

MDF Series

New



General Features

The flat multidrill MDF type is a solid carbide drill that can be used for various purposes including high-efficiency spot facing and drilling on inclined surfaces and curved surfaces.



Characteristics and Applications

- **Applicable to various types of drilling thanks to a point angle of 180°**
Applicable to high-efficiency spot facing, drilling in non-horizontal surfaces such as inclined and cylindrical surfaces, and interrupted drilling. Also reduces burrs at the hole exit.
- **Improves machining stability**
Achieves high rigidity by employing RS THINNING, which ensures thick web at the bottom.
- **Excellent chip evacuation**
Achieves excellent chip evacuation thanks to the wide chip pocket and a high-quality rake face shape.
- **Excellent cutting edge strength**
Achieves excellent cutting edge strength through optimized cutting edge design.



Improves drilling stability by ensuring web thickness

Reduction of Burrs at Hole Exit

MDF Type Comparison

Burrs at Hole Exit

Work Material : SCM415
Tool : MDF0500S2D (ø5.0mm 2D)
Cutting Conditions : $v_c=65\text{m/min}$, $f=0.12\text{mm/rev}$,
 $H=10\text{mm}$, 150 Units, Wet
Equipment : Vertical Machining Centre/M/C (BT40)

Burr height : 0.18mm

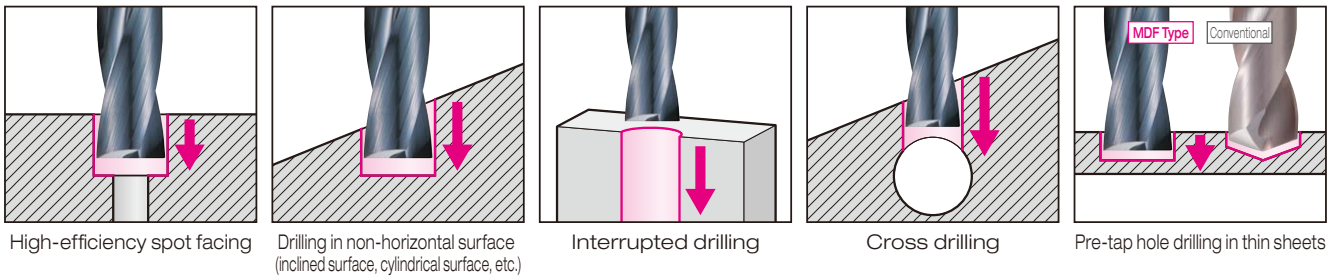
Flat MULTIDRILL MDF Type

Burr height : 0.44mm

Conv. general-purpose drill

Reduces exit burrs by half compared with general-purpose drills

Application



Recommended Cutting Conditions

1. The recommended hole depth is $2 \times D_c$. The depth is measured from the highest point of the hole on drilling in inclined surfaces.
2. The recommended cutting conditions are those for drilling on flat horizontal surfaces.
3. Adjust the feed rate according to the inclination angle when drilling on an inclined surface.
4. Set the feed rate at 70% or lower when the inclination angle is 30° or less.
5. Set the feed rate at 50% or lower when the inclination angle is larger than 30° .
6. This product is a drilling tool. Do not use it for traversing or helical milling.

v_c : Cutting Speed (m/min) f : Feed Rate (mm/rev)

Drill Diameter ϕD_c (mm)	Cutting Conditions	Soft Steel/General Steel (Up to 250HB)	Alloy Steel (Up to 300HB)	Hardened steel (Up to 50HRC)	Stainless Steel (Up to 200HB)	Grey Cast Iron FC250	Ductile Cast Iron	Aluminum Alloy
Up to $\phi 4$	v_c	60 - 75 - 90	50 - 65 - 80	20 - 30 - 40	20 - 30 - 40	60 - 75 - 90	55 - 65 - 75	90 - 110 - 130
	f	0.06 - 0.08 - 0.1	0.05 - 0.08 - 0.10	0.01 - 0.02 - 0.03	0.01 - 0.02 - 0.03	0.06 - 0.08 - 0.10	0.04 - 0.06 - 0.08	0.06 - 0.08 - 0.10
Up to $\phi 6$	v_c	60 - 75 - 90	50 - 65 - 80	20 - 30 - 40	20 - 30 - 50	60 - 75 - 90	60 - 70 - 80	90 - 110 - 130
	f	0.05 - 0.10 - 0.15	0.05 - 0.10 - 0.15	0.04 - 0.06 - 0.08	0.03 - 0.04 - 0.05	0.05 - 0.10 - 0.15	0.06 - 0.09 - 0.12	0.05 - 0.10 - 0.15
Up to $\phi 8$	v_c	60 - 75 - 90	50 - 65 - 80	20 - 30 - 40	20 - 30 - 50	60 - 75 - 90	60 - 70 - 80	90 - 110 - 130
	f	0.10 - 0.15 - 0.20	0.10 - 0.15 - 0.20	0.06 - 0.08 - 0.10	0.04 - 0.06 - 0.08	0.10 - 0.15 - 0.20	0.10 - 0.12 - 0.15	0.10 - 0.15 - 0.20
Up to $\phi 10$	v_c	60 - 75 - 90	50 - 65 - 80	20 - 30 - 40	20 - 30 - 50	60 - 75 - 90	60 - 70 - 80	90 - 110 - 130
	f	0.12 - 0.17 - 0.22	0.12 - 0.17 - 0.22	0.08 - 0.10 - 0.12	0.06 - 0.08 - 0.10	0.12 - 0.17 - 0.22	0.12 - 0.15 - 0.18	0.12 - 0.17 - 0.22
Up to $\phi 12$	v_c	60 - 75 - 90	50 - 65 - 80	20 - 30 - 40	20 - 30 - 50	60 - 75 - 90	60 - 70 - 80	90 - 110 - 130
	f	0.15 - 0.20 - 0.25	0.15 - 0.20 - 0.25	0.12 - 0.15 - 0.18	0.08 - 0.10 - 0.12	0.15 - 0.20 - 0.25	0.15 - 0.18 - 0.20	0.15 - 0.20 - 0.25

Min. - Optimum - Max.

New

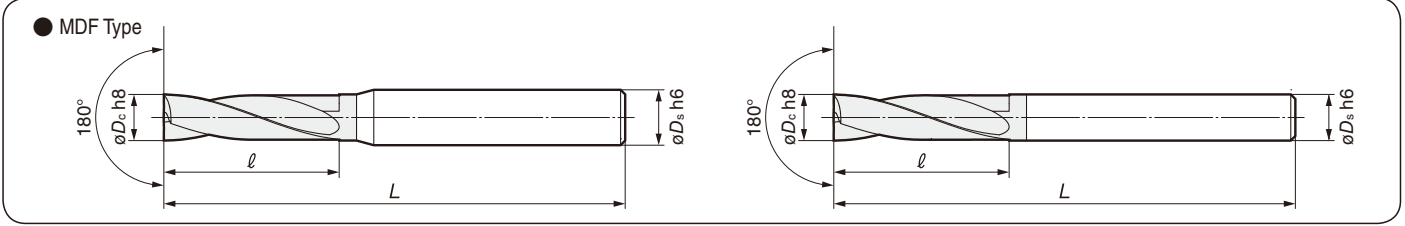


Flat MULTIDRILL

MDF Type

External Coolant Supply (MDF Type)

Carbon Steel	Alloy Steel	Tempered Steel	Hardened Steel	Stainless steel	Ti Alloy	Heat-treated steel	Cast Iron	Ductile Cast iron	Aluminium Alloy	Copper alloy	Composite CFRP	PVD Coat	2D
Up to 0.28%	From 0.28%	Up to 45HRC	From 45HRC										



● Diameter $\phi 2.0$ to $\phi 7.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	Stock	Dimensions (mm)	
				L	ℓ
2.0	4	MDF 0200S2D	●	50	8.0
2.1		MDF 0210S2D	●		8.4
2.2		MDF 0220S2D	●		8.8
2.3		MDF 0230S2D	●		9.2
2.4		MDF 0240S2D	●		9.6
2.5	4	MDF 0250S2D	●	50	10.0
2.6		MDF 0260S2D	●		10.4
2.7		MDF 0270S2D	●		10.8
2.8		MDF 0280S2D	●		11.2
2.9		MDF 0290S2D	●		11.6
3.0	6	MDF 0300S2D	●	50	12.0
3.1		MDF 0310S2D	●		12.4
3.2		MDF 0320S2D	●		12.8
3.3		MDF 0330S2D	●		13.2
3.4		MDF 0340S2D	●		13.6
3.5	MDF 0350S2D	●	14.0		
3.6	6	MDF 0360S2D	●	50	14.4
3.7		MDF 0370S2D	●		14.8
3.8		MDF 0380S2D	●		15.2
3.9		MDF 0390S2D	●		15.6
4.0		MDF 0400S2D	●		16.0
4.1	6	MDF 0410S2D	●	60	16.4
4.2		MDF 0420S2D	●		16.8
4.3		MDF 0430S2D	●		17.2
4.4		MDF 0440S2D	●		17.6
4.5		MDF 0450S2D	●		18.0
4.6	6	MDF 0460S2D	●	60	18.4
4.7		MDF 0470S2D	●		18.8
4.8		MDF 0480S2D	●		19.2
4.9		MDF 0490S2D	●		19.6
5.0		MDF 0500S2D	●		20.0
5.1	6	MDF 0510S2D	●	60	20.4
5.2		MDF 0520S2D	●		20.8
5.3		MDF 0530S2D	●		21.2
5.4		MDF 0540S2D	●		21.6
5.5		MDF 0550S2D	●		22.0
5.6	6	MDF 0560S2D	●	60	22.4
5.7		MDF 0570S2D	●		22.8
5.8		MDF 0580S2D	●		23.2
5.9		MDF 0590S2D	●		23.6
6.0		MDF 0600S2D	●		24.0
6.1	8	MDF 0610S2D	●	70	24.4
6.2		MDF 0620S2D	●		24.8
6.3		MDF 0630S2D	●		25.2
6.4		MDF 0640S2D	●		25.6
6.5		MDF 0650S2D	●		26.0
6.6	8	MDF 0660S2D	●	70	26.4
6.7		MDF 0670S2D	●		26.8
6.8		MDF 0680S2D	●		27.2
6.9		MDF 0690S2D	●		27.6
7.0		MDF 0700S2D	●		28.0

● Diameter $\phi 7.1$ to $\phi 12.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	Stock	Dimensions (mm)	
				L	ℓ
7.1	8	MDF 0710S2D	●	70	28.4
7.2		MDF 0720S2D	●		28.8
7.3		MDF 0730S2D	●		29.2
7.4		MDF 0740S2D	●		29.6
7.5		MDF 0750S2D	●		30.0
7.6	8	MDF 0760S2D	●	70	30.4
7.7		MDF 0770S2D	●		30.8
7.8		MDF 0780S2D	●		31.2
7.9		MDF 0790S2D	●		31.6
8.0		MDF 0800S2D	●		32.0
8.1	10	MDF 0810S2D	●	80	32.4
8.2		MDF 0820S2D	●		32.8
8.3		MDF 0830S2D	●		33.2
8.4		MDF 0840S2D	●		33.6
8.5		MDF 0850S2D	●		34.0
8.6	10	MDF 0860S2D	●	80	34.4
8.7		MDF 0870S2D	●		34.8
8.8		MDF 0880S2D	●		35.2
8.9		MDF 0890S2D	●		35.6
9.0		MDF 0900S2D	●		36.0
9.1	10	MDF 0910S2D	●	80	36.4
9.2		MDF 0920S2D	●		36.8
9.3		MDF 0930S2D	●		37.2
9.4		MDF 0940S2D	●		37.6
9.5		MDF 0950S2D	●		38.0
9.6	10	MDF 0960S2D	●	80	38.4
9.7		MDF 0970S2D	●		38.8
9.8		MDF 0980S2D	●		39.2
9.9		MDF 0990S2D	●		39.6
10.0		MDF 1000S2D	●		40.0
10.1	12	MDF 1010S2D	●	90	40.4
10.2		MDF 1020S2D	●		40.8
10.3		MDF 1030S2D	●		41.2
10.4		MDF 1040S2D	●		41.6
10.5		MDF 1050S2D	●		42.0
10.6	12	MDF 1060S2D	●	90	42.4
10.7		MDF 1070S2D	●		42.8
10.8		MDF 1080S2D	●		43.2
10.9		MDF 1090S2D	●		43.6
11.0		MDF 1100S2D	●		44.0
11.1	12	MDF 1110S2D	●	90	44.4
11.2		MDF 1120S2D	●		44.8
11.3		MDF 1130S2D	●		45.2
11.4		MDF 1140S2D	●		45.6
11.5		MDF 1150S2D	●		46.0
11.6	12	MDF 1160S2D	●	90	46.4
11.7		MDF 1170S2D	●		46.8
11.8		MDF 1180S2D	●		47.2
11.9		MDF 1190S2D	●		47.6
12.0		MDF 1200S2D	●		48.0

Grade: ACF75

Drilling

Solid

Special

Indexable

Reamer

Brazed

Others