

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

Burrs at Hole Exit

Work Material : SCM415
Tool : MDF0500S2D (ø5.0mm 2D)
Cutting Conditions : v_c=215 SFM f=0.005 IPR,
H=0.394", 150 Units, Wet
Equipment : Vertical Machining Center
M/C (BT40)

Burr height : 0.18mm

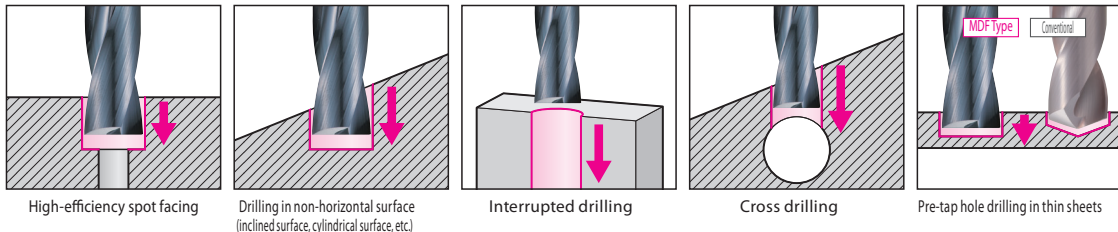
Flat MULTIDRILL MDF Type

Burr height : 0.44mm

Conv. general-purpose drill

Reduces exit burrs by half compared with general-purpose drills

Application



Recommended Cutting Conditions

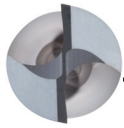
1. The recommended hole depth is 2 x Dc. The depth is measured from the highest point of the hole on drilling in inclined surfaces.
2. The recommended cutting conditions are those for drilling on flat horizontal surfaces.
3. Adjust the feed rate according to the inclination angle when drilling on an 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 (SFM) f: Feed Rate (IPR)

Drill Diameter øDc(mm)	Cutting Conditions	Soft Steel/General Steel (Up to 250HB)	Alloy Steel (Up to 300HB)	Hardened steel (Up to HRC50)	Stainless Steel (Up to 200HB)	Grey Cast Iron FC250	Ductile Cast Iron	Aluminum Alloy
~ ø.5	v _c (SFM)	100-130-160	100-115-130	50-65-85	50-65-85	100-130-160	65-100-130	200-260-330
	f (IPR)	.00016-.0002-.00024	.00016-.0002-.00024	.00004-.00008-.00012	.00012-.00016-.0002	.00016-.0002-.00024	.00004-.00012-.0002	.00012-.0002-.00028
~ ø1	v _c (SFM)	145-180-215	115-145-215	65-100-130	65-85-100	145-180-215	100-130-160	260-330-400
	f (IPR)	.0004-.0012-.0020	.0004-.0012-.0020	.00008-.00024-.0004	.0002-.00028-.0004	.0004-.0012-.0020	.0002-.0004-.0006	.0004-.0006-.0008
~ ø2	v _c (SFM)	160-200-230	130-160-200	65-100-130	65-100-130	160-200-230	145-180-215	295-360-430
	f (IPR)	.0008-.0012-.0016	.0008-.0012-.0016	.0004-.0007-.001	.0004-.0006-.0008	.0008-.0016-.0024	.0006-.0012-.0018	.0012-.002-.0028
~ ø4	v _c (SFM)	200-250-295	160-215-265	65-100-130	65-100-130	200-250-295	160-215-250	295-360-430
	f (IPR)	.0024-.0032-.004	0.002-0.0032-0.004	.0004-.0008-.0012	.0004-.0008-.0012	.0024-.0032-0.004	.0016-.0024-.0032	.0024-.0032-0.004
~ ø6	v _c (SFM)	200-250-295	160-215-265	65-100-130	65-100-160	200-250-295	200-230-265	295-360-430
	f (IPR)	0.002-0.004-0.006	0.002-0.004-0.006	.0016-.0024-.0032	.0012-.002-.0024	.002-.004-.006	.0024-.0035-.005	.002-.004-.006
~ ø8	v _c (SFM)	200-250-295	160-215-265	65-100-130	65-100-160	200-250-295	200-230-265	295-360-430
	f (IPR)	.004-.006-.008	.004-.006-.008	.0024-.0032-.004	.0016-.0024-.0032	.004-.006-.008	.004-.0047-.006	.004-.006-.008
~ ø10	v _c (SFM)	200-250-295	160-215-265	65-100-130	65-100-160	200-250-295	200-230-265	295-360-430
	f (IPR)	.0047-.0067-.0087	.0047-.0067-.0087	.0032-.004-.0047	.0024-.0032-.004	.0047-.0067-.0087	.0047-.006-.007	.0047-.0067-.0087
~ ø12	v _c (SFM)	200-250-295	160-215-265	65-100-130	65-100-160	200-250-295	200-230-265	295-360-430
	f (IPR)	.006-.008-.01	.006-.008-.01	.0047-.006-.007	.003-.004-.0047	.006-.008-.01	.006-.007-.008	.006-.008-.01
~ ø16	v _c (SFM)	200-250-295	160-215-265	65-100-130	65-100-160	200-250-295	200-230-265	295-360-430
	f (IPR)	.008-.01-.012	.008-.01-.012	.005-.0067-.008	.004-.006-.008	.0067-.0087-.011	.006-.008-.01	.008-.01-.012
~ ø20	v _c (SFM)	200-250-295	160-215-265	65-100-130	65-100-160	200-250-295	200-230-265	295-360-430
	f (IPR)	.01-.012-.014	.01-.012-.014	.006-.0075-.0087	.006-.008-.01	.008-.01-.012	.008-.01-.012	.01-.012-.014

Min. - Optimum - Max.





Flat Bottom Solid Carbide Drills

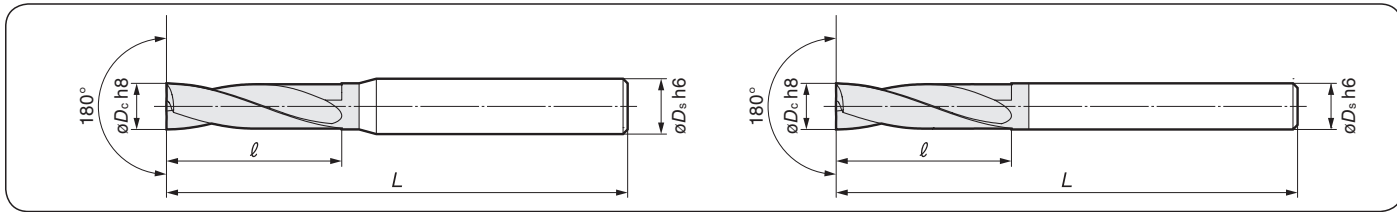
Flat MULTIDRILL

MDF Type



External Coolant Supply (MDF Type)

Carbon Steel	Alloy Steel	Tempered Steel	Hardened Steel	Stainless steel	Ti Alloy	Heat-treated steels	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper alloy	Composite CFRP	PVD Coat	2D
Up to 0.28%	From 0.28%	Steel	Up to 45HRC	From 40HRC									



● Diameter ø0.3 to ø7.0mm

Diameter øD _C (mm)	Shank øD _S (mm)	Cat. No.	Stock	Dimensions (mm)	
				L	ℓ
0.3	3.0	MDF0030S2D	★	40	1.0
0.4		MDF0040S2D	★		1.4
0.5	3.0	MDF0050S2D	★	40	2.0
0.6		MDF0060S2D	★		2.4
0.7	3.0	MDF0070S2D	★	40	2.8
0.8		MDF0080S2D	★		3.2
0.9	3.0	MDF0090S2D	★	40	3.6
1.0		MDF0100S2D	★		4.0
1.1	3.0	MDF0110S2D	★	45	4.4
1.2		MDF0120S2D	★		4.8
1.3	3.0	MDF0130S2D	★	45	5.2
1.4		MDF0140S2D	★		5.6
1.5	3.0	MDF0150S2D	★	45	6.0
1.6		MDF0160S2D	★		6.4
1.7	3.0	MDF0170S2D	★	45	6.8
1.8		MDF0180S2D	★		7.2
1.9	3.0	MDF0190S2D	★	45	7.6
2.0		MDF0200S2D	★		8.0
2.1	4.0	MDF0210S2D	★	50	8.4
2.2		MDF0220S2D	★		8.8
2.3	4.0	MDF0230S2D	★	50	9.2
2.4		MDF0240S2D	★		9.6
2.5	4.0	MDF 0250S2D	★	50	10.0
2.6		MDF0260S2D	★		10.4
2.7	4.0	MDF0270S2D	★	50	10.8
2.8		MDF0280S2D	★		11.2
2.9	4.0	MDF0290S2D	★	50	11.6
3.0		MDF0300S2D	★		12.0
3.1	6.0	MDF0310S2D	★	50	12.4
3.2		MDF0320S2D	★		12.8
3.3	6.0	MDF0330S2D	★	50	13.2
3.4		MDF0340S2D	★		13.6
3.5	6.0	MDF0350S2D	★	50	14.0
3.6		MDF0360S2D	★		14.4
3.7	6.0	MDF0370S2D	★	50	14.8
3.8		MDF0380S2D	★		15.2
3.9	6.0	MDF0390S2D	★	50	15.6
4.0		MDF0400S2D	★		16.0
4.1	6.0	MDF0410S2D	★	60	16.4
4.2		MDF0420S2D	★		16.8
4.3	6.0	MDF0430S2D	★	60	17.2
4.4		MDF0440S2D	★		17.6
4.5	6.0	MDF0450S2D	★	60	18.0
4.6		MDF0460S2D	★		18.4
4.7	6.0	MDF0470S2D	★	60	18.8
4.8		MDF0480S2D	★		19.2
4.9	6.0	MDF0490S2D	★	60	19.6
5.0		MDF0500S2D	★		20.0
5.1	6.0	MDF0510S2D	★	60	20.4
5.2		MDF0520S2D	★		20.8
5.3	6.0	MDF0530S2D	★	60	21.2
5.4		MDF0540S2D	★		21.6
5.5	6.0	MDF0550S2D	★	60	22.0
5.6		MDF0560S2D	★		22.4
5.7	6.0	MDF0570S2D	★	60	22.8
5.8		MDF0580S2D	★		23.2
5.9	6.0	MDF0590S2D	★	60	23.6
6.0		MDF0600S2D	★		24.0
6.1	8.0	MDF0610S2D	★	70	24.4
6.2		MDF0620S2D	★		24.8
6.3	8.0	MDF0630S2D	★	70	25.2
6.4		MDF0640S2D	★		25.6
6.5	8.0	MDF0650S2D	★	70	26.0
6.6		MDF0660S2D	★		26.4
6.7	8.0	MDF0670S2D	★	70	26.8
6.8		MDF0680S2D	★		27.2
6.9	8.0	MDF0690S2D	★	70	27.6
7.0		MDF0700S2D	★		28.0

● Diameter ø7.1 to ø20.0mm

Diameter øD _C (mm)	Shank øD _S (mm)	Cat. No.	Stock	Dimensions (mm)	
				L	ℓ
7.1	8.0	MDF0710S2D	★	70	28.4
7.2		MDF0720S2D	★		28.8
7.3	8.0	MDF0730S2D	★	70	29.2
7.4		MDF0740S2D	★		29.6
7.5	8.0	MDF0750S2D	★	70	30.0
7.6		MDF0760S2D	★		30.4
7.7	8.0	MDF0770S2D	★	70	30.8
7.8		MDF0780S2D	★		31.2
7.9	8.0	MDF0790S2D	★	70	31.6
8.0		MDF0800S2D	★		32.0
8.1	10.0	MDF0810S2D	★	80	32.4
8.2		MDF0820S2D	★		32.8
8.3	10.0	MDF0830S2D	★	80	33.2
8.4		MDF0840S2D	★		33.6
8.5	10.0	MDF0850S2D	★	80	34.0
8.6		MDF0860S2D	★		34.4
8.7	10.0	MDF0870S2D	★	80	34.8
8.8		MDF0880S2D	★		35.2
8.9	10.0	MDF0890S2D	★	80	35.6
9.0		MDF0900S2D	★		36.0
9.1	10.0	MDF0910S2D	★	80	36.4
9.2		MDF0920S2D	★		36.8
9.3	10.0	MDF0930S2D	★	80	37.2
9.4		MDF0940S2D	★		37.6
9.5	10.0	MDF0950S2D	★	80	38.0
9.6		MDF0960S2D	★		38.4
9.7	10.0	MDF0970S2D	★	80	38.8
9.8		MDF0980S2D	★		39.2
9.9	10.0	MDF0990S2D	★	80	39.6
10.0		MDF1000S2D	★		40.0
10.1	12.0	MDF1010S2D	★	90	40.4
10.2		MDF1020S2D	★		40.8
10.3	12.0	MDF1030S2D	★	90	41.2
10.4		MDF1040S2D	★		41.6
10.5	12.0	MDF1050S2D	★	90	42.0
10.6		MDF1060S2D	★		42.4
10.7	12.0	MDF1070S2D	★	90	42.8
10.8		MDF1080S2D	★		43.2
10.9	12.0	MDF1090S2D	★	90	43.6
11.0		MDF1100S2D	★		44.0
11.1	12.0	MDF1110S2D	★	90	44.4
11.2		MDF1120S2D	★		44.8
11.3	12.0	MDF1130S2D	★	90	45.2
11.4		MDF1140S2D	★		45.6
11.5	12.0	MDF1150S2D	★	90	46.0
11.6		MDF1160S2D	★		46.4
11.7	12.0	MDF1170S2D	★	90	46.8
11.8		MDF1180S2D	★		47.2
11.9	12.0	MDF1190S2D	★	90	47.6
12.0		MDF1200S2D	★		48.0
12.5	14.0	MDF1250S2D	★	100	50.0
13.0		MDF1300S2D	★		52.0
13.5	14.0	MDF1350S2D	★	110	54.0
14.0		MDF1400S2D	★		56.0
14.5	16.0	MDF1450S2D	★	110	58.0
15.0		MDF1400S2D	★		60.0
15.5	16.0	MDF1450S2D	★	115	62.0
16.0		MDF1500S2D	★		64.0
16.5	18.0	MDF1650S2D	★	125	66.0
17.0		MDF1700S2D	★		68.0
17.5	18.0	MDF1750S2D	★	130	70.0
18.0		MDF1800S2D	★		72.0
18.5	20.0	MDF1850S2D	★	140	74.0
19.0		MDF1900S2D	★		76.0
19.5	20.0	MDF1950S2D	★	140	78.0
20.0		MDF2000S2D	★		80.0

Grade: ACF75

★ - World Wide Warehouse Item

