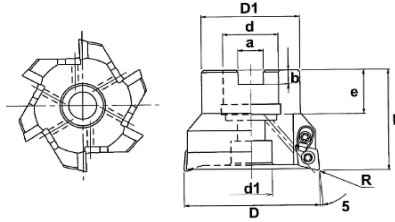


Rhombic Diemaster

Face Mill
XDF type

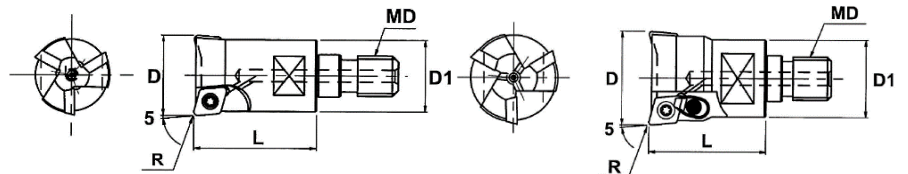


Cat. No.	Stock	Dimensions									No. of flutes	Insert	Parts		
		D	R	D1	L	d	d1	a	b	e			Screw	Clamp set	Wrench
XDF-5052R-22	●	52	1.0	40	50	22	17	10.4	6	20	5	XDHW0310-10	CSW-3575	DCM-18	A-15
XDF-6066R-27	○	66	1.0	48	50	27	20	12.7	7	22	6				

Fig.1

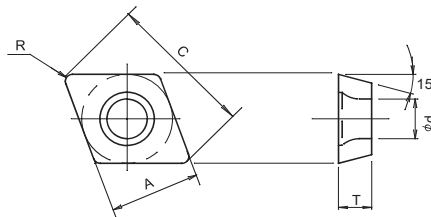
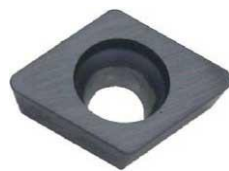
Fig.2

Modular Head
MXD type



Cat. No.	Stock	Dimensions					FIG	Head torque Nm	Insert	No. of flutes	Parts		
		D	R	D1	L	d					Screw	Clamp set	Wrench
MXD-2016-M8	●	16	0.5 1.0	15.4	23	M8	1	23	XDHW0206-**	2	CSW-2547	-	A-07
MXD-3020-M10	●	20	0.5 1.0	17.8	30	M10	1	46		3			
MXD-3025-M12	●	25	0.5 1.0	20.8	35	M12	1	80		3			
MXD-3035-M16	●	35	1.0	28.8	43	M16	2	90	XDHW0310-10	3	CSW-3575	DCM-18	A-15
MXD-4042-M16	○	42	1.0	28.8	43	M16	2	90		4			

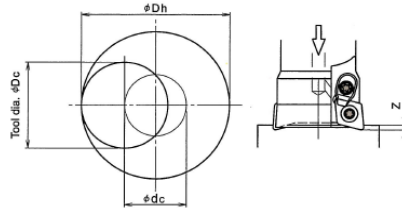
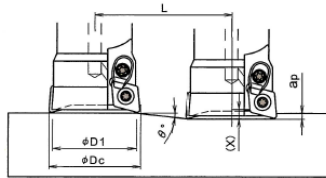
Inserts
XDHW type



Cat. No.	PVD Coated			Dimensions				
	DH103	JC5040	JC8015	A	T	C	R	d
XDHW0206-05	○		○	6.5	2.38	10.589	0.5	2.8
XDHW0206-10	●	●	●	6.5	2.38	9.846	1.0	2.9
XDHW0310-10	●	●	●	10	3.97	15.948	1.0	4

● : Standard stock items □ : Stock in Japan ○ : Soon to be deleted

HELICAL INTERPOLATION CUTTING DATA



• Calculation of tool pass dia.

$$\phi dc = \phi Dh - \phi Dc$$
 Tool pass dia. Bore dia. Tool Dia.

- Depth of cut per one circuit should not exceed max. depth of cut ap .
- Down cutting is recommended, so tool pass rotation should be counterclockwise.
- Do not continue ramping after drilling.
- In case of ramping and helical interpolation, apply 70% or less feed speed from standard cutting condition table.
- In case of drilling, apply 50% or less Z axis feed speed from standard cutting condition table.
- Long consecutive chips may come out in case of drilling, confirm the safe condition sufficiently.

Tool Dia.	Insert Size	$\phi d1$ Effective Dia.(mm)	ϕDh min Min. Bore Dia.(mm)	ϕDh max Max. Bore Dia.(mm)	Maximum Ramping Angle θ°	ap Max. Depth of Cut(mm)	$(ap)/L$ (mm) Total Cutting Length at Max. ap	Z Max. Drilling Depth(mm)	X Depth of Holder Face(mm)
20	0206	16	36	40	$8^\circ 50'$	1.0	12.0	1.0	2.0
25	0206	21	46	50	$5^\circ 30'$	1.0	15.0	1.0	2.0
35	0310	31	66	70	$3^\circ 80'$	1.5	25.0	1.5	2.5
42	0310	38	80	84	$2^\circ 30'$	1.5	35.0	1.5	2.5
52	0310	48	82	104	$4^\circ 55'$	1.5	69.7	1.5	2.5
66	0310	62	110	132	$3^\circ 30'$	1.5	98.1	1.5	2.5

Rhombic Diemaster

Recommended cutting Data for MXD + MSN arbor

Work Material	Insert Grade	Tool Diameter											
		16(2N)				20(3N)				25(3N)			
		L(mm)	Ap(mm)	N(min ⁻¹)	Vf(mm/min)	L(mm)	Ap(mm)	N(min ⁻¹)	Vf(mm/min)	L(mm)	Ap(mm)	N(min ⁻¹)	Vf(mm/min)
Carbon Steel C50,C55 Below 250HB	JC5040	70	1	2,900	1,450	70	1	3,500	2,900	90	1	2,800	2,100
	JC8015	120	0.7	2,900	1,450	120	0.7	3,500	2,900	140	0.7	2,800	2,100
		160	0.5	2,800	1,350	160	0.5	3,200	2,700	210	0.5	2,600	1,900
Mold steel (1.2311,P20) 30-43HRC	JC5040	70	1	2,800	1,400	70	1	3,300	2,600	90	1	2,600	2,000
	JC8015 (Above 40HRC)	120	0.7	2,800	1,400	120	0.7	3,300	2,600	140	0.7	2,600	2,000
		160	0.5	2,700	1,350	160	0.5	3,100	2,300	210	0.5	2,400	1,800
Die Steel (1.2344,1.2379) Below 255HB	JC5040	70	1	2,800	1,400	70	1	3,300	2,600	90	1	2,500	1,600
	JC8015	120	0.7	2,800	1,400	120	0.7	3,300	2,600	140	0.7	2,500	1,600
		160	0.5	2,700	1,350	160	0.5	3,100	2,300	210	0.5	2,400	1,400
Stainless steel Below 250HB	JC8015	70	1	2,300	1,200	70	1	2,700	2,400	90	1	2,100	1,400
		120	0.7	2,300	1,200	120	0.7	2,700	2,400	140	0.7	2,100	1,400
		160	0.5	2,200	1,100	160	0.5	2,600	2,200	210	0.5	2,000	1,000
Hardened die steel (1.2344,1.2379) 40-50HRC	JC8015	70	0.6	2,000	1,000	70	0.6	2,500	2,000	90	0.6	1,900	1,400
	DH103 (Above 50HRC)	120	0.4	2,000	1,000	120	0.4	2,500	2,000	140	0.4	1,900	1,400
		160	0.3	1,900	950	160	0.3	2,200	1,800	210	0.3	1,800	1,000
Gray & Nodular cast iron (GG,GGG) Below 300HB	JC8015	70	1	2,600	1,400	70	1	3,050	2,600	90	1	2,500	2,200
		120	0.7	2,600	1,400	120	0.7	3,050	2,600	140	0.7	2,500	2,200
		160	0.5	2,500	1,300	160	0.5	2,900	2,400	210	0.5	2,300	1,700

Work Material	Insert Grade	Tool Diameter							
		35 (3N)				42(4N)			
		L(mm)	Ap(mm)	N(min ⁻¹)	Vf(mm/min)	L(mm)	Ap(mm)	N(min ⁻¹)	Vf(mm/min)
Carbon Steel C50,C55 Below 250HB	JC5040	100	1.5	2,100	1,900	100	1.5	1,900	2,300
	JC8015	150	1	2,100	1,900	150	1	1,900	2,300
		210	0.6	2,000	1,600	210	0.6	1,800	2,200
Mold steel (1.2311,P20) 30-43HRC	JC5040	100	1.5	2,000	1,800	100	1.5	1,800	2,100
	JC8015 (Above 40HRC)	150	1	2,000	1,800	150	1	1,800	2,100
		210	0.6	1,900	1,550	210	0.6	1,700	2,000
Die Steel (1.2344,1.2379) Below 255HB	JC5040	100	1.5	2,000	1,800	100	1.5	1,800	2,100
	JC8015	150	1	2,000	1,800	150	1	1,800	2,100
		210	0.6	1,900	1,500	210	0.6	1,700	2,000
Stainless steel Below 250HB	JC8015	100	1.5	1,750	1,500	100	1.5	1,550	1,600
		150	1	1,750	1,500	150	1	1,550	1,600
		210	0.6	1,600	1,300	210	0.6	1,500	1,400
Hardened die steel (1.2344,1.2379) 40-50HRC	JC8015	100	0.8	1,400	1,250	100	0.8	1,350	1,350
	DH103 (Above 50HRC)	150	0.6	1,400	1,250	150	0.6	1,350	1,350
		210	0.3	1,300	1,100	210	0.3	1,300	1,100
Gray & Nodular cast iron (GG,GGG) Below 300HB	JC8015	100	1.5	1,900	1,700	100	1.5	1,700	2,050
		150	1	1,900	1,700	150	1	1,700	2,050
		210	0.6	1,800	1,600	210	0.6	1,600	1,800

Rhombic Diemaster

Recommended cutting Data for XDF

Work Material	Insert Grade	Tool Diameter							
		52(5N)				66(6N)			
		L(mm)	Ap(mm)	N(min ⁻¹)	Vf(mm/min)	L(mm)	Ap(mm)	N(min ⁻¹)	Vf(mm/min)
Carbon Steel C50,C55 Below 250HB	JC5040 JC8015	150	1.5	1,300	1,700	150	1.5	980	1,140
		200	1.2	1,300	1,820	200	1.2	980	1,300
		250	1	910	1,350	250	1	690	910
		300	0.8	910	1,800	300	0.8	690	1,100
		350	0.5	780	1,870	350	0.5	590	1,010
		400	0.3	–	–	400	0.3	540	1,190
Mold steel (1.2311,P20) 30-43HRC	JC5040 JC8015 (Above 40HRC)	150	1.5	1,250	1,750	150	1.5	940	1,160
		200	1.2	1,250	1,850	200	1.2	940	1,240
		250	1	880	1,760	250	1	660	970
		300	0.8	880	1,760	300	0.8	660	1,180
		350	0.5	750	1,800	350	0.5	560	1,120
		400	0.3	–	–	400	0.3	520	1,140
Die Steel (1.2344,1.2379) Below 255HB	JC5040 JC8015	150	1.5	1,260	1,750	150	1.5	930	1,080
		200	1.2	1,260	1,850	200	1.2	930	1,120
		250	1	880	1,760	250	1	650	850
		300	0.8	880	1,760	300	0.8	650	1,040
		350	0.5	750	1,850	350	0.5	560	870
		400	0.3	–	–	400	0.3	510	1,100
Stainless steel Below 250HB	JC8015	150	1.5	1,030	1,350	150	1.5	780	900
		200	1.2	1,030	1,440	200	1.2	780	930
		250	1	720	1,060	250	1	550	730
		300	0.8	720	1,420	300	0.8	550	830
		350	0.5	620	1,490	350	0.5	470	690
		400	0.3	–	–	400	0.3	430	940
Hardened die steel (1.2344,1.2379) 40-50HRC	JC8015 DH103 (Above 50HRC)	100	0.8	880	880	100	0.8	650	580
		150	0.7	880	950	150	0.7	650	650
		200	0.6	620	740	200	0.6	450	490
		250	0.5	620	870	250	0.5	450	520
		300	0.4	530	850	300	0.4	390	590
		350	0.3	–	–	350	0.3	360	620
Gray & Nodular cast iron (GG,GGG) Below 300HB	JC8015	150	1.5	1,170	1,820	150	1.5	880	1,370
		200	1.2	1,170	2,000	200	1.2	880	1,440
		250	1	820	1,470	250	1	620	1,120
		300	0.8	820	1,800	300	0.8	620	1,240
		350	0.5	700	1,680	350	0.5	530	1,160
		400	0.3	–	–	400	0.3	480	1,220

L:Overhung length

Ap:Depth of cut

N:Spindle speed

Vf:Feed speed

- Note: 1. Speeds and Feeds should be adjusted according to the machine and work rigidity.
2. If chattering occurs, reduce the Ap or N by 30% and keep the feed per tooth the same.

3. If machine does not have enough power, reduce the depth of cut Ap or Spindle speed and Feed speed.

4. Use air thru.

5. If Hardened Die Steel is 50-55 HRC, recommend reducing Ap, N, Vf by 30%.