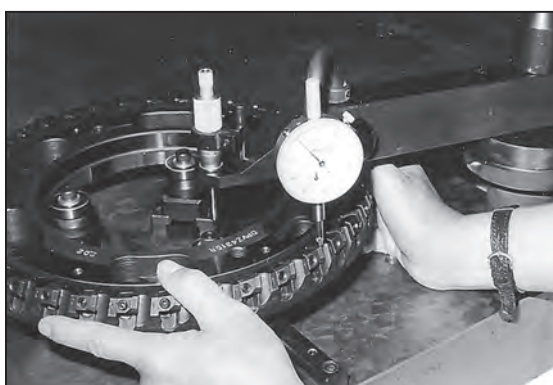
- Axial runout of the inserts is kept within 5 to 10μm to ensure stable surface roughness and longer tool life.
- Simple design with fewer parts compared to the locator type facilitates cleaning the typical cast iron machining dirt and is comparatively inexpensive.
- Fewer parts allow high-density cutter design, higher machining efficiency and longer tool life.

Fig 1



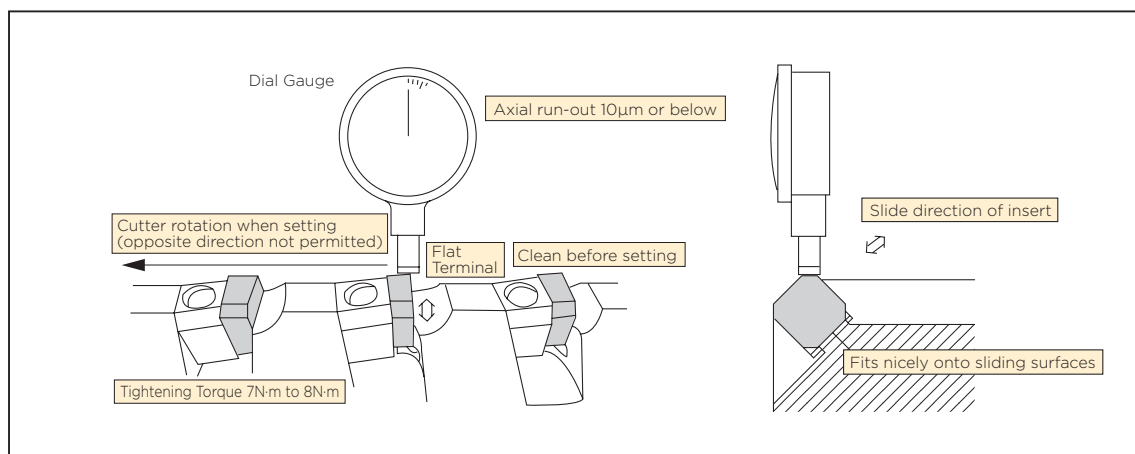
■ Assembly Jig

Application of a special assembly jig (as shown in the figure below) is recommended to accurately assemble the cutting edge reference cutter.



■ Insert Assembly Guidelines

When mounting (assembling) the inserts, pay careful attention to the points noted below in .



NRV 4000/5000 type

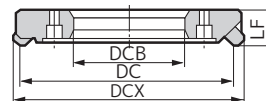
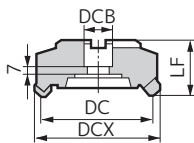
Rake Angle	Radial	-6°
	Axial	-5°

5.5mm	45°
(4000 type)	

8.5mm	45°
(5000 type)	

Fig 1

Fig 2



Body

Dimensions (mm)

Classification	Cat. No.	Stock		Dia. DC	Max. Dia. DCX*	Height LF	Hole Dia. DCB	Number of Teeth	Weight (kg)	Fig
		R	L							
Inch	F type			100	112(118)	60	31.75	10	2.7	1
				125	137(143)	60	38.1	14	3.8	1
				160	172(177)	60	50.8	18	6.3	1
	2-piece type			200	212(218)	40	80	24	5.8	2
				250	262(268)	40	120	30	9.0	2
				315	326(332)	40	180	36	12.5	2
				355	366(372)	40	220	42	15.5	2
				400	411(417)	40	250	48	18.8	2
				450	461(467)	40	300	54	22.0	2

Inserts are sold separately.

Put 4 or 5 in "O" in the catalogue number.

Refer to page H286 for dedicated arbors for the type of cutters shown in Fig 1.

Refer to page H286 for dedicated adapters for the type of cutters shown in Fig 2.

* marked dimensions in () are for the 5000 type.

Insert

Dimensions (mm)

Grade Classification		Coated Carbide	Cemented Carbide						
Process	High-speed/Light Cutting								
	Medium Cutting								
	Roughing								
Cat. No.		ACK 200	ACK 300	G10E	Inscribed Circle IC	Chamfering CHW	Corner Radius RE	Fig	Applicable Cutter
SNC 43MW				●	12.70	3.0	—	1	NRV(Z) 4000
SNC 433					12.70	—	1.2	2	NRV(Z) 4000
434					12.70	—	1.6	2	NRV(Z) 4000
435					12.70	—	2.0	2	NRV(Z) 4000
436					12.70	—	2.4	2	NRV(Z) 4000
SNC 535					15.875	—	2.0	3	NRV(Z) 5000
SNMN 432				●	12.70	—	0.8	3	NRV(Z) 4000
433			●	●	12.70	—	1.2	3	NRV(Z) 4000
434					12.70	—	1.6	3	NRV(Z) 4000
435					12.70	—	2.0	3	NRV(Z) 4000
436					12.70	—	2.4	3	NRV(Z) 4000

Fig 1

Fig 2

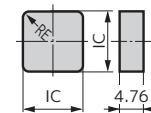
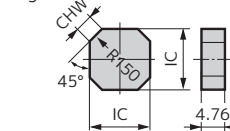
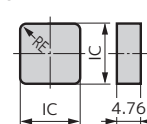


Fig 3



Recommended Cutting Conditions H280

Parts

Applicable Cutters	Clamp Plate		Double Screw	Wrench	Anti-seizure Cream	Jig
	ø160 and below	ø200 and above				
						
NRV(Z) 4000R	NW41RR	NW42RR	WB6-20	TH030	SUMI-P	· Arbor for F type · Adapter for 2-piece type
NRV(Z) 4000L	NW41RL	NW42RL				
NRV(Z) 5000R	NW51R	NW52R	WB6-20			
NRV(Z) 5000L	NW51L	NW52L				

DPV 4000/5000 type



Rake Angle	Radial	5°
	Axial	10°

7mm 65°
(4000 type)

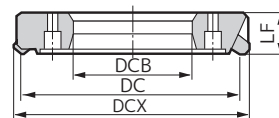
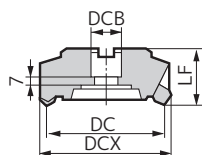
7.5mm 65°
(5000 type)



Face Milling

Fig 1

Fig 2



Body

Dimensions (mm)

Classification	Cat. No.	Stock		Dia. DC	Max. Dia. DCX*	Height LF	Hole Dia. DCB	Number of Teeth 4000	Number of Teeth 5000	Weight (kg)	Fig
		R	L								
Inch	F type			100	107.2(109.6)	60	31.75	12	10	2.6	1
				125	131.5(133.6)	60	38.1	16	14	3.6	1
				160	165.8(176.6)	60	50.8	20	18	6.0	1
	2-piece type			200	206.5(208)	40	80	26	24	5.5	2
				250	256 (258)	40	120	32	32	9.0	2
				315	322.5(323)	40	180	38	36	12.0	2
				355	361.5(363)	40	220	44	42	15.0	2
				400	406.5(408)	40	250	50	48	17.8	2
				450	456.5(458)	40	300	56	54	20.8	2

Inserts are sold separately.

Put 4 or 5 in "O" in the catalogue number.

Refer to page H286 for dedicated arbors for the type of cutters shown in Fig 1.

Refer to page H286 for dedicated adapters for the type of cutters shown in Fig 2.

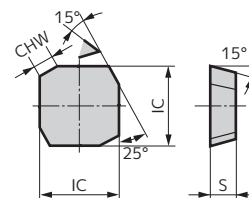
* marked dimensions in () are for the 5000 type.

Insert

Dimensions (mm)

Grade Classification		Coated Carbide		Cemented Carbide					
Process	High-speed/Light Cutting								
	Medium Cutting								
	Roughing								
Cat. No.		ACK200	ACK300	H10E	Inscribed Circle IC	Thickness S	Chamfering CHW	Applicable Cutter	Fig
SDCN 42R				●	12.70	3.18	3.5	DPV(Z) 4000R	1
42L				●	12.70	3.18	3.5	DPV(Z) 4000L	1
SDCN 53R				●	15.875	5.0	5.0	DPV(Z) 5000R	1
53L					15.875	5.0	5.0	DPV(Z) 5000L	1

Fig 1



Recommended Cutting Conditions H280

Parts

Applicable Cutters	Clamp Plate		Double Screw	Wrench	Anti-seizure Cream	Jig
	ø160 and below	ø200 and above				
						
DPV(Z) 4000R	HTW40R	HTW41R	WB6-20			· Arbor for F type · Adapter for 2-piece type
DPV(Z) 4000L	HTW40L	HTW41L				
DPV(Z) 5000R	HTW50R	HTW51R	WB6-20			
DPV(Z) 5000L	HTW50L	HTW51L				

NFV 4000/5000 type

Rake Angle	Radial	-6°
	Axial	-5°

Face Milling



Fig 1

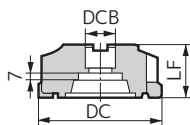
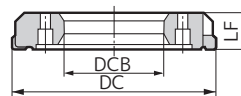


Fig 2



Body

Dimensions (mm)

Classification	Cat. No.	Stock		Dia. DC	Height LF	Hole Dia. DCB	Number of Teeth	Weight (kg)	Fig
		R	L						
Inch	F type			100	60	31.75	10	2.6	1
				125	60	38.1	14	3.9	1
				160	60	50.8	18	6.3	1
	2-piece type			200	40	80	24	5.3	2
				250	40	120	30	9.0	2
				315	40	180	36	11.3	2
				355	40	220	42	14.0	2
				400	40	250	48	16.5	2
				450	40	300	54	21.0	2

Inserts are sold separately.

Put 4 or 5 in "O" in the catalogue number.

Refer to page H286 for dedicated arbors for the type of cutters shown in Fig 1.

Refer to page H286 for dedicated adapters for the type of cutters shown in Fig 2.

Insert

Dimensions (mm)

Grade Classification		Cemented Carbide				
Process	High-speed/Light Cutting					
	Medium Cutting					
	Roughing					
Cat. No.		H10E	Inscribed Circle IC	Thickness S	Applicable Cutter	Fig
SNEF 43W		●	12.70	4.76	NFV(Z) 4000	1
6SS 43M		●	12.70	4.76	NFV(Z) 4000	2
SNEF 53W		●	15.875	4.76	NFV(Z) 5000	1
53WT			15.875	4.76	NFV(Z) 5000	1
6SS 53M		●	15.875	4.76	NFV(Z) 5000	2
SNEN 535W			15.875	4.76	NFV(Z) 5000	3

Fig 1

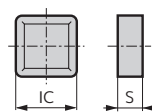


Fig 2

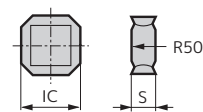
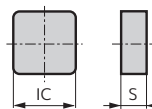


Fig 3



Recommended Cutting Conditions H280

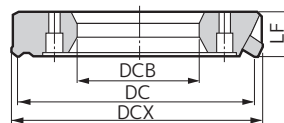
Parts

Applicable Cutters	Clamp Plate		Double Screw	Wrench	Anti-seizure Cream	Jig
	ø160 and below	ø200 and above				
						
NFV(Z)4000R	NW41FR	NW42FR				· Arbor for F type · Adapter for 2-piece type
NFV(Z)4000L	NW41FL	NW42FL				
NFV(Z)5000R	NW51R	NW52R				
NFV(Z)5000L	NW51L	NW52L				

Rake Angle	Radial	-2°
	Axial	18°

10mm 65° Face Milling

Fig 1



Body

Dimensions (mm)

Classification	Cat. No.	Stock		Dia. DC	Max. Dia. DCX	Height LF	Bore Dia. DCB	Number of Teeth	Weight (kg)	Fig
		R	L							
Inch	2-piece type			200	211	40	80	18	7.0	1
				250	261	40	120	22	10.8	1
				315	326	40	180	26	13.7	1
				355	366	40	220	32	16.3	1
				400	411	40	250	36	20.0	1
				450	461	40	300	40	23.6	1

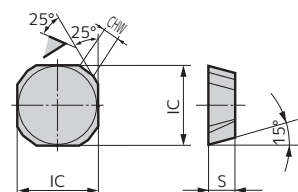
Inserts are sold separately.

Insert

Dimensions (mm)

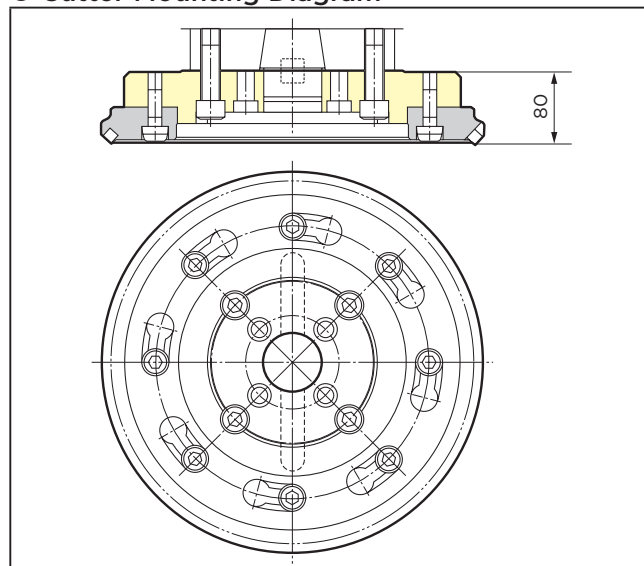
Grade Classification		Cemented Carbide		Cermet					
Process	High-speed/Light Cutting								
	Medium Cutting								
	Roughing								
Cat. No.		A30N	H1	T250A	Inscribed Circle IC	Thickness S	Chamfering CHW	Applicable Cutter	Fig.
SDC 53R			●		15.88	4.76	2.5	APVZ 500OR	1
53L			●		15.88	4.76	2.5	APVZ 500OL	1
53TR		●			15.88	4.76	2.5	APVZ 500OR	1
53TL					15.88	4.76	2.5	APVZ 500OL	1
53TR-R					15.88	4.76	2.5	APVZ 500OR	1
SDCH 53TR		●			15.88	4.76	2.5	APVZ 500OR	1
53TR-R					15.88	4.76	2.5	APVZ 500OR	1

Fig 1

Recommended Cutting Conditions **H280**

Parts

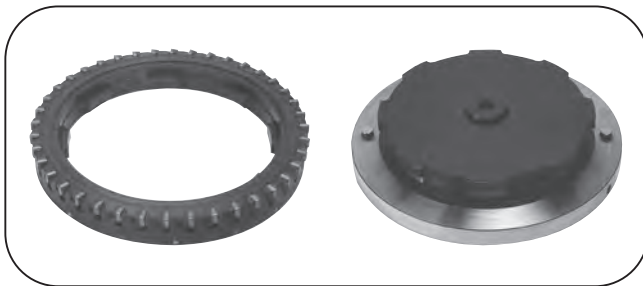
Applicable Cutter	Clamp Plate ø200 and above	Double Screw	Wrench	Anti-seizure Cream	Jig
APVZ 5000R	AW52R	WB6-20	TH030	SUMI-P	· Adapter for 2-piece type
APVZ 5000L	AW52L				



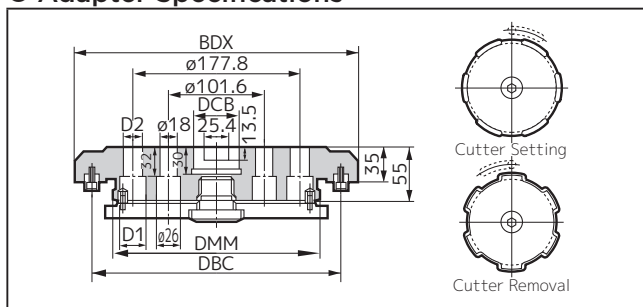
Applicable Cutter

Two-piece Cutter with Centre Bolt

Appearance



Adapter Specifications

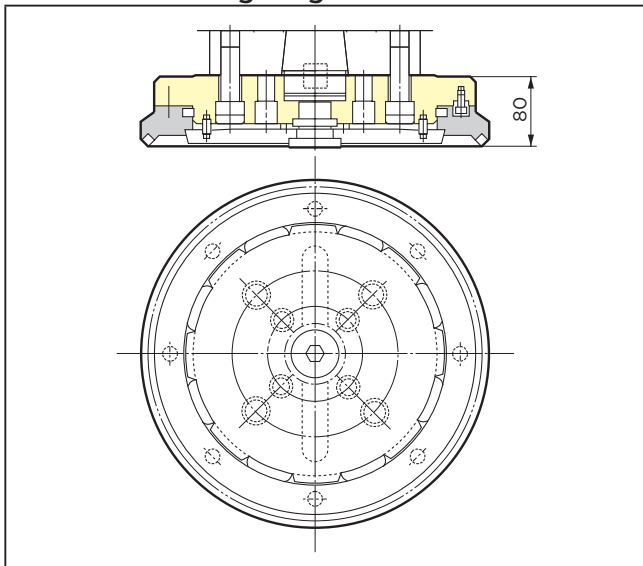


Dimensions (mm)							
Cat. No.	Shank DMM	Maximum O.D. BDX	Hole Dia. DCB	Bolt D1	Bolt D2	Hole Position DBC	Cutter Size (mm)
NQAD 200	105	180	47.625	—	—	155	ø200
250	155	240	47.625	—	—	205	ø250
315	220	305	47.625	32	22	270	ø315
355	260	345	63.5	32	22	310	ø355
400	305	390	63.5	32	22	355	ø400
450	355	440	63.5	32	22	405	ø450

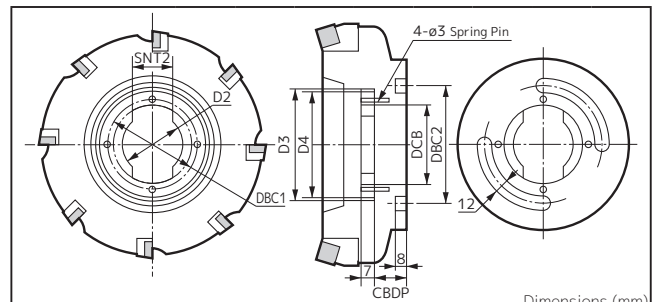
Features and Applications

- (1) With one clamping bolt, the total weight of the two-piece cutter is lighter.
- (2) Cutter can be replaced quickly - simply turn one bolt halfway to mount and remove.
- (3) A tapered spline system is used to connect the adapter to the cutter.
- (4) Can be used for cutters over ø200.

Cutter Mounting Diagram



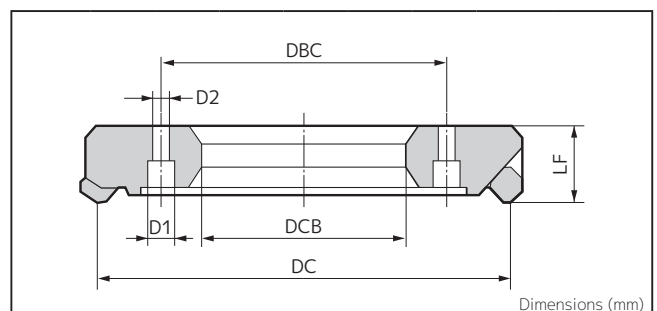
Quick-F QF type Cutter Specifications



Dimensions (mm)								
Cutter Size (mm)	Hole Dia. DCB	Bolt D2	Bolt D3	Diameter D4	Hole Position DBC1	Hole Position DBC2	Keyway Width SNT2	Mounting Depth CDBP
ø100	31.75	22	43.75	43.5	37.75	55	20	24
ø125	38.1	29	50.1	49.8	44.1	55	22	22
ø160	50.8	41	62.8	62.5	56.8	68	26	22

This design applies to all F type high-feed cutters (→ pages H282 to H285). Conventional cutter can be easily adapted to quick change through slight modification.

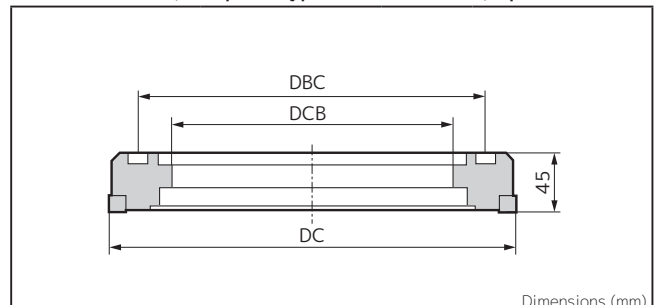
QAD Cutter (Two-piece type) Specifications



Dimensions (mm)								
Cutter Size (mm)	Dia. DC	Hole Dia. DCB	Bolt D1	Bolt D2	Hole Position DBC	Height LF	No. of Bolts n	Adapter Cat. No.
ø200	200	80	24	14	120	40	4	QAD200
ø250	250	120	30	18	170	40	4	QAD250
ø315	315	180	30	18	230	40	6	QAD315
ø355	355	220	30	18	270	40	6	QAD355
ø400	400	250	30	18	300	40	8	QAD400
ø450	450	300	30	18	350	40	8	QAD450

This design applies to the 2-piece type high-feed cutters (→ pages H282 to H285).

NQAD Cutter (Two-piece type with Centre Bolt) Specifications



Dimensions (mm)				
Cutter Size (mm)	Dia. DC	Hole Dia. DCB	Hole Position DBC	Adapter Cat. No.
ø200	200	105	155	NQAD200
ø250	250	155	205	NQAD250
ø315	315	220	270	NQAD315
ø355	355	260	310	NQAD355
ø400	400	305	355	NQAD400
ø450	450	355	405	NQAD450

This design applies to all two-piece type high-feed cutters with a centre bolt (→ pages H282 to H285).

