Milling Cutters

G

G1 ~ G36

Milling Cutter/Indexable Endmill Selection Guide

◎ : Best ○ : Good × : Unsuitable Blank: Not recommended

Usage	Appearance	Series	Insert Cat. No. and Diagram	Approach Angle (Corner Profile) · Maximum Depth-Of-Cut (mm)	Rake Angle		Diameter (mm)	Application									Applicable Work Material								Ref. Page
								Face Milling			Shoulder Milling	Slot Milling	Ramping	Copying	Chamfering	Boring	Finishing	P		M	K	N		S	H	
					Axial	Radial		General-purpose	Finishing	High Feed								General Steel · Cartbon Steel · Alloy Steel	Die Steel · Tempered Steel	Stainless Steel	Cast Iron · Ductile Cast Iron	Non- Ferrous Metal	Aluminum Alloy	Ti Alloy · Heat-resistant Alloy	Hardened Steel 45~55HRC	
Face Milling	WGC	WGC3000 WGC3000RS	SEMT0903AGSN (3000 Type)	4mm 45°	20°	−10° ~ −19°	ø32 ~ ø100	◎				○			○			◎	◎	◎	◎	◎	◎	◎		G11 H14
		WGC (F)4000 WGC (F)4000RS		6mm 45°	20° ~ 22°	−20° ~ −24°	ø40 ~ ø200	◎				○			○			◎	◎	◎	◎	◎	◎	◎		G11 H14
	WGC-EW	WGC3000EW	SEMT13T3AGSN (4000 Type)	4mm 45°	20°	−10° ~ −19°	ø20 ~ ø63	◎				○			○			◎	◎	◎	◎	◎	◎	◎		H14
		WGC4000EW		6mm 45°	20° ~ 22°	−20° ~ −24°	ø32 ~ ø63	◎				○			○			◎	◎	◎	◎	◎	◎	◎		H14
	UFO	UFO4000	SFKN12T3AZTN (A=12.70) SFKN1504AZTN (A=15.875)	5.5mm 45°	27°	−7°	ø80 ~ ø250	○				○			○			○	○	○	○	○	○	○		G12
		UFO5000		7.5mm 45°	27°	−7°	ø100 ~ ø250	○				○			○			○	○	○	○	○	○	○		G13
	UFO-E	UFO4000E	SFKN12T3AZTN	5.5mm 45°	27°	−7°	ø50 ~ ø80	○				○			○			○	○	○	○	○	○	○		H23
	FPG	FPG4000	SDKN42M (A=12.70) SDKN53M (A=15.875)	6.5mm 45°	15°	−4°	ø80 ~ ø315	○				○			○			○	○	○	○					G25
		FPG5000		8.5mm 45°	15°	−4°	ø100 ~ ø200	○				○			○			○	○	○	○					G25
	FPE	FPE4000	SDKN42MT	6.5mm 45°	15°	−4°	ø50 ~ ø80	○				○			○			○	○	○	○		○			H23
	EHG	EHG4000	SEKN42MT (A=12.70) SEKN53MT (A=15.875)	5.5mm 45°	20°	−3°	ø80 ~ ø200	○				○			○			○	○	○	○	○		○		G26
		EHG5000		7.5mm 45°	20°	−3°	ø(80) ~ ø(200)	○				○			○			○	○	○	○	○		○		G26
	APG	APG4000	SDC (H) 42TR	7mm 25°	18°	−2°	ø80 ~ ø315	○				○			○			○	○	○	○	◎	◎		×	G19
	DNF	DNF4000	CSNH43M	6.5mm 25°	−5°	−6°	ø80 ~ ø200	○				○						○			◎	×	×	×		G30
	DPG	DPG4000 DPGF4000	SPCH42 (A=12.70) SPCH53 (A=15.875)	9.5mm 15°	8°	0°	ø80 ~ ø200	○				○			○			○	○	○	○	○	○			G28
		DPG5000		12mm 15°	8°	0°	ø100 ~ ø315	○				○			○			○	○	○	○	○	○			G29

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Usage	Appearance	Series	Insert Cat. No. and Diagram	Approach Angle (Corner Profile) · Maximum Depth-Of-Cut (mm)	Rake Angle		Diameter (mm)	Application										Applicable Work Material								Ref. Page
					Axial	Radial		Face Milling			Shoulder Milling	Slot Milling	Ramping	Copying	Chamfering	Boring	Finishing	P		M	K	N		S	H	
								General-purpose	Finishing	High Feed								General Steel · Cartbon Steel · Alloy Steel	Die Steel · Tempered Steel	Stainless Steel	Cast Iron · Ductile Cast Iron	Non- Ferrous Metal	Aluminum Alloy	Ti Alloy · Heat-resistant Alloy	Hardened Steel 45-55HRC	
Face Milling	MS	MS1400	SDM(E)W1406ZDTR	2mm 65°	10°	−5°	ø63 ~ ø125			◎								◎	◎	◎	◎		×		○	G27
	WRC	WRC1200 WRCF1200	QPMT120440PPEN (A=12) QPMT160660PPEN (A=16) QPMT200670PPEN (A=20)	6mm	−3°	0°	ø50 ~ ø80	◎				○	◎	◎				◎	◎	◎	◎			○	○	H16
		WRC1600 WRCF1600		8mm	−3°	0°	ø63 ~ ø100	◎				○	◎	◎				◎	◎	◎	◎			○	○	G24
		WRC2000 WRCF2000		10mm	−3°	0°	ø80 ~ ø100	◎				○	◎	◎				◎	◎	◎	◎			○	○	G24
	WRC-E	WRC0800E	QPMT080330PPEN (A=8) QPMT10T335PPEN (A=10)	4mm	−3°	0°	ø20 ~ ø25	◎				○	◎	◎				◎	◎	◎	◎			○	○	H16
		WRC1000E		5mm	−3°	0°	ø16 ~ ø32	◎				○	◎	◎				◎	◎	◎	◎			○	○	H16
	WRC-E	WRC1600E	QPMT160660PPEN (A=16) QPMT200670PPEN (A=20)	8mm	−3°	0°	ø40 ~ ø63	◎				○	◎	◎				◎	◎	◎	◎			○	○	H17
		WRC2000E		10mm	−3°	0°	ø50	◎				○	◎	◎				◎	◎	◎	◎			○	○	H17
	GRC	GRC6000	RGEN2004SN-S	10mm	25°	10°	ø80 ~ ø160	○				○							○	○	◎	◎		◎	○	G32
	PF	PF5000	SNEN535W	0.5mm	−6°	−20°	ø160 ~ ø160		◎									○	○		○	×	×	×	×	G33
	BRC-ES	BRC-ES	RDHX0701M0T	0.5mm	0°	0°	ø12 ~ ø20		◎									×	×	×	◎ (FC)				◎	H28 L62
	BRC-R	BRC-R	RDHX1003M0T	0.5mm	0°	0°	ø42 ~ ø66		◎									×	×	×	◎ (FC)				◎	H28 L62
Shoulder Milling	WFM	WFM4000 WFMF4000	XDMT120408 (A=12.70) XDMT150408 (A=15.875)	10mm 0°	10° ~ 17°	10° ~ 16°	ø80 ~ ø160	○			◎	○						◎	○	○	○		×			G16
		WFM5000 WFMF5000		12mm 0°	10° ~ 17°	10° ~ 16°	ø100 ~ ø200	○			◎	○						◎	○	○	○		×			G17
	WFM	WFM4000E WFM4000E-C	XDMT120408PDEN-G	10mm 0°	10° ~ 17°	10° ~ 16°	ø40 ~ ø80	○			◎	○						◎	○	○	○		×			H15

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Usage	Appearance	Series	Insert Cat. No. and Diagram	Approach Angle (Corner Profile) · Maximum Depth-Of-Cut (mm)	Rake Angle		Diameter (mm)	Application										Applicable Work Material								Ref. Page
					Axial	Radial		Face Milling			Shoulder Milling	Slot Milling	Ramping	Copying	Chamfering	Boring	Finishing	P		M	K	N			S	H	
								General-purpose	Finishing	High Feed								General Steel · Cartoon Steel · Alloy Steel	Die Steel · Tempered Steel	Stainless Steel	Cast Iron · Ductile Cast Iron	Non- Ferrous Metal	Aluminum Alloy	Ti Alloy · Heat-resistant Alloy	Hardened Steel 45-55HRC	
Shoulder Milling	WEX-E	WEX2000E WEX2000EL	AXMT123504PEER-G AXMT170508PEER-G	10mm 0°	14°~25°	10°~18°	ø14~ø63	○			◎	◎	◎					◎	◎	◎	◎	◎	◎	◎		H6
		WEX3000E (-C) WEX3000ES (-C) WEX3000EL		14mm 0°	16°~24°	8°~15°	ø25~ø63	○			◎	◎	◎					◎	◎	◎	◎	◎	◎	◎		H7
	WEX-F/R	WEX2000F	AXMT123504PEER-G AXMT170508PEER-G	10mm 0°	23°~25°	16°~18°	ø40~ø63	○			◎	◎	◎					◎	◎	◎	◎	◎	◎	◎		H6
		WEX3000F WEX3000R WEXF3000R		14mm 0°	19°~24°	12°~15°	ø40~ø125	○			◎	◎	◎					◎	◎	◎	◎	◎	◎	◎		H7
	WEM-E	WEM2000E (-C) WEM2000EL (-C)	APMT103504PDER APMT160508PDER	9mm 0°	7°~11°	5°~23°	ø10~ø63	○			○	○	○					○	○	○	○	○	○	○		H8
		WEM3000E (-C) WEM3000EL (-C)		13mm 0°	7°~11°	15°~23°	ø25~ø63	○			○	○	○					○	○	○	○	○	○	○		H9
	WEM-F	WEM2000F	APMT103504PDER APMT160508PDER	9mm 0°	7°~11°	19°~23°	ø40~ø63	○			○	○	○					○	○	○	○	○	○	○		H8
		WEM3000F WEM3000F-C		13mm 0°	7°~11°	19°~23°	ø40~ø63	○			○	○	○					○	○	○	○	○	○	○		H9
	WRM-E	WRM20R-E	APMT103504PDER APMT160508PDER	26-53mm 0°	7°~11°	15°~16°	ø20~ø40	○			◎	◎	◎					◎	◎	◎	◎	◎	◎	◎		H13
		WRM30R-E		49-73mm 0°	7°~11°	21°~24°	ø40~ø80	○			◎	◎	◎					◎	◎	◎	◎	◎	◎	◎		H13
	WRM-F	WRM30R-F	APMT160508PDER	49-73mm 0°	7°~11°	21°~24°	ø40~ø80	○			◎	◎	◎					◎	◎	◎	◎	◎	◎	◎		H13
	CNP	CNP13000 CNPF13000	CNMU130608N-G	12mm 0°	5°	−9°~−15°	ø63~ø160				◎							◎	◎	◎	◎	×	×	×	×	G18
	CHG	CHG4000	TEKN43TR	16mm 0°	15°	4°	ø80~ø200				○	○						◎	○	○	○	○	◎			G14
	CPG	CPG4000	TPCH43TR	18mm 0°	6°	0°	ø80~ø200				○	○						○	○	○	○	○				G15
	CHE	CHE2000	TECN22R (A=6.35) TECN32R (A=9.525) TEEN43R (A=12.70)	8mm 0°	6°~15°	−3°~0°	ø16~ø28				○	○						○	○	○	○	○	○			H25
		CHE3000		13mm 0°	15°	−3°~0°	ø30~ø40				○	○						○	○	○	○	○	○			H25
		CHE4000		16mm 0°	15°	2°~4°	ø50~ø80				○	○						○	○	○	○	○	○			H26

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Usage	Appearance	Series	Insert Cat. No. and Diagram	Approach Angle (Corner Profile) · Maximum Depth-Of-Cut (mm)	Rake Angle		Diameter (mm)	Application									Applicable Work Material									Ref. Page
					Axial	Radial		Face Milling			Shoulder Milling	Slot Milling	Ramping	Copying	Chamfering	Boring	Finishing	P		M	K	N		S	H	
								General-purpose	Finishing	High Feed								General Steel · Cartbon Steel · Alloy Steel	Die Steel · Tempered Steel	Stainless Steel	Cast Iron · Ductile Cast Iron	Non- Ferrous Metal	Aluminum Alloy	Ti Alloy · Heat-resistant Alloy	Hardened Steel 45~55HRC	
Shoulder Milling	FMS	FMS	TPCH43TR	8~19mm 0°	3° ~ 7°	−4° ~ −6°	ø16 ~ ø60				○	○						○	○	○	○	○				H27
Multi-purpose	WMM	WMM2000E/EL WMM2000ELH	APMT103504PDER APMT160508PDER	17~35mm 0°	7° ~ 11°	15° ~ 16°	ø20 ~ ø30	◎			◎	◎	◎	◎		◎		◎	◎	◎	◎	◎	◎	◎		H11
		WMM3000E/EL WMM3000ELH		39mm 0°	7° ~ 11°	17° ~ 19°	ø32 ~ ø40	◎			◎	◎	◎	◎		◎		◎	◎	◎	◎	◎	◎	◎		H11
Radius milling, 3D Profiling	WBMR	WBMR2000 WBMR2000L	ZNMT1804100-C	20~43mm	−10°	—	R10 (ø20) ~ R25 (ø50)					◎		◎				◎	◎	◎	◎			○	○	H21
	WBMF	WBMF1000	ZPGU1551050	0.1~0.4mm	0°	—	R5 (ø10) ~ R15 (ø30)					◎		◎			◎	◎	◎	◎	◎				○	H22
	BES	BES	BEST160S(L)	0.4~0.7mm	0°	0°	R8 (ø16) ~ R25 (ø50)							◎			◎	×	×	×	◎				×	L61
Slotting	TSM	TSM	SNHG121	Slot width 1~30	−2°	−12°	ø100 ~ ø160					○						○	○	○	○					G31
T-slot	TSE	TSE	CPMT060204N-US	9~22mm 0°	0°	0°	ø21 ~ ø50					○						○	○	○						H27
Chamfering	SCP	SCP	SDMA322 R0.8	45°	0°	0°	ø8 ~ ø32								○			○	○	○	○					H24
	SMC	SMC	SPMN422	45°	0°	0°	ø7 ~ ø35								○			○	○	○	○					H24

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Usage	Appearance	Series	Insert Cat. No. and Diagram	Approach Angle (Corner Profile) · Maximum Depth-Of-Cut (mm)	Rake Angle		Diameter (mm)	Application										Applicable Work Material									Ref. Page
					Axial	Radial		Face Milling: General-purpose	Face Milling: Finishing	Face Milling: High Feed	Shoulder Milling	Slot Milling	Ramping	Copying	Chamfering	Boring	Finishing	P: General Steel · Cartoon Steel · Alloy Steel	P: Die Steel · Tempered Steel	M: Stainless Steel	K: Cast Iron · Ductile Cast Iron	N: Non- Ferrous Metal	N: Aluminum Alloy	S: Ti Alloy · Heat-resistant Alloy	H: Hardened Steel 45~55HRC	
Milling of Aluminum and Non-Ferrous Metal	RF	RF4000	NF-SNEW1204ADFR 4.7 12.70	3mm 0°	10°	4°	ø80 ~ ø200	◎	◎									×	×	×	×	○	◎		×	G22 M20
	SRF	SRF	NF-SNEW09T3ADTR 9.525 5 C0.5 9.525	5mm 0°	6°	−2° ~ 4°	ø30 ~ ø63	◎	◎		◎		◎					×	×	×	×	○	◎		×	G23 M21
	WAX	WAX3000	AECT160404PEFRA 18 0.4 1.4 16.4	16-18mm 0°	19° ~ 25°	6°	ø50 ~ ø125	○			◎	◎	◎	◎				×	×	×	×	○	◎		×	H19
	WAX-E	WAX3000E WAX3000EL	AECT160404PEFRA 18 0.4 1.4 16.4	16-18mm 0°	19° ~ 25°	6°	ø20 ~ ø40	○			◎	◎	◎	◎				×	×	×	×	○	◎		×	H19
	FAM	FAM	FABR 26 15	5.8mm 25°	13°	4°	ø80 ~ ø200	○			○							×	×	×	×	○	○		×	M22
	SAM	SAM	SABR 26 15	5.7mm 0°	10°	6°	ø80 ~ ø100	○			○							×	×	×	×	○	○		×	M22
	SAM-E	SAM-E	SABR 26 15	5.7mm 0°	10°	0° ~ 2°	ø50 ~ ø80	○			○							×	×	×	×	○	○		×	M23
High Speed Milling of Cast Iron	FMU	FMU FMU-E	SNEW1203ADTR R300 45° 12.70 2° 12.70	0.5mm 0°	8°	2°	ø37 ~ ø200		◎									×	×	×	◎ (FC)	×	×	×	×	G34 L58
	FM	FM FMF	SNEN1504ADTR(L) R300 45° 15.875 2° 15.875	0.5mm 0°	8°	2°	ø80 ~ ø160		◎									×	×	×	◎ (FC)	×	×	×	×	L60
	RM	RM	SNGN0903 9.525 9.525	3mm 15°	−5° 45'	−6° 45'	ø80 ~ ø160		◎									×	×	×	◎ (FC)	×	×	×	×	G35 L57

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Usage	Appearance	Series	Insert Cat. No. and Diagram	Approach Angle (Corner Profile) · Maximum Depth-Of-Cut (mm)	Rake Angle Axial	Rake Angle Radial	Diameter (mm)	Application: Face Milling General-purpose	Face Milling Finishing	Face Milling High Feed	Shoulder Milling	Slot Milling	Ramping	Copying	Chamfering	Boring	Finishing	Applicable Work Material P: General Steel · Carbon Steel · Alloy Steel	P: Die Steel · Tempered Steel	M: Stainless Steel	K: Cast Iron · Ductile Cast Iron	N: Non-Ferrous Metal	N: Aluminum Alloy	S: Ti Alloy · Heat-resistant Alloy	H: Hardened Steel 45–55HRC	Ref. Page
High Feed Milling (Special purpose)	NRV	NRV4000	SNMN433 SNC535	5.5mm 45°	−5°	−6°	ø100 ~ ø450			◎								×	×	×	◎	×	×	×	×	G40
		NRV5000		8.5mm 45°																						
	DPV	DPV4000	SDCN42R (A=12.70) SDCN53R (A=15.875)	7mm 25°	10°	5°	ø100 ~ ø450		○	◎								×	×	×	◎	×	×	×	×	G40
		DPV5000		7.5mm 25°	10°	5°	ø100 ~ ø450		○	◎								×	×	×	◎	×	×	×	×	G40
	NFV	NFV4000	SNEF43W (A=12.70) SNEF53W (A=15.875)	0.5mm 0°	−5°	−6°	ø100 ~ ø450		◎	◎								×	×	×	◎	×	×	×	×	G41
		NFV5000		0.5mm 0°	−5°	−6°	ø100 ~ ø450		◎	◎								×	×	×	◎	×		×	×	G41
	APV	APV5000	SDC53R	10mm 25°	18°	−2°	ø200 ~ ø450		◎	◎								×	×	×		◎	○		×	G41

● Recommended Conditions by Work Materials

(◎ : Best ○ : Good ⟷ : Cutting Speed (m/min) ⊢ : Feedrate (mm/tooth))

Work / Grade			P: Steel · Cast Steel	P: Die Steel	M: Stainless Steel	K: Cast Iron · Ductile Cast Iron	N: Non-Ferrous Metal	S: Exotic Alloy
Coated Carbide		ACK200				◎ 150–250 / 0.1–0.3		
		ACK300				◎ 70–220 / 0.15–0.4		
		ACP100	◎ 120–300 / 0.1–0.3	◎ 80–230 / 0.15–0.25				
		ACP200	◎ 80–250 / 0.1–0.35	◎ 50–220 / 0.07–0.3	○ 70–230 / 0.1–0.3			
		ACP300	○ 80–200 / 0.1–0.35		◎ 50–250 / 0.1–0.3			
		EH20Z			○ 50–200 / 0.15–0.25			◎ 20–50 / 0.1–0.2
Cermet		T250A	◎ 120–250 / 0.1–0.3	○ 60–180 / 0.1–0.2	○ 80–230 / 0.1–0.2			
Carbide	P	A30N	○ 100–150 / 0.1–0.35					
	K	G10E				○ 80–140 / 0.1–0.3		○ 15–30 / 0.1–0.2
	K	H1					○ 400–600 / 0.1–0.3	
SUMIBORON		BN700				◎ 800–2000 / 0.1–0.3		
SUMIDIA		DA2200					◎ 400–3000 / 0.1–0.15	

Cutter Identification Table

STANDARD TYPE

WGC 3 1 0 0 R

① ② ③ ④

- ① Cutter Series — Chart 1
- ② Insert IC Size Code — Chart 2
- ③ Cutter Diameter — Chart 3
- ④ Right/Left Hand — Chart 4

Chart 3: ③ Cutter Diameter

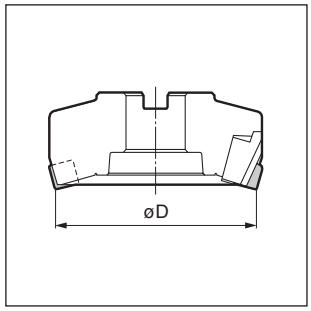


Chart 1: ① Cutter Series

Series Code
WGC
WRC
WFM
UFO
FPG
EHG
CHG
CPG
APG
DPG
DNF
GRC

Chart 2: ② Insert IC: Size Code

Code	IC Dimension (mm)
3	9.525
4	12.70
5	15.875
13	13
14	14
16	16
20	20

Inscribed Circle (IC)

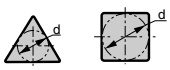
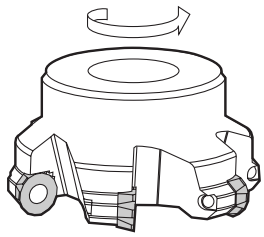
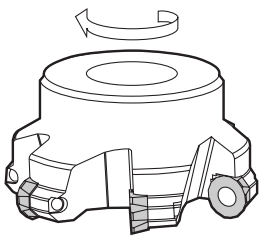


Chart 4: ④ Right/Left Hand

Left Hand (L)	Right Hand (R)
	

FINE-PITCH TYPE

WFM F 4 1 0 0 R

① ⑤ ② ③ ④

- ① Cutter Series — WFM, DPG, WRC
- ⑤ Fine-Pitch Indication — F
- ②③④ — Same as above

HIGH-FEED TYPE

DPV (Z) 4 1 0 0 (Q) R

① ⑥ ② ③ ⑦ ④

- ① Cutter Series — DPV, NRV, NFV, APV
- ⑥ 2 piece set indication — Z
- ②③④ — Same as above
- ⑦ Quick-change Indication — Q

CUTTER TEETH ALLOCATION EXAMPLE

Type / Cutter / φ D	STAND TYPE	FINE-PITCH TYPE	HIGH-PEED TYPE
	DPG4000	DPGF4000	DPV(Z)4000
80	4	6	–
100	5	8	12
125	6	10	16
160	8	12	20
200	10	16	26
250	12	20	32
315	14	24	38
400	20	32	50
500	24	40	56(ø450)

Milling Insert Identification Table

Example: **S F K N 12 T3 A Z T N-W**

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
① Insert Shape Chart 1	② Relief Angle Chart 2	③ Tolerance Class Chart 3	④ Insert Hole or Breaker Chart 4	⑤ Cutting Edge Length Chart 5	⑥ Thickness Chart 6	⑦ Approach Angle Chart 7	⑧ Face Relief Angle Chart 8	⑨ Edge Treatment Chart 9	⑩ Insert Orientation Chart 10	⑪ Supplementary Information Chart 11

Chart 1: ① Insert Shape

Symbol	Insert Shape	Angle
A	Parallelogram	85°
H	Hexagonal	120°
L	Rectangular	90°
O	Octagonal	135°
P	Pentagonal	108°
R	Round	—
S	Square	90°
T	Triangle	60°
Q	Special	—
X	Special	—

Chart 2: ② Relief Angle

Symbol	Relief Angle
N	0°
A	3°
B	5°
C	7°
P	11°
D	15°
E	20°
F	25°
G	30°
O	Special

Chart 3: ③ Tolerance Class

Symbol	Tolerance
A	Very High Precision
C	High Precision
E	Semi-Precision
K	Standard
M	Semi-standard

Chart 4: ④ Insert Hole or Breaker

Symbol	Shape
W	
M	
R	
N	
T	

Chart 5: ⑤ Cutting Edge Length

Shape	Length (ℓ)
S	
T	
R	
H	
A	

Chart 6: ⑥ Thickness

Symbol	Thickness (mm)
02	2.38
03	3.18
T3	3.97
04	4.76
06	6.35

Chart 7: ⑦ Approach Angle

Symbol	Approach Angle
A	45°
D	60°
E	75°
F	85°
H	87°
P	90°
Z	Special

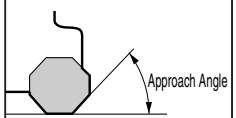


Chart 8: ⑧ Face Relief Angle

Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Special

Chart 9: ⑨ Edge Treatment

Symbol	Shape
F	Sharp Edge
E	Honed
T	Nega-Land
S	Combination

Chart 10: ⑩ Insert Orientation

Symbol	Orientation
N	Neutral
R	Right Hand
L	Left Hand

Chart 11: ⑪ Supplementary Information (Ex.)

Symbol	Indication
A	Sharp Edge
H	Strong Edge
W	Large Edge Treatment
S	Main Insert for WBMR

＊〔**Exceptions**〕

The above table does not apply to the following insert codes-

SPCH42TR · SPCH42R · SPCH53TR · SPCH53R · SDKN42MT · SDKN42M · SDKN53MT · SDKN53M · SEKN42MT · SEKN42M · SEKN53MT · SEKN53M

Explanation for the above exceptions:

- Although "H" and "K" indicate precision tolerances, the insert circumference is not ground
- "M" in this instance represents "Neutral Hand" insert
- "T" in this instance represents "Nega-Land" edge treatment
- "R" indicates the insert orientation (Right Hand)

WGC Type

■ General Features

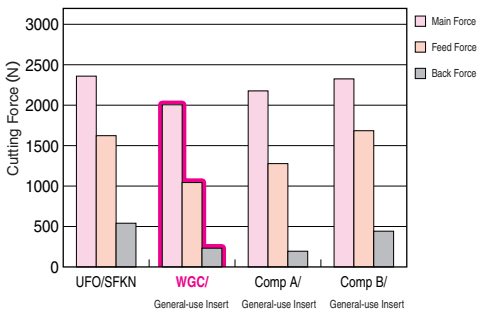
New general-purpose milling cutter, which boasts precise cutter constructions, enables precision milling operations with high efficiency

■ Characteristics / Application

- With its precise constructions, even M-class inserts can produce quality parts
- Good balance of sharpness and toughness through optimum cutting edge design coupled with tough insert grades
- Wide range of items to cover various needs

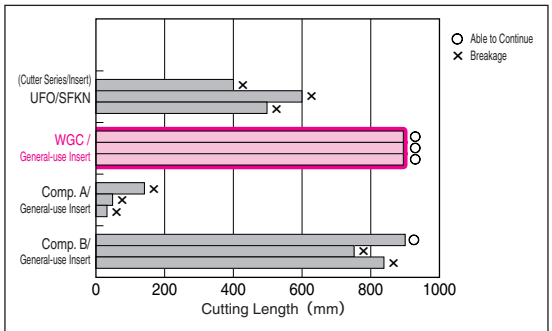
■ Performance

● Performance Comparison



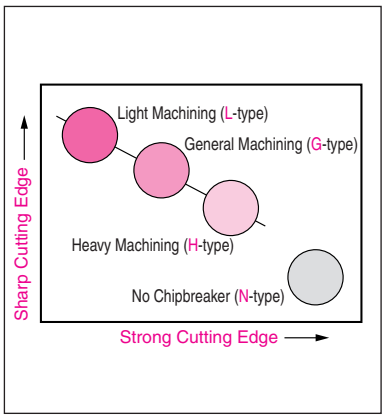
Cutter Size : WGC4100R
Conditions : V=200m/min、fz =0.40mm/t
Ad=3.0mm、Dry
Work Mat'l : S50C

● Cutting Edge Strength Comparison



Cutter Size : WGC4100R
Conditions : V=150m/min、fz =0.50mm/t
Ad=2.0mm、Rd=52.0mm、Dry
Work Mat'l : S50C

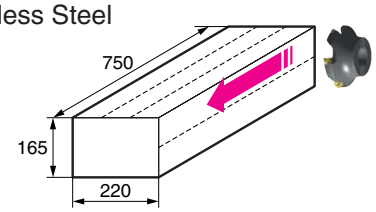
■ Chipbreaker Map



Breaker	L-Type	G-Type	H-Type	N-Type	W-Type
Figure	θ	θ		θ	
Rake Angleθ	25°	20°	15°	0°	
Application	·Light cut ·Low force milling of thin work piece ·Low burr design	·General purpose to Interrupted milling ·Main Chipbreaker	·Interrupted to Heavy milling ·For welded or rolled surfaces	·Very heavy milling	·High precision finish (Wiper edge)

■ Applications Examples

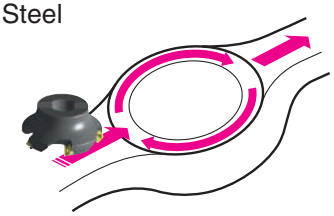
● Stainless Steel



20% longer tool life as compared to conventional tooling (competitor's), with the containment of chipping caused by notch wear and thermal cracking.

Work : SUS420JI
Cutter : WGC4100R
Insert : SEMT13T3AGSN-G (Grade : ACP300)
Cond : V=120m/min, f=0.19mm/t, Ad=4～6mm, Rd=75～80mm wet

● Carbon Steel



30% longer tool life as compared to conventional tooling (competitor's), with the reduction of wear and chipping.

Work : Carbon Steel
Cutter : WGC4080R
Insert : SEMT13T3AGSN-H (Grade : ACP100)
Cond : V=200m/min, f=0.32mm/t, Ad=2～3mm, Rd=15～25mm wet

General Milling for Steel, Cast Iron & Exotic Material

Rake Angle			
	Radial	−10°~−19°	−20°~−24°
	Axial	+20°	+20°~22°
		(3000 Type)	(4000 Type)

4mm 45° (3000 Type) 6mm 45° (4000 Type)

Fig 1

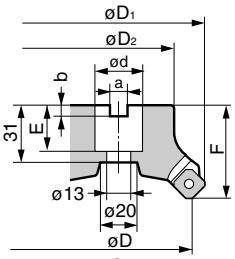


Fig 2

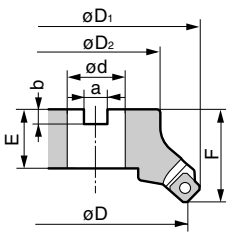
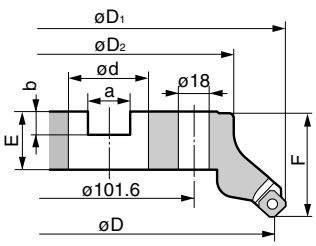


Fig 3



■ Milling Cutter Body (WGC 3000 type)

✻ Inserts are not included.

Cat. No.	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
		øD	øD1	øD2	F	ød	a	b	E			
WGC 3080R	●	80	89	60	50	25.4	9.5	6	25	6	1.1	1
WGC 3100R	●	100	109	70	50	31.75	12.7	8	32	7	1.5	2

■ Milling Cutter Body (WGC 4000 type)

WGC 4080R	●	80	93	60	50	25.4	9.5	6	25	4	1.0	1
WGC 4100R	●	100	113	70	50	31.75	12.7	8	32	5	1.5	2
WGC 4125R	●	125	138	80	63	38.1	15.9	10	38	6	2.6	2
WGC 4160R	●	160	173	100	63	50.8	19	11	38	7	4.0	2
WGC 4200R	●	200	213	130	63	47.625	25.4	14	35	8	6.6	3

■ Milling Cutter Body (WGCF 4000 type)

WGCF 4080R	●	80	93	60	50	25.4	9.5	6	25	8	1.0	1
WGCF 4100R	●	100	113	70	50	31.75	12.7	8	32	10	1.5	2
WGCF 4125R	●	125	138	80	63	38.1	15.9	10	38	12	2.6	2
WGCF 4160R	●	160	173	100	63	50.8	19	11	38	16	4.0	2
WGCF 4200R	●	200	213	130	63	47.625	25.4	14	35	20	6.6	3

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing ϕ 80 cutter to the arbor

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide								DLC	Carbide				Cermet	SUMIDIA		
Application	High Speed/Light Cutting	P			K					N				K N		N		
	General Purpose		P M	M	K			P M	M	N	P	K S			P	N		
	Roughing		P M	P M		K	K	P M	P M							N		
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	DL1000	A30N	EH520	H1	T250A		DA2200	Fig	Cutter
SEET 0903AGFN -L		●	●	●	●	●			●	●			●			–	4	WGC 3000 series
SEET 0903AGSN -G		●	●	●	●	●	●	●	●			●		●		–	4	
SEET 0903AGSN -N		●	●	●	●	●	●	●	●					●		–	4	
SEMT 0903AGSN-L		●	●	●	●	●	●	●	●							–	4	
SEMT 0903AGSN-G		●	●	●	●	●	●	●	●		●					–	4	
SEET 13T3AGFN -L		●	●	●	●	●			●	●		●	●			–	5	WGC 4000 series WGCF 4000 series
SEET 13T3AGSN -G		●	●	●	●	●	●	●	●			●		●		–	5	
SEET 13T3AGSN -N		●	●	●	●	●	●	●	●		●			●		–	5	
SEMT 13T3AGSN-L		●	●	●	●	●	●	●	●							–	5	
SEMT 13T3AGSN-G		●	●	●	●	●	●	●	●		●					–	5	
SEMT 13T3AGSN-H		●	●	●	●	●	●	●	●							–	5	
NF-SECW 13T3AGTN-N		–	–	–	–	–	–	–	–	–	–	–	–	–		●	5	
NF-XEEW 13T3AGFR-W		–	–	–	–	–	–	–	–	–	–	–	–	–		●	6	
XEEW 13T3AGER-W						●	●							●		–	6	

Fig 4

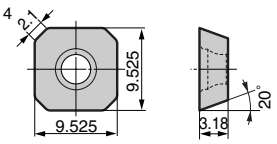


Fig 5

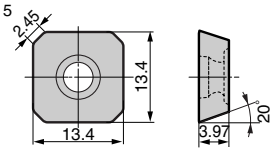
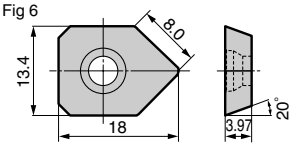
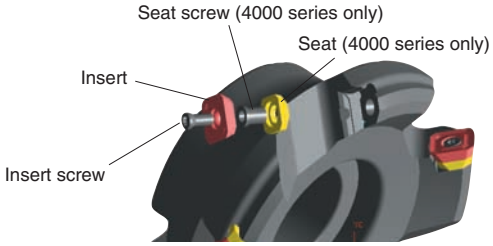


Fig 6



■ Parts

Cutter Cat. No.	Seat	Seat Screw	Insert Screw	Wrench	Wrench
WGC 3000 Series	–	–	BFTX0307IP	TRDR10IP	–
WGC(F) 4000 Series	WGCS13R	BW0507F	BFTX03512IP	TRDR15IP	LH035



■ Recommended Conditions

( ) Conditions for 3000 series

Material	Suitability	Cutting speed (m / min)	Feedrate (mm/tooth)	D.O.C (mm)	Grade	Insert
General Steel	◎	150 ~ 250	0.1 ~ 0.3 (0.1 ~ 0.2)	<3 (<2)	ACP200	SEMT13T3AGSN-G SEET13T3AGSN-G (SEMT0903AGSN-G SEET0903AGSN-G)
Soft Steel	◎	180 ~ 350	0.1 ~ 0.4 (0.1 ~ 0.25)	<3 (<2)	ACP200	
Stainless steel	◎	160 ~ 250	0.15 ~ 0.3 (0.15 ~ 0.2)	<3 (<2)	ACP300	
Die Steel	◎	100 ~ 200	0.15 ~ 0.25 (0.15 ~ 0.2)	<3 (<2)	ACP200	
Cast Iron	◎	100 ~ 250	0.15 ~ 0.3 (0.15 ~ 0.2)	<3 (<2)	ACK200	
Aluminum	◎	500 ~	0.15 ~ 0.3	<3	DL1000	SEET13T3AGFN-L (SEET0903AGFN-L)

● mark : To be replaced by new items under the ACP / ACK series

UFO4000 Type

General Milling for Steel, Cast Iron & Exotic Material

Rake Angle		
	Radial	−7°
	Axial	+27°

5.5mm / 45°

Fig 1

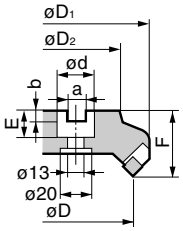


Fig 2

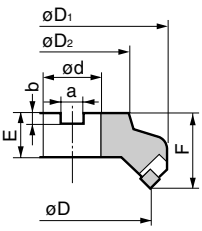


Fig 3

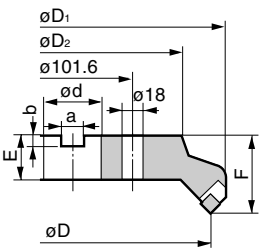
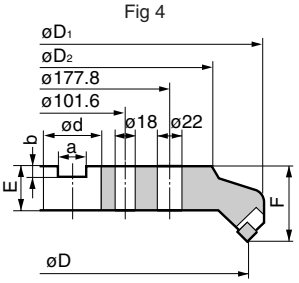


Fig 4



■ Milling Cutter Body

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm) øD	øD1	øD2	F	ød	a	b	E	No. of teeth	Weight (kg)	Fig
UFO 4080R	●	**UFO 4080L**		80	102	60	50	25.4	9.5	6	25	4	2.1	1
UFO 4100R	●	**UFO 4100L**		100	122	70	50	31.75	12.7	8	32	5	2.9	2
UFO 4125R	●	**UFO 4125L**		125	146	75	63	38.1	15.9	10	38	6	4.2	2
UFO 4160R	●	**UFO 4160L**		160	180	100	63	50.8	19.0	11	38	8	6.6	2
UFO 4200R	●	**UFO 4200L**		200	220	130	63	47.625	25.4	14	35	10	9.5	3
UFO 4250R	●	**UFO 4250L**		250	270	130	63	47.625	25.4	14	35	12	14.8	3
UFO 4315R		**UFO 4315L**		315	335	240	80	47.625	25.4	14	35	14	26.6	4

✻ Inserts are not included.

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide											Carbide				Cermet			
Application	High Speed/Light Cutting	P			K					P	K	M			KN					
	General Purpose		PM	M	K			PM	M				P	K		K	P			
	Roughing		PM	PM		K	K	PM	PM											
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	AC211	EH20Z	A30N	G10E	H1	H10E	T250A			Fig
SFEN 12T3AZTN		●	●					●		●			●				●			5
SFEN 12T3AZTN-S													●							5
SFEN 12T3AZTN-W																				5
SFEN 12T3AZFN															●					5
SFKN 12T3AZTN		●	●	●				●	●	●			●				●			6
SFKN 12T3AZTN-S													●							6
SFKN 12T3AZTN-W																	●			6
SFKN 12T3AZFN					●	●	●				●	●		●						6
SFKR 12T3AZEN		●								●			●							7
UW 12500R																●				8

Fig 5

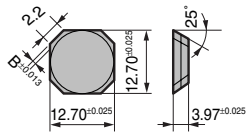


Fig 6

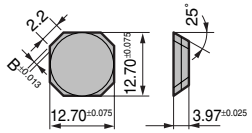


Fig 7

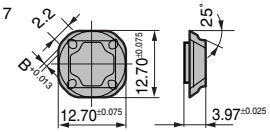
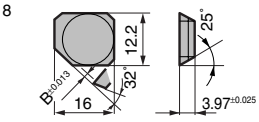
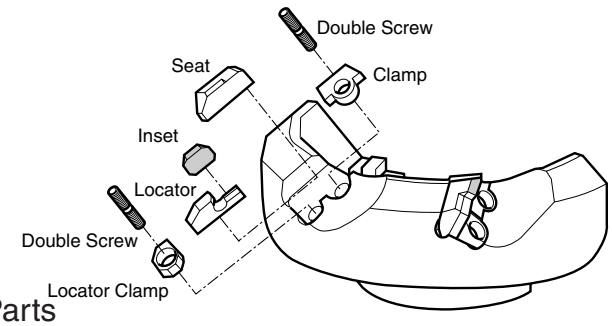


Fig 8



※ -S: Sharp edge, -W: Strong edge



■ Parts

Cutter Cat. No.	Locator Clamp	Insert Clamp	Double Screw	Seat	Locator
UFO 4000R	UFKWR	UFTWR	WB7–15T	UF4SR	UF4KR
UFO 4000L	UFKWL	UFTWL	WB7–15T	UF4SL	UF4KL

Wrench used is TT25

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	◎	100 ~ 250	0.15 ~ 0.3	< 5	① ACP200(T250A) ② SFKN12T3AZTN
Soft Steel	◎	125 ~ 300	0.15 ~ 0.3	< 5	① ACP200(T250A) ② SFKN12T3AZTN
Stainless steel	○	160 ~ 220	0.15 ~ 0.3	< 5	① ACP300(T250A) ② SFKN12T3AZTN
Die Steel	○	80 ~ 200	0.15 ~ 0.25	< 5	① ACP200(T250A) ② SFKN12T3AZTN
Cast Iron	○	60 ~ 250	0.15 ~ 0.3	< 5	① ACK200 ② SFKN12T3AZFN
Aluminum	○	400 ~	0.15 ~ 0.3	< 5	① H1(G10E) ② SFEN12T3AZFN

● mark : To be replaced by new items under the ACP / ACK series

UFO5000 Type

General Milling for Steel, Cast Iron & Exotic Material

Rake Angle		
	Radial	−7°
	Axial	+27°

7.5mm 45°

Fig 1

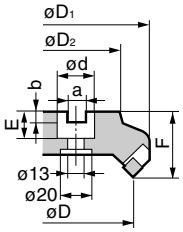


Fig 2

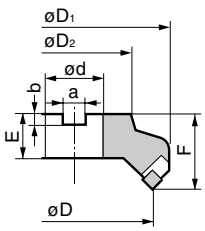


Fig 3

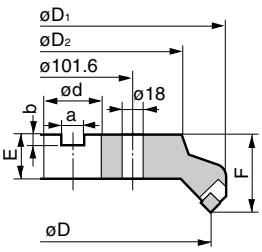
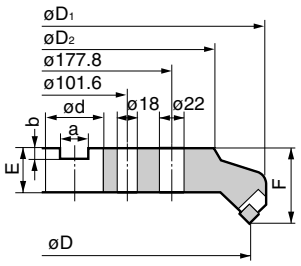


Fig 4



■ Milling Cutter Body

Cat. No.（R）	Stock	Cat. No.（L）	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
				øD	øD1	øD2	F	ød	a	b	E			
UFO 5080R		UFO 5080L		80	102	60	50	25.4	9.5	6	25	4	2.0	1
UFO 5100R	●	UFO 5100L		100	119	70	50	31.75	12.7	8	32	5	2.8	2
UFO 5125R	●	UFO 5125L		125	143	75	63	38.1	15.9	10	38	6	4.0	2
UFO 5160R	●	UFO 5160L		160	177	100	63	50.8	19.0	11	38	8	6.4	2
UFO 5200R	●	UFO 5200L		200	217	130	63	47.625	25.4	14	35	10	9.2	3
UFO 5250R		UFO 5250L		250	267	130	63	47.625	25.4	14	35	12	14.4	3
UFO 5315R		UFO 5315L		315	332	240	80	47.625	25.4	14	35	14	26.1	4

✻ Inserts are not included.

Please use hexagonal bolt (JISB1176) M12 × 30 ～ 35mm for securing φ 80 cutter to the arbor

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide										Carbide				Cermet				
Application	High Speed/Light Cutting	P			K					P	M			K						
	General Purpose		PM	M	K			PM	M			P	K		K	P				
	Roughing		PM	PM		K	K	PM	PM											
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	EH20Z	A30N	G10E	H1	H10E	T250A				Fig
SFEN 1504AZTN		●	●					●		●		●				●				5
SFEN 1504AZTN-S																				5
SFEN 1504AZTN-W																				5
SFEN 1504AZFN																				5
SFKN 1504AZTN		●	●	●				●	●	●		●				●				6
SFKN 1504AZTN-S												▲								6
SFKN 1504AZTN-W																				6
SFKN 1504AZFN					●						●		●							6
UW 15500R															●					7
UW 15500L																				–

Fig 5

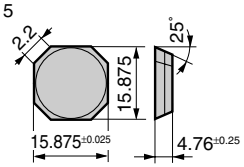


Fig 6

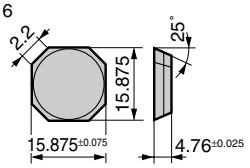
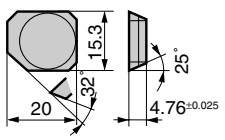
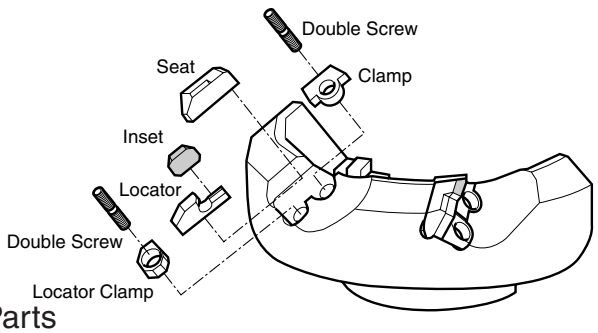


Fig 7



※ -S: Sharp edge, -W: Strong edge



■ Parts

Cutter Cat. No.	Locator Clamp	Insert Clamp	Double Screw	Seat	Locator
UFO 5000R	UFKWR	UFTWR	WB7–15T	UF5SR	UF5KR
UFO 5000L	UFKWL	UFTWL	WB7–15T	UF5SL	UF5KL

Wrench used is TT25

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	◎	100 ~ 250	0.15 ~ 0.3	< 7	① ACP200(T250A) ② SFKN1504AZTN
Soft Steel	◎	125 ~ 300	0.15 ~ 0.3	< 7	① ACP200(T250A) ② SFKN1504AZTN
Stainless steel	○	160 ~ 220	0.15 ~ 0.3	< 7	① ACP300(T250A) ② SFKN1504AZTN
Die Steel	○	80 ~ 200	0.15 ~ 0.25	< 7	① ACP200(T250A) ② SFKN1504AZTN
Cast Iron	○	60 ~ 250	0.15 ~ 0.3	< 7	① ACK200 ② SFKN1504AZFN
Aluminum	○	400 ~	0.15 ~ 0.3	< 7	① H1(G10E) ② SFEN1504AZFN

● mark : To be replaced by new items under the ACP / ACK series ▲ mark : To be replaced by new item (Please confirm stock availability)

CHG4000 Type

Shoulder Milling for Steel, Stainless Steel & Cast Iron

Rake Angle		
	Radial	+4°
	Axial	+15°

16mm 0°

Fig 1

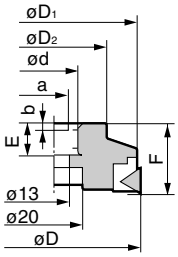


Fig 2

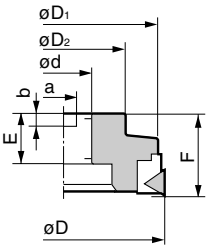


Fig 3

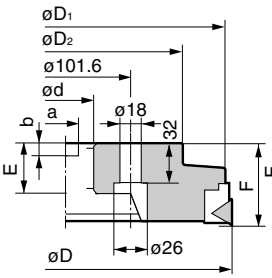
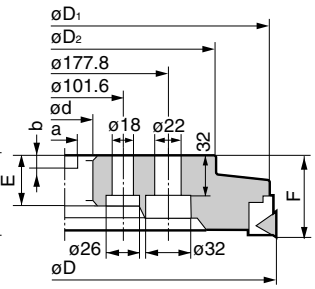


Fig 4



■ Milling Cutter Body

Cat. No.	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
		øD	øD1	øD2	F	ød	a	b	E			
CHG 4080R	●	80	78	60	50	25.4	9.5	6	25	4	1.3	1
CHG 4100R	●	100	96	70	63	31.75	12.5	8	32	5	2.0	2
CHG 4125R	●	125	120	80	63	38.1	15.9	10	38	6	3.1	2
CHG 4160R	●	160	154	100	63	50.8	19.0	11	38	8	5.3	2
CHG 4200R	●	200	193	130	63	47.625	25.4	13.5	38	10	8.1	3
CHG 4250R		250	242	180	63	47.625	25.4	13.5	40	12	13.8	3
CHG 4315R		315	307	240	63	47.625	25.4	13.5	40	14	21.9	4

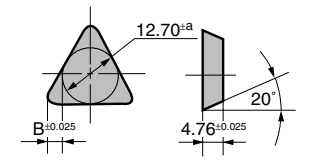
✻ Inserts are not included.

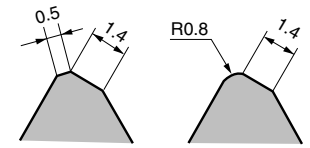
Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing ϕ 80 cutter to the arbor

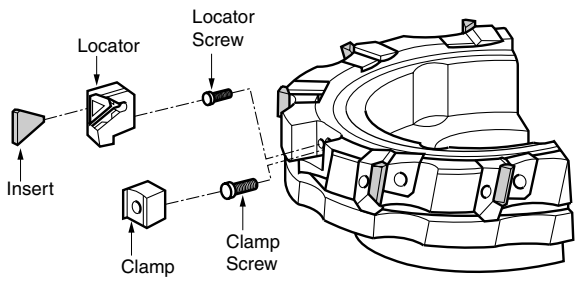
■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide											Carbide			Cermet	SUMIDIA			
Application	High Speed/Light Cutting	P			K					P	K	M			K N		N	N		
	General Purpose		P M	M	K			P M	M				P	K		P	N	N		
	Roughing		P M	P M		K	K	P M	P M								N	N		
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	AC211	EH20Z	A30N	G10E	H1	T250A	DA150	DA2200	Tolerance a(mm)	Fig
TEEN 43R														●	●		●	▲	±0.025	A
NF-TEEN 43R		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●	±0.025	A
TEEN 43TR		●	●	●				●	●	●			●			●	–	–	±0.025	B
TEKN 43R					●	●	●				●	●		●			–	–	±0.075	A
TEKN 43TR		●	●	●				●		●			●			●	–	–	±0.075	B







■ Parts

Cutter Cat. No.	Locator	Clamp	Clamp Screw	Locator Screw	Wrench
CHG 4080R ~ CHG 4125R	LCH4R	CHWR	FBX0811	FBH0512	TH030 TH040
CHG 4160R ~ CHG 4315R			FBX0817		

TH030-Locator Screw Wrench
TH040-Clamp Screw Wrench

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	◎	80 ~ 150	0.1 ~ 0.25	< 7	① ACP200(T250A) ② TEKN43TR
Soft Steel	◎	100 ~ 150	0.1 ~ 0.2	< 7	① ACP200(T250A) ② TEKN43TR
Stainless steel	○	80 ~ 150	0.05 ~ 0.15	< 7	① ACP300(T250A) ② TEEN43TR
Die Steel	△	60 ~ 100	0.1 ~ 0.2	< 5	① ACP200(T250A) ② TEEN43TR
Cast Iron	○	60 ~ 120	0.1 ~ 0.25	< 10	① ACK200 ② TEKN43R
Aluminum	◎	200 ~ 400	0.1 ~ 0.3	< 8	① HI, DA150 ② TEEN43R

▲ mark : To be replaced by new item (Please confirm stock availability) ● mark : To be replaced by new items under the ACP / ACK series

Shoulder Milling for Steel, Stainless Steel & Cast Iron

Rake Angle		
	Radial	0°
	Axial	+6°

18mm 0°

Fig 1

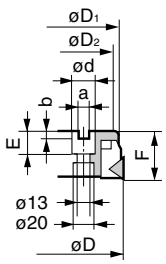


Fig 2

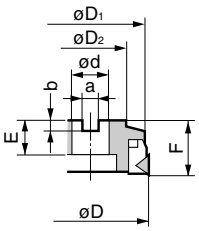
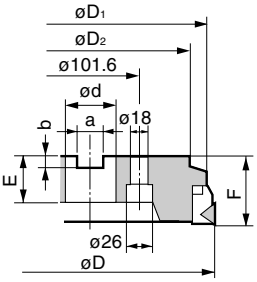


Fig 3



■ Milling Cutter Body

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm) øD	øD1	øD2	F	ød	a	b	E	No. of teeth	Weight (kg)	Fig
CPG 4080R	●	CPG 4080L		80	77	60	50	25.4	9.5	6	25	5	1.2	1
CPG 4100R	●	CPG 4100L		100	98	75	60	31.75	12.7	8	32	6	2.0	2
CPG 4125R	●	CPG 4125L		125	121	75	60	38.1	15.9	10	38	8	3.3	2
CPG 4160R	●	CPG 4160L		160	155	100	60	50.8	19.0	11	38	10	5.5	2
CPG 4200R	●	CPG 4200L		200	194	130	60	47.625	25.4	13.5	38	12	8.6	3
CPG 4250R		CPG 4250L		250	243	200	70	47.625	25.4	13.5	52	14	17.9	3
CPG 4315R		CPG 4315L		315	308	240	70	47.625	25.4	13.5	52	18	25.5	3

✻ Inserts are not included.

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade	Coated Carbide											Carbide				Cermet			Fig
Application: High Speed/Light Cutting	P			K					P	K	M						P	P	
Application: General Purpose		PM	M	K			PM	M				P	P	K	K	P			
Application: Roughing		PM	PM		K	K	PM	PM											
Cat. No.	ACP100	ACP200	ACP300	ACK200	ACK300	AC2310	AC2330	AC2350	AC230	AC211	EH20Z	A30	A30N	H10E	G10E	T250A	T1200A	T130A	
TPCH43R				●	●	●				●	●				●				4
TPCH43L															●				4
TPCH43TR	●	●	●				●		●				●	●		●	●		4
TPCH43TL													●						4
TPMN432												●			●		●	●	5
TPMN433												●			●				5

Fig 4

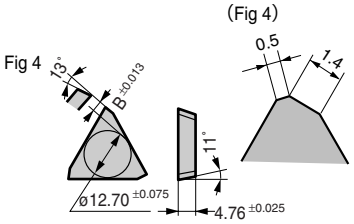
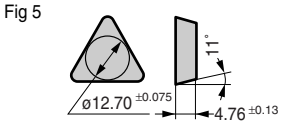
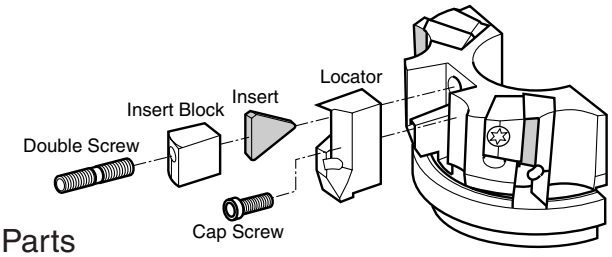


Fig 5





■ Parts

Cutter Cat. No.	Locator	Clamp	Double Screw	Cap Screw	Wrench
CPG4080R	LCP40R	PTW40R	WB8-22T	BX0508	TT27 LH040
CPG4100R ~ CPG4125R	LCP40R	PTW41R	WB8-22T	BX0510	TT27 LH040
CPG4160R ~ CPG4500R	LCP40R	PTW41R	WB8-30T	BX0510	TT27 LH040
CPG4080L	LCP40L	PTW40L	WB8-22T	BX0508	TT27 LH040
CPG4100L ~ CPG4125L	LCP40L	PTW41L	WB8-22T	BX0510	TT27 LH040
CPG4160L ~ CPG4500L	LCP40L	PTW41L	WB8-30T	BX0510	TT27 LH040

TT27-Double Screw Wrench
LH040-Cap Screw Wrench

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	○	80 ~ 140	0.1 ~ 0.25	< 7	① ACP200 (T250A) ② TPCH43TR
Soft Steel	◎	100 ~ 150	0.1 ~ 0.2	< 7	① ACP200 (T250A) ② TPCH43TR
Stainless steel	○	100 ~ 150	0.1 ~ 0.25	< 7	① ACP300 ② TPCH43TR
Die Steel	○	60 ~ 100	0.1 ~ 0.2	< 5	① ACP200 (T250A) ② TPCH43TR
Cast Iron	○	60 ~ 120	0.1 ~ 0.25	< 10	① ACK200 ② TPCH43R
Aluminum	○	400 ~	0.1 ~ 0.25	< 8	① G10E ② TPCH43R

● mark : To be replaced by new items under the ACP / ACK series

Shoulder Milling for Steel, Stainless Steel, Die Steel & Cast Iron

Rake Angle		
	Radial	+10°~16°
	Axial	+10°~17°

10mm 0°

Fig 1

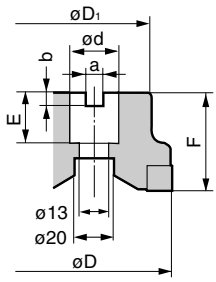


Fig 2

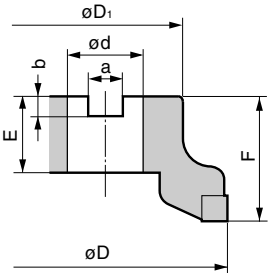
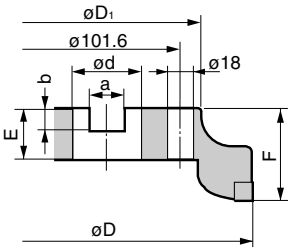


Fig 3



■ Milling Cutter Body (Standard type)

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm)							No. of teeth	Weight (kg)	Fig
				øD	øD1	F	ød	a	b	E			
WFM 4080R	●	WFM 4080L		80	60	50	25.4	9.5	6	25	4	1.0	1
WFM 4100R	●	WFM 4100L		100	70	50	31.75	12.7	8	32	5	1.5	2
WFM 4125R	●	WFM 4125L		125	80	63	38.1	15.9	10	38	6	2.6	2
WFM 4160R	●	WFM 4160L		160	100	63	50.8	19.0	11	38	8	4.6	2
WFM 4200R		WFM 4200L		200	130	63	47.625	25.4	14	35	10	8.5	3

■ Milling Cutter Body (Fine pitched type)

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm)							No. of teeth	Weight (kg)	Fig
				øD	øD1	F	ød	a	b	E			
WFMF 4080R	●	WFMF 4080L		80	60	50	25.4	9.5	6	25	6	1.0	1
WFMF 4100R	●	WFMF 4100L		100	70	50	31.75	12.7	8	32	7	1.5	2
WFMF 4125R	●	WFMF 4125L		125	80	63	38.1	15.9	10	38	8	2.5	2
WFMF 4160R	●	WFMF 4160L		160	100	63	50.8	19.0	11	38	10	4.8	2
WFMF 4200R		WFMF 4200L		200	130	63	47.625	25.4	14	35	12	8.4	3

✻ Inserts are not included.

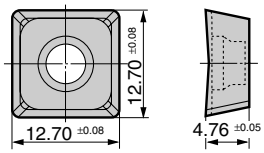
Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

■ Insert

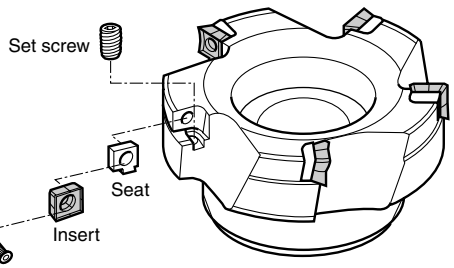
P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide												Carbide			Cermet			
Application	High Speed/Light Cutting	P			K					P										
	General Purpose		PM	M	K			PM	M					P	K		P			
	Roughing		PM	PM		K	K	PM	PM											
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230				A30N	G10E		T250A			Fig
XDMT 120408PDEN							●	●	●	●				●	●		●			4
XDMT 120408PDER-S			●	●		●	●	●	●											4
XDMT 120408PDEN-H			●	●		●	●	●	●											4
XDMT 120408PDEN-G		●	●	●	●	●	●	●	●					○	○		○			4

Fig 4



✻ -S: Sharp edge, -H: Strong edge, -G: General Purpose



■ Parts

Applicable cutter Cat. No.	Seat	Insert Screw	Set Screw	Wrench	Wrench
WFM(F) 4□□□R	WFMS4R	BFTX 0414	BT0506	TRD15	TH025
WFM(F) 4□□□L	WFMS4L				

■ Recommended Conditions

Material	Suitability	Cutting Speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	Grade
General Steel	◎	150 ~ 250	0.1 ~ 0.2	< 8	ACP200, ACP300
Soft Steel	◎	180 ~ 350	0.1 ~ 0.2	< 8	ACP200, ACP300
Stainless steel	○	160 ~ 250	0.1 ~ 0.2	< 8	ACP300
Die Steel	○	100 ~ 200	0.1 ~ 0.2	< 5	ACK300, ACP200
Cast Iron	○	100 ~ 250	0.1 ~ 0.2	< 8	ACK200, ACK300

▲ mark : To be replaced by new item (Please confirm stock availability) ● mark : To be replaced by new items under the ACP / ACK series

Shoulder Milling for Steel, Stainless Steel, Die Steel & Cast Iron

Rake Angle		
	Radial	+10°~16°
	Axial	+10°~17°

12mm 0°

Fig 1

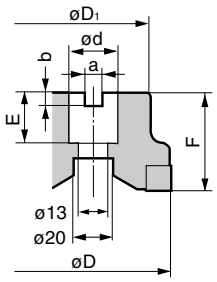


Fig 2

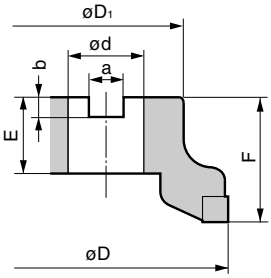
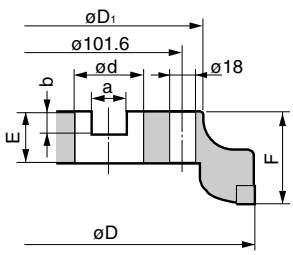


Fig 3



■ Milling Cutter Body (Standard type)

Cat. No.（R）	Stock	Cat. No.（L）	Stock	Dimensions (mm)							No. of teeth	Weight (kg)	Fig
				øD	øD1	F	ød	a	b	E			
WFM 5080R		WFM 5080L		80	60	50	25.4	9.5	6	25	4	1.0	1
WFM 5100R	●	WFM 5100L		100	70	50	31.75	12.7	8	32	5	1.5	2
WFM 5125R	●	WFM 5125L		125	80	63	38.1	15.9	10	38	6	2.6	2
WFM 5160R	●	WFM 5160L		160	100	63	50.8	19.0	11	38	8	4.6	2
WFM 5200R	●	WFM 5200L		200	130	63	47.625	25.4	14	35	10	7.0	3

■ Milling Cutter Body (Fine pitched type)

Cat. No.（R）	Stock	Cat. No.（L）	Stock	Dimensions (mm)							No. of teeth	Weight (kg)	Fig
				øD	øD1	F	ød	a	b	E			
WFMF 5080R		WFMF 5080L		80	60	50	25.4	9.5	6	25	6	1.0	1
WFMF 5100R		WFMF 5100L		100	70	50	31.75	12.7	8	32	7	1.5	2
WFMF 5125R		WFMF 5125L		125	80	63	38.1	15.9	10	38	8	2.5	2
WFMF 5160R		WFMF 5160L		160	100	63	50.8	19.0	11	38	10	4.5	2
WFMF 5200R		WFMF 5200L		200	130	63	47.625	25.4	14	35	12	6.9	3

✻ Inserts are not included.

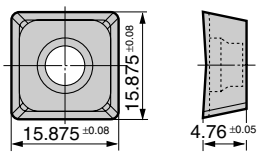
Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing ϕ 80 cutter to the arbor

■ Insert

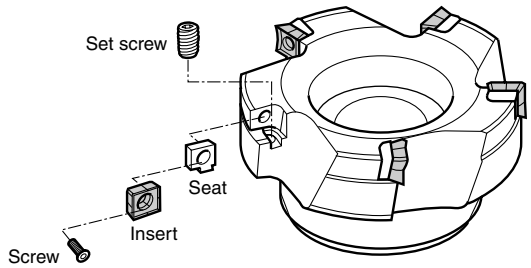
P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide											Carbide			Cermet			
Application	High Speed/Light Cutting	P			K					P									
	General Purpose		P M	M	K			P M	M				P	K		P			
	Roughing		P M	P M		K	K	P M	P M										
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230			A30N	G10E		T250A			Fig
XDMT 150408PDEN							●	●	●	●			●	●		●			4
XDMT 150408PDEN-H			●	●		●	●	●	●										4
XDMT 150408PDEN-G		●	●	●	●	●	●	●	●				○	○		○			4

Fig 4



✻ -H: Strong edge, -G: General Purpose



■ Parts

Applicable cutter Cat. No.	Seat	Insert Screw	Set Screw	Wrench	Wrench
WFM(F) 5□□□R	WFMS5R	BFTX 0515N	BT0506	TRD20	TH025
WFM(F) 5□□□L	WFMS5L				

■ Recommended Conditions

Material	Suitability	Cutting Speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	Grade
General Steel	◎	150 ~ 250	0.1 ~ 0.2	< 12	ACP200, ACP300
Soft Steel	◎	180 ~ 350	0.1 ~ 0.2	< 12	ACP200, ACP300
Stainless steel	○	160 ~ 250	0.1 ~ 0.2	< 12	ACP300
Die Steel	○	100 ~ 200	0.1 ~ 0.2	< 7	ACK300, ACP200
Cast Iron	○	100 ~ 250	0.1 ~ 0.2	< 12	ACK200, ACK300

● mark : To be replaced by new items under the ACP / ACK series ▲ mark : To be replaced by new item (Please confirm stock availability)

CNP(F)13000 Type

Shoulder Milling for Steel, Stainless Steel & Cast Iron

Rake Angle		
Radial	−9°～−15°	12mm / 0°
Axial	5°	

Fig1

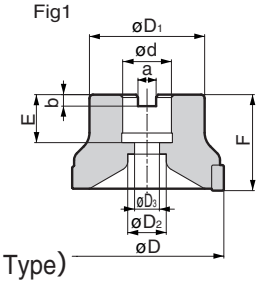


Fig2

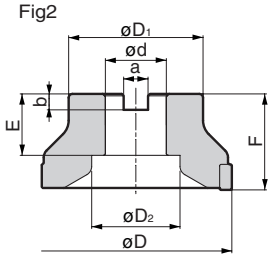
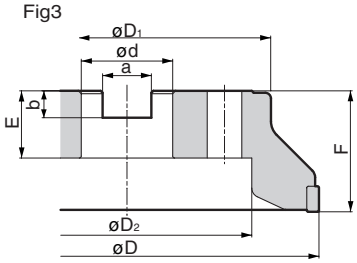


Fig3



■ Milling Cutter Body（CNP13000 Type）

Cat. No.	Stock	Dimensions (mm)									No. of teeth	Weight (kg)	Fig
		øD	øD1	øD2	øD3	F	ød	a	b	E			
CNP13063RS	●	63	40	18	11	40	22	10.4	6.3	20	5	0.4	1
CNP13080R	●	80	60	20	13	50	25.4	9.5	6	25	5	0.9	1
CNP13100R	●	100	70	46	–	50	31.75	12.7	8	32	6	1.3	2
CNP13125R	●	125	80	56	–	63	38.1	15.9	10	38	7	2.5	2
CNP13160R	●	160	100	72	–	63	50.8	19	11	38	8	4.2	2
CNP13200R		200	150	130	–	63	47.625	25.4	14	35	10	7.2	3

■ Milling Cutter Body（CNPF13000 Type）

CNPF13063RS	●	63	40	18	11	40	22	10.4	6.3	20	7	0.4	1
CNPF13080R	●	80	60	20	13	50	25.4	9.5	6	25	7	0.9	1
CNPF13100R	●	100	70	46	–	50	31.75	12.7	8	32	8	1.4	2
CNPF13125R	●	125	80	56	–	63	38.1	15.9	10	38	9	2.4	2
CNPF13160R	●	160	100	72	–	63	50.8	19	11	38	11	4.3	2
CNPF13200R		200	150	130	–	63	47.625	25.4	14	35	13	7.4	3

✻ Inserts are not included.

■ Insert

P Steel　M Stainless Steel　K Cast Iron　N Non-Ferrous Metal　S Exotic Alloy　H Hardened Steel

Grade		Coated Carbide																		
Application	High Speed/Light Cutting	P			K					P										
	General Purpose		P M	M	K			P M	M											
	Roughing		P M	P M		K	K	P M	P M											
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230										Fig
CNMU130608N-G			●	●	●	●	●	●	●	●										4
CNMU130608N-H			●	●	●	●	●	●	●											4
CNMQ130608N						●	●	●	●											5
CNMQ130616N						●	●	●	●											5
CNEQ130608N						●	●	●												5

Fig4

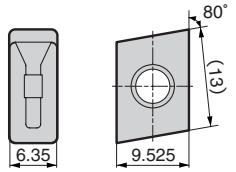
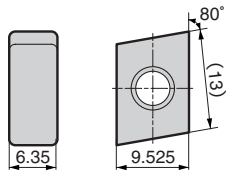


Fig5



✻ -G: General Purpose, -H: Strong edge

■ Parts

Applicable cutter Cat. No.	Insert Screw	Wrench
CNP(F)13000	BFTX0412N	TTX15W

■ Recommended Conditions

✻ If Depth-of-cut exceeds 5mm, reduce recommended feedrates by 50%.
✻ The conditions below are meant as a guide, please adjust the cutting conditions according to actual work material and machine rigidity.

Material	Cutting Speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	Grade
Low Carbon Steel	200～300	0.2～0.4	～10	ACP200
Carbon Steel	150～250	0.2～0.4	～10	ACP200
Alloy Steel	100～230	0.15～0.35	～10	ACP200
Die Steel	100～200	0.15～0.3	～10	ACP200
Stainless Steel	150～200	0.15～0.25	～10	ACP200,ACP300
Cast Iron	100～250	0.2～0.4	～10	ACK300,ACK200

SIDE-CUTTER CONFIGURATIONS

■ Possible Side-Cutter Sizes

Cutter Width, W (mm)	16～24
Cutter Diameter, øD (mm)	ø80 and above

✻ These are made-to-order, please consult our sales representatives for more information

● mark : To be replaced by new items under the ACP / ACK series

General Milling for Aluminum Alloy and Low Carbon Steel

Rake Angle	Radial	−2°
	Axial	+18°

7mm / 25°

Fig 1

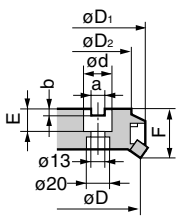


Fig 2

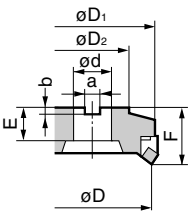


Fig 3

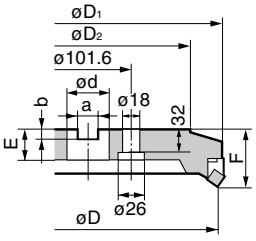
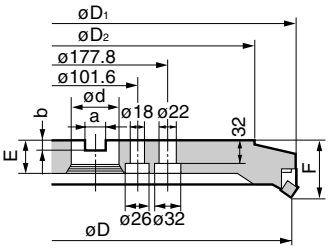


Fig 4



■ Milling Cutter Body

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
				øD	øD1	øD2	F	ød	a	b	E			
APG 4080R	●	APG 4080L		80	90	60	50	25.4	9.5	6	25	5	1.6	1
APG 4100R	●	APG 4100L		100	110	75	60	31.75	12.7	8	32	5	2.7	2
APG 4125R	●	APG 4125L		125	134	75	60	38.1	15.9	10	38	6	4.0	2
APG 4160R	●	APG 4160L		160	169	100	60	50.8	19.0	11	38	8	6.5	2
APG 4200R	●	APG 4200L		200	208	130	60	47.625	25.4	13.5	38	10	9.1	3
APG 4250R	●	APG 4250L		250	258	200	70	47.625	25.4	13.5	40	12	18.3	3
APG 4315R	●	APG 4315L		315	323	240	70	47.625	25.4	13.5	40	16	27.6	3
APG 4400R		APG 4400L		400	408	300	70	63.5	25.4	13.5	45	20		4
APG 4500R		APG 4500L		500	508	400	70	63.5	25.4	13.5	45	24		4

※ Inserts are not included.

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide									Carbide		Cermet		DLC		SUMIDIA		
Application	High Speed/Light Cutting	P			K					M		K N		P		N		N	
	General Purpose		P M	M	K			P M	M		P				P	N		N	
	Roughing		P M	P M		K	K	P M	P M									N	
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	EH20Z	A30N	H1	T1200A	T250A	DL1000		DA2200		Fig
SDCH42TR											●				–		–		5
SDCH42TL															–		–		5
SDCH42TR-R														●	–		–		5
SDCH42TL-R															–		–		5
SDC42R												●			●		–		6
NF-SDC42R		–	–	–	–	–	–	–	–	–	–	–	–	–	–		●		6
SDC42L												●			–		–		6
SDC42TR											●				–		–		6
SDC42TL															–		–		6
SDC42TR-R														●	–		–		6
SDC42TL-R															–		–		6
APW4R													●		–		●		7

Fig 5

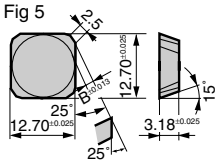


Fig 6

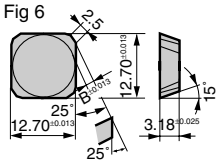
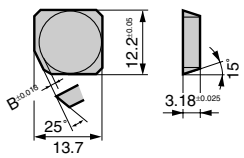
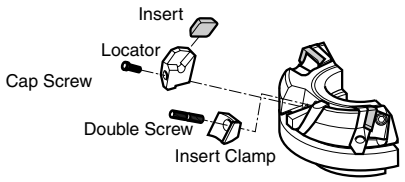


Fig 7



※ -S: Sharp edge, -W: Strong edge

■ Parts



Cutter Cat. No.	Locator	Insert Clamp	Double Screw	Cap Screw	Wrench
APG4080R	LAP40R	ATW45R	WB8-20	BXF0520R	TH040
APG4100R ~ APG4500R	LAP40R	ATW45R	WB8-22TL	BXF0520R	TT27
APG4080L	LAP40L	ATW45L	WB8-20	BXF0520R	TH040
APG4100L ~ APG4500L	LAP40L	ATW45L	WB8-22T	BXF0520R	TT27

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	○	100 ~ 150	0.1 ~ 0.25	< 4	① A30N ② SDCH42TR
Soft Steel	◎	120 ~ 180	0.1 ~ 0.25	< 4	① A30N ② SDCH42TR
Stainless steel	○	120 ~ 180	0.1 ~ 0.25	< 4	① A30N ② SDCH42TR
Die Steel	△	60 ~ 100	0.1 ~ 0.25	< 4	① A30N ② SDCH42TR
Cast Iron	○	60 ~ 120	0.15 ~ 0.3	< 4	① H1 ② SDC42R
Aluminum	◎	400 ~	0.1 ~ 0.3	< 4	① H1 ② SDC42R

● mark : To be replaced by new items under the ACP / ACK series

RF4000 Type

■ General Features

The RF type cutter has a special light weight Aluminum body, designed for high speed, high efficiency roughing to finish milling of Aluminum and other non-ferrous metals.

■ Characteristics

● From Roughing to Finishing Processes

- Roughing : Economical carbide insert
- Both roughing and finishing can be performed at the same time

● Safety Design

- Antl-centrifugal force design to prevent inserts from dislodging from cutter
  (Speeds must be within max. recommended conditions)
- To prevent warping, wedges are not used in the cutter construction

● Strong and Light Cutter Body

- Special Aluminum body
- 40% lighter than steel cutters
- Hard-anodized plated body
- Improved efficiency in higher rotational speeds, lower spindle loads and shorter toll change time

● Easy Run-out Adjustment

- External setting gauge is used for easy tool presetting
- High precision cutter construction, units fitted are within 10μm even before setting
  (Refer to our brochure for optional accessories)

■ Application Examples

Work	Cutter Insert (Grade)	Conditions V=(m/min) F=(mm/min) d=(mm)	Results
Case (ADC12)	RF4160R SUMIDIA blade (DA2200)	V =3,000 F =5,730 d =0.10	Surface finish : Ra=0.2 μm Output : 30,000units (30times carbide's tool life)
Contact surface of Transmission Case (ADC12)	RF4125R SUMIDIA blade (DA2200)	V =3,000 F =7,640 d =1.5	Surface finish : Ra=0.3 μm Output : 20,000units
Contact surface of Cylinder Head (AC4C)	RF4250R Carbide insert (H1)	V =2,000 F =7,535 d =3.5	Surface finish Output : 10,000units

● Max. Recommended Conditions

Cutter	S max (min^{-1})
RF4080R	17,000
RF4100R	15,900
RF4125R	13,500
RF4160R	11,000
RF4200R	9,000
RF4250R	7,600
RF4315R	6,000

■ Application Conditions

● Work Material

- Aluminum Alloy
- Other non-ferrous metal

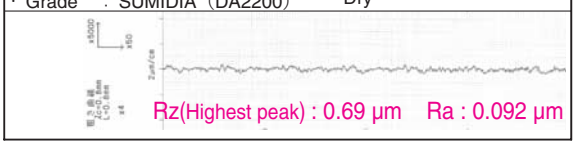
(Not suited for cast iron or steel)

● Recommended Conditions

Work		Aluminum Alloy	
Si content		below 13%	13% and above
Cutting Speeds (m/min)	SUMIDIA	2,000～5,000	400～800
	Carbide	1,000～2,500	200～400
Feed (mm/tooth)		0.05～0.2	0.05～0.2
D.O.C (mm)		below 3mm	below 3mm

● Surface Finish

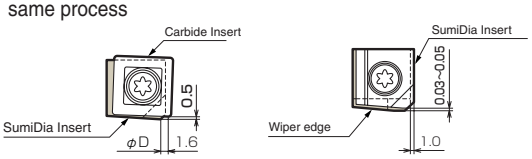
- Process : Finish milling
- M/C : Machining Center
- Arbor : HSK63A
- Work : Si10～12% Al alloy
- Cutter : RF4100R 6 teeth (1x wiper)
- Grade : SUMIDIA (DA2200)
- V = 4,990m/min
- S = 15,900min^{-1}
- F = 11,400mm/min
- f = 0.12mm/t
- d = 0.5mm, Wiper d=0.03mm
- Dry



● Insert Setup

For setting of Carbide inserts with SUMIDIA inserts/ blade

- Roughing and finishing in the same process
- When using wiper edge



⚠ Caution

As it is possible to mix the different type of inserts / blade, it is important to take note of the following.

- Do not mix reground and new inserts or even inserts with different regrinding amount on the same cutter
- Carbide and PCD inserts must be arrange in an alternate manner
- Ensure proper balancing by fixing PCD inserts of blades on opposite positions of the cutter

SRF Type

■ General Features

Small diameter milling cutter SRF type is most suited for high speed Aluminum machining on small machines.

■ Characteristics

- **Best Suited For Small Machines**
  Especially reliable on BT30 class small machines.
- **From Roughing To Finishing Processe**
  Utilising SUMIDIA DA2200 inserts with a side edge of 5mm.
- **Economical NF-type Inserts**
  NF-type SUMIDIA DA2200 inserts lowers tooling cost.
- **High Speed Machining With SUMIDIA**
  Maximum spindle speeds of up to S = 20,000min^{-1}.
  (Actual spindle speeds must be set within the rotational limits of your machine and arbor)
- **Easy Tool Height Adjustment**
  Simple insert mounting design for easy yet precise tool adjustments.

■ Application Examples

Work	Cutter Insert (Grade)	Conditions S=(min^{-1}) F=(mm/min) d=(mm)	Results
Cam case (ADC12)	SRF50R NF-SNEW09T3ADTR (DA2200)	S =6,000 F =2,400 d =0.5	12,000pcs produced with no problems.
Computer case (ADC12)	SRF50R NF-SNEW09T3ADTR (DA2200)	S =15,000 F =7,500 d =0.2	Improved efficency of 2.5times better than using endmills.
Housing case (ADC12)	SRF63R NF-SNEW09T3ADTR (DA2200)	S =8,000 F =4,000 d =0.5	No obstructions on tool magazine when mounting ø63mm cutter on small machines.

■ Recommended Conditions

Work	Aluminum Alloy	
Si content	below 13%	13% and above
Cutting Speeds (m/min)	～4,000	～800
Feed (mm/tooth)	0.05～0.2	0.05～0.2
D.O.C (mm)	～5	～5

RF4000 Type

High Speed Finishing of Aluminum Alloy

Rake Angle		
	Radial	+4°
	Axial	+10°

3mm 0°

Fig 1

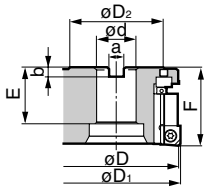
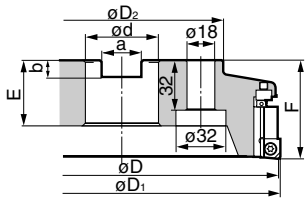


Fig 2



■ Milling Cutter Body

Cat. No.	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
		øD	øD1	øD2	F	ød	a	b	E			
RF4080R	●	80	82	60	50	25.40	9.5	6	30	6	0.7	1
RF4100R	●	100	102	75	50	31.75	12.7	8	38	6	1.0	1
RF4125R	●	125	127	75	63	38.10	15.9	10	38	8	1.6	1
RF4160R	●	160	162	100	63	50.80	19.0	11	38	10	2.6	1
RF4200R	●	200	202	130	63	47.625	25.4	14	42	12	3.6	2
RF4250R		250	252	130	63	47.625	25.4	14	42	16	6.0	2
RF4315R		315	317	240	80	47.625	25.4	14	42	18	11.0	2

✻ Cartridges, blades and inserts are separately
✻ Please use a collar bolt for securing the cutter to the arbor.

■ Insert / Cartridge

Fig 3 Fig 4 Fig 5 Fig 6

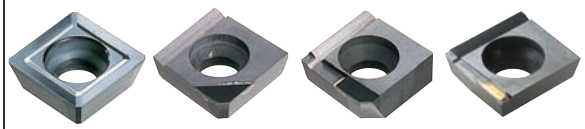


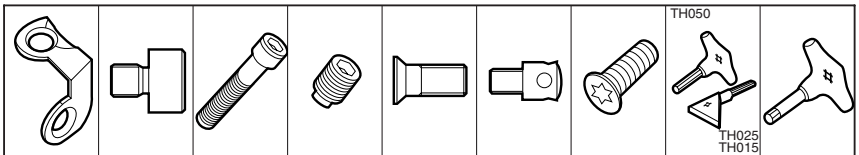
Fig 7 Fig 8

Cat. No.	Uncoated	DLC-Coat	SUMIDIA	SUMICRYSTAL	Dimensions (mm)		Fig	Cartridge			
	H1	DL1000	DA2200	SC10	Ins. Circle	Thickness		Usage	Cat. No.	Stock	Fig
SDET1204ZDFR	●	●	–	–	12.70	4.76	3	For Carbide Inserts	RFR	●	7
NF-SNEW1204ADFR	–	–	●	–	12.70	4.76	4	For SUMIDIA Inserts	RFF	●	8
NF-SNEW1204ADFR-W	–	–	●	–	12.70	4.76	5	For SUMIDIA Inserts	RFF	●	8
SNEW1204ADFR-WS	–	–	–	●	12.70	4.76	6	For SUMIDIA Inserts	RFF	●	8

✻ Wiper inserts are indicated by-W / WS

Refer to page M20 for details of SUMICRYSTAL.

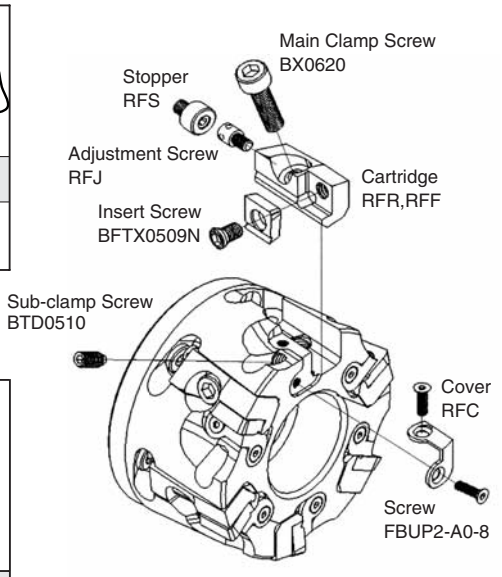
■ Parts



Cover	Stopper	Cap Screw	Set Screw	Screw	Adjustment Screw	Screw	Wrench	Wrench
RFC	RFS	BX0620	BTD0510	FBUP2 -A0-8	RFJ	BFTX 0509N	TH050 TH025 TH015	TTX20

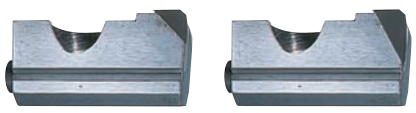
✻ Refer to our brochure for optional internal coolant attachments

■ RF Cutter Structure



■ Blade

RFB RFBW



Description	Cat. No.	SUMIDIA DA2200
SumiDia Blade	RFB	●
SumiDia Wiper Blade	RFBW	●

■ Dummy Blade

Description	Cat. No.	Stock
Dummy Blade	RFD	●

✻ Protect the body as well as maintain balance by using dummy blades for unused teeth

High Speed Finishing of Aluminum Alloy

Rake Angle		
	Radial	−2°～+4°
	Axial	+6°

5mm 0°

Fig 1

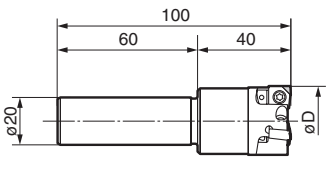


Fig 2

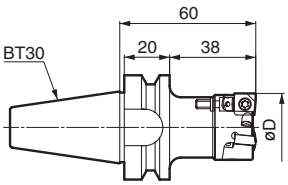


Fig 3

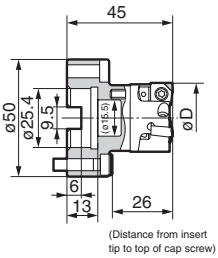
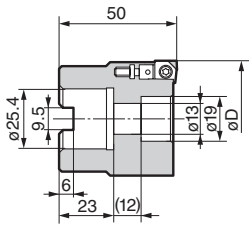


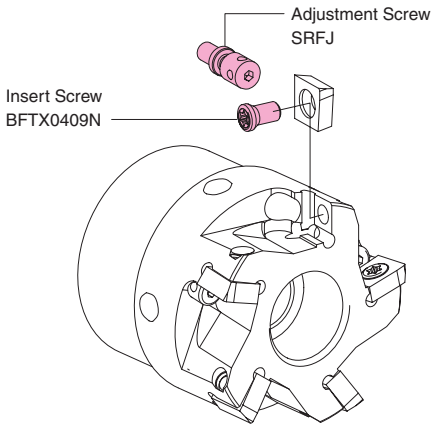
Fig 4



■ Milling Cutter Body

Cat. No.	Stock	øD (mm)	No. of teeth	Fig	Weight (kg)
SRF30R-ST	●	30	3	1	0.34
SRF40R-ST	●	40	4	1	0.50
SRF30R-BT30	●	30	3	2	0.57
SRF40R-BT30	●	40	4	2	0.72
SRF30R	●	30	3	3	0.27
SRF40R	●	40	4	3	0.35
SRF50R	●	50	5	4	0.59
SRF63R	●	63	6	4	0.67

■ Parts



■ Insert

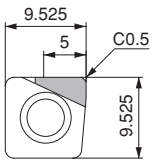


Fig.4

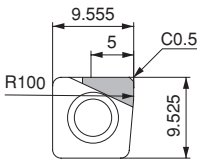


Fig.5

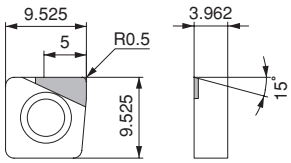
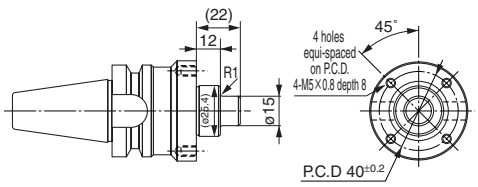


Fig.6

Cat. No.	Cutting Edge	SUMIDIA DA2200	Fig
NF-SNEW09T3ADTR	Standard	●	4
NF-SNEW09T3ADTR-U	Wiper	●	5
NF-SNEW09T3ADTR-R	Nose Radius	●	6

- Standard inserts and Wiper inserts can be used on the same cutter body.
- Standard inserts with nose radius should be used where vibration is present. As such, Wiper-inserts will not be applicable.
- Inserts can be regrind 3 times (up to minimum IC diameter 9.225mm)
- When using reground inserts, it is advisable to re-confirm insert height and cutting diameter with a tool pre-setter.
- Do not mix new and reground inserts, or even inserts with different regrind amount on the same cutter.
- Arbor for SRF30R、SRF40R



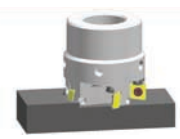
When using SRF30R,SRF40R cutters, there is a requirement to modify the arbor as shown above.
(①Reduce part of the arbor's adaptor shaft from ø25.4mm to ø15mm.② Add 4 tap holes for (M5) cap screws.)
Please use a hexagonal bolt M5 × 20 mm for securing the body.

■ Maximum D.O.C. Guide (SRF50R、teeth = 5)

The contains guidelines on the maximum D.O.C., determined from internal tests. 'O' mark indicates the possible application range. Actual cuting conditions should be set, based on actual machine and work characteristics.

D.O.C. d (mm) \ Feed	Feedrate, F (mm/min)		
	2,500	4,000	5,000
	Feed per tooth, f (mm/tooth)		
	0.05	0.08	0.10
0.5	○	○	○
1.0	○	○	○
1.5	○	○	○
2.0	○	○	○
2.5	○	○	○
3.0	○	○	○
3.5	○	○	—
4.0	○	—	—
4.5	○	—	—
5.0	○	—	—

● Cutting Conditions
Cutter : SRF50R
Insert : NF-SNEW09T3ADTR (DA2200)
S = 10,000min⁻¹
Arbor : BT30 FMA25.4-45
Work : A-5052
Width : 35mm at D.O.C. indicated above



WRC(F)1600/WRC(F)2000 Type

General Milling for Steel, Stainless Steel, Die Steel and Cast Iron

Rake Angle		(1600 type)	(2000 type)
	Radial	0°	0°
	Axial	−3°	−3°

8mm (1600 type) 10mm (2000 type)

Fig 1

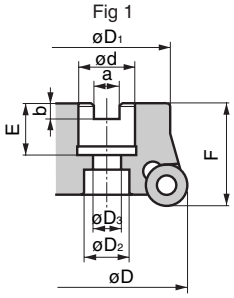
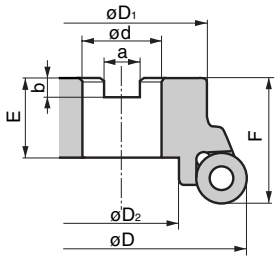


Fig 2



■ Milling Cutter Body

Cat. No.	Stock	Dimensions (mm) øD	øD1	F	ød	a	b	E	øD2	øD3	No. of teeth	Weight (kg)	Fig
WRC 16063R	●	63	50	40	22	10.4	6.3	20	18	11	3	0.4	1
WRC 16080R	●	80	55	50	25.4	9.5	6	25	20	13	4	0.8	1
WRC 16100R	●	100	70	50	31.75	12.7	8	32	46	–	5	1.3	2
WRC 16125R		125	80	63	38.1	15.9	10	38	56	–	5	2.4	2
WRCF 16063R	●	63	50	40	22	10.4	6.3	20	18	11	4	0.4	1
WRCF 16080R	●	80	55	50	25.4	9.5	6	25	20	13	5	0.8	1
WRCF 16100R	●	100	70	50	31.75	12.7	8	32	46	–	6	1.3	2
WRCF 16125R		125	80	63	38.1	15.9	10	38	56	–	6	2.4	2
WRC 20080R	●	80	55	50	25.4	9.5	6	25	20	13	4	0.7	1
WRC 20100R	●	100	70	50	31.75	12.7	8	32	46	–	5	1.1	2
WRC 20125R	●	125	80	63	38.1	15.9	10	38	56	–	5	2.2	2
WRC 20160R	●	160	100	63	50.8	19.0	11	38	72	–	6	3.8	2
WRCF 20080R	●	80	55	50	25.4	9.5	6	25	20	13	5	0.7	1
WRCF 20100R	●	100	70	50	31.75	12.7	8	32	46	–	6	1.1	2
WRCF 20125R		125	80	63	38.1	15.9	10	38	56	–	6	2.3	2
WRCF 20160R		160	100	63	50.8	19.0	11	38	72	–	8	3.9	2

✻ Inserts are not included.

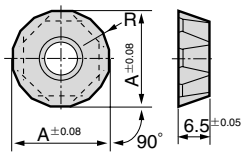
Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

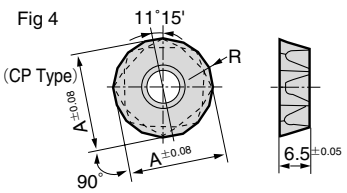
Grade		Coated Carbide									Dimensions (mm)		Fig
Application		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	A	R	
High Speed/Light Cutting		P			K					P			
General Purpose			PM	M	K			PM	M				
Roughing			PM	PM		K	K	PM	PM				
QPMT 160660PPEN			●	●	●	●	●	●	●	●	16	6.0	3
QPMT 160608PPEN			●	●	●	●	●	●	●	●	16	0.8	3
QPMT 160660PPEN-H			●	●	●	●	●	●	●		16	6.0	3
QPMT 160608PPEN-CP			●	●	●	●	●	●	●	●	16	0.8	4
QPMT 200670PPEN			●	●	●	●	●	●	●	●	20	7.0	3
QPMT 200608PPEN			●	●	●	●	●	●	●	●	20	0.8	3
QPMT 200670PPEN-H			●	●	●	●	●	●	●		20	7.0	3
QPMT 200608PPEN-CP			●	●	●	●	●	●	●	●	20	0.8	4

Fig 3



08 Type : R=0.8
60 Type : R=6.0
70 Type : R=7.0

Fig 4



✻ The insert size is indicated by the first 2 digits on the insert and cutter's catalogue no.

✻ -H Strong edge

■ Parts

Applicable cutter Cat. No.	Insert Screw	Wrench
WRC(F)16□□□R	BFTX0513N	TRD20
WRC(F)20□□□R	BFTX0615N	TRD25

■ Recommended Conditions

Material	Cutting speed (m / min)	Feedrate (mm / tooth)	Grade
Carbon steel	150 ~ 250	0.3 ~ 0.6	ACP200, ACP300
Die steel	100 ~ 200	0.1 ~ 0.5	ACP200
Stainless steel	160 ~ 200	0.15 ~ 0.3	ACP300
Cast Iron	100 ~ 200	0.1 ~ 0.2	ACK200

● mark : To be replaced by new items under the ACP / ACK series

General Milling for Steel and Hard-to-cut Material

Rake Angle		
	Radial	−4°
	Axial	+15°

6.5mm 45° (4000 Type)

8.5mm 45° (5000 Type)

Fig 1

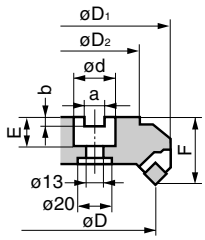


Fig 2

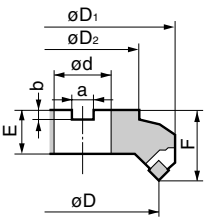


Fig 3

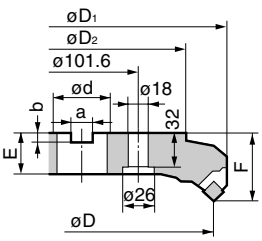
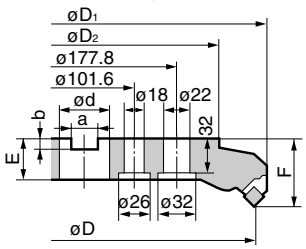


Fig 4



■ Milling Cutter Body

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm) øD	øD1	øD2	F	ød	a	b	E	No. of teeth	Weight (kg)	Fig
FPG 4080R	●	**FPG 4080L**	●	80	105	60	50	25.4	9.5	6	25	4	1.9	1
FPG 4100R	●	**FPG 4100L**		100	124	70	60	31.75	12.7	8	32	5	3.0	2
FPG 4125R	●	**FPG 4125L**	●	125	148	105	60	38.1	15.9	10	38	6	4.5	2
FPG 4160R	●	**FPG 4160L**	●	160	182	110	60	50.8	19.0	11	38	8	6.7	2
FPG 4200R	●	**FPG 4200L**		200	222	130	60	47.625	25.4	13.5	40	10	9.4	3
FPG 4250R	●	**FPG 4250L**		250	271	130	70	47.625	25.4	13.5	40	12	16.2	3
FPG 4315R	●	**FPG 4315L**		315	336	240	70	47.625	25.4	13.5	40	14	24.6	4
FPG 5080R		**FPG 5080L**		80	105	60	50	25.4	9.5	6	25	4	1.9	1
FPG 5100R	▲	**FPG 5100L**		100	124	70	60	31.75	12.7	8	32	5	3.0	2
FPG 5125R	▲	**FPG 5125L**		125	148	80	60	38.1	15.9	10	38	6	4.5	2
FPG 5160R	▲	**FPG 5160L**		160	182	100	60	50.8	19.0	11	38	8	6.7	2
FPG 5200R	▲	**FPG 5200L**		200	222	130	60	47.625	25.4	13.5	40	10	9.4	3
FPG 5250R		**FPG 5250L**		250	271	130	70	47.625	25.4	13.5	40	12	16.2	3
FPG 5315R		**FPG 5315L**		315	336	240	70	47.625	25.4	13.5	40	14	24.6	4

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

✻ Inserts are not included.

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide											Carbide		Cermet		SUMIDIA			
Application	High Speed/Light Cutting	P			K					P	K	M				P	N			
	General Purpose		PM	M	K			PM	M				P	K	P		N			
	Roughing		PM	PM		K	K	PM	PM								N			
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	AC211	EH20Z	A30N	G10E	T250A	T1200A	DA2200		Tolerance a(mm)	Fig
SDEX42MT													●		●	●	–		±0.025	5
SDKN42M					●	●	●				●	●		●			–		±0.075	5
NF-SDKN42M		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	●		±0.075	5
SDKN42MT		●	●	●				●	●	●			●		●	●	–		±0.075	5
SDKN42MT-W															●		–		±0.075	5
✻**SDNN1203AEEN**		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–		±0.05	5
✻**SDNN1203AETN**		●	●	–	–	–	–	●	–	▲	–	–	▲	–	●	–	–		±0.05	5
SDMR1203AEEN		●	●							●			●		–		–		±0.075	6
SDMR1203AETN		–	–	–	–	–	–	–	–	–	–	–	–	–	●	–	–		±0.075	6
SDEX53MT													●		●		–		±0.025	7
SDKN53M					●	●	●				●	●		●			–		±0.075	7
SDKN53MT		●	●	●				●	●	●			●		●		–		±0.075	7

Fig 5

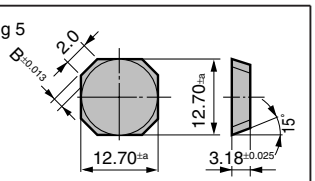


Fig 6

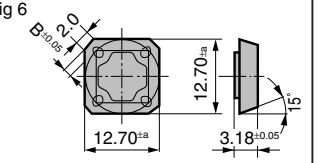
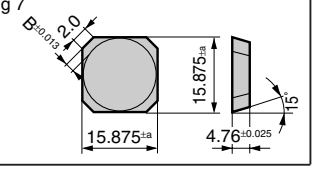
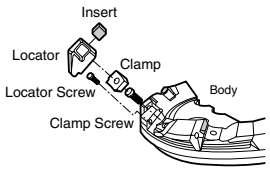


Fig 7



● Applicable Insert

Body	Insert
FPG4000 type	SD○○42 · · SD○○12 · ·
FPG5000 type	SD○○53 · ·



■ Parts

Cutter Cat. No.	Locator Screw	Clamp Screw	Clamp	Locator
FPG4000R	FBH0512	FBX0817	FPWR	LFP4R
FPG4000L			FPWL	LFP4L
FPG5000R	FBH0512	FBX0817	FPWR	LFP5R
FPG5000L			FPWL	LFP5L

TH030-Locator Screw Wrench
TH040-Clamp Screw Wrench

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	◎	100 ~ 160	0.15 ~ 0.4	< 6 (< 8)	① ACP200 (T250A) ② SDKN42MT
Soft Steel	◎	125 ~ 300	0.15 ~ 0.4	< 6 (< 8)	① ACP200 (T250A) ② SDKN42MT
Stainless steel	◎	150 ~ 200	0.15 ~ 0.3	< 6 (< 8)	① ACP300 (T250A) ② SDKN42MT
Die Steel	◎	80 ~ 120	0.15 ~ 0.3	< 6 (< 8)	① ACP200 (T250A) ② SDKN42MT
Cast Iron	○	60 ~ 250	0.15 ~ 0.3	< 6 (< 8)	① ACK200 ② SDKN42M
Aluminium	△	400 ~	0.15 ~ 0.3	< 6 (< 8)	① G10E ② SDKN42M

● mark : To be replaced by new items under the ACP / ACK series ▲ mark : To be replaced by new item (Please confirm stock availability)

EHG4000/5000 Type

General Milling for Steel and Hard-to-cut Material

Rake Angle		
	Radial	−3°
	Axial	+20°

5.5mm 45° (4000 type)

7.5mm 45° (5000 type)

Fig 1

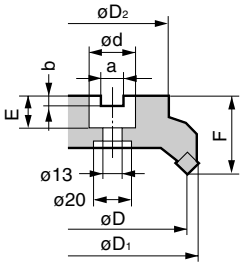


Fig 2

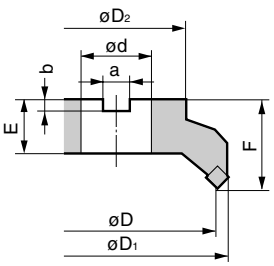
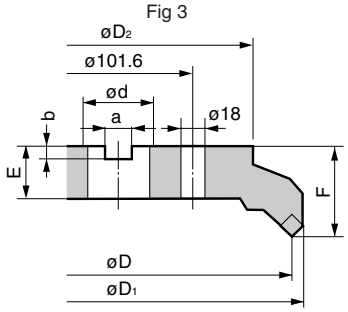


Fig 3



■ Milling Cutter Body

Cat. No.	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
		øD	øD₁	øD₂	F	ød	a	b	E			
EHG 4080R	●	80	95	60	50	25.4	9.5	6	25	4	1.3	1
EHG 4100R	●	100	114	70	50	31.75	12.7	8	32	5	2.0	2
EHG 4125R	●	125	138	80	63	38.1	15.9	10	38	6	3.3	2
EHG 4160R	●	160	173	100	63	50.8	19.0	11	38	8	4.8	2
EHG 4200R	●	200	213	130	63	47.625	25.4	13.5	35	10	7.1	3
EHG 5080R		80	100	60	50	25.4	9.5	6	25	4	1.5	1
EHG 5100R		100	118	70	50	31.75	12.7	8	32	5	2.2	2
EHG 5125R		125	143	80	63	38.1	15.9	10	38	6	3.6	2
EHG 5160R		160	178	100	63	50.8	19.0	11	38	8	5.2	2
EHG 5200R		200	218	130	63	47.625	25.4	13.5	35	10	7.6	3

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

✻ Inserts are not included.

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide										Carbide			Cermet		Dimensions		Tolerance a(mm)	Fig
Application		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	EH20Z	A30N	G10E		T250A		A	T		
	High Speed/Light Cutting	P			K					P	M									
	General Purpose		PM	M	K			PM	M			P	K		P					
	Roughing		PM	PM		K	K	PM	PM											
SECN 42MT												●			●		12.70	3.18	±0.025	4
SECN 42M																	12.70	3.18	±0.025	4
SEEN 42MT		●	●	●				○									12.70	3.18	±0.025	5※
SEKN 42MT		●	●	●				○	○	○		●			●		12.70	3.18	±0.075	5
SEKN 42MT-W															●		12.70	3.18	±0.075	5
SEKN 42M					●	●	○				●		●				12.70	3.18	±0.075	5
✻SENN 1203AFTN		●	–	–	–	–	–	–	–	○	–	●	–		●		12.70	3.18	±0.05	5
SEMR 1203AFEN		●	–	–	–	–	–	–	–	○	–	●	–		–		12.70	3.18	±0.05	6
✻✻SEER 1203AFEN		●	–	–	–	–	–	–	–	○	–	●	–		–		12.70	3.18	±0.025	6
SECN 53MT																	15.875	4.76	±0.025	4
SECN 53M																	15.875	4.76	±0.025	4
SEKN 53MT		●	●	●				○	○	○		●			●		15.875	4.76	±0.075	5
SEKN 53M					●	●	○										15.875	4.76	±0.075	5

Fig 4

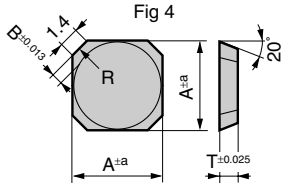
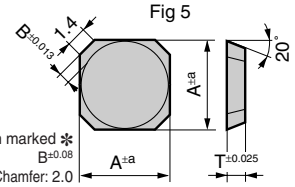
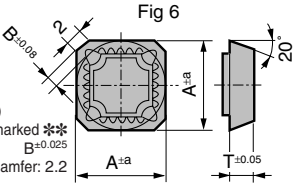


Fig 5



(Note)
Item marked ✻
B±0.08
Chamfer: 2.0

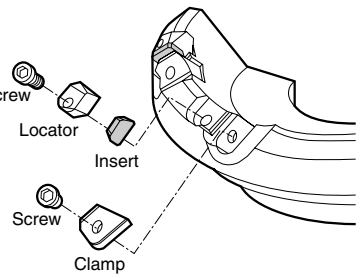
Fig 6



(Note)
Item marked ✻✻
B±0.025
Chamfer: 2.2

• Applicable Insert

Body	Insert
EHG4000 type	SE○N42 · · SE○○12 · ·
EHG5000 type	SE○N53 · ·



■ Parts

Cutter Cat. No.	Locator	Clamp	Screw	Wrench
EHG4000R	EHK4R	EHW4R	EHBX0512	TH040
EHG5000R	EHK5R	EHW5R		

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	◎	160 ~ 250	0.1 ~ 0.2	< 5 (< 7)	① ACP200 (T250A) ② SEKN42MT
Soft Steel	◎	160 ~ 300	0.1 ~ 0.25	< 5 (< 7)	① ACP200 (T250A) ② SEKN42MT
Stainless steel	◎	160 ~ 200	0.1 ~ 0.3	< 5 (< 7)	① ACP300 (T250A) ② SEKN42MT
Die Steel	◎	80 ~ 120	0.1 ~ 0.25	< 5 (< 7)	① ACP200 (T250A) ② SEKN42MT
Cast Iron	○	80 ~ 120	0.1 ~ 0.3	< 5 (< 7)	① ACK200 ② SEKN42M
Aluminium	○	400 ~	0.1 ~ 0.3	< 5 (< 7)	① G10E ② SEKN42M

▲ mark : To be replaced by new item (Please confirm stock availability) ● mark : To be replaced by new items under the ACP / ACK series

High Feed Milling of Steel, Stainless Steel, Die Steel and Cast Iron

Rake Angle		
	Radial	−5°
	Axial	+10°

2mm 65°

Fig 1

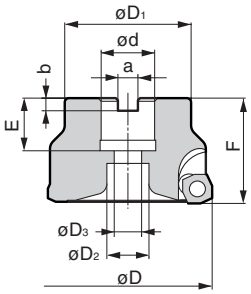
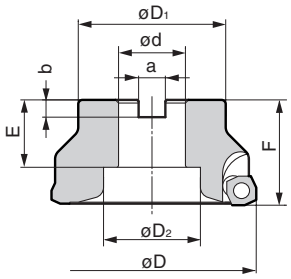


Fig 2



■ Milling Cutter Body

Cat. No.	Stock	Dimensions (mm)									No. of teeth	Weigh (kg)	Fig
		øD	øD1	øD2	øD3	F	ød	a	b	E			
MS 14063RS	●	63	59	18	11	40	22	10.4	6.3	20	4	0.5	1
MS 14080R	●	80	60	20	13	50	25.4	9.5	6	25	5	1.0	1
MS 14100R	●	100	70	46	–	50	31.75	12.7	8	32	6	1.8	2
MS 14125R	●	125	80	56	–	63	38.1	15.9	10	38	7	2.7	2

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide								Fig
Application	High Speed/Light Cutting	P			K				P	
	General Purpose		PM	M	K			PM		
	Roughing		PM	PM		K	K	PM		
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	CS3000	
SDMW 1406ZDTR		●	●		●	●	●	●	●	3
SDEW 1406ZDTR		●	●		●	●	●	●	●	4

Fig 3

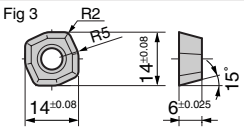
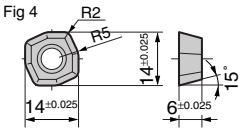


Fig 4



■ Parts

Applicable Cutter	Insert Screw	Wrench
MS 1400 series	BFTX0513N	TRT820

■ Recommended Conditions

Material	Cutting speed (m/min)	Feedrate (mm/tooth)	Depth of Cut (mm)	Grade
Carbon Steel	150～250	< 2.0	< 1.5	ACP200,CS3000
Die Steel	100～200	< 1.5	< 1.5	ACP200,ACK300
Stainless steel	160～200	< 1.0	< 1.5	ACP200,CS3000
Cast Iron	100～200	< 1.5	< 2.0	ACP200,ACK300

● mark : To be replaced by new items under the ACP / ACK series

DPG 4000/DPGF 4000 Type

General Milling for Steel, Stainless Steel & Cast Iron

Rake Angle		
	Radial	0°
	Axial	+8°

9.5mm / 15°

Fig 1

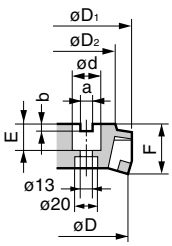


Fig 2

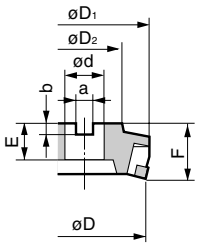
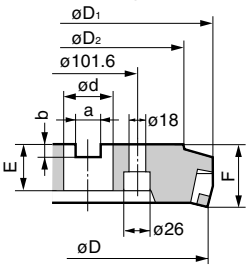


Fig 3

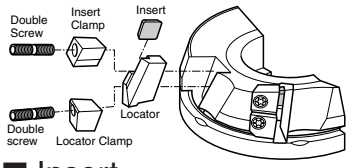


■ Milling Cutter Body

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm) øD	øD1	øD2	F	ød	a	b	E	No. of teeth	Weight (kg)	Fig
DPG 4080R	●	DPG 4080L		80	90	60	50	25.4	9.5	6	25	4	1.5	1
DPG 4100R	●	DPG 4100L		105	115	75	60	31.75	12.7	8	32	5	3.0	2
DPG 4125R	●	DPG 4125L		125	135	75	60	38.1	15.9	10	38	6	4.0	2
DPG 4160R	●	DPG 4160L		157	167	100	60	50.8	19.0	11	38	8	6.1	2
DPG 4200R	●	DPG 4200L		200	210	130	60	47.625	25.4	13.5	38	10	10.0	3
DPGF 4080R	●	DPGF 4080L		80	90	60	50	25.4	9.5	6	25	6	1.5	1
DPGF 4100R	●	DPGF 4100L		105	115	75	60	31.75	12.7	8	32	8	3.0	2
DPGF 4125R	●	DPGF 4125L		125	135	75	60	38.1	15.9	10	38	10	4.0	2
DPGF 4160R	●	DPGF 4160L		157	167	100	60	50.8	19.0	11	38	12	6.1	2

✻ Inserts are not included.

Please use hexagonal bolt (JISB1176) M12 × 30～35mm for securing ϕ 80 cutter to the arbor



■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide											Carbide				Cermet			
Application	High Speed/Light Cutting	P			K					P	K	M						P		
	General Purpose		PM	M	K			PM	M				P	P	K	K	P			
	Roughing		PM	PM		K	K	PM	PM											
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	AC211	EH20Z	A30N	A30	H10E	G10E	T250A	T1200A		Fig
SPCH 42R					●	●	●				●	●				●				5
SPCH 42L					●	●					●	▲				●				5
SPCH 42TR		●	●	●				●	●	●			●		●					5
SPCH 42TL			●					●					●		▲					5
SPCH 42TR-R																	●	●		5
SPCH 42TL-R																	●			5
SPMN 422														●		●	●	●		6
SPMN 423					●	●	●							●		●		●		6
SPG 422														●		●		●		–
SPG 423																●				–
DPW 500R															●			●		7
DPW 500L															●					7

Fig 5

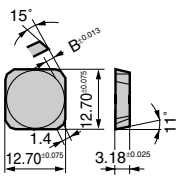


Fig 6

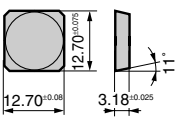
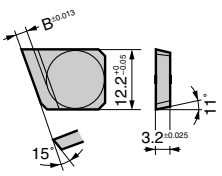


Fig 7



■ Parts

Cutter Cat. No.	Locator	Locator Clamp for DPG	Locator Clamp for DPGF	Insert Clamp for DPG	Insert Clamp for DPGF	Double Screw	Wrench
DPG(F)4080R	GL40R	GLW40R	GLWF80R	GTW40R	GTWF80R	WB8-22T	TT27
DPG(F)4100R ~ DPG(F)4160R	GL40R	GLW41R	GLWF41R	GTW41R	GTWF41R	WB8-30T	TT27
DPG4200R	GL40R	GLW42R	–	GTW42R	–	WB8-30T	TT27
DPG(F)4080L	GL40L	GLW40L	GLWF80L	GTW40L	GTWF80L	WB8-22T	TT27
DPG(F)4100L ~ DPG(F)4160L	GL40L	GLW41L	GLWF41L	GTW41L	GTWF41L	WB8-30T	TT27
DPG4200L	GL40L	GLW42L	–	GTW42L	–	WB8-30T	TT27

■ Recommended Conditions

Material	Suitability	Cutting speed (m/min)	Feedrate (mm/ tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	○	100 ~ 150	0.1 ~ 0.2	< 5	① ACP200 (T250A) ② SPCH42TR
Soft Steel	○	100 ~ 250	0.1 ~ 0.25	< 5	① ACP200 (T250A) ② SPCH42TR
Stainless steel	△	80 ~ 160	0.1 ~ 0.2	< 5	① ACP300 ② SPCH42TR
Die Steel	△	80 ~ 160	0.1 ~ 0.2	< 5	① ACP200 ② SPCH42TR
Cast Iron	○	80 ~ 200	0.1 ~ 0.2	< 5	① ACK200 ② SPCH42R
Aluminium	△	400 ~	0.1 ~ 0.2	< 5	① G10E ② SPCH42R

▲ mark : To be replaced by new item (Please confirm stock availability) ● mark : To be replaced by new items under the ACP / ACK series

General Milling for Steel, Stainless Steel & Cast Iron

Rake Angle		
	Radial	0°
	Axial	+8°

12mm / 15°

Fig 1

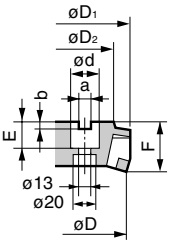


Fig 2

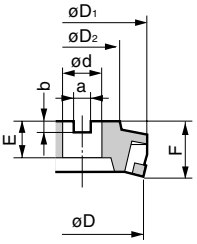


Fig 3

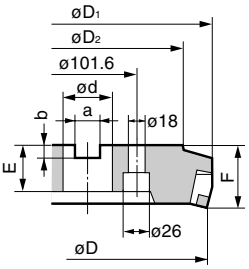
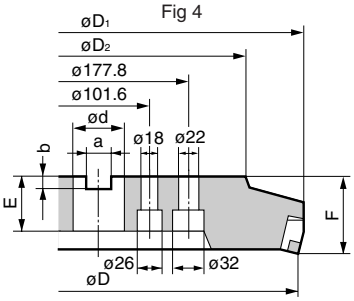


Fig 4



■ Milling Cutter Body

Cat. No. (R)	Stock	Cat. No. (L)	Stock	Dimensions (mm) øD	øD1	øD2	F	ød	a	b	E	No. of teeth	Weight (kg)	Fig
DPG 5080R		**DPG 5080L**		82	90	60	50.5	25.4	9.5	6	25	4	1.5	1
DPG 5100R		**DPG 5100L**		107	115	75	60.5	31.75	12.7	8	32	5	3	2
DPG 5125R		**DPG 5125L**		127	135	75	60.5	38.1	15.9	10	38	6	4	2
DPG 5160R		**DPG 5160L**		159	167	100	60.5	50.8	19.0	11	38	8	6.1	2
DPG 5200R		**DPG 5200L**		202	210	130	60.5	47.625	25.4	13.5	38	10	10	3
DPG 5250R		**DPG 5250L**		252	260	200	70.5	47.625	25.4	13.5	52	12	19.7	3
DPG 5315R		**DPG 5315L**		317	325	240	70.5	47.625	25.4	13.5	52	14	33	4
DPG 5400R		**DPG 5400L**		402	410	300	80.5	63.5	25.4	13.5	57	20	60	4
DPG 5500R		**DPG 5500L**		502	509	400	80.5	63.5	25.4	13.5	57	24	92	4

※ Inserts are not included.

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide											Carbide				Cermet		Fig
Application	High Speed/Light Cutting	P			K					P	K	M						P	
	General Purpose		PM	M	K			PM	M				P	P	K	K	P		
	Roughing		PM	PM		K	K	PM	PM										
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	AC211	EH20Z	A30N	A30	H10E	G10E	T250A	T1200A	
SPCH53R-R					●	●	●				●					●			5
SPCH53L-R																●			5
SPCH53TR-R		●	●					●		●			●				●	▲	5
SPCH53TL-R			●					▲					●		●				5
SPMN532														●		●			6
SPMN533														●		●			6
GW500R															●			●	7
GW500L																			7

Fig 5

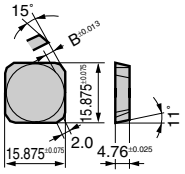


Fig 6

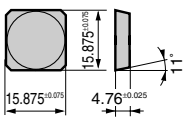
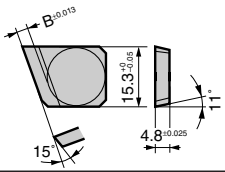


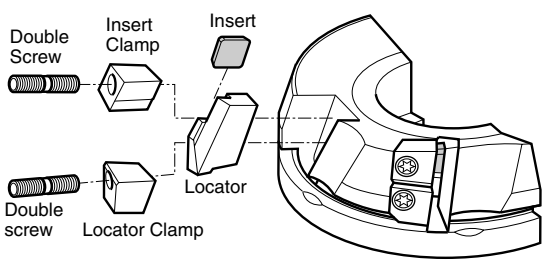
Fig 7



※ -S: Sharp edge, -W: Strong edge

■ Parts

Cutter Cat. No.	Locator	Locator Clamp	Insert Clamp	Double Screw	Wrench
DPG5080R	GL50R	GLW50R	GTW50R	WB8-22T	TT27
DPG5100R ~ DPG5160R		GLW51R	GTW51R	WB8-30T	
DPG5200R ~ DPG5500R		GLW52R	GTW52R	WB8-30T	
DPG5080L	GL50L	GLW50L	GTW50L	WB8-22T	TT27
DPG5100L ~ DPG5160L		GLW51L	GTW51L	WB8-30T	
DPG5200L ~ DPG5500L		GLW52L	GTW52L	WB8-30T	



● mark : To be replaced by new items under the ACP / ACK series ▲ mark : To be replaced by new item (Please confirm stock availability)

DNF4000 Type

General Milling for Steel, Stainless Steel & Cast Iron

Rake Angle	Radial	−6°
	Axial	−5°

6.5mm / 25°

Fig 1

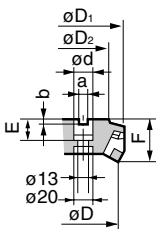


Fig 2

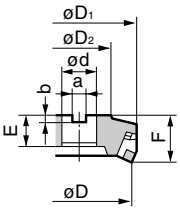


Fig 3

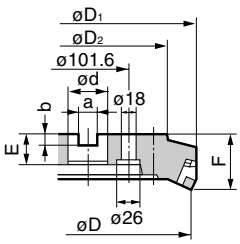
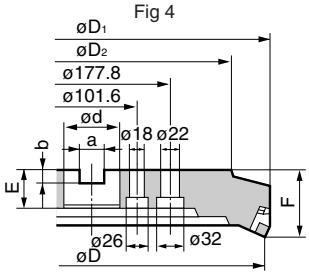


Fig 4



■ Milling Cutter Body

Cat. No.（R）	Stock	Cat. No.（L）	Stock	Dimensions (mm) øD	øD1	øD2	F	ød	a	b	E	No. of teeth	Weight (kg)	Fig
DNF 4080R	●	**DNF 4080L**		80	96	60	50	25.4	9.5	6	25	6	1.8	1
DNF 4100R	●	**DNF 4100L**	●	100	116	75	60	31.75	12.7	8	32	8	3.0	2
DNF 4125R	●	**DNF 4125L**		125	141	75	60	38.1	15.9	10	38	10	4.3	2
DNF 4160R	●	**DNF 4160L**		160	176	100	60	50.8	19.0	11	38	12	6.8	2
DNF 4200R	●	**DNF 4200L**		200	216	130	60	47.625	25.4	13.5	38	16	9.8	3
DNF 4250R		**DNF 4250L**		250	266	200	70	47.625	25.4	13.5	40	20	18.1	3
DNF 4315R		**DNF 4315L**		315	331	240	70	47.625	25.4	13.5	40	24	27.4	3
DNF 4400R		**DNF 4400L**		400	416	300	80	63.5	25.4	13.5	45	32	49.6	4
DNF 4500R		**DNF 4500L**		500	516	400	80	63.5	25.4	13.5	45	40	76.3	4

Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

✻ Inserts are not included.

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide										Carbide				Cermet		Ceramic	SUMIBORON	
Application	High Speed/Light Cutting	P			K					K	M						P	K	H	
	General Purpose		PM	M	K			PM	M			P	P	K	K	P			H	
	Roughing		PM	PM		K	K	PM	PM											
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC211	EH20Z	A30N	A30	H10E	G10E	T250A	T1200A	NB90M	BN250	Fig
CSNH43M					●	●	●			●		●		●	●				–	5
CSNH43MT																●	●		–	5
CSN43M												●			●				–	6
CSN43MT																●	●		●	6
CSNB43M												●			●				–	7
CSNB43MT																●			–	7
SNC433																			–	–
SNC434																			–	–
SNMN432													●		●		●		–	8
SNMN433						●	●						●		●	●			–	8
SNMN434																			–	8
SNMN432TN-S																			–	–
SNMN433TN-S																			–	–
SNMN434TN-S																			–	–
NW100														●			●		–	9

Fig 5

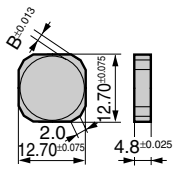


Fig 6

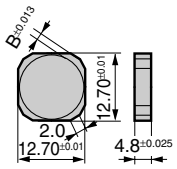


Fig 7

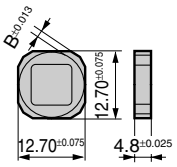


Fig 8

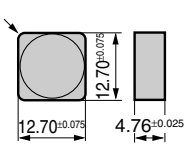
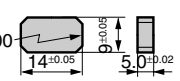
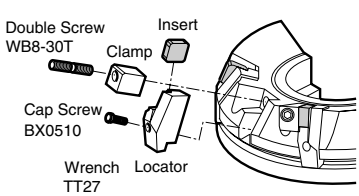


Fig 9



■ Parts (※1 : To use wiper inserts, please change the locators to LNFW40R（L）, wrench and cap screw remains unchanged)

Cutter Cat. No.	Locator (※1)	Insert Clamp
DNF4080R DNF4100R	LNF40R	FTW40R
DNF4125R ~ DNF4500R	LNF40R	FTW41R
DNF4080L ~ DNF4100L	LNF40L	FTW40L
DNF4125L ~ DNF4500L	LNF40L	FTW41L



■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	○	80 ~ 120	0.1 ~ 0.15	< 4	① T250A ② CSN43MT
Soft Steel	△	100 ~ 160	0.1 ~ 0.25	< 4	① T250A ② CSN43MT
Cast Iron	◎	150 ~ 250	0.1 ~ 0.2	< 4	① ACK200 ② CSNH43M

● mark : To be replaced by new items under the ACP / ACK series

Slotting of Steel & Cast Iron

Rake Angle		
	Radial	−12°
	Axial	−2°

W 1°30'

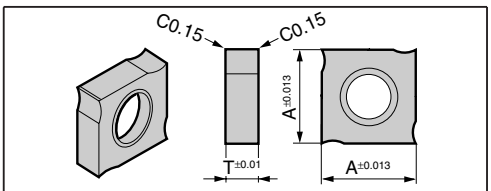
■ Milling Cutter Body

Cat. No.	Dimensions (mm)							No. of teeth	Weight (kg)
	øD	øD1	W	F	ød	a	b		
TSM 1004	100	48	4	8	31.75	7.92	35.2	10	0.15
TSM 1005	100	48	5	8	31.75	7.92	35.2	10	0.20
TSM 1006	100	48	6	8	31.75	7.92	35.2	10	0.30
TSM 1254	125	58	4	8	31.75	7.92	35.2	12	0.35
TSM 1255	125	58	5	8	31.75	7.92	35.2	12	0.40
TSM 1256	125	58	6	8	31.75	7.92	35.2	12	0.45
TSM 1258	125	58	8	10	31.75	7.92	35.2	12	0.60
TSM 1604	160	58	4	8	38.10	9.52	42.3	16	0.50
TSM 1605	160	58	5	8	38.10	9.52	42.3	16	0.60
TSM 1606	160	58	6	8	38.10	9.52	42.3	16	0.70
TSM 1608	160	58	8	10	38.10	9.52	42.3	16	0.95

✻ Inserts are not included.

✻ Above items are made-to-order.

■ Insert



Cat. No.	Carbide	Dimensions (mm)		Cutter Cat. No.
	A30N	A	T	
SNHG 121		12.70	2.2	TSM1004 TSM1254 TSM1604
SNHG 122		12.70	2.7	TSM1005 TSM1255 TSM1605
SNHG 123		12.70	3.2	TSM1006 TSM1256 TSM1606
SNHG 124		12.70	4.3	TSM1258 TSM1608

■ Parts

Cutter Cat. No.	Wrench Support	Screw	Wrench
TSM1004	TP43	BFNX0303	TRX10
TSM1254			
TSM1604			
TSM1005	TP53	BFNX0304	TRX10
TSM1255			
TSM1605			
TSM1006	TP64	BFNX0405	TRD20
TSM1256			
TSM1606			
TSM1258	TP84	BFNX0407	TRD20
TSM1608			

GRC 6000 Type

Milling for Stainless Steel, Die Steel & Hard-to-Cut Material

Rake Angle		
	Radial	+10°
	Axial	+25°

10mm

Fig 1

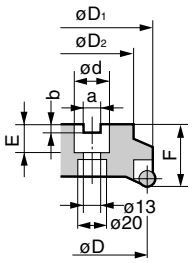


Fig 2

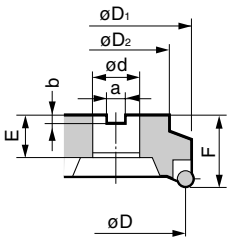
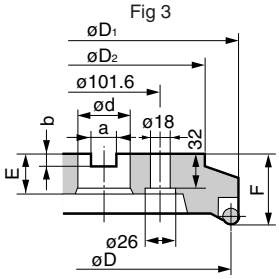


Fig 3



■ Milling Cutter Body

Cat. No.（R）	Stock	Cat. No.（L）	Stock	Dimensions (mm) øD	øD1	øD2	F	ød	a	b	E	No. of teeth	Weight (kg)	Fig
GRC 6080R	●	**GRC 6080L**		80	100	60	50	25.4	9.5	6	25	4	2.3	1
GRC 6100R	●	**GRC 6100L**		100	119	70	50	31.75	12.7	8	32	5	2.9	2
GRC 6125R	●	**GRC 6125L**		125	143	80	63	38.1	15.9	10	38	6	5.1	2
GRC 6160R	●	**GRC 6160L**		160	177	100	63	50.8	19.0	11	38	8	7.5	2
GRC 6200R		**GRC 6200L**		200	216	130	63	47.625	25.4	14	35	10	11.0	3
GRC 6250R		**GRC 6250L**		250	265	130	63	47.625	25.4	14	35	12	16.3	3

✻ Inserts are not included.

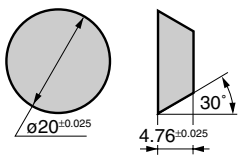
Please use hexagonal bolt (JISB1176) M12 × 30 ~ 35mm for securing φ 80 cutter to the arbor

■ Insert

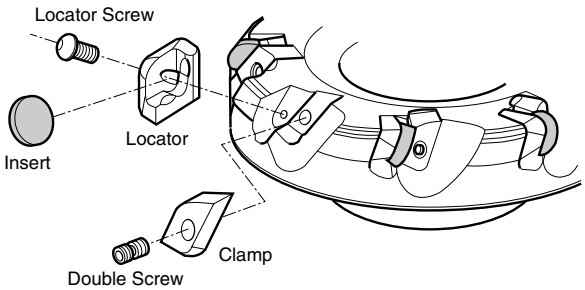
P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Coated Carbide										Carbide							
Application	High Speed/Light Cutting	P			K					P	M								
	General Purpose		P M	M	K			P M	M			P							
	Roughing		P M	P M		K	K	P M	P M										
Cat. No.		ACP100	ACP200	ACP300	ACK200	ACK300	ACZ310	ACZ330	ACZ350	AC230	EH20Z	A30N							Fig
RGEN2004SN-S			●	●				●				●							4
RGEN2004SN-I											●								4
RGEN2004SN-T											●								4

Fig 4



※ -S: For Stainless Steel, -I: For Inconel, -T: For Titanium Alloys.



■ Parts

Cutter Cat. No.	Locator	Clamp	Double Screw	Locator Screw	Wrench
GRC6080R ~ GRC6250R	GRKR	GRWR	WB8-22T	BH0410T	TT27 (TT15)
GRC6080L ~ GRC6250L	GRKL	GRWL	WB8-22T	BH0410T	TT27 (TT15)

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm /tooth)	D.O.C (mm)	① Grade ② Cat. No.
Stainless steel	◎	120 ~ 180	0.15 ~ 0.3	< 5	① ACP200 ② RGEN2004SN-S
Die Steel	◎	80 ~ 160	0.15 ~ 0.3	< 5	① ACP200 ② RGEN2004SN-S
Cast Iron (Inconel)	◎	40 ~ 50	0.1 ~ 0.2	< 2	① EH20 ② RGEN2004SN-I
Aluminium (Ti-Alloy)	◎	40 ~ 80	0.1 ~ 0.2	< 2	① EH20Z ② RGEN2004SN-T

● mark : To be replaced by new items under the ACP / ACK series

Mirror Finishing of Steel & Cast Iron

Rake Angle		
	Radial	−20°
	Axial	−6°

0.5mm 0°

Fig 1

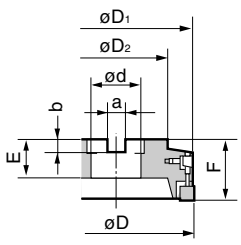
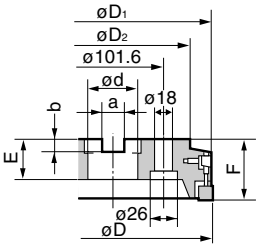


Fig 2



■ Milling Cutter Body

Cat. No.	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
		øD	øD1	øD2	F	ød	a	b	E			
PF 5100		100	99	80	55	31.75	12.7	8	32	2	2.5	1
PF 5125		125	124	100	60	38.1	15.9	10	38	2	3.4	1
PF 5160		160	159	100	60	50.8	19.0	11	38	4	5.0	1
PF 5200		200	199	130	60	47.625	25.4	13.5	38	4	9.0	2
PF 5250		250	249	130	60	47.625	25.4	13.5	38	4	14.0	2

✻ Inserts are not included.

■ Insert

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metal S Exotic Alloy H Hardened Steel

Grade		Cermet	Carbide	Ceramic	Fig
Application	High Speed/Light Cutting	P	K	K	
	General Purpose				
	Roughing				
Cat. No.		T1200A	H10E	NB90M	
SNEN 535W		●			3
SNEF 53W			●		4
SNEF 53WT		●			4

Fig 3

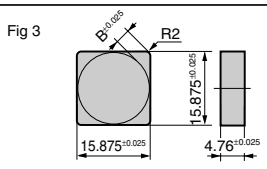
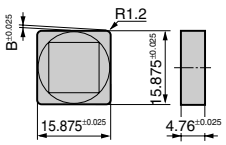


Fig 4



※ W・WT: Wiper edge

■ Parts

Cutter Cat. No.	Clamp	Double Screw	Seat	Adjusting Clamp	Slide Pin	Spring	Seat Screw	Wrench
PF5100 ~ PF5250	PFC	WB6-20	PFB	PFW	PFP	PFS	BH0408	TH030

■ Recommended Conditions

Material	Suitability	Cutting speed (m / min)	Feedrate (mm / tooth)	D.O.C (mm)	① Grade ② Cat. No.
General Steel	◎	150 ~ 200	< 6	< 0.1	① T1200A ② SNEF53WT
Soft Steel	◎	160 ~ 220	< 6	< 0.1	① T1200A ② SNEF53WT
Stainless steel	–	–	–	–	–
Die Steel	○	120 ~ 180	< 3	< 0.1	① T1200A ② SNEF53WT
Cast Iron	◎	300 ~ 400	< 4	< 0.1	① NB90M ② SNEN535W
Aluminium	–	–	–	–	–

FMU/FMU-E Type

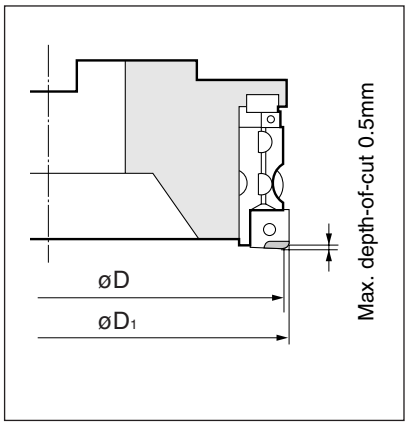
High Speed Finishing of Cast Iron

Rake Angle		
	Radial	+2°
	Axial	+8°

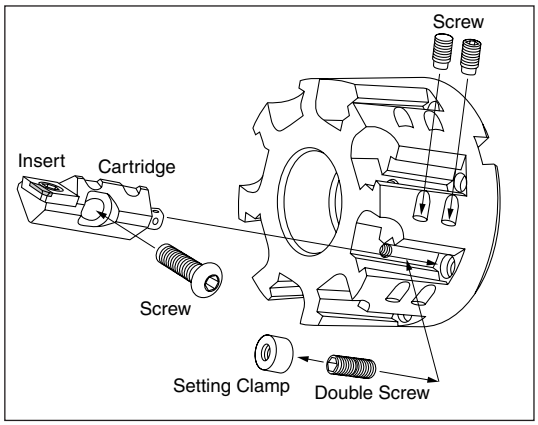
0.5mm 0°

✻ Refer to L58 for technical information.

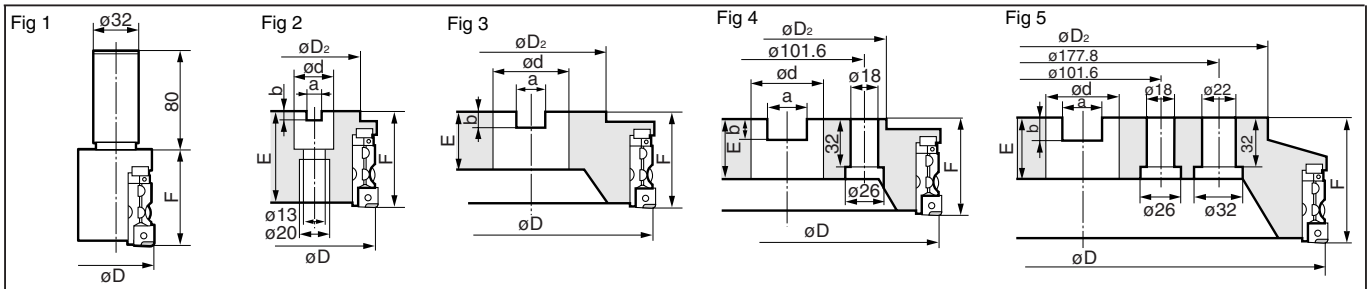
■ Cutter Body



■ Structure



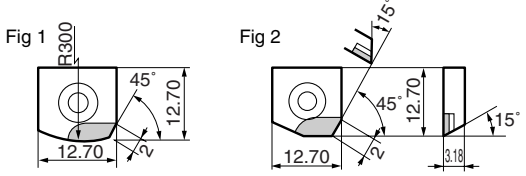
■ Cutter Body



Catalogue No.	Stock	Dimensions (mm)								No. of teeth	Weight (kg)	Fig
		øD	øD1	øD2	F	ød	a	b	E			
FMU 4040ER	●	37	40	—	63	—	—	—	—	2	1.0	1
FMU 4050ER	●	47	50	—	63	—	—	—	—	3	1.2	1
FMU 4063ER	●	60	63	60	63	25.4	9.5	6	25	4	1.0	2
FMU 4080R	●	80	82.8	60	63	25.4	9.5	6	25	6	1.7	2
FMU 4100R	●	100	102.8	75	63	31.75	12.7	8	38	8	2.5	3
FMU 4125R	●	125	127.8	75	63	38.1	15.9	10	38	10	3.9	3
FMU 4160R	●	160	162.8	100	63	50.8	19.0	11	38	12	6.3	3
FMU 4200R	●	200	202.8	130	63	47.625	25.4	14	40	16	9.3	4
FMU 4250R		250	252.8	130	63	47.625	25.4	14	40	20	14.5	4
FMU 4315R		315	317.8	240	80	47.625	25.4	14	40	24	25.0	5

Inserts are not included

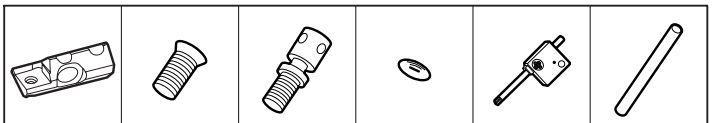
■ Insert



Catalogue No.	Stock		Grade	Fig
	R		SUMIBORON	
SNEW1203ADTR	●		BN700	1
SNEW1203ADTR-S	●		BN700	2

※ S denotes low cutting force insert

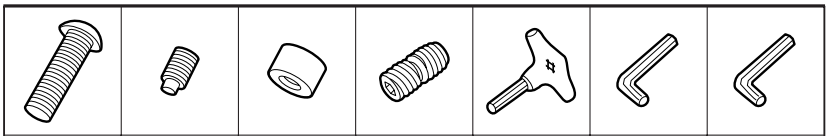
■ Cartridge



Cartridge	Screw	Adjustment screw	O-ring	Wrench	Wrench
FMUU ※	BFTX0509N	FMUJ	P3	TRX20	1.8 x 45

※ FMU4040ER/4050ER/4063ERS uses FMUUE type cartridge
※ FMUU/FMUUES uses similar screw (BFTX0509N), adjustment screw (FMUJ) and O-ring (P3)

■ Parts



Screw	Screw	Setting clamp	Double screw	Wrench	Wrench	Wrench
BH0620 ※	BTD0609	FMUE	WB5-10	TH040	LH030	LH025

※ Screw for FMU4040ER/4050ER/4063ER is BH0615

■ Setting Gauge

FMU-SET

Dial-gauge is not included

RM Type

High Speed and High Efficiency Milling for Cast Iron

Rake Angle		
	Radial	−6° 45′
	Axial	−5° 45′

3mm / 15°

- **High speed, high efficiency milling of Grey Cast Iron**
  - Utilising solid SumiBoron BSN800 for high speed milling of V = 1500m/min.
  - High speed roughing of up to d=3.0mm
  - Wiper insert for high speed finishing.
- **Low cost**
  - Cost effective 8 cornered inserts.
  - Insert regrinding possible.
- **Simple construction for insert run-out**
  - Simple design for direct insert mounting.
  - Insert run-out can be easily adjusted.

■ Cutter Body

Fig 1

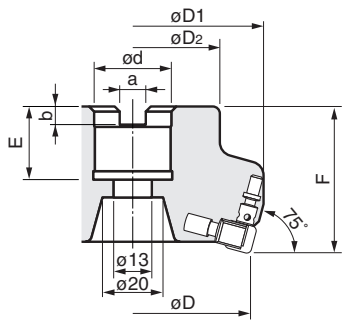
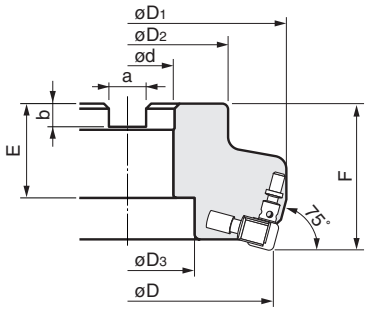


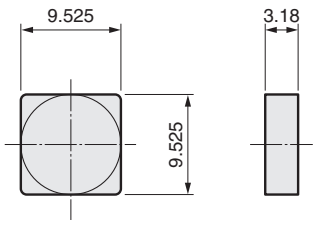
Fig 2



Catalogue No.	Stock	Dimensions (mm)									No. of teeth	Max. Rotation	Weight (kg)	Fig
		øD	øD1	øD2	øD3	F	ød	a	b	E				
RM3080R		80	90	60	–	50	25.40	9.5	6	25	6	9,000	1.6	1
RM3100R		100	110	70	46	50	31.75	12.7	8	32	8	8,000	2.1	2
RM3125R		125	135	80	59	63	38.10	15.9	10	38	10	7,000	3.9	2
RM3160R		160	170	100	80	63	50.80	19	11	38	12	6,000	5.9	2

Inserts are not included

■ Insert



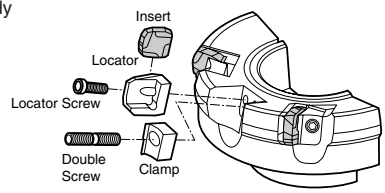
Catalogue No.	Stock	SUMIBORON	Cutting Edge
SNGN090308	●	BNS800	Standard
SNGN090312	●	BNS800	Standard
SNEN090308W	●	BNS800	Wiper

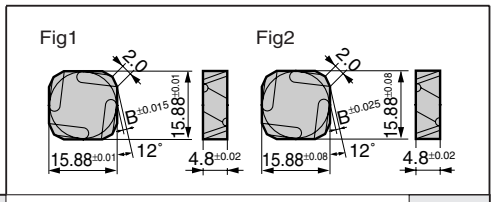
■ Important Notes

(1) Do not use a mix of standard and wiper inserts on a single cutter setting.
(2) Do not mix new and regrind inserts on a single cutter setting.
(3) Inserts can only be regrind once (inscribed circle dimension must be at least 9.125mm)

PGM5000 Type

* Production of this cutter body has been discontinued





■ Insert

Cat. No.	Carbide					Fig
	A30N	H10E	G10E			
CSP53R	●	●	●			1
CSP53L	●					1
CSPH53R	●					2
CSPH53L						2

■ Parts

Cutter Cat. No.	Locator	Clamp	Double Screw	Locator Screw	Wrench
PGM5080R ~ PGM5315R	PGMKR	PGMWR	WB8-20	FBH0512	TH030 TH040
PGM5080L ~ PGM5315L	PGMKL	PGMWL			

▲ mark : To be replaced by new item (Please confirm stock availability)