

Solid carbide drill for hardened steel

MKE
SERIES UP

MIKE

Due to a small helix angle and a unique flute shape,
**Achieves high tool rigidity
and good chip
discharge.**

- Toughness and higher wear resistance.
- Punches even high-speed steel tools.



Miracle Coated VP15TF

Miracle coating displays high welding resistance therefore it can be used for machining a wide range of workpiece materials such as Plain steels, Mild steels, Low carbon steels and Stainless steels.

Solid carbide drill for hardened steel

MIKE

Features

Helix flute

Achieves high tool rigidity and good chip discharge due to a small helix angle and a unique flute shape.

Cutting edge

The same tough straight cutting edge is used as in previous series.

X Thinning

The X thinning enables easy initial cutting, which leads to high accuracy machining.

Three relief faces

Enables easy re-grinding due to the three rake cutting edge geometry.

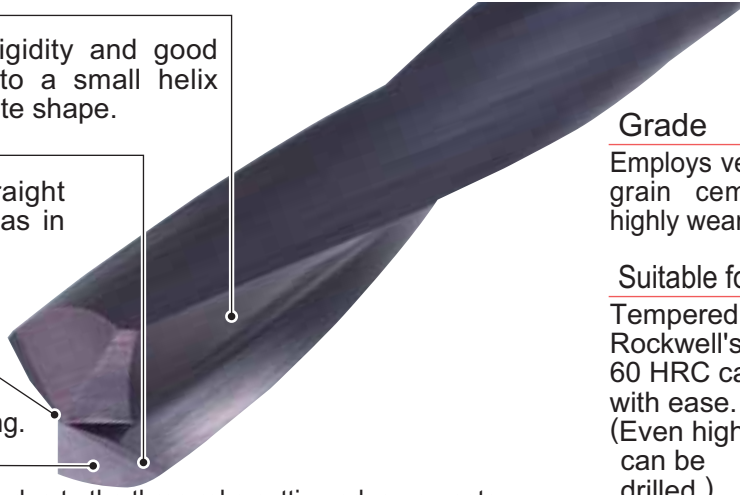
Grade

Employs very tough TF15 micro-grain cemented carbide and highly wear resistant VP coating.

Suitable for hardened steel

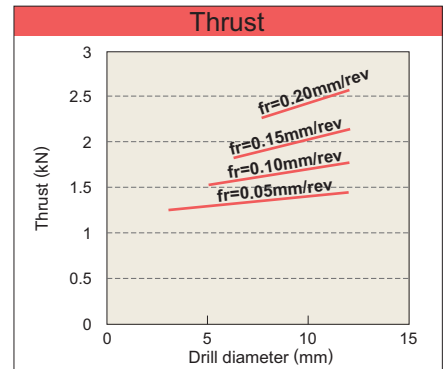
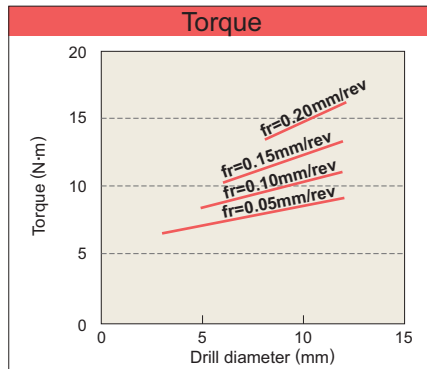
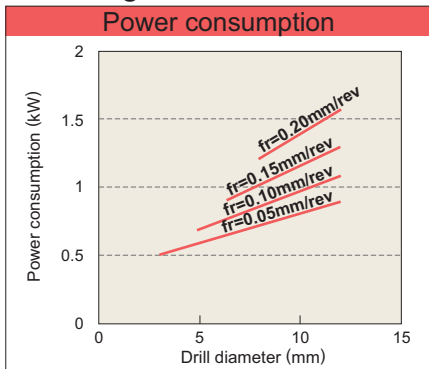
Tempered steel with a Rockwell's hardness up to 60 HRC can be machined with ease.

(Even high speed steel can be drilled.)

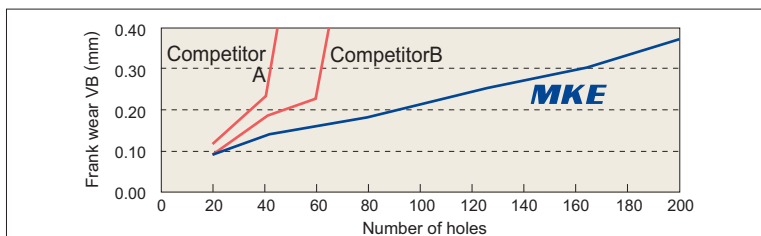
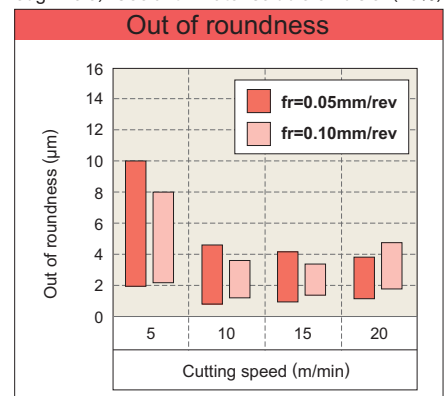
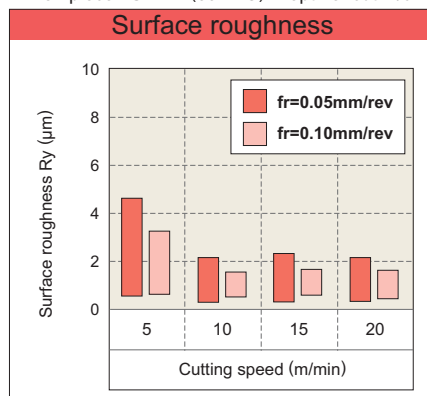
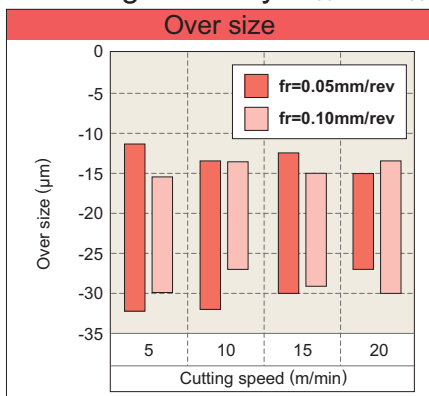


Cutting performance

● Cutting resistance Workpiece : SKD11(60HRC) Cutting speed : 10m/min Depth of cut : l/d=3(through hole) Coolant : Water soluble emulsion(10%)



● Cutting accuracy Tool : MKE1000MA Workpiece : SKD11(60HRC) Depth of cut : l/d=3(through hole) Coolant : Water soluble emulsion(10%)

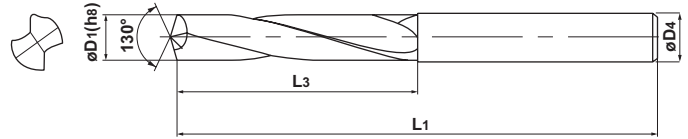


<Cutting conditions>

Tool : MKE1000MA
 Workpiece : SKD11 (60HRC)
 Cutting speed : 10m/min
 Feed : 0.05mm/rev
 Hole depth : 30mm (l/d=3) Blind hole
 Coolant : Water soluble emulsion (10%)

MKE

D1(h8)	D1≤3.0	3.0<D1≤6.0	6.0<D1≤10.0	10.0<D1≤18.0	18.0<D1≤30.0
Tolerance	0 -0.014	0 -0.018	0 -0.022	0 -0.027	0 -0.033



Drill dia. D1 (mm)	Depth (l/d)	Coolant	Stock VP15TF	Order number	Dimensions (mm)		
					D4	L1	L3
2.5	3	Ext.	●	MKE0250MA	2.5	55	20
2.6	3	Ext.	●	0260MA	2.6	55	20
2.7	3	Ext.	●	0270MA	2.7	55	20
2.8	3	Ext.	●	0280MA	2.8	60	21
2.9	3	Ext.	●	0290MA	2.9	60	21
3.0	3	Ext.	●	0300MA	3.0	60	21
3.1	3	Ext.	●	0310MA	3.1	60	24
3.2	3	Ext.	●	0320MA	3.2	60	24
3.3	3	Ext.	●	0330MA	3.3	60	24
3.4	3	Ext.	●	0340MA	3.4	60	24
3.5	3	Ext.	●	0350MA	3.5	60	24
3.6	3	Ext.	●	0360MA	3.6	60	27
3.7	3	Ext.	●	0370MA	3.7	60	27
3.8	3	Ext.	●	0380MA	3.8	60	27
3.9	3	Ext.	●	0390MA	3.9	60	27
4.0	3	Ext.	●	0400MA	4.0	60	27
4.1	3	Ext.	●	0410MA	4.1	63	29
4.2	3	Ext.	●	0420MA	4.2	63	29
4.3	3	Ext.	●	0430MA	4.3	63	29
4.4	3	Ext.	●	0440MA	4.4	63	29
4.5	3	Ext.	●	0450MA	4.5	63	29
4.6	3	Ext.	●	0460MA	4.6	68	32
4.7	3	Ext.	●	0470MA	4.7	68	32
4.8	3	Ext.	●	0480MA	4.8	68	32
4.9	3	Ext.	●	0490MA	4.9	68	32
5.0	3	Ext.	●	0500MA	5.0	68	32
5.1	3	Ext.	●	0510MA	5.1	72	34
5.2	3	Ext.	●	0520MA	5.2	72	34
5.3	3	Ext.	●	0530MA	5.3	72	34
5.4	3	Ext.	●	0540MA	5.4	72	34
5.5	3	Ext.	●	0550MA	5.5	72	34
5.6	3	Ext.	●	0560MA	5.6	74	36
5.7	3	Ext.	●	0570MA	5.7	74	36
5.8	3	Ext.	●	0580MA	5.8	74	36
5.9	3	Ext.	●	0590MA	5.9	74	36
6.0	3	Ext.	●	0600MA	6.0	81	41
6.1	3	Ext.	□	0610MA	6.1	81	41
6.2	3	Ext.	□	0620MA	6.2	81	41
6.3	3	Ext.	□	0630MA	6.3	81	41
6.4	3	Ext.	□	0640MA	6.4	81	41
6.5	3	Ext.	●	0650MA	6.5	81	41
6.6	3	Ext.	□	0660MA	6.6	83	43
6.7	3	Ext.	□	0670MA	6.7	83	43
6.8	3	Ext.	●	0680MA	6.8	83	43
6.9	3	Ext.	●	0690MA	6.9	83	43
7.0	3	Ext.	●	0700MA	7.0	83	43
7.1	3	Ext.	□	0710MA	7.1	87	45
7.2	3	Ext.	□	0720MA	7.2	87	45
7.3	3	Ext.	□	0730MA	7.3	87	45
7.4	3	Ext.	□	0740MA	7.4	87	45
7.5	3	Ext.	●	0750MA	7.5	87	45
7.6	3	Ext.	□	0760MA	7.6	90	48

Drill dia. D1 (mm)	Depth (l/d)	Coolant	Stock VP15TF	Order number	Dimensions (mm)		
					D4	L1	L3
7.7	3	Ext.	□	MKE0770MA	7.7	90	48
7.8	3	Ext.	□	0780MA	7.8	90	48
7.9	3	Ext.	□	0790MA	7.9	90	48
8.0	3	Ext.	●	0800MA	8.0	90	48
8.1	3	Ext.	□	0810MA	8.1	96	53
8.2	3	Ext.	□	0820MA	8.2	96	53
8.3	3	Ext.	□	0830MA	8.3	96	53
8.4	3	Ext.	□	0840MA	8.4	96	53
8.5	3	Ext.	●	0850MA	8.5	96	53
8.6	3	Ext.	●	0860MA	8.6	98	55
8.7	3	Ext.	□	0870MA	8.7	98	55
8.8	3	Ext.	□	0880MA	8.8	98	55
8.9	3	Ext.	□	0890MA	8.9	98	55
9.0	3	Ext.	●	0900MA	9.0	98	55
9.1	3	Ext.	□	0910MA	9.1	102	58
9.2	3	Ext.	□	0920MA	9.2	102	58
9.3	3	Ext.	□	0930MA	9.3	102	58
9.4	3	Ext.	□	0940MA	9.4	102	58
9.5	3	Ext.	●	0950MA	9.5	102	58
9.6	3	Ext.	□	0960MA	9.6	105	60
9.7	3	Ext.	□	0970MA	9.7	105	60
9.8	3	Ext.	□	0980MA	9.8	105	60
9.9	3	Ext.	□	0990MA	9.9	105	60
10.0	3	Ext.	●	1000MA	10.0	105	60
10.1	3	Ext.	□	1010MA	10.1	112	66
10.2	3	Ext.	□	1020MA	10.2	112	66
10.3	3	Ext.	●	1030MA	10.3	112	66
10.4	3	Ext.	●	1040MA	10.4	112	66
10.5	3	Ext.	●	1050MA	10.5	112	66
10.6	3	Ext.	□	1060MA	10.6	114	68
10.7	3	Ext.	□	1070MA	10.7	114	68
10.8	3	Ext.	□	1080MA	10.8	114	68
10.9	3	Ext.	□	1090MA	10.9	114	68
11.0	3	Ext.	●	1100MA	11.0	114	68
11.1	3	Ext.	□	1110MA	11.1	118	71
11.2	3	Ext.	□	1120MA	11.2	118	71
11.3	3	Ext.	□	1130MA	11.3	118	71
11.4	3	Ext.	□	1140MA	11.4	118	71
11.5	3	Ext.	●	1150MA	11.5	118	71
11.6	3	Ext.	□	1160MA	11.6	121	73
11.7	3	Ext.	□	1170MA	11.7	121	73
11.8	3	Ext.	□	1180MA	11.8	121	73
11.9	3	Ext.	□	1190MA	11.9	121	73
12.0	3	Ext.	●	1200MA	12.0	121	73
12.5	3	Ext.	●	1250MA	12.5	135	76
13.0	3	Ext.	●	1300MA	13.0	137	78
13.5	3	Ext.	●	1350MA	13.5	144	84
14.0	3	Ext.	●	1400MA	14.0	147	86
14.5	3	Ext.	●	1450MA	14.5	151	89
15.0	3	Ext.	●	1500MA	15.0	153	91
15.5	3	Ext.	●	1550MA	15.5	157	94
16.0	3	Ext.	●	1600MA	16.0	160	96



Recommended cutting conditions

Workpiece	Hardness	Drill diameter $\phi 2.5 - \phi 5.0$		Drill diameter $\phi 5.1 - \phi 10.0$		Drill diameter $\phi 10.1 - \phi 16.0$	
		Cutting speed (m/min)	Feed (mm/rev)	Cutting speed (m/min)	Feed (mm/rev)	Cutting speed (m/min)	Feed (mm/rev)
P Alloy steel High speed steel	50 - 55	15 (10 - 20)	0.08 (0.05 - 0.10)	20 (15 - 25)	0.12 (0.08 - 0.15)	25 (20 - 30)	0.15 (0.10 - 0.18)
	55 - 60	10 (5 - 15)	0.04 (0.02 - 0.06)	15 (10 - 20)	0.06 (0.04 - 0.08)	20 (10 - 25)	0.08 (0.05 - 0.12)

Application examples

Tool		MKE0300MA	MKE1000MA
Workpiece		JIS SKD11 (60HRC) 	JIS SKD11 (60HRC)
Component		Plate	Plate
Cutting conditions	Cutting speed (mm/min)	10	15
	Feed (mm/rev)	0.04	0.05
	Spindle speed (min ⁻¹)	1,060	477
	Table feed (mm/min)	42	24
Coolant		WSO	WSO
Results		● Tool life 	● Tool life

For Your Safety

●Don't touch breakers and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching chips or spare parts, please use the attached wrench or spanner. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc.



Overseas Operations Center :
Cutting Tools

KFC bldg., 7F, 1-6-1, Yokoami, Sumida-ku, Tokyo 130-0015, Japan
TEL 81-3-5819-8771 FAX 81-3-5819-8774

MMC HARTMETALL GmbH

Comeniusstr.2, 40670, Meerbusch GERMANY
TEL 49-2159-9189-0 FAX 49-2159-50462

MITSUBISHI MATERIALS U.S.A. CORPORATION
Headquarters

17401, Eastman Street, Irvine, California, 92614, USA
TEL 1-949-862-5100 FAX 1-949-862-5180

MMC METAL SINGAPORE PTE LTD.

10, Arumugam Road, #04-00 Lion Industrial Bldg., 409957, SINGAPORE
TEL 65-6743-9370 FAX 65-6749-1469

Mitsubishi Carbides Home page : <http://www.mitsubishicarbide.com>

(Tools specifications subject to change without notice.)