

# PRODUCT NEWS

No. 303

**NEW**

**DIJET**<sup>®</sup>

## Back & Forth Cutter

### PFC/MPF

Face Mill type

Ø 50, Ø 63, Ø 80: 6 Items

Heads type

Ø 30, Ø 33, Ø 40: 3 Items



**NEW PRODUCT**

**From semi-finishing to super finishing  
on slide seat surface.**

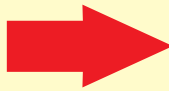
**High speed up and down cutting motion  
can improve the efficiency and accuracy.**



**DIJET INDUSTRIAL CO., LTD.**

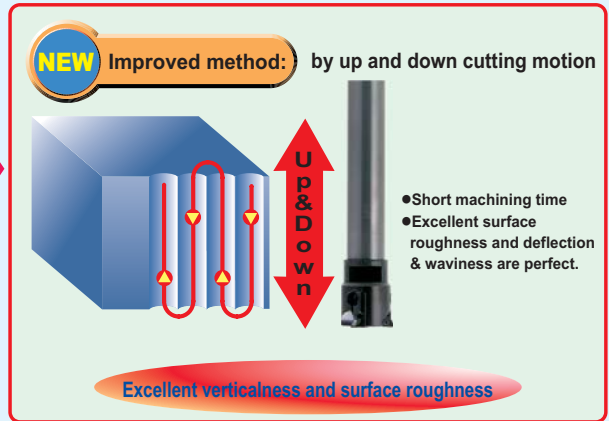
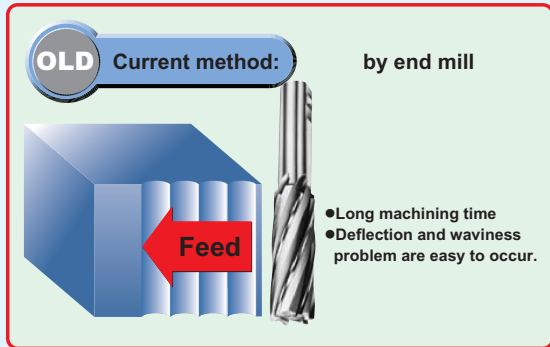
## Features

**1 High speed and high accuracy finishing can be achieved.**



Surface roughness and deflection: 0.01mm or less (feed & pick direction).

### High speed and high accuracy finishing can be achieved.



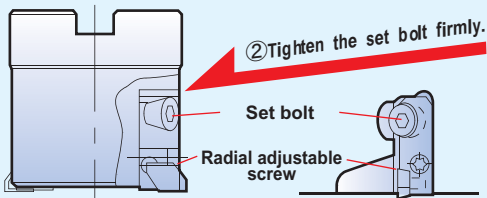
**2 Possible to use with very long arbor ( DSA with through coolant ).**

51 different arbors are available. Maximum extension length up to 400mm.

**3 Easy to adjust the O.D. run out.**

### Easy to adjust the O.D. run out.

#### STEP 1

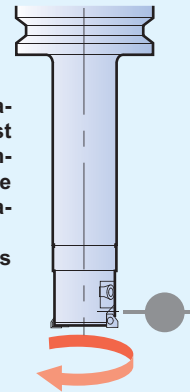


- ① Loosen the all radial adjustable screws for cartridge.
- ② Tighten the set bolt after cartridge pushes to do the space on axial pocket side. Tighten the set bolt firmly.
- ③ Set the cutter body to arbor.

#### STEP 2 On the machine

- ④ Measure the O.D. run out on the machine, and it is based on the highest insert. Next, to adjust the lower inserts to become same height to the highest insert by tightening the radial adjustable screw. Do the adjustment while set bolt was tightened firmly. Never loosen it.

● O.D. run out must suppress to be 0.01mm or less. Target 0.005mm



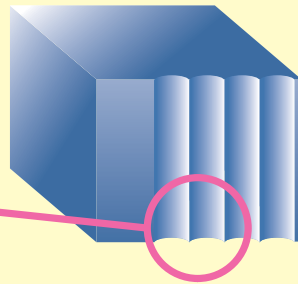
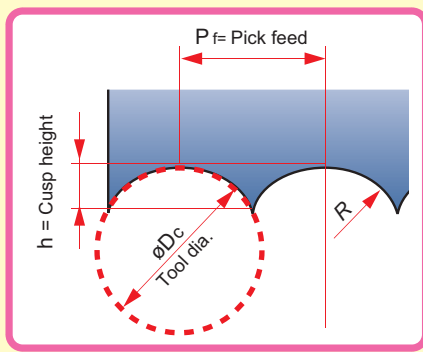
**4 CBN insert and JC8003 value-coated insert are available.**

JBN330: CBN is the best grade for high speed & accuracy finishing and longer tool life. JC8003: DV coating is adopted for high wear-resistance from semi-finishing to finishing.

**5 Consolidating of parts.**

Easy setting by using same wrench for insert 's clamp screw and radial adjustable screw. Moreover, the same parts are used from small diameter to large diameter.

## Surface roughness



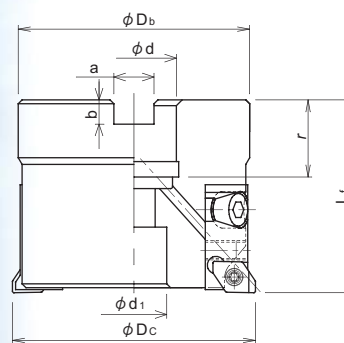
$$\text{Cusp height } \mu\text{m} = \frac{(Pf)^2}{8R} \times 1000$$

$$R = \frac{\phi D_c (\text{Tool dia.})}{2}$$

It is efficient to use large diameter cutter to increase the pick feed. But large diameter cutter may cause interference problem in case of complex work, so to be considered.

## Body / Facemill type

### ● Through coolant hole

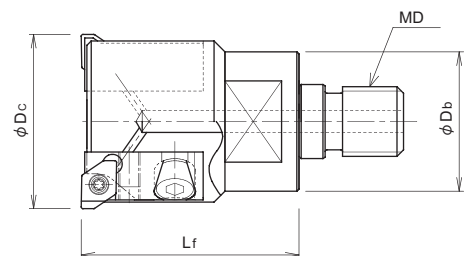
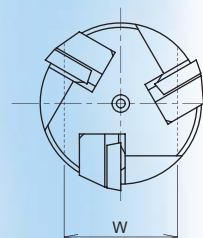


Cat. No.	Stock	No. of inserts	Dimensions (mm)							
			øDc	Lf	øDb	ød	ød1	a	b	r
PFC-4050R-22	●	4	50	50	47	22	17	10.4	6.3	20
PFC-4063R-22	●	4		50	60	22	17	10.4	6.3	20
PFC-6063R-22	●	6	63	50	60	22	17	10.4	6.3	20
PFC-6063R-27	●	6		50	60	27	20	12.4	7	22
PFC-4080R-27	●	4	80	50	76	27	20	12.4	7	22
PFC-8080R-27	●	8		50	76	27	20	12.4	7	22

● Standard stock items Note: All cutters are supplied without inserts.

## Body / Modular head type

### ● Through coolant hole



Cat. No.	Stock	No. of inserts	Dimensions (mm)				
			øDc	Lf	øDb	MD	W
MPF-2030-M16	●	2	30	50	28	M16	22
MPF-2033-M16	●	2	33	50	28	M16	22
MPF-3040-M16	●	3	40	50	32	M16	26

● Standard stock items

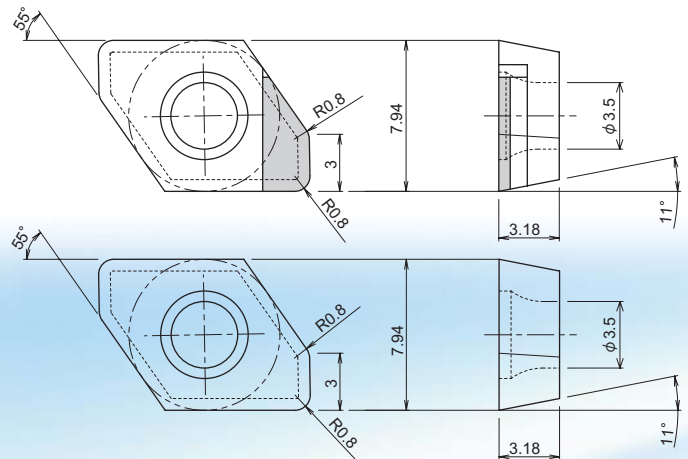
Note: 1. All cutters are supplied without inserts. 2. Please see page 6 for recommended tightening torque. 3. Recommend to use straight shank type of full carbide shank arbor. (Please see page 6)

## Insert

DPGT0903-W3  
JBN330




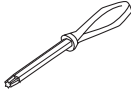

DPGT0903-W3  
JC8003

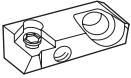





Cat. No.	Tolerance	Coated	
		VALUE coating JC8003 Semi-finishing to finishing	CBN insert JBN330 Super finishing
DPGT0903-W3	G	●	●

● Standard stock items

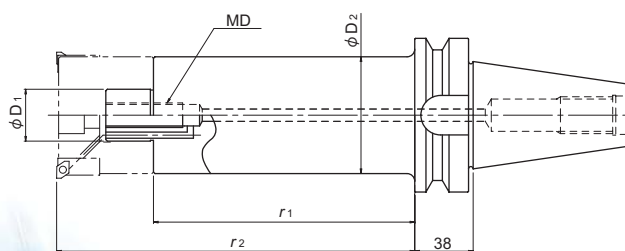
## Parts

Clamp screw	Wrench	Set bolt for arbor
		 only for $\phi$ d bore 27mm cutter
DSW-307H	A-10SD	M12 × 1.75 × 30

Cartridge	Radial adjustable screw for cartridge	Set bolt for cartridge	Wrench for cartridge
			
SDGPR09CA-PFC	RSW-05008	HCS5-10	LW-040

## Arbor (Coolant through the tool)

- For high productivity
- Coolant through the tool



### ■ BT50 shank

Cat. No.	Stock	Dimensions (mm)					Applicable bolts	Applicable cutters
		$\phi D_1$	MD	$r_2$	$r_1$	$\phi D_2$		
DSA-22-100-50-BT50H	●	22	M10	150	100	47	M10 × 1.5 × 25	PFC-4050R-22
DSA-22-150-50-BT50H	●			200	150			
DSA-22-200-50-BT50H	●			250	200			
DSA-22-250-50-BT50H	●			300	250			
DSA-22-100-63-BT50H	●	22	M10	150	100	60	M10 × 1.5 × 25	PFC-4063R-22 PFC-6063R-22
DSA-22-150-63-BT50H	●			200	150			
DSA-22-200-63-BT50H	●			250	200			
DSA-22-250-63-BT50H	●			300	250			
DSA-22-350-63-BT50H	●			400	350			
DSA-31.75-80-80-BT50H	●	31.75	M12	143	80	76	M16 × 2 × 35	PFC-4080R PFC-8080R
DSA-31.75-130-80-BT50H	●			193	130			
DSA-31.75-180-80-BT50H	●			243	180			
DSA-31.75-260-80-BT50H	●			323	260			
DSA-31.75-330-80-BT50H	●			393	330			

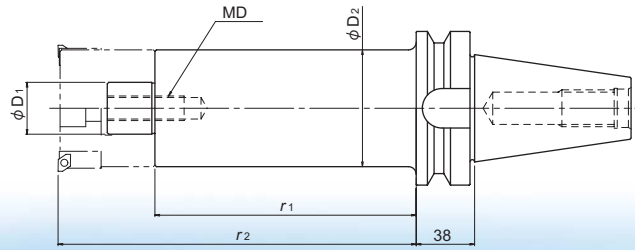
- Standard stock items

### ■ Attention for use:

BT50H type is for coolant through the tool from **INDIVIDUAL POCKETS**.

## Arbor (Coolant through the tool)

- For high productivity
- Center through coolant hole



### ■ BT50 shank

Cat. No.	Stock	Dimensions (mm)					Applicable bolts	Applicable cutters
		$\phi D_1$	MD	$r_2$	$r_1$	$\phi D_2$		
DSA-22-50-50-BT50	<input type="checkbox"/>			100	50		DSB-1025	PFC-4050R-22
DSA-22-100-50-BT50	<input type="checkbox"/>			150	100			
DSA-22-150-50-BT50	<input type="checkbox"/>	22	M10	200	150	47		
DSA-22-200-50-BT50	<input type="checkbox"/>			250	200			
DSA-22-250-50-BT50	<input type="checkbox"/>			300	250			
DSA-22-50-63-BT50	<input type="checkbox"/>			100	50			PFC-4063R-22 PFC-6063R-22
DSA-22-100-63-BT50	<input type="checkbox"/>			150	100			
DSA-22-150-63-BT50	<input type="checkbox"/>	22	M10	200	150	60		
DSA-22-200-63-BT50	<input type="checkbox"/>			250	200			
DSA-22-250-63-BT50	<input type="checkbox"/>			300	250			
DSA-22-350-63-BT50	<input type="checkbox"/>			400	350			
DSA-27-50-63-BT50	<input type="checkbox"/>			100	50		DSB-1230	PFC-6063R-27
DSA-27-100-63-BT50	<input type="checkbox"/>			150	100			
DSA-27-150-63-BT50	<input type="checkbox"/>	27	M12	200	150	60		
DSA-27-200-63-BT50	<input type="checkbox"/>			250	200			
DSA-27-250-63-BT50	<input type="checkbox"/>			300	250			
DSA-27-350-63-BT50	<input type="checkbox"/>			400	350			
DSA-27-7-80-BT50	<input type="checkbox"/>			57	7		M12×1.75×30 (DSB-1225)	PFC-4080R-27 PFC-8080R-27
DSA-27-80-80-BT50	<input type="checkbox"/>			130	80			
DSA-27-130-80-BT50	<input type="checkbox"/>	27	M12	180	130	76		
DSA-27-180-80-BT50	<input type="checkbox"/>			230	180			
DSA-27-260-80-BT50	<input type="checkbox"/>			310	260			
DSA-27-330-80-BT50	<input type="checkbox"/>			380	330			
DSA-31.75-7-80-BT50	<input type="checkbox"/>			70	7		DSB-1635	PFC-4080R PFC-8080R
DSA-31.75-80-80-BT50	<input type="checkbox"/>			143	80			
DSA-31.75-130-80-BT50	<input type="checkbox"/>	31.75	M16	193	130	76		
DSA-31.75-180-80-BT50	<input type="checkbox"/>			243	180			
DSA-31.75-260-80-BT50	<input type="checkbox"/>			323	260			
DSA-31.75-330-80-BT50	<input type="checkbox"/>			393	330			

Exclusive distributor stock

### ■ Attention for use

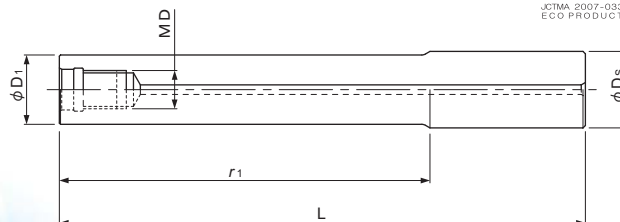
BT50 type (without H type) has only center through coolant hole. (See page 4 for BT50H type.)

**MSN**  
TYPE

**MSN Carbide shank holder (Through coolant hole)**

頑固一徹

- For high productivity
- Through coolant hole



■ End mill shank type

Cat. No.	Stock	Dimensions (mm)				
		$\phi D_s$	$r_1$	L	$\phi D_1$	MD
MSN-M16-55-S32C	●	32	55	120	29	M16
MSN-M16-105-S32C	●		105	170		
MSN-M16-155-S32C	●		155	220		
MSN-M16-195-S32C	●		195	260		

● Standard stock items

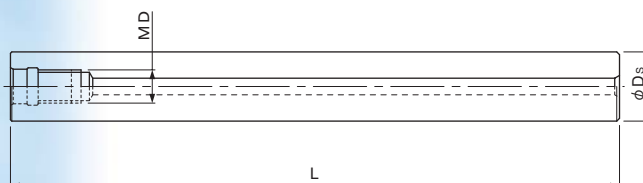
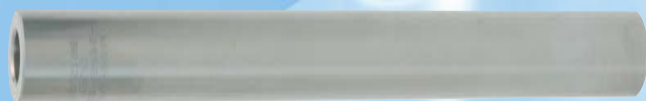
Note: Recommend to use straight shank type arbor for modular head MPF-3040-M16.

**MSN**  
TYPE

**MSN Carbide shank holder (Through coolant hole)**

NEW 頑固一徹

- For high productivity
- Through coolant hole



■ Straight arbor type

Cat. No.	Stock	Dimensions (mm)		
		$\phi D_s$	L	MD
MSN-M16-157S-S32C	●	32	157	M16
MSN-M16-217S-S32C	●		217	
MSN-M16-287S-S32C	●		287	
MSN-M16-357S-S32C	●		357	

● Standard stock items

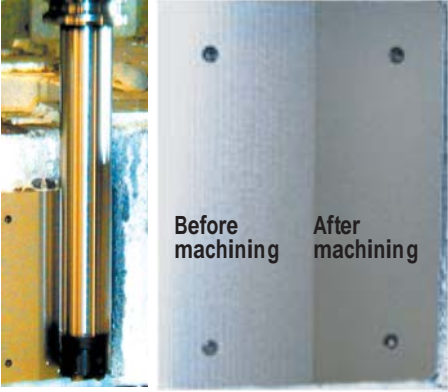
★ Attention to mounting head

Clean the contact surface of head and carbide holder, and also confirm there is no gap between head and holder after tightening.

Recommended tightening torque for modular head

Thread	Tightening Torque	Wrench size (mm)
M16	90Nm	26

## Cutting data

<p>● Extension length: 400mm</p>  <p>Before machining    After machining</p> <p><b>Result</b></p> <p>After 3 hours, inserts did not show any chipping and wear. Excellent surface quality and tool life. Surface roughness and deflection was below 0.01mm.</p>	Work	Part name	Stamping die
		Material	FC250
		Hardness	—
	Tool	Tool No.	PFC-6063R-22
		Grade	DPGT0903-W3 JBN330
	Cutting conditions	n,Vc	6,000 (min <sup>-1</sup> ) , 1,188 (m/min)
		Vf	6,000 (mm/min)
		a <sub>p</sub> (mm)	0.05 (mm)
		a <sub>e</sub> (mm)	0.50 (mm)
		Coolant	DRY
Machine		MC	

## Recommended cutting conditions

Materials	Grades	Vc (m/min)	fz (mm/t)	a <sub>p</sub> (mm)
Cast iron 160-260HB FC 250	JBN330	1,200 (800~2,000)	0.1 (0.05~0.15)	0.05~0.1
	JC8003	400 (300~500)	0.1 (0.05~0.15)	0.05~0.5
Nodular cast iron 170-200HB FCD 600	JBN330	1,000 (600~1,500)	0.1 (0.05~0.15)	0.05~0.1
	JC8003	300 (200~400)	0.1 (0.05~0.15)	0.05~0.5
Carbon & Alloy steel S50C、SCM440	JC8003	200 (100~300)	0.1 (0.05~0.15)	0.05~0.2

### ■ Attention for use

1. Arbor must use a larger diameter as much as possible. In case of using MPF-3040-M16, recommend to use straight shank type of full carbide shank arbor.
2. In case of chatter is occurring and surface quality is not satisfied due to machine and work rigidity, recommend to reduce the spindle speed or feed rate.
3. In case of using as face mill, recommend to reduce feed per tooth up to 0.05mm.

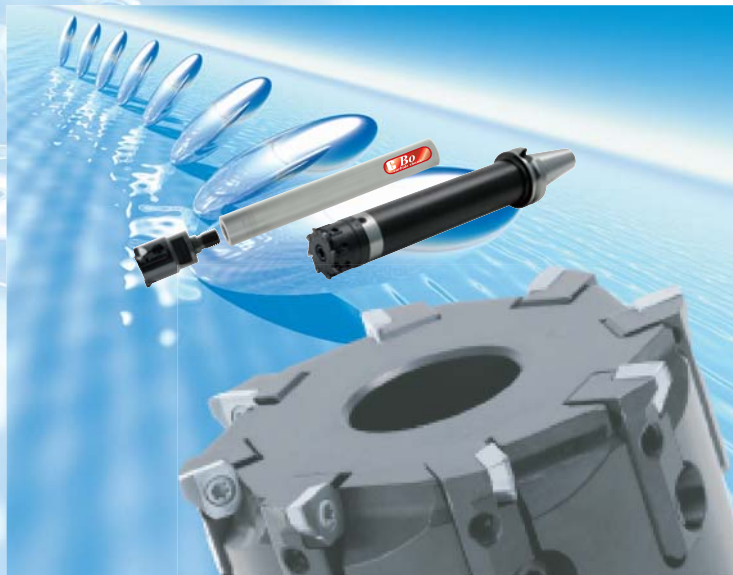


DIJET INDUSTRIAL CO., LTD.

# ニューバックアンドフォースカッタ

Back and Forth Cutter

## PFC/MPF



From semi-finishing to super finishing  
on slide seat surface.

# Break Through



# DIJET INDUSTRIAL CO., LTD.

Headquarters: 2-1-18, Kami-Higashi, Hirano-ku, Osaka 547-0002, Japan  
Phone: 81-6-6791-6781 Fax: 81-6-6793-1221



## Overseas Divisions:

### DIJET INDUSTRIAL CO., LTD. (Europe)

Unit 2 Mundells Court, Welwyn Garden City, Herts AL7 1EN, England  
Phone. 44-1707-325444 Fax. 44-1707-330197

### DIJET EUROPEAN TECHNICAL SERVICE (Italy)

Via Sega 2618/B 35010 San Giorgio in Bosco (PD) Italy  
Phone. 39-049-599-4392 Fax. 39-049-599-4935

### DIJET INDUSTRIAL CO., LTD. (Bangkok Representative Office)

699 Srinakarindr Road, Modernform Tower 15th Floor, Kweang Suanluang  
Khet Suanluang, Bangkok 10250, Thailand  
Phone. 66-2-722-8258, 8259 Fax. 66-2-722-8260

### DIJET INDUSTRIAL CO., LTD. (Shanghai Representative Office)

Room No.1007 Tomson Commercial Building., 710 Dongfang Rd.,  
Shanghai 200122, China  
Phone. 86-21-5058-1698 Fax. 86-21-5058-1699

### DIJET INDUSTRIAL CO., LTD. (Guandong Representative Office)

Rm. 1J2F, A Building, Lotus Plaza, Xianxidadao Road, Changan Town,  
Dongguan City, Guangdong Province, 523850 P. R. , CHINA  
Phone. 86-769-8188-6001, 6002 Fax. 86-769-8118-6608

### DIJET INDUSTRIAL CO., LTD. (Mumbai Representative Office)

A-3/204, Happy Valley Homes,  
G.B. Road, Near Ti-ku-ji-ni Wadi, Chitalsar Manpada,  
Thane (West) Mumbai 400 607, India  
Phone. 91-22-4012-1231 Fax. 91-22-4012-1231

### DIJET Incorporated (U.S.A.)

45807 Helm Street, Plymouth, MI 48170 U.S.A.  
Phone. 1-734-454-9100 Fax. 1-734-454-9395

## Web Sites

<http://www.dijet.com> - <http://www.dijet.org>



#### WARNING:

Grinding produces hazardous dust.  
To avoid adverse health, adequate ventilation and  
read Material Safety Data Sheet First.  
Cutting tools may fragment in use.  
Wear eye protection in the vicinity of their operation.

Your local stockist is: