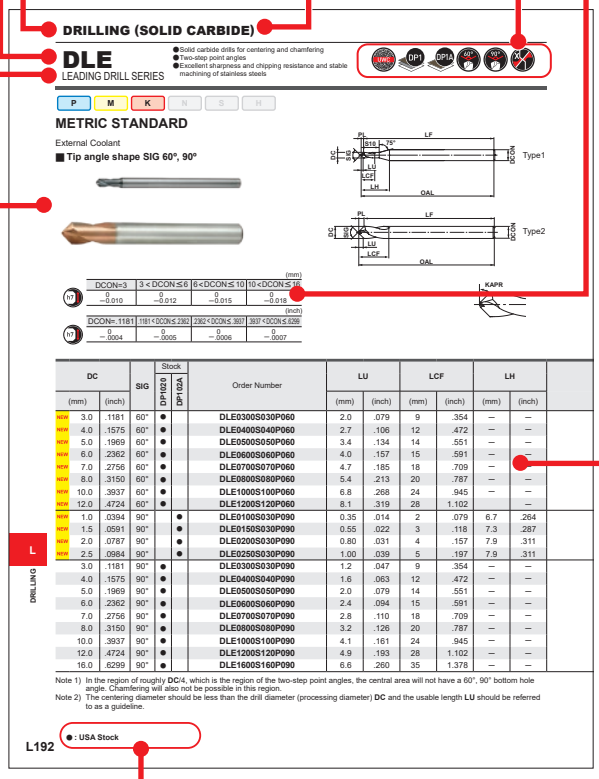
HOW TO READ THE STANDARD OF DRILLING TOOLS

●How this section page is organized

①Arranged in order of solid carbide drills, high-speed steel drills, indexable type drills and brazed type drills.

PHOTO OF PRODUCT
PRODUCT TITLE
PRODUCT CODE
PRODUCT SECTION
PRODUCT TYPE
PRODUCT INFORMATION ICONS
DIAMETER TOLERANCE GEOMETRY
SUITABLE WORKPIECE MATERIALS


DRILLING (SOLID CARBIDE)

DLE
LEADING DRILL SERIES

●Solid carbide drills for centering and chamfering
●Two-step point angles
●Excellent sharpness and chipping resistance and stable machining of stainless steels

P M K N S H

METRIC STANDARD

External Coolant

■ Tip angle shape SIG 60°, 90°

Type1

Type2

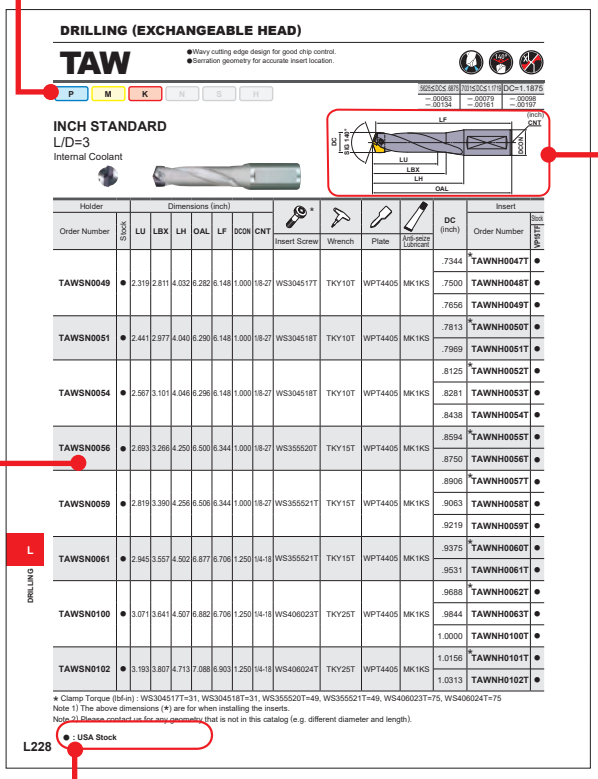
DC		SIG	Stock		Order Number	LU		LCF		LH	
(mm)	(inch)		DP100	DP100A		(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
3.0	.1181	60°	●		DLE0300S030P060	2.0	.079	9	.354	–	–
4.0	.1575	60°	●		DLE0400S040P060	2.7	.106	12	.472	–	–
5.0	.1969	60°	●		DLE0500S050P060	3.4	.134	14	.551	–	–
6.0	.2362	60°	●		DLE0600S060P060	4.0	.157	15	.591	–	–
7.0	.2756	60°	●		DLE0700S070P060	4.7	.185	18	.709	–	–
8.0	.3150	60°	●		DLE0800S080P060	5.4	.213	20	.787	–	–
10.0	.3937	60°	●		DLE1000S100P060	6.8	.268	24	.945	–	–
12.0	.4724	60°	●		DLE1200S120P060	8.1	.319	28	1.102		–
1.0	.0394	90°		●	DLE0100S030P090	0.35	.014	2	.079	6.7	.264
1.5	.0591	90°		●	DLE0150S030P090	0.55	.022	3	.118	7.3	.287
2.0	.0787	90°		●	DLE0200S030P090	0.80	.031	4	.157	7.9	.311
2.5	.0984	90°		●	DLE0250S030P090	1.00	.039	5	.197	7.9	.311
3.0	.1181	90°	●		DLE0300S030P090	1.2	.047	9	.354	–	–
4.0	.1575	90°	●		DLE0400S040P090	1.6	.063	12	.472	–	–
5.0	.1969	90°	●		DLE0500S050P090	2.0	.079	14	.551	–	–
6.0	.2362	90°	●		DLE0600S060P090	2.4	.094	15	.591	–	–
7.0	.2756	90°	●		DLE0700S070P090	2.8	.110	18	.709	–	–
8.0	.3150	90°	●		DLE0800S080P090	3.2	.126	20	.787	–	–
10.0	.3937	90°	●		DLE1000S100P090	4.1	.161	24	.945	–	–
12.0	.4724	90°	●		DLE1200S120P090	4.9	.193	28	1.102	–	–
16.0	.6299	90°	●		DLE1600S160P090	6.6	.260	35	1.378	–	–

Note 1) In the region of roughly DC/4, which is the region of the two-step point angles, the central area will not have a 60°, 90° bottom hole angle. Chamfering will also not be possible in this region.
Note 2) The centering diameter should be less than the drill diameter (processing diameter) DC and the usable length LU should be referred to as a guideline.

● : USA Stock

L192

L
DRILLING


DRILLING (EXCHANGEABLE HEAD)

TAW

●Wavy cutting edge design for good chip control.
●Serration geometry for accurate insert location.

P M K N S H

INCH STANDARD
L/D=3
Internal Coolant

Holder		Dimensions (inch)										Insert	
Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	CNT	Insert Screw	Wrench	Plate	Anti-seize Lubricant	DC (inch)	Order Number	Toss (APMT)
TAWSN0049	●	2.319	2.811	4.032	6.282	6.148	1.000	1/8-27	WS30451?T	TKY10T	WPT4405	MK1KS	.7344	*TAWNH0047T	●
													.7500	TAWNH0048T	●
													.7656	TAWNH0049T	●
TAWSN0051	●	2.441	2.977	4.040	6.290	6.148	1.000	1/8-27	WS30451?T	TKY10T	WPT4405	MK1KS	.7813	*TAWNH0050T	●
													.7969	TAWNH0051T	●
TAWSN0054	●	2.567	3.101	4.046	6.296	6.148	1.000	1/8-27	WS30451?T	TKY10T	WPT4405	MK1KS	.8125	*TAWNH0052T	●
													.8281	TAWNH0053T	●
													.8438	TAWNH0054T	●
TAWSN0056	●	2.693	3.266	4.250	6.500	6.344	1.000	1/8-27	WS355520T	TKY15T	WPT4405	MK1KS	.8594	*TAWNH0055T	●
													.8750	TAWNH0056T	●
TAWSN0059	●	2.819	3.390	4.256	6.506	6.344	1.000	1/8-27	WS355521T	TKY15T	WPT4405	MK1KS	.8906	*TAWNH0057T	●
													.9063	TAWNH0058T	●
													.9219	TAWNH0059T	●
TAWSN0061	●	2.945	3.557	4.502	6.877	6.706	1.250	1/4-18	WS355521T	TKY15T	WPT4405	MK1KS	.9375	*TAWNH0060T	●
													.9531	TAWNH0061T	●
TAWSN0100	●	3.071	3.641	4.507	6.882	6.706	1.250	1/4-18	WS406023T	TKY25T	WPT4405	MK1KS	.9688	*TAWNH0062T	●
													.9844	TAWNH0063T	●
													1.0000	TAWNH0100T	●
TAWSN0102	●	3.193	3.807	4.713	7.088	6.903	1.250	1/4-18	WS406024T	TKY25T	WPT4405	MK1KS	1.0156	*TAWNH0101T	●
													1.0313	TAWNH0102T	●

★ Clamp Torque (lbf-in) : WS30451?T=31, WS30451?T=31, WS355520T=49, WS355521T=49, WS406023T=75, WS406024T=75
Note 1) The above dimensions (★) are for when installing the inserts.
Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

● : USA Stock

L228

L
DRILLING

PRODUCT STANDARDS
indicates diameters, order numbers, stock status,numbers of teeth, dimensions, and spare parts for the title product.

LEGEND FOR STOCK STATUS MARK

●To Order : For solid-carbide or brazed drills, please specify order number and grade.
For indexable type drills, please specify order number for the drill.
For indexable type drill inserts, please specify insert number and insert grade.

DRILLING

IDENTIFICATION L002
SYMBOL DESCRIPTIONS L003
DRILLS SELECTION CHART L004

DRILL STANDARD

SOLID CARBIDE

NEW DVAS DRILLS L008
MICRO-MVS DRILLS L016
MVE/MVS DRILLS L022
MICRO-MWS DRILLS L092
MMS DRILLS L108
MHS DRILLS L120
MNS DRILLS L140
MAE/MAS DRILLS L150
MSE DRILLS L158
MSP DRILLS L162
MICRO-MGS DRILLS (SOLID GUN DRILLS) L164
MHE (DRILLS FOR WHEEL HUB) L167
DSAS/DSAE DRILLS L168
NEW DWAE DRILLS L175
MFE DRILLS L183
DLE DRILLS L192

EXCHANGEABLE HEAD

STAW DRILLS L219
TAW DRILLS L228

INDEXABLE TYPE

MVX DRILLS L199

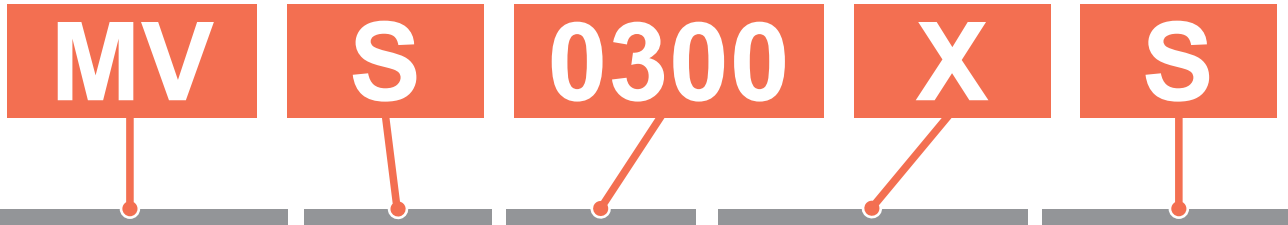
*Arranged by Alphabetical order

L192 **DLE (METRIC)**
L168 **DSAE (METRIC)**
L168 **DSAS (INCH/METRIC)**
L008 **DVAS (Mini, METRIC)**
L175 **DWAE (Mini, METRIC)**
L176 **DWAE (METRIC)**
L152 **MAE (METRIC)**
L150 **MAS (INCH)**
L152 **MAS (METRIC)**
L183 **MFE (INCH/METRIC)**
L165 **MGD (INCH)**
L164 **MGS (MICRO, METRIC)**
L167 **MHE**
L120 **MHS (METRIC)**
L108 **MMS (INCH/METRIC)**
L140 **MNS (METRIC)**
L158 **MSE (METRIC)**
L162 **MSP (METRIC)**
L022 **MVE (INCH/METRIC)**
L022 **MVS (INCH/METRIC)**
L016 **MVS (MICRO, INCH/METRIC)**
L199 **MVX (INCH)**
L204 **MVX (METRIC)**
L092 **MWS (MICRO, INCH/METRIC)**
L219 **STAW (INCH)**
L221 **STAW (METRIC)**
L228 **TAW (INCH)**
L234 **TAW (METRIC)**

IDENTIFICATION

PRODUCT CODE OF DRILLS

SOLID DRILLS



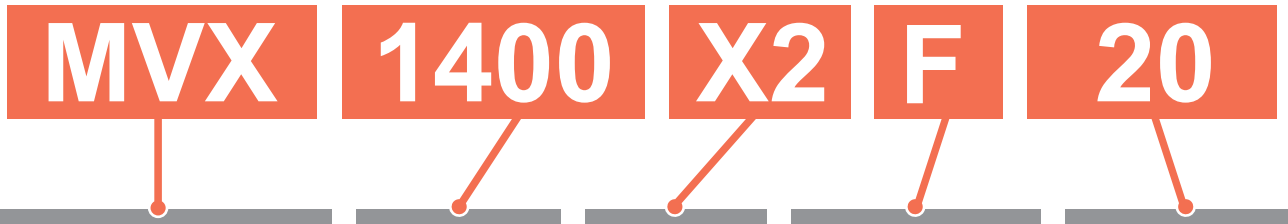
Applications	Coolant	Diameter	L/D	Type of Shank
DVA : General Purpose **DWA** : Swiss-Type Automatic and Small CNC Lathes **DSA** : For Heat Resistant Super Alloys **MV** : General Purpose **MF** : Solid Carbide Flat Bottom **MG** : Micro Solid Carbide Gun Drill **MS** : For Small Diameter Machining **MN** : For Machining of Aluminum Alloys **MH** : For Hardened Steel Alloys **MM** : For Machining of Stainless Steel **DL** : For Centering and Chamfering **MA** : For Aluminum Cast Iron High Precision Hole Machining	**E** : External Coolant **S** : Internal Coolant	**ex.** 0050 → ϕ0.5mm 0300 → ϕ3.0mm	**S** : 2D **M** : 3D **L** : 5D (MAE, MAS : 6D) **X** : 12D **X＊＊D** : ＊＊D	**A** : Straight Shank **B** : Integral Shank **S＊＊＊** : Shank Diameter

＊Other special types can be ordered.

INDEXABLE DRILLS

INCH

METRIC



Product Name	Diameter	L/D	Coolant Type	Shank Size
	ex. 0562 → ϕ.562" 1400 → ϕ14mm	**X2** : 2D **X3** : 3D **X4** : 4D	**C** : Screw Type **F** : General Type	075 → ϕ.750" 20 → ϕ20mm

SYMBOL DESCRIPTIONS

Tool Material

Ultra Micro Grain Carbide
Ultra micro grain carbide is used as the substrate material.

Web Thinning

X Web Thinning
X web thinning is used at the drill point.

Z Web Thinning
Z web thinning is used at the drill point.

XR Web Thinning
XR web thinning is used at the drill point.

N Web Thinning
N web thinning is used at the drill point.

Tolerance

Drill Diameter Tolerance

Shank Diameter Tolerance

Coolant Hole

Coolant Hole

Coating

PVD Coating
DP102A is a PVD coated cemented carbide grade specialized for small diameter drills, with greatly improved wear resistance.

PVD Coating
Exhibits outstanding wear resistance with a wide range of workpiece materials including mild steel, carbon steel, alloy steel, stainless steel, cast iron-based materials, and aluminum alloy.

PVD Coating
An ultra micro-grain cemented carbide optimal for stainless steel, and a PVD coating with outstanding heat resistance and lubricity.

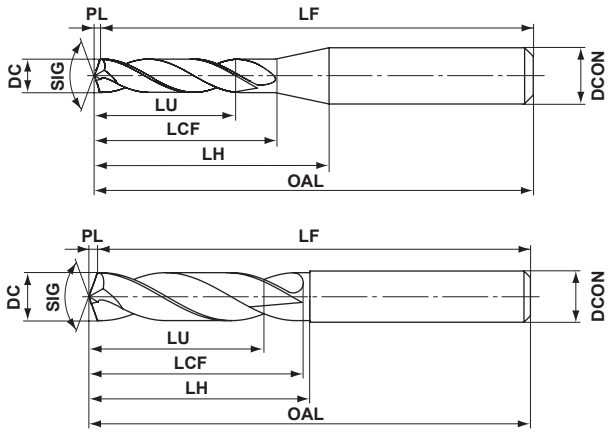
PVD Coating
New grade with increased hardness that exhibits both high wear and fracture resistance, leading to longer tool life when machining heat resistant alloys.

MIRACLE Coating
The original Miracle (Al,Ti)N coating.
Also suitable for dry cutting.

Angle

Point Angle (SIG)
Indicates drill point angle at the tip.
* The icon shown is an example only.

GUIDE FOR ISO13399 SYMBOLS



Symbol	Content
DC	Cutting diameter
SIG	Point angle
LU	Usable length
LCF	Length chip flute
LH	Reduced body diameter length
OAL	Overall length
LF	Functional length
PL	Point length
DCON	Connection diameter

*There are exceptions other than those listed above. For more details, please refer to the technical data (page N002).

DRILLS SELECTION CHART

Drill Structure	Category	Drill Type	Product Code	Coolant	L/D INCH	L/D METRIC	Range of Size	Workpiece Materials P: Carbon Steel Alloy Steel	M: Stainless Steel	K: Cast Iron	N: Light Alloy	S: Heat resistant Alloy	H: Hardened Steel	Page: Dimensions	Page: Cutting Conditions	Shape
Solid Carbide	Micro Size Hole (≤ϕ.1200", ϕ2.95mm)	Small Diameter	NEW **DVAS**	Internal	2 7 12 20 25 30 40 50	2 7 12 20 25 30 40 50	**INCH** ϕ.0394"—ϕ.1142" **METRIC** ϕ1.0—ϕ2.9 mm	◎	◎	○	○	◎		L008	L015	
		New Generation for small diameter	**MVS**	Internal	2 7 12 20 25 30	2 7 12 20 25 30	**INCH** ϕ.0394"—ϕ.1142" **METRIC** ϕ1.0—ϕ2.9 mm	◎	◎	◎	○	○		L016	L085	
		General Use	**MWS**	Internal	1 5 12	1 5 12 20 25 30	**INCH** ϕ.0197"—ϕ.1161" **METRIC** ϕ0.5—ϕ2.95 mm	◎	◎	◎	○	○		L092	L103	
			MSE	External	—	5	**METRIC** ϕ0.1—ϕ0.99 mm	◎	○	◎	○	○		L158	L159	
		Starter Drill for MSE Type	**MSP**	External	—	—	**METRIC** ϕ0.1—ϕ3.0 mm	◎	○	◎	○	○		L162	L162	
	General Size Hole (≥ϕ.1200", ϕ3.0mm)	New Generation	**MVE**	External	2 3	2 3	**INCH** ϕ.1181"—ϕ.7874" **METRIC** ϕ3.0—ϕ20.0 mm	◎	○	◎	○	○	○	L022	L085	
			MVS	Internal	3 5 8 10 15 20 25 30 35 40	3 5 8 10 15 20 25 30 35 40	**INCH** ϕ.1181"—ϕ.7874" **METRIC** ϕ3.0—ϕ20.0 mm	◎	◎	◎	○	○		L022	L085	
	Deep Hole (≥ L/D 10)	Solid Gun Drill	**MGS**	Internal	—	20 I 80	**METRIC** ϕ0.7—ϕ3.0 mm	◎	◎	◎	◎			L164	L165	

Drill Structure	Category	Drill Type	Product Code	Coolant	L/D		Range of Size	Workpiece Materials						Page		Shape
								P	M	K	N	S	H			
					INCH	METRIC		Carbon Steel Alloy Steel	Stainless Steel	Cast Iron	Light Alloy	Heat resistant Alloy	Hardened Steel	Dimensions	Cutting Conditions	
Solid Carbide	Stainless Steel	2 coolant holes	**MMS**	Internal	—	3 5	**INCH** ϕ.1181"—ϕ.7874" **METRIC** ϕ3.0—ϕ20.0 mm		◎					L108	L117	
	Aluminum or Cast Iron	Helix Angle (10°)	**MAE**	External	—	3	**METRIC** ϕ3.0—ϕ16.0 mm			○	◎			L152	L157	
			MAS	Internal	3	3 6	**INCH** ϕ.1250"—ϕ.7812" **METRIC** ϕ3.0—ϕ16.0 mm			○	◎			L150 L152	L151 L157	
	Aluminum	4 coolant holes	**MNS**	Internal	—	5 10 20 30	**METRIC** ϕ3.0—ϕ14.0 mm				◎			L140	L145	
	Hardened Steel	General Use	**MHS**	Internal	—	1 — 30	**METRIC** ϕ0.95—ϕ12.0 mm	○	○			○	◎	L120	L136	
	Wheel Hub	Low Cutting Resistance	**MHE**	External	1	—	**INCH** ϕ.3937"—ϕ.5906"	◎						L167	L167	
	Heat Resistant Alloy	—	**DSAE**	External	3	3	**INCH** ϕ.1181"—ϕ.4724" **METRIC** ϕ3.0—ϕ12.0 mm					◎		L168	L174	
			DSAS	Internal	3	3 5	**INCH** ϕ.1181"—ϕ.5906" **METRIC** ϕ3.0—ϕ15.0 mm					◎		L168	L174	
	Swiss-Type Automatic and Small CNC Lathes	—	NEW Mini Size **DWAE**	External	2 4	2 4	**INCH** ϕ.0394"—ϕ.1142" **METRIC** ϕ1.0—ϕ2.9 mm	◎	◎	◎				L175	L181	
		—	NEW **DWAE**	External	2 4	2 4	**INCH** ϕ.1181"—ϕ.5512" **METRIC** ϕ3.0—ϕ14.0 mm	◎	◎	◎				L176	L181	

Drill Structure	Category	Drill Type	Product Code	Coolant	L/D		Range of Size	Workpiece Materials						Page		Shape
								P	M	K	N	S	H			
					INCH	METRIC		Carbon Steel Alloy Steel	Stainless Steel	Cast Iron	Light Alloy	Heat resistant Alloy	Hardened Steel	Dimensions	Cutting Conditions	
Solid Carbide	—	Flat Bottom	Small Diameter **MFE**	External	2	2	**INCH** ϕ.0295"—ϕ.1161" **METRIC** ϕ0.75—ϕ2.95 mm	◎	◎	◎	○			L183	L189	
			MFE	External	2	2	**INCH** ϕ.1181"—ϕ.7874" **METRIC** ϕ3.0—ϕ20.0 mm	◎	◎	◎	○			L185	L189	
	—	Leading Drills	**DLE**	External	—	—	**INCH** ϕ.1181"—ϕ.6299" **METRIC** ϕ3.0—ϕ16.0 mm	◎	◎	◎				L192	L197	
Exchangeable Head	General Use	Indexable Head	**STAW**	Internal	1.5 3 5 8	1.5 3 5 8	**INCH** ϕ.3906"—ϕ.7188" **METRIC** ϕ10.0—ϕ18.4 mm	◎	○	◎				L219 L201	L226	
			TAW	Internal	3 5 8	3 5 8	**INCH** ϕ.7344"—ϕ1.1875" **METRIC** ϕ18.5—ϕ30.0 mm	◎	○	◎				L228 L234	L236	
Indexable	New Generation	Multi-corner Insert	**MVX**	Internal	2 — 6	2 — 6	**INCH** ϕ.5620"—ϕ2.5000" **METRIC** ϕ14.0—ϕ63.0 mm	◎	○	◎	○		○	L199 L204	L213	

Memo

DVAS Mini Size NEW

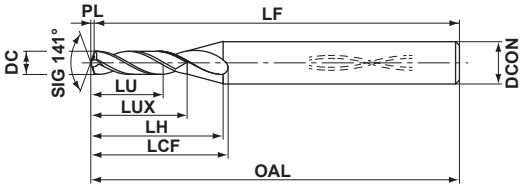
TRISTAR Drills

UWC DP1 141° L/D=2 139° L/D>2 XR

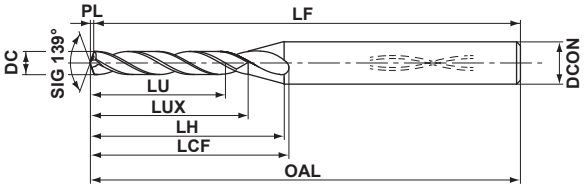
P M K N S H

METRIC STANDARD

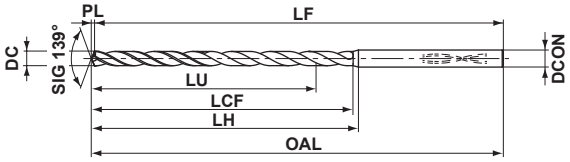
Internal Coolant



Type1



Type2



Type3

L/D=2	L/D>2
.00024 − .00016	0 − .00039
DCON=4	
0 − .00031	

DC Metric (mm)	DC Decimal (inch)	DC Fraction (inch)	Wire / Letter	Thread Size	L/D	Stock DP1120	Order Number	LU mm	LU inch	LUX mm	LUX inch	LCF mm	LCF inch	LH mm	LH inch	OAL mm	OAL inch	LF mm	LF inch	PL mm	PL inch	DCON mm	DCON inch	Type
1.0	.0394				2	●	DVAS0100X02S040	2.2	.087	3.2	.126	8.6	.339	8.8	.346	50	1.969	49.8	1.961	0.2	.008	4	.157	1
					7	●	DVAS0100X07S040	7.2	.283	8.2	.323	13.6	.535	13.8	.543	55	2.165	54.8	2.157	0.2	.008	4	.157	2
					12	●	DVAS0100X12S040	12.2	.480	13.2	.520	18.6	.732	18.8	.740	58	2.283	57.8	2.276	0.2	.008	4	.157	2
					20	●	DVAS0100X20S040	20.2	.795	–	–	23.2	.913	28.8	1.134	67	2.638	66.8	2.630	0.2	.008	4	.157	3
					25	●	DVAS0100X25S040	25.2	.992	–	–	28.2	1.110	33.8	1.331	73	2.874	72.8	2.866	0.2	.008	4	.157	3
					30	●	DVAS0100X30S040	30.2	1.189	–	–	33.2	1.307	38.8	1.528	79	3.110	78.8	3.102	0.2	.008	4	.157	3
					40	●	DVAS0100X40S040	40.2	1.583	–	–	43.2	1.701	48.8	1.921	90	3.543	89.8	3.535	0.2	.008	4	.157	3
					50	●	DVAS0100X50S040	50.2	1.976	–	–	53.2	2.094	58.8	2.315	102	4.016	101.8	4.008	0.2	.008	4	.157	3
1.1	.0433				2	●	DVAS0110X02S040	2.4	.094	3.5	.138	9	.354	8.9	.350	50	1.969	49.8	1.961	0.2	.008	4	.157	1
					7	●	DVAS0110X07S040	7.9	.311	9.1	.358	14.5	.571	14.4	.567	55	2.165	54.8	2.157	0.2	.008	4	.157	2
					12	●	DVAS0110X12S040	13.4	.528	14.6	.575	20	.787	19.9	.783	58	2.283	57.8	2.276	0.2	.008	4	.157	2
					20	●	DVAS0110X20S040	22.2	.874	–	–	25.5	1.004	30.9	1.217	67	2.638	66.8	2.630	0.2	.008	4	.157	3
					25	●	DVAS0110X25S040	27.7	1.091	–	–	31	1.220	36.4	1.433	73	2.874	72.8	2.866	0.2	.008	4	.157	3
					30	●	DVAS0110X30S040	33.2	1.307	–	–	36.5	1.437	41.9	1.650	79	3.110	78.8	3.102	0.2	.008	4	.157	3
					40	★	DVAS0110X40S040	44.2	1.740	–	–	47.5	1.870	52.9	2.083	90	3.543	89.8	3.535	0.2	.008	4	.157	3
1.2	.0472				2	●	DVAS0120X02S040	2.6	.102	3.9	.154	9.4	.370	9	.354	50	1.969	49.8	1.961	0.2	.008	4	.157	1
					7	●	DVAS0120X07S040	8.6	.339	9.9	.390	15.4	.606	15	.591	55	2.165	54.8	2.157	0.2	.008	4	.157	2
					12	●	DVAS0120X12S040	14.6	.575	15.9	.626	21.4	.843	21	.827	60	2.362	59.8	2.354	0.2	.008	4	.157	2
					20	●	DVAS0120X20S040	24.2	.953	–	–	27.8	1.094	33	1.299	71	2.795	70.8	2.787	0.2	.008	4	.157	3
					25	●	DVAS0120X25S040	30.2	1.189	–	–	33.8	1.331	39	1.535	77	3.031	76.8	3.024	0.2	.008	4	.157	3
					30	●	DVAS0120X30S040	36.2	1.425	–	–	39.8	1.567	45	1.772	84	3.307	83.8	3.299	0.2	.008	4	.157	3
					40	●	DVAS0120X40S040	48.2	1.898	–	–	51.8	2.039	57	2.244	97	3.819	96.8	3.811	0.2	.008	4	.157	3
					50	●	DVAS0120X50S040	60.2	2.370	–	–	63.8	2.512	69	2.717	110	4.331	109.8	4.323	0.2	.008	4	.157	3

● : USA Stock ★ : Stocked in Japan

DC					L/D	Stock	Order Number	LU		LUX		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1120		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1.3	.0512				2	●	DVAS0130X02S040	2.8	.110	4.2	.165	9.9	.390	9.2	.362	50	1.969	49.8	1.961	0.2	.008	4	.157	1
					7	●	DVAS0130X07S040	9.3	.366	10.7	.421	16.4	.646	15.7	.618	55	2.165	54.8	2.157	0.2	.008	4	.157	2
					12	●	DVAS0130X12S040	15.8	.622	17.2	.677	22.9	.902	22.2	.874	60	2.362	59.8	2.354	0.2	.008	4	.157	2
					20	●	DVAS0130X20S040	26.2	1.031	–	–	30.1	1.185	35.2	1.386	71	2.795	70.8	2.787	0.2	.008	4	.157	3
					25	●	DVAS0130X25S040	32.7	1.287	–	–	36.6	1.441	41.7	1.642	77	3.031	76.8	3.024	0.2	.008	4	.157	3
					30	●	DVAS0130X30S040	39.2	1.543	–	–	43.1	1.697	48.2	1.898	84	3.307	83.8	3.299	0.2	.008	4	.157	3
					40	●	DVAS0130X40S040	52.2	2.055	–	–	56.1	2.209	61.2	2.409	97	3.819	96.8	3.811	0.2	.008	4	.157	3
					50	●	DVAS0130X50S040	65.2	2.567	–	–	69.1	2.720	74.2	2.921	110	4.331	109.8	4.323	0.2	.008	4	.157	3
1.4	.0551				2	●	DVAS0140X02S040	3	.118	4.5	.177	10.3	.406	9.3	.366	50	1.969	49.8	1.961	0.2	.008	4	.157	1
					7	●	DVAS0140X07S040	10.1	.398	11.5	.453	17.3	.681	16.3	.642	55	2.165	54.7	2.154	0.3	.012	4	.157	2
					12	●	DVAS0140X12S040	17.1	.673	18.5	.728	24.3	.957	23.3	.917	63	2.480	62.7	2.469	0.3	.012	4	.157	2
					20	●	DVAS0140X20S040	28.3	1.114	–	–	32.5	1.280	37.3	1.469	75	2.953	74.7	2.941	0.3	.012	4	.157	3
					25	●	DVAS0140X25S040	35.3	1.390	–	–	39.5	1.555	44.3	1.744	82	3.228	81.7	3.217	0.3	.012	4	.157	3
					30	●	DVAS0140X30S040	42.3	1.665	–	–	46.5	1.831	51.3	2.020	90	3.543	89.7	3.531	0.3	.012	4	.157	3
					40	★	DVAS0140X40S040	56.3	2.217	–	–	60.5	2.382	65.3	2.571	105	4.134	104.7	4.122	0.3	.012	4	.157	3
1.5	.0591			#1-64	2	●	DVAS0150X02S040	3.3	.130	4.8	.189	10.7	.421	9.4	.370	50	1.969	49.7	1.957	0.3	.012	4	.157	1
					7	●	DVAS0150X07S040	10.8	.425	12.3	.484	18.2	.717	16.9	.665	55	2.165	54.7	2.154	0.3	.012	4	.157	2
					12	●	DVAS0150X12S040	18.3	.720	19.8	.780	25.7	1.012	24.4	.961	63	2.480	62.7	2.469	0.3	.012	4	.157	2
					20	●	DVAS0150X20S040	30.3	1.193	–	–	34.8	1.370	39.4	1.551	75	2.953	74.7	2.941	0.3	.012	4	.157	3
					25	●	DVAS0150X25S040	37.8	1.488	–	–	42.3	1.665	46.9	1.846	82	3.228	81.7	3.217	0.3	.012	4	.157	3
					30	●	DVAS0150X30S040	45.3	1.783	–	–	49.8	1.961	54.4	2.142	90	3.543	89.7	3.531	0.3	.012	4	.157	3
					40	●	DVAS0150X40S040	60.3	2.374	–	–	64.8	2.551	69.4	2.732	105	4.134	104.7	4.122	0.3	.012	4	.157	3
					50	●	DVAS0150X50S040	75.3	2.965	–	–	79.8	3.142	84.4	3.323	120	4.724	119.7	4.713	0.3	.012	4	.157	3
1.6	.0630				2	●	DVAS0160X02S040	3.5	.138	5.1	.201	11.1	.437	9.6	.378	50	1.969	49.7	1.957	0.3	.012	4	.157	1
					7	●	DVAS0160X07S040	11.5	.453	13.1	.516	19.2	.756	17.6	.693	57	2.244	56.7	2.232	0.3	.012	4	.157	2
					12	●	DVAS0160X12S040	19.5	.768	21.1	.831	27.2	1.071	25.6	1.008	66	2.598	65.7	2.587	0.3	.012	4	.157	2
					20	●	DVAS0160X20S040	32.3	1.272	–	–	37.1	1.461	41.6	1.638	79	3.110	78.7	3.098	0.3	.012	4	.157	3
					25	●	DVAS0160X25S040	40.3	1.587	–	–	45.1	1.776	49.6	1.953	88	3.465	87.7	3.453	0.3	.012	4	.157	3
					30	●	DVAS0160X30S040	48.3	1.902	–	–	53.1	2.091	57.6	2.268	99	3.898	98.7	3.886	0.3	.012	4	.157	3
					40	★	DVAS0160X40S040	64.3	2.531	–	–	69.1	2.720	73.6	2.898	113	4.449	112.7	4.437	0.3	.012	4	.157	3
1.7	.0669				2	●	DVAS0170X02S040	3.7	.146	5.5	.217	11.6	.457	9.7	.382	50	1.969	49.7	1.957	0.3	.012	4	.157	1
					7	●	DVAS0170X07S040	12.2	.480	14	.551	20.1	.791	18.2	.717	57	2.244	56.7	2.232	0.3	.012	4	.157	2
					12	●	DVAS0170X12S040	20.7	.815	22.5	.886	28.6	1.126	26.7	1.051	66	2.598	65.7	2.587	0.3	.012	4	.157	2
					20	●	DVAS0170X20S040	34.3	1.350	–	–	39.4	1.551	43.7	1.720	79	3.110	78.7	3.098	0.3	.012	4	.157	3
					25	●	DVAS0170X25S040	42.8	1.685	–	–	47.9	1.886	52.2	2.055	88	3.465	87.7	3.453	0.3	.012	4	.157	3
					30	●	DVAS0170X30S040	51.3	2.020	–	–	56.4	2.220	60.7	2.390	99	3.898	98.7	3.886	0.3	.012	4	.157	3
					40	●	DVAS0170X40S040	68.3	2.689	–	–	73.4	2.890	77.7	3.059	113	4.449	112.7	4.437	0.3	.012	4	.157	3
1.8	.0709				2	●	DVAS0180X02S040	3.9	.154	5.8	.228	12	.472	9.8	.386	50	1.969	49.7	1.957	0.3	.012	4	.157	1
					7	●	DVAS0180X07S040	12.9	.508	14.8	.583	21	.827	18.8	.740	59	2.323	58.7	2.311	0.3	.012	4	.157	2
					12	●	DVAS0180X12S040	21.9	.862	23.8	.937	30	1.181	27.8	1.094	69	2.717	68.7	2.705	0.3	.012	4	.157	2
					20	●	DVAS0180X20S040	36.3	1.429	–	–	41.7	1.642	45.8	1.803	84	3.307	83.7	3.295	0.3	.012	4	.157	3
					25	●	DVAS0180X25S040	45.3	1.783	–	–	50.7	1.996	54.8	2.157	94	3.701	93.7	3.689	0.3	.012	4	.157	3
					30	●	DVAS0180X30S040	54.3	2.138	–	–	59.7	2.350	63.8	2.512	104	4.094	103.7	4.083	0.3	.012	4	.157	3
					40	●	DVAS0180X40S040	72.3	2.846	–	–	77.7	3.059	81.8	3.220	123	4.843	122.7	4.831	0.3	.012	4	.157	3
1.9	.0748				2	●	DVAS0190X02S040	4.1	.161	6.1	.240	12.4	.488	10	.394	50	1.969	49.7	1.957	0.3	.012	4	.157	1
					7	●	DVAS0190X07S040	13.7	.539	15.6	.614	21.9	.862	19.5	.768	59	2.323	58.6	2.307	0.4	.016	4	.157	2
					12	●	DVAS0190X12S040	23.2	.913	25.1	.988	31.4	1.236	29	1.142	69	2.717	68.6	2.701	0.4	.016	4	.157	2
					20	●	DVAS0190X20S040	38.4	1.512	–	–	44.1	1.736	48	1.890	84	3.307	83.6	3.291	0.4	.016	4	.157	3
					25	●	DVAS0190X25S040	47.9	1.886	–	–	53.6	2.110	57.5	2.264	94	3.701	93.6	3.685	0.4	.016	4	.157	3
					30	●	DVAS0190X30S040	57.4	2.260	–	–	63.1	2.484	67	2.638	104	4.094	103.6	4.079	0.4	.016	4	.157	3
					40	●	DVAS0190X40S040	76.4	3.008	–	–	82.1	3.232	86	3.386	123	4.843	122.6	4.827	0.4	.016	4	.157	3

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L012
CUTTING CONDITIONS ➤ L015

DVAS Mini Size

TRISTAR Drills

DC					L/D	Stock	Order Number	LU		LUX		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1120		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.0	.0787			#3-48	2	●	DVAS0200X02S040	4.4	.173	6.4	.252	12.9	.508	10.1	.398	50	1.969	49.6	1.953	0.4	.016	4	.157	1
					7	●	DVAS0200X07S040	14.4	.567	16.4	.646	22.9	.902	20.1	.791	62	2.441	61.6	2.425	0.4	.016	4	.157	2
					12	●	DVAS0200X12S040	24.4	.961	26.4	1.039	32.9	1.295	30.1	1.185	73	2.874	72.6	2.858	0.4	.016	4	.157	2
					20	●	DVAS0200X20S040	40.4	1.591	–	–	46.4	1.827	50.1	1.972	91	3.583	90.6	3.567	0.4	.016	4	.157	3
					25	●	DVAS0200X25S040	50.4	1.984	–	–	56.4	2.220	60.1	2.366	102	4.016	101.6	4.000	0.4	.016	4	.157	3
					30	●	DVAS0200X30S040	60.4	2.378	–	–	66.4	2.614	70.1	2.760	113	4.449	112.6	4.433	0.4	.016	4	.157	3
					40	●	DVAS0200X40S040	80.4	3.165	–	–	86.4	3.402	90.1	3.547	136	5.354	135.6	5.339	0.4	.016	4	.157	3
					50	●	DVAS0200X50S040	100.4	3.953	–	–	106.4	4.189	110.1	4.335	158	6.220	157.6	6.205	0.4	.016	4	.157	3
2.1	.0827				2	●	DVAS0210X02S040	4.6	.181	6.7	.264	13.3	.524	10.2	.402	50	1.969	49.6	1.953	0.4	.016	4	.157	1
					7	●	DVAS0210X07S040	15.1	.594	17.2	.677	23.8	.937	20.7	.815	62	2.441	61.6	2.425	0.4	.016	4	.157	2
					12	●	DVAS0210X12S040	25.6	1.008	27.7	1.091	34.3	1.350	31.2	1.228	73	2.874	72.6	2.858	0.4	.016	4	.157	2
					20	●	DVAS0210X20S040	42.4	1.669	–	–	48.7	1.917	52.2	2.055	91	3.583	90.6	3.567	0.4	.016	4	.157	3
					25	●	DVAS0210X25S040	52.9	2.083	–	–	59.2	2.331	62.7	2.469	102	4.016	101.6	4.000	0.4	.016	4	.157	3
					30	●	DVAS0210X30S040	63.4	2.496	–	–	69.7	2.744	73.2	2.882	113	4.449	112.6	4.433	0.4	.016	4	.157	3
					40	★	DVAS0210X40S040	84.4	3.323	–	–	90.7	3.571	94.2	3.709	136	5.354	135.6	5.339	0.4	.016	4	.157	3
2.2	.0866				2	●	DVAS0220X02S040	4.8	.189	7	.276	13.7	.539	10.3	.406	50	1.969	49.6	1.953	0.4	.016	4	.157	1
					7	●	DVAS0220X07S040	15.8	.622	18.1	.713	24.7	.972	21.4	.843	62	2.441	61.6	2.425	0.4	.016	4	.157	2
					12	●	DVAS0220X12S040	26.8	1.055	29.1	1.146	35.7	1.406	32.4	1.276	73	2.874	72.6	2.858	0.4	.016	4	.157	2
					20	●	DVAS0220X20S040	44.4	1.748	–	–	51	2.008	54.4	2.142	91	3.583	90.6	3.567	0.4	.016	4	.157	3
					25	●	DVAS0220X25S040	55.4	2.181	–	–	62	2.441	65.4	2.575	102	4.016	101.6	4.000	0.4	.016	4	.157	3
					30	●	DVAS0220X30S040	66.4	2.614	–	–	73	2.874	76.4	3.008	113	4.449	112.6	4.433	0.4	.016	4	.157	3
					40	●	DVAS0220X40S040	88.4	3.480	–	–	95	3.740	98.4	3.874	136	5.354	135.6	5.339	0.4	.016	4	.157	3
2.3	.0906				2	●	DVAS0230X02S040	5	.197	7.4	.291	14.1	.555	10.5	.413	55	2.165	54.6	2.150	0.4	.016	4	.157	1
					7	●	DVAS0230X07S040	16.5	.650	18.9	.744	25.7	1.012	22	.866	65	2.559	64.6	2.543	0.4	.016	4	.157	2
					12	●	DVAS0230X12S040	28	1.102	30.4	1.197	37.2	1.465	33.5	1.319	78	3.071	77.6	3.055	0.4	.016	4	.157	2
					20	●	DVAS0230X20S040	46.4	1.827	–	–	53.3	2.098	56.5	2.224	98	3.858	97.6	3.843	0.4	.016	4	.157	3
					25	●	DVAS0230X25S040	57.9	2.280	–	–	64.8	2.551	68	2.677	111	4.370	110.6	4.354	0.4	.016	4	.157	3
					30	●	DVAS0230X30S040	69.4	2.732	–	–	76.3	3.004	79.5	3.130	124	4.882	123.6	4.866	0.4	.016	4	.157	3
					40	★	DVAS0230X40S040	92.4	3.638	–	–	99.3	3.909	102.5	4.035	150	5.906	149.6	5.890	0.4	.016	4	.157	3
2.4	.0945				2	●	DVAS0240X02S040	5.2	.205	7.7	.303	14.6	.575	10.6	.417	55	2.165	54.6	2.150	0.4	.016	4	.157	1
					7	●	DVAS0240X07S040	17.2	.677	19.7	.776	26.6	1.047	22.6	.890	65	2.559	64.6	2.543	0.4	.016	4	.157	2
					12	●	DVAS0240X12S040	29.2	1.150	31.7	1.248	38.6	1.520	34.6	1.362	78	3.071	77.6	3.055	0.4	.016	4	.157	2
					20	●	DVAS0240X20S040	48.4	1.906	–	–	55.6	2.189	58.6	2.307	98	3.858	97.6	3.843	0.4	.016	4	.157	3
					25	●	DVAS0240X25S040	60.4	2.378	–	–	67.6	2.661	70.6	2.780	111	4.370	110.6	4.354	0.4	.016	4	.157	3
					30	●	DVAS0240X30S040	72.4	2.850	–	–	79.6	3.134	82.6	3.252	124	4.882	123.6	4.866	0.4	.016	4	.157	3
					40	★	DVAS0240X40S040	96.4	3.795	–	–	103.6	4.079	106.6	4.197	150	5.906	149.6	5.890	0.4	.016	4	.157	3
2.5	.0984				2	●	DVAS0250X02S040	5.5	.217	8	.315	15	.591	10.7	.421	55	2.165	54.6	2.150	0.4	.016	4	.157	1
					7	●	DVAS0250X07S040	18	.709	20.5	.807	27.5	1.083	23.3	.917	65	2.559	64.5	2.539	0.5	.020	4	.157	2
					12	●	DVAS0250X12S040	30.5	1.201	33	1.299	40	1.575	35.8	1.409	78	3.071	77.5	3.051	0.5	.020	4	.157	2
					20	●	DVAS0250X20S040	50.5	1.988	–	–	58	2.283	60.8	2.394	98	3.858	97.5	3.839	0.5	.020	4	.157	3
					25	●	DVAS0250X25S040	63	2.480	–	–	70.5	2.776	73.3	2.886	111	4.370	110.5	4.350	0.5	.020	4	.157	3
					30	●	DVAS0250X30S040	75.5	2.972	–	–	83	3.268	85.8	3.378	124	4.882	123.5	4.862	0.5	.020	4	.157	3
					40	●	DVAS0250X40S040	100.5	3.957	–	–	108	4.252	110.8	4.362	150	5.906	149.5	5.886	0.5	.020	4	.157	3
					50	★	DVAS0250X50S040	125.5	4.941	–	–	133	5.236	135.8	5.346	176	6.929	175.5	6.909	0.5	.020	4	.157	3

● : USA Stock ★ : Stocked in Japan

DC					L/D	Stock	Order Number	LU		LUX		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1120		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.6	.1024				2	●	DVAS0260X02S040	5.7	.224	8.3	.327	15.4	.606	10.9	.429	55	2.165	54.5	2.146	0.5	.020	4	.157	1
					7	●	DVAS0260X07S040	18.7	.736	21.3	.839	28.4	1.118	23.9	.941	65	2.559	64.5	2.539	0.5	.020	4	.157	2
					12	●	DVAS0260X12S040	31.7	1.248	34.3	1.350	41.4	1.630	36.9	1.453	78	3.071	77.5	3.051	0.5	.020	4	.157	2
					20	●	DVAS0260X20S040	52.5	2.067	–	–	60.3	2.374	62.9	2.476	98	3.858	97.5	3.839	0.5	.020	4	.157	3
					25	●	DVAS0260X25S040	65.5	2.579	–	–	73.3	2.886	75.9	2.988	111	4.370	110.5	4.350	0.5	.020	4	.157	3
					30	●	DVAS0260X30S040	78.5	3.091	–	–	86.3	3.398	88.9	3.500	124	4.882	123.5	4.862	0.5	.020	4	.157	3
					40	●	DVAS0260X40S040	104.5	4.114	–	–	112.3	4.421	114.9	4.524	150	5.906	149.5	5.886	0.5	.020	4	.157	3
2.7	.1063		36	#6-32	2	●	DVAS0270X02S040	5.9	.232	8.6	.339	15.8	.622	11	.433	55	2.165	54.5	2.146	0.5	.020	4	.157	1
					7	●	DVAS0270X07S040	19.4	.764	22.2	.874	29.4	1.157	24.5	.965	68	2.677	67.5	2.657	0.5	.020	4	.157	2
					12	●	DVAS0270X12S040	32.9	1.295	35.7	1.406	42.9	1.689	38	1.496	83	3.268	82.5	3.248	0.5	.020	4	.157	2
					20	●	DVAS0270X20S040	54.5	2.146	–	–	62.6	2.465	65	2.559	107	4.213	106.5	4.193	0.5	.020	4	.157	3
					25	●	DVAS0270X25S040	68	2.677	–	–	76.1	2.996	78.5	3.091	122	4.803	121.5	4.783	0.5	.020	4	.157	3
					30	●	DVAS0270X30S040	81.5	3.209	–	–	89.6	3.528	92	3.622	137	5.394	136.5	5.374	0.5	.020	4	.157	3
					40	●	DVAS0270X40S040	108.5	4.272	–	–	116.6	4.591	119	4.685	167	6.575	166.5	6.555	0.5	.020	4	.157	3
2.8	.1102		35		2	●	DVAS0280X02S040	6.1	.240	8.9	.350	16.3	.642	11.1	.437	55	2.165	54.5	2.146	0.5	.020	4	.157	1
					7	●	DVAS0280X07S040	20.1	.791	23	.906	30.3	1.193	25.2	.992	68	2.677	67.5	2.657	0.5	.020	4	.157	2
					12	●	DVAS0280X12S040	34.1	1.343	37	1.457	44.3	1.744	39.2	1.543	83	3.268	82.5	3.248	0.5	.020	4	.157	2
					20	●	DVAS0280X20S040	56.5	2.224	–	–	64.9	2.555	67.2	2.646	107	4.213	106.5	4.193	0.5	.020	4	.157	3
					25	●	DVAS0280X25S040	70.5	2.776	–	–	78.9	3.106	81.2	3.197	122	4.803	121.5	4.783	0.5	.020	4	.157	3
					30	●	DVAS0280X30S040	84.5	3.327	–	–	92.9	3.657	95.2	3.748	137	5.394	136.5	5.374	0.5	.020	4	.157	3
					40	★	DVAS0280X40S040	112.5	4.429	–	–	120.9	4.760	123.2	4.850	167	6.575	166.5	6.555	0.5	.020	4	.157	3
2.9	.1142				2	●	DVAS0290X02S040	6.3	.248	9.3	.366	16.7	.657	11.3	.445	55	2.165	54.5	2.146	0.5	.020	4	.157	1
					7	●	DVAS0290X07S040	20.8	.819	23.8	.937	31.2	1.228	25.8	1.016	68	2.677	67.5	2.657	0.5	.020	4	.157	2
					12	●	DVAS0290X12S040	35.3	1.390	38.3	1.508	45.7	1.799	40.3	1.587	83	3.268	82.5	3.248	0.5	.020	4	.157	2
					20	●	DVAS0290X20S040	58.5	2.303	–	–	67.2	2.646	69.3	2.728	107	4.213	106.5	4.193	0.5	.020	4	.157	3
					25	●	DVAS0290X25S040	73	2.874	–	–	81.7	3.217	83.8	3.299	122	4.803	121.5	4.783	0.5	.020	4	.157	3
					30	●	DVAS0290X30S040	87.5	3.445	–	–	96.2	3.787	98.3	3.870	137	5.394	136.5	5.374	0.5	.020	4	.157	3
					40	●	DVAS0290X40S040	116.5	4.587	–	–	125.2	4.929	127.3	5.012	167	6.575	166.5	6.555	0.5	.020	4	.157	3

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L012
CUTTING CONDITIONS ➤ L015

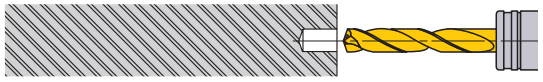
DVAS Mini Size

TRISTAR Drills

■ OPERATIONAL GUIDANCE FOR THE DVAS L/D=2–40

Flat Face Drilling ●Drilling a Blind Hole

1. Drilling a Pilot Hole

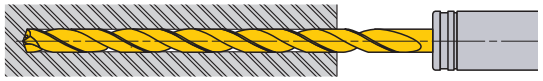


①Use a drill with a larger (flatter) point angle than the super long type. Use the shortest flute possible.
A DVAS drill with L/D = 2 can be machined up to L/D = 3 when drilling pilot holes.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx DC×3.
(Adjust the pilot hole depth according to the length of the long type drill.)

2. Initial Cutting with the Long Type Drill

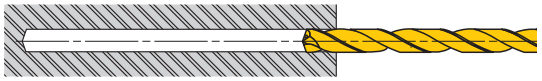
①Penetrate the guide hole at low revolution. (Revolution 500—1000min^{-1}, feed rate 39.37 - 78.74 IPM)
②Stop the long type drill .039- .118 inch short of the guide hole bottom.

3. Drill the Deep Hole



①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

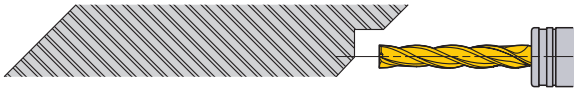
4. Drill Retraction



①After drilling, lower the cutting revolution about .020—.039 inch away from the bottom of the hole. (revolutions around 500—1000min^{-1})
②Next, pull out the drill at a feed rate of 39.37—78.74 IPM.

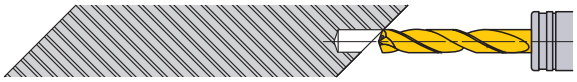
Interruped Drilling ●Drilling and Breaking Through on Irregular Faces or Angles

1. Spot Facing



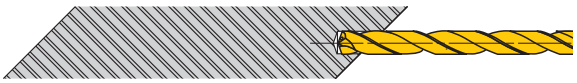
①Machine a flat or the irregular face by using an end mill or slot drill capable of spot facing. Make the spot face diameter the same size as the required deep hole diameter.

2. Drilling a Pilot Hole



①Use a drill with a larger (flatter) point angle than the super long type. Use the shortest flute possible.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx DC×2.
(Adjust the pilot hole depth according to the length of the long type drill.)

3. Initial Cutting with the Long Type Drill

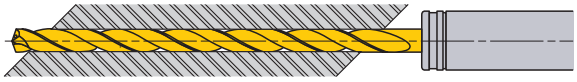


①Penetrate the guide hole at a low revolution. (Revolution 500—1000min^{-1}, feed rate 39.37 - 78.74 IPM)
②Stop the long type drill .0197 - .0394 inch short of the guide hole bottom.

4. Drill the Deep Hole

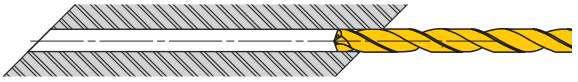
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

5. Breaking Through



①When breaking through, the cutting edge can be damaged.
②Lower the feed rate when penetrating.

6. Drill Retraction

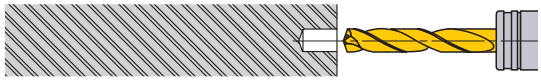


①Finally clear the hole at a feed rate of .0079 - .0118 IPR. (Revolution of around 500—1000min^{-1})
②Retract the drill to the pilot hole depth starting point at a feed rate of 39.37 - 78.74 IPM.

■ OPERATIONAL GUIDANCE FOR THE DVAS L/D=50

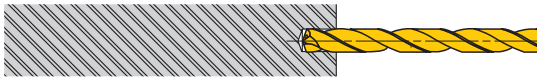
Flat Face Drilling ●Drilling a Blind Hole

1. Drilling a Pilot Hole



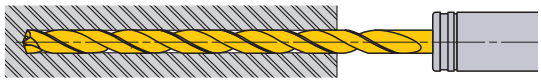
①Use a drill with a larger (flatter) point angle than the super long type. Use a DVAS drill with L/D = 7.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx DC×7.
(Adjust the pilot hole depth according to the length of the long type drill.)

2. Initial Cutting with the Long Type Drill



①Penetrate the guide hole at low revolution. (Revolution 500—1000min^{-1}, feed rate 39.37—78.74 IPM)
②Stop the long type drill .039— .118 inch short of the guide hole bottom.

3. Drill the Deep Hole



①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

4. Drill Retraction

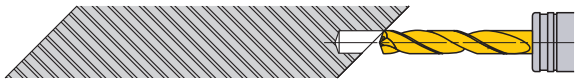
①After drilling, lower the cutting revolution about .020—.039 inch away from the bottom of the hole. (revolutions around 500—1000min^{-1})
②Next, pull out the drill at a feed rate of 39.37—78.74 IPM.

Interruped Drilling ●Drilling and Breaking Through on Irregular Faces or Angles

1. Spot Facing

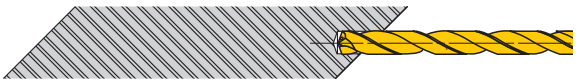
①Machine a flat or the irregular face by using an end mill or slot drill capable of spot facing. Make the spot face diameter the same size as the required deep hole diameter.

2. Drilling a Pilot Hole



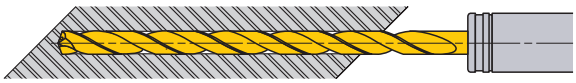
①Use a drill with a larger (flatter) point angle than the super long type. Use a DVAS drill with L/D = 7.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx DC×7.
(Adjust the pilot hole depth according to the length of the long type drill.)

3. Initial Cutting with the Long Type Drill



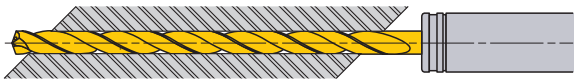
①Penetrate the guide hole at a low revolution. (Revolution 500—1000min^{-1}, feed rate 39.37 - 78.74 IPM)
②Stop the long type drill .0197 - .0394 inch short of the guide hole bottom.

4. Drill the Deep Hole



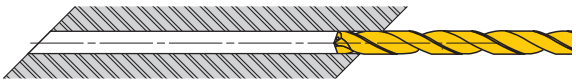
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

5. Breaking Through



①When breaking through, the cutting edge can be damaged.
②Lower the feed rate when penetrating.

6. Drill Retraction



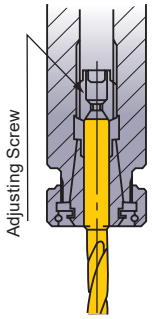
①Finally clear the hole at a feed rate of .0079 - .0118 IPR. (Revolution of around 500—1000min^{-1})
②Retract the drill to the pilot hole depth starting point at a feed rate of 39.37 - 78.74 IPM.

DVAS Mini Size

TRISTAR Drills

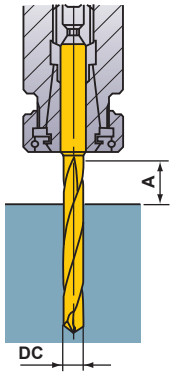
■ OPERATIONAL GUIDANCE FOR THE DVAS DRILL MINI SIZE

Drill Holding



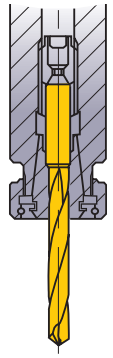
Thrust bearing type collet chuck holds the drill securely.

Drill Length



A ≥ DC x 2

Drill Installation



NG

Do not clamp on the flutes.

Coolant Pressure

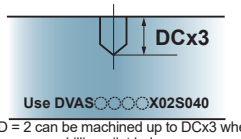
Adjust the coolant pressure according to the type and concentration of coolant.

Drill Dia. **DC**	Water-soluble	Water-insoluble
DC<.0787"	≥ 3MPa	≥ 7MPa
DC<.1181"	≥ 2MPa	≥ 5MPa

Drill Installation

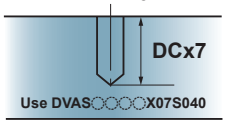
For deep hole drilling, refer to the figure below.

L/D≤40



*L/D = 2 can be machined up to DCx3 when drilling pilot holes.

L/D>40

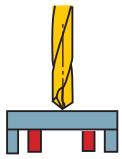


Coolant Handling

Small particles of swarf will jam in the coolant hole of small diameter drills.
Always use a fine mesh filter as a preventive measure.

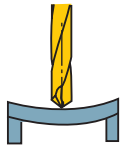
Drill Dia. **DC**	Fine Mesh Filter
DC<.0787"	≤ .394 μ-inch
DC<.1181"	≤ .787 μ-inch

Thin Workpiece



Support if bending occurs

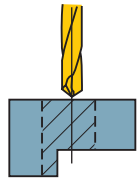
OK



Bending occurs

NG

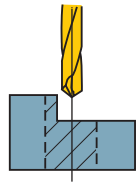
Interrupted Cutting



One Process

OK

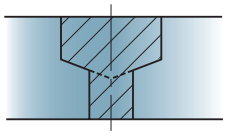
①Lower the feed when drilling the interrupted part.



Requires Prior Machining

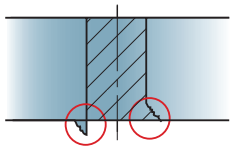
①Spot face with an end mill prior to drilling.

Stepped Holes



①Divide the two processes.
②Drill the larger hole first.
*A tool for machining both chamfer and spot face can be produced to order.

Burring and Workpiece Chipping



Decrease the feed rate at the end of through cutting.

RECOMMENDED CUTTING CONDITIONS

(inch)

Workpiece Material			Mild Steels Carbon Steels, Alloy Steels AISI 1010, 1045, 4140 etc.		Austenitic Stainless Steels, Ferritic Stainless Steels Ferritic and Martensitic Stainless Steels Precipitation Hardening Stainless Steels AISI 304, 316, 410 etc.	
DC		**L/D**	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
mm	inch					
1.0	**.0394**	**2–30**	210(100—330)	.0014(.0008—.0020)	195(65—330)	.0010(.0004—.0016)
1.0	**.0394**	**40, 50**	210(100—330)	.0012(.0008—.0016)	195(65—330)	.0008(.0004—.0012)
1.5	**.0591**	**2–30**	210(100—330)	.0021(.0012—.0030)	195(65—330)	.0015(.0006—.0024)
1.5	**.0591**	**40, 50**	210(100—330)	.0018(.0012—.0024)	195(65—330)	.0012(.0006—.0018)
2.0	**.0787**	**2–30**	230(130—330)	.0028(.0016—.0039)	195(65—330)	.0020(.0008—.0031)
2.0	**.0787**	**40, 50**	230(130—330)	.0024(.0016—.0031)	195(65—330)	.0016(.0008—.0024)
2.5	**.0984**	**2–30**	230(130—330)	.0035(.0020—.0049)	195(65—330)	.0025(.0010—.0039)
2.5	**.0984**	**40, 50**	230(130—330)	.0030(.0020—.0039)	195(65—330)	.0020(.0010—.0030)
2.9	**.1142**	**2–30**	230(130—330)	.0040(.0023—.0057)	195(65—330)	.0029(.0011—.0046)
2.9	**.1142**	**40, 50**	230(130—330)	.0034(.0023—.0046)	195(65—330)	.0023(.0011—.0034)

Workpiece Material			Cast Irons Ductile Cast Irons AISI No 45B, 60-60-8 etc.		Aluminum Alloys ASTM 6061, 7075 etc.	
DC		**L/D**	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
mm	inch					
1.0	**.0394**	**2–30**	230(130—330)	.0014(.0008—.0020)	460(330—590)	.0016(.0008—.0024)
1.0	**.0394**	**40, 50**	230(130—330)	.0012(.0008—.0016)	460(330—590)	.0014(.0008—.0020)
1.5	**.0591**	**2–30**	230(130—330)	.0021(.0012—.0030)	460(330—590)	.0024(.0012—.0035)
1.5	**.0591**	**40, 50**	230(130—330)	.0018(.0012—.0024)	460(330—590)	.0021(.0012—.0030)
2.0	**.0787**	**2–30**	230(130—330)	.0028(.0016—.0039)	460(330—590)	.0031(.0016—.0047)
2.0	**.0787**	**40, 50**	230(130—330)	.0024(.0016—.0031)	460(330—590)	.0028(.0016—.0039)
2.5	**.0984**	**2–30**	230(130—330)	.0035(.0020—.0049)	460(330—590)	.0039(.0020—.0059)
2.5	**.0984**	**40, 50**	230(130—330)	.0030(.0020—.0039)	460(330—590)	.0035(.0020—.0049)
2.9	**.1142**	**2–30**	230(130—330)	.0040(.0023—.0057)	460(330—590)	.0046(.0023—.0069)
2.9	**.1142**	**40, 50**	230(130—330)	.0034(.0023—.0046)	460(330—590)	.0040(.0023—.0057)

Workpiece Material			Heat Resistant Alloys Inconel718 etc.		Titanium Alloys Ti-6Al-4V etc.	
DC		**L/D**	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
mm	inch					
1.0	**.0394**	**2–30**	100(30—165)	.0006(.0004—.0008)	100(65—130)	.0008(.0004—.0012)
1.0	**.0394**	**40, 50**	100(30—165)	.0006(.0004—.0008)	100(65—130)	.0008(.0004—.0012)
1.5	**.0591**	**2–30**	100(30—165)	.0009(.0006—.0012)	100(65—130)	.0012(.0006—.0018)
1.5	**.0591**	**40, 50**	100(30—165)	.0009(.0006—.0012)	100(65—130)	.0012(.0006—.0018)
2.0	**.0787**	**2–30**	100(30—165)	.0012(.0008—.0016)	100(65—130)	.0016(.0008—.0024)
2.0	**.0787**	**40, 50**	100(30—165)	.0012(.0008—.0016)	100(65—130)	.0016(.0008—.0024)
2.5	**.0984**	**2–30**	100(30—165)	.0015(.0010—.0020)	100(65—130)	.0020(.0010—.0030)
2.5	**.0984**	**40, 50**	100(30—165)	.0015(.0010—.0020)	100(65—130)	.0020(.0010—.0030)
2.9	**.1142**	**2–30**	100(30—165)	.0017(.0011—.0023)	100(65—130)	.0023(.0011—.0034)
2.9	**.1142**	**40, 50**	100(30—165)	.0017(.0011—.0023)	100(65—130)	.0023(.0011—.0034)

Workpiece Material			Cobalt Chrome Alloys ASTM F1537, F799 etc.	
DC		**L/D**	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
mm	inch			
1.0	**.0394**	**2–30**	195(100—295)	.0008(.0004—.0012)
1.0	**.0394**	**40, 50**	195(100—295)	.0008(.0004—.0012)
1.5	**.0591**	**2–30**	195(100—295)	.0012(.0006—.0018)
1.5	**.0591**	**40, 50**	195(100—295)	.0012(.0006—.0018)
2.0	**.0787**	**2–30**	195(100—295)	.0016(.0008—.0024)
2.0	**.0787**	**40, 50**	195(100—295)	.0016(.0008—.0024)
2.5	**.0984**	**2–30**	195(100—295)	.0020(.0010—.0030)
2.5	**.0984**	**40, 50**	195(100—295)	.0020(.0010—.0030)
2.9	**.1142**	**2–30**	195(100—295)	.0023(.0011—.0034)
2.9	**.1142**	**40, 50**	195(100—295)	.0023(.0011—.0034)

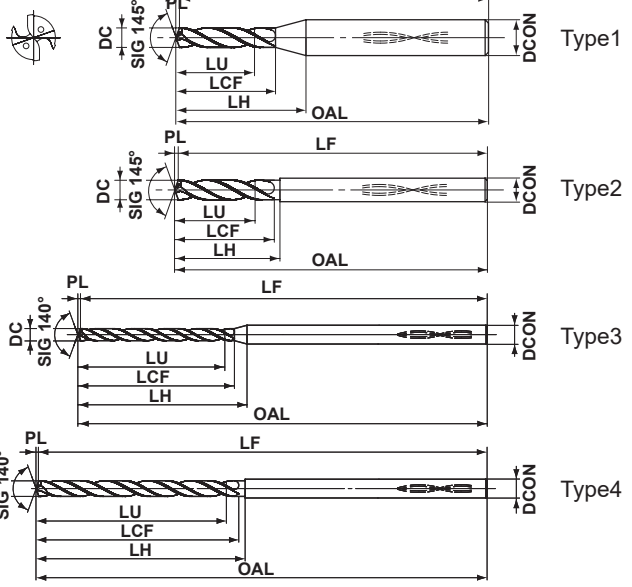
Note 1) This recommended condition is only when using internal coolant.
Note 2) Check the condition of chips and perform step machining if necessary. * Reference of step length: 0.2 to 1.0 DC
Note 3) Adjust the cutting conditions according to machine tool and workpiece clamp rigidity and machining geometry, etc.
Note 4) Machining depths exceeding flute length (LU) are not recommend.
Note 5) Clamp the drill so that the drill runout is within .00012 inch.
Note 6) Do not clamp the flute part of the drill.

MICRO-MVS

- Straight cutting edge profile improves both chip evacuation and cutting edge strength.
- Double margin offers excellent straightness and high precision.

P M K N S H

Internal Coolant



Type	DC<.1181 (inch)	DC<3 (mm)
Type 1	+.00055 0	+0.014 0
Type2,3,4	0 −.00055	0 −0.014
	DCON<.1181	DCON<3
h6	0 −.00024	0 −0.006

DC Metric (mm)	DC Decimal (inch)	DC Fraction (inch)	Wire / Letter	Thread Size	L/D	Stock DP1020	Order Number	LU mm	LU inch	LCF mm	LCF inch	LH mm	LH inch	OAL mm	OAL inch	LF mm	LF inch	PL mm	PL inch	DCON mm	DCON inch	Type
1.000	.0394				2	●	MVS0100X02S030	2.2	.087	5.2	.205	8.9	.350	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0100X07S030	7.2	.283	10.2	.402	13.9	.547	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0100X12S030	12.2	.480	15.2	.598	18.9	.744	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0100X20S030	20.2	.795	24.2	.953	27.9	1.098	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0100X25S030	25.2	.992	28.2	1.110	31.9	1.256	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0100X30S030	30.2	1.189	33.2	1.307	36.9	1.453	72.2	2.843	72	2.835	0.2	.008	3	.118	3
1.016	.0400		60		2	●	MVS0102X02S030	2.2	.087	5.6	.220	9.3	.366	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0102X07S030	7.3	.287	11.2	.441	14.9	.587	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0102X12S030	12.4	.488	17.2	.677	20.9	.823	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0102X20S030	20.5	.807	25.2	.992	28.9	1.138	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0102X25S030	25.6	1.008	31.2	1.228	34.9	1.374	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0102X30S030	30.7	1.209	36.2	1.425	39.9	1.571	72.2	2.843	72	2.835	0.2	.008	3	.118	3
1.042	.0410		59		2	●	MVS0104X02S030	2.3	.091	5.6	.220	9.3	.366	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0104X07S030	7.5	.295	11.2	.441	14.9	.587	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0104X12S030	12.7	.500	17.2	.677	20.9	.823	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0104X20S030	21.0	.827	25.2	.992	28.9	1.138	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0104X25S030	26.2	1.031	31.2	1.228	34.9	1.374	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0104X30S030	31.4	1.236	36.2	1.425	39.9	1.571	72.2	2.843	72	2.835	0.2	.008	3	.118	3
1.067	.0420		58		2	●	MVS0107X02S030	2.3	.091	5.6	.220	9.2	.362	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0107X07S030	7.7	.303	11.2	.441	14.8	.583	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0107X12S030	13.0	.512	17.2	.677	20.8	.819	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0107X20S030	21.5	.846	25.2	.992	28.8	1.134	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0107X25S030	26.9	1.059	31.2	1.228	34.8	1.370	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0107X30S030	32.2	1.268	36.2	1.425	39.8	1.567	72.2	2.843	72	2.835	0.2	.008	3	.118	3

Note 1) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1.093	.0430		57		2	●	MVS0109X02S030	2.4	.094	5.6	.220	9.2	.362	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0109X07S030	7.8	.307	11.2	.441	14.8	.583	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0109X12S030	13.3	.524	17.2	.677	20.8	.819	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0109X20S030	22.0	.866	25.2	.992	28.8	1.134	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0109X25S030	27.5	1.083	31.2	1.228	34.8	1.370	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0109X30S030	33.0	1.299	36.2	1.425	39.8	1.567	72.2	2.843	72	2.835	0.2	.008	3	.118	3
1.100	.0433				2	●	MVS0110X02S030	2.4	.094	5.6	.220	9.1	.358	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0110X07S030	7.9	.311	11.2	.441	14.7	.579	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0110X12S030	13.4	.528	17.2	.677	20.7	.815	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0110X20S030	22.2	.874	25.2	.992	28.7	1.130	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0110X25S030	27.7	1.091	31.2	1.228	34.7	1.366	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0110X30S030	33.2	1.307	36.2	1.425	39.7	1.563	72.2	2.843	72	2.835	0.2	.008	3	.118	3
1.182	.0465		56		2	●	MVS0118X02S030	2.5	.098	6.2	.244	9.6	.378	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0118X07S030	8.5	.335	12.2	.480	15.6	.614	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0118X12S030	14.4	.567	18.2	.717	21.6	.850	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0118X20S030	23.8	.937	28.2	1.110	31.6	1.244	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0118X25S030	29.7	1.169	34.2	1.346	37.6	1.480	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0118X30S030	35.6	1.402	40.2	1.583	43.6	1.717	72.2	2.843	72	2.835	0.2	.008	3	.118	3
1.200	.0472				2	●	MVS0120X02S030	2.6	.102	6.2	.244	9.6	.378	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0120X07S030	8.6	.339	12.2	.480	15.6	.614	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0120X12S030	14.6	.575	18.2	.717	21.6	.850	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0120X20S030	24.2	.953	28.2	1.110	31.6	1.244	60.2	2.370	60	2.362	0.2	.008	3	.118	3
					25	●	MVS0120X25S030	30.2	1.189	34.2	1.346	37.6	1.480	66.2	2.606	66	2.598	0.2	.008	3	.118	3
					30	●	MVS0120X30S030	36.2	1.425	40.2	1.583	43.6	1.717	72.2	2.843	72	2.835	0.2	.008	3	.118	3
1.300	.0512				2	●	MVS0130X02S030	2.8	.110	6.6	.260	9.8	.386	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0130X07S030	9.3	.366	13.2	.520	16.4	.646	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0130X12S030	15.8	.622	20.2	.795	23.4	.921	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0130X20S030	26.2	1.031	30.2	1.189	33.4	1.315	68.2	2.685	68	2.677	0.2	.008	3	.118	3
					25	●	MVS0130X25S030	32.7	1.287	36.2	1.425	39.4	1.551	74.2	2.921	74	2.913	0.2	.008	3	.118	3
					30	●	MVS0130X30S030	39.2	1.543	43.2	1.701	46.4	1.827	82.2	3.236	82	3.228	0.2	.008	3	.118	3
1.321	.0520		55		2	●	MVS0132X02S030	2.9	.114	7.2	.283	10.3	.406	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0132X07S030	9.5	.374	14.2	.559	17.3	.681	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					12	●	MVS0132X12S030	16.1	.634	21.2	.835	24.3	.957	55.2	2.173	55	2.165	0.2	.008	3	.118	3
					20	●	MVS0132X20S030	26.7	1.051	32.2	1.268	35.3	1.390	68.2	2.685	68	2.677	0.2	.008	3	.118	3
					25	●	MVS0132X25S030	33.3	1.311	39.2	1.543	42.3	1.665	74.2	2.921	74	2.913	0.2	.008	3	.118	3
					30	●	MVS0132X30S030	39.9	1.571	46.2	1.819	49.3	1.941	82.2	3.236	82	3.228	0.2	.008	3	.118	3
1.397	.0550		54		2	●	MVS0139X02S030	3.0	.118	7.2	.283	10.2	.402	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0139X07S030	10.0	.394	14.3	.563	17.3	.681	55.3	2.177	55	2.165	0.3	.012	3	.118	3
					12	●	MVS0139X12S030	17.0	.669	21.3	.839	24.3	.957	55.3	2.177	55	2.165	0.3	.012	3	.118	3
					20	●	MVS0139X20S030	28.2	1.110	32.3	1.272	35.3	1.390	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					25	●	MVS0139X25S030	35.2	1.386	39.3	1.547	42.3	1.665	74.3	2.925	74	2.913	0.3	.012	3	.118	3
					30	●	MVS0139X30S030	42.2	1.661	46.3	1.823	49.3	1.941	82.3	3.240	82	3.228	0.3	.012	3	.118	3
1.400	.0551				2	●	MVS0140X02S030	3.0	.118	7.2	.283	10.2	.402	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0140X07S030	10.1	.398	14.3	.563	17.3	.681	55.3	2.177	55	2.165	0.3	.012	3	.118	3
					12	●	MVS0140X12S030	17.1	.673	21.3	.839	24.3	.957	55.3	2.177	55	2.165	0.3	.012	3	.118	3
					20	●	MVS0140X20S030	28.3	1.114	32.3	1.272	35.3	1.390	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					25	●	MVS0140X25S030	35.3	1.390	39.3	1.547	42.3	1.665	74.3	2.925	74	2.913	0.3	.012	3	.118	3
					30	●	MVS0140X30S030	42.3	1.665	46.3	1.823	49.3	1.941	82.3	3.240	82	3.228	0.3	.012	3	.118	3

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MICRO-MVS

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1.500	.0591			#1-64	2	●	MVS0150X02S030	3.2	.126	7.6	.299	10.4	.409	55.2	2.173	55	2.165	0.2	.008	3	.118	1
					7	●	MVS0150X07S030	10.8	.425	15.3	.602	18.1	.713	55.3	2.177	55	2.165	0.3	.012	3	.118	3
					12	●	MVS0150X12S030	18.3	.720	23.3	.917	26.1	1.028	55.3	2.177	55	2.165	0.3	.012	3	.118	3
					20	●	MVS0150X20S030	30.3	1.193	35.3	1.390	38.1	1.500	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					25	●	MVS0150X25S030	37.8	1.488	42.3	1.665	45.1	1.776	74.3	2.925	74	2.913	0.3	.012	3	.118	3
					30	●	MVS0150X30S030	45.3	1.783	50.3	1.980	53.1	2.091	82.3	3.240	82	3.228	0.3	.012	3	.118	3
1.588	.0625	1/16			2	●	MVS0159X02S030	3.4	.134	8.3	.327	10.9	.429	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0159X07S030	11.4	.449	16.3	.642	18.9	.744	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0159X12S030	19.3	.760	24.3	.957	26.9	1.059	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0159X20S030	32.0	1.260	37.3	1.469	39.9	1.571	78.3	3.083	78	3.071	0.3	.012	3	.118	3
					25	●	MVS0159X25S030	40.0	1.575	45.3	1.783	47.9	1.886	86.3	3.398	86	3.386	0.3	.012	3	.118	3
					30	●	MVS0159X30S030	47.0	1.850	53.3	2.098	55.9	2.201	95.3	3.752	95	3.740	0.3	.012	3	.118	3
1.600	.0630				2	●	MVS0160X02S030	3.5	.138	8.3	.327	10.9	.429	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0160X07S030	11.5	.453	16.3	.642	18.9	.744	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0160X12S030	19.5	.768	24.3	.957	26.9	1.059	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0160X20S030	32.3	1.272	37.3	1.469	39.9	1.571	78.3	3.083	78	3.071	0.3	.012	3	.118	3
					25	●	MVS0160X25S030	40.3	1.587	45.3	1.783	47.9	1.886	86.3	3.398	86	3.386	0.3	.012	3	.118	3
					30	●	MVS0160X30S030	48.3	1.902	53.3	2.098	55.9	2.201	95.3	3.752	95	3.740	0.3	.012	3	.118	3
1.613	.0635		52		2	●	MVS0161X02S030	3.5	.138	8.7	.343	11.3	.445	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0161X07S030	11.5	.453	17.3	.681	19.9	.783	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0161X12S030	19.7	.776	26.3	1.035	28.9	1.138	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0161X20S030	32.6	1.283	39.3	1.547	41.9	1.650	78.3	3.083	78	3.071	0.3	.012	3	.118	3
					25	●	MVS0161X25S030	40.6	1.598	48.3	1.902	50.9	2.004	86.3	3.398	86	3.386	0.3	.012	3	.118	3
					30	●	MVS0161X30S030	48.7	1.917	56.3	2.217	58.9	2.319	95.3	3.752	95	3.740	0.3	.012	3	.118	3
1.700	.0669				2	●	MVS0170X02S030	3.7	.146	8.7	.343	11.1	.437	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0170X07S030	12.2	.480	17.3	.681	19.7	.776	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0170X12S030	20.7	.815	26.3	1.035	28.7	1.130	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0170X20S030	34.3	1.350	39.3	1.547	41.7	1.642	78.3	3.083	78	3.071	0.3	.012	3	.118	3
					25	●	MVS0170X25S030	42.8	1.685	48.3	1.902	50.7	1.996	86.3	3.398	86	3.386	0.3	.012	3	.118	3
					30	●	MVS0170X30S030	51.3	2.020	56.3	2.217	58.7	2.311	95.3	3.752	95	3.740	0.3	.012	3	.118	3
1.778	.0700		50	#2-56	2	●	MVS0178X02S030	3.8	.150	9.3	.366	11.6	.457	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0178X07S030	12.8	.504	18.3	.720	20.6	.811	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0178X12S030	21.7	.854	27.3	1.075	29.6	1.165	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0178X20S030	35.9	1.413	41.3	1.626	43.6	1.717	84.3	3.319	84	3.307	0.3	.012	3	.118	3
					25	●	MVS0178X25S030	44.8	1.764	50.3	1.980	52.6	2.071	94.3	3.713	94	3.701	0.3	.012	3	.118	3
					30	●	MVS0178X30S030	53.7	2.114	59.3	2.335	61.6	2.425	102.3	4.028	102	4.016	0.3	.012	3	.118	3
1.800	.0709				2	●	MVS0180X02S030	3.9	.154	9.3	.366	11.5	.453	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0180X07S030	12.9	.508	18.3	.720	20.5	.807	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0180X12S030	21.9	.862	27.3	1.075	29.5	1.161	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0180X20S030	36.3	1.429	41.3	1.626	43.5	1.713	84.3	3.319	84	3.307	0.3	.012	3	.118	3
					25	●	MVS0180X25S030	45.3	1.783	50.3	1.980	52.5	2.067	94.3	3.713	94	3.701	0.3	.012	3	.118	3
					30	●	MVS0180X30S030	54.3	2.138	59.3	2.335	61.5	2.421	102.3	4.028	102	4.016	0.3	.012	3	.118	3
1.855	.0730		49		2	●	MVS0186X02S030	4.0	.157	9.7	.382	11.8	.465	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0186X07S030	13.3	.524	19.3	.760	21.4	.843	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0186X12S030	22.6	.890	29.3	1.154	31.4	1.236	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0186X20S030	37.4	1.472	44.3	1.744	46.4	1.827	84.3	3.319	84	3.307	0.3	.012	3	.118	3
					25	●	MVS0186X25S030	46.7	1.839	53.3	2.098	55.4	2.181	94.3	3.713	94	3.701	0.3	.012	3	.118	3
					30	●	MVS0186X30S030	56.0	2.205	63.3	2.492	65.4	2.575	102.3	4.028	102	4.016	0.3	.012	3	.118	3

Note 1) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1.900	.0748				2	●	MVS0190X02S030	4.1	.161	9.7	.382	11.8	.465	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0190X07S030	13.6	.535	19.3	.760	21.4	.843	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					12	●	MVS0190X12S030	23.1	.909	29.3	1.154	31.4	1.236	68.3	2.689	68	2.677	0.3	.012	3	.118	3
					20	●	MVS0190X20S030	38.3	1.508	44.3	1.744	46.4	1.827	84.3	3.319	84	3.307	0.3	.012	3	.118	3
					25	●	MVS0190X25S030	47.8	1.882	53.3	2.098	55.4	2.181	94.3	3.713	94	3.701	0.3	.012	3	.118	3
					30	●	MVS0190X30S030	57.3	2.256	63.3	2.492	65.4	2.575	102.3	4.028	102	4.016	0.3	.012	3	.118	3
1.931	.0760		48		2	●	MVS0193X02S030	4.2	.165	10.3	.406	12.3	.484	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0193X07S030	13.9	.547	20.4	.803	22.4	.882	68.4	2.693	68	2.677	0.4	.016	3	.118	3
					12	●	MVS0193X12S030	23.5	.925	30.4	1.197	32.4	1.276	68.4	2.693	68	2.677	0.4	.016	3	.118	3
					20	●	MVS0193X20S030	39.0	1.535	46.4	1.827	48.4	1.906	84.4	3.323	84	3.307	0.4	.016	3	.118	3
					25	●	MVS0193X25S030	48.6	1.913	56.4	2.220	58.4	2.299	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					30	●	MVS0193X30S030	58.3	2.295	66.4	2.614	68.4	2.693	102.4	4.031	102	4.016	0.4	.016	3	.118	3
1.994	.0785				2	●	MVS0199X02S030	4.3	.169	10.3	.406	12.2	.480	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0199X07S030	14.3	.563	20.4	.803	22.3	.878	68.4	2.693	68	2.677	0.4	.016	3	.118	3
					12	●	MVS0199X12S030	24.3	.957	30.4	1.197	32.3	1.272	68.4	2.693	68	2.677	0.4	.016	3	.118	3
					20	●	MVS0199X20S030	40.2	1.583	46.4	1.827	48.3	1.902	84.4	3.323	84	3.307	0.4	.016	3	.118	3
					25	●	MVS0199X25S030	50.2	1.976	56.4	2.220	58.3	2.295	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					30	●	MVS0199X30S030	60.2	2.370	66.4	2.614	68.3	2.689	102.4	4.031	102	4.016	0.4	.016	3	.118	3
2.000	.0787			#3-48	2	●	MVS0200X02S030	4.3	.169	10.3	.406	12.2	.480	68.3	2.689	68	2.677	0.3	.012	3	.118	1
					7	●	MVS0200X07S030	14.4	.567	20.4	.803	22.3	.878	68.4	2.693	68	2.677	0.4	.016	3	.118	3
					12	●	MVS0200X12S030	24.4	.961	30.4	1.197	32.3	1.272	68.4	2.693	68	2.677	0.4	.016	3	.118	3
					20	●	MVS0200X20S030	40.4	1.591	46.4	1.827	48.3	1.902	84.4	3.323	84	3.307	0.4	.016	3	.118	3
					25	●	MVS0200X25S030	50.4	1.984	56.4	2.220	58.3	2.295	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					30	●	MVS0200X30S030	60.4	2.378	66.4	2.614	68.3	2.689	102.4	4.031	102	4.016	0.4	.016	3	.118	3
2.058	.0810		46		2	●	MVS0206X02S030	4.4	.173	10.7	.421	12.5	.492	74.3	2.925	74	2.913	0.3	.012	3	.118	1
					7	●	MVS0206X07S030	14.8	.583	21.4	.843	23.2	.913	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0206X12S030	25.1	.988	32.4	1.276	34.2	1.346	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0206X20S030	41.5	1.634	48.4	1.906	50.2	1.976	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0206X25S030	51.8	2.039	59.4	2.339	61.2	2.409	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0206X30S030	62.1	2.445	69.4	2.732	71.2	2.803	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.100	.0827				2	●	MVS0210X02S030	4.5	.177	10.7	.421	12.4	.488	74.3	2.925	74	2.913	0.3	.012	3	.118	1
					7	●	MVS0210X07S030	15.1	.594	21.4	.843	23.1	.909	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0210X12S030	25.6	1.008	32.4	1.276	34.1	1.343	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0210X20S030	42.4	1.669	48.4	1.906	50.1	1.972	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0210X25S030	52.9	2.083	59.4	2.339	61.1	2.406	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0210X30S030	63.4	2.496	69.4	2.732	71.1	2.799	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.185	.0860		44		2	●	MVS0218X02S030	4.7	.185	11.3	.445	12.8	.504	74.3	2.925	74	2.913	0.3	.012	3	.118	1
					7	●	MVS0218X07S030	15.7	.618	22.4	.882	23.9	.941	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0218X12S030	26.6	1.047	33.4	1.315	34.9	1.374	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0218X20S030	44.1	1.736	51.4	2.024	52.9	2.083	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0218X25S030	55.0	2.165	62.4	2.457	63.9	2.516	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0218X30S030	65.9	2.594	73.4	2.890	74.9	2.949	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.200	.0866				2	●	MVS0220X02S030	4.7	.185	11.3	.445	12.8	.504	74.3	2.925	74	2.913	0.3	.012	3	.118	1
					7	●	MVS0220X07S030	15.8	.622	22.4	.882	23.9	.941	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0220X12S030	26.8	1.055	33.4	1.315	34.9	1.374	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0220X20S030	44.4	1.748	51.4	2.024	52.9	2.083	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0220X25S030	55.4	2.181	62.4	2.457	63.9	2.516	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0220X30S030	66.4	2.614	73.4	2.890	74.9	2.949	118.4	4.661	118	4.646	0.4	.016	3	.118	3

MICRO-MVS

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.261	.0890		43	#4-40	2	●	MVS0226X02S030	4.9	.193	11.8	.465	13.2	.520	74.4	2.929	74	2.913	0.4	.016	3	.118	1
					7	●	MVS0226X07S030	16.2	.638	23.4	.921	24.8	.976	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0226X12S030	27.5	1.083	35.4	1.394	36.8	1.449	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0226X20S030	45.6	1.795	53.4	2.102	54.8	2.157	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0226X25S030	56.9	2.240	64.4	2.535	65.8	2.591	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0226X30S030	68.2	2.685	76.4	3.008	77.8	3.063	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.300	.0906				2	●	MVS0230X02S030	5.0	.197	11.8	.465	13.1	.516	74.4	2.929	74	2.913	0.4	.016	3	.118	1
					7	●	MVS0230X07S030	16.5	.650	23.4	.921	24.7	.972	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0230X12S030	28.0	1.102	35.4	1.394	36.7	1.445	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0230X20S030	46.4	1.827	53.4	2.102	54.7	2.154	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0230X25S030	57.9	2.280	64.4	2.535	65.7	2.587	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0230X30S030	69.4	2.732	76.4	3.008	77.7	3.059	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.382	.0938	3/32			2	●	MVS0238X02S030	5.1	.201	12.4	.488	13.6	.535	74.4	2.929	74	2.913	0.4	.016	3	.118	1
					7	●	MVS0238X07S030	17.1	.673	24.4	.961	25.6	1.008	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0238X12S030	29.0	1.142	36.4	1.433	37.6	1.480	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0238X20S030	48.1	1.894	55.4	2.181	56.6	2.228	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0238X25S030	60.0	2.362	67.4	2.654	68.6	2.701	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0238X30S030	71.9	2.831	79.4	3.126	80.6	3.173	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.400	.0945				2	●	MVS0240X02S030	5.2	.205	12.4	.488	13.5	.531	74.4	2.929	74	2.913	0.4	.016	3	.118	1
					7	●	MVS0240X07S030	17.2	.677	24.4	.961	25.5	1.004	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0240X12S030	29.2	1.150	36.4	1.433	37.5	1.476	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0240X20S030	48.4	1.906	55.4	2.181	56.5	2.224	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0240X25S030	60.4	2.378	67.4	2.654	68.5	2.697	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0240X30S030	72.4	2.850	79.4	3.126	80.5	3.169	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.439	.0960		41		2	●	MVS0244X02S030	5.3	.209	12.8	.504	13.8	.543	74.4	2.929	74	2.913	0.4	.016	3	.118	1
					7	●	MVS0244X07S030	17.5	.689	25.4	1.000	26.4	1.039	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					12	●	MVS0244X12S030	29.7	1.169	38.4	1.512	39.4	1.551	74.4	2.929	74	2.913	0.4	.016	3	.118	3
					20	●	MVS0244X20S030	49.2	1.937	58.4	2.299	59.4	2.339	94.4	3.717	94	3.701	0.4	.016	3	.118	3
					25	●	MVS0244X25S030	61.4	2.417	70.4	2.772	71.4	2.811	107.4	4.228	107	4.213	0.4	.016	3	.118	3
					30	●	MVS0244X30S030	73.6	2.898	83.4	3.283	84.4	3.323	118.4	4.661	118	4.646	0.4	.016	3	.118	3
2.500	.0984				2	●	MVS0250X02S030	5.4	.213	12.8	.504	13.7	.539	74.4	2.929	74	2.913	0.4	.016	3	.118	1
					7	●	MVS0250X07S030	18.0	.709	25.5	1.004	26.4	1.039	74.5	2.933	74	2.913	0.5	.020	3	.118	3
					12	●	MVS0250X12S030	30.5	1.201	38.5	1.516	39.4	1.551	74.5	2.933	74	2.913	0.5	.020	3	.118	3
					20	●	MVS0250X20S030	50.5	1.988	58.5	2.303	59.4	2.339	94.5	3.720	94	3.701	0.5	.020	3	.118	3
					25	●	MVS0250X25S030	63.0	2.480	70.5	2.776	71.4	2.811	107.5	4.232	107	4.213	0.5	.020	3	.118	3
					30	●	MVS0250X30S030	75.5	2.972	83.5	3.287	84.4	3.323	118.5	4.665	118	4.646	0.5	.020	3	.118	3
2.566	.1010				2	●	MVS0257X02S030	5.5	.217	13.4	.528	13.4	.528	81.4	3.205	81	3.189	0.4	.016	3	.118	2
					7	●	MVS0257X07S030	18.4	.724	26.5	1.043	26.5	1.043	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	MVS0257X12S030	31.2	1.228	39.5	1.555	39.5	1.555	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	MVS0257X20S030	51.8	2.039	60.5	2.382	60.5	2.382	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	MVS0257X25S030	64.6	2.543	73.5	2.894	73.5	2.894	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	MVS0257X30S030	77.4	3.047	86.5	3.406	86.5	3.406	132.5	5.217	132	5.197	0.5	.020	3	.118	4
2.600	.1024				2	●	MVS0260X02S030	5.6	.220	13.4	.528	13.4	.528	81.4	3.205	81	3.189	0.4	.016	3	.118	2
					7	●	MVS0260X07S030	18.7	.736	26.5	1.043	26.5	1.043	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	MVS0260X12S030	31.7	1.248	39.5	1.555	39.5	1.555	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	MVS0260X20S030	52.5	2.067	60.5	2.382	60.5	2.382	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	MVS0260X25S030	65.5	2.579	73.5	2.894	73.5	2.894	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	MVS0260X30S030	78.5	3.091	86.5	3.406	86.5	3.406	132.5	5.217	132	5.197	0.5	.020	3	.118	4

Note 1) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.642	**.1040**		**37**	**#5-44**	2	●	**MVS0264X02S030**	5.7	.224	13.8	.543	13.8	.543	81.4	3.205	81	3.189	0.4	.016	3	.118	2
					7	●	**MVS0264X07S030**	19.0	.748	27.5	1.083	27.5	1.083	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	**MVS0264X12S030**	32.2	1.268	41.5	1.634	41.5	1.634	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	**MVS0264X20S030**	53.3	2.098	62.5	2.461	62.5	2.461	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	**MVS0264X25S030**	66.5	2.618	76.5	3.012	76.5	3.012	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	**MVS0264X30S030**	79.7	3.138	89.5	3.524	89.5	3.524	132.5	5.217	132	5.197	0.5	.020	3	.118	4
2.693	**.1060**				2	●	**MVS0269X02S030**	5.8	.228	13.8	.543	13.8	.543	81.4	3.205	81	3.189	0.4	.016	3	.118	2
					7	●	**MVS0269X07S030**	19.3	.760	27.5	1.083	27.5	1.083	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	**MVS0269X12S030**	32.8	1.291	41.5	1.634	41.5	1.634	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	**MVS0269X20S030**	54.3	2.138	62.5	2.461	62.5	2.461	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	**MVS0269X25S030**	67.8	2.669	76.5	3.012	76.5	3.012	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	**MVS0269X30S030**	81.2	3.197	89.5	3.524	89.5	3.524	132.5	5.217	132	5.197	0.5	.020	3	.118	4
2.700	**.1063**		**36**	**#6-32**	2	●	**MVS0270X02S030**	5.8	.228	13.8	.543	13.8	.543	81.4	3.205	81	3.189	0.4	.016	3	.118	2
					7	●	**MVS0270X07S030**	19.4	.764	27.5	1.083	27.5	1.083	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	**MVS0270X12S030**	32.9	1.295	41.5	1.634	41.5	1.634	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	**MVS0270X20S030**	54.5	2.146	62.5	2.461	62.5	2.461	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	**MVS0270X25S030**	68.0	2.677	76.5	3.012	76.5	3.012	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	**MVS0270X30S030**	81.5	3.209	89.5	3.524	89.5	3.524	132.5	5.217	132	5.197	0.5	.020	3	.118	4
2.779	**.1094**	**7/64**			2	●	**MVS0278X02S030**	6.0	.236	14.4	.567	14.4	.567	81.4	3.205	81	3.189	0.4	.016	3	.118	2
					7	●	**MVS0278X07S030**	20.0	.787	28.5	1.122	28.5	1.122	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	**MVS0278X12S030**	33.9	1.335	42.5	1.673	42.5	1.673	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	**MVS0278X20S030**	56.1	2.209	64.5	2.539	64.5	2.539	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	**MVS0278X25S030**	70.0	2.756	78.5	3.091	78.5	3.091	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	**MVS0278X30S030**	83.9	3.303	92.5	3.642	92.5	3.642	132.5	5.217	132	5.197	0.5	.020	3	.118	4
2.800	**.1102**		**35**		2	●	**MVS0280X02S030**	6.0	.236	14.4	.567	14.4	.567	81.4	3.205	81	3.189	0.4	.016	3	.118	2
					7	●	**MVS0280X07S030**	20.1	.791	28.5	1.122	28.5	1.122	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	**MVS0280X12S030**	34.1	1.343	42.5	1.673	42.5	1.673	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	**MVS0280X20S030**	56.5	2.224	64.5	2.539	64.5	2.539	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	**MVS0280X25S030**	70.5	2.776	78.5	3.091	78.5	3.091	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	**MVS0280X30S030**	84.5	3.327	92.5	3.642	92.5	3.642	132.5	5.217	132	5.197	0.5	.020	3	.118	4
2.900	**.1142**				2	●	**MVS0290X02S030**	6.3	.248	14.9	.587	14.9	.587	81.5	3.209	81	3.189	0.5	.020	3	.118	2
					7	●	**MVS0290X07S030**	20.8	.819	29.5	1.161	29.5	1.161	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					12	●	**MVS0290X12S030**	35.3	1.390	44.5	1.752	44.5	1.752	81.5	3.209	81	3.189	0.5	.020	3	.118	4
					20	●	**MVS0290X20S030**	58.5	2.303	67.5	2.657	67.5	2.657	103.5	4.075	103	4.055	0.5	.020	3	.118	4
					25	●	**MVS0290X25S030**	73.0	2.874	81.5	3.209	81.5	3.209	117.5	4.626	117	4.606	0.5	.020	3	.118	4
					30	●	**MVS0290X30S030**	87.5	3.445	96.5	3.799	96.5	3.799	132.5	5.217	132	5.197	0.5	.020	3	.118	4

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

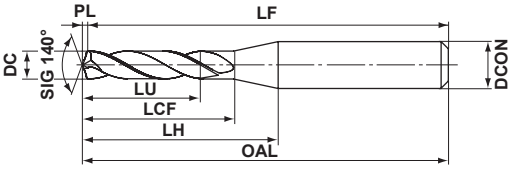
MVE/MVS

- New DP1020 grade provides excellent wear resistance with a unique wavy cutting edge sharpness and "TRI-Cooling technology" coolant holes which provides excellent chip evacuation.
- Double margin available in 10×D, 15×D, 20×D, 25×D, 30×D, 35×D and 40×D for excellent straightness and surface finish.

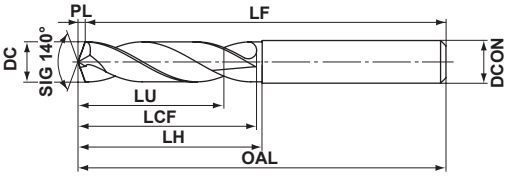
UWC | DP1 | only MVS | 140° | X | Z | only MVS

P | M | K | N | S | H only MVE

MVE (External Coolant)

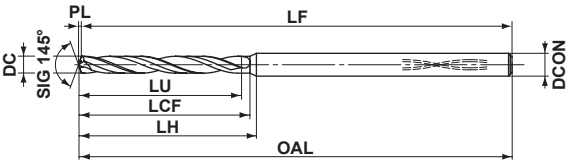


Type1

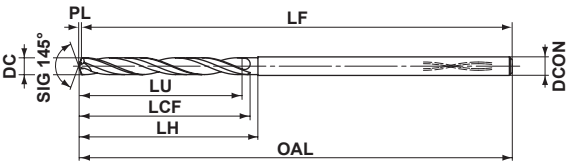


Type2

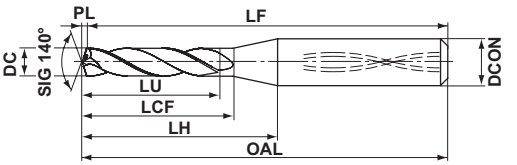
MVS (Internal Coolant)



Type3



Type4



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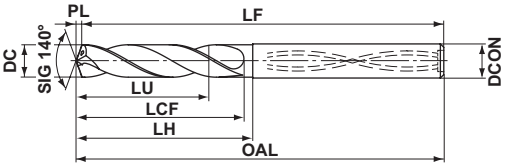
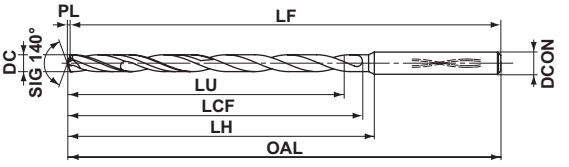
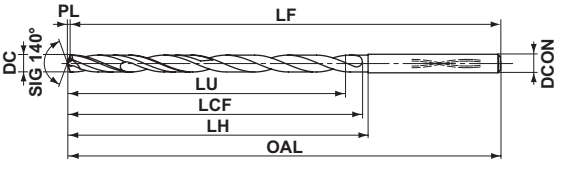


Type6



Type7



Type8

(inch)

Type	DC=.1181	.1181<DC≤.2362	.2362<DC≤.3937	.3937<DC≤.7087	.7087<DC≤.7874
Type1,2,3,4,5,6	0 −.00055	0 −.00071	0 −.00087	0 −.00106	0 −.00130
Type7,8	−.00067 −.00122	−.00098 −.00169	−.00130 −.00217	−.00161 −.00268	–
	DCON=.1181	.1181<DCON≤.2362	.2362<DCON≤.3937	.3937<DCON≤.7087	.7087<DCON≤.7874
h6	0 −.00024	0 −.00031	0 −.00035	0 −.00043	0 −.00051

(mm)

Type	DC=3	3<DC≤6	6<DC≤10	10<DC≤18	18 <DC≤20
Type1,2,3,4,5,6	0 −0.014	0 −0.018	0 −0.022	0 −0.027	0 −0.033
Type7,8	−0.017 −0.031	−0.025 −0.043	−0.033 −0.055	−0.041 −0.068	–
	DCON=3	3<DCON≤6	6<DCON≤10	10<DCON≤18	18 <DCON≤20
h6	0 −0.006	0 −0.008	0 −0.009	0 −0.011	0 −0.013

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.000	.1181				2	Ext.	★	MVE0300X02S030	6.5	.256	16.5	.650	16.5	.650	55.5	2.185	55	2.165	0.5	.020	3	.118	2
					2	Ext.	●	MVE0300X02S060	6.5	.256	16.5	.650	19.7	.776	55.5	2.185	55	2.165	0.5	.020	6	.236	1
					2	Int.	★	MVS0300X02S030PL	6.5	.256	16.5	.650	16.5	.650	55.5	2.185	55	2.165	0.5	.020	3	.118	4
					2	Int.	●	MVS0300X02S060PL	6.5	.256	16.5	.650	19.7	.776	55.5	2.185	55	2.165	0.5	.020	6	.236	3
					3	Ext.	★	MVE0300X03S030	9.5	.374	21.5	.850	21.5	.850	60.5	2.386	60	2.362	0.5	.024	3	.118	2
					3	Ext.	★	MVE0300X03S060	9.5	.374	21.5	.850	24.7	.976	60.5	2.386	60	2.362	0.5	.024	6	.236	1
					3	Int.	★	MVS0300X03S030	9.5	.374	21.5	.850	21.5	.850	72.5	2.858	72	2.835	0.5	.024	3	.118	6
					3	Int.	●	MVS0300X03S060	9.5	.374	21.5	.850	24.7	.976	72.5	2.858	72	2.835	0.5	.024	6	.236	5
					5	Int.	★	MVS0300X05S030	15.5	.610	28.5	1.126	28.5	1.126	81.5	3.213	81	3.189	0.5	.024	3	.118	6
					5	Int.	●	MVS0300X05S060	15.5	.610	28.5	1.126	31.7	1.252	81.5	3.213	81	3.189	0.5	.024	6	.236	5
					8	Int.	★	MVS0300X08S030	24.5	.965	35.5	1.402	35.5	1.402	81.5	3.213	81	3.189	0.5	.024	3	.118	6
					8	Int.	●	MVS0300X08S060	24.5	.965	35.5	1.402	38.7	1.528	81.5	3.213	81	3.189	0.5	.024	6	.236	5
					10	Int.	★	MVS0300X10S030	30.5	1.201	39.5	1.555	42.5	1.677	90.5	3.563	90	3.543	0.5	.020	3	.118	8
					10	Int.	●	MVS0300X10S060	30.5	1.201	39.5	1.555	45.8	1.803	90.5	3.563	90	3.543	0.5	.020	6	.236	7
					15	Int.	★	MVS0300X15S030	45.5	1.791	54.5	2.146	57.5	2.268	105.5	4.154	105	4.134	0.5	.020	3	.118	8
					15	Int.	●	MVS0300X15S060	45.5	1.791	54.5	2.146	60.8	2.394	105.5	4.154	105	4.134	0.5	.020	6	.236	7
					20	Int.	★	MVS0300X20S030	60.5	2.382	69.5	2.736	72.5	2.858	120.5	4.744	120	4.724	0.5	.020	3	.118	8
					20	Int.	●	MVS0300X20S060	60.5	2.382	69.5	2.736	75.8	2.984	120.5	4.744	120	4.724	0.5	.020	6	.236	7
					25	Int.	★	MVS0300X25S030	75.5	2.972	84.5	3.327	87.5	3.449	135.5	5.335	135	5.315	0.5	.020	3	.118	8
					25	Int.	●	MVS0300X25S060	75.5	2.972	84.5	3.327	90.8	3.575	135.5	5.335	135	5.315	0.5	.020	6	.236	7
					30	Int.	★	MVS0300X30S030	90.5	3.563	99.5	3.917	102.5	4.039	150.5	5.925	150	5.906	0.5	.020	3	.118	8
					30	Int.	●	MVS0300X30S060	90.5	3.563	99.5	3.917	105.8	4.165	150.5	5.925	150	5.906	0.5	.020	6	.236	7
					35	Int.	★	MVS0300X35S030	105.5	4.154	115.5	4.547	118.5	4.669	166.5	6.555	166	6.535	0.5	.020	3	.118	8
					35	Int.	●	MVS0300X35S060	105.5	4.154	115.5	4.547	121.8	4.795	166.5	6.555	166	6.535	0.5	.020	6	.236	7
					40	Int.	★	MVS0300X40S030	120.5	4.744	130.5	5.138	133.5	5.260	181.5	7.146	181	7.126	0.5	.020	3	.118	8
					40	Int.	●	MVS0300X40S060	120.5	4.744	130.5	5.138	136.8	5.386	181.5	7.146	181	7.126	0.5	.020	6	.236	7
3.048	.1200		31		2	Ext.	●	MVE0305X02S060	6.6	.260	18.6	.732	21.8	.858	55.6	2.189	55	2.165	0.6	.024	6	.236	1
					2	Int.	●	MVS0305X02S060PL	6.6	.260	18.5	.728	21.6	.854	55.5	2.185	55	2.165	0.5	.020	6	.236	3
					3	Int.	●	MVS0305X03S060	9.7	.382	21.6	.850	24.8	.976	76.6	3.016	76	2.992	0.6	.024	6	.236	5
					5	Int.	●	MVS0305X05S060	15.8	.622	32.6	1.283	35.8	1.409	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					8	Int.	●	MVS0305X08S060	24.9	.980	41.6	1.638	44.8	1.764	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					10	Int.	●	MVS0305X10S060	31.0	1.220	46.6	1.835	52.7	2.079	97.6	3.843	97	3.819	0.6	.024	6	.236	7
					15	Int.	●	MVS0305X15S060	46.3	1.823	63.6	2.504	69.7	2.748	114.6	4.512	114	4.488	0.6	.024	6	.236	7
					20	Int.	●	MVS0305X20S060	61.5	2.421	81.6	3.213	87.7	3.457	132.6	5.220	132	5.197	0.6	.024	6	.236	7
					25	Int.	●	MVS0305X25S060	76.7	3.020	98.6	3.882	104.7	4.126	149.6	5.890	149	5.866	0.6	.024	6	.236	7
					30	Int.	●	MVS0305X30S060	92.0	3.622	116.6	4.591	119.6	4.835	167.6	6.598	167	6.575	0.6	.024	6	.236	7
					35	Int.	●	MVS0305X35S060	107.2	4.220	134.6	5.299	137.6	5.543	185.6	7.307	185	7.283	0.6	.024	6	.236	7
					40	Int.	●	MVS0305X40S060	122.5	4.823	150.6	5.929	153.6	6.173	201.6	7.937	201	7.913	0.6	.024	6	.236	7

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.100	.1220				2	Ext.	★	MVE0310X02S040	6.8	.268	18.6	.732	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	2
					2	Ext.	●	MVE0310X02S060	6.8	.268	18.6	.732	21.7	.854	55.6	2.189	55	2.165	0.6	.024	6	.236	1
					2	Int.	★	MVS0310X02S040PL	6.7	.264	18.5	.728	20.5	.807	55.5	2.185	55	2.165	0.5	.020	4	.157	4
					2	Int.	●	MVS0310X02S060PL	6.7	.264	18.5	.728	21.6	.850	55.5	2.185	55	2.165	0.5	.020	6	.236	3
					3	Ext.	★	MVE0310X03S040	9.9	.390	24.6	.969	26.6	1.047	60.6	2.386	60	2.362	0.6	.024	4	.157	2
					3	Ext.	★	MVE0310X03S060	9.9	.390	24.6	.969	27.7	1.091	60.6	2.386	60	2.362	0.6	.024	6	.236	1
					3	Int.	★	MVS0310X03S040	9.9	.390	21.6	.850	23.6	.929	76.6	3.016	76	2.992	0.6	.024	4	.157	6
					3	Int.	●	MVS0310X03S060	9.9	.390	21.6	.850	24.7	.972	76.6	3.016	76	2.992	0.6	.024	6	.236	5
					5	Int.	★	MVS0310X05S040	16.1	.634	32.6	1.283	32.6	1.283	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					5	Int.	●	MVS0310X05S060	16.1	.634	32.6	1.283	35.7	1.406	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					8	Int.	★	MVS0310X08S040	25.4	1.000	41.6	1.638	41.6	1.638	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					8	Int.	●	MVS0310X08S060	25.4	1.000	41.6	1.638	44.7	1.760	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					10	Int.	★	MVS0310X10S040	31.6	1.244	46.6	1.835	49.6	1.953	97.6	3.843	97	3.819	0.6	.024	4	.157	8
					10	Int.	●	MVS0310X10S060	31.6	1.244	46.6	1.835	52.7	2.075	97.6	3.843	97	3.819	0.6	.024	6	.236	7
					15	Int.	★	MVS0310X15S040	47.1	1.854	63.6	2.504	66.6	2.622	114.6	4.512	114	4.488	0.6	.024	4	.157	8
					15	Int.	●	MVS0310X15S060	47.1	1.854	63.6	2.504	69.7	2.744	114.6	4.512	114	4.488	0.6	.024	6	.236	7
					20	Int.	★	MVS0310X20S040	62.6	2.465	81.6	3.213	84.6	3.331	132.6	5.220	132	5.197	0.6	.024	4	.157	8
					20	Int.	●	MVS0310X20S060	62.6	2.465	81.6	3.213	87.7	3.453	132.6	5.220	132	5.197	0.6	.024	6	.236	7
					25	Int.	★	MVS0310X25S040	78.1	3.075	98.6	3.882	101.6	4.000	149.6	5.890	149	5.866	0.6	.024	4	.157	8
					25	Int.	●	MVS0310X25S060	78.1	3.075	98.6	3.882	104.7	4.122	149.6	5.890	149	5.866	0.6	.024	6	.236	7
					30	Int.	★	MVS0310X30S040	93.6	3.685	116.6	4.591	119.6	4.709	167.6	6.598	167	6.575	0.6	.024	4	.157	8
					30	Int.	●	MVS0310X30S060	93.6	3.685	116.6	4.591	122.7	4.831	167.6	6.598	167	6.575	0.6	.024	6	.236	7
					35	Int.	□	MVS0310X35S040	109.1	4.295	134.6	5.299	137.6	5.417	185.6	7.307	185	7.283	0.6	.024	4	.157	8
					35	Int.	□	MVS0310X35S060	109.1	4.295	134.6	5.299	140.7	5.539	185.6	7.307	185	7.283	0.6	.024	6	.236	7
					40	Int.	□	MVS0310X40S040	124.6	4.906	150.6	5.929	153.6	6.047	201.6	7.937	201	7.913	0.6	.024	4	.157	8
					40	Int.	□	MVS0310X40S060	124.6	4.906	150.6	5.929	156.7	6.169	201.6	7.937	201	7.913	0.6	.024	6	.236	7
3.175	.1250	1/8			2	Ext.	●	MVE0318X02S060	6.9	.272	18.6	.732	21.6	.850	55.6	2.189	55	2.165	0.6	.024	6	.236	1
					2	Int.	●	MVS0318X02S060PL	6.9	.272	18.5	.728	21.5	.846	55.5	2.185	55	2.165	0.5	.020	6	.236	3
					3	Int.	●	MVS0318X03S060	10.1	.398	21.6	.850	24.6	.969	76.6	3.016	76	2.992	0.6	.024	6	.236	5
					5	Int.	●	MVS0318X05S060	16.4	.646	32.6	1.283	35.6	1.402	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					8	Int.	●	MVS0318X08S060	26.0	1.024	41.6	1.638	44.6	1.756	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					10	Int.	●	MVS0318X10S060	32.3	1.272	46.6	1.835	52.6	2.071	97.6	3.843	97	3.819	0.6	.024	6	.236	7
					15	Int.	●	MVS0318X15S060	48.2	1.898	63.6	2.504	69.6	2.740	114.6	4.512	114	4.488	0.6	.024	6	.236	7
					20	Int.	●	MVS0318X20S060	64.1	2.524	81.6	3.213	87.6	3.449	132.6	5.220	132	5.197	0.6	.024	6	.236	7
					25	Int.	●	MVS0318X25S060	79.9	3.146	98.6	3.882	104.6	4.118	149.6	5.890	149	5.866	0.6	.024	6	.236	7
					30	Int.	●	MVS0318X30S060	95.8	3.772	116.6	4.591	119.6	4.827	167.6	6.598	167	6.575	0.6	.024	6	.236	7
					35	Int.	●	MVS0318X35S060	111.7	4.398	134.6	5.299	137.6	5.535	185.6	7.307	185	7.283	0.6	.024	6	.236	7
					40	Int.	●	MVS0318X40S060	127.6	5.024	150.6	5.929	153.6	6.165	201.6	7.937	201	7.913	0.6	.024	6	.236	7

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0320X02S040	7.0	.276	18.6	.732	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	2
					2	Ext.	●	MVE0320X02S060	7.0	.276	18.6	.732	21.6	.850	55.6	2.189	55	2.165	0.6	.024	6	.236	1
					2	Int.	★	MVS0320X02S040PL	6.9	.272	18.5	.728	20.5	.807	55.5	2.185	55	2.165	0.5	.020	4	.157	4
					2	Int.	●	MVS0320X02S060PL	6.9	.272	18.5	.728	21.5	.846	55.5	2.185	55	2.165	0.5	.020	6	.236	3
					3	Ext.	★	MVE0320X03S040	10.2	.402	24.6	.969	26.6	1.047	60.6	2.386	60	2.362	0.6	.024	4	.157	2
					3	Ext.	★	MVE0320X03S060	10.2	.402	24.6	.969	27.6	1.087	60.6	2.386	60	2.362	0.6	.024	6	.236	1
					3	Int.	★	MVS0320X03S040	10.2	.402	21.6	.850	23.6	.929	76.6	3.016	76	2.992	0.6	.024	4	.157	6
					3	Int.	●	MVS0320X03S060	10.2	.402	21.6	.850	24.6	.969	76.6	3.016	76	2.992	0.6	.024	6	.236	5
					5	Int.	★	MVS0320X05S040	16.6	.654	32.6	1.283	32.6	1.283	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					5	Int.	●	MVS0320X05S060	16.6	.654	32.6	1.283	35.6	1.402	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					8	Int.	★	MVS0320X08S040	26.2	1.031	41.6	1.638	41.6	1.638	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					8	Int.	●	MVS0320X08S060	26.2	1.031	41.6	1.638	44.6	1.756	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					10	Int.	★	MVS0320X10S040	32.6	1.283	46.6	1.835	49.6	1.953	97.6	3.843	97	3.819	0.6	.024	4	.157	8
3.200	.1260				10	Int.	●	MVS0320X10S060	32.6	1.283	46.6	1.835	52.6	2.071	97.6	3.843	97	3.819	0.6	.024	6	.236	7
					15	Int.	★	MVS0320X15S040	48.6	1.913	63.6	2.504	66.6	2.622	114.6	4.512	114	4.488	0.6	.024	4	.157	8
					15	Int.	●	MVS0320X15S060	48.6	1.913	63.6	2.504	69.6	2.740	114.6	4.512	114	4.488	0.6	.024	6	.236	7
					20	Int.	★	MVS0320X20S040	64.6	2.543	81.6	3.213	84.6	3.331	132.6	5.220	132	5.197	0.6	.024	4	.157	8
					20	Int.	●	MVS0320X20S060	64.6	2.543	81.6	3.213	87.6	3.449	132.6	5.220	132	5.197	0.6	.024	6	.236	7
					25	Int.	★	MVS0320X25S040	80.6	3.173	98.6	3.882	101.6	4.000	149.6	5.890	149	5.866	0.6	.024	4	.157	8
					25	Int.	●	MVS0320X25S060	80.6	3.173	98.6	3.882	104.6	4.118	149.6	5.890	149	5.866	0.6	.024	6	.236	7
					30	Int.	★	MVS0320X30S040	96.6	3.803	116.6	4.591	119.6	4.709	167.6	6.598	167	6.575	0.6	.024	4	.157	8
					30	Int.	●	MVS0320X30S060	96.6	3.803	116.6	4.591	122.6	4.827	167.6	6.598	167	6.575	0.6	.024	6	.236	7
					35	Int.	□	MVS0320X35S040	112.6	4.433	134.6	5.299	137.6	5.417	185.6	7.307	185	7.283	0.6	.024	4	.157	8
					35	Int.	□	MVS0320X35S060	112.6	4.433	134.6	5.299	140.6	5.539	185.6	7.307	185	7.283	0.6	.024	6	.236	7
					40	Int.	□	MVS0320X40S040	128.6	5.063	150.6	5.929	153.6	6.047	201.6	7.937	201	7.913	0.6	.024	4	.157	8
					40	Int.	□	MVS0320X40S060	128.6	5.063	150.6	5.929	156.6	6.165	201.6	7.937	201	7.913	0.6	.024	6	.236	7
					2	Ext.	★	MVE0330X02S040	7.2	.283	18.6	.732	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	2
					2	Ext.	●	MVE0330X02S060	7.2	.283	18.6	.732	21.5	.846	55.6	2.189	55	2.165	0.6	.024	6	.236	1
					2	Int.	★	MVS0330X02S040PL	7.1	.280	18.5	.728	20.5	.807	55.5	2.185	55	2.165	0.5	.020	4	.157	4
					2	Int.	●	MVS0330X02S060PL	7.1	.280	18.5	.728	21.4	.843	55.5	2.185	55	2.165	0.5	.020	6	.236	3
					3	Ext.	★	MVE0330X03S040	10.5	.413	24.6	.969	26.6	1.047	60.6	2.386	60	2.362	0.6	.024	4	.157	2
					3	Ext.	★	MVE0330X03S060	10.5	.413	24.6	.969	27.5	1.083	60.6	2.386	60	2.362	0.6	.024	6	.236	1
					3	Int.	★	MVS0330X03S040	10.5	.413	21.6	.850	23.6	.929	76.6	3.016	76	2.992	0.6	.024	4	.157	6
					3	Int.	●	MVS0330X03S060	10.5	.413	21.6	.850	24.5	.965	76.6	3.016	76	2.992	0.6	.024	6	.236	5
					5	Int.	★	MVS0330X05S040	17.1	.673	32.6	1.283	32.6	1.283	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					5	Int.	●	MVS0330X05S060	17.1	.673	32.6	1.283	35.5	1.398	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					8	Int.	★	MVS0330X08S040	27.0	1.063	41.6	1.638	41.6	1.638	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					8	Int.	●	MVS0330X08S060	27.0	1.063	41.6	1.638	44.5	1.752	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					10	Int.	★	MVS0330X10S040	33.6	1.323	46.6	1.835	49.6	1.953	97.6	3.843	97	3.819	0.6	.024	4	.157	8
3.300	.1299			M4x.7	10	Int.	●	MVS0330X10S060	33.6	1.323	46.6	1.835	52.5	2.067	97.6	3.843	97	3.819	0.6	.024	6	.236	7
					15	Int.	★	MVS0330X15S040	50.1	1.972	63.6	2.504	66.6	2.622	114.6	4.512	114	4.488	0.6	.024	4	.157	8
					15	Int.	●	MVS0330X15S060	50.1	1.972	63.6	2.504	69.5	2.736	114.6	4.512	114	4.488	0.6	.024	6	.236	7
					20	Int.	★	MVS0330X20S040	66.6	2.622	81.6	3.213	84.6	3.331	132.6	5.220	132	5.197	0.6	.024	4	.157	8
					20	Int.	●	MVS0330X20S060	66.6	2.622	81.6	3.213	87.5	3.445	132.6	5.220	132	5.197	0.6	.024	6	.236	7
					25	Int.	★	MVS0330X25S040	83.1	3.272	98.6	3.882	101.6	4.000	149.6	5.890	149	5.866	0.6	.024	4	.157	8
					25	Int.	●	MVS0330X25S060	83.1	3.272	98.6	3.882	104.5	4.114	149.6	5.890	149	5.866	0.6	.024	6	.236	7
					30	Int.	★	MVS0330X30S040	99.6	3.921	116.6	4.591	119.6	4.709	167.6	6.598	167	6.575	0.6	.024	4	.157	8
					30	Int.	●	MVS0330X30S060	99.6	3.921	116.6	4.591	122.5	4.823	167.6	6.598	167	6.575	0.6	.024	6	.236	7
					35	Int.	□	MVS0330X35S040	116.1	4.571	134.6	5.299	137.6	5.417	185.6	7.307	185	7.283	0.6	.024	4	.157	8
					35	Int.	□	MVS0330X35S060	116.1	4.571	134.6	5.299	140.5	5.531	185.6	7.307	185	7.283	0.6	.024	6	.236	7
					40	Int.	□	MVS0330X40S040	132.6	5.220	150.6	5.929	153.6	6.047	201.6	7.937	201	7.913	0.6	.024	4	.157	8
					40	Int.	□	MVS0330X40S060	132.6	5.220	150.6	5.929	156.5	6.161	201.6	7.937	201	7.913	0.6	.024	6	.236	7

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.400	.1339				2	Ext.	★	MVE0340X02S040	7.4	.291	18.6	.732	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	2
					2	Ext.	●	MVE0340X02S060	7.4	.291	18.6	.732	21.4	.843	55.6	2.189	55	2.165	0.6	.024	6	.236	1
					2	Int.	★	MVS0340X02S040PL	7.3	.287	18.5	.728	20.5	.807	55.5	2.185	55	2.165	0.5	.020	4	.157	4
					2	Int.	●	MVS0340X02S060PL	7.3	.287	18.5	.728	21.3	.839	55.5	2.185	55	2.165	0.5	.020	6	.236	3
					3	Ext.	★	MVE0340X03S040	10.8	.425	24.6	.969	26.6	1.047	60.6	2.386	60	2.362	0.6	.024	4	.157	2
					3	Ext.	★	MVE0340X03S060	10.8	.425	24.6	.969	27.4	1.079	60.6	2.386	60	2.362	0.6	.024	6	.236	1
					3	Int.	★	MVS0340X03S040	10.8	.425	21.6	.850	23.6	.929	76.6	3.016	76	2.992	0.6	.024	4	.157	6
					3	Int.	●	MVS0340X03S060	10.8	.425	21.6	.850	24.4	.961	76.6	3.016	76	2.992	0.6	.024	6	.236	5
					5	Int.	★	MVS0340X05S040	17.6	.693	32.6	1.283	32.6	1.283	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					5	Int.	●	MVS0340X05S060	17.6	.693	32.6	1.283	35.4	1.394	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					8	Int.	★	MVS0340X08S040	27.8	1.094	41.6	1.638	41.6	1.638	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					8	Int.	●	MVS0340X08S060	27.8	1.094	41.6	1.638	44.4	1.748	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					10	Int.	★	MVS0340X10S040	34.6	1.362	46.6	1.835	49.6	1.953	97.6	3.843	97	3.819	0.6	.024	4	.157	8
					10	Int.	●	MVS0340X10S060	34.6	1.362	46.6	1.835	52.4	2.063	97.6	3.843	97	3.819	0.6	.024	6	.236	7
					15	Int.	★	MVS0340X15S040	51.6	2.031	63.6	2.504	66.6	2.622	114.6	4.512	114	4.488	0.6	.024	4	.157	8
					15	Int.	●	MVS0340X15S060	51.6	2.031	63.6	2.504	69.4	2.732	114.6	4.512	114	4.488	0.6	.024	6	.236	7
					20	Int.	★	MVS0340X20S040	68.6	2.701	81.6	3.213	84.6	3.331	132.6	5.220	132	5.197	0.6	.024	4	.157	8
					20	Int.	●	MVS0340X20S060	68.6	2.701	81.6	3.213	87.4	3.441	132.6	5.220	132	5.197	0.6	.024	6	.236	7
					25	Int.	★	MVS0340X25S040	85.6	3.370	98.6	3.882	101.6	4.000	149.6	5.890	149	5.866	0.6	.024	4	.157	8
					25	Int.	●	MVS0340X25S060	85.6	3.370	98.6	3.882	104.4	4.110	149.6	5.890	149	5.866	0.6	.024	6	.236	7
					30	Int.	★	MVS0340X30S040	102.6	4.039	116.6	4.591	119.6	4.709	167.6	6.598	167	6.575	0.6	.024	4	.157	8
					30	Int.	●	MVS0340X30S060	102.6	4.039	116.6	4.591	122.4	4.819	167.6	6.598	167	6.575	0.6	.024	6	.236	7
					35	Int.	□	MVS0340X35S040	119.6	4.709	134.6	5.299	137.6	5.417	185.6	7.307	185	7.283	0.6	.024	4	.157	8
					35	Int.	□	MVS0340X35S060	119.6	4.709	134.6	5.299	140.4	5.528	185.6	7.307	185	7.283	0.6	.024	6	.236	7
					40	Int.	□	MVS0340X40S040	136.6	5.378	150.6	5.929	153.6	6.047	201.6	7.937	201	7.913	0.6	.024	4	.157	8
					40	Int.	□	MVS0340X40S060	136.6	5.378	150.6	5.929	156.4	6.157	201.6	7.937	201	7.913	0.6	.024	6	.236	7
3.500	.1378				2	Ext.	★	MVE0350X02S040	7.6	.299	18.6	.732	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	2
					2	Ext.	●	MVE0350X02S060	7.6	.299	18.6	.732	21.3	.839	55.6	2.189	55	2.165	0.6	.024	6	.236	1
					2	Int.	★	MVS0350X02S040PL	7.6	.299	18.5	.728	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	4
					2	Int.	●	MVS0350X02S060PL	7.6	.299	18.5	.728	21.2	.835	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Ext.	★	MVE0350X03S040	11.1	.437	24.6	.969	26.6	1.047	60.6	2.386	60	2.362	0.6	.024	4	.157	2
					3	Ext.	★	MVE0350X03S060	11.1	.437	24.6	.969	27.3	1.075	60.6	2.386	60	2.362	0.6	.024	6	.236	1
					3	Int.	★	MVS0350X03S040	11.1	.437	21.6	.850	23.6	.929	76.6	3.016	76	2.992	0.6	.024	4	.157	6
					3	Int.	●	MVS0350X03S060	11.1	.437	21.6	.850	24.3	.957	76.6	3.016	76	2.992	0.6	.024	6	.236	5
					5	Int.	★	MVS0350X05S040	18.1	.713	32.6	1.283	32.6	1.283	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					5	Int.	●	MVS0350X05S060	18.1	.713	32.6	1.283	35.3	1.390	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					8	Int.	★	MVS0350X08S040	28.6	1.126	41.6	1.638	41.6	1.638	87.6	3.449	87	3.425	0.6	.024	4	.157	6
					8	Int.	●	MVS0350X08S060	28.6	1.126	41.6	1.638	44.3	1.744	87.6	3.449	87	3.425	0.6	.024	6	.236	5
					10	Int.	★	MVS0350X10S040	35.6	1.402	46.6	1.835	49.6	1.953	97.6	3.843	97	3.819	0.6	.024	4	.157	8
					10	Int.	●	MVS0350X10S060	35.6	1.402	46.6	1.835	52.3	2.059	97.6	3.843	97	3.819	0.6	.024	6	.236	7
					15	Int.	★	MVS0350X15S040	53.1	2.091	63.6	2.504	66.6	2.622	114.6	4.512	114	4.488	0.6	.024	4	.157	8
					15	Int.	●	MVS0350X15S060	53.1	2.091	63.6	2.504	69.3	2.728	114.6	4.512	114	4.488	0.6	.024	6	.236	7
					20	Int.	★	MVS0350X20S040	70.6	2.780	81.6	3.213	84.6	3.331	132.6	5.220	132	5.197	0.6	.024	4	.157	8
					20	Int.	●	MVS0350X20S060	70.6	2.780	81.6	3.213	87.3	3.437	132.6	5.220	132	5.197	0.6	.024	6	.236	7
					25	Int.	★	MVS0350X25S040	88.1	3.469	98.6	3.882	101.6	4.000	149.6	5.890	149	5.866	0.6	.024	4	.157	8
					25	Int.	●	MVS0350X25S060	88.1	3.469	98.6	3.882	104.3	4.106	149.6	5.890	149	5.866	0.6	.024	6	.236	7
					30	Int.	★	MVS0350X30S040	105.6	4.157	116.6	4.591	119.6	4.709	167.6	6.598	167	6.575	0.6	.024	4	.157	8
					30	Int.	●	MVS0350X30S060	105.6	4.157	116.6	4.591	122.3	4.815	167.6	6.598	167	6.575	0.6	.024	6	.236	7
					35	Int.	★	MVS0350X35S040	123.1	4.846	134.6	5.299	137.6	5.417	185.6	7.307	185	7.283	0.6	.024	4	.157	8
					35	Int.	●	MVS0350X35S060	123.1	4.846	134.6	5.299	140.3	5.524	185.6	7.307	185	7.283	0.6	.024	6	.236	7
					40	Int.	★	MVS0350X40S040	140.6	5.535	150.6	5.929	153.6	6.047	201.6	7.937	201	7.913	0.6	.024	4	.157	8
					40	Int.	●	MVS0350X40S060	140.6	5.535	150.6	5.929	156.3	6.154	201.6	7.937	201	7.913	0.6	.024	6	.236	7

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.572	.1407	9/64			2	Ext.	●	MVE0357X02S060	7.7	.303	20.7	.815	23.3	.917	55.7	2.193	55	2.165	0.7	.028	6	.236	1
					2	Int.	●	MVS0357X02S060PL	7.7	.303	20.6	.811	23.2	.913	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Int.	●	MVS0357X03S060	11.4	.449	23.7	.933	26.3	1.035	80.7	3.177	80	3.150	0.7	.028	6	.236	5
					5	Int.	●	MVS0357X05S060	18.5	.728	36.7	1.445	39.3	1.547	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					8	Int.	●	MVS0357X08S060	29.2	1.150	46.7	1.839	49.3	1.941	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					10	Int.	●	MVS0357X10S060	36.4	1.433	52.7	2.075	58.3	2.295	103.7	4.083	103	4.055	0.7	.028	6	.236	7
					15	Int.	●	MVS0357X15S060	54.2	2.134	72.7	2.862	78.3	3.083	123.7	4.870	123	4.843	0.7	.028	6	.236	7
					20	Int.	●	MVS0357X20S060	72.1	2.839	92.7	3.650	98.3	3.870	143.7	5.657	143	5.630	0.7	.028	6	.236	7
					25	Int.	●	MVS0357X25S060	89.9	3.539	112.7	4.437	118.3	4.657	163.7	6.445	163	6.417	0.7	.028	6	.236	7
					30	Int.	●	MVS0357X30S060	107.8	4.244	132.7	5.224	135.7	5.445	183.7	7.232	183	7.205	0.7	.028	6	.236	7
					35	Int.	●	MVS0357X35S060	125.6	4.945	152.7	6.012	155.7	6.232	203.7	8.020	203	7.992	0.7	.028	6	.236	7
					40	Int.	●	MVS0357X40S060	143.5	5.650	172.7	6.799	175.7	7.020	223.7	8.807	223	8.780	0.7	.028	6	.236	7
3.600	.1417				2	Ext.	★	MVE0360X02S040	7.9	.311	20.7	.815	20.7	.815	55.7	2.193	55	2.165	0.7	.028	4	.157	2
					2	Ext.	●	MVE0360X02S060	7.9	.311	20.7	.815	23.3	.917	55.7	2.193	55	2.165	0.7	.028	6	.236	1
					2	Int.	★	MVS0360X02S040PL	7.8	.307	20.6	.811	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	4
					2	Int.	●	MVS0360X02S060PL	7.8	.307	20.6	.811	23.1	.909	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Ext.	★	MVE0360X03S040	11.5	.453	27.7	1.091	27.7	1.091	60.7	2.390	60	2.362	0.7	.028	4	.157	2
					3	Ext.	★	MVE0360X03S060	11.5	.453	27.7	1.091	30.3	1.193	60.7	2.390	60	2.362	0.7	.028	6	.236	1
					3	Int.	★	MVS0360X03S040	11.5	.453	23.7	.933	23.7	.933	80.7	3.177	80	3.150	0.7	.028	4	.157	6
					3	Int.	●	MVS0360X03S060	11.5	.453	23.7	.933	26.3	1.035	80.7	3.177	80	3.150	0.7	.028	6	.236	5
					5	Int.	★	MVS0360X05S040	18.7	.736	36.7	1.445	36.7	1.445	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					5	Int.	●	MVS0360X05S060	18.7	.736	36.7	1.445	39.3	1.547	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					8	Int.	★	MVS0360X08S040	29.5	1.161	46.7	1.839	46.7	1.839	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					8	Int.	●	MVS0360X08S060	29.5	1.161	46.7	1.839	49.3	1.941	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					10	Int.	★	MVS0360X10S040	36.7	1.445	52.7	2.075	55.7	2.193	103.7	4.083	103	4.055	0.7	.028	4	.157	8
					10	Int.	●	MVS0360X10S060	36.7	1.445	52.7	2.075	58.2	2.291	103.7	4.083	103	4.055	0.7	.028	6	.236	7
					15	Int.	★	MVS0360X15S040	54.7	2.154	72.7	2.862	75.7	2.980	123.7	4.870	123	4.843	0.7	.028	4	.157	8
					15	Int.	●	MVS0360X15S060	54.7	2.154	72.7	2.862	78.2	3.079	123.7	4.870	123	4.843	0.7	.028	6	.236	7
					20	Int.	★	MVS0360X20S040	72.7	2.862	92.7	3.650	95.7	3.768	143.7	5.657	143	5.630	0.7	.028	4	.157	8
					20	Int.	●	MVS0360X20S060	72.7	2.862	92.7	3.650	98.2	3.866	143.7	5.657	143	5.630	0.7	.028	6	.236	7
					25	Int.	★	MVS0360X25S040	90.7	3.571	112.7	4.437	115.7	4.555	163.7	6.445	163	6.417	0.7	.028	4	.157	8
					25	Int.	●	MVS0360X25S060	90.7	3.571	112.7	4.437	118.2	4.654	163.7	6.445	163	6.417	0.7	.028	6	.236	7
					30	Int.	★	MVS0360X30S040	108.7	4.280	132.7	5.224	135.7	5.343	183.7	7.232	183	7.205	0.7	.028	4	.157	8
					30	Int.	●	MVS0360X30S060	108.7	4.280	132.7	5.224	138.2	5.441	183.7	7.232	183	7.205	0.7	.028	6	.236	7
					35	Int.	□	MVS0360X35S040	126.7	4.988	152.7	6.012	155.7	6.130	203.7	8.020	203	7.992	0.7	.028	4	.157	8
					35	Int.	□	MVS0360X35S060	126.7	4.988	152.7	6.012	158.2	6.232	203.7	8.020	203	7.992	0.7	.028	6	.236	7
					40	Int.	□	MVS0360X40S040	144.7	5.697	172.7	6.799	175.7	6.917	223.7	8.807	223	8.780	0.7	.028	4	.157	8
					40	Int.	□	MVS0360X40S060	144.7	5.697	172.7	6.799	178.2	7.020	223.7	8.807	223	8.780	0.7	.028	6	.236	7

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0370X02S040	8.1	.319	20.7	.815	20.7	.815	55.7	2.193	55	2.165	0.7	.028	4	.157	2
					2	Ext.	●	MVE0370X02S060	8.1	.319	20.7	.815	23.2	.913	55.7	2.193	55	2.165	0.7	.028	6	.236	1
					2	Int.	★	MVS0370X02S040PL	8.0	.315	20.6	.811	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	4
					2	Int.	●	MVS0370X02S060PL	8.0	.315	20.6	.811	23.0	.906	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Ext.	★	MVE0370X03S040	11.8	.465	27.7	1.091	27.7	1.091	60.7	2.390	60	2.362	0.7	.028	4	.157	2
					3	Ext.	★	MVE0370X03S060	11.8	.465	27.7	1.091	30.2	1.189	60.7	2.390	60	2.362	0.7	.028	6	.236	1
					3	Int.	★	MVS0370X03S040	11.8	.465	23.7	.933	23.7	.933	80.7	3.177	80	3.150	0.7	.028	4	.157	6
					3	Int.	●	MVS0370X03S060	11.8	.465	23.7	.933	26.2	1.031	80.7	3.177	80	3.150	0.7	.028	6	.236	5
					5	Int.	★	MVS0370X05S040	19.2	.756	36.7	1.445	36.7	1.445	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					5	Int.	●	MVS0370X05S060	19.2	.756	36.7	1.445	39.2	1.543	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					8	Int.	★	MVS0370X08S040	30.3	1.193	46.7	1.839	46.7	1.839	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					8	Int.	●	MVS0370X08S060	30.3	1.193	46.7	1.839	49.2	1.937	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					10	Int.	★	MVS0370X10S040	37.7	1.484	52.7	2.075	55.7	2.193	103.7	4.083	103	4.055	0.7	.028	4	.157	8
3.700	.1457			M4.5x.75	10	Int.	●	MVS0370X10S060	37.7	1.484	52.7	2.075	58.1	2.287	103.7	4.083	103	4.055	0.7	.028	6	.236	7
					15	Int.	★	MVS0370X15S040	56.2	2.213	72.7	2.862	75.7	2.980	123.7	4.870	123	4.843	0.7	.028	4	.157	8
					15	Int.	●	MVS0370X15S060	56.2	2.213	72.7	2.862	78.1	3.075	123.7	4.870	123	4.843	0.7	.028	6	.236	7
					20	Int.	★	MVS0370X20S040	74.7	2.941	92.7	3.650	95.7	3.768	143.7	5.657	143	5.630	0.7	.028	4	.157	8
					20	Int.	●	MVS0370X20S060	74.7	2.941	92.7	3.650	98.1	3.862	143.7	5.657	143	5.630	0.7	.028	6	.236	7
					25	Int.	★	MVS0370X25S040	93.2	3.669	112.7	4.437	115.7	4.555	163.7	6.445	163	6.417	0.7	.028	4	.157	8
					25	Int.	●	MVS0370X25S060	93.2	3.669	112.7	4.437	118.1	4.650	163.7	6.445	163	6.417	0.7	.028	6	.236	7
					30	Int.	★	MVS0370X30S040	111.7	4.398	132.7	5.224	135.7	5.343	183.7	7.232	183	7.205	0.7	.028	4	.157	8
					30	Int.	●	MVS0370X30S060	111.7	4.398	132.7	5.224	138.1	5.437	183.7	7.232	183	7.205	0.7	.028	6	.236	7
					35	Int.	□	MVS0370X35S040	130.2	5.126	152.7	6.012	155.7	6.130	203.7	8.020	203	7.992	0.7	.028	4	.157	8
					35	Int.	□	MVS0370X35S060	130.2	5.126	152.7	6.012	158.1	6.228	203.7	8.020	203	7.992	0.7	.028	6	.236	7
					40	Int.	□	MVS0370X40S040	148.7	5.854	172.7	6.799	175.7	6.917	223.7	8.807	223	8.780	0.7	.028	4	.157	8
					40	Int.	□	MVS0370X40S060	148.7	5.854	172.7	6.799	178.1	7.016	223.7	8.807	223	8.780	0.7	.028	6	.236	7
					2	Ext.	★	MVE0380X02S040	8.3	.327	20.7	.815	20.7	.815	55.7	2.193	55	2.165	0.7	.028	4	.157	2
					2	Ext.	●	MVE0380X02S060	8.3	.327	20.7	.815	23.1	.909	55.7	2.193	55	2.165	0.7	.028	6	.236	1
					2	Int.	★	MVS0380X02S040PL	8.2	.323	20.6	.811	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	4
					2	Int.	●	MVS0380X02S060PL	8.2	.323	20.6	.811	23.0	.906	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Ext.	★	MVE0380X03S040	12.1	.476	27.7	1.091	27.7	1.091	60.7	2.390	60	2.362	0.7	.028	4	.157	2
					3	Ext.	★	MVE0380X03S060	12.1	.476	27.7	1.091	30.1	1.185	60.7	2.390	60	2.362	0.7	.028	6	.236	1
					3	Int.	★	MVS0380X03S040	12.1	.476	23.7	.933	23.7	.933	80.7	3.177	80	3.150	0.7	.028	4	.157	6
					3	Int.	●	MVS0380X03S060	12.1	.476	23.7	.933	26.1	1.028	80.7	3.177	80	3.150	0.7	.028	6	.236	5
					5	Int.	★	MVS0380X05S040	19.7	.776	36.7	1.445	36.7	1.445	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					5	Int.	●	MVS0380X05S060	19.7	.776	36.7	1.445	39.1	1.539	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					8	Int.	★	MVS0380X08S040	31.1	1.224	46.7	1.839	46.7	1.839	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					8	Int.	●	MVS0380X08S060	31.1	1.224	46.7	1.839	49.1	1.933	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					10	Int.	★	MVS0380X10S040	38.7	1.524	52.7	2.075	55.7	2.193	103.7	4.083	103	4.055	0.7	.028	4	.157	8
3.800	.1496		25	#10-24	10	Int.	●	MVS0380X10S060	38.7	1.524	52.7	2.075	58.1	2.287	103.7	4.083	103	4.055	0.7	.028	6	.236	7
					15	Int.	★	MVS0380X15S040	57.7	2.272	72.7	2.862	75.7	2.980	123.7	4.870	123	4.843	0.7	.028	4	.157	8
					15	Int.	●	MVS0380X15S060	57.7	2.272	72.7	2.862	78.1	3.075	123.7	4.870	123	4.843	0.7	.028	6	.236	7
					20	Int.	★	MVS0380X20S040	76.7	3.020	92.7	3.650	95.7	3.768	143.7	5.657	143	5.630	0.7	.028	4	.157	8
					20	Int.	●	MVS0380X20S060	76.7	3.020	92.7	3.650	98.1	3.862	143.7	5.657	143	5.630	0.7	.028	6	.236	7
					25	Int.	★	MVS0380X25S040	95.7	3.768	112.7	4.437	115.7	4.555	163.7	6.445	163	6.417	0.7	.028	4	.157	8
					25	Int.	●	MVS0380X25S060	95.7	3.768	112.7	4.437	118.1	4.650	163.7	6.445	163	6.417	0.7	.028	6	.236	7
					30	Int.	★	MVS0380X30S040	114.7	4.516	132.7	5.224	135.7	5.343	183.7	7.232	183	7.205	0.7	.028	4	.157	8
					30	Int.	●	MVS0380X30S060	114.7	4.516	132.7	5.224	138.1	5.437	183.7	7.232	183	7.205	0.7	.028	6	.236	7
					35	Int.	□	MVS0380X35S040	133.7	5.264	152.7	6.012	155.7	6.130	203.7	8.020	203	7.992	0.7	.028	4	.157	8
					35	Int.	□	MVS0380X35S060	133.7	5.264	152.7	6.012	158.1	6.224	203.7	8.020	203	7.992	0.7	.028	6	.236	7
					40	Int.	□	MVS0380X40S040	152.7	6.012	172.7	6.799	175.7	6.917	223.7	8.807	223	8.780	0.7	.028	4	.157	8
					40	Int.	□	MVS0380X40S060	152.7	6.012	172.7	6.799	178.1	7.012	223.7	8.807	223	8.780	0.7	.028	6	.236	7

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	**MVE0390X02S040**	8.5	.335	20.7	.815	20.7	.815	55.7	2.193	55	2.165	0.7	.028	4	.157	2
					2	Ext.	●	**MVE0390X02S060**	8.5	.335	20.7	.815	23.0	.906	55.7	2.193	55	2.165	0.7	.028	6	.236	1
					2	Int.	★	**MVS0390X02S040PL**	8.4	.331	20.6	.811	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	4
					2	Int.	●	**MVS0390X02S060PL**	8.4	.331	20.6	.811	22.9	.902	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Ext.	★	**MVE0390X03S040**	12.4	.488	27.7	1.091	27.7	1.091	60.7	2.390	60	2.362	0.7	.028	4	.157	2
					3	Ext.	★	**MVE0390X03S060**	12.4	.488	27.7	1.091	30.0	1.181	60.7	2.390	60	2.362	0.7	.028	6	.236	1
					3	Int.	★	**MVS0390X03S040**	12.4	.488	23.7	.933	23.7	.933	80.7	3.177	80	3.150	0.7	.028	4	.157	6
					3	Int.	●	**MVS0390X03S060**	12.4	.488	23.7	.933	26.0	1.024	80.7	3.177	80	3.150	0.7	.028	6	.236	5
					5	Int.	★	**MVS0390X05S040**	20.2	.795	36.7	1.445	36.7	1.445	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					5	Int.	●	**MVS0390X05S060**	20.2	.795	36.7	1.445	39.0	1.535	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					8	Int.	★	**MVS0390X08S040**	31.9	1.256	46.7	1.839	46.7	1.839	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					8	Int.	●	**MVS0390X08S060**	31.9	1.256	46.7	1.839	49.0	1.929	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					10	Int.	★	**MVS0390X10S040**	39.7	1.563	52.7	2.075	55.7	2.193	103.7	4.083	103	4.055	0.7	.028	4	.157	8
3.900	**.1535**				10	Int.	●	**MVS0390X10S060**	39.7	1.563	52.7	2.075	58.0	2.283	103.7	4.083	103	4.055	0.7	.028	6	.236	7
					15	Int.	★	**MVS0390X15S040**	59.2	2.331	72.7	2.862	75.7	2.980	123.7	4.870	123	4.843	0.7	.028	4	.157	8
					15	Int.	●	**MVS0390X15S060**	59.2	2.331	72.7	2.862	78.0	3.071	123.7	4.870	123	4.843	0.7	.028	6	.236	7
					20	Int.	★	**MVS0390X20S040**	78.7	3.098	92.7	3.650	95.7	3.768	143.7	5.657	143	5.630	0.7	.028	4	.157	8
					20	Int.	●	**MVS0390X20S060**	78.7	3.098	92.7	3.650	98.0	3.858	143.7	5.657	143	5.630	0.7	.028	6	.236	7
					25	Int.	★	**MVS0390X25S040**	98.2	3.866	112.7	4.437	115.7	4.555	163.7	6.445	163	6.417	0.7	.028	4	.157	8
					25	Int.	●	**MVS0390X25S060**	98.2	3.866	112.7	4.437	118.0	4.646	163.7	6.445	163	6.417	0.7	.028	6	.236	7
					30	Int.	★	**MVS0390X30S040**	117.7	4.634	132.7	5.224	135.7	5.343	183.7	7.232	183	7.205	0.7	.028	4	.157	8
					30	Int.	●	**MVS0390X30S060**	117.7	4.634	132.7	5.224	138.0	5.433	183.7	7.232	183	7.205	0.7	.028	6	.236	7
					35	Int.	□	**MVS0390X35S040**	137.2	5.402	152.7	6.012	155.7	6.130	203.7	8.020	203	7.992	0.7	.028	4	.157	8
					35	Int.	□	**MVS0390X35S060**	137.2	5.402	152.7	6.012	158.0	6.220	203.7	8.020	203	7.992	0.7	.028	6	.236	7
					40	Int.	□	**MVS0390X40S040**	156.7	6.169	172.7	6.799	175.7	6.917	223.7	8.807	223	8.780	0.7	.028	4	.157	8
					40	Int.	□	**MVS0390X40S060**	156.7	6.169	172.7	6.799	178.0	7.008	223.7	8.807	223	8.780	0.7	.028	6	.236	7
					2	Ext.	●	**MVE0397X02S060**	8.6	.339	20.7	.815	22.9	.902	55.7	2.193	55	2.165	0.7	.028	6	.236	1
					2	Int.	●	**MVS0397X02S060PL**	8.6	.339	20.6	.811	22.8	.898	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Int.	●	**MVS0397X03S060**	12.6	.496	23.7	.933	25.9	1.020	80.7	3.177	80	3.150	0.7	.028	6	.236	5
					5	Int.	●	**MVS0397X05S060**	20.5	.807	36.7	1.445	38.9	1.531	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					8	Int.	●	**MVS0397X08S060**	32.5	1.280	46.7	1.839	48.9	1.925	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					10	Int.	●	**MVS0397X10S060**	40.4	1.591	52.7	2.075	57.9	2.280	103.7	4.083	103	4.055	0.7	.028	6	.236	7
3.969	**.1563**	**5/32**			15	Int.	●	**MVS0397X15S060**	60.2	2.370	72.7	2.862	77.9	3.067	123.7	4.870	123	4.843	0.7	.028	6	.236	7
					20	Int.	●	**MVS0397X20S060**	80.1	3.154	92.7	3.650	97.9	3.854	143.7	5.657	143	5.630	0.7	.028	6	.236	7
					25	Int.	●	**MVS0397X25S060**	99.9	3.933	112.7	4.437	117.9	4.642	163.7	6.445	163	6.417	0.7	.028	6	.236	7
					30	Int.	●	**MVS0397X30S060**	119.7	4.713	132.7	5.224	135.7	5.429	183.7	7.232	183	7.205	0.7	.028	6	.236	7
					35	Int.	●	**MVS0397X35S060**	139.6	5.496	152.7	6.012	155.7	6.217	203.7	8.020	203	7.992	0.7	.028	6	.236	7
					40	Int.	●	**MVS0397X40S060**	159.4	6.276	172.7	6.799	175.7	7.004	223.7	8.807	223	8.780	0.7	.028	6	.236	7

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0400X02S040	8.7	.343	20.7	.815	20.7	.815	55.7	2.193	55	2.165	0.7	.028	4	.157	2
					2	Ext.	●	MVE0400X02S060	8.7	.343	20.7	.815	22.8	.898	55.7	2.193	55	2.165	0.7	.028	6	.236	1
					2	Int.	★	MVS0400X02S040PL	8.6	.339	20.6	.811	20.6	.811	55.6	2.189	55	2.165	0.6	.024	4	.157	4
					2	Int.	●	MVS0400X02S060PL	8.6	.339	20.6	.811	22.8	.898	55.6	2.189	55	2.165	0.6	.024	6	.236	3
					3	Ext.	★	MVE0400X03S040	12.7	.500	27.7	1.091	27.7	1.091	60.7	2.390	60	2.362	0.7	.028	4	.157	2
					3	Ext.	★	MVE0400X03S060	12.7	.500	27.7	1.091	29.8	1.173	60.7	2.390	60	2.362	0.7	.028	6	.236	1
					3	Int.	★	MVS0400X03S040	12.7	.500	23.7	.933	23.7	.933	80.7	3.177	80	3.150	0.7	.028	4	.157	6
					3	Int.	●	MVS0400X03S060	12.7	.500	23.7	.933	25.8	1.016	80.7	3.177	80	3.150	0.7	.028	6	.236	5
					5	Int.	★	MVS0400X05S040	20.7	.815	36.7	1.445	36.7	1.445	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					5	Int.	●	MVS0400X05S060	20.7	.815	36.7	1.445	38.8	1.528	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					8	Int.	★	MVS0400X08S040	32.7	1.287	46.7	1.839	46.7	1.839	92.7	3.650	92	3.622	0.7	.028	4	.157	6
					8	Int.	●	MVS0400X08S060	32.7	1.287	46.7	1.839	48.8	1.921	92.7	3.650	92	3.622	0.7	.028	6	.236	5
					10	Int.	★	MVS0400X10S040	40.7	1.602	52.7	2.075	55.7	2.193	103.7	4.083	103	4.055	0.7	.028	4	.157	8
4.000	.1575				10	Int.	●	MVS0400X10S060	40.7	1.602	52.7	2.075	57.9	2.280	103.7	4.083	103	4.055	0.7	.028	6	.236	7
					15	Int.	★	MVS0400X15S040	60.7	2.390	72.7	2.862	75.7	2.980	123.7	4.870	123	4.843	0.7	.028	4	.157	8
					15	Int.	●	MVS0400X15S060	60.7	2.390	72.7	2.862	77.9	3.067	123.7	4.870	123	4.843	0.7	.028	6	.236	7
					20	Int.	★	MVS0400X20S040	80.7	3.177	92.7	3.650	95.7	3.768	143.7	5.657	143	5.630	0.7	.028	4	.157	8
					20	Int.	●	MVS0400X20S060	80.7	3.177	92.7	3.650	97.9	3.854	143.7	5.657	143	5.630	0.7	.028	6	.236	7
					25	Int.	★	MVS0400X25S040	100.7	3.965	112.7	4.437	115.7	4.555	163.7	6.445	163	6.417	0.7	.028	4	.157	8
					25	Int.	●	MVS0400X25S060	100.7	3.965	112.7	4.437	117.9	4.642	163.7	6.445	163	6.417	0.7	.028	6	.236	7
					30	Int.	★	MVS0400X30S040	120.7	4.752	132.7	5.224	135.7	5.343	183.7	7.232	183	7.205	0.7	.028	4	.157	8
					30	Int.	●	MVS0400X30S060	120.7	4.752	132.7	5.224	137.9	5.429	183.7	7.232	183	7.205	0.7	.028	6	.236	7
					35	Int.	★	MVS0400X35S040	140.7	5.539	152.7	6.012	155.7	6.130	203.7	8.020	203	7.992	0.7	.028	4	.157	8
					35	Int.	●	MVS0400X35S060	140.7	5.539	152.7	6.012	157.9	6.217	203.7	8.020	203	7.992	0.7	.028	6	.236	7
					40	Int.	★	MVS0400X40S040	160.7	6.327	172.7	6.799	175.7	6.917	223.7	8.807	223	8.780	0.7	.028	4	.157	8
					40	Int.	●	MVS0400X40S060	160.7	6.327	172.7	6.799	177.9	7.004	223.7	8.807	223	8.780	0.7	.028	6	.236	7
					2	Ext.	●	MVE0404X02S060	8.8	.346	22.7	.894	24.8	.976	62.7	2.469	62	2.441	0.7	.028	6	.236	1
					2	Int.	●	MVS0404X02S060PL	8.8	.346	22.6	.890	24.7	.972	62.6	2.465	62	2.441	0.6	.024	6	.236	3
					3	Int.	●	MVS0404X03S060	12.8	.504	25.7	1.012	27.8	1.094	86.7	3.413	86	3.386	0.7	.028	6	.236	5
					5	Int.	●	MVS0404X05S060	20.9	.823	40.7	1.602	42.8	1.685	100.7	3.965	100	3.937	0.7	.028	6	.236	5
					8	Int.	●	MVS0404X08S060	33.0	1.299	52.7	2.075	54.8	2.157	100.7	3.965	100	3.937	0.7	.028	6	.236	5
					10	Int.	●	MVS0404X10S060	41.1	1.618	59.7	2.350	64.8	2.551	112.7	4.437	112	4.409	0.7	.028	6	.236	7
4.039	.1590		21	#10-32	15	Int.	●	MVS0404X15S060	61.3	2.413	81.7	3.217	86.8	3.417	134.7	5.303	134	5.276	0.7	.028	6	.236	7
					20	Int.	●	MVS0404X20S060	81.5	3.209	104.7	4.122	109.8	4.323	157.7	6.209	157	6.181	0.7	.028	6	.236	7
					25	Int.	●	MVS0404X25S060	101.7	4.004	126.7	4.988	131.8	5.189	179.7	7.075	179	7.047	0.7	.028	6	.236	7
					30	Int.	●	MVS0404X30S060	121.9	4.799	149.7	5.894	152.7	6.094	202.7	7.980	202	7.953	0.7	.028	6	.236	7
					35	Int.	●	MVS0404X35S060	142.1	5.594	171.7	6.760	174.7	6.961	224.7	8.846	224	8.819	0.7	.028	6	.236	7
					40	Int.	●	MVS0404X40S060	162.3	6.390	195.7	7.705	198.7	7.906	248.7	9.791	248	9.764	0.7	.028	6	.236	7

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0410X02S050	8.9	.350	22.7	.894	24.7	.972	62.7	2.469	62	2.441	0.7	.028	5	.197	2
					2	Ext.	●	MVE0410X02S060	8.9	.350	22.7	.894	24.7	.972	62.7	2.469	62	2.441	0.7	.028	6	.236	1
					2	Int.	★	MVS0410X02S050PL	8.8	.346	22.6	.890	24.6	.969	62.6	2.465	62	2.441	0.6	.024	5	.197	4
					2	Int.	●	MVS0410X02S060PL	8.8	.346	22.6	.890	24.7	.972	62.6	2.465	62	2.441	0.6	.024	6	.236	3
					3	Ext.	★	MVE0410X03S050	13.0	.512	29.7	1.169	31.7	1.248	68.7	2.705	68	2.677	0.7	.028	5	.197	2
					3	Ext.	★	MVE0410X03S060	13.0	.512	29.7	1.169	31.7	1.248	68.7	2.705	68	2.677	0.7	.028	6	.236	1
					3	Int.	★	MVS0410X03S050	13.0	.512	25.7	1.012	25.7	1.012	86.7	3.413	86	3.386	0.7	.028	5	.197	6
					3	Int.	●	MVS0410X03S060	13.0	.512	25.7	1.012	27.7	1.091	86.7	3.413	86	3.386	0.7	.028	6	.236	5
					5	Int.	★	MVS0410X05S050	21.2	.835	40.7	1.602	40.7	1.602	100.7	3.965	100	3.937	0.7	.028	5	.197	6
					5	Int.	●	MVS0410X05S060	21.2	.835	40.7	1.602	42.7	1.681	100.7	3.965	100	3.937	0.7	.028	6	.236	5
					8	Int.	★	MVS0410X08S050	33.5	1.319	52.7	2.075	52.7	2.075	100.7	3.965	100	3.937	0.7	.028	5	.197	6
					8	Int.	●	MVS0410X08S060	33.5	1.319	52.7	2.075	54.7	2.154	100.7	3.965	100	3.937	0.7	.028	6	.236	5
					10	Int.	★	MVS0410X10S050	41.7	1.642	59.7	2.350	62.7	2.472	112.7	4.437	112	4.409	0.7	.028	5	.197	8
4.100	.1614				10	Int.	●	MVS0410X10S060	41.7	1.642	59.7	2.350	64.8	2.551	112.7	4.437	112	4.409	0.7	.028	6	.236	7
					15	Int.	★	MVS0410X15S050	62.2	2.449	81.7	3.217	84.7	3.339	134.7	5.303	134	5.276	0.7	.028	5	.197	8
					15	Int.	●	MVS0410X15S060	62.2	2.449	81.7	3.217	86.8	3.417	134.7	5.303	134	5.276	0.7	.028	6	.236	7
					20	Int.	★	MVS0410X20S050	82.7	3.256	104.7	4.122	107.7	4.244	157.7	6.209	157	6.181	0.7	.028	5	.197	8
					20	Int.	●	MVS0410X20S060	82.7	3.256	104.7	4.122	109.8	4.323	157.7	6.209	157	6.181	0.7	.028	6	.236	7
					25	Int.	★	MVS0410X25S050	103.2	4.063	126.7	4.988	129.7	5.110	179.7	7.075	179	7.047	0.7	.028	5	.197	8
					25	Int.	●	MVS0410X25S060	103.2	4.063	126.7	4.988	131.8	5.189	179.7	7.075	179	7.047	0.7	.028	6	.236	7
					30	Int.	★	MVS0410X30S050	123.7	4.870	149.7	5.894	152.7	6.016	202.7	7.980	202	7.953	0.7	.028	5	.197	8
					30	Int.	●	MVS0410X30S060	123.7	4.870	149.7	5.894	154.8	6.094	202.7	7.980	202	7.953	0.7	.028	6	.236	7
					35	Int.	□	MVS0410X35S050	144.2	5.677	171.7	6.760	174.7	6.882	224.7	8.846	224	8.819	0.7	.028	5	.197	8
					35	Int.	□	MVS0410X35S060	144.2	5.677	171.7	6.760	176.8	6.961	224.7	8.846	224	8.819	0.7	.028	6	.236	7
					40	Int.	□	MVS0410X40S050	164.7	6.484	195.7	7.705	198.7	7.827	248.7	9.791	248	9.764	0.7	.028	5	.197	8
					40	Int.	□	MVS0410X40S060	164.7	6.484	195.7	7.705	200.8	7.906	248.7	9.791	248	9.764	0.7	.028	6	.236	7
					2	Ext.	★	MVE0420X02S050	9.2	.362	22.8	.898	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	2
					2	Ext.	●	MVE0420X02S060	9.2	.362	22.8	.898	24.7	.972	62.8	2.472	62	2.441	0.8	.031	6	.236	1
					2	Int.	★	MVS0420X02S050PL	9.1	.358	22.7	.894	24.7	.972	62.7	2.469	62	2.441	0.7	.028	5	.197	4
					2	Int.	●	MVS0420X02S060PL	9.1	.358	22.7	.894	24.6	.969	62.7	2.469	62	2.441	0.7	.028	6	.236	3
					3	Ext.	★	MVE0420X03S050	13.4	.528	29.8	1.173	31.8	1.252	68.8	2.709	68	2.677	0.8	.031	5	.197	2
					3	Ext.	★	MVE0420X03S060	13.4	.528	29.8	1.173	31.7	1.248	68.8	2.709	68	2.677	0.8	.031	6	.236	1
					3	Int.	★	MVS0420X03S050	13.4	.528	25.8	1.016	25.8	1.016	86.8	3.417	86	3.386	0.8	.031	5	.197	6
					3	Int.	●	MVS0420X03S060	13.4	.528	25.8	1.016	27.7	1.091	86.8	3.417	86	3.386	0.8	.031	6	.236	5
					5	Int.	★	MVS0420X05S050	21.8	.858	40.8	1.606	40.8	1.606	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					5	Int.	●	MVS0420X05S060	21.8	.858	40.8	1.606	42.7	1.681	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					8	Int.	★	MVS0420X08S050	34.4	1.354	52.8	2.079	52.8	2.079	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					8	Int.	●	MVS0420X08S060	34.4	1.354	52.8	2.079	54.7	2.154	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					10	Int.	★	MVS0420X10S050	42.8	1.685	59.8	2.354	62.8	2.472	112.8	4.441	112	4.409	0.8	.031	5	.197	8
4.200	.1654			M5x.8	10	Int.	●	MVS0420X10S060	42.8	1.685	59.8	2.354	64.7	2.547	112.8	4.441	112	4.409	0.8	.031	6	.236	7
					15	Int.	★	MVS0420X15S050	63.8	2.512	81.8	3.220	84.8	3.339	134.8	5.307	134	5.276	0.8	.031	5	.197	8
					15	Int.	●	MVS0420X15S060	63.8	2.512	81.8	3.220	86.7	3.413	134.8	5.307	134	5.276	0.8	.031	6	.236	7
					20	Int.	★	MVS0420X20S050	84.8	3.339	104.8	4.126	107.8	4.244	157.8	6.213	157	6.181	0.8	.031	5	.197	8
					20	Int.	●	MVS0420X20S060	84.8	3.339	104.8	4.126	109.7	4.319	157.8	6.213	157	6.181	0.8	.031	6	.236	7
					25	Int.	★	MVS0420X25S050	105.8	4.165	126.8	4.992	129.8	5.110	179.8	7.079	179	7.047	0.8	.031	5	.197	8
					25	Int.	●	MVS0420X25S060	105.8	4.165	126.8	4.992	131.7	5.185	179.8	7.079	179	7.047	0.8	.031	6	.236	7
					30	Int.	★	MVS0420X30S050	126.8	4.992	149.8	5.898	152.8	6.016	202.8	7.984	202	7.953	0.8	.031	5	.197	8
					30	Int.	●	MVS0420X30S060	126.8	4.992	149.8	5.898	154.7	6.091	202.8	7.984	202	7.953	0.8	.031	6	.236	7
					35	Int.	□	MVS0420X35S050	147.8	5.819	171.8	6.764	174.8	6.882	224.8	8.850	224	8.819	0.8	.031	5	.197	8
					35	Int.	□	MVS0420X35S060	147.8	5.819	171.8	6.764	176.7	6.957	224.8	8.850	224	8.819	0.8	.031	6	.236	7
					40	Int.	□	MVS0420X40S050	168.8	6.646	195.8	7.709	198.8	7.827	248.8	9.795	248	9.764	0.8	.031	5	.197	8
					40	Int.	□	MVS0420X40S060	168.8	6.646	195.8	7.709	200.7	7.902	248.8	9.795	248	9.764	0.8	.031	6	.236	7

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
4.300	.1693				2	Ext.	★	MVE0430X02S050	9.4	.370	22.8	.898	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	2
					2	Ext.	●	MVE0430X02S060	9.4	.370	22.8	.898	24.6	.969	62.8	2.472	62	2.441	0.8	.031	6	.236	1
					2	Int.	★	MVS0430X02S050PL	9.3	.366	22.7	.894	24.7	.972	62.7	2.469	62	2.441	0.7	.028	5	.197	4
					2	Int.	●	MVS0430X02S060PL	9.3	.366	22.7	.894	24.5	.965	62.7	2.469	62	2.441	0.7	.028	6	.236	3
					3	Ext.	★	MVE0430X03S050	13.7	.539	29.8	1.173	31.8	1.252	68.8	2.709	68	2.677	0.8	.031	5	.197	2
					3	Ext.	★	MVE0430X03S060	13.7	.539	29.8	1.173	31.6	1.244	68.8	2.709	68	2.677	0.8	.031	6	.236	1
					3	Int.	★	MVS0430X03S050	13.7	.539	25.8	1.016	25.8	1.016	86.8	3.417	86	3.386	0.8	.031	5	.197	6
					3	Int.	●	MVS0430X03S060	13.7	.539	25.8	1.016	27.6	1.087	86.8	3.417	86	3.386	0.8	.031	6	.236	5
					5	Int.	★	MVS0430X05S050	22.3	.878	40.8	1.606	40.8	1.606	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					5	Int.	●	MVS0430X05S060	22.3	.878	40.8	1.606	42.6	1.677	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					8	Int.	★	MVS0430X08S050	35.2	1.386	52.8	2.079	52.8	2.079	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					8	Int.	●	MVS0430X08S060	35.2	1.386	52.8	2.079	54.6	2.150	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					10	Int.	★	MVS0430X10S050	43.8	1.724	59.8	2.354	62.8	2.472	112.8	4.441	112	4.409	0.8	.031	5	.197	8
					10	Int.	●	MVS0430X10S060	43.8	1.724	59.8	2.354	64.6	2.543	112.8	4.441	112	4.409	0.8	.031	6	.236	7
					15	Int.	★	MVS0430X15S050	65.3	2.571	81.8	3.220	84.8	3.339	134.8	5.307	134	5.276	0.8	.031	5	.197	8
					15	Int.	●	MVS0430X15S060	65.3	2.571	81.8	3.220	86.6	3.409	134.8	5.307	134	5.276	0.8	.031	6	.236	7
					20	Int.	★	MVS0430X20S050	86.8	3.417	104.8	4.126	107.8	4.244	157.8	6.213	157	6.181	0.8	.031	5	.197	8
					20	Int.	●	MVS0430X20S060	86.8	3.417	104.8	4.126	109.6	4.315	157.8	6.213	157	6.181	0.8	.031	6	.236	7
					25	Int.	★	MVS0430X25S050	108.3	4.264	126.8	4.992	129.8	5.110	179.8	7.079	179	7.047	0.8	.031	5	.197	8
					25	Int.	●	MVS0430X25S060	108.3	4.264	126.8	4.992	131.6	5.181	179.8	7.079	179	7.047	0.8	.031	6	.236	7
					30	Int.	★	MVS0430X30S050	129.8	5.110	149.8	5.898	152.8	6.016	202.8	7.984	202	7.953	0.8	.031	5	.197	8
					30	Int.	●	MVS0430X30S060	129.8	5.110	149.8	5.898	154.6	6.087	202.8	7.984	202	7.953	0.8	.031	6	.236	7
					35	Int.	□	MVS0430X35S050	151.3	5.957	171.8	6.764	174.8	6.882	224.8	8.850	224	8.819	0.8	.031	5	.197	8
					35	Int.	□	MVS0430X35S060	151.3	5.957	171.8	6.764	176.6	6.953	224.8	8.850	224	8.819	0.8	.031	6	.236	7
					40	Int.	□	MVS0430X40S050	172.8	6.803	195.8	7.709	198.8	7.827	248.8	9.795	248	9.764	0.8	.031	5	.197	8
					40	Int.	□	MVS0430X40S060	172.8	6.803	195.8	7.709	200.6	7.898	248.8	9.795	248	9.764	0.8	.031	6	.236	7
4.366	.1719	11/64			2	Ext.	●	MVE0437X02S060	9.5	.374	22.8	.898	24.6	.969	62.8	2.472	62	2.441	0.8	.031	6	.236	1
					2	Int.	●	MVS0437X02S060PL	9.5	.374	22.7	.894	24.4	.965	62.7	2.469	62	2.441	0.7	.028	6	.236	3
					3	Int.	●	MVS0437X03S060	13.9	.547	25.8	1.016	27.6	1.087	86.8	3.417	86	3.386	0.8	.031	6	.236	5
					5	Int.	●	MVS0437X05S060	22.6	.890	40.8	1.606	42.6	1.677	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					8	Int.	●	MVS0437X08S060	35.7	1.406	52.8	2.079	54.6	2.150	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					10	Int.	●	MVS0437X10S060	44.4	1.748	59.8	2.354	64.5	2.543	112.8	4.441	112	4.409	0.8	.031	6	.236	7
					15	Int.	●	MVS0437X15S060	66.3	2.610	81.8	3.220	86.5	3.409	134.8	5.307	134	5.276	0.8	.031	6	.236	7
					20	Int.	●	MVS0437X20S060	88.1	3.469	104.8	4.126	109.5	4.315	157.8	6.213	157	6.181	0.8	.031	6	.236	7
					25	Int.	●	MVS0437X25S060	109.9	4.327	126.8	4.992	131.5	5.181	179.8	7.079	179	7.047	0.8	.031	6	.236	7
					30	Int.	●	MVS0437X30S060	131.8	5.189	149.8	5.898	152.8	6.087	202.8	7.984	202	7.953	0.8	.031	6	.236	7
					35	Int.	●	MVS0437X35S060	153.6	6.047	171.8	6.764	174.8	6.953	224.8	8.850	224	8.819	0.8	.031	6	.236	7
					40	Int.	●	MVS0437X40S060	175.4	6.906	195.8	7.709	198.8	7.898	248.8	9.795	248	9.764	0.8	.031	6	.236	7

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0440X02S050	9.6	.378	22.8	.898	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	2
					2	Ext.	●	MVE0440X02S060	9.6	.378	22.8	.898	24.5	.965	62.8	2.472	62	2.441	0.8	.031	6	.236	1
					2	Int.	★	MVS0440X02S050PL	9.5	.374	22.7	.894	24.7	.972	62.7	2.469	62	2.441	0.7	.028	5	.197	4
					2	Int.	●	MVS0440X02S060PL	9.5	.374	22.7	.894	24.4	.961	62.7	2.469	62	2.441	0.7	.028	6	.236	3
					3	Ext.	★	MVE0440X03S050	14.0	.551	29.8	1.173	31.8	1.252	68.8	2.709	68	2.677	0.8	.031	5	.197	2
					3	Ext.	★	MVE0440X03S060	14.0	.551	29.8	1.173	31.5	1.240	68.8	2.709	68	2.677	0.8	.031	6	.236	1
					3	Int.	★	MVS0440X03S050	14.0	.551	25.8	1.016	25.8	1.016	86.8	3.417	86	3.386	0.8	.031	5	.197	6
					3	Int.	●	MVS0440X03S060	14.0	.551	25.8	1.016	27.5	1.083	86.8	3.417	86	3.386	0.8	.031	6	.236	5
					5	Int.	★	MVS0440X05S050	22.8	.898	40.8	1.606	40.8	1.606	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					5	Int.	●	MVS0440X05S060	22.8	.898	40.8	1.606	42.5	1.673	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					8	Int.	★	MVS0440X08S050	36.0	1.417	52.8	2.079	52.8	2.079	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					8	Int.	●	MVS0440X08S060	36.0	1.417	52.8	2.079	54.5	2.146	100.8	3.969	100	3.937	0.8	.031	6	.236	5
4.400	.1732		17		10	Int.	★	MVS0440X10S050	44.8	1.764	59.8	2.354	62.8	2.472	112.8	4.441	112	4.409	0.8	.031	5	.197	8
					10	Int.	●	MVS0440X10S060	44.8	1.764	59.8	2.354	64.5	2.539	112.8	4.441	112	4.409	0.8	.031	6	.236	7
					15	Int.	★	MVS0440X15S050	66.8	2.630	81.8	3.220	84.8	3.339	134.8	5.307	134	5.276	0.8	.031	5	.197	8
					15	Int.	●	MVS0440X15S060	66.8	2.630	81.8	3.220	86.5	3.406	134.8	5.307	134	5.276	0.8	.031	6	.236	7
					20	Int.	★	MVS0440X20S050	88.8	3.496	104.8	4.126	107.8	4.244	157.8	6.213	157	6.181	0.8	.031	5	.197	8
					20	Int.	●	MVS0440X20S060	88.8	3.496	104.8	4.126	109.5	4.311	157.8	6.213	157	6.181	0.8	.031	6	.236	7
					25	Int.	★	MVS0440X25S050	110.8	4.362	126.8	4.992	129.8	5.110	179.8	7.079	179	7.047	0.8	.031	5	.197	8
					25	Int.	●	MVS0440X25S060	110.8	4.362	126.8	4.992	131.5	5.177	179.8	7.079	179	7.047	0.8	.031	6	.236	7
					30	Int.	★	MVS0440X30S050	132.8	5.228	149.8	5.898	152.8	6.016	202.8	7.984	202	7.953	0.8	.031	5	.197	8
					30	Int.	●	MVS0440X30S060	132.8	5.228	149.8	5.898	154.5	6.083	202.8	7.984	202	7.953	0.8	.031	6	.236	7
					35	Int.	□	MVS0440X35S050	154.8	6.094	171.8	6.764	174.8	6.882	224.8	8.850	224	8.819	0.8	.031	5	.197	8
					35	Int.	□	MVS0440X35S060	154.8	6.094	171.8	6.764	176.5	6.949	224.8	8.850	224	8.819	0.8	.031	6	.236	7
					40	Int.	□	MVS0440X40S050	176.8	6.961	195.8	7.709	198.8	7.827	248.8	9.795	248	9.764	0.8	.031	5	.197	8
					40	Int.	□	MVS0440X40S060	176.8	6.961	195.8	7.709	200.5	7.894	248.8	9.795	248	9.764	0.8	.031	6	.236	7
					2	Ext.	★	MVE0450X02S050	9.8	.386	22.8	.898	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	2
					2	Ext.	●	MVE0450X02S060	9.8	.386	22.8	.898	24.4	.961	62.8	2.472	62	2.441	0.8	.031	6	.236	1
					2	Int.	★	MVS0450X02S050PL	9.7	.382	22.7	.894	24.7	.972	62.7	2.469	62	2.441	0.7	.028	5	.197	4
					2	Int.	●	MVS0450X02S060PL	9.7	.382	22.7	.894	24.3	.957	62.7	2.469	62	2.441	0.7	.028	6	.236	3
					3	Ext.	★	MVE0450X03S050	14.3	.563	29.8	1.173	31.8	1.252	68.8	2.709	68	2.677	0.8	.031	5	.197	2
					3	Ext.	★	MVE0450X03S060	14.3	.563	29.8	1.173	31.4	1.236	68.8	2.709	68	2.677	0.8	.031	6	.236	1
					3	Int.	★	MVS0450X03S050	14.3	.563	25.8	1.016	25.8	1.016	86.8	3.417	86	3.386	0.8	.031	5	.197	6
					3	Int.	●	MVS0450X03S060	14.3	.563	25.8	1.016	27.4	1.079	86.8	3.417	86	3.386	0.8	.031	6	.236	5
					5	Int.	★	MVS0450X05S050	23.3	.917	40.8	1.606	40.8	1.606	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					5	Int.	●	MVS0450X05S060	23.3	.917	40.8	1.606	42.4	1.669	100.8	3.969	100	3.937	0.8	.031	6	.236	5
					8	Int.	★	MVS0450X08S050	36.8	1.449	52.8	2.079	52.8	2.079	100.8	3.969	100	3.937	0.8	.031	5	.197	6
					8	Int.	●	MVS0450X08S060	36.8	1.449	52.8	2.079	54.4	2.142	100.8	3.969	100	3.937	0.8	.031	6	.236	5
4.500	.1772		16	#12-24	10	Int.	★	MVS0450X10S050	45.8	1.803	59.8	2.354	62.8	2.472	112.8	4.441	112	4.409	0.8	.031	5	.197	8
					10	Int.	●	MVS0450X10S060	45.8	1.803	59.8	2.354	64.4	2.535	112.8	4.441	112	4.409	0.8	.031	6	.236	7
					15	Int.	★	MVS0450X15S050	68.3	2.689	81.8	3.220	84.8	3.339	134.8	5.307	134	5.276	0.8	.031	5	.197	8
					15	Int.	●	MVS0450X15S060	68.3	2.689	81.8	3.220	86.4	3.402	134.8	5.307	134	5.276	0.8	.031	6	.236	7
					20	Int.	★	MVS0450X20S050	90.8	3.575	104.8	4.126	107.8	4.244	157.8	6.213	157	6.181	0.8	.031	5	.197	8
					20	Int.	●	MVS0450X20S060	90.8	3.575	104.8	4.126	109.4	4.307	157.8	6.213	157	6.181	0.8	.031	6	.236	7
					25	Int.	★	MVS0450X25S050	113.3	4.461	126.8	4.992	129.8	5.110	179.8	7.079	179	7.047	0.8	.031	5	.197	8
					25	Int.	●	MVS0450X25S060	113.3	4.461	126.8	4.992	131.4	5.173	179.8	7.079	179	7.047	0.8	.031	6	.236	7
					30	Int.	★	MVS0450X30S050	135.8	5.346	149.8	5.898	152.8	6.016	202.8	7.984	202	7.953	0.8	.031	5	.197	8
					30	Int.	●	MVS0450X30S060	135.8	5.346	149.8	5.898	154.4	6.079	202.8	7.984	202	7.953	0.8	.031	6	.236	7
					35	Int.	★	MVS0450X35S050	158.3	6.232	171.8	6.764	174.8	6.882	224.8	8.850	224	8.819	0.8	.031	5	.197	8
					35	Int.	●	MVS0450X35S060	158.3	6.232	171.8	6.764	176.4	6.945	224.8	8.850	224	8.819	0.8	.031	6	.236	7
					40	Int.	★	MVS0450X40S050	180.8	7.118	195.8	7.709	198.8	7.827	248.8	9.795	248	9.764	0.8	.031	5	.197	8
					40	Int.	●	MVS0450X40S060	180.8	7.118	195.8	7.709	200.4	7.890	248.8	9.795	248	9.764	0.8	.031	6	.236	7

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
4.600	.1811				2	Ext.	★	MVE0460X02S050	10.0	.394	24.8	.976	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	2
					2	Ext.	●	MVE0460X02S060	10.0	.394	24.8	.976	27.8	1.094	62.8	2.472	62	2.441	0.8	.031	6	.236	2
					2	Int.	★	MVS0460X02S050PL	9.9	.390	24.7	.972	24.7	.972	62.7	2.469	62	2.441	0.7	.028	5	.197	4
					2	Int.	●	MVS0460X02S060PL	9.9	.390	24.7	.972	27.7	1.091	62.7	2.469	62	2.441	0.7	.028	6	.236	4
					3	Ext.	★	MVE0460X03S050	14.6	.575	32.8	1.291	32.8	1.291	68.8	2.709	68	2.677	0.8	.031	5	.197	2
					3	Ext.	★	MVE0460X03S060	14.6	.575	32.8	1.291	35.8	1.409	68.8	2.709	68	2.677	0.8	.031	6	.236	2
					3	Int.	★	MVS0460X03S050	14.6	.575	28.3	1.114	28.3	1.114	90.8	3.575	90	3.543	0.8	.031	5	.197	6
					3	Int.	●	MVS0460X03S060	14.6	.575	28.3	1.114	31.3	1.232	90.8	3.575	90	3.543	0.8	.031	6	.236	6
					5	Int.	★	MVS0460X05S050	23.8	.937	44.8	1.764	44.8	1.764	105.8	4.165	105	4.134	0.8	.031	5	.197	6
					5	Int.	●	MVS0460X05S060	23.8	.937	44.8	1.764	47.8	1.882	105.8	4.165	105	4.134	0.8	.031	6	.236	6
					8	Int.	★	MVS0460X08S050	37.6	1.480	57.8	2.276	57.8	2.276	105.8	4.165	105	4.134	0.8	.031	5	.197	6
					8	Int.	●	MVS0460X08S060	37.6	1.480	57.8	2.276	60.8	2.394	105.8	4.165	105	4.134	0.8	.031	6	.236	6
					10	Int.	★	MVS0460X10S050	46.8	1.843	65.8	2.591	68.8	2.709	118.8	4.677	118	4.646	0.8	.031	5	.197	8
					10	Int.	●	MVS0460X10S060	46.8	1.843	65.8	2.591	68.8	2.709	118.8	4.677	118	4.646	0.8	.031	6	.236	8
					15	Int.	★	MVS0460X15S050	69.8	2.748	90.8	3.575	93.8	3.693	143.8	5.661	143	5.630	0.8	.031	5	.197	8
					15	Int.	●	MVS0460X15S060	69.8	2.748	90.8	3.575	93.8	3.693	143.8	5.661	143	5.630	0.8	.031	6	.236	8
					20	Int.	★	MVS0460X20S050	92.8	3.654	115.8	4.559	118.8	4.677	168.8	6.646	168	6.614	0.8	.031	5	.197	8
					20	Int.	●	MVS0460X20S060	92.8	3.654	115.8	4.559	118.8	4.677	168.8	6.646	168	6.614	0.8	.031	6	.236	8
					25	Int.	★	MVS0460X25S050	115.8	4.559	140.8	5.543	143.8	5.661	193.8	7.630	193	7.598	0.8	.031	5	.197	8
					25	Int.	●	MVS0460X25S060	115.8	4.559	140.8	5.543	143.8	5.661	193.8	7.630	193	7.598	0.8	.031	6	.236	8
					30	Int.	★	MVS0460X30S050	138.8	5.465	165.8	6.528	168.8	6.646	218.8	8.614	218	8.583	0.8	.031	5	.197	8
					30	Int.	●	MVS0460X30S060	138.8	5.465	165.8	6.528	168.8	6.646	218.8	8.614	218	8.583	0.8	.031	6	.236	8
					35	Int.	□	MVS0460X35S050	161.8	6.370	190.8	7.512	193.8	7.630	243.8	9.598	243	9.567	0.8	.031	5	.197	8
					35	Int.	□	MVS0460X35S060	161.8	6.370	190.8	7.512	193.8	7.630	243.8	9.598	243	9.567	0.8	.031	6	.236	8
					40	Int.	□	MVS0460X40S050	184.8	7.276	215.8	8.496	218.8	8.614	268.8	10.583	268	10.551	0.8	.031	5	.197	8
					40	Int.	□	MVS0460X40S060	184.8	7.276	215.8	8.496	218.8	8.614	268.8	10.583	268	10.551	0.8	.031	6	.236	8
4.700	.1850		13		2	Ext.	★	MVE0470X02S050	10.3	.406	24.9	.980	24.9	.980	62.9	2.476	62	2.441	0.9	.035	5	.197	2
					2	Ext.	●	MVE0470X02S060	10.3	.406	24.9	.980	27.9	1.098	62.9	2.476	62	2.441	0.9	.035	6	.236	2
					2	Int.	★	MVS0470X02S050PL	10.1	.398	24.7	.972	24.7	.972	62.7	2.469	62	2.441	0.7	.028	5	.197	4
					2	Int.	●	MVS0470X02S060PL	10.1	.398	24.7	.972	27.7	1.091	62.7	2.469	62	2.441	0.7	.028	6	.236	4
					3	Ext.	★	MVE0470X03S050	15.0	.591	32.9	1.295	32.9	1.295	68.9	2.713	68	2.677	0.9	.035	5	.197	2
					3	Ext.	★	MVE0470X03S060	15.0	.591	32.9	1.295	35.9	1.413	68.9	2.713	68	2.677	0.9	.035	6	.236	2
					3	Int.	★	MVS0470X03S050	15.0	.591	28.4	1.118	28.4	1.118	90.9	3.579	90	3.543	0.9	.035	5	.197	6
					3	Int.	●	MVS0470X03S060	15.0	.591	28.4	1.118	31.4	1.236	90.9	3.579	90	3.543	0.9	.035	6	.236	6
					5	Int.	★	MVS0470X05S050	24.4	.961	44.9	1.768	44.9	1.768	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					5	Int.	●	MVS0470X05S060	24.4	.961	44.9	1.768	47.9	1.886	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					8	Int.	★	MVS0470X08S050	38.5	1.516	57.9	2.280	57.9	2.280	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					8	Int.	●	MVS0470X08S060	38.5	1.516	57.9	2.280	60.9	2.398	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					10	Int.	★	MVS0470X10S050	47.9	1.886	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	5	.197	8
					10	Int.	●	MVS0470X10S060	47.9	1.886	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	6	.236	8
					15	Int.	★	MVS0470X15S050	71.4	2.811	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	5	.197	8
					15	Int.	●	MVS0470X15S060	71.4	2.811	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	6	.236	8
					20	Int.	★	MVS0470X20S050	94.9	3.736	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	5	.197	8
					20	Int.	●	MVS0470X20S060	94.9	3.736	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	6	.236	8
					25	Int.	★	MVS0470X25S050	118.4	4.661	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	5	.197	8
					25	Int.	●	MVS0470X25S060	118.4	4.661	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	6	.236	8
					30	Int.	★	MVS0470X30S050	141.9	5.587	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	5	.197	8
					30	Int.	●	MVS0470X30S060	141.9	5.587	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	6	.236	8
					35	Int.	□	MVS0470X35S050	165.4	6.512	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	5	.197	8
					35	Int.	□	MVS0470X35S060	165.4	6.512	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	6	.236	8
					40	Int.	□	MVS0470X40S050	188.9	7.437	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	5	.197	8
					40	Int.	□	MVS0470X40S060	188.9	7.437	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	6	.236	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
4.763	.1875	3/16			2	Ext.	●	MVE0476X02S060	10.3	.406	24.9	.980	27.9	1.098	62.9	2.476	62	2.441	0.9	.035	6	.236	2
					2	Int.	●	MVS0476X02S060PL	10.3	.406	24.8	.976	27.8	1.094	62.8	2.472	62	2.441	0.8	.031	6	.236	4
					3	Int.	●	MVS0476X03S060	15.1	.594	28.4	1.118	31.4	1.236	90.9	3.579	90	3.543	0.9	.035	6	.236	6
					5	Int.	●	MVS0476X05S060	24.7	.972	44.9	1.768	47.9	1.886	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					8	Int.	●	MVS0476X08S060	39.0	1.535	57.9	2.280	60.9	2.398	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					10	Int.	●	MVS0476X10S060	48.5	1.909	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	6	.236	8
					15	Int.	●	MVS0476X15S060	72.3	2.846	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	6	.236	8
					20	Int.	●	MVS0476X20S060	96.1	3.783	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	6	.236	8
					25	Int.	●	MVS0476X25S060	119.9	4.720	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	6	.236	8
					30	Int.	●	MVS0476X30S060	143.7	5.657	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	6	.236	8
					35	Int.	●	MVS0476X35S060	167.6	6.598	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	6	.236	8
					40	Int.	●	MVS0476X40S060	191.4	7.535	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	6	.236	8
4.800	.1890		12		2	Ext.	★	MVE0480X02S050	10.5	.413	24.9	.980	24.9	.980	62.9	2.476	62	2.441	0.9	.035	5	.197	2
					2	Ext.	●	MVE0480X02S060	10.5	.413	24.9	.980	27.9	1.098	62.9	2.476	62	2.441	0.9	.035	6	.236	2
					2	Int.	★	MVS0480X02S050PL	10.4	.409	24.8	.976	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	4
					2	Int.	●	MVS0480X02S060PL	10.4	.409	24.8	.976	27.8	1.094	62.8	2.472	62	2.441	0.8	.031	6	.236	4
					3	Ext.	★	MVE0480X03S050	15.3	.602	32.9	1.295	32.9	1.295	68.9	2.713	68	2.677	0.9	.035	5	.197	2
					3	Ext.	★	MVE0480X03S060	15.3	.602	32.9	1.295	35.9	1.413	68.9	2.713	68	2.677	0.9	.035	6	.236	2
					3	Int.	★	MVS0480X03S050	15.3	.602	28.4	1.118	28.4	1.118	90.9	3.579	90	3.543	0.9	.035	5	.197	6
					3	Int.	●	MVS0480X03S060	15.3	.602	28.4	1.118	31.4	1.236	90.9	3.579	90	3.543	0.9	.035	6	.236	6
					5	Int.	★	MVS0480X05S050	24.9	.980	44.9	1.768	44.9	1.768	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					5	Int.	●	MVS0480X05S060	24.9	.980	44.9	1.768	47.9	1.886	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					8	Int.	★	MVS0480X08S050	39.3	1.547	57.9	2.280	57.9	2.280	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					8	Int.	●	MVS0480X08S060	39.3	1.547	57.9	2.280	60.9	2.398	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					10	Int.	★	MVS0480X10S050	48.9	1.925	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	5	.197	8
					10	Int.	●	MVS0480X10S060	48.9	1.925	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	6	.236	8
					15	Int.	★	MVS0480X15S050	72.9	2.870	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	5	.197	8
					15	Int.	●	MVS0480X15S060	72.9	2.870	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	6	.236	8
					20	Int.	★	MVS0480X20S050	96.9	3.815	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	5	.197	8
					20	Int.	●	MVS0480X20S060	96.9	3.815	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	6	.236	8
					25	Int.	★	MVS0480X25S050	120.9	4.760	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	5	.197	8
					25	Int.	●	MVS0480X25S060	120.9	4.760	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	6	.236	8
					30	Int.	★	MVS0480X30S050	144.9	5.705	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	5	.197	8
					30	Int.	●	MVS0480X30S060	144.9	5.705	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	6	.236	8
					35	Int.	□	MVS0480X35S050	168.9	6.650	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	5	.197	8
					35	Int.	□	MVS0480X35S060	168.9	6.650	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	6	.236	8
					40	Int.	□	MVS0480X40S050	192.9	7.594	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	5	.197	8
					40	Int.	□	MVS0480X40S060	192.9	7.594	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	6	.236	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
4.900	.1929				2	Ext.	★	MVE0490X02S050	10.7	.421	24.9	.980	24.9	.980	62.9	2.476	62	2.441	0.9	.035	5	.197	2
					2	Ext.	●	MVE0490X02S060	10.7	.421	24.9	.980	27.9	1.098	62.9	2.476	62	2.441	0.9	.035	6	.236	2
					2	Int.	★	MVS0490X02S050PL	10.6	.417	24.8	.976	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	4
					2	Int.	●	MVS0490X02S060PL	10.6	.417	24.8	.976	27.8	1.094	62.8	2.472	62	2.441	0.8	.031	6	.236	4
					3	Ext.	★	MVE0490X03S050	15.6	.614	32.9	1.295	32.9	1.295	68.9	2.713	68	2.677	0.9	.035	5	.197	2
					3	Ext.	★	MVE0490X03S060	15.6	.614	32.9	1.295	35.9	1.413	68.9	2.713	68	2.677	0.9	.035	6	.236	2
					3	Int.	★	MVS0490X03S050	15.6	.614	28.4	1.118	28.4	1.118	90.9	3.579	90	3.543	0.9	.035	5	.197	6
					3	Int.	●	MVS0490X03S060	15.6	.614	28.4	1.118	31.4	1.236	90.9	3.579	90	3.543	0.9	.035	6	.236	6
					5	Int.	★	MVS0490X05S050	25.4	1.000	44.9	1.768	44.9	1.768	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					5	Int.	●	MVS0490X05S060	25.4	1.000	44.9	1.768	47.9	1.886	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					8	Int.	★	MVS0490X08S050	40.1	1.579	57.9	2.280	57.9	2.280	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					8	Int.	●	MVS0490X08S060	40.1	1.579	57.9	2.280	60.9	2.398	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					10	Int.	★	MVS0490X10S050	49.9	1.965	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	5	.197	8
					10	Int.	●	MVS0490X10S060	49.9	1.965	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	6	.236	8
					15	Int.	★	MVS0490X15S050	74.4	2.929	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	5	.197	8
					15	Int.	●	MVS0490X15S060	74.4	2.929	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	6	.236	8
					20	Int.	★	MVS0490X20S050	98.9	3.894	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	5	.197	8
					20	Int.	●	MVS0490X20S060	98.9	3.894	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	6	.236	8
					25	Int.	★	MVS0490X25S050	123.4	4.858	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	5	.197	8
					25	Int.	●	MVS0490X25S060	123.4	4.858	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	6	.236	8
					30	Int.	★	MVS0490X30S050	147.9	5.823	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	5	.197	8
					30	Int.	●	MVS0490X30S060	147.9	5.823	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	6	.236	8
					35	Int.	□	MVS0490X35S050	172.4	6.787	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	5	.197	8
					35	Int.	□	MVS0490X35S060	172.4	6.787	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	6	.236	8
					40	Int.	□	MVS0490X40S050	196.9	7.752	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	5	.197	8
					40	Int.	□	MVS0490X40S060	196.9	7.752	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	6	.236	8
5.000	.1969			M6x1.0	2	Ext.	★	MVE0500X02S050	10.9	.429	24.9	.980	24.9	.980	62.9	2.476	62	2.441	0.9	.035	5	.197	2
					2	Ext.	●	MVE0500X02S060	10.9	.429	24.9	.980	27.9	1.098	62.9	2.476	62	2.441	0.9	.035	6	.236	2
					2	Int.	★	MVS0500X02S050PL	10.8	.425	24.8	.976	24.8	.976	62.8	2.472	62	2.441	0.8	.031	5	.197	4
					2	Int.	●	MVS0500X02S060PL	10.8	.425	24.8	.976	24.8	.976	62.8	2.472	62	2.441	0.8	.031	6	.236	4
					3	Ext.	★	MVE0500X03S050	15.9	.626	32.9	1.295	32.9	1.295	68.9	2.713	68	2.677	0.9	.035	5	.197	2
					3	Ext.	★	MVE0500X03S060	15.9	.626	32.9	1.295	35.9	1.413	68.9	2.713	68	2.677	0.9	.035	6	.236	2
					3	Int.	★	MVS0500X03S050	15.9	.626	28.4	1.118	28.4	1.118	90.9	3.579	90	3.543	0.9	.035	5	.197	6
					3	Int.	●	MVS0500X03S060	15.9	.626	28.4	1.118	31.4	1.236	90.9	3.579	90	3.543	0.9	.035	6	.236	6
					5	Int.	★	MVS0500X05S050	25.9	1.020	44.9	1.768	44.9	1.768	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					5	Int.	●	MVS0500X05S060	25.9	1.020	44.9	1.768	47.9	1.886	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					8	Int.	★	MVS0500X08S050	40.9	1.610	57.9	2.280	57.9	2.280	105.9	4.169	105	4.134	0.9	.035	5	.197	6
					8	Int.	●	MVS0500X08S060	40.9	1.610	57.9	2.280	60.9	2.398	105.9	4.169	105	4.134	0.9	.035	6	.236	6
					10	Int.	★	MVS0500X10S050	50.9	2.004	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	5	.197	8
					10	Int.	●	MVS0500X10S060	50.9	2.004	65.9	2.594	68.9	2.713	118.9	4.681	118	4.646	0.9	.035	6	.236	8
					15	Int.	★	MVS0500X15S050	75.9	2.988	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	5	.197	8
					15	Int.	●	MVS0500X15S060	75.9	2.988	90.9	3.579	93.9	3.697	143.9	5.665	143	5.630	0.9	.035	6	.236	8
					20	Int.	★	MVS0500X20S050	100.9	3.972	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	5	.197	8
					20	Int.	●	MVS0500X20S060	100.9	3.972	115.9	4.563	118.9	4.681	168.9	6.650	168	6.614	0.9	.035	6	.236	8
					25	Int.	★	MVS0500X25S050	125.9	4.957	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	5	.197	8
					25	Int.	●	MVS0500X25S060	125.9	4.957	140.9	5.547	143.9	5.665	193.9	7.634	193	7.598	0.9	.035	6	.236	8
					30	Int.	★	MVS0500X30S050	150.9	5.941	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	5	.197	8
					30	Int.	●	MVS0500X30S060	150.9	5.941	165.9	6.531	168.9	6.650	218.9	8.618	218	8.583	0.9	.035	6	.236	8
					35	Int.	★	MVS0500X35S050	175.9	6.925	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	5	.197	8
					35	Int.	●	MVS0500X35S060	175.9	6.925	190.9	7.516	193.9	7.634	243.9	9.602	243	9.567	0.9	.035	6	.236	8
					40	Int.	★	MVS0500X40S050	200.9	7.909	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	5	.197	8
					40	Int.	●	MVS0500X40S060	200.9	7.909	215.9	8.500	218.9	8.618	268.9	10.587	268	10.551	0.9	.035	6	.236	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE0510X02S060	11.1	.437	26.9	1.059	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	2
					2	Int.	●	MVS0510X02S060PL	11.0	.433	26.8	1.055	28.8	1.134	66.8	2.630	66	2.598	0.8	.031	6	.236	4
					3	Ext.	★	MVE0510X03S060	16.2	.638	34.9	1.374	36.9	1.453	74.9	2.949	74	2.913	0.9	.035	6	.236	2
					3	Int.	●	MVS0510X03S060	16.2	.638	28.4	1.118	30.9	1.217	82.9	3.264	82	3.228	0.9	.035	6	.236	6
					5	Int.	●	MVS0510X05S060	26.4	1.039	44.9	1.768	48.9	1.925	100.9	3.972	100	3.937	0.9	.035	6	.236	6
					8	Int.	●	MVS0510X08S060	41.7	1.642	61.9	2.437	66.9	2.634	118.9	4.681	118	4.646	0.9	.035	6	.236	6
5.100	.2008		7	1/4-20	10	Int.	●	MVS0510X10S060	51.9	2.043	72.9	2.870	75.9	2.988	127.9	5.035	127	5.000	0.9	.035	6	.236	8
					15	Int.	●	MVS0510X15S060	77.4	3.047	99.9	3.933	102.9	4.051	154.9	6.098	154	6.063	0.9	.035	6	.236	8
					20	Int.	★	MVS0510X20S060	102.9	4.051	127.9	5.035	130.9	5.154	182.9	7.201	182	7.165	0.9	.035	6	.236	8
					25	Int.	★	MVS0510X25S060	128.4	5.055	154.9	6.098	157.9	6.217	209.9	8.264	209	8.228	0.9	.035	6	.236	8
					30	Int.	★	MVS0510X30S060	153.9	6.059	182.9	7.201	185.9	7.319	237.9	9.366	237	9.331	0.9	.035	6	.236	8
					35	Int.	□	MVS0510X35S060	179.4	7.063	209.9	8.264	212.9	8.382	264.9	10.429	264	10.394	0.9	.035	6	.236	8
					40	Int.	□	MVS0510X40S060	204.9	8.067	240.9	9.484	243.9	9.602	295.9	11.650	295	11.614	0.9	.035	6	.236	8
					2	Ext.	●	MVE0516X02S060	11.2	.441	26.9	1.059	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	2
					2	Int.	●	MVS0516X02S060PL	11.2	.441	26.8	1.055	28.8	1.134	66.8	2.630	66	2.598	0.8	.031	6	.236	4
					3	Int.	●	MVS0516X03S060	16.4	.646	28.4	1.118	30.9	1.217	82.9	3.264	82	3.228	0.9	.035	6	.236	6
					5	Int.	●	MVS0516X05S060	26.7	1.051	44.9	1.768	48.9	1.925	100.9	3.972	100	3.937	0.9	.035	6	.236	6
					8	Int.	●	MVS0516X08S060	42.2	1.661	61.9	2.437	66.9	2.634	118.9	4.681	118	4.646	0.9	.035	6	.236	6
5.160	.2032	13/64			10	Int.	●	MVS0516X10S060	52.5	2.067	72.9	2.870	75.9	2.988	127.9	5.035	127	5.000	0.9	.035	6	.236	8
					15	Int.	●	MVS0516X15S060	78.3	3.083	99.9	3.933	102.9	4.051	154.9	6.098	154	6.063	0.9	.035	6	.236	8
					20	Int.	●	MVS0516X20S060	104.1	4.098	127.9	5.035	130.9	5.154	182.9	7.201	182	7.165	0.9	.035	6	.236	8
					25	Int.	●	MVS0516X25S060	129.9	5.114	154.9	6.098	157.9	6.217	209.9	8.264	209	8.228	0.9	.035	6	.236	8
					30	Int.	●	MVS0516X30S060	155.7	6.130	182.9	7.201	185.9	7.319	237.9	9.366	237	9.331	0.9	.035	6	.236	8
					35	Int.	●	MVS0516X35S060	181.5	7.146	209.9	8.264	212.9	8.382	264.9	10.429	264	10.394	0.9	.035	6	.236	8
					40	Int.	●	MVS0516X40S060	207.3	8.161	240.9	9.484	243.9	9.602	295.9	11.650	295	11.614	0.9	.035	6	.236	8
					2	Ext.	●	MVE0520X02S060	11.3	.445	26.9	1.059	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	2
					2	Int.	●	MVS0520X02S060PL	11.2	.441	26.8	1.055	28.8	1.134	66.8	2.630	66	2.598	0.8	.031	6	.236	4
					3	Ext.	★	MVE0520X03S060	16.5	.650	34.9	1.374	36.9	1.453	74.9	2.949	74	2.913	0.9	.035	6	.236	2
					3	Int.	●	MVS0520X03S060	16.5	.650	28.4	1.118	30.9	1.217	82.9	3.264	82	3.228	0.9	.035	6	.236	6
					5	Int.	●	MVS0520X05S060	26.9	1.059	44.9	1.768	48.9	1.925	100.9	3.972	100	3.937	0.9	.035	6	.236	6
					8	Int.	●	MVS0520X08S060	42.5	1.673	61.9	2.437	66.9	2.634	118.9	4.681	118	4.646	0.9	.035	6	.236	6
5.200	.2047				10	Int.	●	MVS0520X10S060	52.9	2.083	72.9	2.870	75.9	2.992	127.9	5.035	127	5.000	0.9	.035	6	.236	8
					15	Int.	●	MVS0520X15S060	78.9	3.106	99.9	3.933	102.9	4.051	154.9	6.098	154	6.063	0.9	.035	6	.236	8
					20	Int.	★	MVS0520X20S060	104.9	4.130	127.9	5.035	130.9	5.157	182.9	7.201	182	7.165	0.9	.035	6	.236	8
					25	Int.	★	MVS0520X25S060	130.9	5.154	154.9	6.098	157.9	6.217	209.9	8.264	209	8.228	0.9	.035	6	.236	8
					30	Int.	★	MVS0520X30S060	156.9	6.177	182.9	7.201	185.9	7.319	237.9	9.366	237	9.331	0.9	.035	6	.236	8
					35	Int.	□	MVS0520X35S060	182.9	7.201	209.9	8.264	212.9	8.386	264.9	10.429	264	10.394	0.9	.035	6	.236	8
					40	Int.	□	MVS0520X40S060	208.9	8.224	240.9	9.484	243.9	9.606	295.9	11.650	295	11.614	0.9	.035	6	.236	8
					2	Ext.	●	MVE0530X02S060	11.6	.457	27.0	1.063	29.0	1.142	67.0	2.638	66	2.598	1.0	.039	6	.236	2
					2	Int.	●	MVS0530X02S060PL	11.4	.449	26.8	1.055	28.8	1.134	66.8	2.630	66	2.598	0.8	.031	6	.236	4
					3	Ext.	★	MVE0530X03S060	16.9	.665	35.0	1.378	37.0	1.457	75.0	2.953	74	2.913	1.0	.039	6	.236	2
					3	Int.	●	MVS0530X03S060	16.9	.665	28.5	1.122	31.0	1.220	83.0	3.268	82	3.228	1.0	.039	6	.236	6
					5	Int.	●	MVS0530X05S060	27.5	1.083	45.0	1.772	49.0	1.929	101.0	3.976	100	3.937	1.0	.039	6	.236	6
					8	Int.	●	MVS0530X08S060	43.4	1.709	62.0	2.441	67.0	2.638	119.0	4.685	118	4.646	1.0	.039	6	.236	6
5.300	.2087		4		10	Int.	●	MVS0530X10S060	54.0	2.126	73.0	2.874	76.0	2.992	128.0	5.039	127	5.000	1.0	.039	6	.236	8
					15	Int.	●	MVS0530X15S060	80.5	3.169	100.0	3.937	103.0	4.055	155.0	6.102	154	6.063	1.0	.039	6	.236	8
					20	Int.	★	MVS0530X20S060	107.0	4.213	128.0	5.039	131.0	5.157	183.0	7.205	182	7.165	1.0	.039	6	.236	8
					25	Int.	★	MVS0530X25S060	133.5	5.256	155.0	6.102	158.0	6.220	210.0	8.268	209	8.228	1.0	.039	6	.236	8
					30	Int.	★	MVS0530X30S060	160.0	6.299	183.0	7.205	186.0	7.323	238.0	9.370	237	9.331	1.0	.039	6	.236	8
					35	Int.	□	MVS0530X35S060	186.5	7.343	210.0	8.268	213.0	8.386	265.0	10.433	264	10.394	1.0	.039	6	.236	8
					40	Int.	□	MVS0530X40S060	213.0	8.386	241.0	9.488	244.0	9.606	296.0	11.654	295	11.614	1.0	.039	6	.236	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE0540X02S060	11.8	.465	27.0	1.063	29.0	1.142	67.0	2.638	66	2.598	1.0	.039	6	.236	2
					2	Int.	●	MVS0540X02S060PL	11.7	.461	26.9	1.059	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Ext.	★	MVE0540X03S060	17.2	.677	35.0	1.378	37.0	1.457	75.0	2.953	74	2.913	1.0	.039	6	.236	2
					3	Int.	●	MVS0540X03S060	17.2	.677	28.5	1.122	31.0	1.220	83.0	3.268	82	3.228	1.0	.039	6	.236	6
					5	Int.	●	MVS0540X05S060	28.0	1.102	45.0	1.772	49.0	1.929	101.0	3.976	100	3.937	1.0	.039	6	.236	6
					8	Int.	●	MVS0540X08S060	44.2	1.740	62.0	2.441	67.0	2.638	119.0	4.685	118	4.646	1.0	.039	6	.236	6
5.400	.2126		3	1/4-28	10	Int.	★	MVS0540X10S060	55.0	2.165	73.0	2.874	76.0	2.992	128.0	5.039	127	5.000	1.0	.039	6	.236	8
					15	Int.	●	MVS0540X15S060	82.0	3.228	100.0	3.937	103.0	4.055	155.0	6.102	154	6.063	1.0	.039	6	.236	8
					20	Int.	★	MVS0540X20S060	109.0	4.291	128.0	5.039	131.0	5.157	183.0	7.205	182	7.165	1.0	.039	6	.236	8
					25	Int.	★	MVS0540X25S060	136.0	5.354	155.0	6.102	158.0	6.220	210.0	8.268	209	8.228	1.0	.039	6	.236	8
					30	Int.	★	MVS0540X30S060	163.0	6.417	183.0	7.205	186.0	7.323	238.0	9.370	237	9.331	1.0	.039	6	.236	8
					35	Int.	□	MVS0540X35S060	190.0	7.480	210.0	8.268	213.0	8.386	265.0	10.433	264	10.394	1.0	.039	6	.236	8
					40	Int.	□	MVS0540X40S060	217.0	8.543	241.0	9.488	244.0	9.606	296.0	11.654	295	11.614	1.0	.039	6	.236	8
					2	Ext.	●	MVE0550X02S060	12.0	.472	27.0	1.063	29.0	1.142	67.0	2.638	66	2.598	1.0	.039	6	.236	2
					2	Int.	●	MVS0550X02S060PL	11.9	.469	26.9	1.059	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Ext.	★	MVE0550X03S060	17.5	.689	35.0	1.378	37.0	1.457	75.0	2.953	74	2.913	1.0	.039	6	.236	2
					3	Int.	●	MVS0550X03S060	17.5	.689	28.5	1.122	31.0	1.220	83.0	3.268	82	3.228	1.0	.039	6	.236	6
					5	Int.	●	MVS0550X05S060	28.5	1.122	45.0	1.772	49.0	1.929	101.0	3.976	100	3.937	1.0	.039	6	.236	6
					8	Int.	●	MVS0550X08S060	45.0	1.772	62.0	2.441	67.0	2.638	119.0	4.685	118	4.646	1.0	.039	6	.236	6
5.500	.2165				10	Int.	●	MVS0550X10S060	56.0	2.205	73.0	2.874	76.0	2.992	128.0	5.039	127	5.000	1.0	.039	6	.236	8
					15	Int.	★	MVS0550X15S060	83.5	3.287	100.0	3.937	103.0	4.055	155.0	6.102	154	6.063	1.0	.039	6	.236	8
					20	Int.	●	MVS0550X20S060	111.0	4.370	128.0	5.039	131.0	5.157	183.0	7.205	182	7.165	1.0	.039	6	.236	8
					25	Int.	●	MVS0550X25S060	138.5	5.453	155.0	6.102	158.0	6.220	210.0	8.268	209	8.228	1.0	.039	6	.236	8
					30	Int.	★	MVS0550X30S060	166.0	6.535	183.0	7.205	186.0	7.323	238.0	9.370	237	9.331	1.0	.039	6	.236	8
					35	Int.	●	MVS0550X35S060	193.5	7.618	210.0	8.268	213.0	8.386	265.0	10.433	264	10.394	1.0	.039	6	.236	8
					40	Int.	●	MVS0550X40S060	221.0	8.701	241.0	9.488	244.0	9.606	296.0	11.654	295	11.614	1.0	.039	6	.236	8
					2	Ext.	●	MVE0556X02S060	12.1	.476	29.0	1.142	29.0	1.142	67.0	2.638	66	2.598	1.0	.039	6	.236	2
					2	Int.	●	MVS0556X02S060PL	12.1	.476	28.9	1.138	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Int.	●	MVS0556X03S060	17.7	.697	31.0	1.220	31.0	1.220	83.0	3.268	82	3.228	1.0	.039	6	.236	6
					5	Int.	●	MVS0556X05S060	28.8	1.134	49.0	1.929	49.0	1.929	101.0	3.976	100	3.937	1.0	.039	6	.236	6
					8	Int.	●	MVS0556X08S060	45.5	1.791	67.0	2.638	67.0	2.638	119.0	4.685	118	4.646	1.0	.039	6	.236	6
					10	Int.	●	MVS0556X10S060	56.6	2.228	79.0	3.110	82.0	3.228	134.0	5.276	133	5.236	1.0	.039	6	.236	8
5.557	.2188	7/32			15	Int.	●	MVS0556X15S060	84.4	3.323	109.0	4.291	112.0	4.409	164.0	6.457	163	6.417	1.0	.039	6	.236	8
					20	Int.	●	MVS0556X20S060	112.2	4.417	139.0	5.472	142.0	5.591	194.0	7.638	193	7.598	1.0	.039	6	.236	8
					25	Int.	●	MVS0556X25S060	140.0	5.512	169.0	6.654	172.0	6.772	224.0	8.819	223	8.780	1.0	.039	6	.236	8
					30	Int.	●	MVS0556X30S060	167.7	6.602	199.0	7.835	202.0	7.953	254.0	10.000	253	9.961	1.0	.039	6	.236	8
					35	Int.	●	MVS0556X35S060	195.5	7.697	229.0	9.016	232.0	9.134	284.0	11.181	283	11.142	1.0	.039	6	.236	8
					40	Int.	●	MVS0556X40S060	223.3	8.791	261.0	10.276	264.0	10.394	316.0	12.441	315	12.402	1.0	.039	6	.236	8
					2	Ext.	●	MVE0560X02S060	12.2	.480	29.0	1.142	29.0	1.142	67.0	2.638	66	2.598	1.0	.039	6	.236	2
					2	Int.	●	MVS0560X02S060PL	12.1	.476	28.9	1.138	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Ext.	★	MVE0560X03S060	17.8	.701	37.0	1.457	37.0	1.457	75.0	2.953	74	2.913	1.0	.039	6	.236	2
					3	Int.	●	MVS0560X03S060	17.8	.701	31.0	1.220	31.0	1.220	83.0	3.268	82	3.228	1.0	.039	6	.236	6
					5	Int.	●	MVS0560X05S060	29.0	1.142	49.0	1.929	49.0	1.929	101.0	3.976	100	3.937	1.0	.039	6	.236	6
					8	Int.	●	MVS0560X08S060	45.8	1.803	67.0	2.638	67.0	2.638	119.0	4.685	118	4.646	1.0	.039	6	.236	6
5.600	.2205		2		10	Int.	★	MVS0560X10S060	57.0	2.244	79.0	3.110	82.0	3.228	134.0	5.276	133	5.236	1.0	.039	6	.236	8
					15	Int.	★	MVS0560X15S060	85.0	3.346	109.0	4.291	112.0	4.409	164.0	6.457	163	6.417	1.0	.039	6	.236	8
					20	Int.	★	MVS0560X20S060	113.0	4.449	139.0	5.472	142.0	5.591	194.0	7.638	193	7.598	1.0	.039	6	.236	8
					25	Int.	★	MVS0560X25S060	141.0	5.551	169.0	6.654	172.0	6.772	224.0	8.819	223	8.780	1.0	.039	6	.236	8
					30	Int.	★	MVS0560X30S060	169.0	6.654	199.0	7.835	202.0	7.953	254.0	10.000	253	9.961	1.0	.039	6	.236	8
					35	Int.	□	MVS0560X35S060	197.0	7.756	229.0	9.016	232.0	9.134	284.0	11.181	283	11.142	1.0	.039	6	.236	8
					40	Int.	□	MVS0560X40S060	225.0	8.858	261.0	10.276	264.0	10.394	316.0	12.441	315	12.402	1.0	.039	6	.236	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of ø5.9mm or less will be round shape.

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE0570X02S060	12.4	.488	29.0	1.142	29.0	1.142	67.0	2.638	66	2.598	1.0	.039	6	.236	2
					2	Int.	●	MVS0570X02S060PL	12.3	.484	28.9	1.138	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Ext.	★	MVE0570X03S060	18.1	.713	37.0	1.457	37.0	1.457	75.0	2.953	74	2.913	1.0	.039	6	.236	2
					3	Int.	●	MVS0570X03S060	18.1	.713	31.0	1.220	31.0	1.220	83.0	3.268	82	3.228	1.0	.039	6	.236	6
					5	Int.	●	MVS0570X05S060	29.5	1.161	49.0	1.929	49.0	1.929	101.0	3.976	100	3.937	1.0	.039	6	.236	6
					8	Int.	●	MVS0570X08S060	46.6	1.835	67.0	2.638	67.0	2.638	119.0	4.685	118	4.646	1.0	.039	6	.236	6
5.700	.2244				10	Int.	●	MVS0570X10S060	58.0	2.283	79.0	3.110	82.0	3.228	134.0	5.276	133	5.236	1.0	.039	6	.236	8
					15	Int.	●	MVS0570X15S060	86.5	3.406	109.0	4.291	112.0	4.409	164.0	6.457	163	6.417	1.0	.039	6	.236	8
					20	Int.	●	MVS0570X20S060	115.0	4.528	139.0	5.472	142.0	5.591	194.0	7.638	193	7.598	1.0	.039	6	.236	8
					25	Int.	★	MVS0570X25S060	143.5	5.650	169.0	6.654	172.0	6.772	224.0	8.819	223	8.780	1.0	.039	6	.236	8
					30	Int.	★	MVS0570X30S060	172.0	6.772	199.0	7.835	202.0	7.953	254.0	10.000	253	9.961	1.0	.039	6	.236	8
					35	Int.	□	MVS0570X35S060	200.5	7.894	229.0	9.016	232.0	9.134	284.0	11.181	283	11.142	1.0	.039	6	.236	8
					40	Int.	□	MVS0570X40S060	229.0	9.016	261.0	10.276	264.0	10.394	316.0	12.441	315	12.402	1.0	.039	6	.236	8
					2	Ext.	●	MVE0580X02S060	12.7	.500	29.1	1.146	29.1	1.146	67.1	2.642	66	2.598	1.1	.043	6	.236	2
					2	Int.	●	MVS0580X02S060PL	12.5	.492	28.9	1.138	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Ext.	★	MVE0580X03S060	18.5	.728	37.1	1.461	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	6	.236	2
					3	Int.	●	MVS0580X03S060	18.5	.728	31.1	1.224	31.1	1.224	83.1	3.272	82	3.228	1.1	.043	6	.236	6
					5	Int.	●	MVS0580X05S060	30.1	1.185	49.1	1.933	49.1	1.933	101.1	3.980	100	3.937	1.1	.043	6	.236	6
					8	Int.	●	MVS0580X08S060	47.5	1.870	67.1	2.642	67.1	2.642	119.1	4.689	118	4.646	1.1	.043	6	.236	6
5.800	.2283		1		10	Int.	●	MVS0580X10S060	59.1	2.327	79.1	3.114	82.1	3.232	134.1	5.280	133	5.236	1.1	.043	6	.236	8
					15	Int.	★	MVS0580X15S060	88.1	3.469	109.1	4.295	112.1	4.413	164.1	6.461	163	6.417	1.1	.043	6	.236	8
					20	Int.	●	MVS0580X20S060	117.1	4.610	139.1	5.476	142.1	5.594	194.1	7.642	193	7.598	1.1	.043	6	.236	8
					25	Int.	★	MVS0580X25S060	146.1	5.752	169.1	6.657	172.1	6.776	224.1	8.823	223	8.780	1.1	.043	6	.236	8
					30	Int.	★	MVS0580X30S060	175.1	6.894	199.1	7.839	202.1	7.957	254.1	10.004	253	9.961	1.1	.043	6	.236	8
					35	Int.	□	MVS0580X35S060	204.1	8.035	229.1	9.020	232.1	9.138	284.1	11.185	283	11.142	1.1	.043	6	.236	8
					40	Int.	□	MVS0580X40S060	233.1	9.177	261.1	10.280	264.1	10.398	316.1	12.445	315	12.402	1.1	.043	6	.236	8
					2	Ext.	●	MVE0590X02S060	12.9	.508	29.1	1.146	29.1	1.146	67.1	2.642	66	2.598	1.1	.043	6	.236	2
					2	Int.	●	MVS0590X02S060PL	12.7	.500	28.9	1.138	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Ext.	★	MVE0590X03S060	18.8	.740	37.1	1.461	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	6	.236	2
					3	Int.	●	MVS0590X03S060	18.8	.740	31.1	1.224	31.1	1.224	83.1	3.272	82	3.228	1.1	.043	6	.236	6
					5	Int.	●	MVS0590X05S060	30.6	1.205	49.1	1.933	49.1	1.933	101.1	3.980	100	3.937	1.1	.043	6	.236	6
					8	Int.	●	MVS0590X08S060	48.3	1.902	67.1	2.642	67.1	2.642	119.1	4.689	118	4.646	1.1	.043	6	.236	6
5.900	.2323				10	Int.	★	MVS0590X10S060	60.1	2.366	79.1	3.114	82.1	3.232	134.1	5.280	133	5.236	1.1	.043	6	.236	8
					15	Int.	★	MVS0590X15S060	89.6	3.528	109.1	4.295	112.1	4.413	164.1	6.461	163	6.417	1.1	.043	6	.236	8
					20	Int.	★	MVS0590X20S060	119.1	4.689	139.1	5.476	142.1	5.594	194.1	7.642	193	7.598	1.1	.043	6	.236	8
					25	Int.	★	MVS0590X25S060	148.6	5.850	169.1	6.657	172.1	6.776	224.1	8.823	223	8.780	1.1	.043	6	.236	8
					30	Int.	★	MVS0590X30S060	178.1	7.012	199.1	7.839	202.1	7.957	254.1	10.004	253	9.961	1.1	.043	6	.236	8
					35	Int.	□	MVS0590X35S060	207.6	8.173	229.1	9.020	232.1	9.138	284.1	11.185	283	11.142	1.1	.043	6	.236	8
					40	Int.	□	MVS0590X40S060	237.1	9.335	261.1	10.280	264.1	10.398	316.1	12.445	315	12.402	1.1	.043	6	.236	8
					2	Ext.	●	MVE0595X02S060	12.9	.508	29.1	1.146	29.1	1.146	67.1	2.642	66	2.598	1.1	.043	6	.236	2
					2	Int.	●	MVS0595X02S060PL	12.9	.508	28.9	1.138	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Int.	●	MVS0595X03S060	18.9	.744	31.1	1.224	31.1	1.224	83.1	3.272	82	3.228	1.1	.043	6	.236	6
					5	Int.	●	MVS0595X05S060	30.8	1.213	49.1	1.933	49.1	1.933	101.1	3.980	100	3.937	1.1	.043	6	.236	6
					8	Int.	●	MVS0595X08S060	48.7	1.917	67.1	2.642	67.1	2.642	119.1	4.689	118	4.646	1.1	.043	6	.236	6
					10	Int.	●	MVS0595X10S060	60.6	2.386	79.1	3.114	82.1	3.232	134.1	5.280	133	5.236	1.1	.043	6	.236	8
5.954	.2344	15/64	A		15	Int.	●	MVS0595X15S060	90.4	3.559	109.1	4.295	112.1	4.413	164.1	6.461	163	6.417	1.1	.043	6	.236	8
					20	Int.	●	MVS0595X20S060	120.2	4.732	139.1	5.476	142.1	5.594	194.1	7.642	193	7.598	1.1	.043	6	.236	8
					25	Int.	●	MVS0595X25S060	149.9	5.902	169.1	6.657	172.1	6.776	224.1	8.823	223	8.780	1.1	.043	6	.236	8
					30	Int.	●	MVS0595X30S060	179.7	7.075	199.1	7.839	202.1	7.957	254.1	10.004	253	9.961	1.1	.043	6	.236	8
					35	Int.	●	MVS0595X35S060	209.5	8.248	229.1	9.020	232.1	9.138	284.1	11.185	283	11.142	1.1	.043	6	.236	8
					40	Int.	●	MVS0595X40S060	239.2	9.417	261.1	10.280	264.1	10.398	316.1	12.445	315	12.402	1.1	.043	6	.236	8

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MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
6.000	.2362			M7x1.0	2	Ext.	●	MVE0600X02S060	13.1	.516	29.1	1.146	29.1	1.146	67.1	2.642	66	2.598	1.1	.043	6	.236	2
					2	Int.	●	MVS0600X02S060PL	12.9	.508	28.9	1.138	28.9	1.138	66.9	2.634	66	2.598	0.9	.035	6	.236	4
					3	Ext.	★	MVE0600X03S060	19.1	.752	37.1	1.461	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	6	.236	2
					3	Int.	●	MVS0600X03S060	19.1	.752	31.1	1.224	31.1	1.224	83.1	3.272	82	3.228	1.1	.043	6	.236	6
					5	Int.	●	MVS0600X05S060	31.1	1.224	49.1	1.933	49.1	1.933	101.1	3.980	100	3.937	1.1	.043	6	.236	6
					8	Int.	●	MVS0600X08S060	49.1	1.933	67.1	2.642	67.1	2.642	119.1	4.689	118	4.646	1.1	.043	6	.236	6
					10	Int.	●	MVS0600X10S060	61.1	2.406	79.1	3.114	82.1	3.232	134.1	5.280	133	5.236	1.1	.043	6	.236	8
					15	Int.	●	MVS0600X15S060	91.1	3.587	109.1	4.295	112.1	4.413	164.1	6.461	163	6.417	1.1	.043	6	.236	8
					20	Int.	●	MVS0600X20S060	121.1	4.768	139.1	5.476	142.1	5.594	194.1	7.642	193	7.598	1.1	.043	6	.236	8
					25	Int.	●	MVS0600X25S060	151.1	5.949	169.1	6.657	172.1	6.776	224.1	8.823	223	8.780	1.1	.043	6	.236	8
					30	Int.	●	MVS0600X30S060	181.1	7.130	199.1	7.839	202.1	7.957	254.1	10.004	253	9.961	1.1	.043	6	.236	8
					35	Int.	●	MVS0600X35S060	211.1	8.311	229.1	9.020	232.1	9.138	284.1	11.185	283	11.142	1.1	.043	6	.236	8
					40	Int.	●	MVS0600X40S060	241.1	9.492	261.1	10.280	264.1	10.398	316.1	12.445	315	12.402	1.1	.043	6	.236	8
6.100	.2402				2	Ext.	★	MVE0610X02S070	13.3	.524	32.1	1.264	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	7	.276	2
					2	Ext.	●	MVE0610X02S080	13.3	.524	32.1	1.264	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	8	.315	2
					2	Int.	★	MVS0610X02S070PL	13.2	.520	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	7	.276	4
					2	Int.	●	MVS0610X02S080PL	13.2	.520	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Ext.	★	MVE0610X03S070	19.4	.764	42.1	1.657	45.1	1.776	84.1	3.311	83	3.268	1.1	.043	7	.276	2
					3	Ext.	★	MVE0610X03S080	19.4	.764	42.1	1.657	45.1	1.776	84.1	3.311	83	3.268	1.1	.043	8	.315	2
					3	Int.	★	MVS0610X03S070	19.4	.764	33.6	1.323	36.1	1.421	89.1	3.508	88	3.465	1.1	.043	7	.276	6
					3	Int.	●	MVS0610X03S080	19.4	.764	33.6	1.323	36.1	1.421	89.1	3.508	88	3.465	1.1	.043	8	.315	6
					5	Int.	★	MVS0610X05S070	31.6	1.244	53.1	2.091	57.1	2.248	110.1	4.335	109	4.291	1.1	.043	7	.276	6
					5	Int.	●	MVS0610X05S080	31.6	1.244	53.1	2.091	57.1	2.248	110.1	4.335	109	4.291	1.1	.043	8	.315	6
					8	Int.	★	MVS0610X08S070	49.9	1.965	73.1	2.878	78.1	3.075	131.1	5.161	130	5.118	1.1	.043	7	.276	6
					8	Int.	●	MVS0610X08S080	49.9	1.965	73.1	2.878	78.1	3.075	131.1	5.161	130	5.118	1.1	.043	8	.315	6
					10	Int.	★	MVS0610X10S070	62.1	2.445	86.1	3.390	89.1	3.508	142.1	5.594	141	5.551	1.1	.043	7	.276	8
					10	Int.	●	MVS0610X10S080	62.1	2.445	86.1	3.390	89.1	3.508	142.1	5.594	141	5.551	1.1	.043	8	.315	8
					15	Int.	★	MVS0610X15S070	92.6	3.646	118.1	4.650	121.1	4.768	174.1	6.854	173	6.811	1.1	.043	7	.276	8
					15	Int.	●	MVS0610X15S080	92.6	3.646	118.1	4.650	121.1	4.768	174.1	6.854	173	6.811	1.1	.043	8	.315	8
					20	Int.	★	MVS0610X20S070	123.1	4.846	151.1	5.949	154.1	6.067	207.1	8.154	206	8.110	1.1	.043	7	.276	8
					20	Int.	●	MVS0610X20S080	123.1	4.846	151.1	5.949	154.1	6.067	207.1	8.154	206	8.110	1.1	.043	8	.315	8
					25	Int.	★	MVS0610X25S070	153.6	6.047	183.1	7.209	186.1	7.327	239.1	9.413	238	9.370	1.1	.043	7	.276	8
					25	Int.	●	MVS0610X25S080	153.6	6.047	183.1	7.209	186.1	7.327	239.1	9.413	238	9.370	1.1	.043	8	.315	8
					30	Int.	★	MVS0610X30S070	184.1	7.248	216.1	8.508	219.1	8.626	272.1	10.713	271	10.669	1.1	.043	7	.276	8
					30	Int.	●	MVS0610X30S080	184.1	7.248	216.1	8.508	219.1	8.626	272.1	10.713	271	10.669	1.1	.043	8	.315	8
					35	Int.	□	MVS0610X35S070	214.6	8.449	248.1	9.768	253.1	9.965	306.1	12.051	305	12.008	1.1	.043	7	.276	8
					35	Int.	□	MVS0610X35S080	214.6	8.449	248.1	9.768	253.1	9.965	306.1	12.051	305	12.008	1.1	.043	8	.315	8
					40	Int.	□	MVS0610X40S070	245.1	9.650	281.1	11.067	284.1	11.185	337.1	13.272	336	13.228	1.1	.043	7	.276	8
					40	Int.	□	MVS0610X40S080	245.1	9.650	281.1	11.067	284.1	11.185	337.1	13.272	336	13.228	1.1	.043	8	.315	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0620X02S070	13.5	.531	32.1	1.264	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	7	.276	2
					2	Ext.	●	MVE0620X02S080	13.5	.531	32.1	1.264	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	8	.315	2
					2	Int.	★	MVS0620X02S070PL	13.4	.528	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	7	.276	4
					2	Int.	●	MVS0620X02S080PL	13.4	.528	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Ext.	★	MVE0620X03S070	19.7	.776	42.1	1.657	45.1	1.776	84.1	3.311	83	3.268	1.1	.043	7	.276	2
					3	Ext.	★	MVE0620X03S080	19.7	.776	42.1	1.657	45.1	1.776	84.1	3.311	83	3.268	1.1	.043	8	.315	2
					3	Int.	★	MVS0620X03S070	19.7	.776	33.6	1.323	36.1	1.421	89.1	3.508	88	3.465	1.1	.043	7	.276	6
					3	Int.	●	MVS0620X03S080	19.7	.776	33.6	1.323	36.1	1.421	89.1	3.508	88	3.465	1.1	.043	8	.315	6
					5	Int.	★	MVS0620X05S070	32.1	1.264	53.1	2.091	57.1	2.248	110.1	4.335	109	4.291	1.1	.043	7	.276	6
					5	Int.	●	MVS0620X05S080	32.1	1.264	53.1	2.091	57.1	2.248	110.1	4.335	109	4.291	1.1	.043	8	.315	6
					8	Int.	★	MVS0620X08S070	50.7	1.996	73.1	2.878	78.1	3.075	131.1	5.161	130	5.118	1.1	.043	7	.276	6
					8	Int.	●	MVS0620X08S080	50.7	1.996	73.1	2.878	78.1	3.075	131.1	5.161	130	5.118	1.1	.043	8	.315	6
					10	Int.	★	MVS0620X10S070	63.1	2.484	86.1	3.390	89.1	3.508	142.1	5.594	141	5.551	1.1	.043	7	.276	8
6.200	.2441				10	Int.	●	MVS0620X10S080	63.1	2.484	86.1	3.390	89.1	3.508	142.1	5.594	141	5.551	1.1	.043	8	.315	8
					15	Int.	★	MVS0620X15S070	94.1	3.705	118.1	4.650	121.1	4.768	174.1	6.854	173	6.811	1.1	.043	7	.276	8
					15	Int.	●	MVS0620X15S080	94.1	3.705	118.1	4.650	121.1	4.768	174.1	6.854	173	6.811	1.1	.043	8	.315	8
					20	Int.	★	MVS0620X20S070	125.1	4.925	151.1	5.949	154.1	6.067	207.1	8.154	206	8.110	1.1	.043	7	.276	8
					20	Int.	●	MVS0620X20S080	125.1	4.925	151.1	5.949	154.1	6.067	207.1	8.154	206	8.110	1.1	.043	8	.315	8
					25	Int.	★	MVS0620X25S070	156.1	6.146	183.1	7.209	186.1	7.327	239.1	9.413	238	9.370	1.1	.043	7	.276	8
					25	Int.	●	MVS0620X25S080	156.1	6.146	183.1	7.209	186.1	7.327	239.1	9.413	238	9.370	1.1	.043	8	.315	8
					30	Int.	★	MVS0620X30S070	187.1	7.366	216.1	8.508	219.1	8.626	272.1	10.713	271	10.669	1.1	.043	7	.276	8
					30	Int.	●	MVS0620X30S080	187.1	7.366	216.1	8.508	219.1	8.626	272.1	10.713	271	10.669	1.1	.043	8	.315	8
					35	Int.	□	MVS0620X35S070	218.1	8.587	248.1	9.768	253.1	9.965	306.1	12.051	305	12.008	1.1	.043	7	.276	8
					35	Int.	□	MVS0620X35S080	218.1	8.587	248.1	9.768	253.1	9.965	306.1	12.051	305	12.008	1.1	.043	8	.315	8
					40	Int.	□	MVS0620X40S070	249.1	9.807	281.1	11.067	284.1	11.185	337.1	13.272	336	13.228	1.1	.043	7	.276	8
					40	Int.	□	MVS0620X40S080	249.1	9.807	281.1	11.067	284.1	11.185	337.1	13.272	336	13.228	1.1	.043	8	.315	8
					2	Ext.	★	MVE0630X02S070	13.7	.539	32.1	1.264	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	7	.276	2
					2	Ext.	●	MVE0630X02S080	13.7	.539	32.1	1.264	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	8	.315	2
					2	Int.	★	MVS0630X02S070PL	13.6	.535	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	7	.276	4
					2	Int.	●	MVS0630X02S080PL	13.6	.535	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Ext.	★	MVE0630X03S070	20.0	.787	42.1	1.657	45.1	1.776	84.1	3.311	83	3.268	1.1	.043	7	.276	2
					3	Ext.	★	MVE0630X03S080	20.0	.787	42.1	1.657	45.1	1.776	84.1	3.311	83	3.268	1.1	.043	8	.315	2
					3	Int.	★	MVS0630X03S070	20.0	.787	33.6	1.323	36.1	1.421	89.1	3.508	88	3.465	1.1	.043	7	.276	6
					3	Int.	●	MVS0630X03S080	20.0	.787	33.6	1.323	36.1	1.421	89.1	3.508	88	3.465	1.1	.043	8	.315	6
					5	Int.	★	MVS0630X05S070	32.6	1.283	53.1	2.091	57.1	2.248	110.1	4.335	109	4.291	1.1	.043	7	.276	6
					5	Int.	●	MVS0630X05S080	32.6	1.283	53.1	2.091	57.1	2.248	110.1	4.335	109	4.291	1.1	.043	8	.315	6
					8	Int.	★	MVS0630X08S070	51.5	2.028	73.1	2.878	78.1	3.075	131.1	5.161	130	5.118	1.1	.043	7	.276	6
					8	Int.	●	MVS0630X08S080	51.5	2.028	73.1	2.878	78.1	3.075	131.1	5.161	130	5.118	1.1	.043	8	.315	6
					10	Int.	★	MVS0630X10S070	64.1	2.524	86.1	3.390	89.1	3.512	142.1	5.594	141	5.551	1.1	.043	7	.276	8
6.300	.2480				10	Int.	●	MVS0630X10S080	64.1	2.524	86.1	3.390	89.1	3.508	142.1	5.594	141	5.551	1.1	.043	8	.315	8
					15	Int.	★	MVS0630X15S070	95.6	3.764	118.1	4.650	121.1	4.772	174.1	6.854	173	6.811	1.1	.043	7	.276	8
					15	Int.	●	MVS0630X15S080	95.6	3.764	118.1	4.650	121.1	4.768	174.1	6.854	173	6.811	1.1	.043	8	.315	8
					20	Int.	★	MVS0630X20S070	127.1	5.004	151.1	5.949	154.1	6.071	207.1	8.154	206	8.110	1.1	.043	7	.276	8
					20	Int.	●	MVS0630X20S080	127.1	5.004	151.1	5.949	154.1	6.067	207.1	8.154	206	8.110	1.1	.043	8	.315	8
					25	Int.	★	MVS0630X25S070	158.6	6.244	183.1	7.209	186.1	7.331	239.1	9.413	238	9.370	1.1	.043	7	.276	8
					25	Int.	●	MVS0630X25S080	158.6	6.244	183.1	7.209	186.1	7.327	239.1	9.413	238	9.370	1.1	.043	8	.315	8
					30	Int.	★	MVS0630X30S070	190.1	7.484	216.1	8.508	219.1	8.630	272.1	10.713	271	10.669	1.1	.043	7	.276	8
					30	Int.	●	MVS0630X30S080	190.1	7.484	216.1	8.508	219.1	8.626	272.1	10.713	271	10.669	1.1	.043	8	.315	8
					35	Int.	□	MVS0630X35S070	221.6	8.724	248.1	9.768	253.1	9.969	306.1	12.051	305	12.008	1.1	.043	7	.276	8
					35	Int.	□	MVS0630X35S080	221.6	8.724	248.1	9.768	253.1	9.969	306.1	12.051	305	12.008	1.1	.043	8	.315	8
					40	Int.	□	MVS0630X40S070	253.1	9.965	281.1	11.067	284.1	11.189	337.1	13.272	336	13.228	1.1	.043	7	.276	8
					40	Int.	□	MVS0630X40S080	253.1	9.965	281.1	11.067	284.1	11.189	337.1	13.272	336	13.228	1.1	.043	8	.315	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
6.350	.2500	1/4	E		2	Ext.	●	MVE0635X02S080	13.8	.543	32.2	1.268	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	●	MVS0635X02S080PL	13.8	.543	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Int.	●	MVS0635X03S080	20.2	.795	33.7	1.327	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	●	MVS0635X05S080	32.9	1.295	53.2	2.094	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	●	MVS0635X08S080	51.9	2.043	73.2	2.882	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	●	MVS0635X10S080	64.6	2.543	86.2	3.394	89.2	3.512	142.2	5.598	141	5.551	1.2	.047	8	.315	8
					15	Int.	●	MVS0635X15S080	96.4	3.795	118.2	4.654	121.2	4.772	174.2	6.858	173	6.811	1.2	.047	8	.315	8
					20	Int.	●	MVS0635X20S080	128.1	5.043	151.2	5.953	154.2	6.071	207.2	8.157	206	8.110	1.2	.047	8	.315	8
					25	Int.	●	MVS0635X25S080	159.9	6.295	183.2	7.213	186.2	7.331	239.2	9.417	238	9.370	1.2	.047	8	.315	8
					30	Int.	●	MVS0635X30S080	191.6	7.543	216.2	8.512	219.2	8.630	272.2	10.717	271	10.669	1.2	.047	8	.315	8
					35	Int.	●	MVS0635X35S080	223.4	8.795	248.2	9.772	253.2	9.969	306.2	12.055	305	12.008	1.2	.047	8	.315	8
					40	Int.	●	MVS0635X40S080	255.1	10.043	281.2	11.071	284.2	11.189	337.2	13.276	336	13.228	1.2	.047	8	.315	8
6.400	.2520				2	Ext.	★	MVE0640X02S070	14.0	.551	32.2	1.268	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	7	.276	2
					2	Ext.	●	MVE0640X02S080	14.0	.551	32.2	1.268	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	★	MVS0640X02S070PL	13.8	.543	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	7	.276	4
					2	Int.	●	MVS0640X02S080PL	13.8	.543	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Ext.	★	MVE0640X03S070	20.4	.803	42.2	1.661	45.2	1.780	84.2	3.315	83	3.268	1.2	.047	7	.276	2
					3	Ext.	★	MVE0640X03S080	20.4	.803	42.2	1.661	45.2	1.780	84.2	3.315	83	3.268	1.2	.047	8	.315	2
					3	Int.	★	MVS0640X03S070	20.4	.803	33.7	1.327	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	7	.276	6
					3	Int.	●	MVS0640X03S080	20.4	.803	33.7	1.327	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	★	MVS0640X05S070	33.2	1.307	53.2	2.094	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	7	.276	6
					5	Int.	●	MVS0640X05S080	33.2	1.307	53.2	2.094	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	★	MVS0640X08S070	52.4	2.063	73.2	2.882	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	7	.276	6
					8	Int.	●	MVS0640X08S080	52.4	2.063	73.2	2.882	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	★	MVS0640X10S070	65.2	2.567	86.2	3.394	89.2	3.512	142.2	5.598	141	5.551	1.2	.047	7	.276	8
					10	Int.	●	MVS0640X10S080	65.2	2.567	86.2	3.394	89.2	3.512	142.2	5.598	141	5.551	1.2	.047	8	.315	8
					15	Int.	★	MVS0640X15S070	97.2	3.827	118.2	4.654	121.2	4.772	174.2	6.858	173	6.811	1.2	.047	7	.276	8
					15	Int.	●	MVS0640X15S080	97.2	3.827	118.2	4.654	121.2	4.772	174.2	6.858	173	6.811	1.2	.047	8	.315	8
					20	Int.	★	MVS0640X20S070	129.2	5.087	151.2	5.953	154.2	6.071	207.2	8.157	206	8.110	1.2	.047	7	.276	8
					20	Int.	●	MVS0640X20S080	129.2	5.087	151.2	5.953	154.2	6.071	207.2	8.157	206	8.110	1.2	.047	8	.315	8
					25	Int.	★	MVS0640X25S070	161.2	6.346	183.2	7.213	186.2	7.331	239.2	9.417	238	9.370	1.2	.047	7	.276	8
					25	Int.	●	MVS0640X25S080	161.2	6.346	183.2	7.213	186.2	7.331	239.2	9.417	238	9.370	1.2	.047	8	.315	8
					30	Int.	★	MVS0640X30S070	193.2	7.606	216.2	8.512	219.2	8.630	272.2	10.717	271	10.669	1.2	.047	7	.276	8
					30	Int.	●	MVS0640X30S080	193.2	7.606	216.2	8.512	219.2	8.630	272.2	10.717	271	10.669	1.2	.047	8	.315	8
					35	Int.	□	MVS0640X35S070	225.2	8.866	248.2	9.772	253.2	9.969	306.2	12.055	305	12.008	1.2	.047	7	.276	8
					35	Int.	□	MVS0640X35S080	225.2	8.866	248.2	9.772	253.2	9.969	306.2	12.055	305	12.008	1.2	.047	8	.315	8
					40	Int.	□	MVS0640X40S070	257.2	10.126	281.2	11.071	284.2	11.189	337.2	13.276	336	13.228	1.2	.047	7	.276	8
					40	Int.	□	MVS0640X40S080	257.2	10.126	281.2	11.071	284.2	11.189	337.2	13.276	336	13.228	1.2	.047	8	.315	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	**MVE0650X02S070**	14.2	.559	32.2	1.268	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	7	.276	2
					2	Ext.	●	**MVE0650X02S080**	14.2	.559	32.2	1.268	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	★	**MVS0650X02S070PL**	14.0	.551	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	7	.276	4
					2	Int.	●	**MVS0650X02S080PL**	14.0	.551	32.0	1.260	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Ext.	★	**MVE0650X03S070**	20.7	.815	42.2	1.661	45.2	1.780	84.2	3.315	83	3.268	1.2	.047	7	.276	2
					3	Ext.	★	**MVE0650X03S080**	20.7	.815	42.2	1.661	45.2	1.780	84.2	3.315	83	3.268	1.2	.047	8	.315	2
					3	Int.	★	**MVS0650X03S070**	20.7	.815	33.7	1.327	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	7	.276	6
					3	Int.	●	**MVS0650X03S080**	20.7	.815	33.7	1.327	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	★	**MVS0650X05S070**	33.7	1.327	53.2	2.094	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	7	.276	6
					5	Int.	●	**MVS0650X05S080**	33.7	1.327	53.2	2.094	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	★	**MVS0650X08S070**	53.2	2.094	73.2	2.882	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	7	.276	6
					8	Int.	●	**MVS0650X08S080**	53.2	2.094	73.2	2.882	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	★	**MVS0650X10S070**	66.2	2.606	86.2	3.394	89.2	3.512	142.2	5.598	141	5.551	1.2	.047	7	.276	8
6.500	**.2559**				10	Int.	●	**MVS0650X10S080**	66.2	2.606	86.2	3.394	89.2	3.512	142.2	5.598	141	5.551	1.2	.047	8	.315	8
					15	Int.	★	**MVS0650X15S070**	98.7	3.886	118.2	4.654	121.2	4.772	174.2	6.858	173	6.811	1.2	.047	7	.276	8
					15	Int.	●	**MVS0650X15S080**	98.7	3.886	118.2	4.654	121.2	4.772	174.2	6.858	173	6.811	1.2	.047	8	.315	8
					20	Int.	★	**MVS0650X20S070**	131.2	5.165	151.2	5.953	154.2	6.071	207.2	8.157	206	8.110	1.2	.047	7	.276	8
					20	Int.	●	**MVS0650X20S080**	131.2	5.165	151.2	5.953	154.2	6.071	207.2	8.157	206	8.110	1.2	.047	8	.315	8
					25	Int.	★	**MVS0650X25S070**	163.7	6.445	183.2	7.213	186.2	7.331	239.2	9.417	238	9.370	1.2	.047	7	.276	8
					25	Int.	●	**MVS0650X25S080**	163.7	6.445	183.2	7.213	186.2	7.331	239.2	9.417	238	9.370	1.2	.047	8	.315	8
					30	Int.	★	**MVS0650X30S070**	196.2	7.724	216.2	8.512	219.2	8.630	272.2	10.717	271	10.669	1.2	.047	7	.276	8
					30	Int.	●	**MVS0650X30S080**	196.2	7.724	216.2	8.512	219.2	8.630	272.2	10.717	271	10.669	1.2	.047	8	.315	8
					35	Int.	★	**MVS0650X35S070**	228.7	9.004	248.2	9.772	253.2	9.969	306.2	12.055	305	12.008	1.2	.047	7	.276	8
					35	Int.	●	**MVS0650X35S080**	228.7	9.004	248.2	9.772	253.2	9.969	306.2	12.055	305	12.008	1.2	.047	8	.315	8
					40	Int.	★	**MVS0650X40S070**	261.2	10.283	281.2	11.071	284.2	11.189	337.2	13.276	336	13.228	1.2	.047	7	.276	8
					40	Int.	●	**MVS0650X40S080**	261.2	10.283	281.2	11.071	284.2	11.189	337.2	13.276	336	13.228	1.2	.047	8	.315	8
					2	Ext.	●	**MVE0653X02S080**	14.2	.559	35.2	1.386	37.2	1.465	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	●	**MVS0653X02S080PL**	14.2	.559	35.0	1.378	37.0	1.457	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Int.	●	**MVS0653X03S080**	20.8	.819	36.2	1.425	38.2	1.504	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	●	**MVS0653X05S080**	33.8	1.331	57.2	2.252	59.2	2.331	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	●	**MVS0653X08S080**	53.4	2.102	78.2	3.079	80.2	3.157	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	●	**MVS0653X10S080**	66.5	2.618	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	8	.315	8
6.528	**.2570**		**F**	**5/16-18**	15	Int.	●	**MVS0653X15S080**	99.1	3.902	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	8	.315	8
					20	Int.	●	**MVS0653X20S080**	131.7	5.185	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	8	.315	8
					25	Int.	●	**MVS0653X25S080**	164.4	6.472	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	8	.315	8
					30	Int.	●	**MVS0653X30S080**	197.0	7.756	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	8	.315	8
					35	Int.	●	**MVS0653X35S080**	229.7	9.043	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	8	.315	8
					40	Int.	●	**MVS0653X40S080**	262.3	10.327	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	8	.315	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
6.600	.2598				2	Ext.	★	MVE0660X02S070	14.4	.567	35.2	1.386	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	7	.276	2
					2	Ext.	●	MVE0660X02S080	14.4	.567	35.2	1.386	37.2	1.465	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	★	MVS0660X02S070PL	14.2	.559	35.0	1.378	35.0	1.378	75.0	2.953	74	2.913	1.0	.039	7	.276	4
					2	Int.	●	MVS0660X02S080PL	14.2	.559	35.0	1.378	37.0	1.457	75.0	2.953	74	2.913	1.0	.039	8	.315	4
					3	Ext.	★	MVE0660X03S070	21.0	.827	44.2	1.740	44.2	1.740	84.2	3.315	83	3.268	1.2	.047	7	.276	2
					3	Ext.	★	MVE0660X03S080	21.0	.827	44.2	1.740	46.2	1.819	84.2	3.315	83	3.268	1.2	.047	8	.315	2
					3	Int.	★	MVS0660X03S070	21.0	.827	36.2	1.425	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	7	.276	6
					3	Int.	●	MVS0660X03S080	21.0	.827	36.2	1.425	38.2	1.504	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	★	MVS0660X05S070	34.2	1.346	57.2	2.252	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	7	.276	6
					5	Int.	●	MVS0660X05S080	34.2	1.346	57.2	2.252	59.2	2.331	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	★	MVS0660X08S070	54.0	2.126	78.2	3.079	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	7	.276	6
					8	Int.	●	MVS0660X08S080	54.0	2.126	78.2	3.079	80.2	3.157	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	★	MVS0660X10S070	67.2	2.646	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	7	.276	8
					10	Int.	●	MVS0660X10S080	67.2	2.646	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	8	.315	8
					15	Int.	★	MVS0660X15S070	100.2	3.945	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	7	.276	8
					15	Int.	●	MVS0660X15S080	100.2	3.945	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	8	.315	8
					20	Int.	★	MVS0660X20S070	133.2	5.244	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	7	.276	8
					20	Int.	●	MVS0660X20S080	133.2	5.244	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	8	.315	8
					25	Int.	★	MVS0660X25S070	166.2	6.543	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	7	.276	8
					25	Int.	●	MVS0660X25S080	166.2	6.543	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	8	.315	8
					30	Int.	★	MVS0660X30S070	199.2	7.843	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	7	.276	8
					30	Int.	●	MVS0660X30S080	199.2	7.843	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	8	.315	8
					35	Int.	□	MVS0660X35S070	232.2	9.142	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	7	.276	8
					35	Int.	□	MVS0660X35S080	232.2	9.142	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	8	.315	8
					40	Int.	□	MVS0660X40S070	265.2	10.441	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	7	.276	8
					40	Int.	□	MVS0660X40S080	265.2	10.441	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	8	.315	8
6.700	.2638			M8x1.25	2	Ext.	★	MVE0670X02S070	14.6	.575	35.2	1.386	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	7	.276	2
					2	Ext.	●	MVE0670X02S080	14.6	.575	35.2	1.386	37.2	1.465	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	★	MVS0670X02S070PL	14.5	.571	35.1	1.382	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	7	.276	4
					2	Int.	●	MVS0670X02S080PL	14.5	.571	35.1	1.382	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	8	.315	4
					3	Ext.	★	MVE0670X03S070	21.3	.839	44.2	1.740	44.2	1.740	84.2	3.315	83	3.268	1.2	.047	7	.276	2
					3	Ext.	★	MVE0670X03S080	21.3	.839	44.2	1.740	46.2	1.819	84.2	3.315	83	3.268	1.2	.047	8	.315	2
					3	Int.	★	MVS0670X03S070	21.3	.839	36.2	1.425	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	7	.276	6
					3	Int.	●	MVS0670X03S080	21.3	.839	36.2	1.425	38.2	1.504	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	★	MVS0670X05S070	34.7	1.366	57.2	2.252	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	7	.276	6
					5	Int.	●	MVS0670X05S080	34.7	1.366	57.2	2.252	59.2	2.331	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	★	MVS0670X08S070	54.8	2.157	78.2	3.079	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	7	.276	6
					8	Int.	●	MVS0670X08S080	54.8	2.157	78.2	3.079	80.2	3.157	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	★	MVS0670X10S070	68.2	2.685	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	7	.276	8
					10	Int.	●	MVS0670X10S080	68.2	2.685	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	8	.315	8
					15	Int.	★	MVS0670X15S070	101.7	4.004	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	7	.276	8
					15	Int.	●	MVS0670X15S080	101.7	4.004	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	8	.315	8
					20	Int.	★	MVS0670X20S070	135.2	5.323	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	7	.276	8
					20	Int.	●	MVS0670X20S080	135.2	5.323	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	8	.315	8
					25	Int.	★	MVS0670X25S070	168.7	6.642	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	7	.276	8
					25	Int.	●	MVS0670X25S080	168.7	6.642	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	8	.315	8
					30	Int.	★	MVS0670X30S070	202.2	7.961	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	7	.276	8
					30	Int.	●	MVS0670X30S080	202.2	7.961	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	8	.315	8
					35	Int.	□	MVS0670X35S070	235.7	9.280	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	7	.276	8
					35	Int.	□	MVS0670X35S080	235.7	9.280	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	8	.315	8
					40	Int.	□	MVS0670X40S070	269.2	10.598	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	7	.276	8
					40	Int.	□	MVS0670X40S080	269.2	10.598	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	8	.315	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
6.747	.2657	17/64			2	Ext.	●	MVE0675X02S080	14.6	.575	35.2	1.386	37.2	1.465	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	●	MVS0675X02S080PL	14.6	.575	35.1	1.382	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	8	.315	4
					3	Int.	●	MVS0675X03S080	21.5	.846	36.2	1.425	38.2	1.504	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	●	MVS0675X05S080	34.9	1.374	57.2	2.252	59.2	2.331	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	●	MVS0675X08S080	55.2	2.173	78.2	3.079	80.2	3.157	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	●	MVS0675X10S080	68.7	2.705	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	8	.315	8
					15	Int.	●	MVS0675X15S080	102.4	4.031	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	8	.315	8
					20	Int.	●	MVS0675X20S080	136.1	5.358	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	8	.315	8
					25	Int.	●	MVS0675X25S080	169.9	6.689	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	8	.315	8
					30	Int.	●	MVS0675X30S080	203.6	8.016	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	8	.315	8
					35	Int.	●	MVS0675X35S080	237.3	9.343	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	8	.315	8
					40	Int.	●	MVS0675X40S080	271.1	10.673	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	8	.315	8
6.800	.2677				2	Ext.	★	MVE0680X02S070	14.8	.583	35.2	1.386	35.2	1.386	75.2	2.961	74	2.913	1.2	.047	7	.276	2
					2	Ext.	●	MVE0680X02S080	14.8	.583	35.2	1.386	37.2	1.465	75.2	2.961	74	2.913	1.2	.047	8	.315	2
					2	Int.	★	MVS0680X02S070PL	14.7	.579	35.1	1.382	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	7	.276	4
					2	Int.	●	MVS0680X02S080PL	14.7	.579	35.1	1.382	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	8	.315	4
					3	Ext.	★	MVE0680X03S070	21.6	.850	44.2	1.740	44.2	1.740	84.2	3.315	83	3.268	1.2	.047	7	.276	2
					3	Ext.	★	MVE0680X03S080	21.6	.850	44.2	1.740	46.2	1.819	84.2	3.315	83	3.268	1.2	.047	8	.315	2
					3	Int.	★	MVS0680X03S070	21.6	.850	36.2	1.425	36.2	1.425	89.2	3.512	88	3.465	1.2	.047	7	.276	6
					3	Int.	●	MVS0680X03S080	21.6	.850	36.2	1.425	38.2	1.504	89.2	3.512	88	3.465	1.2	.047	8	.315	6
					5	Int.	★	MVS0680X05S070	35.2	1.386	57.2	2.252	57.2	2.252	110.2	4.339	109	4.291	1.2	.047	7	.276	6
					5	Int.	●	MVS0680X05S080	35.2	1.386	57.2	2.252	59.2	2.331	110.2	4.339	109	4.291	1.2	.047	8	.315	6
					8	Int.	★	MVS0680X08S070	55.6	2.189	78.2	3.079	78.2	3.079	131.2	5.165	130	5.118	1.2	.047	7	.276	6
					8	Int.	●	MVS0680X08S080	55.6	2.189	78.2	3.079	80.2	3.157	131.2	5.165	130	5.118	1.2	.047	8	.315	6
					10	Int.	★	MVS0680X10S070	69.2	2.724	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	7	.276	8
					10	Int.	●	MVS0680X10S080	69.2	2.724	92.2	3.630	95.2	3.748	148.2	5.835	147	5.787	1.2	.047	8	.315	8
					15	Int.	★	MVS0680X15S070	103.2	4.063	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	7	.276	8
					15	Int.	●	MVS0680X15S080	103.2	4.063	127.2	5.008	130.2	5.126	183.2	7.213	182	7.165	1.2	.047	8	.315	8
					20	Int.	★	MVS0680X20S070	137.2	5.402	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	7	.276	8
					20	Int.	●	MVS0680X20S080	137.2	5.402	162.2	6.386	165.2	6.504	218.2	8.591	217	8.543	1.2	.047	8	.315	8
					25	Int.	★	MVS0680X25S070	171.2	6.740	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	7	.276	8
					25	Int.	●	MVS0680X25S080	171.2	6.740	197.2	7.764	200.2	7.882	253.2	9.969	252	9.921	1.2	.047	8	.315	8
					30	Int.	★	MVS0680X30S070	205.2	8.079	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	7	.276	8
					30	Int.	●	MVS0680X30S080	205.2	8.079	232.2	9.142	235.2	9.260	288.2	11.346	287	11.299	1.2	.047	8	.315	8
					35	Int.	□	MVS0680X35S070	239.2	9.417	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	7	.276	8
					35	Int.	□	MVS0680X35S080	239.2	9.417	267.2	10.520	270.2	10.638	323.2	12.724	322	12.677	1.2	.047	8	.315	8
					40	Int.	□	MVS0680X40S070	273.2	10.756	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	7	.276	8
					40	Int.	□	MVS0680X40S080	273.2	10.756	301.2	11.858	304.2	11.976	357.2	14.063	356	14.016	1.2	.047	8	.315	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
6.900	.2717		I	5/16-24	2	Ext.	★	MVE0690X02S070	15.1	.594	35.3	1.390	35.3	1.390	75.3	2.965	74	2.913	1.3	.051	7	.276	2
					2	Ext.	●	MVE0690X02S080	15.1	.594	35.3	1.390	37.3	1.469	75.3	2.965	74	2.913	1.3	.051	8	.315	2
					2	Int.	★	MVS0690X02S070PL	14.9	.587	35.1	1.382	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	7	.276	4
					2	Int.	●	MVS0690X02S080PL	14.9	.587	35.1	1.382	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	8	.315	4
					3	Ext.	★	MVE0690X03S070	22.0	.866	44.3	1.744	44.3	1.744	84.3	3.319	83	3.268	1.3	.051	7	.276	2
					3	Ext.	★	MVE0690X03S080	22.0	.866	44.3	1.744	46.3	1.823	84.3	3.319	83	3.268	1.3	.051	8	.315	2
					3	Int.	★	MVS0690X03S070	22.0	.866	36.3	1.429	36.3	1.429	89.3	3.516	88	3.465	1.3	.051	7	.276	6
					3	Int.	●	MVS0690X03S080	22.0	.866	36.3	1.429	38.3	1.508	89.3	3.516	88	3.465	1.3	.051	8	.315	6
					5	Int.	★	MVS0690X05S070	35.8	1.409	57.3	2.256	57.3	2.256	110.3	4.343	109	4.291	1.3	.051	7	.276	6
					5	Int.	●	MVS0690X05S080	35.8	1.409	57.3	2.256	59.3	2.335	110.3	4.343	109	4.291	1.3	.051	8	.315	6
					8	Int.	★	MVS0690X08S070	56.5	2.224	78.3	3.083	78.3	3.083	131.3	5.169	130	5.118	1.3	.051	7	.276	6
					8	Int.	●	MVS0690X08S080	56.5	2.226	78.3	3.083	80.3	3.161	131.3	5.169	130	5.118	1.3	.051	8	.315	6
					10	Int.	★	MVS0690X10S070	70.3	2.768	92.3	3.634	95.3	3.752	148.3	5.839	147	5.787	1.3	.051	7	.276	8
					10	Int.	●	MVS0690X10S080	70.3	2.768	92.3	3.634	95.3	3.752	148.3	5.839	147	5.787	1.3	.051	8	.315	8
					15	Int.	★	MVS0690X15S070	104.8	4.126	127.3	5.012	130.3	5.130	183.3	7.217	182	7.165	1.3	.051	7	.276	8
					15	Int.	●	MVS0690X15S080	104.8	4.126	127.3	5.012	130.3	5.130	183.3	7.217	182	7.165	1.3	.051	8	.315	8
					20	Int.	★	MVS0690X20S070	139.3	5.484	162.3	6.390	165.3	6.508	218.3	8.594	217	8.543	1.3	.051	7	.276	8
					20	Int.	●	MVS0690X20S080	139.3	5.484	162.3	6.390	165.3	6.508	218.3	8.594	217	8.543	1.3	.051	8	.315	8
					25	Int.	★	MVS0690X25S070	173.8	6.843	197.3	7.768	200.3	7.886	253.3	9.972	252	9.921	1.3	.051	7	.276	8
					25	Int.	●	MVS0690X25S080	173.8	6.843	197.3	7.768	200.3	7.886	253.3	9.972	252	9.921	1.3	.051	8	.315	8
					30	Int.	★	MVS0690X30S070	208.3	8.201	232.3	9.146	235.3	9.264	288.3	11.350	287	11.299	1.3	.051	7	.276	8
					30	Int.	●	MVS0690X30S080	208.3	8.201	232.3	9.146	235.3	9.264	288.3	11.350	287	11.299	1.3	.051	8	.315	8
					35	Int.	□	MVS0690X35S070	242.8	9.559	267.3	10.524	270.3	10.642	323.3	12.728	322	12.677	1.3	.051	7	.276	8
					35	Int.	□	MVS0690X35S080	242.8	9.559	267.3	10.524	270.3	10.642	323.3	12.728	322	12.677	1.3	.051	8	.315	8
					40	Int.	□	MVS0690X40S070	277.3	10.917	301.3	11.862	304.3	11.980	357.3	14.067	356	14.016	1.3	.051	7	.276	8
					40	Int.	□	MVS0690X40S080	277.3	10.917	301.3	11.862	304.3	11.980	357.3	14.067	356	14.016	1.3	.051	8	.315	8
7.000	.2756			M8x1.0	2	Ext.	★	MVE0700X02S070	15.3	.602	35.3	1.390	35.3	1.390	75.3	2.965	74	2.913	1.3	.051	7	.276	2
					2	Ext.	●	MVE0700X02S080	15.3	.602	35.3	1.390	37.3	1.469	75.3	2.965	74	2.913	1.3	.051	8	.315	2
					2	Int.	★	MVS0700X02S070PL	15.1	.594	35.1	1.382	35.1	1.382	75.1	2.957	74	2.913	1.1	.043	7	.276	4
					2	Int.	●	MVS0700X02S080PL	15.1	.594	35.1	1.382	37.1	1.461	75.1	2.957	74	2.913	1.1	.043	8	.315	4
					3	Ext.	★	MVE0700X03S070	22.3	.878	44.3	1.744	44.3	1.744	84.3	3.319	83	3.268	1.3	.051	7	.276	2
					3	Ext.	★	MVE0700X03S080	22.3	.878	44.3	1.744	46.3	1.823	84.3	3.319	83	3.268	1.3	.051	8	.315	2
					3	Int.	★	MVS0700X03S070	22.3	.878	36.3	1.429	36.3	1.429	89.3	3.516	88	3.465	1.3	.051	7	.276	6
					3	Int.	●	MVS0700X03S080	22.3	.878	36.3	1.429	38.3	1.508	89.3	3.516	88	3.465	1.3	.051	8	.315	6
					5	Int.	★	MVS0700X05S070	36.3	1.429	57.3	2.256	57.3	2.256	110.3	4.343	109	4.291	1.3	.051	7	.276	6
					5	Int.	●	MVS0700X05S080	36.3	1.429	57.3	2.256	59.3	2.335	110.3	4.343	109	4.291	1.3	.051	8	.315	6
					8	Int.	★	MVS0700X08S070	57.3	2.256	78.3	3.083	78.3	3.083	131.3	5.169	130	5.118	1.3	.051	7	.276	6
					8	Int.	●	MVS0700X08S080	57.3	2.256	78.3	3.083	80.3	3.161	131.3	5.169	130	5.118	1.3	.051	8	.315	6
					10	Int.	★	MVS0700X10S070	71.3	2.807	92.3	3.634	95.3	3.752	148.3	5.839	147	5.787	1.3	.051	7	.276	8
					10	Int.	●	MVS0700X10S080	71.3	2.807	92.3	3.634	95.3	3.752	148.3	5.839	147	5.787	1.3	.051	8	.315	8
					15	Int.	★	MVS0700X15S070	106.3	4.185	127.3	5.012	130.3	5.130	183.3	7.217	182	7.165	1.3	.051	7	.276	8
					15	Int.	●	MVS0700X15S080	106.3	4.185	127.3	5.012	130.3	5.130	183.3	7.217	182	7.165	1.3	.051	8	.315	8
					20	Int.	★	MVS0700X20S070	141.3	5.563	162.3	6.390	165.3	6.508	218.3	8.594	217	8.543	1.3	.051	7	.276	8
					20	Int.	●	MVS0700X20S080	141.3	5.563	162.3	6.390	165.3	6.508	218.3	8.594	217	8.543	1.3	.051	8	.315	8
					25	Int.	★	MVS0700X25S070	176.3	6.941	197.3	7.768	200.3	7.886	253.3	9.972	252	9.921	1.3	.051	7	.276	8
					25	Int.	●	MVS0700X25S080	176.3	6.941	197.3	7.768	200.3	7.886	253.3	9.972	252	9.921	1.3	.051	8	.315	8
					30	Int.	★	MVS0700X30S070	211.3	8.319	232.3	9.146	235.3	9.264	288.3	11.350	287	11.299	1.3	.051	7	.276	8
					30	Int.	●	MVS0700X30S080	211.3	8.319	232.3	9.146	235.3	9.264	288.3	11.350	287	11.299	1.3	.051	8	.315	8
					35	Int.	★	MVS0700X35S070	246.3	9.697	267.3	10.524	270.3	10.642	323.3	12.728	322	12.677	1.3	.051	7	.276	8
					35	Int.	●	MVS0700X35S080	246.3	9.697	267.3	10.524	270.3	10.642	323.3	12.728	322	12.677	1.3	.051	8	.315	8
					40	Int.	★	MVS0700X40S070	281.3	11.075	301.3	11.862	304.3	11.980	357.3	14.067	356	14.016	1.3	.051	7	.276	8
					40	Int.	●	MVS0700X40S080	281.3	11.075	301.3	11.862	304.3	11.980	357.3	14.067	356	14.016	1.3	.051	8	.315	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	**MVE0710X02S080**	15.5	.610	35.3	1.390	38.3	1.508	80.3	3.161	79	3.110	1.3	.051	8	.315	2
					2	Int.	●	**MVS0710X02S080PL**	15.3	.602	35.1	1.382	38.1	1.500	80.1	3.154	79	3.110	1.1	.043	8	.315	4
					3	Ext.	★	**MVE0710X03S080**	22.6	.890	46.3	1.823	49.3	1.941	91.3	3.594	90	3.543	1.3	.051	8	.315	2
					3	Int.	●	**MVS0710X03S080**	22.6	.890	38.8	1.528	41.3	1.626	95.3	3.752	94	3.701	1.3	.051	8	.315	6
					5	Int.	●	**MVS0710X05S080**	36.8	1.449	61.3	2.413	65.3	2.571	119.3	4.697	118	4.646	1.3	.051	8	.315	6
					8	Int.	●	**MVS0710X08S080**	58.1	2.287	84.3	3.319	89.3	3.516	143.3	5.642	142	5.591	1.3	.051	8	.315	6
7.100	**.2795**				10	Int.	★	**MVS0710X10S080**	72.3	2.846	99.3	3.909	102.3	4.028	156.3	6.154	155	6.102	1.3	.051	8	.315	8
					15	Int.	★	**MVS0710X15S080**	107.8	4.244	136.3	5.366	139.3	5.484	193.3	7.610	192	7.559	1.3	.051	8	.315	8
					20	Int.	★	**MVS0710X20S080**	143.3	5.642	174.3	6.862	177.3	6.980	231.3	9.106	230	9.055	1.3	.051	8	.315	8
					25	Int.	★	**MVS0710X25S080**	178.8	7.039	211.3	8.319	214.3	8.437	268.3	10.563	267	10.512	1.3	.051	8	.315	8
					30	Int.	★	**MVS0710X30S080**	214.3	8.437	249.3	9.815	252.3	9.933	306.3	12.059	305	12.008	1.3	.051	8	.315	8
					35	Int.	□	**MVS0710X35S080**	249.8	9.835	286.3	11.272	289.3	11.390	343.3	13.516	342	13.465	1.3	.051	8	.315	8
					40	Int.	□	**MVS0710X40S080**	285.3	11.232	321.3	12.650	324.3	12.768	378.3	14.894	377	14.843	1.3	.051	8	.315	8
					2	Ext.	●	**MVE0714X02S080**	15.5	.610	35.3	1.390	38.3	1.508	80.3	3.161	79	3.110	1.3	.051	8	.315	2
					2	Int.	●	**MVS0714X02S080PL**	15.5	.610	35.1	1.382	38.1	1.500	80.1	3.154	79	3.110	1.1	.043	8	.315	4
					3	Int.	●	**MVS0714X03S080**	22.7	.894	38.8	1.528	41.3	1.626	95.3	3.752	94	3.701	1.3	.051	8	.315	6
					5	Int.	●	**MVS0714X05S080**	37.0	1.457	61.3	2.413	65.3	2.571	119.3	4.697	118	4.646	1.3	.051	8	.315	6
					8	Int.	●	**MVS0714X08S080**	58.4	2.299	84.3	3.319	89.3	3.516	143.3	5.642	142	5.591	1.3	.051	8	.315	6
					10	Int.	●	**MVS0714X10S080**	72.7	2.862	99.3	3.909	102.3	4.028	156.3	6.154	155	6.102	1.3	.051	8	.315	8
7.144	**.2813**	**9/32**	**K**		15	Int.	●	**MVS0714X15S080**	108.4	4.268	136.3	5.366	139.3	5.484	193.3	7.610	192	7.559	1.3	.051	8	.315	8
					20	Int.	●	**MVS0714X20S080**	144.1	5.673	174.3	6.862	177.3	6.980	231.3	9.106	230	9.055	1.3	.051	8	.315	8
					25	Int.	●	**MVS0714X25S080**	179.8	7.079	211.3	8.319	214.3	8.437	268.3	10.563	267	10.512	1.3	.051	8	.315	8
					30	Int.	●	**MVS0714X30S080**	215.5	8.484	249.3	9.815	252.3	9.933	306.3	12.059	305	12.008	1.3	.051	8	.315	8
					35	Int.	●	**MVS0714X35S080**	251.3	9.894	286.3	11.272	289.3	11.390	343.3	13.516	342	13.465	1.3	.051	8	.315	8
					40	Int.	●	**MVS0714X40S080**	287.0	11.299	321.3	12.650	324.3	12.768	378.3	14.894	377	14.843	1.3	.051	8	.315	8
					2	Ext.	●	**MVE0720X02S080**	15.7	.618	35.3	1.390	38.3	1.508	80.3	3.161	79	3.110	1.3	.051	8	.315	2
					2	Int.	●	**MVS0720X02S080PL**	15.5	.610	35.1	1.382	38.1	1.500	80.1	3.154	79	3.110	1.1	.043	8	.315	4
					3	Ext.	★	**MVE0720X03S080**	22.9	.902	46.3	1.823	49.3	1.941	91.3	3.594	90	3.543	1.3	.051	8	.315	2
					3	Int.	●	**MVS0720X03S080**	22.9	.902	38.8	1.528	41.3	1.626	95.3	3.752	94	3.701	1.3	.051	8	.315	6
					5	Int.	●	**MVS0720X05S080**	37.3	1.469	61.3	2.413	65.3	2.571	119.3	4.697	118	4.646	1.3	.051	8	.315	6
					8	Int.	●	**MVS0720X08S080**	58.9	2.319	84.3	3.319	89.3	3.516	143.3	5.642	142	5.591	1.3	.051	8	.315	6
7.200	**.2835**				10	Int.	★	**MVS0720X10S080**	73.3	2.886	99.3	3.909	102.3	4.028	156.3	6.154	155	6.102	1.3	.051	8	.315	8
					15	Int.	★	**MVS0720X15S080**	109.3	4.303	136.3	5.366	139.3	5.484	193.3	7.610	192	7.559	1.3	.051	8	.315	8
					20	Int.	★	**MVS0720X20S080**	145.3	5.720	174.3	6.862	177.3	6.980	231.3	9.106	230	9.055	1.3	.051	8	.315	8
					25	Int.	★	**MVS0720X25S080**	181.3	7.138	211.3	8.319	214.3	8.437	268.3	10.563	267	10.512	1.3	.051	8	.315	8
					30	Int.	★	**MVS0720X30S080**	217.3	8.555	249.3	9.815	252.3	9.933	306.3	12.059	305	12.008	1.3	.051	8	.315	8
					35	Int.	□	**MVS0720X35S080**	253.3	9.972	286.3	11.272	289.3	11.390	343.3	13.516	342	13.465	1.3	.051	8	.315	8
					40	Int.	□	**MVS0720X40S080**	289.3	11.390	321.3	12.650	324.3	12.768	378.3	14.894	377	14.843	1.3	.051	8	.315	8
					2	Ext.	●	**MVE0730X02S080**	15.9	.626	35.3	1.390	38.3	1.508	80.3	3.161	79	3.110	1.3	.051	8	.315	2
					2	Int.	●	**MVS0730X02S080PL**	15.8	.622	35.2	1.386	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Ext.	★	**MVE0730X03S080**	23.2	.913	46.3	1.823	49.3	1.941	91.3	3.594	90	3.543	1.3	.051	8	.315	2
					3	Int.	●	**MVS0730X03S080**	23.2	.913	38.8	1.528	41.3	1.626	95.3	3.752	94	3.701	1.3	.051	8	.315	6
					5	Int.	●	**MVS0730X05S080**	37.8	1.488	61.3	2.413	65.3	2.571	119.3	4.697	118	4.646	1.3	.051	8	.315	6
					8	Int.	●	**MVS0730X08S080**	59.7	2.350	84.3	3.319	89.3	3.516	143.3	5.642	142	5.591	1.3	.051	8	.315	6
7.300	**.2874**				10	Int.	★	**MVS0730X10S080**	74.3	2.925	99.3	3.909	102.3	4.028	156.3	6.154	155	6.102	1.3	.051	8	.315	8
					15	Int.	★	**MVS0730X15S080**	110.8	4.362	136.3	5.366	139.3	5.484	193.3	7.610	192	7.559	1.3	.051	8	.315	8
					20	Int.	★	**MVS0730X20S080**	147.3	5.799	174.3	6.862	177.3	6.980	231.3	9.106	230	9.055	1.3	.051	8	.315	8
					25	Int.	★	**MVS0730X25S080**	183.8	7.236	211.3	8.319	214.3	8.437	268.3	10.563	267	10.512	1.3	.051	8	.315	8
					30	Int.	★	**MVS0730X30S080**	220.3	8.673	249.3	9.815	252.3	9.933	306.3	12.059	305	12.008	1.3	.051	8	.315	8
					35	Int.	□	**MVS0730X35S080**	256.8	10.110	286.3	11.272	289.3	11.390	343.3	13.516	342	13.465	1.3	.051	8	.315	8
					40	Int.	□	**MVS0730X40S080**	293.3	11.547	321.3	12.650	324.3	12.768	378.3	14.894	377	14.843	1.3	.051	8	.315	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE0740X02S080	16.1	.634	35.3	1.390	38.3	1.508	80.3	3.161	79	3.110	1.3	.051	8	.315	2
					2	Int.	●	MVS0740X02S080PL	16.0	.630	35.2	1.386	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Ext.	★	MVE0740X03S080	23.5	.925	46.3	1.823	49.3	1.941	91.3	3.594	90	3.543	1.3	.051	8	.315	2
					3	Int.	●	MVS0740X03S080	23.5	.925	38.8	1.528	41.3	1.626	95.3	3.752	94	3.701	1.3	.051	8	.315	6
					5	Int.	●	MVS0740X05S080	38.3	1.508	61.3	2.413	65.3	2.571	119.3	4.697	118	4.646	1.3	.051	8	.315	6
					8	Int.	●	MVS0740X08S080	60.5	2.382	84.3	3.319	89.3	3.516	143.3	5.642	142	5.591	1.3	.051	8	.315	6
7.400	.2913				10	Int.	★	MVS0740X10S080	75.3	2.965	99.3	3.909	102.3	4.031	156.3	6.154	155	6.102	1.3	.051	8	.315	8
					15	Int.	★	MVS0740X15S080	112.3	4.421	136.3	5.366	139.3	5.488	193.3	7.610	192	7.559	1.3	.051	8	.315	8
					20	Int.	★	MVS0740X20S080	149.3	5.878	174.3	6.862	177.3	6.984	231.3	9.106	230	9.055	1.3	.051	8	.315	8
					25	Int.	★	MVS0740X25S080	186.3	7.335	211.3	8.319	214.3	8.441	268.3	10.563	267	10.512	1.3	.051	8	.315	8
					30	Int.	★	MVS0740X30S080	223.3	8.791	249.3	9.815	252.3	9.937	306.3	12.059	305	12.008	1.3	.051	8	.315	8
					35	Int.	□	MVS0740X35S080	260.3	10.248	286.3	11.272	289.3	11.394	343.3	13.516	342	13.465	1.3	.051	8	.315	8
					40	Int.	□	MVS0740X40S080	297.3	11.705	321.3	12.650	324.3	12.772	378.3	14.894	377	14.843	1.3	.051	8	.315	8
					2	Ext.	●	MVE0750X02S080	16.4	.646	35.4	1.394	38.4	1.512	80.4	3.165	79	3.110	1.4	.055	8	.315	2
					2	Int.	●	MVS0750X02S080PL	16.2	.638	35.2	1.386	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Ext.	★	MVE0750X03S080	23.9	.941	46.4	1.827	49.4	1.945	91.4	3.598	90	3.543	1.4	.055	8	.315	2
					3	Int.	●	MVS0750X03S080	23.9	.941	38.9	1.531	41.4	1.630	95.4	3.756	94	3.701	1.4	.055	8	.315	6
					5	Int.	●	MVS0750X05S080	38.9	1.531	61.4	2.417	65.4	2.575	119.4	4.701	118	4.646	1.4	.055	8	.315	6
					8	Int.	●	MVS0750X08S080	61.4	2.417	84.4	3.323	89.4	3.520	143.4	5.646	142	5.591	1.4	.055	8	.315	6
7.500	.2953		M		10	Int.	●	MVS0750X10S080	76.4	3.008	99.4	3.913	102.4	4.031	156.4	6.157	155	6.102	1.4	.055	8	.315	8
					15	Int.	★	MVS0750X15S080	113.9	4.484	136.4	5.370	139.4	5.488	193.4	7.614	192	7.559	1.4	.055	8	.315	8
					20	Int.	★	MVS0750X20S080	151.4	5.961	174.4	6.866	177.4	6.984	231.4	9.110	230	9.055	1.4	.055	8	.315	8
					25	Int.	★	MVS0750X25S080	188.9	7.437	211.4	8.323	214.4	8.441	268.4	10.567	267	10.512	1.4	.055	8	.315	8
					30	Int.	★	MVS0750X30S080	226.4	8.913	249.4	9.819	252.4	9.937	306.4	12.063	305	12.008	1.4	.055	8	.315	8
					35	Int.	●	MVS0750X35S080	263.9	10.390	286.4	11.276	289.4	11.394	343.4	13.520	342	13.465	1.4	.055	8	.315	8
					40	Int.	●	MVS0750X40S080	301.4	11.866	321.4	12.654	324.4	12.772	378.4	14.898	377	14.843	1.4	.055	8	.315	8
					2	Ext.	●	MVE0754X02S080	16.4	.646	38.4	1.512	38.4	1.512	80.4	3.165	79	3.110	1.4	.055	8	.315	2
					2	Int.	●	MVS0754X02S080PL	16.4	.646	38.2	1.504	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Int.	●	MVS0754X03S080	24.0	.945	41.4	1.630	41.4	1.630	95.4	3.756	94	3.701	1.4	.055	8	.315	6
					5	Int.	●	MVS0754X05S080	39.1	1.539	65.4	2.575	65.4	2.575	119.4	4.701	118	4.646	1.4	.055	8	.315	6
					8	Int.	●	MVS0754X08S080	61.7	2.429	89.4	3.520	89.4	3.520	143.4	5.646	142	5.591	1.4	.055	8	.315	6
					10	Int.	●	MVS0754X10S080	76.8	3.024	105.4	4.150	108.4	4.268	162.4	6.394	161	6.339	1.4	.055	8	.315	8
7.541	.2969	19/64			15	Int.	●	MVS0754X15S080	114.5	4.508	145.4	5.724	148.4	5.843	202.4	7.969	201	7.913	1.4	.055	8	.315	8
					20	Int.	●	MVS0754X20S080	152.2	5.992	185.4	7.299	188.4	7.417	242.4	9.543	241	9.488	1.4	.055	8	.315	8
					25	Int.	●	MVS0754X25S080	189.9	7.478	225.4	8.874	228.4	8.992	282.4	11.118	281	11.063	1.4	.055	8	.315	8
					30	Int.	●	MVS0754X30S080	227.6	8.961	265.4	10.449	268.4	10.567	322.4	12.693	321	12.638	1.4	.055	8	.315	8
					35	Int.	●	MVS0754X35S080	265.3	10.445	305.4	12.024	308.4	12.142	362.4	14.268	361	14.213	1.4	.055	8	.315	8
					40	Int.	●	MVS0754X40S080	303.0	11.929	341.4	13.441	344.4	13.559	398.4	15.685	397	15.630	1.4	.055	8	.315	8
					2	Ext.	●	MVE0760X02S080	16.6	.654	38.4	1.512	38.4	1.512	80.4	3.165	79	3.110	1.4	.055	8	.315	2
					2	Int.	●	MVS0760X02S080PL	16.4	.646	38.2	1.504	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Ext.	★	MVE0760X03S080	24.2	.953	49.4	1.945	49.4	1.945	91.4	3.598	90	3.543	1.4	.055	8	.315	2
					3	Int.	●	MVS0760X03S080	24.2	.953	41.4	1.630	41.4	1.630	95.4	3.756	94	3.701	1.4	.055	8	.315	6
					5	Int.	●	MVS0760X05S080	39.4	1.551	65.4	2.575	65.4	2.575	119.4	4.701	118	4.646	1.4	.055	8	.315	6
					8	Int.	●	MVS0760X08S080	62.2	2.449	89.4	3.520	89.4	3.520	143.4	5.646	142	5.591	1.4	.055	8	.315	6
7.600	.2992				10	Int.	★	MVS0760X10S080	77.4	3.047	105.4	4.150	108.4	4.268	162.4	6.394	161	6.339	1.4	.055	8	.315	8
					15	Int.	★	MVS0760X15S080	115.1	4.531	145.4	5.724	148.4	5.843	202.4	7.969	201	7.913	1.4	.055	8	.315	8
					20	Int.	★	MVS0760X20S080	153.4	6.039	185.4	7.299	188.4	7.417	242.4	9.543	241	9.488	1.4	.055	8	.315	8
					25	Int.	★	MVS0760X25S080	191.4	7.535	225.4	8.874	228.4	8.992	282.4	11.118	281	11.063	1.4	.055	8	.315	8
					30	Int.	★	MVS0760X30S080	229.4	9.031	265.4	10.449	268.4	10.567	322.4	12.693	321	12.638	1.4	.055	8	.315	8
					35	Int.	□	MVS0760X35S080	267.4	10.528	305.4	12.024	308.4	12.142	362.4	14.268	361	14.213	1.4	.055	8	.315	8
					40	Int.	□	MVS0760X40S080	305.4	12.024	341.4	13.441	344.4	13.559	398.4	15.685	397	15.630	1.4	.055	8	.315	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE0770X02S080	16.8	.661	38.4	1.512	38.4	1.512	80.4	3.165	79	3.110	1.4	.055	8	.315	2
					2	Int.	●	MVS0770X02S080PL	16.6	.654	38.2	1.504	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Ext.	★	MVE0770X03S080	24.5	.965	49.4	1.945	49.4	1.945	91.4	3.598	90	3.543	1.4	.055	8	.315	2
					3	Int.	●	MVS0770X03S080	24.5	.965	41.4	1.630	41.4	1.630	95.4	3.756	94	3.701	1.4	.055	8	.315	6
					5	Int.	●	MVS0770X05S080	39.9	1.571	65.4	2.575	65.4	2.575	119.4	4.701	118	4.646	1.4	.055	8	.315	6
					8	Int.	●	MVS0770X08S080	63.0	2.480	89.4	3.520	89.4	3.520	143.4	5.646	142	5.591	1.4	.055	8	.315	6
7.700	.3031				10	Int.	★	MVS0770X10S080	78.4	3.087	105.4	4.150	108.4	4.268	162.4	6.394	161	6.339	1.4	.055	8	.315	8
					15	Int.	★	MVS0770X15S080	116.9	4.602	145.4	5.724	148.4	5.843	202.4	7.969	201	7.913	1.4	.055	8	.315	8
					20	Int.	★	MVS0770X20S080	155.4	6.118	185.4	7.299	188.4	7.417	242.4	9.543	241	9.488	1.4	.055	8	.315	8
					25	Int.	★	MVS0770X25S080	193.9	7.634	225.4	8.874	228.4	8.992	282.4	11.118	281	11.063	1.4	.055	8	.315	8
					30	Int.	★	MVS0770X30S080	232.4	9.150	265.4	10.449	268.4	10.567	322.4	12.693	321	12.638	1.4	.055	8	.315	8
					35	Int.	□	MVS0770X35S080	270.9	10.665	305.4	12.024	308.4	12.142	362.4	14.268	361	14.213	1.4	.055	8	.315	8
					40	Int.	□	MVS0770X40S080	309.4	12.181	341.4	13.441	344.4	13.559	398.4	15.685	397	15.630	1.4	.055	8	.315	8
					2	Ext.	●	MVE0780X02S080	17.0	.669	38.4	1.512	38.4	1.512	80.4	3.165	79	3.110	1.4	.055	8	.315	2
					2	Int.	●	MVS0780X02S080PL	16.8	.661	38.2	1.504	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Ext.	★	MVE0780X03S080	24.8	.976	49.4	1.945	49.4	1.945	91.4	3.598	90	3.543	1.4	.055	8	.315	2
					3	Int.	●	MVS0780X03S080	24.8	.976	41.4	1.630	41.4	1.630	95.4	3.756	94	3.701	1.4	.055	8	.315	6
					5	Int.	●	MVS0780X05S080	40.4	1.591	65.4	2.575	65.4	2.575	119.4	4.701	118	4.646	1.4	.055	8	.315	6
					8	Int.	●	MVS0780X08S080	63.8	2.512	89.4	3.520	89.4	3.520	143.4	5.646	142	5.591	1.4	.055	8	.315	6
7.800	.3071				10	Int.	★	MVS0780X10S080	79.4	3.126	105.4	4.150	108.4	4.268	162.4	6.394	161	6.339	1.4	.055	8	.315	8
					15	Int.	●	MVS0780X15S080	118.4	4.661	145.4	5.724	148.4	5.843	202.4	7.969	201	7.913	1.4	.055	8	.315	8
					20	Int.	★	MVS0780X20S080	157.4	6.197	185.4	7.299	188.4	7.417	242.4	9.543	241	9.488	1.4	.055	8	.315	8
					25	Int.	●	MVS0780X25S080	196.4	7.732	225.4	8.874	228.4	8.992	282.4	11.118	281	11.063	1.4	.055	8	.315	8
					30	Int.	★	MVS0780X30S080	235.4	9.268	265.4	10.449	268.4	10.567	322.4	12.693	321	12.638	1.4	.055	8	.315	8
					35	Int.	□	MVS0780X35S080	274.4	10.803	305.4	12.024	308.4	12.142	362.4	14.268	361	14.213	1.4	.055	8	.315	8
					40	Int.	□	MVS0780X40S080	313.4	12.339	341.4	13.441	344.4	13.559	398.4	15.685	397	15.630	1.4	.055	8	.315	8
					2	Ext.	●	MVE0790X02S080	17.2	.677	38.4	1.512	38.4	1.512	80.4	3.165	79	3.110	1.4	.055	8	.315	2
					2	Int.	●	MVS0790X02S080PL	17.0	.669	38.2	1.504	38.2	1.504	80.2	3.157	79	3.110	1.2	.047	8	.315	4
					3	Ext.	★	MVE0790X03S080	25.1	.988	49.4	1.945	49.4	1.945	91.4	3.598	90	3.543	1.4	.055	8	.315	2
					3	Int.	●	MVS0790X03S080	25.1	.988	41.4	1.630	41.4	1.630	95.4	3.756	94	3.701	1.4	.055	8	.315	6
					5	Int.	●	MVS0790X05S080	40.9	1.610	65.4	2.575	65.4	2.575	119.4	4.701	118	4.646	1.4	.055	8	.315	6
					8	Int.	●	MVS0790X08S080	64.6	2.543	89.4	3.520	89.4	3.520	143.4	5.646	142	5.591	1.4	.055	8	.315	6
7.900	.3110				10	Int.	★	MVS0790X10S080	80.4	3.165	105.4	4.150	108.4	4.268	162.4	6.394	161	6.339	1.4	.055	8	.315	8
					15	Int.	★	MVS0790X15S080	119.9	4.720	145.4	5.724	148.4	5.843	202.4	7.969	201	7.913	1.4	.055	8	.315	8
					20	Int.	★	MVS0790X20S080	159.4	6.276	185.4	7.299	188.4	7.417	242.4	9.543	241	9.488	1.4	.055	8	.315	8
					25	Int.	★	MVS0790X25S080	198.9	7.831	225.4	8.874	228.4	8.992	282.4	11.118	281	11.063	1.4	.055	8	.315	8
					30	Int.	★	MVS0790X30S080	238.4	9.386	265.4	10.449	268.4	10.567	322.4	12.693	321	12.638	1.4	.055	8	.315	8
					35	Int.	□	MVS0790X35S080	277.9	10.941	305.4	12.024	308.4	12.142	362.4	14.268	361	14.213	1.4	.055	8	.315	8
					40	Int.	□	MVS0790X40S080	317.4	12.496	341.4	13.441	344.4	13.559	398.4	15.685	397	15.630	1.4	.055	8	.315	8
					2	Ext.	●	MVE0794X02S080	17.2	.677	38.4	1.512	38.4	1.512	80.4	3.165	79	3.110	1.4	.055	8	.315	2
					2	Int.	●	MVS0794X02S080PL	17.2	.677	38.3	1.508	38.3	1.508	80.3	3.161	79	3.110	1.3	.051	8	.315	4
					3	Int.	●	MVS0794X03S080	25.2	.992	41.4	1.630	41.4	1.630	95.4	3.756	94	3.701	1.4	.055	8	.315	6
					5	Int.	●	MVS0794X05S080	41.1	1.618	65.4	2.575	65.4	2.575	119.4	4.701	118	4.646	1.4	.055	8	.315	6
					8	Int.	●	MVS0794X08S080	64.9	2.555	89.4	3.520	89.4	3.520	143.4	5.646	142	5.591	1.4	.055	8	.315	6
7.938	.3125	5/16		3/8-16	10	Int.	●	MVS0794X10S080	80.8	3.181	105.4	4.150	108.4	4.268	162.4	6.394	161	6.339	1.4	.055	8	.315	8
					15	Int.	●	MVS0794X15S080	120.5	4.744	145.4	5.724	148.4	5.843	202.4	7.969	201	7.913	1.4	.055	8	.315	8
					20	Int.	●	MVS0794X20S080	160.2	6.307	185.4	7.299	188.4	7.417	242.4	9.543	241	9.488	1.4	.055	8	.315	8
					25	Int.	●	MVS0794X25S080	199.9	7.870	225.4	8.874	228.4	8.992	282.4	11.118	281	11.063	1.4	.055	8	.315	8
					30	Int.	●	MVS0794X30S080	239.6	9.433	265.4	10.449	268.4	10.567	322.4	12.693	321	12.638	1.4	.055	8	.315	8
					35	Int.	●	MVS0794X35S080	279.3	10.996	305.4	12.024	308.4	12.142	362.4	14.268	361	14.213	1.4	.055	8	.315	8
					40	Int.	●	MVS0794X40S080	318.9	12.555	341.4	13.441	344.4	13.559	398.4	15.685	397	15.630	1.4	.055	8	.315	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
8.000	.3150				2	Ext.	●	MVE0800X02S080	17.5	.689	38.5	1.516	38.5	1.516	80.5	3.169	79	3.110	1.5	.059	8	.315	2
					2	Int.	●	MVS0800X02S080PL	17.3	.681	38.3	1.508	38.3	1.508	80.3	3.161	79	3.110	1.3	.051	8	.315	4
					3	Ext.	★	MVE0800X03S080	25.5	1.004	49.5	1.949	49.5	1.949	91.5	3.602	90	3.543	1.5	.059	8	.315	2
					3	Int.	●	MVS0800X03S080	25.5	1.004	41.5	1.634	41.5	1.634	95.5	3.760	94	3.701	1.5	.059	8	.315	6
					5	Int.	●	MVS0800X05S080	41.5	1.634	65.5	2.579	65.5	2.579	119.5	4.705	118	4.646	1.5	.059	8	.315	6
					8	Int.	●	MVS0800X08S080	65.5	2.579	89.5	3.524	89.5	3.524	143.5	5.650	142	5.591	1.5	.059	8	.315	6
					10	Int.	●	MVS0800X10S080	81.5	3.209	105.5	4.154	108.5	4.272	162.5	6.398	161	6.339	1.5	.059	8	.315	8
					15	Int.	●	MVS0800X15S080	121.5	4.783	145.5	5.728	148.5	5.846	202.5	7.972	201	7.913	1.5	.059	8	.315	8
					20	Int.	●	MVS0800X20S080	161.5	6.358	185.5	7.303	188.5	7.421	242.5	9.547	241	9.488	1.5	.059	8	.315	8
					25	Int.	★	MVS0800X25S080	201.5	7.933	225.5	8.878	228.5	8.996	282.5	11.122	281	11.063	1.5	.059	8	.315	8
					30	Int.	●	MVS0800X30S080	241.5	9.508	265.5	10.453	268.5	10.571	322.5	12.697	321	12.638	1.5	.059	8	.315	8
					35	Int.	●	MVS0800X35S080	281.5	11.083	305.5	12.028	308.5	12.146	362.5	14.272	361	14.213	1.5	.059	8	.315	8
					40	Int.	●	MVS0800X40S080	321.5	12.657	341.5	13.445	344.5	13.563	398.5	15.689	397	15.630	1.5	.059	8	.315	8
8.100	.3189				2	Ext.	★	MVE0810X02S090	17.7	.697	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	9	.354	2
					2	Ext.	●	MVE0810X02S100	17.7	.697	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	10	.394	2
					2	Int.	★	MVS0810X02S090PL	17.5	.689	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	9	.354	4
					2	Int.	●	MVS0810X02S100PL	17.5	.689	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	10	.394	4
					3	Ext.	★	MVE0810X03S090	25.8	1.016	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	9	.354	2
					3	Ext.	★	MVE0810X03S100	25.8	1.016	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	10	.394	2
					3	Int.	★	MVS0810X03S090	25.8	1.016	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	9	.354	6
					3	Int.	●	MVS0810X03S100	25.8	1.016	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	10	.394	6
					5	Int.	★	MVS0810X05S090	42.0	1.654	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	9	.354	6
					5	Int.	●	MVS0810X05S100	42.0	1.654	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	10	.394	6
					8	Int.	★	MVS0810X08S090	66.3	2.610	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	9	.354	6
					8	Int.	●	MVS0810X08S100	66.3	2.610	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	10	.394	6
					10	Int.	★	MVS0810X10S090	82.5	3.248	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	9	.354	8
					10	Int.	●	MVS0810X10S100	82.5	3.248	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	10	.394	8
					15	Int.	★	MVS0810X15S090	123.0	4.843	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	9	.354	8
					15	Int.	●	MVS0810X15S100	123.0	4.843	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	10	.394	8
					20	Int.	★	MVS0810X20S090	163.5	6.437	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	9	.354	8
					20	Int.	●	MVS0810X20S100	163.5	6.437	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	10	.394	8
					25	Int.	★	MVS0810X25S090	204.0	8.031	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	9	.354	8
					25	Int.	●	MVS0810X25S100	204.0	8.031	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	10	.394	8
					30	Int.	★	MVS0810X30S090	244.5	9.626	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	9	.354	8
					30	Int.	●	MVS0810X30S100	244.5	9.626	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	10	.394	8
					35	Int.	□	MVS0810X35S090	285.0	11.220	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	9	.354	8
					35	Int.	□	MVS0810X35S100	285.0	11.220	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	10	.394	8
					40	Int.	□	MVS0810X40S090	325.5	12.815	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	9	.354	8
					40	Int.	□	MVS0810X40S100	325.5	12.815	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	10	.394	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0820X02S090	17.9	.705	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	9	.354	2
					2	Ext.	●	MVE0820X02S100	17.9	.705	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	10	.394	2
					2	Int.	★	MVS0820X02S090PL	17.7	.697	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	9	.354	4
					2	Int.	●	MVS0820X02S100PL	17.7	.697	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	10	.394	4
					3	Ext.	★	MVE0820X03S090	26.1	1.028	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	9	.354	2
					3	Ext.	★	MVE0820X03S100	26.1	1.028	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	10	.394	2
					3	Int.	★	MVS0820X03S090	26.1	1.028	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	9	.354	6
					3	Int.	●	MVS0820X03S100	26.1	1.028	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	10	.394	6
					5	Int.	★	MVS0820X05S090	42.5	1.673	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	9	.354	6
					5	Int.	●	MVS0820X05S100	42.5	1.673	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	10	.394	6
					8	Int.	★	MVS0820X08S090	67.1	2.642	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	9	.354	6
					8	Int.	●	MVS0820X08S100	67.1	2.642	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	10	.394	6
					10	Int.	★	MVS0820X10S090	83.5	3.287	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	9	.354	8
8.200	.3228		P		10	Int.	●	MVS0820X10S100	83.5	3.287	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	10	.394	8
					15	Int.	★	MVS0820X15S090	124.5	4.902	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	9	.354	8
					15	Int.	●	MVS0820X15S100	124.5	4.902	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	10	.394	8
					20	Int.	★	MVS0820X20S090	165.5	6.516	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	9	.354	8
					20	Int.	●	MVS0820X20S100	165.5	6.516	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	10	.394	8
					25	Int.	★	MVS0820X25S090	206.5	8.130	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	9	.354	8
					25	Int.	●	MVS0820X25S100	206.5	8.130	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	10	.394	8
					30	Int.	★	MVS0820X30S090	247.5	9.744	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	9	.354	8
					30	Int.	●	MVS0820X30S100	247.5	9.744	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	10	.394	8
					35	Int.	□	MVS0820X35S090	288.5	11.358	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	9	.354	8
					35	Int.	□	MVS0820X35S100	288.5	11.358	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	10	.394	8
					40	Int.	□	MVS0820X40S090	329.5	12.972	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	9	.354	8
					40	Int.	□	MVS0820X40S100	329.5	12.972	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	10	.394	8
					2	Ext.	★	MVE0830X02S090	18.1	.713	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	9	.354	2
					2	Ext.	●	MVE0830X02S100	18.1	.713	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	10	.394	2
					2	Int.	★	MVS0830X02S090PL	17.9	.705	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	9	.354	4
					2	Int.	●	MVS0830X02S100PL	17.9	.705	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	10	.394	4
					3	Ext.	★	MVE0830X03S090	26.4	1.039	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	9	.354	2
					3	Ext.	★	MVE0830X03S100	26.4	1.039	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	10	.394	2
					3	Int.	★	MVS0830X03S090	26.4	1.039	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	9	.354	6
					3	Int.	●	MVS0830X03S100	26.4	1.039	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	10	.394	6
					5	Int.	★	MVS0830X05S090	43.0	1.693	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	9	.354	6
					5	Int.	●	MVS0830X05S100	43.0	1.693	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	10	.394	6
					8	Int.	★	MVS0830X08S090	67.9	2.673	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	9	.354	6
					8	Int.	●	MVS0830X08S100	67.9	2.673	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	10	.394	6
					10	Int.	★	MVS0830X10S090	84.5	3.327	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	9	.354	8
8.300	.3268				10	Int.	●	MVS0830X10S100	84.5	3.327	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	10	.394	8
					15	Int.	★	MVS0830X15S090	126.0	4.961	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	9	.354	8
					15	Int.	●	MVS0830X15S100	126.0	4.961	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	10	.394	8
					20	Int.	★	MVS0830X20S090	167.5	6.594	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	9	.354	8
					20	Int.	●	MVS0830X20S100	167.5	6.594	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	10	.394	8
					25	Int.	★	MVS0830X25S090	209.0	8.228	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	9	.354	8
					25	Int.	●	MVS0830X25S100	209.0	8.228	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	10	.394	8
					30	Int.	★	MVS0830X30S090	250.5	9.862	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	9	.354	8
					30	Int.	●	MVS0830X30S100	250.5	9.862	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	10	.394	8
					35	Int.	□	MVS0830X35S090	292.0	11.496	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	9	.354	8
					35	Int.	□	MVS0830X35S100	292.0	11.496	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	10	.394	8
					40	Int.	□	MVS0830X40S090	333.5	13.130	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	9	.354	8
					40	Int.	□	MVS0830X40S100	333.5	13.130	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	10	.394	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
8.335	.3282	21/64			2	Ext.	●	MVE0833X02S100	18.1	.713	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	10	.394	2
					2	Int.	●	MVS0833X02S100PL	18.1	.713	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	10	.394	4
					3	Int.	●	MVS0833X03S100	26.5	1.043	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	10	.394	6
					5	Int.	●	MVS0833X05S100	43.2	1.701	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	10	.394	6
					8	Int.	●	MVS0833X08S100	68.2	2.685	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	10	.394	6
					10	Int.	●	MVS0833X10S100	84.8	3.339	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	10	.394	8
					15	Int.	●	MVS0833X15S100	126.5	4.980	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	10	.394	8
					20	Int.	●	MVS0833X20S100	168.2	6.622	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	10	.394	8
					25	Int.	●	MVS0833X25S100	209.9	8.264	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	10	.394	8
					30	Int.	●	MVS0833X30S100	251.5	9.902	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	10	.394	8
					35	Int.	●	MVS0833X35S100	293.2	11.543	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	10	.394	8
					40	Int.	●	MVS0833X40S100	334.9	13.185	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	10	.394	8
8.400	.3307				2	Ext.	★	MVE0840X02S090	18.3	.720	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	9	.354	2
					2	Ext.	●	MVE0840X02S100	18.3	.720	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	10	.394	2
					2	Int.	★	MVS0840X02S090PL	18.1	.713	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	9	.354	4
					2	Int.	●	MVS0840X02S100PL	18.1	.713	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	10	.394	4
					3	Ext.	★	MVE0840X03S090	26.7	1.051	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	9	.354	2
					3	Ext.	★	MVE0840X03S100	26.7	1.051	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	10	.394	2
					3	Int.	★	MVS0840X03S090	26.7	1.051	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	9	.354	6
					3	Int.	●	MVS0840X03S100	26.7	1.051	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	10	.394	6
					5	Int.	★	MVS0840X05S090	43.5	1.713	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	9	.354	6
					5	Int.	●	MVS0840X05S100	43.5	1.713	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	10	.394	6
					8	Int.	★	MVS0840X08S090	68.7	2.705	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	9	.354	6
					8	Int.	●	MVS0840X08S100	68.7	2.705	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	10	.394	6
					10	Int.	★	MVS0840X10S090	85.5	3.366	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	9	.354	8
					10	Int.	●	MVS0840X10S100	85.5	3.366	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	10	.394	8
					15	Int.	★	MVS0840X15S090	127.5	5.020	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	9	.354	8
					15	Int.	●	MVS0840X15S100	127.5	5.020	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	10	.394	8
					20	Int.	★	MVS0840X20S090	169.5	6.673	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	9	.354	8
					20	Int.	●	MVS0840X20S100	169.5	6.673	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	10	.394	8
					25	Int.	★	MVS0840X25S090	211.5	8.327	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	9	.354	8
					25	Int.	●	MVS0840X25S100	211.5	8.327	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	10	.394	8
					30	Int.	★	MVS0840X30S090	253.5	9.980	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	9	.354	8
					30	Int.	●	MVS0840X30S100	253.5	9.980	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	10	.394	8
					35	Int.	□	MVS0840X35S090	295.5	11.634	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	9	.354	8
					35	Int.	□	MVS0840X35S100	295.5	11.634	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	10	.394	8
					40	Int.	□	MVS0840X40S090	337.5	13.287	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	9	.354	8
					40	Int.	□	MVS0840X40S100	337.5	13.287	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	10	.394	8
8.433	.3320		Q	3/8-24	2	Ext.	●	MVE0843X02S100	18.3	.720	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	10	.394	2
					2	Int.	●	MVS0843X02S100PL	18.3	.720	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	10	.394	4
					3	Int.	●	MVS0843X03S100	26.8	1.055	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	10	.394	6
					5	Int.	●	MVS0843X05S100	43.7	1.720	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	10	.394	6
					8	Int.	●	MVS0843X08S100	69.0	2.717	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	10	.394	6
					10	Int.	●	MVS0843X10S100	85.8	3.378	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	10	.394	8
					15	Int.	●	MVS0843X15S100	128.0	5.039	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	10	.394	8
					20	Int.	●	MVS0843X20S100	170.2	6.701	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	10	.394	8
					25	Int.	●	MVS0843X25S100	212.3	8.358	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	10	.394	8
					30	Int.	●	MVS0843X30S100	254.5	10.020	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	10	.394	8
					35	Int.	●	MVS0843X35S100	296.7	11.681	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	10	.394	8
					40	Int.	●	MVS0843X40S100	338.8	13.339	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	10	.394	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0850X02S090	18.5	.728	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	9	.354	2
					2	Ext.	●	MVE0850X02S100	18.5	.728	38.5	1.516	41.5	1.634	85.5	3.366	84	3.307	1.5	.059	10	.394	2
					2	Int.	★	MVS0850X02S090PL	18.3	.720	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	9	.354	4
					2	Int.	●	MVS0850X02S100PL	18.3	.720	38.3	1.508	41.3	1.626	85.3	3.358	84	3.307	1.3	.051	10	.394	4
					3	Ext.	★	MVE0850X03S090	27.0	1.063	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	9	.354	2
					3	Ext.	★	MVE0850X03S100	27.0	1.063	54.5	2.146	57.5	2.264	99.5	3.917	98	3.858	1.5	.059	10	.394	2
					3	Int.	★	MVS0850X03S090	27.0	1.063	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	9	.354	6
					3	Int.	●	MVS0850X03S100	27.0	1.063	44.0	1.732	46.5	1.831	101.5	3.996	100	3.937	1.5	.059	10	.394	6
					5	Int.	★	MVS0850X05S090	44.0	1.732	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	9	.354	6
					5	Int.	●	MVS0850X05S100	44.0	1.732	69.5	2.736	73.5	2.894	128.5	5.059	127	5.000	1.5	.059	10	.394	6
					8	Int.	★	MVS0850X08S090	69.5	2.736	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	9	.354	6
					8	Int.	●	MVS0850X08S100	69.5	2.736	95.5	3.760	100.5	3.957	155.5	6.122	154	6.063	1.5	.059	10	.394	6
					10	Int.	★	MVS0850X10S090	86.5	3.406	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	9	.354	8
8.500	.3346			M10x1.5	10	Int.	●	MVS0850X10S100	86.5	3.406	112.5	4.429	115.5	4.547	170.5	6.713	169	6.654	1.5	.059	10	.394	8
					15	Int.	★	MVS0850X15S090	129.0	5.079	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	9	.354	8
					15	Int.	●	MVS0850X15S100	129.0	5.079	154.5	6.083	157.5	6.201	212.5	8.366	211	8.307	1.5	.059	10	.394	8
					20	Int.	★	MVS0850X20S090	171.5	6.752	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	9	.354	8
					20	Int.	●	MVS0850X20S100	171.5	6.752	197.5	7.776	200.5	7.894	255.5	10.059	254	10.000	1.5	.059	10	.394	8
					25	Int.	★	MVS0850X25S090	214.0	8.425	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	9	.354	8
					25	Int.	●	MVS0850X25S100	214.0	8.425	239.5	9.429	242.5	9.547	297.5	11.713	296	11.654	1.5	.059	10	.394	8
					30	Int.	★	MVS0850X30S090	256.5	10.098	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	9	.354	8
					30	Int.	●	MVS0850X30S100	256.5	10.098	282.5	11.122	285.5	11.240	340.5	13.406	339	13.346	1.5	.059	10	.394	8
					35	Int.	★	MVS0850X35S090	299.0	11.772	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	9	.354	8
					35	Int.	●	MVS0850X35S100	299.0	11.772	324.5	12.776	327.5	12.894	382.5	15.059	381	15.000	1.5	.059	10	.394	8
					40	Int.	★	MVS0850X40S090	341.5	13.445	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	9	.354	8
					40	Int.	●	MVS0850X40S100	341.5	13.445	366.5	14.429	369.5	14.547	424.5	16.713	423	16.654	1.5	.059	10	.394	8
					2	Ext.	★	MVE0860X02S090	18.8	.740	41.6	1.638	41.6	1.638	85.6	3.370	84	3.307	1.6	.063	9	.354	2
					2	Ext.	●	MVE0860X02S100	18.8	.740	41.6	1.638	43.6	1.717	85.6	3.370	84	3.307	1.6	.063	10	.394	2
					2	Int.	★	MVS0860X02S090PL	18.6	.732	41.4	1.630	41.4	1.630	85.4	3.362	84	3.307	1.4	.055	9	.354	4
					2	Int.	●	MVS0860X02S100PL	18.6	.732	41.4	1.630	43.4	1.709	85.4	3.362	84	3.307	1.4	.055	10	.394	4
					3	Ext.	★	MVE0860X03S090	27.4	1.079	56.6	2.228	56.6	2.228	99.6	3.921	98	3.858	1.6	.063	9	.354	2
					3	Ext.	★	MVE0860X03S100	27.4	1.079	56.6	2.228	58.6	2.307	99.6	3.921	98	3.858	1.6	.063	10	.394	2
					3	Int.	★	MVS0860X03S090	27.4	1.079	46.6	1.835	46.6	1.835	101.6	4.000	100	3.937	1.6	.063	9	.354	6
					3	Int.	●	MVS0860X03S100	27.4	1.079	46.6	1.835	48.6	1.913	101.6	4.000	100	3.937	1.6	.063	10	.394	6
					5	Int.	★	MVS0860X05S090	44.6	1.756	73.6	2.898	73.6	2.898	128.6	5.063	127	5.000	1.6	.063	9	.354	6
					5	Int.	●	MVS0860X05S100	44.6	1.756	73.6	2.898	75.6	2.976	128.6	5.063	127	5.000	1.6	.063	10	.394	6
					8	Int.	★	MVS0860X08S090	70.4	2.772	100.6	3.961	100.6	3.961	155.6	6.126	154	6.063	1.6	.063	9	.354	6
					8	Int.	●	MVS0860X08S100	70.4	2.772	100.6	3.961	102.6	4.039	155.6	6.126	154	6.063	1.6	.063	10	.394	6
					10	Int.	★	MVS0860X10S090	87.6	3.449	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	9	.354	8
8.600	.3386		R		10	Int.	●	MVS0860X10S100	87.6	3.449	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	10	.394	8
					15	Int.	★	MVS0860X15S090	130.6	5.142	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	9	.354	8
					15	Int.	●	MVS0860X15S100	130.6	5.142	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	10	.394	8
					20	Int.	★	MVS0860X20S090	173.6	6.835	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	9	.354	8
					20	Int.	●	MVS0860X20S100	173.6	6.835	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	10	.394	8
					25	Int.	★	MVS0860X25S090	216.6	8.528	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	9	.354	8
					25	Int.	●	MVS0860X25S100	216.6	8.528	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	10	.394	8
					30	Int.	★	MVS0860X30S090	259.6	10.220	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	9	.354	8
					30	Int.	●	MVS0860X30S100	259.6	10.220	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	10	.394	8
					35	Int.	□	MVS0860X35S090	302.6	11.913	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	9	.354	8
					35	Int.	□	MVS0860X35S100	302.6	11.913	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	10	.394	8
					40	Int.	□	MVS0860X40S090	345.6	13.606	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	9	.354	8
					40	Int.	□	MVS0860X40S100	345.6	13.606	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	10	.394	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0870X02S090	19.0	.748	41.6	1.638	41.6	1.638	85.6	3.370	84	3.307	1.6	.063	9	.354	2
					2	Ext.	●	MVE0870X02S100	19.0	.748	41.6	1.638	43.6	1.717	85.6	3.370	84	3.307	1.6	.063	10	.394	2
					2	Int.	★	MVS0870X02S090PL	18.8	.740	41.4	1.630	41.4	1.630	85.4	3.362	84	3.307	1.4	.055	9	.354	4
					2	Int.	●	MVS0870X02S100PL	18.8	.740	41.4	1.630	43.4	1.709	85.4	3.362	84	3.307	1.4	.055	10	.394	4
					3	Ext.	★	MVE0870X03S090	27.7	1.091	56.6	2.228	56.6	2.228	99.6	3.921	98	3.858	1.6	.063	9	.354	2
					3	Ext.	★	MVE0870X03S100	27.7	1.091	56.6	2.228	58.6	2.307	99.6	3.921	98	3.858	1.6	.063	10	.394	2
					3	Int.	★	MVS0870X03S090	27.7	1.091	46.6	1.835	46.6	1.835	101.6	4.000	100	3.937	1.6	.063	9	.354	6
					3	Int.	●	MVS0870X03S100	27.7	1.091	46.6	1.835	48.6	1.913	101.6	4.000	100	3.937	1.6	.063	10	.394	6
					5	Int.	★	MVS0870X05S090	45.1	1.776	73.6	2.898	73.6	2.898	128.6	5.063	127	5.000	1.6	.063	9	.354	6
					5	Int.	●	MVS0870X05S100	45.1	1.776	73.6	2.898	75.6	2.976	128.6	5.063	127	5.000	1.6	.063	10	.394	6
					8	Int.	★	MVS0870X08S090	71.2	2.803	100.6	3.961	100.6	3.961	155.6	6.126	154	6.063	1.6	.063	9	.354	6
					8	Int.	●	MVS0870X08S100	71.2	2.803	100.6	3.961	102.6	4.039	155.6	6.126	154	6.063	1.6	.063	10	.394	6
					10	Int.	★	MVS0870X10S090	88.6	3.488	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	9	.354	8
8.700	.3425			M10x1.25	10	Int.	●	MVS0870X10S100	88.6	3.488	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	10	.394	8
					15	Int.	★	MVS0870X15S090	132.1	5.201	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	9	.354	8
					15	Int.	●	MVS0870X15S100	132.1	5.201	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	10	.394	8
					20	Int.	★	MVS0870X20S090	175.6	6.913	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	9	.354	8
					20	Int.	●	MVS0870X20S100	175.6	6.913	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	10	.394	8
					25	Int.	★	MVS0870X25S090	219.1	8.626	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	9	.354	8
					25	Int.	●	MVS0870X25S100	219.1	8.626	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	10	.394	8
					30	Int.	★	MVS0870X30S090	262.6	10.339	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	9	.354	8
					30	Int.	●	MVS0870X30S100	262.6	10.339	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	10	.394	8
					35	Int.	□	MVS0870X35S090	306.1	12.051	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	9	.354	8
					35	Int.	□	MVS0870X35S100	306.1	12.051	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	10	.394	8
					40	Int.	□	MVS0870X40S090	349.6	13.764	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	9	.354	8
					40	Int.	□	MVS0870X40S100	349.6	13.764	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	10	.394	8
					2	Ext.	●	MVE0873X02S100	19.0	.748	41.6	1.638	43.6	1.717	85.6	3.370	84	3.307	1.6	.063	10	.394	2
					2	Int.	●	MVS0873X02S100PL	19.0	.748	41.4	1.630	43.4	1.709	85.4	3.362	84	3.307	1.4	.055	10	.394	4
					3	Int.	●	MVS0873X03S100	27.8	1.094	46.6	1.835	48.6	1.913	101.6	4.000	100	3.937	1.6	.063	10	.394	6
					5	Int.	●	MVS0873X05S100	45.2	1.780	73.6	2.898	75.6	2.976	128.6	5.063	127	5.000	1.6	.063	10	.394	6
					8	Int.	●	MVS0873X08S100	71.4	2.811	100.6	3.961	102.6	4.039	155.6	6.126	154	6.063	1.6	.063	10	.394	6
					10	Int.	●	MVS0873X10S100	88.9	3.500	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	10	.394	8
8.732	.3438	11/32			15	Int.	●	MVS0873X15S100	132.6	5.220	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	10	.394	8
					20	Int.	●	MVS0873X20S100	176.2	6.937	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	10	.394	8
					25	Int.	●	MVS0873X25S100	219.9	8.657	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	10	.394	8
					30	Int.	●	MVS0873X30S100	263.6	10.378	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	10	.394	8
					35	Int.	●	MVS0873X35S100	307.2	12.094	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	10	.394	8
					40	Int.	●	MVS0873X40S100	350.9	13.815	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	10	.394	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE0880X02S090	19.2	.756	41.6	1.638	41.6	1.638	85.6	3.370	84	3.307	1.6	.063	9	.354	2
					2	Ext.	●	MVE0880X02S100	19.2	.756	41.6	1.638	43.6	1.717	85.6	3.370	84	3.307	1.6	.063	10	.394	2
					2	Int.	★	MVS0880X02S090PL	19.0	.748	41.4	1.630	41.4	1.630	85.4	3.362	84	3.307	1.4	.055	9	.354	4
					2	Int.	●	MVS0880X02S100PL	19.0	.748	41.4	1.630	43.4	1.709	85.4	3.362	84	3.307	1.4	.055	10	.394	4
					3	Ext.	★	MVE0880X03S090	28.0	1.102	56.6	2.228	56.6	2.228	99.6	3.921	98	3.858	1.6	.063	9	.354	2
					3	Ext.	★	MVE0880X03S100	28.0	1.102	56.6	2.228	58.6	2.307	99.6	3.921	98	3.858	1.6	.063	10	.394	2
					3	Int.	★	MVS0880X03S090	28.0	1.102	46.6	1.835	46.6	1.835	101.6	4.000	100	3.937	1.6	.063	9	.354	6
					3	Int.	●	MVS0880X03S100	28.0	1.102	46.6	1.835	48.6	1.913	101.6	4.000	100	3.937	1.6	.063	10	.394	6
					5	Int.	★	MVS0880X05S090	45.6	1.795	73.6	2.898	73.6	2.898	128.6	5.063	127	5.000	1.6	.063	9	.354	6
					5	Int.	●	MVS0880X05S100	45.6	1.795	73.6	2.898	75.6	2.976	128.6	5.063	127	5.000	1.6	.063	10	.394	6
					8	Int.	★	MVS0880X08S090	72.0	2.835	100.6	3.961	100.6	3.961	155.6	6.126	154	6.063	1.6	.063	9	.354	6
					8	Int.	●	MVS0880X08S100	72.0	2.835	100.6	3.961	102.6	4.039	155.6	6.126	154	6.063	1.6	.063	10	.394	6
					10	Int.	★	MVS0880X10S090	89.6	3.528	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	9	.354	8
8.800	.3465				10	Int.	●	MVS0880X10S100	89.6	3.528	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	10	.394	8
					15	Int.	★	MVS0880X15S090	133.6	5.260	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	9	.354	8
					15	Int.	●	MVS0880X15S100	133.6	5.260	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	10	.394	8
					20	Int.	★	MVS0880X20S090	177.6	6.992	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	9	.354	8
					20	Int.	●	MVS0880X20S100	177.6	6.992	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	10	.394	8
					25	Int.	★	MVS0880X25S090	221.6	8.724	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	9	.354	8
					25	Int.	●	MVS0880X25S100	221.6	8.724	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	10	.394	8
					30	Int.	★	MVS0880X30S090	265.6	10.457	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	9	.354	8
					30	Int.	●	MVS0880X30S100	265.6	10.457	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	10	.394	8
					35	Int.	□	MVS0880X35S090	309.6	12.189	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	9	.354	8
					35	Int.	□	MVS0880X35S100	309.6	12.189	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	10	.394	8
					40	Int.	□	MVS0880X40S090	353.6	13.921	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	9	.354	8
					40	Int.	□	MVS0880X40S100	353.6	13.921	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	10	.394	8
					2	Ext.	★	MVE0890X02S090	19.4	.764	41.6	1.638	41.6	1.638	85.6	3.370	84	3.307	1.6	.063	9	.354	2
					2	Ext.	●	MVE0890X02S100	19.4	.764	41.6	1.638	43.6	1.717	85.6	3.370	84	3.307	1.6	.063	10	.394	2
					2	Int.	★	MVS0890X02S090PL	19.2	.756	41.4	1.630	41.4	1.630	85.4	3.362	84	3.307	1.4	.055	9	.354	4
					2	Int.	●	MVS0890X02S100PL	19.2	.756	41.4	1.630	43.4	1.709	85.4	3.362	84	3.307	1.4	.055	10	.394	4
					3	Ext.	★	MVE0890X03S090	28.3	1.114	56.6	2.228	56.6	2.228	99.6	3.921	98	3.858	1.6	.063	9	.354	2
					3	Ext.	★	MVE0890X03S100	28.3	1.114	56.6	2.228	58.6	2.307	99.6	3.921	98	3.858	1.6	.063	10	.394	2
					3	Int.	★	MVS0890X03S090	28.3	1.114	46.6	1.835	46.6	1.835	101.6	4.000	100	3.937	1.6	.063	9	.354	6
					3	Int.	●	MVS0890X03S100	28.3	1.114	46.6	1.835	48.6	1.913	101.6	4.000	100	3.937	1.6	.063	10	.394	6
					5	Int.	★	MVS0890X05S090	46.1	1.815	73.6	2.898	73.6	2.898	128.6	5.063	127	5.000	1.6	.063	9	.354	6
					5	Int.	●	MVS0890X05S100	46.1	1.815	73.6	2.898	75.6	2.976	128.6	5.063	127	5.000	1.6	.063	10	.394	6
					8	Int.	★	MVS0890X08S090	72.8	2.866	100.6	3.961	100.6	3.961	155.6	6.126	154	6.063	1.6	.063	9	.354	6
					8	Int.	●	MVS0890X08S100	72.8	2.866	100.6	3.961	102.6	4.039	155.6	6.126	154	6.063	1.6	.063	10	.394	6
					10	Int.	★	MVS0890X10S090	90.6	3.567	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	9	.354	8
8.900	.3504				10	Int.	●	MVS0890X10S100	90.6	3.567	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	10	.394	8
					15	Int.	★	MVS0890X15S090	135.1	5.319	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	9	.354	8
					15	Int.	●	MVS0890X15S100	135.1	5.319	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	10	.394	8
					20	Int.	★	MVS0890X20S090	179.6	7.071	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	9	.354	8
					20	Int.	●	MVS0890X20S100	179.6	7.071	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	10	.394	8
					25	Int.	★	MVS0890X25S090	224.1	8.823	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	9	.354	8
					25	Int.	●	MVS0890X25S100	224.1	8.823	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	10	.394	8
					30	Int.	★	MVS0890X30S090	268.6	10.575	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	9	.354	8
					30	Int.	●	MVS0890X30S100	268.6	10.575	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	10	.394	8
					35	Int.	□	MVS0890X35S090	313.1	12.327	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	9	.354	8
					35	Int.	□	MVS0890X35S100	313.1	12.327	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	10	.394	8
					40	Int.	□	MVS0890X40S090	357.6	14.079	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	9	.354	8
					40	Int.	□	MVS0890X40S100	357.6	14.079	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	10	.394	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
9.000	.3543				2	Ext.	★	MVE0900X02S090	19.6	.772	41.6	1.638	41.6	1.638	85.6	3.370	84	3.307	1.6	.063	9	.354	2
					2	Ext.	●	MVE0900X02S100	19.6	.772	41.6	1.638	43.6	1.717	85.6	3.370	84	3.307	1.6	.063	10	.394	2
					2	Int.	★	MVS0900X02S090PL	19.4	.764	41.4	1.630	41.4	1.630	85.4	3.362	84	3.307	1.4	.055	9	.354	4
					2	Int.	●	MVS0900X02S100PL	19.4	.764	41.4	1.630	43.4	1.709	85.4	3.362	84	3.307	1.4	.055	10	.394	4
					3	Ext.	★	MVE0900X03S090	28.6	1.126	56.6	2.228	56.6	2.228	99.6	3.921	98	3.858	1.6	.063	9	.354	2
					3	Ext.	★	MVE0900X03S100	28.6	1.126	56.6	2.228	58.6	2.307	99.6	3.921	98	3.858	1.6	.063	10	.394	2
					3	Int.	★	MVS0900X03S090	28.6	1.126	46.6	1.835	46.6	1.835	101.6	4.000	100	3.937	1.6	.063	9	.354	6
					3	Int.	●	MVS0900X03S100	28.6	1.126	46.6	1.835	48.6	1.913	101.6	4.000	100	3.937	1.6	.063	10	.394	6
					5	Int.	★	MVS0900X05S090	46.6	1.835	73.6	2.898	73.6	2.898	128.6	5.063	127	5.000	1.6	.063	9	.354	6
					5	Int.	●	MVS0900X05S100	46.6	1.835	73.6	2.898	75.6	2.976	128.6	5.063	127	5.000	1.6	.063	10	.394	6
					8	Int.	★	MVS0900X08S090	73.6	2.898	100.6	3.961	100.6	3.961	155.6	6.126	154	6.063	1.6	.063	9	.354	6
					8	Int.	●	MVS0900X08S100	73.6	2.898	100.6	3.961	102.6	4.039	155.6	6.126	154	6.063	1.6	.063	10	.394	6
					10	Int.	★	MVS0900X10S090	91.6	3.606	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	9	.354	8
					10	Int.	●	MVS0900X10S100	91.6	3.606	118.6	4.669	121.6	4.787	176.6	6.953	175	6.890	1.6	.063	10	.394	8
					15	Int.	★	MVS0900X15S090	136.6	5.378	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	9	.354	8
					15	Int.	●	MVS0900X15S100	136.6	5.378	163.6	6.441	166.6	6.559	221.6	8.724	220	8.661	1.6	.063	10	.394	8
					20	Int.	★	MVS0900X20S090	181.6	7.150	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	9	.354	8
					20	Int.	●	MVS0900X20S100	181.6	7.150	208.6	8.213	211.6	8.331	266.6	10.496	265	10.433	1.6	.063	10	.394	8
					25	Int.	★	MVS0900X25S090	226.6	8.921	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	9	.354	8
					25	Int.	●	MVS0900X25S100	226.6	8.921	253.6	9.984	256.6	10.102	311.6	12.268	310	12.205	1.6	.063	10	.394	8
					30	Int.	★	MVS0900X30S090	271.6	10.693	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	9	.354	8
					30	Int.	●	MVS0900X30S100	271.6	10.693	298.6	11.756	301.6	11.874	356.6	14.039	355	13.976	1.6	.063	10	.394	8
					35	Int.	★	MVS0900X35S090	316.6	12.465	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	9	.354	8
					35	Int.	●	MVS0900X35S100	316.6	12.465	343.6	13.528	346.6	13.646	401.6	15.811	400	15.748	1.6	.063	10	.394	8
					40	Int.	★	MVS0900X40S090	361.6	14.236	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	9	.354	8
					40	Int.	●	MVS0900X40S100	361.6	14.236	391.6	15.417	394.6	15.535	449.6	17.701	448	17.638	1.6	.063	10	.394	8
9.100	.3583		T		2	Ext.	●	MVE0910X02S100	19.9	.783	41.7	1.642	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0910X02S100PL	19.6	.772	41.4	1.630	44.4	1.748	90.4	3.559	89	3.504	1.4	.055	10	.394	4
					3	Ext.	★	MVE0910X03S100	29.0	1.142	59.7	2.350	62.7	2.469	106.7	4.201	105	4.134	1.7	.067	10	.394	2
					3	Int.	●	MVS0910X03S100	29.0	1.142	49.2	1.937	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0910X05S100	47.2	1.858	77.7	3.059	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0910X08S100	74.5	2.933	106.7	4.201	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
					10	Int.	★	MVS0910X10S100	92.7	3.650	125.7	4.949	128.7	5.067	183.7	7.232	182	7.165	1.7	.067	10	.394	8
					15	Int.	★	MVS0910X15S100	138.2	5.441	172.7	6.799	175.7	6.917	230.7	9.083	229	9.016	1.7	.067	10	.394	8
					20	Int.	★	MVS0910X20S100	183.7	7.232	220.7	8.689	223.7	8.807	278.7	10.972	277	10.906	1.7	.067	10	.394	8
					25	Int.	★	MVS0910X25S100	229.2	9.024	267.7	10.539	270.7	10.657	325.7	12.823	324	12.756	1.7	.067	10	.394	8
					30	Int.	★	MVS0910X30S100	274.7	10.815	315.7	12.429	318.7	12.547	373.7	14.713	372	14.646	1.7	.067	10	.394	8
					35	Int.	□	MVS0910X35S100	320.2	12.606	362.7	14.280	365.7	14.398	420.7	16.563	419	16.496	1.7	.067	10	.394	8
9.129	.3594	23/64			2	Ext.	●	MVE0913X02S100	19.8	.780	41.7	1.642	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0913X02S100PL	19.8	.780	41.4	1.630	44.4	1.748	90.4	3.559	89	3.504	1.4	.055	10	.394	4
					3	Int.	●	MVS0913X03S100	29.0	1.142	49.2	1.937	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0913X05S100	47.3	1.862	77.7	3.059	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0913X08S100	74.7	2.941	106.7	4.201	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
					10	Int.	●	MVS0913X10S100	92.9	3.657	125.7	4.949	128.7	5.067	183.7	7.232	182	7.165	1.7	.067	10	.394	8
					15	Int.	●	MVS0913X15S100	138.6	5.457	172.7	6.799	175.7	6.917	230.7	9.083	229	9.016	1.7	.067	10	.394	8
					20	Int.	●	MVS0913X20S100	184.2	7.252	220.7	8.689	223.7	8.807	278.7	10.972	277	10.906	1.7	.067	10	.394	8
					25	Int.	●	MVS0913X25S100	229.8	9.047	267.7	10.539	270.7	10.657	325.7	12.823	324	12.756	1.7	.067	10	.394	8
					30	Int.	●	MVS0913X30S100	275.5	10.846	315.7	12.429	318.7	12.547	373.7	14.713	372	14.646	1.7	.067	10	.394	8
					35	Int.	●	MVS0913X35S100	321.1	12.642	362.7	14.280	365.7	14.398	420.7	16.563	419	16.496	1.7	.067	10	.394	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE0920X02S100	20.1	.791	41.7	1.642	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0920X02S100PL	19.9	.783	41.5	1.634	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Ext.	★	MVE0920X03S100	29.3	1.154	59.7	2.350	62.7	2.469	106.7	4.201	105	4.134	1.7	.067	10	.394	2
					3	Int.	●	MVS0920X03S100	29.3	1.154	49.2	1.937	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0920X05S100	47.7	1.878	77.7	3.059	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0920X08S100	75.3	2.965	106.7	4.201	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
9.200	.3622				10	Int.	★	MVS0920X10S100	93.7	3.689	125.7	4.949	128.7	5.067	183.7	7.232	182	7.165	1.7	.067	10	.394	8
					15	Int.	★	MVS0920X15S100	139.7	5.500	172.7	6.799	175.7	6.917	230.7	9.083	229	9.016	1.7	.067	10	.394	8
					20	Int.	★	MVS0920X20S100	185.7	7.311	220.7	8.689	223.7	8.807	278.7	10.972	277	10.906	1.7	.067	10	.394	8
					25	Int.	★	MVS0920X25S100	231.7	9.122	267.7	10.539	270.7	10.657	325.7	12.823	324	12.756	1.7	.067	10	.394	8
					30	Int.	★	MVS0920X30S100	277.7	10.933	315.7	12.429	318.7	12.547	373.7	14.713	372	14.646	1.7	.067	10	.394	8
					35	Int.	□	MVS0920X35S100	323.7	12.744	362.7	14.280	365.7	14.398	420.7	16.563	419	16.496	1.7	.067	10	.394	8
					2	Ext.	●	MVE0930X02S100	20.3	.799	41.7	1.642	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0930X02S100PL	20.1	.791	41.5	1.634	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Ext.	★	MVE0930X03S100	29.6	1.165	59.7	2.350	62.7	2.469	106.7	4.201	105	4.134	1.7	.067	10	.394	2
					3	Int.	●	MVS0930X03S100	29.6	1.165	49.2	1.937	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0930X05S100	48.2	1.898	77.7	3.059	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0930X08S100	76.1	2.996	106.7	4.201	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
9.300	.3661				10	Int.	★	MVS0930X10S100	94.7	3.728	125.7	4.949	128.7	5.067	183.7	7.232	182	7.165	1.7	.067	10	.394	8
					15	Int.	★	MVS0930X15S100	141.2	5.559	172.7	6.799	175.7	6.917	230.7	9.083	229	9.016	1.7	.067	10	.394	8
					20	Int.	★	MVS0930X20S100	187.7	7.390	220.7	8.689	223.7	8.807	278.7	10.972	277	10.906	1.7	.067	10	.394	8
					25	Int.	★	MVS0930X25S100	234.2	9.220	267.7	10.539	270.7	10.657	325.7	12.823	324	12.756	1.7	.067	10	.394	8
					30	Int.	★	MVS0930X30S100	280.7	11.051	315.7	12.429	318.7	12.547	373.7	14.713	372	14.646	1.7	.067	10	.394	8
					35	Int.	□	MVS0930X35S100	327.2	12.882	362.7	14.280	365.7	14.398	420.7	16.563	419	16.496	1.7	.067	10	.394	8
					2	Ext.	●	MVE0935X02S100	20.3	.799	41.7	1.642	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0935X02S100PL	20.3	.799	41.5	1.634	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Int.	●	MVS0935X03S100	29.7	1.169	49.2	1.937	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0935X05S100	48.4	1.906	77.7	3.059	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0935X08S100	76.5	3.012	106.7	4.201	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
9.348	.3680		U	7/16-14	10	Int.	●	MVS0935X10S100	95.2	3.748	125.7	4.949	128.7	5.067	183.7	7.232	182	7.165	1.7	.067	10	.394	8
					15	Int.	●	MVS0935X15S100	141.9	5.587	172.7	6.799	175.7	6.917	230.7	9.083	229	9.016	1.7	.067	10	.394	8
					20	Int.	●	MVS0935X20S100	188.6	7.425	220.7	8.689	223.7	8.807	278.7	10.972	277	10.906	1.7	.067	10	.394	8
					25	Int.	●	MVS0935X25S100	235.4	9.268	267.7	10.539	270.7	10.657	325.7	12.823	324	12.756	1.7	.067	10	.394	8
					30	Int.	●	MVS0935X30S100	282.1	11.106	315.7	12.429	318.7	12.547	373.7	14.713	372	14.646	1.7	.067	10	.394	8
					35	Int.	●	MVS0935X35S100	328.8	12.945	362.7	14.280	365.7	14.398	420.7	16.563	419	16.496	1.7	.067	10	.394	8
					2	Ext.	●	MVE0940X02S100	20.5	.807	41.7	1.642	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0940X02S100PL	20.3	.799	41.5	1.634	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Ext.	★	MVE0940X03S100	29.9	1.177	59.7	2.350	62.7	2.469	106.7	4.201	105	4.134	1.7	.067	10	.394	2
					3	Int.	●	MVS0940X03S100	29.9	1.177	49.2	1.937	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0940X05S100	48.7	1.917	77.7	3.059	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0940X08S100	76.9	3.028	106.7	4.201	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
9.400	.3701				10	Int.	★	MVS0940X10S100	95.7	3.768	125.7	4.949	128.7	5.067	183.7	7.232	182	7.165	1.7	.067	10	.394	8
					15	Int.	★	MVS0940X15S100	142.7	5.618	172.7	6.799	175.7	6.917	230.7	9.083	229	9.016	1.7	.067	10	.394	8
					20	Int.	★	MVS0940X20S100	189.7	7.469	220.7	8.689	223.7	8.807	278.7	10.972	277	10.906	1.7	.067	10	.394	8
					25	Int.	★	MVS0940X25S100	236.7	9.319	267.7	10.539	270.7	10.657	325.7	12.823	324	12.756	1.7	.067	10	.394	8
					30	Int.	★	MVS0940X30S100	283.7	11.169	315.7	12.429	318.7	12.547	373.7	14.713	372	14.646	1.7	.067	10	.394	8
					35	Int.	□	MVS0940X35S100	330.7	13.020	362.7	14.280	365.7	14.398	420.7	16.563	419	16.496	1.7	.067	10	.394	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
9.500	.3740				2	Ext.	●	MVE0950X02S100	20.7	.815	41.7	1.642	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0950X02S100PL	20.5	.807	41.5	1.634	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Ext.	★	MVE0950X03S100	30.2	1.189	59.7	2.350	62.7	2.469	106.7	4.201	105	4.134	1.7	.067	10	.394	2
					3	Int.	●	MVS0950X03S100	30.2	1.189	49.2	1.937	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0950X05S100	49.2	1.937	77.7	3.059	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0950X08S100	77.7	3.059	106.7	4.201	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
					10	Int.	★	MVS0950X10S100	96.7	3.807	125.7	4.949	128.7	5.067	183.7	7.232	182	7.165	1.7	.067	10	.394	8
					15	Int.	★	MVS0950X15S100	144.2	5.677	172.7	6.799	175.7	6.917	230.7	9.083	229	9.016	1.7	.067	10	.394	8
					20	Int.	●	MVS0950X20S100	191.7	7.547	220.7	8.689	223.7	8.807	278.7	10.972	277	10.906	1.7	.067	10	.394	8
					25	Int.	★	MVS0950X25S100	239.2	9.417	267.7	10.539	270.7	10.657	325.7	12.823	324	12.756	1.7	.067	10	.394	8
					30	Int.	★	MVS0950X30S100	286.7	11.287	315.7	12.429	318.7	12.547	373.7	14.713	372	14.646	1.7	.067	10	.394	8
					35	Int.	●	MVS0950X35S100	334.2	13.157	362.7	14.280	365.7	14.398	420.7	16.563	419	16.496	1.7	.067	10	.394	8
9.525	.3750	3/8			2	Ext.	●	MVE0953X02S100	20.7	.815	44.7	1.760	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0953X02S100PL	20.7	.815	44.5	1.752	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Int.	●	MVS0953X03S100	30.3	1.193	51.7	2.035	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0953X05S100	49.3	1.941	81.7	3.217	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0953X08S100	77.9	3.067	111.7	4.398	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
					10	Int.	●	MVS0953X10S100	97.0	3.819	131.7	5.185	134.7	5.303	189.7	7.469	188	7.402	1.7	.067	10	.394	8
					15	Int.	●	MVS0953X15S100	144.6	5.693	181.7	7.154	184.7	7.272	239.7	9.437	238	9.370	1.7	.067	10	.394	8
					20	Int.	●	MVS0953X20S100	192.2	7.567	231.7	9.122	234.7	9.240	289.7	11.406	288	11.339	1.7	.067	10	.394	8
					25	Int.	●	MVS0953X25S100	239.8	9.441	281.7	11.091	284.7	11.209	339.7	13.374	338	13.307	1.7	.067	10	.394	8
					30	Int.	●	MVS0953X30S100	287.5	11.319	331.7	13.059	334.7	13.177	389.7	15.343	388	15.276	1.7	.067	10	.394	8
					35	Int.	●	MVS0953X35S100	335.1	13.193	381.7	15.028	384.7	15.146	439.7	17.311	438	17.244	1.7	.067	10	.394	8
9.600	.3780				2	Ext.	●	MVE0960X02S100	20.9	.823	44.7	1.760	44.7	1.760	90.7	3.571	89	3.504	1.7	.067	10	.394	2
					2	Int.	●	MVS0960X02S100PL	20.7	.815	44.5	1.752	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Ext.	★	MVE0960X03S100	30.5	1.201	61.7	2.429	61.7	2.429	106.7	4.201	105	4.134	1.7	.067	10	.394	2
					3	Int.	●	MVS0960X03S100	30.5	1.201	51.7	2.035	51.7	2.035	107.7	4.240	106	4.173	1.7	.067	10	.394	6
					5	Int.	●	MVS0960X05S100	49.7	1.957	81.7	3.217	81.7	3.217	137.7	5.421	136	5.354	1.7	.067	10	.394	6
					8	Int.	●	MVS0960X08S100	78.5	3.091	111.7	4.398	111.7	4.398	167.7	6.602	166	6.535	1.7	.067	10	.394	6
					10	Int.	●	MVS0960X10S100	97.7	3.846	131.7	5.185	134.7	5.307	189.7	7.469	188	7.402	1.7	.067	10	.394	8
					15	Int.	★	MVS0960X15S100	145.7	5.736	181.7	7.154	184.7	7.276	239.7	9.437	238	9.370	1.7	.067	10	.394	8
					20	Int.	★	MVS0960X20S100	193.7	7.626	231.7	9.122	234.7	9.244	289.7	11.406	288	11.339	1.7	.067	10	.394	8
					25	Int.	★	MVS0960X25S100	241.7	9.516	281.7	11.091	284.7	11.213	339.7	13.374	338	13.307	1.7	.067	10	.394	8
					30	Int.	★	MVS0960X30S100	289.7	11.406	331.7	13.059	334.7	13.181	389.7	15.343	388	15.276	1.7	.067	10	.394	8
					35	Int.	□	MVS0960X35S100	337.7	13.295	381.7	15.028	384.7	15.150	439.7	17.311	438	17.244	1.7	.067	10	.394	8
9.700	.3819		Tube Sheet		2	Ext.	●	MVE0970X02S100	21.2	.835	44.8	1.764	44.8	1.764	90.8	3.575	89	3.504	1.8	.071	10	.394	2
					2	Int.	●	MVS0970X02S100PL	20.9	.823	44.5	1.752	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Ext.	★	MVE0970X03S100	30.9	1.217	61.8	2.433	61.8	2.433	106.8	4.205	105	4.134	1.8	.071	10	.394	2
					3	Int.	●	MVS0970X03S100	30.9	1.217	51.8	2.039	51.8	2.039	107.8	4.244	106	4.173	1.8	.071	10	.394	6
					5	Int.	●	MVS0970X05S100	50.3	1.980	81.8	3.220	81.8	3.220	137.8	5.425	136	5.354	1.8	.071	10	.394	6
					8	Int.	●	MVS0970X08S100	79.4	3.126	111.8	4.402	111.8	4.402	167.8	6.606	166	6.535	1.8	.071	10	.394	6
					10	Int.	★	MVS0970X10S100	98.8	3.890	131.8	5.189	134.8	5.307	189.8	7.472	188	7.402	1.8	.071	10	.394	8
					15	Int.	●	MVS0970X15S100	147.3	5.799	181.8	7.157	184.8	7.276	239.8	9.441	238	9.370	1.8	.071	10	.394	8
					20	Int.	★	MVS0970X20S100	195.8	7.709	231.8	9.126	234.8	9.244	289.8	11.409	288	11.339	1.8	.071	10	.394	8
					25	Int.	★	MVS0970X25S100	244.3	9.618	281.8	11.094	284.8	11.213	339.8	13.378	338	13.307	1.8	.071	10	.394	8
					30	Int.	★	MVS0970X30S100	292.8	11.528	331.8	13.063	334.8	13.181	389.8	15.346	388	15.276	1.8	.071	10	.394	8
					35	Int.	□	MVS0970X35S100	341.3	13.437	381.8	15.031	384.8	15.150	439.8	17.315	438	17.244	1.8	.071	10	.394	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE0980X02S100	21.4	.843	44.8	1.764	44.8	1.764	90.8	3.575	89	3.504	1.8	.071	10	.394	2
					2	Int.	●	MVS0980X02S100PL	21.1	.831	44.5	1.752	44.5	1.752	90.5	3.563	89	3.504	1.5	.059	10	.394	4
					3	Ext.	★	MVE0980X03S100	31.2	1.228	61.8	2.433	61.8	2.433	106.8	4.205	105	4.134	1.8	.071	10	.394	2
					3	Int.	●	MVS0980X03S100	31.2	1.228	51.8	2.039	51.8	2.039	107.8	4.244	106	4.173	1.8	.071	10	.394	6
					5	Int.	●	MVS0980X05S100	50.8	2.000	81.8	3.220	81.8	3.220	137.8	5.425	136	5.354	1.8	.071	10	.394	6
					8	Int.	●	MVS0980X08S100	80.2	3.157	111.8	4.402	111.8	4.402	167.8	6.606	166	6.535	1.8	.071	10	.394	6
9.800	.3858		W		10	Int.	●	MVS0980X10S100	99.8	3.929	131.8	5.189	134.8	5.307	189.8	7.472	188	7.402	1.8	.071	10	.394	8
					15	Int.	★	MVS0980X15S100	148.8	5.858	181.8	7.157	184.8	7.276	239.8	9.441	238	9.370	1.8	.071	10	.394	8
					20	Int.	★	MVS0980X20S100	197.8	7.787	231.8	9.126	234.8	9.244	289.8	11.409	288	11.339	1.8	.071	10	.394	8
					25	Int.	★	MVS0980X25S100	246.8	9.717	281.8	11.094	284.8	11.213	339.8	13.378	338	13.307	1.8	.071	10	.394	8
					30	Int.	★	MVS0980X30S100	295.8	11.646	331.8	13.063	334.8	13.181	389.8	15.346	388	15.276	1.8	.071	10	.394	8
					35	Int.	□	MVS0980X35S100	344.8	13.575	381.8	15.031	384.8	15.150	439.8	17.315	438	17.244	1.8	.071	10	.394	8
					2	Ext.	●	MVE0990X02S100	21.6	.850	44.8	1.764	44.8	1.764	90.8	3.575	89	3.504	1.8	.071	10	.394	2
					2	Int.	●	MVS0990X02S100PL	21.4	.843	44.6	1.756	44.6	1.756	90.6	3.567	89	3.504	1.6	.063	10	.394	4
					3	Ext.	★	MVE0990X03S100	31.5	1.240	61.8	2.433	61.8	2.433	106.8	4.205	105	4.134	1.8	.071	10	.394	2
					3	Int.	●	MVS0990X03S100	31.5	1.240	51.8	2.039	51.8	2.039	107.8	4.244	106	4.173	1.8	.071	10	.394	6
					5	Int.	●	MVS0990X05S100	51.3	2.020	81.8	3.220	81.8	3.220	137.8	5.425	136	5.354	1.8	.071	10	.394	6
					8	Int.	●	MVS0990X08S100	81.0	3.189	111.8	4.402	111.8	4.402	167.8	6.606	166	6.535	1.8	.071	10	.394	6
9.900	.3898				10	Int.	★	MVS0990X10S100	100.8	3.969	131.8	5.189	134.8	5.307	189.8	7.472	188	7.402	1.8	.071	10	.394	8
					15	Int.	★	MVS0990X15S100	150.3	5.917	181.8	7.157	184.8	7.276	239.8	9.441	238	9.370	1.8	.071	10	.394	8
					20	Int.	★	MVS0990X20S100	199.8	7.866	231.8	9.126	234.8	9.244	289.8	11.409	288	11.339	1.8	.071	10	.394	8
					25	Int.	★	MVS0990X25S100	249.3	9.815	281.8	11.094	284.8	11.213	339.8	13.378	338	13.307	1.8	.071	10	.394	8
					30	Int.	★	MVS0990X30S100	298.8	11.764	331.8	13.063	334.8	13.181	389.8	15.346	388	15.276	1.8	.071	10	.394	8
					35	Int.	□	MVS0990X35S100	348.3	13.713	381.8	15.031	384.8	15.150	439.8	17.315	438	17.244	1.8	.071	10	.394	8
					2	Ext.	●	MVE0992X02S100	21.5	.846	44.8	1.764	44.9	1.768	90.8	3.575	89	3.504	1.8	.071	10	.394	2
					2	Int.	●	MVS0992X02S100PL	21.5	.846	44.6	1.756	44.6	1.756	90.6	3.567	89	3.504	1.6	.063	10	.394	4
					3	Int.	●	MVS0992X03S100	31.5	1.240	51.8	2.039	51.9	2.043	107.8	4.244	106	4.173	1.8	.071	10	.394	6
					5	Int.	●	MVS0992X05S100	51.4	2.024	81.8	3.220	81.9	3.224	137.8	5.425	136	5.354	1.8	.071	10	.394	6
					8	Int.	●	MVS0992X08S100	81.2	3.197	111.8	4.402	111.9	4.406	167.8	6.606	166	6.535	1.8	.071	10	.394	6
9.922	.3907	25/64		7/16-20	10	Int.	●	MVS0992X10S100	101.0	3.976	131.8	5.189	134.8	5.307	189.8	7.472	188	7.402	1.8	.071	10	.394	8
					15	Int.	●	MVS0992X15S100	150.6	5.929	181.8	7.157	184.8	7.276	239.8	9.441	238	9.370	1.8	.071	10	.394	8
					20	Int.	●	MVS0992X20S100	200.2	7.882	231.8	9.126	234.8	9.244	289.8	11.409	288	11.339	1.8	.071	10	.394	8
					25	Int.	●	MVS0992X25S100	249.8	9.835	281.8	11.094	284.8	11.213	339.8	13.378	338	13.307	1.8	.071	10	.394	8
					30	Int.	●	MVS0992X30S100	299.4	11.787	331.8	13.063	334.8	13.181	389.8	15.346	388	15.276	1.8	.071	10	.394	8
					35	Int.	●	MVS0992X35S100	349.0	13.740	381.8	15.031	384.8	15.150	439.8	17.315	438	17.244	1.8	.071	10	.394	8
					2	Ext.	●	MVE1000X02S100	21.8	.858	44.8	1.764	44.8	1.764	90.8	3.575	89	3.504	1.8	.071	10	.394	2
					2	Int.	●	MVS1000X02S100PL	21.6	.850	44.6	1.756	44.6	1.756	90.6	3.567	89	3.504	1.6	.063	10	.394	4
					3	Ext.	★	MVE1000X03S100	31.8	1.252	61.8	2.433	61.8	2.433	106.8	4.205	105	4.134	1.8	.071	10	.394	2
					3	Int.	●	MVS1000X03S100	31.8	1.252	51.8	2.039	51.8	2.039	107.8	4.244	106	4.173	1.8	.071	10	.394	6
					5	Int.	●	MVS1000X05S100	51.8	2.039	81.8	3.220	81.8	3.220	137.8	5.425	136	5.354	1.8	.071	10	.394	6
					8	Int.	●	MVS1000X08S100	81.8	3.220	111.8	4.402	111.8	4.402	167.8	6.606	166	6.535	1.8	.071	10	.394	6
10.000	.3937				10	Int.	●	MVS1000X10S100	101.8	4.008	131.8	5.189	134.8	5.307	189.8	7.472	188	7.402	1.8	.071	10	.394	8
					15	Int.	●	MVS1000X15S100	151.8	5.976	181.8	7.157	184.8	7.276	239.8	9.441	238	9.370	1.8	.071	10	.394	8
					20	Int.	★	MVS1000X20S100	201.8	7.945	231.8	9.126	234.8	9.244	289.8	11.409	288	11.339	1.8	.071	10	.394	8
					25	Int.	★	MVS1000X25S100	251.8	9.913	281.8	11.094	284.8	11.213	339.8	13.378	338	13.307	1.8	.071	10	.394	8
					30	Int.	★	MVS1000X30S100	301.8	11.882	331.8	13.063	334.8	13.181	389.8	15.346	388	15.276	1.8	.071	10	.394	8
					35	Int.	●	MVS1000X35S100	351.8	13.850	381.8	15.031	384.8	15.150	439.8	17.315	438	17.244	1.8	.071	10	.394	8

ISO13399 ➤ L003
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CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
10.100	.3976				2	Ext.	★	MVE1010X02S110	22.0	.866	44.8	1.764	47.8	1.882	96.8	3.811	95	3.740	1.8	.071	11	.433	2
					2	Ext.	●	MVE1010X02S120	22.0	.866	44.8	1.764	47.8	1.882	96.8	3.811	95	3.740	1.8	.071	12	.472	2
					2	Int.	●	MVS1010X02S110PL	21.8	.858	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	11	.433	4
					2	Int.	●	MVS1010X02S120PL	21.8	.858	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	12	.472	4
					3	Ext.	★	MVE1010X03S110	32.1	1.264	67.8	2.669	70.8	2.787	115.8	4.559	114	4.488	1.8	.071	11	.433	2
					3	Ext.	★	MVE1010X03S120	32.1	1.264	67.8	2.669	70.8	2.787	115.8	4.559	114	4.488	1.8	.071	12	.472	2
					3	Int.	★	MVS1010X03S110	32.1	1.264	54.3	2.138	56.8	2.236	117.8	4.638	116	4.567	1.8	.071	11	.433	6
					3	Int.	●	MVS1010X03S120	32.1	1.264	54.3	2.138	56.8	2.236	117.8	4.638	116	4.567	1.8	.071	12	.472	6
					5	Int.	★	MVS1010X05S110	52.3	2.059	85.8	3.378	89.8	3.535	150.8	5.937	149	5.866	1.8	.071	11	.433	6
					5	Int.	●	MVS1010X05S120	52.3	2.059	85.8	3.378	89.8	3.535	150.8	5.937	149	5.866	1.8	.071	12	.472	6
					8	Int.	★	MVS1010X08S110	82.6	3.252	117.8	4.638	122.8	4.835	183.8	7.236	182	7.165	1.8	.071	11	.433	6
					8	Int.	●	MVS1010X08S120	82.6	3.252	117.8	4.638	122.8	4.835	183.8	7.236	182	7.165	1.8	.071	12	.472	6
					10	Int.	★	MVS1010X10S110	102.8	4.047	138.8	5.465	141.8	5.583	202.8	7.984	201	7.913	1.8	.071	11	.433	8
					10	Int.	●	MVS1010X10S120	102.8	4.047	138.8	5.465	141.8	5.583	202.8	7.984	201	7.913	1.8	.071	12	.472	8
					15	Int.	★	MVS1010X15S110	153.3	6.035	190.8	7.512	193.8	7.630	254.8	10.031	253	9.961	1.8	.071	11	.433	8
					15	Int.	●	MVS1010X15S120	153.3	6.035	190.8	7.512	193.8	7.630	254.8	10.031	253	9.961	1.8	.071	12	.472	8
					20	Int.	★	MVS1010X20S110	203.8	8.024	243.8	9.598	246.8	9.717	307.8	12.118	306	12.047	1.8	.071	11	.433	8
					20	Int.	●	MVS1010X20S120	203.8	8.024	243.8	9.598	246.8	9.717	307.8	12.118	306	12.047	1.8	.071	12	.472	8
					25	Int.	★	MVS1010X25S110	254.3	10.012	295.8	11.646	298.8	11.764	359.8	14.165	358	14.094	1.8	.071	11	.433	8
					25	Int.	●	MVS1010X25S120	254.3	10.012	295.8	11.646	298.8	11.764	359.8	14.165	358	14.094	1.8	.071	12	.472	8
10.200	.4016			M12x1.75	2	Ext.	★	MVE1020X02S110	22.3	.878	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	11	.433	2
					2	Ext.	●	MVE1020X02S120	22.3	.878	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	12	.472	2
					2	Int.	●	MVS1020X02S110PL	22.0	.866	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	11	.433	4
					2	Int.	●	MVS1020X02S120PL	22.0	.866	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	12	.472	4
					3	Ext.	★	MVE1020X03S110	32.5	1.280	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	11	.433	2
					3	Ext.	★	MVE1020X03S120	32.5	1.280	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	12	.472	2
					3	Int.	★	MVS1020X03S110	32.5	1.280	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	11	.433	6
					3	Int.	●	MVS1020X03S120	32.5	1.280	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	12	.472	6
					5	Int.	★	MVS1020X05S110	52.9	2.083	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	11	.433	6
					5	Int.	●	MVS1020X05S120	52.9	2.083	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	12	.472	6
					8	Int.	★	MVS1020X08S110	83.5	3.287	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	11	.433	6
					8	Int.	●	MVS1020X08S120	83.5	3.287	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	12	.472	6
					10	Int.	★	MVS1020X10S110	103.9	4.091	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	11	.433	8
					10	Int.	●	MVS1020X10S120	103.9	4.091	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	12	.472	8
					15	Int.	★	MVS1020X15S110	154.9	6.098	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	11	.433	8
					15	Int.	●	MVS1020X15S120	154.9	6.098	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	12	.472	8
					20	Int.	★	MVS1020X20S110	205.9	8.106	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	11	.433	8
					20	Int.	●	MVS1020X20S120	205.9	8.106	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	12	.472	8
					25	Int.	★	MVS1020X25S110	256.9	10.114	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	11	.433	8
					25	Int.	●	MVS1020X25S120	256.9	10.114	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	12	.472	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
10.300	.4055				2	Ext.	★	MVE1030X02S110	22.5	.886	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	11	.433	2
					2	Ext.	●	MVE1030X02S120	22.5	.886	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	12	.472	2
					2	Int.	●	MVS1030X02S110PL	22.2	.874	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	11	.433	4
					2	Int.	●	MVS1030X02S120PL	22.2	.874	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	12	.472	4
					3	Ext.	★	MVE1030X03S110	32.8	1.291	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	11	.433	2
					3	Ext.	★	MVE1030X03S120	32.8	1.291	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	12	.472	2
					3	Int.	★	MVS1030X03S110	32.8	1.291	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	11	.433	6
					3	Int.	●	MVS1030X03S120	32.8	1.291	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	12	.472	6
					5	Int.	★	MVS1030X05S110	53.4	2.102	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	11	.433	6
					5	Int.	●	MVS1030X05S120	53.4	2.102	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	12	.472	6
					8	Int.	★	MVS1030X08S110	84.3	3.319	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	11	.433	6
					8	Int.	●	MVS1030X08S120	84.3	3.319	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	12	.472	6
					10	Int.	★	MVS1030X10S110	104.9	4.130	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	11	.433	8
					10	Int.	●	MVS1030X10S120	104.9	4.130	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	12	.472	8
					15	Int.	★	MVS1030X15S110	156.4	6.157	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	11	.433	8
					15	Int.	●	MVS1030X15S120	156.4	6.157	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	12	.472	8
					20	Int.	★	MVS1030X20S110	207.9	8.185	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	11	.433	8
					20	Int.	●	MVS1030X20S120	207.9	8.185	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	12	.472	8
					25	Int.	★	MVS1030X25S110	259.4	10.213	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	11	.433	8
					25	Int.	●	MVS1030X25S120	259.4	10.213	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	12	.472	8
10.319	.4063	13/32			2	Ext.	●	MVE1032X02S120	22.4	.882	44.9	1.768	46.7	1.839	96.9	3.815	95	3.740	1.9	.075	12	.472	2
					2	Int.	●	MVS1032X02S120PL	22.4	.882	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	12	.472	4
					3	Int.	●	MVS1032X03S120	32.8	1.291	54.4	2.142	56.2	2.213	117.9	4.642	116	4.567	1.9	.075	12	.472	6
					5	Int.	●	MVS1032X05S120	53.4	2.102	85.9	3.382	87.7	3.453	150.9	5.941	149	5.866	1.9	.075	12	.472	6
					8	Int.	●	MVS1032X08S120	84.4	3.323	117.9	4.642	119.7	4.713	183.9	7.240	182	7.165	1.9	.075	12	.472	6
					10	Int.	●	MVS1032X10S120	105.0	4.134	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	12	.472	8
					15	Int.	●	MVS1032X15S120	156.6	6.165	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	12	.472	8
					20	Int.	●	MVS1032X20S120	208.2	8.197	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	12	.472	8
					25	Int.	●	MVS1032X25S120	259.8	10.228	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	12	.472	8
10.400	.4094				2	Ext.	★	MVE1040X02S110	22.7	.894	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	11	.433	2
					2	Ext.	●	MVE1040X02S120	22.7	.894	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	12	.472	2
					2	Int.	★	MVS1040X02S110PL	22.4	.882	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	11	.433	4
					2	Int.	●	MVS1040X02S120PL	22.4	.882	44.6	1.756	47.6	1.874	96.6	3.803	95	3.740	1.6	.063	12	.472	4
					3	Ext.	★	MVE1040X03S110	33.1	1.303	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	11	.433	2
					3	Ext.	★	MVE1040X03S120	33.1	1.303	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	12	.472	2
					3	Int.	★	MVS1040X03S110	33.1	1.303	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	11	.433	6
					3	Int.	●	MVS1040X03S120	33.1	1.303	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	12	.472	6
					5	Int.	★	MVS1040X05S110	53.9	2.122	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	11	.433	6
					5	Int.	●	MVS1040X05S120	53.9	2.122	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	12	.472	6
					8	Int.	★	MVS1040X08S110	85.1	3.350	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	11	.433	6
					8	Int.	●	MVS1040X08S120	85.1	3.350	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	12	.472	6
					10	Int.	★	MVS1040X10S110	105.9	4.169	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	11	.433	8
					10	Int.	●	MVS1040X10S120	105.9	4.169	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	12	.472	8
					15	Int.	★	MVS1040X15S110	157.9	6.217	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	11	.433	8
					15	Int.	●	MVS1040X15S120	157.9	6.217	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	12	.472	8
					20	Int.	★	MVS1040X20S110	209.9	8.264	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	11	.433	8
					20	Int.	●	MVS1040X20S120	209.9	8.264	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	12	.472	8
					25	Int.	★	MVS1040X25S110	261.9	10.311	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	11	.433	8
					25	Int.	●	MVS1040X25S120	261.9	10.311	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	12	.472	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
10.500	.4134		Z		2	Ext.	★	MVE1050X02S110	22.9	.902	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	11	.433	2
					2	Ext.	●	MVE1050X02S120	22.9	.902	44.9	1.768	47.9	1.886	96.9	3.815	95	3.740	1.9	.075	12	.472	2
					2	Int.	★	MVS1050X02S110PL	22.7	.894	44.7	1.760	47.7	1.878	96.7	3.807	95	3.740	1.7	.067	11	.433	4
					2	Int.	●	MVS1050X02S120PL	22.7	.894	44.7	1.760	47.7	1.878	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Ext.	★	MVE1050X03S110	33.4	1.315	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	11	.433	2
					3	Ext.	★	MVE1050X03S120	33.4	1.315	67.9	2.673	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	12	.472	2
					3	Int.	★	MVS1050X03S110	33.4	1.315	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	11	.433	6
					3	Int.	●	MVS1050X03S120	33.4	1.315	54.4	2.142	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	12	.472	6
					5	Int.	★	MVS1050X05S110	54.4	2.142	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	11	.433	6
					5	Int.	●	MVS1050X05S120	54.4	2.142	85.9	3.382	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	12	.472	6
					8	Int.	★	MVS1050X08S110	85.9	3.382	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	11	.433	6
					8	Int.	●	MVS1050X08S120	85.9	3.382	117.9	4.642	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	12	.472	6
					10	Int.	★	MVS1050X10S110	106.9	4.209	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	11	.433	8
					10	Int.	●	MVS1050X10S120	106.9	4.209	138.9	5.469	141.9	5.587	202.9	7.988	201	7.913	1.9	.075	12	.472	8
					15	Int.	★	MVS1050X15S110	159.4	6.276	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	11	.433	8
					15	Int.	●	MVS1050X15S120	159.4	6.276	190.9	7.516	193.9	7.634	254.9	10.035	253	9.961	1.9	.075	12	.472	8
					20	Int.	★	MVS1050X20S110	211.9	8.343	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	11	.433	8
					20	Int.	●	MVS1050X20S120	211.9	8.343	243.9	9.602	246.9	9.720	307.9	12.122	306	12.047	1.9	.075	12	.472	8
					25	Int.	★	MVS1050X25S110	264.4	10.409	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	11	.433	8
					25	Int.	●	MVS1050X25S120	264.4	10.409	295.9	11.650	298.9	11.768	359.9	14.169	358	14.094	1.9	.075	12	.472	8
10.600	.4173				2	Ext.	★	MVE1060X02S110	23.1	.909	48.9	1.925	48.9	1.925	96.9	3.815	95	3.740	1.9	.075	11	.433	2
					2	Ext.	●	MVE1060X02S120	23.1	.909	48.9	1.925	49.9	1.965	96.9	3.815	95	3.740	1.9	.075	12	.472	2
					2	Int.	★	MVS1060X02S110PL	22.9	.902	48.7	1.917	48.7	1.917	96.7	3.807	95	3.740	1.7	.067	11	.433	4
					2	Int.	●	MVS1060X02S120PL	22.9	.902	48.7	1.917	49.7	1.957	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Ext.	★	MVE1060X03S110	33.7	1.327	69.9	2.752	69.9	2.752	115.9	4.563	114	4.488	1.9	.075	11	.433	2
					3	Ext.	★	MVE1060X03S120	33.7	1.327	69.9	2.752	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	12	.472	2
					3	Int.	★	MVS1060X03S110	33.7	1.327	56.9	2.240	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	11	.433	6
					3	Int.	●	MVS1060X03S120	33.7	1.327	56.9	2.240	57.9	2.280	117.9	4.642	116	4.567	1.9	.075	12	.472	6
					5	Int.	★	MVS1060X05S110	54.9	2.161	89.9	3.539	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	11	.433	6
					5	Int.	●	MVS1060X05S120	54.9	2.161	89.9	3.539	90.9	3.579	150.9	5.941	149	5.866	1.9	.075	12	.472	6
					8	Int.	★	MVS1060X08S110	86.7	3.413	122.9	4.839	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	11	.433	6
					8	Int.	●	MVS1060X08S120	86.7	3.413	122.9	4.839	123.9	4.878	183.9	7.240	182	7.165	1.9	.075	12	.472	6
					10	Int.	★	MVS1060X10S110	107.9	4.248	144.9	5.705	147.9	5.823	208.9	8.224	207	8.150	1.9	.075	11	.433	8
					10	Int.	●	MVS1060X10S120	107.9	4.248	144.9	5.705	147.9	5.823	208.9	8.224	207	8.150	1.9	.075	12	.472	8
					15	Int.	★	MVS1060X15S110	160.9	6.335	199.9	7.870	202.9	7.988	263.9	10.390	262	10.315	1.9	.075	11	.433	8
					15	Int.	●	MVS1060X15S120	160.9	6.335	199.9	7.870	202.9	7.988	263.9	10.390	262	10.315	1.9	.075	12	.472	8
					20	Int.	★	MVS1060X20S110	213.9	8.421	254.9	10.035	257.9	10.154	318.9	12.555	317	12.480	1.9	.075	11	.433	8
					20	Int.	●	MVS1060X20S120	213.9	8.421	254.9	10.035	257.9	10.154	318.9	12.555	317	12.480	1.9	.075	12	.472	8
					25	Int.	★	MVS1060X25S110	266.9	10.508	309.9	12.201	312.9	12.319	373.9	14.720	372	14.646	1.9	.075	11	.433	8
					25	Int.	●	MVS1060X25S120	266.9	10.508	309.9	12.201	312.9	12.319	373.9	14.720	372	14.646	1.9	.075	12	.472	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
10.700	.4213				2	Ext.	★	MVE1070X02S110	23.3	.917	48.9	1.925	48.9	1.925	96.9	3.815	95	3.740	1.9	.075	11	.433	2
					2	Ext.	●	MVE1070X02S120	23.3	.917	48.9	1.925	49.9	1.965	96.9	3.815	95	3.740	1.9	.075	12	.472	2
					2	Int.	★	MVS1070X02S110PL	23.1	.909	48.7	1.917	48.7	1.917	96.7	3.807	95	3.740	1.7	.067	11	.433	4
					2	Int.	●	MVS1070X02S120PL	23.1	.909	48.7	1.917	49.7	1.957	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Ext.	★	MVE1070X03S110	34.0	1.339	69.9	2.752	69.9	2.752	115.9	4.563	114	4.488	1.9	.075	11	.433	2
					3	Ext.	★	MVE1070X03S120	34.0	1.339	69.9	2.752	70.9	2.791	115.9	4.563	114	4.488	1.9	.075	12	.472	2
					3	Int.	★	MVS1070X03S110	34.0	1.339	56.9	2.240	56.9	2.240	117.9	4.642	116	4.567	1.9	.075	11	.433	6
					3	Int.	●	MVS1070X03S120	34.0	1.339	56.9	2.240	57.9	2.280	117.9	4.642	116	4.567	1.9	.075	12	.472	6
					5	Int.	★	MVS1070X05S110	55.4	2.181	89.9	3.539	89.9	3.539	150.9	5.941	149	5.866	1.9	.075	11	.433	6
					5	Int.	●	MVS1070X05S120	55.4	2.181	89.9	3.539	90.9	3.579	150.9	5.941	149	5.866	1.9	.075	12	.472	6
					8	Int.	★	MVS1070X08S110	87.5	3.445	122.9	4.839	122.9	4.839	183.9	7.240	182	7.165	1.9	.075	11	.433	6
					8	Int.	●	MVS1070X08S120	87.5	3.445	122.9	4.839	123.9	4.878	183.9	7.240	182	7.165	1.9	.075	12	.472	6
					10	Int.	★	MVS1070X10S110	108.9	4.287	144.9	5.705	147.9	5.827	208.9	8.224	207	8.150	1.9	.075	11	.433	8
					10	Int.	●	MVS1070X10S120	108.9	4.287	144.9	5.705	147.9	5.823	208.9	8.224	207	8.150	1.9	.075	12	.472	8
					15	Int.	★	MVS1070X15S110	162.4	6.394	199.9	7.870	202.9	7.992	263.9	10.390	262	10.315	1.9	.075	11	.433	8
					15	Int.	●	MVS1070X15S120	162.4	6.394	199.9	7.870	202.9	7.988	263.9	10.390	262	10.315	1.9	.075	12	.472	8
					20	Int.	★	MVS1070X20S110	215.9	8.500	254.9	10.035	257.9	10.157	318.9	12.555	317	12.480	1.9	.075	11	.433	8
					20	Int.	●	MVS1070X20S120	215.9	8.500	254.9	10.035	257.9	10.154	318.9	12.555	317	12.480	1.9	.075	12	.472	8
					25	Int.	★	MVS1070X25S110	269.4	10.606	309.9	12.201	312.9	12.323	373.9	14.720	372	14.646	1.9	.075	11	.433	8
					25	Int.	●	MVS1070X25S120	269.4	10.606	309.9	12.201	312.9	12.319	373.9	14.720	372	14.646	1.9	.075	12	.472	8
10.716	.4219	27/64		1/2-13	2	Ext.	●	MVE1072X02S120	23.3	.917	49.0	1.929	50.4	1.984	97.0	3.819	95	3.740	2.0	.079	12	.472	2
					2	Int.	●	MVS1072X02S120PL	23.3	.917	48.7	1.917	49.7	1.957	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Int.	●	MVS1072X03S120	34.1	1.343	57.0	2.244	58.4	2.299	118.0	4.646	116	4.567	2.0	.079	12	.472	6
					5	Int.	●	MVS1072X05S120	55.5	2.185	90.0	3.543	91.4	3.598	151.0	5.945	149	5.866	2.0	.079	12	.472	6
					8	Int.	●	MVS1072X08S120	87.7	3.453	123.0	4.843	124.4	4.898	184.0	7.244	182	7.165	2.0	.079	12	.472	6
					10	Int.	●	MVS1072X10S120	109.1	4.295	145.0	5.709	148.0	5.827	209.0	8.228	207	8.150	2.0	.079	12	.472	8
					15	Int.	●	MVS1072X15S120	162.7	6.406	200.0	7.874	203.0	7.992	264.0	10.394	262	10.315	2.0	.079	12	.472	8
					20	Int.	●	MVS1072X20S120	216.2	8.512	255.0	10.039	258.0	10.157	319.0	12.559	317	12.480	2.0	.079	12	.472	8
					25	Int.	●	MVS1072X25S120	269.8	10.622	310.0	12.205	313.0	12.323	374.0	14.724	372	14.646	2.0	.079	12	.472	8
10.800	.4252			M12x1.25	2	Ext.	★	MVE1080X02S110	23.6	.929	49.0	1.929	49.0	1.929	97.0	3.819	95	3.740	2.0	.079	11	.433	2
					2	Ext.	●	MVE1080X02S120	23.6	.929	49.0	1.929	50.0	1.969	97.0	3.819	95	3.740	2.0	.079	12	.472	2
					2	Int.	★	MVS1080X02S110PL	23.3	.917	48.7	1.917	48.7	1.917	96.7	3.807	95	3.740	1.7	.067	11	.433	4
					2	Int.	●	MVS1080X02S120PL	23.3	.917	48.7	1.917	49.7	1.957	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Ext.	★	MVE1080X03S110	34.4	1.354	70.0	2.756	70.0	2.756	116.0	4.567	114	4.488	2.0	.079	11	.433	2
					3	Ext.	★	MVE1080X03S120	34.4	1.354	70.0	2.756	71.0	2.795	116.0	4.567	114	4.488	2.0	.079	12	.472	2
					3	Int.	★	MVS1080X03S110	34.4	1.354	57.0	2.244	57.0	2.244	118.0	4.646	116	4.567	2.0	.079	11	.433	6
					3	Int.	●	MVS1080X03S120	34.4	1.354	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	6
					5	Int.	★	MVS1080X05S110	56.0	2.205	90.0	3.543	90.0	3.543	151.0	5.945	149	5.866	2.0	.079	11	.433	6
					5	Int.	●	MVS1080X05S120	56.0	2.205	90.0	3.543	91.0	3.583	151.0	5.945	149	5.866	2.0	.079	12	.472	6
					8	Int.	★	MVS1080X08S110	88.4	3.480	123.0	4.843	123.0	4.843	184.0	7.244	182	7.165	2.0	.079	11	.433	6
					8	Int.	●	MVS1080X08S120	88.4	3.480	123.0	4.843	124.0	4.882	184.0	7.244	182	7.165	2.0	.079	12	.472	6
					10	Int.	★	MVS1080X10S110	110.0	4.331	145.0	5.709	148.0	5.827	209.0	8.228	207	8.150	2.0	.079	11	.433	8
					10	Int.	●	MVS1080X10S120	110.0	4.331	145.0	5.709	148.0	5.827	209.0	8.228	207	8.150	2.0	.079	12	.472	8
					15	Int.	★	MVS1080X15S110	164.0	6.457	200.0	7.874	203.0	7.992	264.0	10.394	262	10.315	2.0	.079	11	.433	8
					15	Int.	●	MVS1080X15S120	164.0	6.457	200.0	7.874	203.0	7.992	264.0	10.394	262	10.315	2.0	.079	12	.472	8
					20	Int.	★	MVS1080X20S110	218.0	8.583	255.0	10.039	258.0	10.157	319.0	12.559	317	12.480	2.0	.079	11	.433	8
					20	Int.	●	MVS1080X20S120	218.0	8.583	255.0	10.039	258.0	10.157	319.0	12.559	317	12.480	2.0	.079	12	.472	8
					25	Int.	★	MVS1080X25S110	272.0	10.709	310.0	12.205	313.0	12.323	374.0	14.724	372	14.646	2.0	.079	11	.433	8
					25	Int.	●	MVS1080X25S120	272.0	10.709	310.0	12.205	313.0	12.323	374.0	14.724	372	14.646	2.0	.079	12	.472	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
10.900	.4291				2	Ext.	★	MVE1090X02S110	23.8	.937	49.0	1.929	49.0	1.929	97.0	3.819	95	3.740	2.0	.079	11	.433	2
					2	Ext.	●	MVE1090X02S120	23.8	.937	49.0	1.929	50.0	1.969	97.0	3.819	95	3.740	2.0	.079	12	.472	2
					2	Int.	★	MVS1090X02S110PL	23.5	.925	48.7	1.917	48.7	1.917	96.7	3.807	95	3.740	1.7	.067	11	.433	4
					2	Int.	●	MVS1090X02S120PL	23.5	.925	48.7	1.917	49.7	1.957	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Ext.	★	MVE1090X03S110	34.7	1.366	70.0	2.756	70.0	2.756	116.0	4.567	114	4.488	2.0	.079	11	.433	2
					3	Ext.	★	MVE1090X03S120	34.7	1.366	70.0	2.756	71.0	2.795	116.0	4.567	114	4.488	2.0	.079	12	.472	2
					3	Int.	★	MVS1090X03S110	34.7	1.366	57.0	2.244	57.0	2.244	118.0	4.646	116	4.567	2.0	.079	11	.433	6
					3	Int.	●	MVS1090X03S120	34.7	1.366	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	6
					5	Int.	★	MVS1090X05S110	56.5	2.224	90.0	3.543	90.0	3.543	151.0	5.945	149	5.866	2.0	.079	11	.433	6
					5	Int.	●	MVS1090X05S120	56.5	2.224	90.0	3.543	91.0	3.583	151.0	5.945	149	5.866	2.0	.079	12	.472	6
					8	Int.	★	MVS1090X08S110	89.2	3.512	123.0	4.843	123.0	4.843	184.0	7.244	182	7.165	2.0	.079	11	.433	6
					8	Int.	●	MVS1090X08S120	89.2	3.512	123.0	4.843	124.0	4.882	184.0	7.244	182	7.165	2.0	.079	12	.472	6
					10	Int.	★	MVS1090X10S110	111.0	4.370	145.0	5.709	148.0	5.827	209.0	8.228	207	8.150	2.0	.079	11	.433	8
					10	Int.	●	MVS1090X10S120	111.0	4.370	145.0	5.709	148.0	5.827	209.0	8.228	207	8.150	2.0	.079	12	.472	8
					15	Int.	★	MVS1090X15S110	165.5	6.516	200.0	7.874	203.0	7.992	264.0	10.394	262	10.315	2.0	.079	11	.433	8
					15	Int.	●	MVS1090X15S120	165.5	6.516	200.0	7.874	203.0	7.992	264.0	10.394	262	10.315	2.0	.079	12	.472	8
					20	Int.	★	MVS1090X20S110	220.0	8.661	255.0	10.039	258.0	10.157	319.0	12.559	317	12.480	2.0	.079	11	.433	8
					20	Int.	●	MVS1090X20S120	220.0	8.661	255.0	10.039	258.0	10.157	319.0	12.559	317	12.480	2.0	.079	12	.472	8
					25	Int.	★	MVS1090X25S110	274.5	10.807	310.0	12.205	313.0	12.323	374.0	14.724	372	14.646	2.0	.079	11	.433	8
					25	Int.	●	MVS1090X25S120	274.5	10.807	310.0	12.205	313.0	12.323	374.0	14.724	372	14.646	2.0	.079	11	.433	8
11.000	.4331				2	Ext.	★	MVE1100X02S110	24.0	.945	49.0	1.929	49.0	1.929	97.0	3.819	95	3.740	2.0	.079	11	.433	2
					2	Ext.	●	MVE1100X02S120	24.0	.945	49.0	1.929	50.0	1.969	97.0	3.819	95	3.740	2.0	.079	12	.472	2
					2	Int.	★	MVS1100X02S110PL	23.7	.933	48.7	1.917	48.7	1.917	96.7	3.807	95	3.740	1.7	.067	11	.433	4
					2	Int.	●	MVS1100X02S120PL	23.7	.933	48.7	1.917	49.7	1.957	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Ext.	★	MVE1100X03S110	35.0	1.378	70.0	2.756	70.0	2.756	116.0	4.567	114	4.488	2.0	.079	11	.433	2
					3	Ext.	★	MVE1100X03S120	35.0	1.378	70.0	2.756	71.0	2.795	116.0	4.567	114	4.488	2.0	.079	12	.472	2
					3	Int.	★	MVS1100X03S110	35.0	1.378	57.0	2.244	57.0	2.244	118.0	4.646	116	4.567	2.0	.079	11	.433	6
					3	Int.	●	MVS1100X03S120	35.0	1.378	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	6
					5	Int.	★	MVS1100X05S110	57.0	2.244	90.0	3.543	90.0	3.543	151.0	5.945	149	5.866	2.0	.079	11	.433	6
					5	Int.	●	MVS1100X05S120	57.0	2.244	90.0	3.543	91.0	3.583	151.0	5.945	149	5.866	2.0	.079	12	.472	6
					8	Int.	★	MVS1100X08S110	90.0	3.543	123.0	4.843	123.0	4.843	184.0	7.244	182	7.165	2.0	.079	11	.433	6
					8	Int.	●	MVS1100X08S120	90.0	3.543	123.0	4.843	124.0	4.882	184.0	7.244	182	7.165	2.0	.079	12	.472	6
					10	Int.	★	MVS1100X10S110	112.0	4.409	145.0	5.709	147.0	5.827	209.0	8.228	207	8.150	2.0	.079	11	.433	8
					10	Int.	●	MVS1100X10S120	112.0	4.409	145.0	5.709	148.0	5.827	209.0	8.228	207	8.150	2.0	.079	12	.472	8
					15	Int.	★	MVS1100X15S110	167.0	6.575	200.0	7.874	203.0	7.992	264.0	10.394	262	10.315	2.0	.079	11	.433	8
					15	Int.	●	MVS1100X15S120	167.0	6.575	200.0	7.874	203.0	7.992	264.0	10.394	262	10.315	2.0	.079	12	.472	8
					20	Int.	★	MVS1100X20S110	222.0	8.740	255.0	10.039	258.0	10.157	319.0	12.559	317	12.480	2.0	.079	11	.433	8
					20	Int.	●	MVS1100X20S120	222.0	8.740	255.0	10.039	258.0	10.157	319.0	12.559	317	12.480	2.0	.079	12	.472	8
					25	Int.	★	MVS1100X25S110	277.0	10.906	310.0	12.205	313.0	12.323	374.0	14.724	372	14.646	2.0	.079	11	.433	8
					25	Int.	●	MVS1100X25S120	277.0	10.906	310.0	12.205	313.0	12.323	374.0	14.724	372	14.646	2.0	.079	12	.472	8
11.100	.4370				2	Ext.	●	MVE1110X02S120	24.2	.953	49.0	1.929	52.0	2.047	97.0	3.819	95	3.740	2.0	.079	12	.472	2
					2	Int.	●	MVS1110X02S120PL	23.9	.941	48.7	1.917	51.7	2.035	96.7	3.807	95	3.740	1.7	.067	12	.472	4
					3	Ext.	★	MVE1110X03S120	35.3	1.390	73.0	2.874	76.0	2.992	123.0	4.843	121	4.764	2.0	.079	12	.472	2
					3	Int.	●	MVS1110X03S120	35.3	1.390	59.5	2.343	62.0	2.441	124.0	4.882	122	4.803	2.0	.079	12	.472	6
					5	Int.	●	MVS1110X05S120	57.5	2.264	94.0	3.701	98.0	3.858	160.0	6.299	158	6.220	2.0	.079	12	.472	6
					8	Int.	●	MVS1110X08S120	90.8	3.575	129.0	5.079	134.0	5.276	196.0	7.717	194	7.638	2.0	.079	12	.472	6
					10	Int.	★	MVS1110X10S120	113.0	4.449	152.0	5.984	155.0	6.102	217.0	8.543	215	8.465	2.0	.079	12	.472	8
					15	Int.	★	MVS1110X15S120	168.5	6.634	209.0	8.228	212.0	8.346	274.0	10.787	272	10.709	2.0	.079	12	.472	8
					20	Int.	★	MVS1110X20S120	224.0	8.819	267.0	10.512	270.0	10.630	332.0	13.071	330	12.992	2.0	.079	12	.472	8
					25	Int.	★	MVS1110X25S120	279.5	11.004	324.0	12.756	327.0	12.874	389.0	15.315	387	15.236	2.0	.079	12	.472	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE1111X02S120	24.1	.949	49.0	1.929	52.0	2.047	97.0	3.819	95	3.740	2.0	.079	12	.472	2
					2	Int.	●	MVS1111X02S120PL	24.1	.949	48.8	1.921	51.8	2.039	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Int.	●	MVS1111X03S120	35.3	1.390	59.5	2.343	62.0	2.441	124.0	4.882	122	4.803	2.0	.079	12	.472	6
					5	Int.	●	MVS1111X05S120	57.6	2.268	94.0	3.701	98.0	3.858	160.0	6.299	158	6.220	2.0	.079	12	.472	6
11.113	.4375	7/16			8	Int.	●	MVS1111X08S120	90.9	3.579	129.0	5.079	134.0	5.276	196.0	7.717	194	7.638	2.0	.079	12	.472	6
					10	Int.	●	MVS1111X10S120	113.1	4.453	152.0	5.984	155.0	6.102	217.0	8.543	215	8.465	2.0	.079	12	.472	8
					15	Int.	●	MVS1111X15S120	168.7	6.642	209.0	8.228	212.0	8.346	274.0	10.787	272	10.709	2.0	.079	12	.472	8
					20	Int.	●	MVS1111X20S120	224.3	8.831	267.0	10.512	270.0	10.630	332.0	13.071	330	12.992	2.0	.079	12	.472	8
					25	Int.	●	MVS1111X25S120	279.8	11.016	324.0	12.756	327.0	12.874	389.0	15.315	387	15.236	2.0	.079	12	.472	8
					2	Ext.	●	MVE1120X02S120	24.4	.961	49.0	1.929	52.0	2.047	97.0	3.819	95	3.740	2.0	.079	12	.472	2
					2	Int.	●	MVS1120X02S120PL	24.2	.953	48.8	1.921	51.8	2.039	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Ext.	★	MVE1120X03S120	35.6	1.402	73.0	2.874	76.0	2.992	123.0	4.843	121	4.764	2.0	.079	12	.472	2
					3	Int.	●	MVS1120X03S120	35.6	1.402	59.5	2.343	62.0	2.441	124.0	4.882	122	4.803	2.0	.079	12	.472	6
					5	Int.	●	MVS1120X05S120	58.0	2.283	94.0	3.701	98.0	3.858	160.0	6.299	158	6.220	2.0	.079	12	.472	6
11.200	.4409				8	Int.	●	MVS1120X08S120	91.6	3.606	129.0	5.079	134.0	5.276	196.0	7.717	194	7.638	2.0	.079	12	.472	6
					10	Int.	★	MVS1120X10S120	114.0	4.488	152.0	5.984	155.0	6.102	217.0	8.543	215	8.465	2.0	.079	12	.472	8
					15	Int.	★	MVS1120X15S120	170.0	6.693	209.0	8.228	212.0	8.346	274.0	10.787	272	10.709	2.0	.079	12	.472	8
					20	Int.	★	MVS1120X20S120	226.0	8.898	267.0	10.512	270.0	10.630	332.0	13.071	330	12.992	2.0	.079	12	.472	8
					25	Int.	★	MVS1120X25S120	282.0	11.102	324.0	12.756	327.0	12.874	389.0	15.315	387	15.236	2.0	.079	12	.472	8
					2	Ext.	●	MVE1130X02S120	24.7	.972	49.1	1.933	52.1	2.051	97.1	3.823	95	3.740	2.1	.083	12	.472	2
					2	Int.	●	MVS1130X02S120PL	24.4	.961	48.8	1.921	51.8	2.039	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Ext.	★	MVE1130X03S120	36.0	1.417	73.1	2.878	76.1	2.996	123.1	4.846	121	4.764	2.1	.083	12	.472	2
					3	Int.	●	MVS1130X03S120	36.0	1.417	59.6	2.346	62.1	2.445	124.1	4.886	122	4.803	2.1	.083	12	.472	6
					5	Int.	●	MVS1130X05S120	58.6	2.307	94.1	3.705	98.1	3.862	160.1	6.303	158	6.220	2.1	.083	12	.472	6
11.300	.4449				8	Int.	●	MVS1130X08S120	92.5	3.642	129.1	5.083	134.1	5.280	196.1	7.720	194	7.638	2.1	.083	12	.472	6
					10	Int.	★	MVS1130X10S120	115.1	4.531	152.1	5.988	155.1	6.106	217.1	8.547	215	8.465	2.1	.083	12	.472	8
					15	Int.	★	MVS1130X15S120	171.6	6.756	209.1	8.232	212.1	8.350	274.1	10.791	272	10.709	2.1	.083	12	.472	8
					20	Int.	★	MVS1130X20S120	228.1	8.980	267.1	10.516	270.1	10.634	332.1	13.075	330	12.992	2.1	.083	12	.472	8
					25	Int.	★	MVS1130X25S120	284.6	11.205	324.1	12.760	327.1	12.878	389.1	15.319	387	15.236	2.1	.083	12	.472	8
					2	Ext.	●	MVE1140X02S120	24.9	.980	49.1	1.933	52.1	2.051	97.1	3.823	95	3.740	2.1	.083	12	.472	2
					2	Int.	●	MVS1140X02S120PL	24.6	.969	48.8	1.921	51.8	2.039	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Ext.	★	MVE1140X03S120	36.3	1.429	73.1	2.878	76.1	2.996	123.1	4.846	121	4.764	2.1	.083	12	.472	2
					3	Int.	●	MVS1140X03S120	36.3	1.429	59.6	2.346	62.1	2.445	124.1	4.886	122	4.803	2.1	.083	12	.472	6
					5	Int.	●	MVS1140X05S120	59.1	2.327	94.1	3.705	98.1	3.862	160.1	6.303	158	6.220	2.1	.083	12	.472	6
11.400	.4488				8	Int.	●	MVS1140X08S120	93.3	3.673	129.1	5.083	134.1	5.280	196.1	7.720	194	7.638	2.1	.083	12	.472	6
					10	Int.	★	MVS1140X10S120	116.1	4.571	152.1	5.988	155.1	6.106	217.1	8.547	215	8.465	2.1	.083	12	.472	8
					15	Int.	★	MVS1140X15S120	173.1	6.815	209.1	8.232	212.1	8.350	274.1	10.791	272	10.709	2.1	.083	12	.472	8
					20	Int.	★	MVS1140X20S120	230.1	9.059	267.1	10.516	270.1	10.634	332.1	13.075	330	12.992	2.1	.083	12	.472	8
					25	Int.	★	MVS1140X25S120	287.1	11.303	324.1	12.760	327.1	12.878	389.1	15.319	387	15.236	2.1	.083	12	.472	8
					2	Ext.	●	MVE1150X02S120	25.1	.988	49.1	1.933	52.1	2.051	97.1	3.823	95	3.740	2.1	.083	12	.472	2
					2	Int.	●	MVS1150X02S120PL	24.8	.976	48.8	1.921	51.8	2.039	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Ext.	★	MVE1150X03S120	36.6	1.441	73.1	2.878	76.1	2.996	123.1	4.846	121	4.764	2.1	.083	12	.472	2
					3	Int.	●	MVS1150X03S120	36.6	1.441	59.6	2.346	62.1	2.445	124.1	4.886	122	4.803	2.1	.083	12	.472	6
					5	Int.	●	MVS1150X05S120	59.6	2.346	94.1	3.705	98.1	3.862	160.1	6.303	158	6.220	2.1	.083	12	.472	6
11.500	.4528				8	Int.	●	MVS1150X08S120	94.1	3.705	129.1	5.083	134.1	5.280	196.1	7.720	194	7.638	2.1	.083	12	.472	6
					10	Int.	★	MVS1150X10S120	117.1	4.610	152.1	5.988	155.1	6.106	217.1	8.547	215	8.465	2.1	.083	12	.472	8
					15	Int.	★	MVS1150X15S120	174.6	6.874	209.1	8.232	212.1	8.350	274.1	10.791	272	10.709	2.1	.083	12	.472	8
					20	Int.	★	MVS1150X20S120	232.1	9.138	267.1	10.516	270.1	10.634	332.1	13.075	330	12.992	2.1	.083	12	.472	8
					25	Int.	★	MVS1150X25S120	289.6	11.402	324.1	12.760	327.1	12.878	389.1	15.319	387	15.236	2.1	.083	12	.472	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE1151X02S120	25.0	.984	49.1	1.933	49.1	1.933	97.1	3.823	95	3.740	2.1	.083	12	.472	2
					2	Int.	●	MVS1151X02S120PL	25.0	.984	48.8	1.921	48.8	1.921	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Int.	●	MVS1151X03S120	36.6	1.441	62.1	2.445	62.1	2.445	124.1	4.886	122	4.803	2.1	.083	12	.472	6
					5	Int.	●	MVS1151X05S120	59.6	2.346	98.1	3.862	98.1	3.862	160.1	6.303	158	6.220	2.1	.083	12	.472	6
11.510	.4532	29/64		1/2-20	8	Int.	●	MVS1151X08S120	94.1	3.705	134.1	5.280	134.1	5.280	196.1	7.720	194	7.638	2.1	.083	12	.472	6
					10	Int.	●	MVS1151X10S120	117.2	4.614	158.1	6.224	161.1	6.343	223.1	8.783	221	8.701	2.1	.083	12	.472	8
					15	Int.	●	MVS1151X15S120	174.7	6.878	218.1	8.587	221.1	8.705	283.1	11.146	281	11.063	2.1	.083	12	.472	8
					20	Int.	●	MVS1151X20S120	232.3	9.146	278.1	10.949	281.1	11.067	343.1	13.508	341	13.425	2.1	.083	12	.472	8
					25	Int.	●	MVS1151X25S120	289.8	11.409	338.1	13.311	341.1	13.429	403.1	15.870	401	15.787	2.1	.083	12	.472	8
					2	Ext.	●	MVE1160X02S120	25.3	.996	49.1	1.933	49.1	1.933	97.1	3.823	95	3.740	2.1	.083	12	.472	2
					2	Int.	●	MVS1160X02S120PL	25.0	.984	48.8	1.921	48.8	1.921	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Ext.	★	MVE1160X03S120	36.9	1.453	75.1	2.957	75.1	2.957	123.1	4.846	121	4.764	2.1	.083	12	.472	2
					3	Int.	●	MVS1160X03S120	36.9	1.453	62.1	2.445	62.1	2.445	124.1	4.886	122	4.803	2.1	.083	12	.472	6
					5	Int.	●	MVS1160X05S120	60.1	2.366	98.1	3.862	98.1	3.862	160.1	6.303	158	6.220	2.1	.083	12	.472	6
11.600	.4567				8	Int.	●	MVS1160X08S120	94.9	3.736	134.1	5.280	134.1	5.280	196.1	7.720	194	7.638	2.1	.083	12	.472	6
					10	Int.	★	MVS1160X10S120	118.1	4.650	158.1	6.224	161.1	6.343	223.1	8.783	221	8.701	2.1	.083	12	.472	8
					15	Int.	★	MVS1160X15S120	176.1	6.933	218.1	8.587	221.1	8.705	283.1	11.146	281	11.063	2.1	.083	12	.472	8
					20	Int.	★	MVS1160X20S120	234.1	9.217	278.1	10.949	281.1	11.067	343.1	13.508	341	13.425	2.1	.083	12	.472	8
					25	Int.	★	MVS1160X25S120	292.1	11.500	338.1	13.311	341.1	13.429	403.1	15.870	401	15.787	2.1	.083	12	.472	8
					2	Ext.	●	MVE1170X02S120	25.5	1.004	49.1	1.933	49.1	1.933	97.1	3.823	95	3.740	2.1	.083	12	.472	2
					2	Int.	●	MVS1170X02S120PL	25.2	.992	48.8	1.921	48.8	1.921	96.8	3.811	95	3.740	1.8	.071	12	.472	4
					3	Ext.	★	MVE1170X03S120	37.2	1.465	75.1	2.957	75.1	2.957	123.1	4.846	121	4.764	2.1	.083	12	.472	2
					3	Int.	●	MVS1170X03S120	37.2	1.465	62.1	2.445	62.1	2.445	124.1	4.886	122	4.803	2.1	.083	12	.472	6
					5	Int.	●	MVS1170X05S120	60.6	2.386	98.1	3.862	98.1	3.862	160.1	6.303	158	6.220	2.1	.083	12	.472	6
11.700	.4606				8	Int.	●	MVS1170X08S120	95.7	3.768	134.1	5.280	134.1	5.280	196.1	7.720	194	7.638	2.1	.083	12	.472	6
					10	Int.	★	MVS1170X10S120	119.1	4.689	158.1	6.224	161.1	6.343	223.1	8.783	221	8.701	2.1	.083	12	.472	8
					15	Int.	★	MVS1170X15S120	177.6	6.992	218.1	8.587	221.1	8.705	283.1	11.146	281	11.063	2.1	.083	12	.472	8
					20	Int.	★	MVS1170X20S120	236.1	9.295	278.1	10.949	281.1	11.067	343.1	13.508	341	13.425	2.1	.083	12	.472	8
					25	Int.	★	MVS1170X25S120	294.6	11.598	338.1	13.311	341.1	13.429	403.1	15.870	401	15.787	2.1	.083	12	.472	8
					2	Ext.	●	MVE1180X02S120	25.7	1.012	49.1	1.933	49.1	1.933	97.1	3.823	95	3.740	2.1	.083	12	.472	2
					2	Int.	●	MVS1180X02S120PL	25.5	1.004	48.9	1.925	48.9	1.925	96.9	3.815	95	3.740	1.9	.075	12	.472	4
					3	Ext.	★	MVE1180X03S120	37.5	1.476	75.1	2.957	75.1	2.957	123.1	4.846	121	4.764	2.1	.083	12	.472	2
					3	Int.	●	MVS1180X03S120	37.5	1.476	62.1	2.445	62.1	2.445	124.1	4.886	122	4.803	2.1	.083	12	.472	6
					5	Int.	●	MVS1180X05S120	61.1	2.406	98.1	3.862	98.1	3.862	160.1	6.303	158	6.220	2.1	.083	12	.472	6
11.800	.4646				8	Int.	●	MVS1180X08S120	96.5	3.799	134.1	5.280	134.1	5.280	196.1	7.720	194	7.638	2.1	.083	12	.472	6
					10	Int.	★	MVS1180X10S120	120.1	4.728	158.1	6.224	161.1	6.346	223.1	8.783	221	8.701	2.1	.083	12	.472	8
					15	Int.	★	MVS1180X15S120	179.1	7.051	218.1	8.587	221.1	8.709	283.1	11.146	281	11.063	2.1	.083	12	.472	8
					20	Int.	★	MVS1180X20S120	238.1	9.374	278.1	10.949	281.1	11.071	343.1	13.508	341	13.425	2.1	.083	12	.472	8
					25	Int.	★	MVS1180X25S120	297.1	11.697	338.1	13.311	341.1	13.433	403.1	15.870	401	15.787	2.1	.083	12	.472	8
					2	Ext.	●	MVE1190X02S120	26.0	1.024	49.2	1.937	49.2	1.937	97.2	3.827	95	3.740	2.2	.087	12	.472	2
					2	Int.	●	MVS1190X02S120PL	25.7	1.012	48.9	1.925	48.9	1.925	96.9	3.815	95	3.740	1.9	.075	12	.472	4
					3	Ext.	★	MVE1190X03S120	37.9	1.492	75.2	2.961	75.2	2.961	123.2	4.850	121	4.764	2.2	.087	12	.472	2
					3	Int.	●	MVS1190X03S120	37.9	1.492	62.2	2.449	62.2	2.449	124.2	4.890	122	4.803	2.2	.087	12	.472	6
					5	Int.	●	MVS1190X05S120	61.7	2.429	98.2	3.866	98.2	3.866	160.2	6.307	158	6.220	2.2	.087	12	.472	6
11.900	.4685				8	Int.	●	MVS1190X08S120	97.4	3.835	134.2	5.283	134.2	5.283	196.2	7.724	194	7.638	2.2	.087	12	.472	6
					10	Int.	★	MVS1190X10S120	121.2	4.772	158.2	6.228	161.2	6.346	223.2	8.787	221	8.701	2.2	.087	12	.472	8
					15	Int.	★	MVS1190X15S120	180.7	7.114	218.2	8.591	221.2	8.709	283.2	11.150	281	11.063	2.2	.087	12	.472	8
					20	Int.	★	MVS1190X20S120	240.2	9.457	278.2	10.953	281.2	11.071	343.2	13.512	341	13.425	2.2	.087	12	.472	8
					25	Int.	★	MVS1190X25S120	299.7	11.799	338.2	13.315	341.2	13.433	403.2	15.874	401	15.787	2.2	.087	12	.472	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
12.000	.4724			M14x2.0	2	Ext.	●	MVE1200X02S120	26.2	1.031	49.2	1.937	49.2	1.937	97.2	3.827	95	3.740	2.2	.087	12	.472	2
					2	Int.	●	MVS1200X02S120PL	25.9	1.020	48.9	1.925	48.9	1.925	96.9	3.815	95	3.740	1.9	.075	12	.472	4
					3	Ext.	★	MVE1200X03S120	38.2	1.504	75.2	2.961	75.2	2.961	123.2	4.850	121	4.764	2.2	.087	12	.472	2
					3	Int.	●	MVS1200X03S120	38.2	1.504	62.2	2.449	62.2	2.449	124.2	4.890	122	4.803	2.2	.087	12	.472	6
					5	Int.	●	MVS1200X05S120	62.2	2.449	98.2	3.866	98.2	3.866	160.2	6.307	158	6.220	2.2	.087	12	.472	6
					8	Int.	●	MVS1200X08S120	98.2	3.866	134.2	5.283	134.2	5.283	196.2	7.724	194	7.638	2.2	.087	12	.472	6
					10	Int.	●	MVS1200X10S120	122.2	4.811	158.2	6.228	161.2	6.346	223.2	8.787	221	8.701	2.2	.087	12	.472	8
					15	Int.	★	MVS1200X15S120	182.2	7.173	218.2	8.591	221.2	8.709	283.2	11.150	281	11.063	2.2	.087	12	.472	8
					20	Int.	★	MVS1200X20S120	242.2	9.535	278.2	10.953	281.2	11.071	343.2	13.512	341	13.425	2.2	.087	12	.472	8
					25	Int.	★	MVS1200X25S120	302.2	11.898	338.2	13.315	341.2	13.433	403.2	15.874	401	15.787	2.2	.087	12	.472	8
12.100	.4764				2	Ext.	★	MVE1210X02S130	26.4	1.039	53.2	2.094	56.2	2.213	104.2	4.102	102	4.016	2.2	.087	13	.512	2
					2	Ext.	●	MVE1210X02S140	26.4	1.039	53.2	2.094	56.2	2.213	104.2	4.102	102	4.016	2.2	.087	14	.551	2
					2	Int.	★	MVS1210X02S130PL	26.1	1.028	52.9	2.083	55.9	2.201	103.9	4.091	102	4.016	1.9	.075	13	.512	4
					2	Int.	●	MVS1210X02S140PL	26.1	1.028	52.9	2.083	55.9	2.201	103.9	4.091	102	4.016	1.9	.075	14	.551	4
					3	Ext.	★	MVE1210X03S130	38.5	1.516	78.2	3.079	81.2	3.197	139.2	5.480	137	5.394	2.2	.087	13	.512	2
					3	Ext.	□	MVE1210X03S140	38.5	1.516	78.2	3.079	81.2	3.197	139.2	5.480	137	5.394	2.2	.087	14	.551	2
					3	Int.	★	MVS1210X03S130	38.5	1.516	64.7	2.547	67.2	2.646	130.2	5.126	128	5.039	2.2	.087	13	.512	6
					3	Int.	●	MVS1210X03S140	38.5	1.516	64.7	2.547	67.2	2.646	130.2	5.126	128	5.039	2.2	.087	14	.551	6
					5	Int.	★	MVS1210X05S130	62.7	2.469	102.2	4.024	106.2	4.181	169.2	6.661	167	6.575	2.2	.087	13	.512	6
					5	Int.	●	MVS1210X05S140	62.7	2.469	102.2	4.024	106.2	4.181	169.2	6.661	167	6.575	2.2	.087	14	.551	6
					8	Int.	□	MVS1210X08S130	99.0	3.898	140.2	5.520	145.2	5.717	208.2	8.197	206	8.110	2.2	.087	13	.512	6
					8	Int.	●	MVS1210X08S140	99.0	3.898	140.2	5.520	145.2	5.717	208.2	8.197	206	8.110	2.2	.087	14	.551	6
					10	Int.	□	MVS1210X10S130	123.2	4.850	165.2	6.504	168.2	6.622	231.2	9.102	229	9.016	2.2	.087	13	.512	8
					10	Int.	●	MVS1210X10S140	123.2	4.850	165.2	6.504	168.2	6.622	231.2	9.102	229	9.016	2.2	.087	14	.551	8
					15	Int.	□	MVS1210X15S130	183.7	7.232	227.2	8.945	230.2	9.063	293.2	11.543	291	11.457	2.2	.087	13	.512	8
					15	Int.	●	MVS1210X15S140	183.7	7.232	227.2	8.945	230.2	9.063	293.2	11.543	291	11.457	2.2	.087	14	.551	8
					20	Int.	□	MVS1210X20S130	244.2	9.614	290.2	11.425	293.2	11.543	356.2	14.024	354	13.937	2.2	.087	13	.512	8
					20	Int.	●	MVS1210X20S140	244.2	9.614	290.2	11.425	293.2	11.543	356.2	14.024	354	13.937	2.2	.087	14	.551	8
12.200	.4803				2	Ext.	★	MVE1220X02S130	26.6	1.047	53.2	2.094	56.2	2.213	104.2	4.102	102	4.016	2.2	.087	13	.512	2
					2	Ext.	●	MVE1220X02S140	26.6	1.047	53.2	2.094	56.2	2.213	104.2	4.102	102	4.016	2.2	.087	14	.551	2
					2	Int.	★	MVS1220X02S130PL	26.3	1.035	52.9	2.083	55.9	2.201	103.9	4.091	102	4.016	1.9	.075	13	.512	4
					2	Int.	●	MVS1220X02S140PL	26.3	1.035	52.9	2.083	55.9	2.201	103.9	4.091	102	4.016	1.9	.075	14	.551	4
					3	Ext.	★	MVE1220X03S130	38.8	1.528	78.2	3.079	81.2	3.197	139.2	5.480	137	5.394	2.2	.087	13	.512	2
					3	Ext.	□	MVE1220X03S140	38.8	1.528	78.2	3.079	81.2	3.197	139.2	5.480	137	5.394	2.2	.087	14	.551	2
					3	Int.	★	MVS1220X03S130	38.8	1.528	64.7	2.547	67.2	2.646	130.2	5.126	128	5.039	2.2	.087	13	.512	6
					3	Int.	●	MVS1220X03S140	38.8	1.528	64.7	2.547	67.2	2.646	130.2	5.126	128	5.039	2.2	.087	14	.551	6
					5	Int.	★	MVS1220X05S130	63.2	2.488	102.2	4.024	106.2	4.181	169.2	6.661	167	6.575	2.2	.087	13	.512	6
					5	Int.	●	MVS1220X05S140	63.2	2.488	102.2	4.024	106.2	4.181	169.2	6.661	167	6.575	2.2	.087	14	.551	6
					8	Int.	□	MVS1220X08S130	99.8	3.929	140.2	5.520	145.2	5.717	208.2	8.197	206	8.110	2.2	.087	13	.512	6
					8	Int.	●	MVS1220X08S140	99.8	3.929	140.2	5.520	145.2	5.717	208.2	8.197	206	8.110	2.2	.087	14	.551	6
					10	Int.	□	MVS1220X10S130	124.2	4.890	165.2	6.504	168.2	6.622	231.2	9.102	229	9.016	2.2	.087	13	.512	8
					10	Int.	●	MVS1220X10S140	124.2	4.890	165.2	6.504	168.2	6.622	231.2	9.102	229	9.016	2.2	.087	14	.551	8
					15	Int.	□	MVS1220X15S130	185.2	7.291	227.2	8.945	230.2	9.063	293.2	11.543	291	11.457	2.2	.087	13	.512	8
					15	Int.	●	MVS1220X15S140	185.2	7.291	227.2	8.945	230.2	9.063	293.2	11.543	291	11.457	2.2	.087	14	.551	8
					20	Int.	□	MVS1220X20S130	246.2	9.693	290.2	11.425	293.2	11.543	356.2	14.024	354	13.937	2.2	.087	13	.512	8
					20	Int.	●	MVS1220X20S140	246.2	9.693	290.2	11.425	293.2	11.543	356.2	14.024	354	13.937	2.2	.087	14	.551	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
12.300	.4843			9/16-12	2	Ext.	★	MVE1230X02S130	26.8	1.055	53.2	2.094	56.2	2.213	104.2	4.102	102	4.016	2.2	.087	13	.512	2
					2	Ext.	●	MVE1230X02S140	26.8	1.055	53.2	2.094	56.2	2.213	104.2	4.102	102	4.016	2.2	.087	14	.551	2
					2	Int.	★	MVS1230X02S130PL	26.5	1.043	52.9	2.083	55.9	2.201	103.9	4.091	102	4.016	1.9	.075	13	.512	4
					2	Int.	●	MVS1230X02S140PL	26.5	1.043	52.9	2.083	55.9	2.201	103.9	4.091	102	4.016	1.9	.075	14	.551	4
					3	Ext.	★	MVE1230X03S130	39.1	1.539	78.2	3.079	81.2	3.197	139.2	5.480	137	5.394	2.2	.087	13	.512	2
					3	Ext.	□	MVE1230X03S140	39.1	1.539	78.2	3.079	81.2	3.197	139.2	5.480	137	5.394	2.2	.087	14	.551	2
					3	Int.	★	MVS1230X03S130	39.1	1.539	64.7	2.547	67.2	2.646	130.2	5.126	128	5.039	2.2	.087	13	.512	6
					3	Int.	●	MVS1230X03S140	39.1	1.539	64.7	2.547	67.2	2.646	130.2	5.126	128	5.039	2.2	.087	14	.551	6
					5	Int.	★	MVS1230X05S130	63.7	2.508	102.2	4.024	106.2	4.181	169.2	6.661	167	6.575	2.2	.087	13	.512	6
					5	Int.	●	MVS1230X05S140	63.7	2.508	102.2	4.024	106.2	4.181	169.2	6.661	167	6.575	2.2	.087	14	.551	6
					8	Int.	□	MVS1230X08S130	100.6	3.961	140.2	5.520	145.2	5.717	208.2	8.197	206	8.110	2.2	.087	13	.512	6
					8	Int.	●	MVS1230X08S140	100.6	3.961	140.2	5.520	145.2	5.717	208.2	8.197	206	8.110	2.2	.087	14	.551	6
					10	Int.	□	MVS1230X10S130	125.2	4.929	165.2	6.504	168.2	6.622	231.2	9.102	229	9.016	2.2	.087	13	.512	8
					10	Int.	●	MVS1230X10S140	125.2	4.929	165.2	6.504	168.2	6.622	231.2	9.102	229	9.016	2.2	.087	14	.551	8
					15	Int.	□	MVS1230X15S130	186.7	7.350	227.2	8.945	230.2	9.063	293.2	11.543	291	11.457	2.2	.087	13	.512	8
					15	Int.	●	MVS1230X15S140	186.7	7.350	227.2	8.945	230.2	9.063	293.2	11.543	291	11.457	2.2	.087	14	.551	8
					20	Int.	□	MVS1230X20S130	248.2	9.772	290.2	11.425	293.2	11.543	356.2	14.024	354	13.937	2.2	.087	13	.512	8
					20	Int.	●	MVS1230X20S140	248.2	9.772	290.2	11.425	293.2	11.543	356.2	14.024	354	13.937	2.2	.087	14	.551	8
12.400	.4882				2	Ext.	★	MVE1240X02S130	27.1	1.067	53.3	2.098	56.3	2.217	104.3	4.106	102	4.016	2.3	.091	13	.512	2
					2	Ext.	●	MVE1240X02S140	27.1	1.067	53.3	2.098	56.3	2.217	104.3	4.106	102	4.016	2.3	.091	14	.551	2
					2	Int.	★	MVS1240X02S130PL	26.8	1.055	53.0	2.087	56.0	2.205	104.0	4.094	102	4.016	2.0	.079	13	.512	4
					2	Int.	●	MVS1240X02S140PL	26.8	1.055	53.0	2.087	56.0	2.205	104.0	4.094	102	4.016	2.0	.079	14	.551	4
					3	Ext.	★	MVE1240X03S130	39.5	1.555	78.3	3.083	81.3	3.201	139.3	5.484	137	5.394	2.3	.091	13	.512	2
					3	Ext.	□	MVE1240X03S140	39.5	1.555	78.3	3.083	81.3	3.201	139.3	5.484	137	5.394	2.3	.091	14	.551	2
					3	Int.	★	MVS1240X03S130	39.5	1.555	64.8	2.551	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	13	.512	6
					3	Int.	●	MVS1240X03S140	39.5	1.555	64.8	2.551	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	14	.551	6
					5	Int.	★	MVS1240X05S130	64.3	2.531	102.3	4.028	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	13	.512	6
					5	Int.	●	MVS1240X05S140	64.3	2.531	102.3	4.028	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	14	.551	6
					8	Int.	□	MVS1240X08S130	101.5	3.996	140.3	5.524	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	13	.512	6
					8	Int.	●	MVS1240X08S140	101.5	3.996	140.3	5.524	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	14	.551	6
					10	Int.	□	MVS1240X10S130	126.3	4.972	165.3	6.508	168.3	6.626	231.3	9.106	229	9.016	2.3	.091	13	.512	8
					10	Int.	●	MVS1240X10S140	126.3	4.972	165.3	6.508	168.3	6.626	231.3	9.106	229	9.016	2.3	.091	14	.551	8
					15	Int.	□	MVS1240X15S130	188.3	7.413	227.3	8.949	230.3	9.067	293.3	11.547	291	11.457	2.3	.091	13	.512	8
					15	Int.	●	MVS1240X15S140	188.3	7.413	227.3	8.949	230.3	9.067	293.3	11.547	291	11.457	2.3	.091	14	.551	8
					20	Int.	□	MVS1240X20S130	250.3	9.854	290.3	11.429	293.3	11.547	356.3	14.028	354	13.937	2.3	.091	13	.512	8
					20	Int.	●	MVS1240X20S140	250.3	9.854	290.3	11.429	293.3	11.547	356.3	14.028	354	13.937	2.3	.091	14	.551	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
12.500	.4921			M14x4.5	2	Ext.	★	MVE1250X02S130	27.3	1.075	53.3	2.098	56.3	2.217	104.3	4.106	102	4.016	2.3	.091	13	.512	2
					2	Ext.	●	MVE1250X02S140	27.3	1.075	53.3	2.098	56.3	2.217	104.3	4.106	102	4.016	2.3	.091	14	.551	2
					2	Int.	★	MVS1250X02S130PL	27.0	1.063	53.0	2.087	56.0	2.205	104.0	4.094	102	4.016	2.0	.079	13	.512	4
					2	Int.	●	MVS1250X02S140PL	27.0	1.063	53.0	2.087	56.0	2.205	104.0	4.094	102	4.016	2.0	.079	14	.551	4
					3	Ext.	★	MVE1250X03S130	39.8	1.567	78.3	3.083	81.3	3.201	139.3	5.484	137	5.394	2.3	.091	13	.512	2
					3	Ext.	□	MVE1250X03S140	39.8	1.567	78.3	3.083	81.3	3.201	139.3	5.484	137	5.394	2.3	.091	14	.551	2
					3	Int.	★	MVS1250X03S130	39.8	1.567	64.8	2.551	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	13	.512	6
					3	Int.	●	MVS1250X03S140	39.8	1.567	64.8	2.551	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	14	.551	6
					5	Int.	★	MVS1250X05S130	64.8	2.551	102.3	4.028	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	13	.512	6
					5	Int.	●	MVS1250X05S140	64.8	2.551	102.3	4.028	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	14	.551	6
					8	Int.	★	MVS1250X08S130	102.3	4.028	140.3	5.524	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	13	.512	6
					8	Int.	●	MVS1250X08S140	102.3	4.028	140.3	5.524	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	14	.551	6
					10	Int.	★	MVS1250X10S130	127.3	5.012	165.3	6.508	168.3	6.626	231.3	9.106	229	9.016	2.3	.091	13	.512	8
					10	Int.	●	MVS1250X10S140	127.3	5.012	165.3	6.508	168.3	6.626	231.3	9.106	229	9.016	2.3	.091	14	.551	8
					15	Int.	★	MVS1250X15S130	189.8	7.472	227.3	8.949	230.3	9.067	293.3	11.547	291	11.457	2.3	.091	13	.512	8
					15	Int.	●	MVS1250X15S140	189.8	7.472	227.3	8.949	230.3	9.067	293.3	11.547	291	11.457	2.3	.091	14	.551	8
					20	Int.	★	MVS1250X20S130	252.3	9.933	290.3	11.429	293.3	11.547	356.3	14.028	354	13.937	2.3	.091	13	.512	8
					20	Int.	●	MVS1250X20S140	252.3	9.933	290.3	11.429	293.3	11.547	356.3	14.028	354	13.937	2.3	.091	14	.551	8
12.600	.4961				2	Ext.	★	MVE1260X02S130	27.5	1.083	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	13	.512	2
					2	Ext.	●	MVE1260X02S140	27.5	1.083	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	14	.551	2
					2	Int.	★	MVS1260X02S130PL	27.2	1.071	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	13	.512	4
					2	Int.	●	MVS1260X02S140PL	27.2	1.071	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	14	.551	4
					3	Ext.	★	MVE1260X03S130	40.1	1.579	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	13	.512	2
					3	Ext.	□	MVE1260X03S140	40.1	1.579	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	14	.551	2
					3	Int.	★	MVS1260X03S130	40.1	1.579	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	13	.512	6
					3	Int.	●	MVS1260X03S140	40.1	1.579	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	14	.551	6
					5	Int.	★	MVS1260X05S130	65.3	2.571	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	13	.512	6
					5	Int.	●	MVS1260X05S140	65.3	2.571	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	14	.551	6
					8	Int.	□	MVS1260X08S130	103.1	4.059	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	13	.512	6
					8	Int.	●	MVS1260X08S140	103.1	4.059	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	14	.551	6
					10	Int.	□	MVS1260X10S130	128.3	5.051	171.3	6.744	174.3	6.862	237.3	9.343	235	9.252	2.3	.091	13	.512	8
					10	Int.	●	MVS1260X10S140	128.3	5.051	171.3	6.744	174.3	6.862	237.3	9.343	235	9.252	2.3	.091	14	.551	8
					15	Int.	□	MVS1260X15S130	191.3	7.531	236.3	9.303	239.3	9.421	302.3	11.902	300	11.811	2.3	.091	13	.512	8
					15	Int.	●	MVS1260X15S140	191.3	7.531	236.3	9.303	239.3	9.421	302.3	11.902	300	11.811	2.3	.091	14	.551	8
					20	Int.	□	MVS1260X20S130	254.3	10.012	301.3	11.862	304.3	11.980	367.3	14.461	365	14.370	2.3	.091	13	.512	8
					20	Int.	●	MVS1260X20S140	254.3	10.012	301.3	11.862	304.3	11.980	367.3	14.461	365	14.370	2.3	.091	14	.551	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
12.700	.5000	1/2			2	Ext.	★	MVE1270X02S130	27.7	1.091	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	13	.512	2
					2	Ext.	●	MVE1270X02S140	27.7	1.091	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	14	.551	2
					2	Int.	★	MVS1270X02S130PL	27.4	1.079	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	13	.512	4
					2	Int.	●	MVS1270X02S140PL	27.4	1.079	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	14	.551	4
					3	Ext.	★	MVE1270X03S130	40.4	1.591	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	13	.512	2
					3	Ext.	□	MVE1270X03S140	40.4	1.591	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	14	.551	2
					3	Int.	★	MVS1270X03S130	40.4	1.591	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	13	.512	6
					3	Int.	●	MVS1270X03S140	40.4	1.591	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	14	.551	6
					5	Int.	★	MVS1270X05S130	65.8	2.591	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	13	.512	6
					5	Int.	●	MVS1270X05S140	65.8	2.591	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	14	.551	6
					8	Int.	□	MVS1270X08S130	103.9	4.091	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	13	.512	6
					8	Int.	●	MVS1270X08S140	103.9	4.091	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	14	.551	6
					10	Int.	□	MVS1270X10S130	129.3	5.091	171.3	6.744	174.3	6.862	237.3	9.343	235	9.252	2.3	.091	13	.512	8
					10	Int.	●	MVS1270X10S140	129.3	5.091	171.3	6.744	174.3	6.862	237.3	9.343	235	9.252	2.3	.091	14	.551	8
					15	Int.	□	MVS1270X15S130	192.8	7.591	236.3	9.303	239.3	9.421	302.3	11.902	300	11.811	2.3	.091	13	.512	8
					15	Int.	●	MVS1270X15S140	192.8	7.591	236.3	9.303	239.3	9.421	302.3	11.902	300	11.811	2.3	.091	14	.551	8
					20	Int.	□	MVS1270X20S130	256.3	10.091	301.3	11.862	304.3	11.980	367.3	14.461	365	14.370	2.3	.091	13	.512	8
					20	Int.	●	MVS1270X20S140	256.3	10.091	301.3	11.862	304.3	11.980	367.3	14.461	365	14.370	2.3	.091	14	.551	8
12.800	.5039				2	Ext.	★	MVE1280X02S130	27.9	1.098	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	13	.512	2
					2	Ext.	●	MVE1280X02S140	27.9	1.098	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	14	.551	2
					2	Int.	★	MVS1280X02S130PL	27.6	1.087	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	13	.512	4
					2	Int.	●	MVS1280X02S140PL	27.6	1.087	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	14	.551	4
					3	Ext.	★	MVE1280X03S130	40.7	1.602	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	13	.512	2
					3	Ext.	□	MVE1280X03S140	40.7	1.602	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	14	.551	2
					3	Int.	★	MVS1280X03S130	40.7	1.602	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	13	.512	6
					3	Int.	●	MVS1280X03S140	40.7	1.602	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	14	.551	6
					5	Int.	★	MVS1280X05S130	66.3	2.610	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	13	.512	6
					5	Int.	●	MVS1280X05S140	66.3	2.610	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	14	.551	6
					8	Int.	□	MVS1280X08S130	104.7	4.122	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	13	.512	6
					8	Int.	●	MVS1280X08S140	104.7	4.122	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	14	.551	6
					10	Int.	□	MVS1280X10S130	130.3	5.130	171.3	6.744	174.3	6.862	237.3	9.343	235	9.252	2.3	.091	13	.512	8
					10	Int.	●	MVS1280X10S140	130.3	5.130	171.3	6.744	174.3	6.862	237.3	9.343	235	9.252	2.3	.091	14	.551	8
					15	Int.	□	MVS1280X15S130	194.3	7.650	236.3	9.303	239.3	9.421	302.3	11.902	300	11.811	2.3	.091	13	.512	8
					15	Int.	●	MVS1280X15S140	194.3	7.650	236.3	9.303	239.3	9.421	302.3	11.902	300	11.811	2.3	.091	14	.551	8
					20	Int.	□	MVS1280X20S130	258.3	10.169	301.3	11.862	304.3	11.980	367.3	14.461	365	14.370	2.3	.091	13	.512	8
					20	Int.	●	MVS1280X20S140	258.3	10.169	301.3	11.862	304.3	11.980	367.3	14.461	365	14.370	2.3	.091	14	.551	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
12.900	.5079				2	Ext.	★	MVE1290X02S130	28.1	1.106	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	13	.512	2
					2	Ext.	●	MVE1290X02S140	28.1	1.106	53.3	2.098	53.3	2.098	104.3	4.106	102	4.016	2.3	.091	14	.551	2
					2	Int.	★	MVS1290X02S130PL	27.8	1.094	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	13	.512	4
					2	Int.	●	MVS1290X02S140PL	27.8	1.094	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	14	.551	4
					3	Ext.	★	MVE1290X03S130	41.0	1.614	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	13	.512	2
					3	Ext.	□	MVE1290X03S140	41.0	1.614	80.3	3.161	80.3	3.161	139.3	5.484	137	5.394	2.3	.091	14	.551	2
					3	Int.	★	MVS1290X03S130	41.0	1.614	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	13	.512	6
					3	Int.	●	MVS1290X03S140	41.0	1.614	67.3	2.650	67.3	2.650	130.3	5.130	128	5.039	2.3	.091	14	.551	6
					5	Int.	★	MVS1290X05S130	66.8	2.630	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	13	.512	6
					5	Int.	●	MVS1290X05S140	66.8	2.630	106.3	4.185	106.3	4.185	169.3	6.665	167	6.575	2.3	.091	14	.551	6
					8	Int.	□	MVS1290X08S130	105.5	4.154	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	13	.512	6
					8	Int.	●	MVS1290X08S140	105.5	4.154	145.3	5.720	145.3	5.720	208.3	8.201	206	8.110	2.3	.091	14	.551	6
					10	Int.	□	MVS1290X10S130	131.3	5.169	171.3	6.744	174.3	6.866	237.3	9.343	235	9.252	2.3	.091	13	.512	8
					10	Int.	●	MVS1290X10S140	131.3	5.169	171.3	6.744	174.3	6.862	237.3	9.343	235	9.252	2.3	.091	14	.551	8
					15	Int.	□	MVS1290X15S130	195.8	7.709	236.3	9.303	239.3	9.425	302.3	11.902	300	11.811	2.3	.091	13	.512	8
					15	Int.	●	MVS1290X15S140	195.8	7.709	236.3	9.303	239.3	9.421	302.3	11.902	300	11.811	2.3	.091	14	.551	8
					20	Int.	□	MVS1290X20S130	260.3	10.248	301.3	11.862	304.3	11.984	367.3	14.461	365	14.370	2.3	.091	13	.512	8
					20	Int.	●	MVS1290X20S140	260.3	10.248	301.3	11.862	304.3	11.980	367.3	14.461	365	14.370	2.3	.091	14	.551	8
13.000	.5118				2	Ext.	★	MVE1300X02S130	28.4	1.118	53.4	2.102	53.4	2.102	104.4	4.110	102	4.016	2.4	.094	13	.512	2
					2	Ext.	●	MVE1300X02S140	28.4	1.118	53.4	2.102	53.4	2.102	104.4	4.110	102	4.016	2.4	.094	14	.551	2
					2	Int.	★	MVS1300X02S130PL	28.0	1.102	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	13	.512	4
					2	Int.	●	MVS1300X02S140PL	28.0	1.102	53.0	2.087	53.0	2.087	104.0	4.094	102	4.016	2.0	.079	14	.551	4
					3	Ext.	★	MVE1300X03S130	41.4	1.630	80.4	3.165	80.4	3.165	139.4	5.488	137	5.394	2.4	.094	13	.512	2
					3	Ext.	□	MVE1300X03S140	41.4	1.630	80.4	3.165	80.4	3.165	139.4	5.488	137	5.394	2.4	.094	14	.551	2
					3	Int.	★	MVS1300X03S130	41.4	1.630	67.4	2.654	67.4	2.654	130.4	5.134	128	5.039	2.4	.094	13	.512	6
					3	Int.	●	MVS1300X03S140	41.4	1.630	67.4	2.654	67.4	2.654	130.4	5.134	128	5.039	2.4	.094	14	.551	6
					5	Int.	★	MVS1300X05S130	67.4	2.654	106.4	4.189	106.4	4.189	169.4	6.669	167	6.575	2.4	.094	13	.512	6
					5	Int.	●	MVS1300X05S140	67.4	2.654	106.4	4.189	106.4	4.189	169.4	6.669	167	6.575	2.4	.094	14	.551	6
					8	Int.	★	MVS1300X08S130	106.4	4.189	145.4	5.724	145.4	5.724	208.4	8.205	206	8.110	2.4	.094	13	.512	6
					8	Int.	●	MVS1300X08S140	106.4	4.189	145.4	5.724	145.4	5.724	208.4	8.205	206	8.110	2.4	.094	14	.551	6
					10	Int.	★	MVS1300X10S130	132.4	5.213	171.4	6.748	174.4	6.866	237.4	9.346	235	9.252	2.4	.094	13	.512	8
					10	Int.	●	MVS1300X10S140	132.4	5.213	171.4	6.748	174.4	6.866	237.4	9.346	235	9.252	2.4	.094	14	.551	8
					15	Int.	★	MVS1300X15S130	197.4	7.772	236.4	9.307	239.4	9.425	302.4	11.906	300	11.811	2.4	.094	13	.512	8
					15	Int.	●	MVS1300X15S140	197.4	7.772	236.4	9.307	239.4	9.425	302.4	11.906	300	11.811	2.4	.094	14	.551	8
					20	Int.	★	MVS1300X20S130	262.4	10.331	301.4	11.866	304.4	11.984	367.4	14.465	365	14.370	2.4	.094	13	.512	8
					20	Int.	●	MVS1300X20S140	262.4	10.331	301.4	11.866	304.4	11.984	367.4	14.465	365	14.370	2.4	.094	14	.551	8
13.100	.5157			9/16-18	2	Ext.	●	MVE1310X02S140	28.6	1.126	56.4	2.220	59.4	2.339	109.4	4.307	107	4.213	2.4	.094	14	.551	2
					2	Int.	●	MVS1310X02S140PL	28.3	1.114	56.1	2.209	59.1	2.327	109.1	4.295	107	4.213	2.1	.083	14	.551	4
					3	Ext.	★	MVE1310X03S140	41.7	1.642	86.4	3.402	89.4	3.520	149.4	5.882	147	5.787	2.4	.094	14	.551	2
					3	Int.	●	MVS1310X03S140	41.7	1.642	69.9	2.752	72.4	2.850	136.4	5.370	134	5.276	2.4	.094	14	.551	6
					5	Int.	●	MVS1310X05S140	67.9	2.673	110.4	4.346	114.4	4.504	178.4	7.024	176	6.929	2.4	.094	14	.551	6
					8	Int.	●	MVS1310X08S140	107.2	4.220	151.4	5.961	156.4	6.157	220.4	8.677	218	8.583	2.4	.094	14	.551	6
					10	Int.	□	MVS1310X10S140	133.4	5.252	178.4	7.024	181.4	7.142	245.4	9.661	243	9.567	2.4	.094	14	.551	8
					15	Int.	□	MVS1310X15S140	198.9	7.831	245.4	9.661	248.4	9.780	312.4	12.299	310	12.205	2.4	.094	14	.551	8
					20	Int.	□	MVS1310X20S140	264.4	10.409	313.4	12.339	316.4	12.457	380.4	14.976	378	14.882	2.4	.094	14	.551	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE1320X02S140	28.8	1.134	56.4	2.220	59.4	2.339	109.4	4.307	107	4.213	2.4	.094	14	.551	2
					2	Int.	●	MVS1320X02S140PL	28.5	1.122	56.1	2.209	59.1	2.327	109.1	4.295	107	4.213	2.1	.083	14	.551	4
					3	Ext.	★	MVE1320X03S140	42.0	1.654	86.4	3.402	89.4	3.520	149.4	5.882	147	5.787	2.4	.094	14	.551	2
					3	Int.	●	MVS1320X03S140	42.0	1.654	69.9	2.752	72.4	2.850	136.4	5.370	134	5.276	2.4	.094	14	.551	6
13.200	.5197				5	Int.	●	MVS1320X05S140	68.4	2.693	110.4	4.346	114.4	4.504	178.4	7.024	176	6.929	2.4	.094	14	.551	6
					8	Int.	●	MVS1320X08S140	108.0	4.252	151.4	5.961	156.4	6.157	220.4	8.677	218	8.583	2.4	.094	14	.551	6
					10	Int.	□	MVS1320X10S140	133.4	5.252	178.4	7.024	181.4	7.142	245.4	9.661	243	9.567	2.4	.094	14	.551	8
					15	Int.	□	MVS1320X15S140	200.4	7.890	245.4	9.661	248.4	9.780	312.4	12.299	310	12.205	2.4	.094	14	.551	8
					20	Int.	□	MVS1320X20S140	266.4	10.488	313.4	12.339	316.4	12.457	380.4	14.976	378	14.882	2.4	.094	14	.551	8
					2	Ext.	●	MVE1330X02S140	29.0	1.142	56.4	2.220	59.4	2.339	109.4	4.307	107	4.213	2.4	.094	14	.551	2
					2	Int.	●	MVS1330X02S140PL	28.7	1.130	56.1	2.209	59.1	2.327	109.1	4.295	107	4.213	2.1	.083	14	.551	4
					3	Ext.	★	MVE1330X03S140	42.3	1.665	86.4	3.402	89.4	3.520	149.4	5.882	147	5.787	2.4	.094	14	.551	2
					3	Int.	●	MVS1330X03S140	42.3	1.665	69.9	2.752	72.4	2.850	136.4	5.370	134	5.276	2.4	.094	14	.551	6
13.300	.5236				5	Int.	●	MVS1330X05S140	68.9	2.713	110.4	4.346	114.4	4.504	178.4	7.024	176	6.929	2.4	.094	14	.551	6
					8	Int.	●	MVS1330X08S140	108.8	4.283	151.4	5.961	156.4	6.157	220.4	8.677	218	8.583	2.4	.094	14	.551	6
					10	Int.	□	MVS1330X10S140	135.4	5.331	178.4	7.024	181.4	7.142	245.4	9.661	243	9.567	2.4	.094	14	.551	8
					15	Int.	□	MVS1330X15S140	201.9	7.949	245.4	9.661	248.4	9.780	312.4	12.299	310	12.205	2.4	.094	14	.551	8
					20	Int.	□	MVS1330X20S140	268.4	10.567	313.4	12.339	316.4	12.457	380.4	14.976	378	14.882	2.4	.094	14	.551	8
					2	Ext.	●	MVE1340X02S140	29.2	1.150	56.4	2.220	59.4	2.339	109.4	4.307	107	4.213	2.4	.094	14	.551	2
					2	Int.	●	MVS1340X02S140PL	28.9	1.138	56.1	2.209	59.1	2.327	109.1	4.295	107	4.213	2.1	.083	14	.551	4
					3	Ext.	★	MVE1340X03S140	42.6	1.677	86.4	3.402	89.4	3.520	149.4	5.882	147	5.787	2.4	.094	14	.551	2
					3	Int.	●	MVS1340X03S140	42.6	1.677	69.9	2.752	72.4	2.850	136.4	5.370	134	5.276	2.4	.094	14	.551	6
13.400	.5276				5	Int.	●	MVS1340X05S140	69.4	2.732	110.4	4.346	114.4	4.504	178.4	7.024	176	6.929	2.4	.094	14	.551	6
					8	Int.	●	MVS1340X08S140	109.6	4.315	151.4	5.961	156.4	6.157	220.4	8.677	218	8.583	2.4	.094	14	.551	6
					10	Int.	□	MVS1340X10S140	136.4	5.370	178.4	7.024	181.4	7.142	245.4	9.661	243	9.567	2.4	.094	14	.551	8
					15	Int.	□	MVS1340X15S140	203.4	8.008	245.4	9.661	248.4	9.780	312.4	12.299	310	12.205	2.4	.094	14	.551	8
					20	Int.	□	MVS1340X20S140	270.4	10.646	313.4	12.339	316.4	12.457	380.4	14.976	378	14.882	2.4	.094	14	.551	8
					2	Ext.	●	MVE1350X02S140	29.5	1.161	56.5	2.224	59.5	2.343	109.5	4.311	107	4.213	2.5	.098	14	.551	2
					2	Int.	●	MVS1350X02S140PL	29.1	1.146	56.1	2.209	59.1	2.327	109.1	4.295	107	4.213	2.1	.083	14	.551	4
					3	Ext.	★	MVE1350X03S140	43.0	1.693	86.5	3.406	89.5	3.524	149.5	5.886	147	5.787	2.5	.098	14	.551	2
					3	Int.	●	MVS1350X03S140	43.0	1.693	70.0	2.756	72.5	2.854	136.5	5.374	134	5.276	2.5	.098	14	.551	6
13.500	.5315			5/8-11	5	Int.	●	MVS1350X05S140	70.0	2.756	110.5	4.350	114.5	4.508	178.5	7.028	176	6.929	2.5	.098	14	.551	6
					8	Int.	●	MVS1350X08S140	110.5	4.350	151.5	5.965	156.5	6.161	220.5	8.681	218	8.583	2.5	.098	14	.551	6
					10	Int.	●	MVS1350X10S140	137.5	5.413	178.5	7.028	181.5	7.146	245.5	9.665	243	9.567	2.5	.098	14	.551	8
					15	Int.	★	MVS1350X15S140	205.0	8.071	245.5	9.665	248.5	9.783	312.5	12.303	310	12.205	2.5	.098	14	.551	8
					20	Int.	★	MVS1350X20S140	272.5	10.728	313.5	12.343	316.5	12.461	380.5	14.980	378	14.882	2.5	.098	14	.551	8
					2	Ext.	●	MVE1360X02S140	29.7	1.169	56.5	2.224	56.5	2.224	109.5	4.311	107	4.213	2.5	.098	14	.551	2
					2	Int.	●	MVS1360X02S140PL	29.3	1.154	56.1	2.209	56.1	2.209	109.1	4.295	107	4.213	2.1	.083	14	.551	4
					3	Ext.	★	MVE1360X03S140	43.3	1.705	88.5	3.484	88.5	3.484	149.5	5.886	147	5.787	2.5	.098	14	.551	2
					3	Int.	●	MVS1360X03S140	43.3	1.705	72.5	2.854	72.5	2.854	136.5	5.374	134	5.276	2.5	.098	14	.551	6
13.600	.5354				5	Int.	●	MVS1360X05S140	70.5	2.776	114.5	4.508	114.5	4.508	178.5	7.028	176	6.929	2.5	.098	14	.551	6
					8	Int.	●	MVS1360X08S140	111.3	4.382	156.5	6.161	156.5	6.161	220.5	8.681	218	8.583	2.5	.098	14	.551	6
					10	Int.	□	MVS1360X10S140	138.5	5.453	184.5	7.264	187.5	7.382	251.5	9.902	249	9.803	2.5	.098	14	.551	8
					15	Int.	□	MVS1360X15S140	206.5	8.130	254.5	10.020	257.5	10.138	321.5	12.657	319	12.559	2.5	.098	14	.551	8
					20	Int.	□	MVS1360X20S140	274.5	10.807	324.5	12.776	327.5	12.894	391.5	15.413	389	15.315	2.5	.098	14	.551	8

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	●	MVE1370X02S140	29.9	1.177	56.5	2.224	56.5	2.224	109.5	4.311	107	4.213	2.5	.098	14	.551	2
					2	Int.	●	MVS1370X02S140PL	29.6	1.165	56.2	2.213	56.2	2.213	109.2	4.299	107	4.213	2.2	.087	14	.551	4
					3	Ext.	★	MVE1370X03S140	43.6	1.717	88.5	3.484	88.5	3.484	149.5	5.886	147	5.787	2.5	.098	14	.551	2
					3	Int.	●	MVS1370X03S140	43.6	1.717	72.5	2.854	72.5	2.854	136.5	5.374	134	5.276	2.5	.098	14	.551	6
13.700	.5394				5	Int.	●	MVS1370X05S140	71.0	2.795	114.5	4.508	114.5	4.508	178.5	7.028	176	6.929	2.5	.098	14	.551	6
					8	Int.	●	MVS1370X08S140	112.1	4.413	156.5	6.161	156.5	6.161	220.5	8.681	218	8.583	2.5	.098	14	.551	6
					10	Int.	□	MVS1370X10S140	139.5	5.492	184.5	7.264	187.5	7.382	251.5	9.902	249	9.803	2.5	.098	14	.551	8
					15	Int.	□	MVS1370X15S140	208.0	8.189	254.5	10.020	257.5	10.138	321.5	12.657	319	12.559	2.5	.098	14	.551	8
					20	Int.	□	MVS1370X20S140	276.5	10.886	324.5	12.776	327.5	12.894	391.5	15.413	389	15.315	2.5	.098	14	.551	8
					2	Ext.	●	MVE1380X02S140	30.1	1.185	56.5	2.224	56.5	2.224	109.5	4.311	107	4.213	2.5	.098	14	.551	2
					2	Int.	●	MVS1380X02S140PL	29.8	1.173	56.2	2.213	56.2	2.213	109.2	4.299	107	4.213	2.2	.087	14	.551	4
					3	Ext.	★	MVE1380X03S140	43.9	1.728	88.5	3.484	88.5	3.484	149.5	5.886	147	5.787	2.5	.098	14	.551	2
					3	Int.	●	MVS1380X03S140	43.9	1.728	72.5	2.854	72.5	2.854	136.5	5.374	134	5.276	2.5	.098	14	.551	6
13.800	.5433				5	Int.	●	MVS1380X05S140	71.5	2.815	114.5	4.508	114.5	4.508	178.5	7.028	176	6.929	2.5	.098	14	.551	6
					8	Int.	●	MVS1380X08S140	112.9	4.445	156.5	6.161	156.5	6.161	220.5	8.681	218	8.583	2.5	.098	14	.551	6
					10	Int.	□	MVS1380X10S140	140.5	5.531	184.5	7.264	187.5	7.382	251.5	9.902	249	9.803	2.5	.098	14	.551	8
					15	Int.	□	MVS1380X15S140	209.5	8.248	254.5	10.020	257.5	10.138	321.5	12.657	319	12.559	2.5	.098	14	.551	8
					20	Int.	□	MVS1380X20S140	278.5	10.965	324.5	12.776	327.5	12.894	391.5	15.413	389	15.315	2.5	.098	14	.551	8
					2	Ext.	●	MVE1389X02S140	30.1	1.185	56.5	2.224	56.5	2.224	109.5	4.311	107	4.213	2.5	.098	14	.551	2
					2	Int.	●	MVS1389X02S140PL	30.1	1.185	56.2	2.213	56.2	2.213	109.2	4.299	107	4.213	2.2	.087	14	.551	4
					3	Int.	●	MVS1389X03S140	44.2	1.740	72.5	2.854	72.5	2.854	136.5	5.374	134	5.276	2.5	.098	14	.551	6
					5	Int.	●	MVS1389X05S140	72.0	2.835	114.5	4.508	114.5	4.508	178.5	7.028	176	6.929	2.5	.098	14	.551	6
13.891	.5469	35/64			8	Int.	●	MVS1389X08S140	113.6	4.472	156.5	6.161	156.5	6.161	220.5	8.681	218	8.583	2.5	.098	14	.551	6
					10	Int.	●	MVS1389X10S140	141.4	5.567	184.5	7.264	187.5	7.382	251.5	9.902	249	9.803	2.5	.098	14	.551	8
					15	Int.	●	MVS1389X15S140	210.9	8.303	254.5	10.020	257.5	10.138	321.5	12.657	319	12.559	2.5	.098	14	.551	8
					20	Int.	●	MVS1389X20S140	280.3	11.035	324.5	12.776	327.5	12.894	391.5	15.413	389	15.315	2.5	.098	14	.551	8
					2	Ext.	●	MVE1390X02S140	30.3	1.193	56.5	2.224	56.5	2.224	109.5	4.311	107	4.213	2.5	.098	14	.551	2
					2	Int.	●	MVS1390X02S140PL	30.0	1.181	56.2	2.213	56.2	2.213	109.2	4.299	107	4.213	2.2	.087	14	.551	4
					3	Ext.	★	MVE1390X03S140	44.2	1.740	88.5	3.484	88.5	3.484	149.5	5.886	147	5.787	2.5	.098	14	.551	2
					3	Int.	●	MVS1390X03S140	44.2	1.740	72.5	2.854	72.5	2.854	136.5	5.374	134	5.276	2.5	.098	14	.551	6
13.900	.5472				5	Int.	●	MVS1390X05S140	72.0	2.835	114.5	4.508	114.5	4.508	178.5	7.028	176	6.929	2.5	.098	14	.551	6
					8	Int.	●	MVS1390X08S140	113.7	4.476	156.5	6.161	156.5	6.161	220.5	8.681	218	8.583	2.5	.098	14	.551	6
					10	Int.	□	MVS1390X10S140	141.5	5.571	184.5	7.264	187.5	7.382	251.5	9.902	249	9.803	2.5	.098	14	.551	8
					15	Int.	□	MVS1390X15S140	211.0	8.307	254.5	10.020	257.5	10.138	321.5	12.657	319	12.559	2.5	.098	14	.551	8
					20	Int.	□	MVS1390X20S140	280.5	11.043	324.5	12.776	327.5	12.894	391.5	15.413	389	15.315	2.5	.098	14	.551	8
					2	Ext.	●	MVE1400X02S140	30.5	1.201	56.5	2.224	56.5	2.224	109.5	4.311	107	4.213	2.5	.098	14	.551	2
					2	Int.	●	MVS1400X02S140PL	30.2	1.189	56.2	2.213	56.2	2.213	109.2	4.299	107	4.213	2.2	.087	14	.551	4
					3	Ext.	★	MVE1400X03S140	44.5	1.752	88.5	3.484	88.5	3.484	149.5	5.886	147	5.787	2.5	.098	14	.551	2
					3	Int.	●	MVS1400X03S140	44.5	1.752	72.5	2.854	72.5	2.854	136.5	5.374	134	5.276	2.5	.098	14	.551	6
14.000	.5512			M16x2.0	5	Int.	●	MVS1400X05S140	72.5	2.854	114.5	4.508	114.5	4.508	178.5	7.028	176	6.929	2.5	.098	14	.551	6
					8	Int.	●	MVS1400X08S140	114.5	4.508	156.5	6.161	156.5	6.161	220.5	8.681	218	8.583	2.5	.098	14	.551	6
					10	Int.	★	MVS1400X10S140	142.5	5.610	184.5	7.264	187.5	7.386	251.5	9.902	249	9.803	2.5	.098	14	.551	8
					15	Int.	●	MVS1400X15S140	212.5	8.366	254.5	10.020	257.5	10.142	321.5	12.657	319	12.559	2.5	.098	14	.551	8
					20	Int.	★	MVS1400X20S140	282.5	11.122	324.5	12.776	327.5	12.898	391.5	15.413	389	15.315	2.5	.098	14	.551	8

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
14.100	.5551				2	Ext.	★	MVE1410X02S150	30.8	1.213	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	15	.591	2
					2	Ext.	●	MVE1410X02S160	30.8	1.213	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	16	.630	2
					3	Ext.	★	MVE1410X03S150	44.9	1.768	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	15	.591	2
					3	Ext.	□	MVE1410X03S160	44.9	1.768	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	16	.630	2
					3	Int.	★	MVS1410X03S150	44.9	1.768	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	15	.591	6
					3	Int.	●	MVS1410X03S160	44.9	1.768	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	16	.630	6
					5	Int.	★	MVS1410X05S150	73.1	2.878	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	15	.591	6
					5	Int.	●	MVS1410X05S160	73.1	2.878	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	16	.630	6
					8	Int.	□	MVS1410X08S150	115.4	4.543	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	15	.591	6
					8	Int.	●	MVS1410X08S160	115.4	4.543	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	16	.630	6
14.200	.5591				2	Ext.	★	MVE1420X02S150	31.0	1.220	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	15	.591	2
					2	Ext.	●	MVE1420X02S160	31.0	1.220	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	16	.630	2
					3	Ext.	★	MVE1420X03S150	45.2	1.780	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	15	.591	2
					3	Ext.	□	MVE1420X03S160	45.2	1.780	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	16	.630	2
					3	Int.	★	MVS1420X03S150	45.2	1.780	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	15	.591	6
					3	Int.	●	MVS1420X03S160	45.2	1.780	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	16	.630	6
					5	Int.	★	MVS1420X05S150	73.6	2.898	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	15	.591	6
					5	Int.	●	MVS1420X05S160	73.6	2.898	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	16	.630	6
					8	Int.	★	MVS1420X08S150	116.2	4.575	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	15	.591	6
					8	Int.	●	MVS1420X08S160	116.2	4.575	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	16	.630	6
14.288	.5625	9/16			2	Ext.	●	MVE1429X02S160	31.1	1.224	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	16	.630	2
					3	Int.	●	MVS1429X03S160	45.4	1.787	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	16	.630	6
					5	Int.	●	MVS1429X05S160	74.0	2.913	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	16	.630	6
					8	Int.	●	MVS1429X08S160	116.9	4.602	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	16	.630	6
14.300	.5630				2	Ext.	★	MVE1430X02S150	31.2	1.228	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	15	.591	2
					2	Ext.	●	MVE1430X02S160	31.2	1.228	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	16	.630	2
					3	Ext.	★	MVE1430X03S150	45.5	1.791	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	15	.591	2
					3	Ext.	□	MVE1430X03S160	45.5	1.791	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	16	.630	2
					3	Int.	★	MVS1430X03S150	45.5	1.791	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	15	.591	6
					3	Int.	●	MVS1430X03S160	45.5	1.791	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	16	.630	6
					5	Int.	★	MVS1430X05S150	74.1	2.917	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	15	.591	6
					5	Int.	●	MVS1430X05S160	74.1	2.917	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	16	.630	6
					8	Int.	□	MVS1430X08S150	117.0	4.606	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	15	.591	6
					8	Int.	●	MVS1430X08S160	117.0	4.606	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	16	.630	6
14.400	.5569				2	Ext.	★	MVE1440X02S150	31.4	1.236	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	15	.591	2
					2	Ext.	●	MVE1440X02S160	31.4	1.236	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	16	.630	2
					3	Ext.	★	MVE1440X03S150	45.8	1.803	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	15	.591	2
					3	Ext.	□	MVE1440X03S160	45.8	1.803	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	16	.630	2
					3	Int.	★	MVS1440X03S150	45.8	1.803	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	15	.591	6
					3	Int.	●	MVS1440X03S160	45.8	1.803	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	16	.630	6
					5	Int.	★	MVS1440X05S150	74.6	2.937	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	15	.591	6
					5	Int.	●	MVS1440X05S160	74.6	2.937	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	16	.630	6
					8	Int.	□	MVS1440X08S150	117.8	4.638	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	15	.591	6
					8	Int.	●	MVS1440X08S160	117.8	4.638	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	16	.630	6

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
14.500	.5709			M16x1.5	2	Ext.	★	MVE1450X02S150	31.6	1.244	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	15	.591	2
					2	Ext.	●	MVE1450X02S160	31.6	1.244	58.6	2.307	61.6	2.425	113.6	4.472	111	4.370	2.6	.102	16	.630	2
					3	Ext.	★	MVE1450X03S150	46.1	1.815	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	15	.591	2
					3	Ext.	□	MVE1450X03S160	46.1	1.815	91.6	3.606	94.6	3.724	155.6	6.126	153	6.024	2.6	.102	16	.630	2
					3	Int.	★	MVS1450X03S150	46.1	1.815	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	15	.591	6
					3	Int.	●	MVS1450X03S160	46.1	1.815	75.1	2.957	77.6	3.055	142.6	5.614	140	5.512	2.6	.102	16	.630	6
					5	Int.	★	MVS1450X05S150	75.1	2.957	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	15	.591	6
					5	Int.	●	MVS1450X05S160	75.1	2.957	118.6	4.669	122.6	4.827	187.6	7.386	185	7.283	2.6	.102	16	.630	6
					8	Int.	★	MVS1450X08S150	118.6	4.669	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	15	.591	6
					8	Int.	●	MVS1450X08S160	118.6	4.669	162.6	6.402	167.6	6.598	227.6	8.961	225	8.858	2.6	.102	16	.630	6
14.600	.5748				2	Ext.	★	MVE1460X02S150	31.8	1.252	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	15	.591	2
					2	Ext.	●	MVE1460X02S160	31.9	1.256	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	16	.630	2
					3	Ext.	★	MVE1460X03S150	46.5	1.831	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	15	.591	2
					3	Ext.	□	MVE1460X03S160	46.5	1.831	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	16	.630	2
					3	Int.	★	MVS1460X03S150	46.5	1.831	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	15	.591	6
					3	Int.	●	MVS1460X03S160	46.5	1.831	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	16	.630	6
					5	Int.	★	MVS1460X05S150	75.7	2.980	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	15	.591	6
					5	Int.	●	MVS1460X05S160	75.7	2.980	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	16	.630	6
					8	Int.	□	MVS1460X08S150	119.5	4.705	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	15	.591	6
					8	Int.	●	MVS1460X08S160	119.5	4.705	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	16	.630	6
14.685	.5782	37/64		5/8-18	2	Ext.	●	MVE1468X02S160	31.9	1.256	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	16	.630	2
					3	Int.	●	MVS1468X03S160	46.7	1.839	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	16	.630	6
					5	Int.	●	MVS1468X05S160	76.1	2.996	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	16	.630	6
					8	Int.	●	MVS1468X08S160	120.1	4.728	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	16	.630	6
14.700	.5787				2	Ext.	★	MVE1470X02S150	32.1	1.264	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	15	.591	2
					2	Ext.	●	MVE1470X02S160	32.1	1.264	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	16	.630	2
					3	Ext.	★	MVE1470X03S150	46.8	1.843	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	15	.591	2
					3	Ext.	□	MVE1470X03S160	46.8	1.843	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	16	.630	2
					3	Int.	★	MVS1470X03S150	46.8	1.843	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	15	.591	6
					3	Int.	●	MVS1470X03S160	46.8	1.843	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	16	.630	6
					5	Int.	★	MVS1470X05S150	76.2	3.000	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	15	.591	6
					5	Int.	●	MVS1470X05S160	76.2	3.000	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	16	.630	6
					8	Int.	□	MVS1470X08S150	120.3	4.736	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	15	.591	6
					8	Int.	●	MVS1470X08S160	120.3	4.736	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	16	.630	6
14.800	.5827				2	Ext.	★	MVE1480X02S150	32.3	1.272	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	15	.591	2
					2	Ext.	●	MVE1480X02S160	32.3	1.272	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	16	.630	2
					3	Ext.	★	MVE1480X03S150	47.1	1.854	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	15	.591	2
					3	Ext.	□	MVE1480X03S160	47.1	1.854	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	16	.630	2
					3	Int.	★	MVS1480X03S150	47.1	1.854	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	15	.591	6
					3	Int.	●	MVS1480X03S160	47.1	1.854	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	16	.630	6
					5	Int.	★	MVS1480X05S150	76.7	3.020	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	15	.591	6
					5	Int.	●	MVS1480X05S160	76.7	3.020	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	16	.630	6
					8	Int.	□	MVS1480X08S150	121.1	4.768	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	15	.591	6
					8	Int.	●	MVS1480X08S160	121.1	4.768	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	16	.630	6

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	Ext.	★	MVE1490X02S150	32.5	1.280	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	15	.591	2
					2	Ext.	●	MVE1490X02S160	32.5	1.280	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	16	.630	2
					3	Ext.	★	MVE1490X03S150	47.4	1.866	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	15	.591	2
					3	Ext.	□	MVE1490X03S160	47.4	1.866	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	16	.630	2
					3	Int.	★	MVS1490X03S150	47.4	1.866	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	15	.591	6
14.900	.5866				3	Int.	●	MVS1490X03S160	47.4	1.866	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	16	.630	6
					5	Int.	★	MVS1490X05S150	77.2	3.039	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	15	.591	6
					5	Int.	●	MVS1490X05S160	77.2	3.039	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	16	.630	6
					8	Int.	□	MVS1490X08S150	121.9	4.799	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	15	.591	6
					8	Int.	●	MVS1490X08S160	121.9	4.799	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	16	.630	6
					2	Ext.	★	MVE1500X02S150	32.7	1.287	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	15	.591	2
					2	Ext.	●	MVE1500X02S160	32.7	1.287	58.7	2.311	58.7	2.311	113.7	4.476	111	4.370	2.7	.106	16	.630	2
					3	Ext.	★	MVE1500X03S150	47.7	1.878	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	15	.591	2
					3	Ext.	□	MVE1500X03S160	47.7	1.878	93.7	3.689	93.7	3.689	155.7	6.130	153	6.024	2.7	.106	16	.630	2
					3	Int.	★	MVS1500X03S150	47.7	1.878	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	15	.591	6
15.000	.5906				3	Int.	●	MVS1500X03S160	47.7	1.878	77.7	3.059	77.7	3.059	142.7	5.618	140	5.512	2.7	.106	16	.630	6
					5	Int.	★	MVS1500X05S150	77.7	3.059	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	15	.591	6
					5	Int.	●	MVS1500X05S160	77.7	3.059	122.7	4.831	122.7	4.831	187.7	7.390	185	7.283	2.7	.106	16	.630	6
					8	Int.	★	MVS1500X08S150	122.7	4.831	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	15	.591	6
					8	Int.	●	MVS1500X08S160	122.7	4.831	167.7	6.602	167.7	6.602	227.7	8.965	225	8.858	2.7	.106	16	.630	6
					2	Ext.	●	MVE1508X02S160	32.9	1.295	60.7	2.390	63.7	2.508	117.7	4.634	115	4.528	2.7	.106	16	.630	2
15.082	.5938	19/32			3	Int.	●	MVS1508X03S160	48.0	1.890	80.2	3.157	82.7	3.256	147.7	5.815	145	5.709	2.7	.106	16	.630	6
					5	Int.	●	MVS1508X05S160	78.1	3.075	126.7	4.988	130.7	5.146	195.7	7.705	193	7.598	2.7	.106	16	.630	6
					8	Int.	●	MVS1508X08S160	123.4	4.858	173.7	6.839	183.7	7.232	243.7	9.594	241	9.488	2.7	.106	16	.630	6
					2	Ext.	●	MVE1510X02S160	32.9	1.295	60.7	2.390	63.7	2.508	117.7	4.634	115	4.528	2.7	.106	16	.630	2
					3	Ext.	★	MVE1510X03S160	48.0	1.890	96.7	3.807	99.7	3.925	162.7	6.406	160	6.299	2.7	.106	16	.630	2
15.100	.5945				3	Int.	●	MVS1510X03S160	48.0	1.890	80.2	3.157	82.7	3.256	147.7	5.815	145	5.709	2.7	.106	16	.630	6
					5	Int.	●	MVS1510X05S160	78.2	3.079	126.7	4.988	130.7	5.146	195.7	7.705	193	7.598	2.7	.106	16	.630	6
					8	Int.	●	MVS1510X08S160	123.5	4.862	173.7	6.839	183.7	7.232	243.7	9.594	241	9.488	2.7	.106	16	.630	6
					2	Ext.	●	MVE1520X02S160	33.2	1.307	60.8	2.394	63.8	2.512	117.8	4.638	115	4.528	2.8	.110	16	.630	2
					3	Ext.	★	MVE1520X03S160	48.4	1.906	96.8	3.811	99.8	3.929	162.8	6.409	160	6.299	2.8	.110	16	.630	2
15.200	.5984				3	Int.	●	MVS1520X03S160	48.4	1.906	80.3	3.161	82.8	3.260	147.8	5.819	145	5.709	2.8	.110	16	.630	6
					5	Int.	●	MVS1520X05S160	78.8	3.102	126.8	4.992	130.8	5.150	195.8	7.709	193	7.598	2.8	.110	16	.630	6
					8	Int.	●	MVS1520X08S160	124.4	4.898	173.8	6.843	183.8	7.236	243.8	9.598	241	9.488	2.8	.110	16	.630	6
					2	Ext.	●	MVE1530X02S160	33.4	1.315	60.8	2.394	63.8	2.512	117.8	4.638	115	4.528	2.8	.110	16	.630	2
					3	Ext.	★	MVE1530X03S160	48.7	1.917	96.8	3.811	99.8	3.929	162.8	6.409	160	6.299	2.8	.110	16	.630	2
15.300	.6024				3	Int.	●	MVS1530X03S160	48.7	1.917	80.3	3.161	82.8	3.260	147.8	5.819	145	5.709	2.8	.110	16	.630	6
					5	Int.	●	MVS1530X05S160	79.3	3.122	126.8	4.992	130.8	5.150	195.8	7.709	193	7.598	2.8	.110	16	.630	6
					8	Int.	●	MVS1530X08S160	125.2	4.929	173.8	6.843	183.8	7.236	243.8	9.598	241	9.488	2.8	.110	16	.630	6
					2	Ext.	●	MVE1540X02S160	33.6	1.323	60.8	2.394	63.8	2.512	117.8	4.638	115	4.528	2.8	.110	16	.630	2
					3	Ext.	★	MVE1540X03S160	49.0	1.929	96.8	3.811	99.8	3.929	162.8	6.409	160	6.299	2.8	.110	16	.630	2
15.400	.6063				3	Int.	●	MVS1540X03S160	49.0	1.929	80.3	3.161	82.8	3.260	147.8	5.819	145	5.709	2.8	.110	16	.630	6
					5	Int.	●	MVS1540X05S160	79.8	3.142	126.8	4.992	130.8	5.150	195.8	7.709	193	7.598	2.8	.110	16	.630	6
					8	Int.	●	MVS1540X08S160	126.0	4.961	173.8	6.843	183.8	7.236	243.8	9.598	241	9.488	2.8	.110	16	.630	6
					2	Ext.	●	MVE1548X02S160	33.7	1.327	60.8	2.394	63.8	2.512	117.8	4.638	115	4.528	2.8	.110	16	.630	2
15.479	.6094	39/64			3	Int.	●	MVS1548X03S160	49.2	1.937	80.3	3.161	82.8	3.260	147.8	5.819	145	5.709	2.8	.110	16	.630	6
					5	Int.	●	MVS1548X05S160	80.2	3.157	126.8	4.992	130.8	5.150	195.8	7.709	193	7.598	2.8	.110	16	.630	6
					8	Int.	●	MVS1548X08S160	126.6	4.984	173.8	6.843	183.8	7.236	243.8	9.598	241	9.488	2.8	.110	16	.630	6
					2	Ext.	●	MVE1550X02S160	33.8	1.331	60.8	2.394	63.8	2.512	117.8	4.638	115	4.528	2.8	.110	16	.630	2
					3	Ext.	★	MVE1550X03S160	49.3	1.941	96.8	3.811	99.8	3.929	162.8	6.409	160	6.299	2.8	.110	16	.630	2
15.500	.6102			M18x2.5	3	Int.	●	MVS1550X03S160	49.3	1.941	80.3	3.161	82.8	3.260	147.8	5.819	145	5.709	2.8	.110	16	.630	6
					5	Int.	●	MVS1550X05S160	80.3	3.161	126.8	4.992	130.8	5.150	195.8	7.709	193	7.598	2.8	.110	16	.630	6
					8	Int.	●	MVS1550X08S160	126.8	4.992	173.8	6.843	183.8	7.236	243.8	9.598	241	9.488	2.8	.110	16	.630	6

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
15.600	.6142				2	Ext.	●	MVE1560X02S160	34.0	1.339	60.8	2.394	60.8	2.394	117.8	4.638	115	4.528	2.8	.110	16	.630	2
					3	Ext.	★	MVE1560X03S160	49.6	1.953	98.8	3.890	98.8	3.890	162.8	6.409	160	6.299	2.8	.110	16	.630	2
					3	Int.	●	MVS1560X03S160	49.6	1.953	82.8	3.260	82.8	3.260	147.8	5.819	145	5.709	2.8	.110	16	.630	6
					5	Int.	●	MVS1560X05S160	80.8	3.181	130.8	5.150	130.8	5.150	195.8	7.709	193	7.598	2.8	.110	16	.630	6
					8	Int.	●	MVS1560X08S160	127.6	5.024	178.8	7.039	183.8	7.236	243.8	9.598	241	9.488	2.8	.110	16	.630	6
15.700	.6181				2	Ext.	●	MVE1570X02S160	34.3	1.350	60.9	2.398	60.9	2.398	117.9	4.642	115	4.528	2.9	.114	16	.630	2
					3	Ext.	★	MVE1570X03S160	50.0	1.969	98.9	3.894	98.9	3.894	162.9	6.413	160	6.299	2.9	.114	16	.630	2
					3	Int.	●	MVS1570X03S160	50.0	1.969	82.9	3.264	82.9	3.264	147.9	5.823	145	5.709	2.9	.114	16	.630	6
					5	Int.	●	MVS1570X05S160	81.4	3.205	130.9	5.154	130.9	5.154	195.9	7.713	193	7.598	2.9	.114	16	.630	6
					8	Int.	●	MVS1570X08S160	128.5	5.059	178.9	7.043	183.9	7.240	243.9	9.602	241	9.488	2.9	.114	16	.630	6
15.800	.6220				2	Ext.	●	MVE1580X02S160	34.5	1.358	60.9	2.398	60.9	2.398	117.9	4.642	115	4.528	2.9	.114	16	.630	2
					3	Ext.	★	MVE1580X03S160	50.3	1.980	98.9	3.894	98.9	3.894	162.9	6.413	160	6.299	2.9	.114	16	.630	2
					3	Int.	●	MVS1580X03S160	50.3	1.980	82.9	3.264	82.9	3.264	147.9	5.823	145	5.709	2.9	.114	16	.630	6
					5	Int.	●	MVS1580X05S160	81.9	3.224	130.9	5.154	130.9	5.154	195.9	7.713	193	7.598	2.9	.114	16	.630	6
					8	Int.	●	MVS1580X08S160	129.3	5.091	178.9	7.043	183.9	7.240	243.9	9.602	241	9.488	2.9	.114	16	.630	6
15.875	.6250	5/8			2	Ext.	●	MVE1588X02S160	34.6	1.362	60.9	2.398	60.9	2.398	117.9	4.642	115	4.528	2.9	.114	16	.630	2
					3	Int.	●	MVS1588X03S160	50.5	1.988	82.9	3.264	82.9	3.264	147.9	5.823	145	5.709	2.9	.114	16	.630	6
					5	Int.	●	MVS1588X05S160	82.2	3.236	130.9	5.154	130.9	5.154	195.9	7.713	193	7.598	2.9	.114	16	.630	6
					8	Int.	●	MVS1588X08S160	129.9	5.114	178.9	7.043	183.9	7.240	243.9	9.602	241	9.488	2.9	.114	16	.630	6
15.900	.6260				2	Ext.	●	MVE1590X02S160	34.7	1.366	60.9	2.398	60.9	2.398	117.9	4.642	115	4.528	2.9	.114	16	.630	2
					3	Ext.	★	MVE1590X03S160	50.6	1.992	98.9	3.894	98.9	3.894	162.9	6.413	160	6.299	2.9	.114	16	.630	2
					3	Int.	●	MVS1590X03S160	50.6	1.992	82.9	3.264	82.9	3.264	147.9	5.823	145	5.709	2.9	.114	16	.630	6
					5	Int.	●	MVS1590X05S160	82.4	3.244	130.9	5.154	130.9	5.154	195.9	7.713	193	7.598	2.9	.114	16	.630	6
					8	Int.	●	MVS1590X08S160	130.1	5.122	178.9	7.043	183.9	7.240	243.9	9.602	241	9.488	2.9	.114	16	.630	6
16.000	.6299				2	Ext.	●	MVE1600X02S160	34.9	1.374	60.9	2.398	60.9	2.398	117.9	4.642	115	4.528	2.9	.114	16	.630	2
					3	Ext.	★	MVE1600X03S160	50.9	2.004	98.9	3.894	98.9	3.894	162.9	6.413	160	6.299	2.9	.114	16	.630	2
					3	Int.	●	MVS1600X03S160	50.9	2.004	82.9	3.264	82.9	3.264	147.9	5.823	145	5.709	2.9	.114	16	.630	6
					5	Int.	●	MVS1600X05S160	82.9	3.264	130.9	5.154	130.9	5.154	195.9	7.713	193	7.598	2.9	.114	16	.630	6
					8	Int.	●	MVS1600X08S160	130.9	5.154	178.9	7.043	183.9	7.240	243.9	9.602	241	9.488	2.9	.114	16	.630	6
16.100	.6339				2	Ext.	□	MVE1610X02S170	35.1	1.382	62.9	2.476	62.9	2.476	121.9	4.799	119	4.685	2.9	.114	17	.669	2
					2	Ext.	□	MVE1610X02S180	35.1	1.382	62.9	2.476	62.9	2.476	121.9	4.799	119	4.685	2.9	.114	18	.709	2
					3	Ext.	□	MVE1610X03S170	51.2	2.016	104.9	4.130	104.9	4.130	169.9	6.689	167	6.575	2.9	.114	17	.669	2
					3	Ext.	□	MVE1610X03S180	51.2	2.016	104.9	4.130	104.9	4.130	169.9	6.689	167	6.575	2.9	.114	18	.709	2
					3	Int.	□	MVS1610X03S170	51.2	2.016	85.4	3.362	87.9	3.461	152.9	6.020	150	5.906	2.9	.114	17	.669	6
					3	Int.	□	MVS1610X03S180	51.2	2.016	85.4	3.362	87.9	3.461	152.9	6.020	150	5.906	2.9	.114	18	.709	6
					5	Int.	□	MVS1610X05S170	83.4	3.283	134.9	5.311	138.9	5.469	203.9	8.028	201	7.913	2.9	.114	17	.669	6
					5	Int.	□	MVS1610X05S180	83.4	3.283	134.9	5.311	138.9	5.469	203.9	8.028	201	7.913	2.9	.114	18	.709	6
16.200	.6378				2	Ext.	★	MVE1620X02S170	35.3	1.390	62.9	2.476	62.9	2.476	121.9	4.799	119	4.685	2.9	.114	17	.669	2
					2	Ext.	□	MVE1620X02S180	35.3	1.390	62.9	2.476	62.9	2.476	121.9	4.799	119	4.685	2.9	.114	18	.709	2
					3	Ext.	□	MVE1620X03S170	51.5	2.028	104.9	4.130	104.9	4.130	169.9	6.689	167	6.575	2.9	.114	17	.669	2
					3	Ext.	□	MVE1620X03S180	51.5	2.028	104.9	4.130	104.9	4.130	169.9	6.689	167	6.575	2.9	.114	18	.709	2
					3	Int.	□	MVS1620X03S170	51.5	2.028	85.4	3.362	87.9	3.461	152.9	6.020	150	5.906	2.9	.114	17	.669	6
					3	Int.	□	MVS1620X03S180	51.5	2.028	85.4	3.362	87.9	3.461	152.9	6.020	150	5.906	2.9	.114	18	.709	6
					5	Int.	□	MVS1620X05S170	83.9	3.303	134.9	5.311	138.9	5.469	203.9	8.028	201	7.913	2.9	.114	17	.669	6
					5	Int.	□	MVS1620X05S180	83.9	3.303	134.9	5.311	138.9	5.469	203.9	8.028	201	7.913	2.9	.114	18	.709	6
16.272	.6407	41/64			2	Ext.	●	MVE1627X02S180	35.5	1.398	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	18	.709	2
					3	Int.	●	MVS1627X03S180	51.7	2.035	85.5	3.366	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	18	.709	6
					5	Int.	●	MVS1627X05S180	84.3	3.319	135.0	5.315	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	18	.709	6

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
16.300	.6417				2	Ext.	★	MVE1630X02S170	35.6	1.402	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	17	.669	2
					2	Ext.	□	MVE1630X02S180	35.6	1.402	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	18	.709	2
					3	Ext.	□	MVE1630X03S170	51.9	2.043	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	17	.669	2
					3	Ext.	□	MVE1630X03S180	51.9	2.043	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	18	.709	2
					3	Int.	□	MVS1630X03S170	51.9	2.043	85.5	3.366	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	17	.669	6
					3	Int.	□	MVS1630X03S180	51.9	2.043	85.5	3.366	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	18	.709	6
					5	Int.	□	MVS1630X05S170	84.5	3.327	135.0	5.315	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	17	.669	6
					5	Int.	□	MVS1630X05S180	84.5	3.327	135.0	5.315	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	18	.709	6
16.400	.6457				2	Ext.	□	MVE1640X02S170	35.8	1.409	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	17	.669	2
					2	Ext.	□	MVE1640X02S180	35.8	1.409	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	18	.709	2
					3	Ext.	□	MVE1640X03S170	52.2	2.055	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	17	.669	2
					3	Ext.	□	MVE1640X03S180	52.2	2.055	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	18	.709	2
					3	Int.	□	MVS1640X03S170	52.2	2.055	85.5	3.366	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	17	.669	6
					3	Int.	□	MVS1640X03S180	52.2	2.055	85.5	3.366	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	18	.709	6
					5	Int.	□	MVS1640X05S170	85.0	3.346	135.0	5.315	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	17	.669	6
					5	Int.	□	MVS1640X05S180	85.0	3.346	135.0	5.315	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	18	.709	6
16.500	.6496			M18x1.5	2	Ext.	★	MVE1650X02S170	36.0	1.417	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	17	.669	2
					2	Ext.	●	MVE1650X02S180	36.0	1.417	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	18	.709	2
					3	Ext.	★	MVE1650X03S170	52.5	2.067	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	17	.669	2
					3	Ext.	□	MVE1650X03S180	52.5	2.067	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	18	.709	2
					3	Int.	★	MVS1650X03S170	52.5	2.067	85.5	3.366	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	17	.669	6
					3	Int.	●	MVS1650X03S180	52.5	2.067	85.5	3.366	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	18	.709	6
					5	Int.	★	MVS1650X05S170	85.5	3.366	135.0	5.315	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	17	.669	6
					5	Int.	●	MVS1650X05S180	85.5	3.366	135.0	5.315	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	18	.709	6
16.600	.6535				2	Ext.	□	MVE1660X02S170	36.2	1.425	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	17	.669	2
					2	Ext.	□	MVE1660X02S180	36.2	1.425	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	18	.709	2
					3	Ext.	□	MVE1660X03S170	52.8	2.079	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	17	.669	2
					3	Ext.	□	MVE1660X03S180	52.8	2.079	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	18	.709	2
					3	Int.	□	MVS1660X03S170	52.8	2.079	88.0	3.465	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	17	.669	6
					3	Int.	□	MVS1660X03S180	52.8	2.079	88.0	3.465	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	18	.709	6
					5	Int.	□	MVS1660X05S170	86.0	3.386	139.0	5.472	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	17	.669	6
					5	Int.	□	MVS1660X05S180	86.0	3.386	139.0	5.472	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	18	.709	6
16.669	.6563	21/32		3/4-10	2	Ext.	●	MVE1667X02S180	36.3	1.429	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	18	.709	2
					3	Int.	●	MVS1667X03S180	53.0	2.087	88.0	3.465	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	18	.709	6
					5	Int.	●	MVS1667X05S180	86.4	3.402	139.0	5.472	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	18	.709	6
16.700	.6575				2	Ext.	□	MVE1670X02S170	36.4	1.433	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	17	.669	2
					2	Ext.	□	MVE1670X02S180	36.4	1.433	63.0	2.480	63.0	2.480	122.0	4.803	119	4.685	3.0	.118	18	.709	2
					3	Ext.	□	MVE1670X03S170	53.1	2.091	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	17	.669	2
					3	Ext.	□	MVE1670X03S180	53.1	2.091	105.0	4.134	105.0	4.134	170.0	6.693	167	6.575	3.0	.118	18	.709	2
					3	Int.	□	MVS1670X03S170	53.1	2.091	88.0	3.465	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	17	.669	6
					3	Int.	□	MVS1670X03S180	53.1	2.091	88.0	3.465	88.0	3.465	153.0	6.024	150	5.906	3.0	.118	18	.709	6
					5	Int.	□	MVS1670X05S170	86.5	3.406	139.0	5.472	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	17	.669	6
					5	Int.	□	MVS1670X05S180	86.5	3.406	139.0	5.472	139.0	5.472	204.0	8.031	201	7.913	3.0	.118	18	.709	6
16.800	.6614				2	Ext.	□	MVE1680X02S170	36.7	1.445	63.1	2.484	63.1	2.484	122.1	4.807	119	4.685	3.1	.122	17	.669	2
					2	Ext.	□	MVE1680X02S180	36.7	1.445	63.1	2.484	63.1	2.484	122.1	4.807	119	4.685	3.1	.122	18	.709	2
					3	Ext.	□	MVE1680X03S170	53.5	2.106	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	17	.669	2
					3	Ext.	□	MVE1680X03S180	53.5	2.106	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	18	.709	2
					3	Int.	□	MVS1680X03S170	53.5	2.106	88.1	3.469	88.1	3.469	153.1	6.028	150	5.906	3.1	.122	17	.669	6
					3	Int.	□	MVS1680X03S180	53.5	2.106	88.1	3.469	88.1	3.469	153.1	6.028	150	5.906	3.1	.122	18	.709	6
					5	Int.	□	MVS1680X05S170	87.1	3.429	139.1	5.476	139.1	5.476	204.1	8.035	201	7.913	3.1	.122	17	.669	6
					5	Int.	□	MVS1680X05S180	87.1	3.429	139.1	5.476	139.1	5.476	204.1	8.035	201	7.913	3.1	.122	18	.709	6

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
16.900	.6654				2	Ext.	□	MVE1690X02S170	36.9	1.453	63.1	2.484	63.1	2.484	122.1	4.807	119	4.685	3.1	.122	17	.669	2
					2	Ext.	□	MVE1690X02S180	36.9	1.453	63.1	2.484	63.1	2.484	122.1	4.807	119	4.685	3.1	.122	18	.709	2
					3	Ext.	□	MVE1690X03S170	53.8	2.118	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	17	.669	2
					3	Ext.	□	MVE1690X03S180	53.8	2.118	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	18	.709	2
					3	Int.	□	MVS1690X03S170	53.8	2.118	88.1	3.469	88.1	3.469	153.1	6.028	150	5.906	3.1	.122	17	.669	6
					3	Int.	□	MVS1690X03S180	53.8	2.118	88.1	3.469	88.1	3.469	153.1	6.028	150	5.906	3.1	.122	18	.709	6
					5	Int.	□	MVS1690X05S170	87.6	3.449	139.1	5.476	139.1	5.476	204.1	8.035	201	7.913	3.1	.122	17	.669	6
					5	Int.	□	MVS1690X05S180	87.6	3.449	139.1	5.476	139.1	5.476	204.1	8.035	201	7.913	3.1	.122	18	.709	6
17.000	.6693		Tube Sheet		2	Ext.	★	MVE1700X02S170	37.1	1.461	63.1	2.484	63.1	2.484	122.1	4.807	119	4.685	3.1	.122	17	.669	2
					2	Ext.	●	MVE1700X02S180	37.1	1.461	63.1	2.484	63.1	2.484	122.1	4.807	119	4.685	3.1	.122	18	.709	2
					3	Ext.	★	MVE1700X03S170	54.1	2.130	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	17	.669	2
					3	Ext.	□	MVE1700X03S180	54.1	2.130	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	18	.709	2
					3	Int.	★	MVS1700X03S170	54.1	2.130	88.1	3.469	88.1	3.469	153.1	6.028	150	5.906	3.1	.122	17	.669	6
					3	Int.	●	MVS1700X03S180	54.1	2.130	88.1	3.469	88.1	3.469	153.1	6.028	150	5.906	3.1	.122	18	.709	6
					5	Int.	★	MVS1700X05S170	88.1	3.469	139.1	5.476	139.1	5.476	204.1	8.035	201	7.913	3.1	.122	17	.669	6
					5	Int.	●	MVS1700X05S180	88.1	3.469	139.1	5.476	139.1	5.476	204.1	8.035	201	7.913	3.1	.122	18	.709	6
17.066	.6719	43/64			2	Ext.	●	MVE1707X02S180	37.2	1.465	65.1	2.563	65.1	2.563	126.1	4.965	123	4.843	3.1	.122	18	.709	2
					3	Int.	●	MVS1707X03S180	54.3	2.138	90.6	3.567	93.1	3.665	158.1	6.224	155	6.102	3.1	.122	18	.709	6
					5	Int.	●	MVS1707X05S180	88.4	3.480	143.1	5.634	147.1	5.791	212.1	8.350	209	8.228	3.1	.122	18	.709	6
17.100	.6732				2	Ext.	□	MVE1710X02S180	37.3	1.469	65.1	2.563	65.1	2.563	126.1	4.965	123	4.843	3.1	.122	18	.709	2
					3	Ext.	□	MVE1710X03S180	54.4	2.142	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	18	.709	2
					3	Int.	□	MVS1710X03S180	54.4	2.142	90.6	3.567	93.1	3.665	158.1	6.224	155	6.102	3.1	.122	18	.709	6
					5	Int.	□	MVS1710X05S180	88.6	3.488	143.1	5.634	147.1	5.791	212.1	8.350	209	8.228	3.1	.122	18	.709	6
17.200	.6772				2	Ext.	□	MVE1720X02S180	37.5	1.476	65.1	2.563	65.1	2.563	126.1	4.965	123	4.843	3.1	.122	18	.709	2
					3	Ext.	□	MVE1720X03S180	54.7	2.154	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	18	.709	2
					3	Int.	□	MVS1720X03S180	54.7	2.154	90.6	3.567	93.1	3.665	158.1	6.224	155	6.102	3.1	.122	18	.709	6
					5	Int.	□	MVS1720X05S180	89.1	3.508	143.1	5.634	147.1	5.791	212.1	8.350	209	8.228	3.1	.122	18	.709	6
17.300	.6811				2	Ext.	□	MVE1730X02S180	37.7	1.484	65.1	2.563	65.1	2.563	126.1	4.965	123	4.843	3.1	.122	18	.709	2
					3	Ext.	□	MVE1730X03S180	55.0	2.165	105.1	4.138	105.1	4.138	170.1	6.697	167	6.575	3.1	.122	18	.709	2
					3	Int.	□	MVS1730X03S180	55.0	2.165	90.6	3.567	93.1	3.665	158.1	6.224	155	6.102	3.1	.122	18	.709	6
					5	Int.	□	MVS1730X05S180	89.6	3.528	143.1	5.634	147.1	5.791	212.1	8.350	209	8.228	3.1	.122	18	.709	6
17.400	.6850				2	Ext.	□	MVE1740X02S180	38.0	1.496	65.2	2.567	65.2	2.567	126.2	4.969	123	4.843	3.2	.126	18	.709	2
					3	Ext.	□	MVE1740X03S180	55.4	2.181	105.2	4.142	105.2	4.142	170.2	6.701	167	6.575	3.2	.126	18	.709	2
					3	Int.	□	MVS1740X03S180	55.4	2.181	90.7	3.571	93.2	3.669	158.2	6.228	155	6.102	3.2	.126	18	.709	6
					5	Int.	□	MVS1740X05S180	90.2	3.551	143.2	5.638	147.2	5.795	212.2	8.354	209	8.228	3.2	.126	18	.709	6
17.463	.6875	11/16		3/4-16	2	Ext.	●	MVE1746X02S180	38.1	1.500	65.2	2.567	65.2	2.567	126.2	4.969	123	4.843	3.2	.126	18	.709	2
					3	Int.	●	MVS1746X03S180	55.5	2.185	90.7	3.571	93.2	3.669	158.2	6.228	155	6.102	3.2	.126	18	.709	6
					5	Int.	●	MVS1746X05S180	90.5	3.563	143.2	5.638	147.2	5.795	212.2	8.354	209	8.228	3.2	.126	18	.709	6
17.500	.6890			M20x2.5	2	Ext.	●	MVE1750X02S180	38.2	1.504	65.2	2.567	65.2	2.567	126.2	4.969	123	4.843	3.2	.126	18	.709	2
					3	Ext.	★	MVE1750X03S180	55.7	2.193	105.2	4.142	105.2	4.142	170.2	6.701	167	6.575	3.2	.126	18	.709	2
					3	Int.	●	MVS1750X03S180	55.7	2.193	90.7	3.571	93.2	3.669	158.2	6.228	155	6.102	3.2	.126	18	.709	6
					5	Int.	●	MVS1750X05S180	90.7	3.571	143.2	5.638	147.2	5.795	212.2	8.354	209	8.228	3.2	.126	18	.709	6
17.600	.6929				2	Ext.	□	MVE1760X02S180	38.4	1.512	65.2	2.567	65.2	2.567	126.2	4.969	123	4.843	3.2	.126	18	.709	2
					3	Ext.	□	MVE1760X03S180	56.0	2.205	105.2	4.142	105.2	4.142	170.2	6.701	167	6.575	3.2	.126	18	.709	2
					3	Int.	□	MVS1760X03S180	56.0	2.205	93.2	3.669	93.2	3.669	158.2	6.228	155	6.102	3.2	.126	18	.709	6
					5	Int.	□	MVS1760X05S180	91.2	3.591	147.2	5.795	147.2	5.795	212.2	8.354	209	8.228	3.2	.126	18	.709	6
17.700	.6969				2	Ext.	□	MVE1770X02S180	38.6	1.520	65.2	2.567	65.2	2.567	126.2	4.969	123	4.843	3.2	.126	18	.709	2
					3	Ext.	□	MVE1770X03S180	56.3	2.217	105.2	4.142	105.2	4.142	170.2	6.701	167	6.575	3.2	.126	18	.709	2
					3	Int.	□	MVS1770X03S180	56.3	2.217	93.2	3.669	93.2	3.669	158.2	6.228	155	6.102	3.2	.126	18	.709	6
					5	Int.	□	MVS1770X05S180	91.7	3.610	147.2	5.795	147.2	5.795	212.2	8.354	209	8.228	3.2	.126	18	.709	6

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
17.800	.7008				2	Ext.	★	MVE1780X02S180	38.8	1.528	65.2	2.567	65.2	2.567	126.2	4.969	123	4.843	3.2	.126	18	.709	2
					3	Ext.	□	MVE1780X03S180	56.6	2.228	105.2	4.142	105.2	4.142	170.2	6.701	167	6.575	3.2	.126	18	.709	2
					3	Int.	□	MVS1780X03S180	56.6	2.228	93.2	3.669	93.2	3.669	158.2	6.228	155	6.102	3.2	.126	18	.709	6
					5	Int.	□	MVS1780X05S180	92.2	3.630	147.2	5.795	147.2	5.795	212.2	8.354	209	8.228	3.2	.126	18	.709	6
17.860	.7032	45/64			2	Ext.	●	MVE1786X02S180	38.9	1.531	65.3	2.571	65.3	2.571	126.3	4.972	123	4.843	3.3	.130	18	.709	2
					3	Int.	●	MVS1786X03S180	56.8	2.236	93.3	3.673	93.3	3.673	158.3	6.232	155	6.102	3.3	.130	18	.709	6
					5	Int.	●	MVS1786X05S180	92.5	3.642	147.3	5.799	147.3	5.799	212.3	8.358	209	8.228	3.3	.130	18	.709	6
17.900	.7047				2	Ext.	□	MVE1790X02S180	39.1	1.539	65.3	2.571	65.3	2.571	126.3	4.972	123	4.843	3.3	.130	18	.709	2
					3	Ext.	□	MVE1790X03S180	57.0	2.244	105.3	4.146	105.3	4.146	170.3	6.705	167	6.575	3.3	.130	18	.709	2
					3	Int.	□	MVS1790X03S180	57.0	2.244	93.3	3.673	93.3	3.673	158.3	6.232	155	6.102	3.3	.130	18	.709	6
					5	Int.	□	MVS1790X05S180	92.8	3.654	147.3	5.799	147.3	5.799	212.3	8.358	209	8.228	3.3	.130	18	.709	6
18.000	.7087				2	Ext.	●	MVE1800X02S180	39.3	1.547	65.3	2.571	65.3	2.571	126.3	4.972	123	4.843	3.3	.130	18	.709	2
					3	Ext.	★	MVE1800X03S180	57.3	2.256	105.3	4.146	105.3	4.146	170.3	6.705	167	6.575	3.3	.130	18	.709	2
					3	Int.	●	MVS1800X03S180	57.3	2.256	93.3	3.673	93.3	3.673	158.3	6.232	155	6.102	3.3	.130	18	.709	6
					5	Int.	●	MVS1800X05S180	93.3	3.673	147.3	5.799	147.3	5.799	212.3	8.358	209	8.228	3.3	.130	18	.709	6
18.100	.7126				2	Ext.	□	MVE1810X02S190	39.5	1.555	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	19	.748	2
					2	Ext.	□	MVE1810X02S200	39.5	1.555	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	20	.787	2
					3	Ext.	□	MVE1810X03S190	57.6	2.268	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	19	.748	2
					3	Ext.	□	MVE1810X03S200	57.6	2.268	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	20	.787	2
					3	Int.	□	MVS1810X03S190	57.6	2.268	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	19	.748	6
					3	Int.	□	MVS1810X03S200	57.6	2.268	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	20	.787	6
					5	Int.	□	MVS1810X05S190	93.8	3.693	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	19	.748	6
					5	Int.	□	MVS1810X05S200	93.8	3.693	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	20	.787	6
18.200	.7165				2	Ext.	□	MVE1820X02S190	39.7	1.563	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	19	.748	2
					2	Ext.	□	MVE1820X02S200	39.7	1.563	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	20	.787	2
					3	Ext.	□	MVE1820X03S190	57.9	2.280	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	19	.748	2
					3	Ext.	□	MVE1820X03S200	57.9	2.280	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	20	.787	2
					3	Int.	□	MVS1820X03S190	57.9	2.280	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	19	.748	6
					3	Int.	□	MVS1820X03S200	57.9	2.280	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	20	.787	6
					5	Int.	□	MVS1820X05S190	94.3	3.713	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	19	.748	6
					5	Int.	□	MVS1820X05S200	94.3	3.713	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	20	.787	6
18.257	.7188	23/32			2	Ext.	●	MVE1826X02S200	39.8	1.567	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	20	.787	2
					3	Int.	●	MVS1826X03S200	58.1	2.287	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	20	.787	6
					5	Int.	●	MVS1826X05S200	94.6	3.724	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	20	.787	6
18.300	.7205				2	Ext.	□	MVE1830X02S190	39.9	1.571	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	19	.748	2
					2	Ext.	□	MVE1830X02S200	39.9	1.571	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	20	.787	2
					3	Ext.	□	MVE1830X03S190	58.2	2.291	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	19	.748	2
					3	Ext.	□	MVE1830X03S200	58.2	2.291	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	20	.787	2
					3	Int.	□	MVS1830X03S190	58.2	2.291	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	19	.748	6
					3	Int.	□	MVS1830X03S200	58.2	2.291	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	20	.787	6
					5	Int.	□	MVS1830X05S190	94.8	3.732	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	19	.748	6
					5	Int.	□	MVS1830X05S200	94.8	3.732	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	20	.787	6
18.400	.7244				2	Ext.	□	MVE1840X02S190	40.1	1.579	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	19	.748	2
					2	Ext.	□	MVE1840X02S200	40.1	1.579	67.3	2.650	67.3	2.650	130.3	5.130	127	5.000	3.3	.130	20	.787	2
					3	Ext.	□	MVE1840X03S190	58.5	2.303	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	19	.748	2
					3	Ext.	□	MVE1840X03S200	58.5	2.303	117.3	4.618	117.3	4.618	182.3	7.177	179	7.047	3.3	.130	20	.787	2
					3	Int.	□	MVS1840X03S190	58.5	2.303	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	19	.748	6
					3	Int.	□	MVS1840X03S200	58.5	2.303	95.8	3.772	98.3	3.870	163.3	6.429	160	6.299	3.3	.130	20	.787	6
					5	Int.	□	MVS1840X05S190	95.3	3.752	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	19	.748	6
					5	Int.	□	MVS1840X05S200	95.3	3.752	151.3	5.957	155.3	6.114	220.3	8.673	217	8.543	3.3	.130	20	.787	6

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
18.500	.7283			M20x1.5	2	Ext.	★	MVE1850X02S190	40.4	1.591	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	19	.748	2
					2	Ext.	●	MVE1850X02S200	40.4	1.591	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	20	.787	2
					3	Ext.	★	MVE1850X03S190	58.9	2.319	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	19	.748	2
					3	Ext.	□	MVE1850X03S200	58.9	2.319	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	20	.787	2
					3	Int.	★	MVS1850X03S190	58.9	2.319	95.9	3.776	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	19	.748	6
					3	Int.	●	MVS1850X03S200	58.9	2.319	95.9	3.776	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	20	.787	6
					5	Int.	★	MVS1850X05S190	95.9	3.776	151.4	5.961	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	19	.748	6
					5	Int.	●	MVS1850X05S200	95.9	3.776	151.4	5.961	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	20	.787	6
18.600	.7323				2	Ext.	□	MVE1860X02S190	40.6	1.598	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	19	.748	2
					2	Ext.	□	MVE1860X02S200	40.6	1.598	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	20	.787	2
					3	Ext.	□	MVE1860X03S190	59.2	2.331	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	19	.748	2
					3	Ext.	□	MVE1860X03S200	59.2	2.331	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	20	.787	2
					3	Int.	□	MVS1860X03S190	59.2	2.331	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	19	.748	6
					3	Int.	□	MVS1860X03S200	59.2	2.331	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	20	.787	6
					5	Int.	□	MVS1860X05S190	96.4	3.795	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	19	.748	6
					5	Int.	□	MVS1860X05S200	96.4	3.795	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	20	.787	6
18.654	.7344	47/64			2	Ext.	●	MVE1865X02S200	40.7	1.602	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	20	.787	2
					3	Int.	●	MVS1865X03S200	59.3	2.335	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	20	.787	6
					5	Int.	●	MVS1865X05S200	96.6	3.803	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	20	.787	6
18.700	.7362				2	Ext.	□	MVE1870X02S190	40.8	1.606	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	19	.748	2
					2	Ext.	□	MVE1870X02S200	40.8	1.606	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	20	.787	2
					3	Ext.	□	MVE1870X03S190	59.5	2.343	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	19	.748	2
					3	Ext.	□	MVE1870X03S200	59.5	2.343	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	20	.787	2
					3	Int.	□	MVS1870X03S190	59.5	2.343	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	19	.748	6
					3	Int.	□	MVS1870X03S200	59.5	2.343	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	20	.787	6
					5	Int.	□	MVS1870X05S190	96.9	3.815	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	19	.748	6
					5	Int.	□	MVS1870X05S200	96.9	3.815	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	20	.787	6
18.800	.7402				2	Ext.	□	MVE1880X02S190	41.0	1.614	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	19	.748	2
					2	Ext.	□	MVE1880X02S200	41.0	1.614	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	20	.787	2
					3	Ext.	□	MVE1880X03S190	59.8	2.354	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	19	.748	2
					3	Ext.	□	MVE1880X03S200	59.8	2.354	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	20	.787	2
					3	Int.	□	MVS1880X03S190	59.8	2.354	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	19	.748	6
					3	Int.	□	MVS1880X03S200	59.8	2.354	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	20	.787	6
					5	Int.	□	MVS1880X05S190	97.4	3.835	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	19	.748	6
					5	Int.	□	MVS1880X05S200	97.4	3.835	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	20	.787	6
18.900	.7441				2	Ext.	□	MVE1890X02S190	41.2	1.622	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	19	.748	2
					2	Ext.	□	MVE1890X02S200	41.2	1.622	67.4	2.654	67.4	2.654	130.4	5.134	127	5.000	3.4	.134	20	.787	2
					3	Ext.	□	MVE1890X03S190	60.1	2.366	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	19	.748	2
					3	Ext.	□	MVE1890X03S200	60.1	2.366	117.4	4.622	117.4	4.622	182.4	7.181	179	7.047	3.4	.134	20	.787	2
					3	Int.	□	MVS1890X03S190	60.1	2.366	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	19	.748	6
					3	Int.	□	MVS1890X03S200	60.1	2.366	98.4	3.874	98.4	3.874	163.4	6.433	160	6.299	3.4	.134	20	.787	6
					5	Int.	□	MVS1890X05S190	97.9	3.854	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	19	.748	6
					5	Int.	□	MVS1890X05S200	97.9	3.854	155.4	6.118	155.4	6.118	220.4	8.677	217	8.543	3.4	.134	20	.787	6
19.000	.7480				2	Ext.	★	MVE1900X02S190	41.5	1.634	67.5	2.657	67.5	2.657	130.5	5.138	127	5.000	3.5	.138	19	.748	2
					2	Ext.	●	MVE1900X02S200	41.5	1.634	67.5	2.657	67.5	2.657	130.5	5.138	127	5.000	3.5	.138	20	.787	2
					3	Ext.	★	MVE1900X03S190	60.5	2.382	117.5	4.626	117.5	4.626	182.5	7.185	179	7.047	3.5	.138	19	.748	2
					3	Ext.	□	MVE1900X03S200	60.5	2.382	117.5	4.626	117.5	4.626	182.5	7.185	179	7.047	3.5	.138	20	.787	2
					3	Int.	★	MVS1900X03S190	60.5	2.382	98.5	3.878	98.5	3.878	163.5	6.437	160	6.299	3.5	.138	19	.748	6
					3	Int.	●	MVS1900X03S200	60.5	2.382	98.5	3.878	98.5	3.878	163.5	6.437	160	6.299	3.5	.138	20	.787	6
					5	Int.	★	MVS1900X05S190	98.5	3.878	155.5	6.122	155.5	6.122	220.5	8.681	217	8.543	3.5	.138	19	.748	6
					5	Int.	●	MVS1900X05S200	98.5	3.878	155.5	6.122	155.5	6.122	220.5	8.681	217	8.543	3.5	.138	20	.787	6

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L083
CUTTING CONDITIONS ➤ L085

MVE/MVS

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
19.050	.7500	3/4			2	Ext.	●	MVE1905X02S200	41.5	1.634	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Int.	●	MVS1905X03S200	60.6	2.386	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	●	MVS1905X05S200	98.7	3.886	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.100	.7520				2	Ext.	□	MVE1910X02S200	41.7	1.642	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Ext.	□	MVE1910X03S200	60.8	2.394	117.5	4.626	117.5	4.626	182.5	7.185	179	7.047	3.5	.138	20	.787	2
					3	Int.	□	MVS1910X03S200	60.8	2.394	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	□	MVS1910X05S200	99.0	3.898	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.200	.7559				2	Ext.	□	MVE1920X02S200	41.9	1.650	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Ext.	□	MVE1920X03S200	61.1	2.406	117.5	4.626	117.5	4.626	182.5	7.185	179	7.047	3.5	.138	20	.787	2
					3	Int.	□	MVS1920X03S200	61.1	2.406	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	□	MVS1920X05S200	99.5	3.917	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.254	.7580		Tube Sheet		2	Ext.	●	MVE1925X02S200	42.0	1.654	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Int.	●	MVS1925X03S200	61.2	2.409	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	●	MVS1925X05S200	99.7	3.925	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.300	.7598				2	Ext.	□	MVE1930X02S200	42.1	1.657	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Ext.	□	MVE1930X03S200	61.4	2.417	117.5	4.626	117.5	4.626	182.5	7.185	179	7.047	3.5	.138	20	.787	2
					3	Int.	□	MVS1930X03S200	61.4	2.417	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	□	MVS1930X05S200	100.0	3.937	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.400	.7638				2	Ext.	□	MVE1940X02S200	42.3	1.665	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Ext.	□	MVE1940X03S200	61.7	2.429	117.5	4.626	117.5	4.626	182.5	7.185	179	7.047	3.5	.138	20	.787	2
					3	Int.	□	MVS1940X03S200	61.7	2.429	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	□	MVS1940X05S200	100.5	3.957	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.447	.7657	49/64		7/8-9	2	Ext.	●	MVE1945X02S200	42.4	1.669	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Int.	●	MVS1945X03S200	61.8	2.433	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	●	MVS1945X05S200	100.7	3.965	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.500	.7677			M22x2.5	2	Ext.	●	MVE1950X02S200	42.5	1.673	69.5	2.736	69.5	2.736	134.5	5.295	131	5.157	3.5	.138	20	.787	2
					3	Ext.	★	MVE1950X03S200	62.0	2.441	117.5	4.626	117.5	4.626	182.5	7.185	179	7.047	3.5	.138	20	.787	2
					3	Int.	●	MVS1950X03S200	62.0	2.441	101.0	3.976	103.5	4.075	168.5	6.634	165	6.496	3.5	.138	20	.787	6
					5	Int.	●	MVS1950X05S200	101.0	3.976	159.5	6.280	163.5	6.437	228.5	8.996	225	8.858	3.5	.138	20	.787	6
19.600	.7717				2	Ext.	□	MVE1960X02S200	42.8	1.685	69.6	2.740	69.6	2.740	134.6	5.299	131	5.157	3.6	.142	20	.787	2
					3	Ext.	□	MVE1960X03S200	62.4	2.457	117.6	4.630	117.6	4.630	182.6	7.189	179	7.047	3.6	.142	20	.787	2
					3	Int.	□	MVS1960X03S200	62.4	2.457	103.6	4.079	103.6	4.079	168.6	6.638	165	6.496	3.6	.142	20	.787	6
					5	Int.	□	MVS1960X05S200	101.6	4.000	163.6	6.441	163.6	6.441	228.6	9.000	225	8.858	3.6	.142	20	.787	6
19.700	.7756				2	Ext.	□	MVE1970X02S200	43.0	1.693	69.6	2.740	69.6	2.740	134.6	5.299	131	5.157	3.6	.142	20	.787	2
					3	Ext.	□	MVE1970X03S200	62.7	2.469	117.6	4.630	117.6	4.630	182.6	7.189	179	7.047	3.6	.142	20	.787	2
					3	Int.	□	MVS1970X03S200	62.7	2.469	103.6	4.079	103.6	4.079	168.6	6.638	165	6.496	3.6	.142	20	.787	6
					5	Int.	□	MVS1970X05S200	102.1	4.020	163.6	6.441	163.6	6.441	228.6	9.000	225	8.858	3.6	.142	20	.787	6
19.800	.7795				2	Ext.	□	MVE1980X02S200	43.2	1.701	69.6	2.740	69.6	2.740	134.6	5.299	131	5.157	3.6	.142	20	.787	2
					3	Ext.	□	MVE1980X03S200	63.0	2.480	117.6	4.630	117.6	4.630	182.6	7.189	179	7.047	3.6	.142	20	.787	2
					3	Int.	□	MVS1980X03S200	63.0	2.480	103.6	4.079	103.6	4.079	168.6	6.638	165	6.496	3.6	.142	20	.787	6
					5	Int.	□	MVS1980X05S200	102.6	4.039	163.6	6.441	163.6	6.441	228.6	9.000	225	8.858	3.6	.142	20	.787	6
19.844	.7813	25/32			2	Ext.	●	MVE1984X02S200	43.3	1.705	69.6	2.740	69.6	2.740	134.6	5.299	131	5.157	3.6	.142	20	.787	2
					3	Int.	●	MVS1984X03S200	63.1	2.484	103.6	4.079	103.6	4.079	168.6	6.638	165	6.496	3.6	.142	20	.787	6
					5	Int.	●	MVS1984X05S200	102.8	4.047	163.6	6.441	163.6	6.441	228.6	9.000	225	8.858	3.6	.142	20	.787	6
19.900	.7835				2	Ext.	□	MVE1990X02S200	43.4	1.709	69.6	2.740	69.6	2.740	134.6	5.299	131	5.157	3.6	.142	20	.787	2
					3	Ext.	□	MVE1990X03S200	63.3	2.492	117.6	4.630	117.6	4.630	182.6	7.189	179	7.047	3.6	.142	20	.787	2
					3	Int.	□	MVS1990X03S200	63.3	2.492	103.6	4.079	103.6	4.079	168.6	6.638	165	6.496	3.6	.142	20	.787	6
					5	Int.	□	MVS1990X05S200	103.1	4.059	163.6	6.441	163.6	6.441	228.6	9.000	225	8.858	3.6	.142	20	.787	6
20.000	.7874				2	Ext.	●	MVE2000X02S200	43.6	1.717	69.6	2.740	69.6	2.740	134.6	5.299	131	5.157	3.6	.142	20	.787	2
					3	Ext.	★	MVE2000X03S200	63.6	2.504	117.6	4.630	117.6	4.630	182.6	7.189	179	7.047	3.6	.142	20	.787	2
					3	Int.	●	MVS2000X03S200	63.6	2.504	103.6	4.079	103.6	4.079	168.6	6.638	165	6.496	3.6	.142	20	.787	6
					5	Int.	●	MVS2000X05S200	103.6	4.079	163.6	6.441	163.6	6.441	228.6	9.000	225	8.858	3.6	.142	20	.787	6

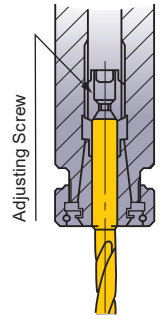
Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L085

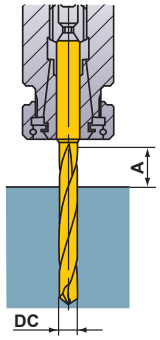
■ OPERATIONAL GUIDANCE FOR THE MVS DRILL (L/D<10)

Drill Holding



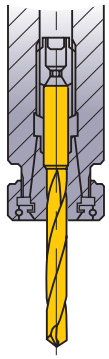
Thrust bearing type collet chuck holds the drill securely.

Drill Length



A > DC x 1.5(DC×over .079" for DC<.118")

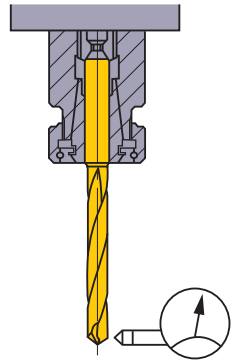
Drill Installation



NG

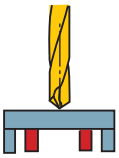
Do not clamp on the flutes.

Installation Tolerance



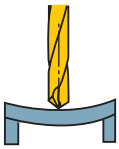
Run-out ≤ .0012 inch

Thin Workpiece



Support the Workpiece

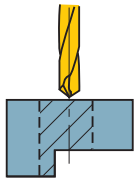
OK



If Bending Occurs

NG

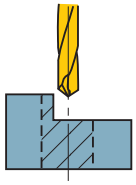
Interrupted Cutting



One Process

OK

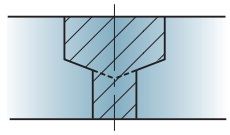
①Lower the feed when drilling the interrupted part.



Requires Prior Machining

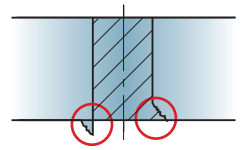
①Spot face with an end mill prior to drilling.

Stepped Holes



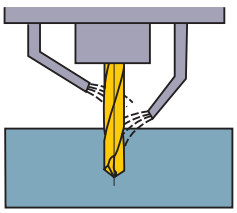
①Divide the two processes.
②Drill the larger hole first.
*A tool for machining both chamfer and spot face can be produced to order.

Burring and Workpiece Chipping



①Lower the feed rate by 50% at the end of through cutting.
②Add a 45°chamfer.
③Change the point angle.

Coolant Method (MVE)

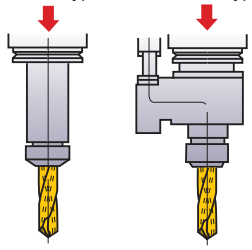


Two coolant positions, at the end and at the center are ideal.

Through Coolant Type (MVS)

Spindles Through Coolant Type

Revolving Coolant Machine Type



Less than ø.118 inch : 225PSI-1000PSI
More than ø.118 inch : 75PSI-1000PSI
More than 450PSI is recommended.

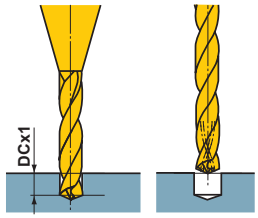
Coolant Handling

<MVS Type>

①Small chip particles can jam in the oil hole of small diameter drills. Always use a fine mesh filter as a preventative measure.

②Dirt and dust particles adhere to the oil in old coolant and prevent an efficient flow. Regular coolant exchange is recommended.

Drill Installation



①Drill a prepared hole about DCx1 using the shortest flute length of MVS. (DC=drill diameter)
②Use the prepared hole as a guide when using a drill with an oil hole. Depending on the cutting conditions, peck feed is recommended.

■ CAUTIONS FOR USE (For DC<.118")

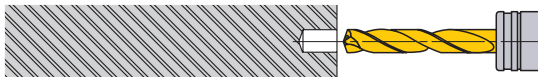
Please use a fine mesh filter (5 microns or less) for coolant to prevent chips from jamming in the coolant hole.
For deep drilling with the long type drill, machining a pilot hole is recommended.
(Otherwise, centrifugal forces may cause drill breakage.)

MVE/MVS

■ OPERATIONAL GUIDANCE FOR THE MVS LONG TYPE DRILL (L/D≥10)

Flat Face Drilling ●Drilling a blind hole

■ 1. Drilling a Pilot Hole



①Use a drill with the same or larger point angle than the long type. Use the shortest flute possible.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx DCx1.
(Adjust the pilot hole depth according to the length of the long type drill.)

■ 2. Initial Cutting with the Long Type Drill

①Penetrate the guide hole at low revolution.
(Revolution 500-1000 min-1, feed rate .008—.012 IPR)
②Stop the long type drill .020—.039 inch short of the guide hole bottom.

■ 3. Drill the Deep Hole

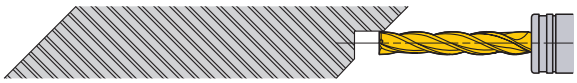
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

■ 4. Drill Retraction

①After drilling, lower the cutting revolution about .020—.039 inch short of the hole end. (Revolution 500-1000 min-1)
②Retract the drill to the pilot hole depth starting point at a feed rate of 120 IPM.
③Finally, clear the hole at a cutting speed of 65—100 SFM and feed rate of .008—.012 IPR.

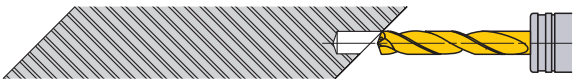
Interrupted Drilling ●Drilling and breaking through on irregular faces or angles

■ 1. Spot Facing



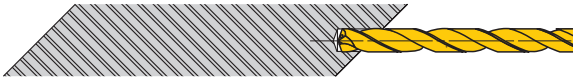
①Machine a flat on the irregular face by using an MFE (flat bottom drill) or an end mill capable of spot facing. Make the spot face diameter the same size as the required deep hole diameter.

■ 2. Drilling a Pilot Hole



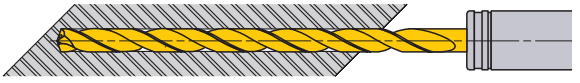
①Use a drill with the same or larger point angle than the long type. Use the shortest flute possible.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx DCx1.
(Adjust the pilot hole depth according to the length of the long type drill.)

■ 3. Initial Cutting with the Long Type Drill



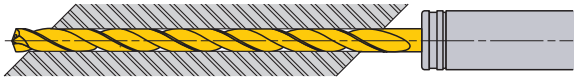
①Penetrate the guide hole at a low revolution.
(Revolution 500-1000 min-1, feed rate .008—.012 IPR)
②Stop the long type drill .020—.039 inch short of the guide hole bottom.

■ 4. Drill the Deep Hole



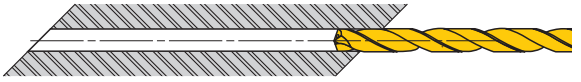
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.
②Feed as usual until breaking through.

■ 5. Breaking Through



①When breaking through, the cutting edge can be damaged.
②Recommend about half rate of the usual feed rate after breaking through.

■ 6. Drill Retraction



①Finally clear the hole at a revolution speed 500-1000 min-1 and feed rate of .008—.012 IPR.
②Retract the drill to the pilot hole depth starting point at a feed rate of 120 IPM.

RECOMMENDED CUTTING CONDITIONS

■ MVE

(inch)

Workpiece Material		Mild Steel (≤180HB) AISI 1010 etc.		Carbon Steel, Alloy Steel (180—280HB) AISI 1045, 4140 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1260	**3.2**	214	.0039 (.0024—.0051)	197	.0039 (.0024—.0051)
.1575	**4.0**	230	.0047 (.0031—.0063)	214	.0047 (.0031—.0063)
.1969	**5.0**	230	.0059 (.0039—.0079)	214	.0059 (.0039—.0079)
.2480	**6.3**	263	.0079 (.0051—.0102)	246	.0079 (.0051—.0102)
.3150	**8.0**	279	.0091 (.0071—.0110)	263	.0091 (.0071—.0110)
.3937	**10.0**	296	.0106 (.0087—.0126)	279	.0106 (.0087—.0126)
.4724	**12.0**	312	.0122 (.0110—.0134)	296	.0122 (.0110—.0134)
.6299	**16.0**	328	.0130 (.0110—.0150)	296	.0130 (.0110—.0150)
.7874	**20.0**	328	.0138 (.0118—.0157)	296	.0138 (.0118—.0157)

Workpiece Material		Carbon Steel, Alloy Steel (280—350HB) AISI 4340 etc.		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1260	**3.2**	181	.0035 (.0024—.0047)	66	.0028 (.0020—.0031)
.1575	**4.0**	197	.0043 (.0028—.0055)	66	.0031 (.0024—.0039)
.1969	**5.0**	197	.0055 (.0035—.0071)	66	.0039 (.0028—.0051)
.2480	**6.3**	230	.0071 (.0043—.0094)	82	.0051 (.0035—.0067)
.3150	**8.0**	246	.0083 (.0063—.0098)	82	.0055 (.0039—.0071)
.3937	**10.0**	263	.0091 (.0075—.0106)	82	.0063 (.0047—.0075)
.4724	**12.0**	279	.0102 (.0091—.0114)	82	.0071 (.0059—.0079)
.6299	**16.0**	279	.0114 (.0094—.0130)	82	.0075 (.0059—.0091)
.7874	**20.0**	279	.0118 (.0102—.0134)	82	.0079 (.0059—.0094)

Workpiece Material		Gray Cast Iron (≤350MPa) AISI No.45B etc.		Ductile Cast Iron (≤450MPa) AISI 60-40-18 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1260	**3.2**	230	.0039 (.0024—.0051)	214	.0039 (.0024—.0051)
.1575	**4.0**	230	.0047 (.0031—.0063)	214	.0047 (.0031—.0063)
.1969	**5.0**	230	.0059 (.0039—.0079)	214	.0059 (.0039—.0079)
.2480	**6.3**	246	.0079 (.0051—.0102)	230	.0079 (.0051—.0102)
.3150	**8.0**	246	.0098 (.0071—.0122)	230	.0091 (.0071—.0110)
.3937	**10.0**	246	.0114 (.0087—.0138)	230	.0106 (.0087—.0126)
.4724	**12.0**	263	.0130 (.0110—.0146)	246	.0122 (.0110—.0134)
.6299	**16.0**	263	.0138 (.0110—.0165)	246	.0130 (.0110—.0150)
.7874	**20.0**	279	.0146 (.0118—.0173)	263	.0138 (.0118—.0157)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

MVE/MVS

RECOMMENDED CUTTING CONDITIONS

■ MVE

(inch)

Workpiece Material		Aluminum Alloy (Si<5%) ASTM A6061, 7075 etc.		Heat Resistant Alloy Inconel718 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1260	**3.2**	263	.0039 (.0024—.0051)	66	.0028 (.0020—.0035)
.1575	**4.0**	263	.0047 (.0031—.0063)	66	.0035 (.0024—.0043)
.1969	**5.0**	263	.0059 (.0039—.0079)	66	.0043 (.0031—.0055)
.2480	**6.3**	296	.0079 (.0051—.0102)	82	.0047 (.0035—.0059)
.3150	**8.0**	296	.0091 (.0071—.0110)	82	.0051 (.0043—.0063)
.3937	**10.0**	296	.0106 (.0087—.0126)	82	.0055 (.0047—.0067)
.4724	**12.0**	328	.0122 (.0110—.0134)	82	.0063 (.0051—.0071)
.6299	**16.0**	328	.0130 (.0110—.0150)	82	.0071 (.0055—.0083)
.7874	**20.0**	361	.0138 (.0118—.0157)	99	.0075 (.0059—.0087)

Workpiece Material		Hardened Steel (40—55HRC) AISI H13, L6 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm		
.1260	**3.2**	66	.0028 (.0020—.0035)
.1575	**4.0**	66	.0035 (.0024—.0043)
.1969	**5.0**	66	.0043 (.0031—.0055)
.2480	**6.3**	82	.0047 (.0035—.0059)
.3150	**8.0**	82	.0051 (.0043—.0063)
.3937	**10.0**	82	.0055 (.0047—.0067)
.4724	**12.0**	82	.0063 (.0051—.0071)
.6299	**16.0**	82	.0071 (.0055—.0083)
.7874	**20.0**	99	.0075 (.0059—.0087)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

■ MVS

(inch)

Workpiece Material			Mild Steel (≤180HB) AISI 1010 etc.		Carbon Steel, Alloy Steel (180—280HB) AISI 1045, 4140 etc.	
DC		L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm					
.0394	1.0	2DC,7DC	164	.0016 (.0008—.0020)	164	.0016 (.0008—.0020)
		12DC-30DC	164	.0008 (.0004—.0012)	131	.0008 (.0004—.0012)
.0591	1.5	2DC,7DC	164	.0020 (.0012—.0031)	164	.0020 (.0012—.0031)
		12DC-30DC	164	.0020 (.0008—.0031)	131	.0020 (.0012—.0031)
.0787	2.0	2DC,7DC	164	.0028 (.0016—.0039)	164	.0028 (.0016—.0039)
		12DC-30DC	164	.0028 (.0016—.0039)	164	.0028 (.0016—.0039)
.0984	2.5	2DC,7DC	197	.0035 (.0020—.0051)	197	.0035 (.0020—.0051)
		12DC-30DC	197	.0035 (.0024—.0051)	164	.0035 (.0024—.0051)
.1260	3.2	2DC-8DC	296	.0039 (.0024—.0051)	263	.0039 (.0024—.0051)
		10DC-25DC	295	.0067 (.0039—.0094)	295	.0067 (.0039—.0094)
		30DC,40DC	246	.0054 (.0031—.0076)	246	.0054 (.0031—.0076)
.1575	4.0	2DC-8DC	328	.0047 (.0031—.0063)	296	.0047 (.0031—.0063)
		10DC-26DC	295	.0079 (.0047—.0118)	295	.0079 (.0047—.0118)
		30DC,40DC	246	.0063 (.0038—.0094)	246	.0063 (.0038—.0094)
.1969	5.0	2DC-8DC	328	.0059 (.0039—.0079)	296	.0059 (.0039—.0079)
		10DC-27DC	295	.0098 (.0059—.0138)	295	.0098 (.0059—.0138)
		30DC,40DC	246	.0079 (.0047—.0110)	246	.0079 (.0047—.0110)
.2480	6.3	2DC-8DC	361	.0079 (.0051—.0102)	328	.0079 (.0051—.0102)
		10DC-28DC	361	.0106 (.0067—.0146)	328	.0106 (.0067—.0146)
		30DC,40DC	295	.0085 (.0054—.0117)	262	.0085 (.0054—.0117)
.3150	8.0	2DC-8DC	394	.0091 (.0071—.0110)	361	.0091 (.0071—.0110)
		10DC-29DC	361	.0118 (.0079—.0157)	328	.0118 (.0079—.0157)
		30DC,40DC	295	.0094 (.0063—.0126)	262	.0094 (.0063—.0126)
.3937	10.0	2DC-8DC	427	.0106 (.0087—.0126)	394	.0106 (.0087—.0126)
		10DC-30DC	361	.0126 (.0087—.0165)	328	.0126 (.0087—.0165)
		30DC,40DC	295	.0101 (.0069—.0132)	262	.0101 (.0069—.0132)
.4724	12.0	2DC-8DC	460	.0118 (.0102—.0134)	427	.0118 (.0102—.0134)
		10DC-31DC	427	.0134 (.0094—.0173)	394	.0134 (.0094—.0173)
		30DC,40DC	344	.0107 (.0076—.0139)	312	.0107 (.0076—.0139)
.6299	16.0	2DC-8DC	525	.0130 (.0106—.0150)	460	.0130 (.0106—.0150)
		10DC-32DC	427	.0142 (.0102—.0181)	394	.0142 (.0102—.0181)
		30DC,40DC	344	.0113 (.0082—.0145)	312	.0113 (.0082—.0145)
.7874	20.0	2DC-8DC	525	.0138 (.0118—.0157)	460	.0138 (.0118—.0157)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

MVE/MVS

RECOMMENDED CUTTING CONDITIONS

■ MVS

(inch)

Workpiece Material			Carbon Steel, Alloy Steel (280—350HB) AISI 4340 etc.		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.	
DC		L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm					
.0394	1.0	2DC,7DC	131	.0016 (.0008—.0020)	98	.0012 (.0008—.0020)
		12DC-30DC	98	.0008 (.0004—.0012)	98	.0008 (.0004—.0012)
.0591	1.5	2DC,7DC	131	.0020 (.0012—.0031)	98	.0020 (.0012—.0028)
		12DC-30DC	98	.0020 (.0008—.0031)	98	.0020 (.0008—.0031)
.0787	2.0	2DC,7DC	131	.0028 (.0016—.0039)	98	.0024 (.0016—.0031)
		12DC-30DC	131	.0028 (.0016—.0039)	98	.0028 (.0016—.0039)
.0984	2.5	2DC,7DC	164	.0035 (.0020—.0051)	131	.0031 (.0020—.0039)
		12DC-30DC	164	.0031 (.0020—.0051)	98	.0031 (.0020—.0047)
.1260	3.2	2DC-8DC	230	.0039 (.0024—.0051)	132	.0031 (.0024—.0039)
		10DC-25DC	262	.0059 (.0035—.0087)	131	.0028 (.0020—.0035)
		30DC,40DC	213	.0059 (.0028—.0069)	98	.0022 (.0016—.0028)
.1575	4.0	2DC-8DC	263	.0043 (.0028—.0055)	132	.0035 (.0024—.0043)
		10DC-26DC	262	.0071 (.0043—.0106)	131	.0031 (.0024—.0039)
		30DC,40DC	213	.0071 (.0035—.0085)	98	.0025 (.0019—.0031)
.1969	5.0	2DC-8DC	263	.0055 (.0035—.0071)	132	.0043 (.0031—.0055)
		10DC-27DC	262	.0087 (.0055—.0126)	131	.0039 (.0028—.0047)
		30DC,40DC	213	.0087 (.0044—.0101)	98	.0031 (.0022—.0038)
.2480	6.3	2DC-8DC	296	.0071 (.0043—.0094)	164	.0055 (.0035—.0071)
		10DC-28DC	295	.0094 (.0059—.0130)	164	.0047 (.0031—.0063)
		30DC,40DC	246	.0094 (.0047—.0104)	131	.0038 (.0025—.0050)
.3150	8.0	2DC-8DC	328	.0083 (.0063—.0098)	164	.0059 (.0039—.0075)
		10DC-29DC	295	.0106 (.0071—.0142)	164	.0055 (.0039—.0067)
		30DC,40DC	246	.0106 (.0057—.0113)	131	.0044 (.0031—.0054)
.3937	10.0	2DC-8DC	361	.0091 (.0075—.0106)	164	.0063 (.0047—.0079)
		10DC-30DC	295	.0114 (.0079—.0150)	164	.0059 (.0047—.0071)
		30DC,40DC	246	.0114 (.0063—.0120)	131	.0047 (.0038—.0057)
.4724	12.0	2DC-8DC	394	.0102 (.0087—.0114)	197	.0071 (.0059—.0083)
		10DC-31DC	328	.0118 (.0087—.0157)	197	.0067 (.0055—.0075)
		30DC,40DC	262	.0118 (.0069—.0126)	164	.0054 (.0044—.0060)
.6299	16.0	2DC-8DC	427	.0110 (.0091—.0130)	197	.0075 (.0055—.0094)
		10DC-32DC	328	.0126 (.0091—.0161)	197	.0067 (.0055—.0075)
		30DC,40DC	262	.0126 (.0072—.0129)	164	.0054 (.0044—.0060)
.7874	20.0	2DC-8DC	427	.0118 (.0102—.0134)	197	.0083 (.0059—.0102)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

(inch)

Workpiece Material			Gray Cast Iron (≤350MPa) No45B etc.		Ductile Cast Iron (≤450MPa) 60-60-8 etc.	
DC		L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm					
.0394	**1.0**	**2DC,7DC**	164	.0016 (.0008—.0020)	131	.0016 (.0008—.0020)
		12DC-30DC	131	.0008 (.0004—.0012)	98	.0008 (.0004—.0012)
.0591	**1.5**	**2DC,7DC**	164	.0020 (.0012—.0031)	131	.0020 (.0012—.0031)
		12DC-30DC	131	.0020 (.0012—.0031)	98	.0020 (.0008—.0031)
.0787	**2.0**	**2DC,7DC**	164	.0028 (.0016—.0039)	131	.0028 (.0016—.0039)
		12DC-30DC	164	.0028 (.0016—.0039)	131	.0028 (.0016—.0039)
.0984	**2.5**	**2DC,7DC**	197	.0035 (.0020—.0051)	164	.0035 (.0020—.0051)
		12DC-30DC	164	.0035 (.0024—.0051)	164	.0031 (.0020—.0047)
.1260	**3.2**	**2DC-8DC**	296	.0039 (.0024—.0051)	214	.0039 (.0024—.0051)
		10DC-25DC	295	.0075 (.0043—.0102)	295	.0067 (.0039—.0094)
		30DC,40DC	246	.0060 (.0035—.0082)	246	.0054 (.0031—.0076)
.1575	**4.0**	**2DC-8DC**	328	.0047 (.0031—.0063)	214	.0047 (.0031—.0063)
		10DC-26DC	295	.0087 (.0051—.0130)	295	.0079 (.0047—.0118)
		30DC,40DC	246	.0069 (.0041—.0104)	246	.0063 (.0038—.0094)
.1969	**5.0**	**2DC-8DC**	328	.0059 (.0039—.0079)	214	.0059 (.0039—.0079)
		10DC-27DC	295	.0110 (.0276—.0154)	295	.0098 (.0059—.0138)
		30DC,40DC	246	.0088 (.0220—.0123)	246	.0079 (.0047—.0110)
.2480	**6.3**	**2DC-8DC**	361	.0079 (.0051—.0102)	230	.0079 (.0051—.0102)
		10DC-28DC	361	.0118 (.0075—.0161)	328	.0106 (.0067—.0146)
		30DC,40DC	295	.0094 (.0060—.0129)	262	.0085 (.0054—.0117)
.3150	**8.0**	**2DC-8DC**	394	.0098 (.0071—.0122)	230	.0091 (.0071—.0110)
		10DC-29DC	361	.0130 (.0087—.0173)	328	.0118 (.0079—.0157)
		30DC,40DC	295	.0104 (.0069—.0139)	262	.0094 (.0063—.0126)
.3937	**10.0**	**2DC-8DC**	427	.0114 (.0087—.0138)	230	.0106 (.0087—.0126)
		10DC-30DC	361	.0138 (.0094—.0181)	328	.0126 (.0087—.0165)
		30DC,40DC	295	.0110 (.0076—.0145)	262	.0101 (.0069—.0132)
.4724	**12.0**	**2DC-8DC**	460	.0126 (.0102—.0146)	296	.0118 (.0102—.0134)
		10DC-31DC	427	.0146 (.0102—.0189)	394	.0134 (.0094—.0173)
		30DC,40DC	344	.0117 (.0082—.0151)	328	.0107 (.0076—.0139)
.6299	**16.0**	**2DC-8DC**	525	.0138 (.0110—.0165)	296	.0130 (.0110—.0150)
		10DC-32DC	427	.0157 (.0114—.0189)	394	.0142 (.0102—.0181)
		30DC,40DC	344	.0126 (.0091—.0151)	328	.0113 (.0082—.0145)
.7874	**20.0**	**2DC-8DC**	525	.0146 (.0118—.0173)	328	.0138 (.0118—.0157)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

MVE/MVS

RECOMMENDED CUTTING CONDITIONS

■ MVS

(inch)

Workpiece Material			Aluminum Alloy (Si<5%) ASTM 6061, 7075 etc.		Heat Resistant Alloy Inconel718 etc.	
DC		L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm					
.0394	1.0	2DC,7DC	197	.0020 (.0012—.0031)	33	.0008 (.0004—.0012)
		12DC-30DC	164	.0020 (.0012—.0031)	33	.0008 (.0004—.0012)
.0591	1.5	2DC,7DC	262	.0028 (.0020—.0047)	33	.0012 (.0008—.0016)
		12DC-30DC	230	.0031 (.0020—.0047)	33	.0012 (.0008—.0016)
.0787	2.0	2DC,7DC	295	.0039 (.0024—.0059)	49	.0016 (.0012—.0020)
		12DC-30DC	262	.0043 (.0024—.0059)	49	.0016 (.0012—.0020)
.0984	2.5	2DC,7DC	328	.0051 (.0031—.0079)	49	.0020 (.0016—.0024)
		12DC-30DC	295	.0055 (.0031—.0079)	49	.0020 (.0016—.0024)
.1260	3.2	2DC-8DC	394	.0091 (.0039—.0138)	66	.0028 (.0020—.0035)
		10DC-25DC	328	.0091 (.0039—.0138)	66	.0028 (.0020—.0035)
		30DC,40DC	262	.0072 (.0031—.0110)	49	.0022 (.0016—.0028)
.1575	4.0	2DC-8DC	394	.0094 (.0047—.0138)	66	.0035 (.0024—.0043)
		10DC-26DC	328	.0094 (.0047—.0138)	66	.0035 (.0024—.0043)
		30DC,40DC	262	.0076 (.0038—.0110)	49	.0028 (.0019—.0035)
.1969	5.0	2DC-8DC	394	.0098 (.0059—.0138)	66	.0043 (.0031—.0055)
		10DC-27DC	328	.0098 (.0059—.0138)	66	.0043 (.0031—.0055)
		30DC,40DC	262	.0079 (.0047—.0110)	49	.0035 (.0025—.0044)
.2480	6.3	2DC-8DC	492	.0138 (.0079—.0197)	82	.0051 (.0035—.0063)
		10DC-28DC	427	.0138 (.0079—.0197)	66	.0051 (.0035—.0063)
		30DC,40DC	344	.0110 (.0063—.0157)	49	.0041 (.0028—.0050)
.3150	8.0	2DC-8DC	492	.0138 (.0079—.0197)	82	.0055 (.0043—.0067)
		10DC-29DC	427	.0138 (.0079—.0197)	66	.0055 (.0043—.0063)
		30DC,40DC	344	.0110 (.0063—.0157)	49	.0044 (.0035—.0050)
.3937	10.0	2DC-8DC	492	.0197 (.0079—.0315)	82	.0059 (.0047—.0067)
		10DC-30DC	427	.0197 (.0079—.0315)	66	.0059 (.0047—.0067)
		30DC,40DC	344	.0157 (.0063—.0252)	49	.0047 (.0038—.0054)
.4724	12.0	2DC-8DC	525	.0197 (.0079—.0315)	82	.0063 (.0051—.0071)
		10DC-31DC	459	.0197 (.0079—.0315)	66	.0063 (.0051—.0071)
		30DC,40DC	377	.0157 (.0063—.0252)	49	.0050 (.0041—.0057)
.6299	16.0	2DC-8DC	525	.0236 (.0079—.0394)	82	.0071 (.0055—.0083)
		10DC-32DC	459	.0197 (.0079—.0315)	66	.0067 (.0055—.0075)
		30DC,40DC	377	.0157 (.0063—.0252)	49	.0054 (.0044—.0060)
.7874	20.0	2DC-8DC	558	.0236 (.0079—.0394)	99	.0075 (.0059—.0087)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

Memo

MICRO-MWS

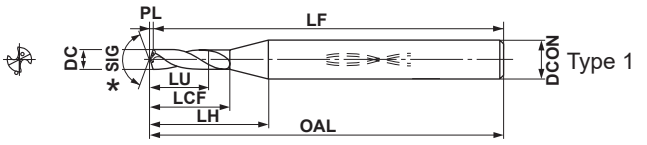
● For high accuracy and efficient drilling of carbon steels through to difficult-to-cut materials.

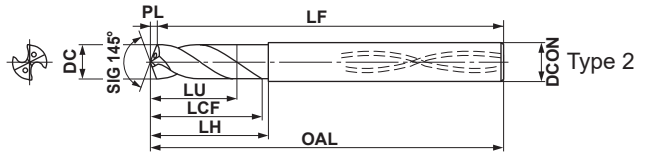
P M K N S H

Internal Coolant

	(inch)		(mm)	
	.0197≤DC<.03	.0304≤DC<.1161	0.5≤DC<1	1≤DC<2.95
	+ .00035 0	+ .00055 0	+0.009 0	+0.014 0
h6	.1181≤DCON		DCON=3	
	0 − .00031		0 −0.006	

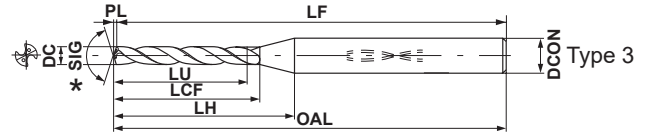
SB Type



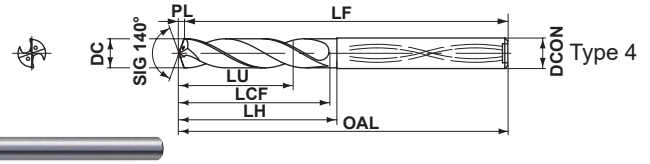


	(inch)		(mm)	
	.0197≤DC<.03	.0304≤DC<.1161	0.5≤DC<1	1≤DC<2.95
	0 − .00035	0 − .00035	0 −0.009	0 −0.014
h6	.0197≤DCON<.03	.0304≤DCON<.1161	DCON=3	
	0 − .00024	0 − .00024	0 −0.006	

LB/XB Type (ϕ.0200"−ϕ.1200" & ϕ0.50−ϕ2.95mm)



DB Type (ϕ.0400"−ϕ.1200" & ϕ1.00−ϕ2.95mm)



* Point Angle:Type 1 140° for drill diameter ϕ0.50-2.0mm and 145° for ϕ2.05-2.95mm.
Type 3 135° for drill diameter ϕ0.50-2.0mm and 140° for ϕ2.05-2.95mm.

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
0.500	.0197				1	★	MWS0050SB	0.6	.024	2.59	.102	7.29	.287	47.09	1.854	47	1.850	0.09	.004	3.0	.118	1
					5	★	MWS0050LB	2.6	.102	8.10	.319	13.10	.516	47.10	1.854	47	1.850	0.10	.004	3.0	.118	3
					12	★	MWS0050XB	6.1	.240	16.10	.634	21.10	.831	47.10	1.854	47	1.850	0.10	.004	3.0	.118	3
0.508	.0200		76		1	●	MWS00200SB	0.6	.024	2.59	.102	7.59	.299	45.09	1.775	45	1.772	0.09	.004	3.175	.125	1
					5	●	MWS00200LB	2.6	.102	8.11	.319	13.11	.516	47.11	1.855	47	1.850	0.11	.004	3.175	.125	3
					12	●	MWS00200XB	6.2	.244	16.11	.634	21.11	.831	47.11	1.855	47	1.850	0.11	.004	3.175	.125	3
0.510	.0201				1	★	MWS0051SB	0.6	.024	2.69	.106	7.29	.287	47.09	1.854	47	1.850	0.09	.004	3.0	.118	1
					5	★	MWS0051LB	2.7	.106	8.11	.319	13.11	.516	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
					12	★	MWS0051XB	6.2	.244	16.11	.634	21.11	.831	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
0.520	.0205				1	●	MWS0052SB	0.6	.024	2.69	.106	7.29	.287	47.09	1.854	47	1.850	0.09	.004	3.0	.118	1
					5	★	MWS0052LB	2.7	.106	8.11	.319	13.11	.516	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
					12	●	MWS0052XB	6.4	.252	16.11	.634	21.11	.831	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
0.530	**.0209**				1	★	**MWS0053SB**	0.6	.024	2.70	.106	7.30	.287	47.1	1.854	47	1.850	0.10	.004	3.0	.118	1
					5	★	**MWS0053LB**	2.8	.110	8.11	.319	13.11	.516	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
					12	★	**MWS0053XB**	6.5	.256	16.11	.634	21.11	.831	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
0.534	**.0210**		**75**		1	●	**MWS00210SB**	0.6	.024	2.70	.106	7.60	.299	45.1	1.776	45	1.772	0.10	.004	3.175	.125	1
					5	●	**MWS00210LB**	2.8	.110	8.11	.319	13.01	.512	47.11	1.855	47	1.850	0.11	.004	3.175	.125	3
					12	●	**MWS00210XB**	6.5	.256	16.11	.634	21.01	.827	47.11	1.855	47	1.850	0.11	.004	3.175	.125	3
0.540	**.0213**				1	★	**MWS0054SB**	0.6	.024	2.70	.106	7.30	.287	47.1	1.854	47	1.850	0.10	.004	3.0	.118	1
					5	★	**MWS0054LB**	2.8	.110	8.11	.319	13.11	.516	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
					12	★	**MWS0054XB**	6.6	.260	16.11	.634	21.11	.831	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
0.550	**.0217**				1	●	**MWS0055SB**	0.7	.028	2.70	.106	7.30	.287	47.10	1.854	47	1.850	0.10	.004	3.0	.118	1
					5	★	**MWS0055LB**	2.9	.114	8.11	.319	13.11	.516	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
					12	●	**MWS0055XB**	6.7	.264	16.11	.634	21.11	.831	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
0.560	**.0220**				1	●	**MWS0056SB**	0.7	.028	3.00	.118	7.60	.299	47.10	1.854	47	1.850	0.10	.004	3.0	.118	1
					5	★	**MWS0056LB**	2.9	.114	8.12	.320	13.12	.517	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
					12	●	**MWS0056XB**	6.8	.268	16.12	.635	21.12	.831	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
0.570	**.0224**				1	●	**MWS0057SB**	0.7	.028	3.00	.118	7.50	.295	47.10	1.854	47	1.850	0.10	.004	3.0	.118	1
					5	★	**MWS0057LB**	3.0	.118	8.12	.320	13.12	.517	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
					12	●	**MWS0057XB**	7.0	.276	16.12	.635	21.12	.831	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
0.572	**.0225**		**74**		1	●	**MWS00225SB**	0.7	.028	3.00	.118	7.90	.311	45.10	1.776	45	1.772	0.10	.004	3.175	.125	1
					5	●	**MWS00225LB**	3.0	.118	8.12	.320	13.02	.513	47.12	1.855	47	1.850	0.12	.005	3.175	.125	3
					12	●	**MWS00225XB**	7.0	.276	16.12	.635	21.02	.828	47.12	1.855	47	1.850	0.12	.005	3.175	.125	3
0.580	**.0228**				1	★	**MWS0058SB**	0.7	.028	3.01	.119	7.51	.296	47.11	1.855	47	1.850	0.11	.004	3.0	.118	1
					5	★	**MWS0058LB**	3.0	.118	8.12	.320	13.12	.517	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
					12	★	**MWS0058XB**	7.1	.280	16.12	.635	21.12	.831	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
0.590	**.0232**				1	★	**MWS0059SB**	0.7	.028	3.01	.119	7.51	.296	47.11	1.855	47	1.850	0.11	.004	3.0	.118	1
					5	★	**MWS0059LB**	3.1	.122	8.12	.320	12.12	.477	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
					12	★	**MWS0059XB**	7.2	.283	16.12	.635	20.12	.792	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
0.600	**.0236**				1	●	**MWS0060SB**	0.7	.028	3.01	.119	7.51	.296	47.11	1.855	47	1.850	0.11	.004	3.0	.118	1
					5	★	**MWS0060LB**	3.1	.122	8.12	.320	12.12	.477	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
					12	●	**MWS0060XB**	7.3	.287	16.12	.635	20.12	.792	47.12	1.855	47	1.850	0.12	.005	3.0	.118	3
0.610	**.0240**		**73**		1	●	**MWS00240SB**	0.7	.028	3.21	.126	8.01	.315	45.11	1.776	45	1.772	0.11	.004	3.175	.125	1
					1	★	**MWS0061SB**	0.7	.028	3.21	.126	7.71	.304	47.11	1.855	47	1.850	0.11	.004	3.0	.118	3
					5	●	**MWS00240LB**	3.2	.126	8.13	.320	12.93	.509	47.13	1.856	47	1.850	0.13	.005	3.175	.125	3
					5	★	**MWS0061LB**	3.2	.126	8.13	.320	12.13	.478	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
					12	●	**MWS00240XB**	7.4	.291	16.13	.635	20.93	.824	47.13	1.856	47	1.850	0.13	.005	3.175	.125	3
					12	★	**MWS0061XB**	7.5	.295	16.13	.635	20.13	.793	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
0.620	**.0244**				1	★	**MWS0062SB**	0.7	.028	3.21	.126	7.61	.300	47.11	1.855	47	1.850	0.11	.004	3.0	.118	1
					5	★	**MWS0062LB**	3.2	.126	8.13	.320	12.13	.478	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
					12	★	**MWS0062XB**	7.6	.299	16.13	.635	20.13	.793	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
0.630	**.0248**				1	★	**MWS0063SB**	0.7	.028	3.21	.126	7.61	.300	47.11	1.855	47	1.850	0.11	.004	3.0	.118	1
					5	★	**MWS0063LB**	3.3	.130	8.13	.320	12.13	.478	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
					12	★	**MWS0063XB**	7.7	.303	16.13	.635	20.13	.793	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
0.635	**.0250**		**72**		1	●	**MWS00250SB**	0.8	.031	3.22	.127	7.92	.312	45.12	1.776	45	1.772	0.12	.005	3.175	.125	1
					5	●	**MWS00250LB**	3.3	.130	8.13	.320	12.83	.505	47.13	1.856	47	1.850	0.13	.005	3.175	.125	3
					12	●	**MWS00250XB**	7.8	.307	16.13	.635	20.83	.820	47.13	1.856	47	1.850	0.13	.005	3.175	.125	3
0.640	**.0252**				1	★	**MWS0064SB**	0.8	.031	3.22	.127	7.62	.300	47.12	1.855	47	1.850	0.12	.005	3.0	.118	1
					5	★	**MWS0064LB**	3.3	.130	8.13	.320	12.13	.478	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
					12	★	**MWS0064XB**	7.8	.307	16.13	.635	20.13	.793	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3

MICRO-MWS

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					1	●	MWS0065SB	0.8	.031	3.22	.127	7.62	.300	47.12	1.855	47	1.850	0.12	.005	3.0	.118	1
0.650	.0256				5	★	MWS0065LB	3.4	.134	8.13	.320	12.13	.478	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
					12	●	MWS0065XB	7.9	.311	16.13	.635	20.13	.793	47.13	1.856	47	1.850	0.13	.005	3.0	.118	3
					1	●	MWS00260SB	0.8	.031	3.52	.139	8.22	.324	45.12	1.776	45	1.772	0.12	.005	3.175	.125	1
					1	●	MWS0066SB	0.8	.031	3.52	.139	7.92	.312	47.12	1.855	47	1.850	0.12	.005	3.0	.118	1
0.660	.0260		71		5	●	MWS00260LB	3.4	.134	8.14	.320	12.84	.506	47.14	1.856	47	1.850	0.14	.006	3.175	.125	3
					5	●	MWS0066LB	3.4	.134	8.14	.320	12.14	.478	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					12	●	MWS00260XB	8.1	.319	16.14	.635	20.84	.820	47.14	1.856	47	1.850	0.14	.006	3.175	.125	3
					12	★	MWS0066XB	8.1	.319	16.14	.635	20.14	.793	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					1	★	MWS0067SB	0.8	.031	3.52	.139	7.82	.308	47.12	1.855	47	1.850	0.12	.005	3.0	.118	1
0.670	.0264				5	★	MWS0067LB	3.5	.138	8.14	.320	12.14	.478	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					12	★	MWS0067XB	8.2	.323	16.14	.635	20.14	.793	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					1	★	MWS0068SB	0.8	.031	3.52	.139	7.82	.308	47.12	1.855	47	1.850	0.12	.005	3.0	.118	1
0.680	.0268				5	★	MWS0068LB	3.5	.138	8.14	.320	12.14	.478	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					12	★	MWS0068XB	8.3	.327	16.14	.635	20.14	.793	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					1	★	MWS0069SB	0.8	.031	3.53	.139	7.83	.308	47.13	1.856	47	1.850	0.13	.005	3.0	.118	1
0.690	.0272				5	★	MWS0069LB	3.6	.142	8.14	.320	12.14	.478	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					12	★	MWS0069XB	8.4	.331	16.14	.635	20.14	.793	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					1	●	MWS0070SB	0.8	.031	3.53	.139	7.83	.308	47.13	1.856	47	1.850	0.13	.005	3.0	.118	1
0.700	.0276				5	★	MWS0070LB	3.6	.142	8.14	.320	12.14	.478	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					12	★	MWS0070XB	8.5	.335	16.14	.635	20.14	.793	47.14	1.856	47	1.850	0.14	.006	3.0	.118	3
					1	★	MWS0071SB	0.8	.031	3.73	.147	8.03	.316	50.13	1.974	50	1.969	0.13	.005	3.0	.118	1
0.710	.0280		70		5	★	MWS0071LB	3.7	.146	20.15	.793	14.15	.557	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					12	★	MWS0071XB	8.7	.343	20.15	.793	24.15	.951	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					1	●	MWS00280SB	0.8	.031	3.73	.147	8.33	.328	50.13	1.974	50	1.969	0.13	.005	3.175	.125	1
0.712	.0280		70		5	●	MWS00280LB	3.7	.146	10.15	.400	14.75	.581	50.15	1.974	50	1.969	0.15	.006	3.175	.125	3
					12	●	MWS00280XB	8.7	.343	20.15	.793	24.75	.974	50.15	1.974	50	1.969	0.15	.006	3.175	.125	3
					1	★	MWS0072SB	0.9	.035	3.73	.147	8.03	.316	50.13	1.974	50	1.969	0.13	.005	3.0	.118	1
0.720	.0283				5	★	MWS0072LB	3.8	.150	10.15	.400	14.15	.557	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					12	★	MWS0072XB	8.8	.346	20.15	.793	24.15	.951	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					1	★	MWS0073SB	0.9	.035	3.73	.147	7.93	.312	50.13	1.974	50	1.969	0.13	.005	3.0	.118	1
0.730	.0287				5	★	MWS0073LB	3.8	.150	10.15	.400	14.15	.557	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					12	★	MWS0073XB	8.9	.350	20.15	.793	24.15	.951	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					1	★	MWS0074SB	0.9	.035	3.73	.147	7.93	.312	50.13	1.974	50	1.969	0.13	.005	3.0	.118	1
0.740	.0291				5	★	MWS0074LB	3.9	.154	10.15	.400	14.15	.557	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					12	★	MWS0074XB	9.0	.354	20.15	.793	24.15	.951	50.15	1.974	50	1.969	0.15	.006	3.0	.118	3
					1	●	MWS00292SB	0.9	.035	3.74	.147	8.24	.324	50.14	1.974	50	1.969	0.14	.006	3.175	.125	1
0.742	.0292		69		5	●	MWS00292LB	3.9	.154	10.15	.400	14.65	.577	50.15	1.974	50	1.969	0.15	.006	3.175	.125	3
					12	●	MWS00292XB	9.1	.358	20.15	.793	24.65	.970	50.15	1.974	50	1.969	0.15	.006	3.175	.125	3
					1	●	MWS0075SB	0.9	.035	3.74	.147	7.94	.313	50.14	1.974	50	1.969	0.14	.006	3.0	.118	1
0.750	.0295				5	●	MWS0075LB	3.9	.154	10.16	.400	14.16	.557	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
					12	●	MWS0075XB	9.2	.362	20.16	.794	24.16	.951	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
					1	●	MWS0076SB	0.9	.035	4.04	.159	8.24	.324	50.14	1.974	50	1.969	0.14	.006	3.0	.118	1
0.760	.0299				5	●	MWS0076LB	4.0	.157	10.16	.400	14.16	.557	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
					12	●	MWS0076XB	9.3	.366	20.16	.794	24.16	.951	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
					1	★	MWS0077SB	0.9	.035	4.04	.159	8.24	.324	50.14	1.974	50	1.969	0.14	.006	3.0	.118	1
0.770	.0303				5	★	MWS0077LB	4.0	.157	10.16	.400	14.16	.557	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
					12	★	MWS0077XB	9.4	.370	20.16	.794	24.16	.951	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
● : USA Stock ★ : Stocked in Japan

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
0.780	.0307				1	●	MWS0078SB	0.9	.035	4.04	.159	8.14	.320	50.14	1.974	50	1.969	0.14	.006	3.0	.118	1
					5	★	MWS0078LB	4.1	.161	10.16	.400	14.16	.557	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
					12	●	MWS0078XB	9.5	.374	20.16	.794	24.16	.951	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
0.788	.0310		68		1	●	MWS00310SB	0.9	.035	4.04	.159	8.54	.336	50.14	1.974	50	1.969	0.14	.006	3.175	.125	1
					5	●	MWS00310LB	4.1	.161	10.16	.400	14.66	.577	50.16	1.975	50	1.969	0.16	.006	3.175	.125	3
					12	●	MWS00310XB	9.6	.378	20.16	.794	24.66	.971	50.16	1.975	50	1.969	0.16	.006	3.175	.125	3
0.790	.0311				1	★	MWS0079SB	0.9	.035	4.04	.159	8.14	.320	50.14	1.974	50	1.969	0.14	.006	3.0	.118	1
					5	★	MWS0079LB	4.1	.161	10.16	.400	14.16	.557	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
					12	★	MWS0079XB	9.6	.378	20.16	.794	24.16	.951	50.16	1.975	50	1.969	0.16	.006	3.0	.118	3
0.794	.0313	1/32			1	●	MWS00312SB	0.9	.035	4.04	.159	8.44	.332	50.14	1.974	50	1.969	0.14	.006	3.175	.125	1
					5	●	MWS00312LB	4.1	.161	10.16	.400	14.56	.573	50.16	1.975	50	1.969	0.16	.006	3.175	.125	3
					12	●	MWS00312XB	9.7	.382	20.16	.794	24.56	.967	50.16	1.975	50	1.969	0.16	.006	3.175	.125	3
0.800	.0315				1	●	MWS0080SB	1.0	.039	4.05	.159	8.15	.321	50.15	1.974	50	1.969	0.15	.006	3.0	.118	1
					5	●	MWS0080LB	4.2	.165	10.17	.400	14.17	.558	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
					12	●	MWS0080XB	9.8	.386	20.17	.794	24.17	.952	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
0.810	.0319				1	★	MWS0081SB	1.0	.039	4.25	.167	8.35	.329	50.15	1.974	50	1.969	0.15	.006	3.0	.118	1
					5	★	MWS0081LB	4.2	.165	10.17	.400	14.17	.558	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
					12	★	MWS0081XB	9.9	.390	20.17	.794	24.17	.952	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
0.813	.0320		67		1	●	MWS00320SB	1.0	.039	4.25	.167	8.65	.341	50.15	1.974	50	1.969	0.15	.006	3.175	.125	1
					5	●	MWS00320LB	4.2	.165	10.17	.400	14.57	.574	50.17	1.975	50	1.969	0.17	.007	3.175	.125	3
					12	●	MWS00320XB	9.9	.390	20.17	.794	24.57	.967	50.17	1.975	50	1.969	0.17	.007	3.175	.125	3
0.820	.0323				1	●	MWS0082SB	1.0	.039	4.25	.167	8.35	.329	50.15	1.974	50	1.969	0.15	.006	3.0	.118	1
					5	●	MWS0082LB	4.3	.169	10.17	.400	14.17	.558	50.17	1.975	50	1.969	0.17	.007	3.0.	.118	3
					12	★	MWS0082XB	10.0	.394	20.17	.794	24.17	.952	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
0.830	.0327				1	●	MWS0083SB	1.0	.039	4.25	.167	8.25	.325	50.15	1.974	50	1.969	0.15	.006	3.0	.118	1
					5	●	MWS0083LB	4.3	.169	10.17	.400	14.17	.558	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
					12	★	MWS0083XB	10.1	.398	20.17	.794	24.17	.952	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
0.839	.0330		66		1	●	MWS00330SB	1.0	.039	4.25	.167	8.65	.341	50.15	1.974	50	1.969	0.15	.006	3.175	.125	1
					5	●	MWS00330LB	4.4	.173	10.17	.400	14.57	.574	50.17	1.975	50	1.969	0.17	.007	3.175	.125	3
					12	●	MWS00330XB	10.2	.402	20.17	.794	24.57	.967	50.17	1.975	50	1.969	0.17	.007	3.175	.125	3
0.840	.0331				1	★	MWS0084SB	1.0	.039	4.25	.167	8.25	.325	50.15	1.974	50	1.969	0.15	.006	3.0	.118	1
					5	★	MWS0084LB	4.4	.173	10.17	.400	14.17	.558	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
					12	★	MWS0084XB	10.3	.406	20.17	.794	24.17	.952	50.17	1.975	50	1.969	0.17	.007	3.0	.118	3
0.850	.0335				1	●	MWS0085SB	1.0	.039	4.25	.167	8.25	.325	50.15	1.974	50	1.969	0.15	.006	3.0	.118	1
					5	●	MWS0085LB	4.4	.173	10.18	.401	14.18	.558	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
					12	★	MWS0085XB	10.4	.409	20.18	.794	24.18	.952	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
0.860	.0339				1	●	MWS0086SB	1.0	.039	4.56	.180	8.56	.337	50.16	1.975	50	1.969	0.16	.006	3.0	.118	1
					5	★	MWS0086LB	4.5	.177	10.18	.401	14.18	.558	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
					12	★	MWS0086XB	10.5	.413	20.18	.794	24.18	.952	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
0.870	.0343				1	★	MWS0087SB	1.0	.039	4.56	.180	8.56	.337	50.16	1.975	50	1.969	0.16	.006	3.0	.118	1
					5	★	MWS0087LB	4.5	.177	10.18	.401	14.18	.558	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
					12	★	MWS0087XB	10.6	.417	20.18	.794	24.18	.952	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
0.880	.0346				1	★	MWS0088SB	1.0	.039	4.56	.180	8.56	.337	50.16	1.975	50	1.969	0.16	.006	3.0	.118	1
					5	★	MWS0088LB	4.6	.181	10.18	.401	14.18	.558	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
					12	★	MWS0088XB	10.7	.421	20.18	.794	24.18	.952	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
0.889	.0350		65		1	●	MWS00350SB	1.1	.043	4.56	.180	8.86	.349	50.16	1.975	50	1.969	0.16	.006	3.175	.125	1
					5	●	MWS00350LB	4.6	.181	10.18	.401	14.48	.570	50.18	1.976	50	1.969	0.18	.007	3.175	.125	3
					12	●	MWS00350XB	10.9	.429	20.18	.794	24.48	.964	50.18	1.976	50	1.969	0.18	.007	3.175	.125	3

MICRO-MWS

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
0.890	.0350		65		1	★	MWS0089SB	1.1	.043	4.56	.180	8.46	.333	50.16	1.975	50	1.969	0.16	.006	3.0	.118	1
					5	★	MWS0089LB	4.6	.181	10.18	.401	14.18	.558	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
					12	★	MWS0089XB	10.9	.429	20.18	.794	24.18	.952	50.18	1.976	50	1.969	0.18	.007	3.0	.118	3
0.900	.0354				1	●	MWS0090SB	1.1	.043	4.56	.180	8.46	.333	50.16	1.975	50	1.969	0.16	.006	3.0	.118	1
					5	●	MWS0090LB	4.7	.185	10.19	.401	14.19	.559	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
					12	★	MWS0090XB	11.0	.433	20.19	.795	24.19	.952	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
0.910	.0358				1	★	MWS0091SB	1.1	.043	4.77	.188	8.67	.341	50.17	1.975	50	1.969	0.17	.007	3.0	.118	1
					5	★	MWS0091LB	4.7	.185	10.19	.401	14.19	.559	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
					12	★	MWS0091XB	11.1	.437	20.19	.795	24.19	.952	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
0.915	.0360		64		1	●	MWS00360SB	1.1	.043	4.77	.188	8.97	.353	50.17	1.975	50	1.969	0.17	.007	3.175	.125	1
					5	●	MWS00360LB	4.8	.189	10.19	.401	14.39	.567	50.19	1.976	50	1.969	0.19	.007	3.175	.125	3
					12	●	MWS00360XB	11.1	.437	20.19	.795	24.39	.960	50.19	1.976	50	1.969	0.19	.007	3.175	.125	3
0.920	.0362				1	★	MWS0092SB	1.1	.043	4.77	.188	8.67	.341	50.17	1.975	50	1.969	0.17	.007	3.0	.118	1
					5	★	MWS0092LB	4.8	.189	10.19	.401	14.19	.559	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
					12	★	MWS0092XB	11.2	.441	20.19	.795	24.19	.952	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
0.930	.0366				1	●	MWS0093SB	1.1	.043	4.77	.188	8.67	.341	50.17	1.975	50	1.969	0.17	.007	3.0	.118	1
					5	●	MWS0093LB	4.8	.189	10.19	.401	14.19	.559	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
					12	★	MWS0093XB	11.4	.449	20.19	.795	24.19	.952	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
0.940	.0370		63		1	●	MWS00370SB	1.1	.043	4.77	.188	8.97	.353	50.17	1.975	50	1.969	0.17	.007	3.175	.125	1
					1	★	MWS0094SB	1.1	.043	4.77	.188	8.57	.337	50.17	1.975	50	1.969	0.17	.007	3.0	.118	1
					5	●	MWS00370LB	4.9	.193	10.19	.401	14.39	.567	50.19	1.976	50	1.969	0.19	.007	3.175	.125	3
					5	★	MWS0094LB	4.9	.193	10.19	.401	14.19	.559	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
					12	●	MWS00370XB	11.5	.453	20.19	.795	24.39	.960	50.19	1.976	50	1.969	0.19	.007	3.175	.125	3
					12	★	MWS0094XB	11.5	.453	20.19	.795	24.19	.952	50.19	1.976	50	1.969	0.19	.007	3.0	.118	3
0.950	.0374				1	★	MWS0095SB	1.1	.043	4.77	.188	8.57	.337	50.17	1.975	50	1.969	0.17	.007	3.0	.118	1
					5	★	MWS0095LB	5.0	.197	10.20	.402	14.20	.559	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
					12	★	MWS0095XB	11.6	.457	20.20	.795	24.20	.953	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
0.960	.0378				1	★	MWS0096SB	1.1	.043	5.07	.200	8.87	.349	50.17	1.975	50	1.969	0.17	.007	3.0	.118	1
					5	★	MWS0096LB	5.0	.197	10.20	.402	14.20	.559	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
					12	★	MWS0096XB	11.7	.461	20.20	.795	24.20	.953	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
0.966	.0380		62		1	●	MWS00380SB	1.1	.043	5.08	.200	9.18	.361	50.18	1.976	50	1.969	0.18	.007	3.175	.125	1
					5	●	MWS00380LB	5.0	.197	10.20	.402	14.30	.563	50.20	1.976	50	1.969	0.20	.008	3.175	.125	3
					12	●	MWS00380XB	11.8	.465	20.20	.795	24.30	.957	50.20	1.976	50	1.969	0.20	.008	3.175	.125	3
0.970	.0382				1	●	MWS0097SB	1.2	.047	5.08	.200	8.88	.350	50.18	1.976	50	1.969	0.18	.007	3.0	.118	1
					5	●	MWS0097LB	5.1	.201	10.20	.402	14.20	.559	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
					12	★	MWS0097XB	11.8	.465	20.20	.795	24.20	.953	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
0.980	.0386				1	★	MWS0098SB	1.2	.047	5.08	.200	8.88	.350	50.18	1.976	50	1.969	0.18	.007	3.0	.118	1
					5	★	MWS0098LB	5.1	.201	10.20	.402	14.20	.559	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
					12	★	MWS0098XB	12.0	.472	20.20	.795	24.20	.953	50.20	1.976	50	1.969	0.20	.008	3.0	.118	3
0.990	.0390		61		1	●	MWS0099SB	1.2	.047	5.08	.200	8.88	.350	50.18	1.976	50	1.969	0.18	.007	3.0	.118	1
					5	★	MWS0099LB	5.2	.205	10.21	.402	14.21	.559	50.21	1.977	50	1.969	0.21	.008	3.0	.118	3
					12	★	MWS0099XB	12.1	.476	20.21	.796	24.21	.953	50.21	1.977	50	1.969	0.21	.008	3.0	.118	3
0.991	.0390		61		1	●	MWS00390SB	1.2	.047	5.08	.200	9.18	.361	50.18	1.976	50	1.969	0.18	.007	3.175	.125	1
					5	●	MWS00390LB	5.2	.205	10.21	.402	14.31	.563	50.21	1.977	50	1.969	0.21	.008	3.175	.125	3
					12	●	MWS00390XB	12.1	.476	20.21	.796	24.31	.957	50.21	1.977	50	1.969	0.21	.008	3.175	.125	3

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1.000	.0394				1	●	MWS0100SB	1.2	.047	5.20	.205	8.9	.350	55.2	2.173	55	2.165	0.2	.008	3.0	.118	1
					5	●	MWS0100LB	5.2	.205	11.20	.441	15.2	.598	55.2	2.173	55	2.165	0.2	.008	3.0	.118	3
					12	●	MWS0100XB	12.2	.480	23.20	.913	27.2	1.071	55.2	2.173	55	2.165	0.2	.008	3.0	.118	3
					20	●	MWS0100X20DB	20.2	.795	24.20	.953	28.2	1.110	60.2	2.370	60	2.362	0.2	.008	3.0	.118	3
					25	●	MWS0100X25DB	25.2	.992	28.20	1.110	32.2	1.268	66.2	2.606	66	2.598	0.2	.008	3.0	.118	3
					30	●	MWS0100X30DB	30.2	1.189	33.20	1.307	37.2	1.465	72.2	2.843	72	2.835	0.2	.008	3.0	.118	3
1.001	.0394				1	●	MWS00394SB	1.2	.047	5.20	.205	9.3	.366	55.2	2.173	55	2.165	0.2	.008	3.175	.125	1
					12	●	MWS00394XB	12.2	.480	23.20	.913	27.3	1.075	55.2	2.173	55	2.165	0.2	.008	3.175	.125	3
1.016	.0400		60		1	●	MWS00400SB	1.2	.047	5.20	.205	9.2	.362	55.2	2.173	55	2.165	0.2	.008	3.175	.125	1
					12	●	MWS00400XB	12.4	.488	23.20	.913	27.2	1.071	55.2	2.173	55	2.165	0.2	.008	3.175	.125	3
1.042	.0410		59		1	●	MWS00410SB	1.2	.047	5.40	.213	9.4	.370	55.2	2.173	55	2.165	0.2	.008	3.175	.125	1
					12	●	MWS00410XB	12.7	.500	23.20	.913	27.2	1.071	55.2	2.173	55	2.165	0.2	.008	3.175	.125	3
1.050	.0413				1	●	MWS0105SB	1.3	.051	5.4	.213	9.0	.354	55.2	2.173	55	2.165	0.2	.008	3.0	.118	1
					20	□	MWS0105X20DB	21.2	.835	24.2	.953	28.2	1.110	60.2	2.370	60	2.362	0.2	.008	3.0	.118	3
					25	●	MWS0105X25DB	26.5	1.043	29.2	1.150	33.2	1.307	66.2	2.606	66	2.598	0.2	.008	3.0	.118	3
					30	□	MWS0105X30DB	31.7	1.248	35.2	1.386	38.2	1.504	72.2	2.843	72	2.835	0.2	.008	3.0	.118	3
1.067	.0420		58		1	●	MWS00420SB	1.3	.051	5.4	.213	9.3	.366	55.2	2.173	55	2.165	0.2	.008	3.175	.125	1
					12	●	MWS00420XB	13.0	.512	23.2	.913	27.1	1.067	55.2	2.173	55	2.165	0.2	.008	3.175	.125	3
1.093	.0430		57		1	●	MWS00430SB	1.3	.051	5.6	.220	9.5	.374	55.2	2.173	55	2.165	0.2	.008	3.175	.125	1
					12	●	MWS00430XB	13.3	.524	23.2	.913	27.1	1.067	55.2	2.173	55	2.165	0.2	.008	3.175	.125	3
1.100	.0433				1	●	MWS0110SB	1.3	.051	5.6	.220	9.1	.358	55.2	2.173	55	2.165	0.2	.008	3.0	.118	1
					5	★	MWS0110LB	5.7	.224	17.2	.677	21.2	.835	55.2	2.173	55	2.165	0.2	.008	3.0	.118	3
					12	●	MWS0110XB	13.4	.528	23.2	.913	27.2	1.071	55.2	2.173	55	2.165	0.2	.008	3.0	.118	3
					20	★	MWS0110X20DB	22.2	.874	25.2	.992	29.2	1.150	60.2	2.370	60	2.362	0.2	.008	3.0	.118	3
					25	●	MWS0110X25DB	27.7	1.091	31.2	1.228	34.2	1.346	66.2	2.606	66	2.598	0.2	.008	3.0	.118	3
					30	★	MWS0110X30DB	33.2	1.307	36.2	1.425	40.2	1.583	72.2	2.843	72	2.835	0.2	.008	3.0	.118	3
1.150	.0453				1	□	MWS0115SB	1.4	.055	5.8	.228	9.3	.366	55.2	2.173	55	2.165	0.2	.008	3.0	.118	1
					20	□	MWS0115X20DB	23.2	.913	26.2	1.031	30.2	1.189	60.2	2.370	60	2.362	0.2	.008	3.0	.118	3
					25	□	MWS0115X25DB	29.0	1.142	32.2	1.268	36.2	1.425	66.2	2.606	66	2.598	0.2	.008	3.0	.118	3
					30	□	MWS0115X30DB	34.7	1.366	38.2	1.504	41.2	1.622	72.2	2.843	72	2.835	0.2	.008	3.0	.118	3
1.182	.0465		56		1	●	MWS00465SB	1.4	.055	6.2	.244	9.9	.390	55.2	2.173	55	2.165	0.2	.008	3.175	.125	1
					12	●	MWS00465XB	14.4	.567	23.2	.913	26.9	1.059	55.2	2.173	55	2.165	0.2	.008	3.175	.125	3
1.200	.0472				1	●	MWS0120SB	1.4	.055	6.2	.244	9.6	.378	55.2	2.173	55	2.165	0.2	.008	3.0	.118	1
					5	★	MWS0120LB	6.3	.248	17.3	.681	20.3	.799	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					12	●	MWS0120XB	14.7	.579	23.3	.917	26.3	1.035	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					20	●	MWS0120X20DB	24.3	.957	28.2	1.110	31.2	1.228	60.2	2.370	60	2.362	0.2	.008	3.0	.118	3
					25	●	MWS0120X25DB	30.3	1.193	34.2	1.346	37.2	1.465	66.2	2.606	66	2.598	0.2	.008	3.0	.118	3
					30	●	MWS0120X30DB	36.3	1.429	40.2	1.583	43.2	1.701	72.2	2.843	72	2.835	0.2	.008	3.0	.118	3
1.250	.0492				1	●	MWS0125SB	1.5	.059	6.4	.252	9.7	.382	55.2	2.173	55	2.165	0.2	.008	3.0	.118	1
					20	●	MWS0125X20DB	25.3	.996	29.2	1.150	32.2	1.268	68.2	2.685	68	2.677	0.2	.008	3.0	.118	3
					25	□	MWS0125X25DB	31.6	1.244	35.2	1.386	38.2	1.504	74.2	2.921	74	2.913	0.2	.008	3.0	.118	3
					30	□	MWS0125X30DB	37.8	1.488	41.2	1.622	45.2	1.780	82.2	3.236	82	3.228	0.2	.008	3.0	.118	3
1.300	.0512				1	●	MWS0130SB	1.5	.059	6.6	.260	9.8	.386	55.2	2.173	55	2.165	0.2	.008	3.0	.118	1
					5	★	MWS0130LB	6.8	.268	17.3	.681	20.3	.799	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					12	●	MWS0130XB	15.9	.626	23.3	.917	26.3	1.035	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					20	●	MWS0130X20DB	26.3	1.035	30.2	1.189	33.2	1.307	68.2	2.685	68	2.677	0.2	.008	3.0	.118	3
					25	●	MWS0130X25DB	32.8	1.291	36.2	1.425	40.2	1.583	74.2	2.921	74	2.913	0.2	.008	3.0	.118	3
					30	●	MWS0130X30DB	39.3	1.547	43.2	1.701	46.2	1.819	82.2	3.236	82	3.228	0.2	.008	3.0	.118	3

MICRO-MWS

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1.321	.0520		55		1	●	MWS00520SB	1.6	.063	6.6	.260	10.1	.398	55.2	2.173	55	2.165	0.2	.008	3.175	.125	1
					12	●	MWS00520XB	16.1	.634	23.3	.917	26.8	1.055	55.3	2.177	55	2.165	0.3	.012	3.175	.125	3
1.350	.0531				1	□	MWS0135SB	1.7	.067	6.9	.272	10.0	.394	55.3	2.177	55	2.165	0.3	.012	3.0	.118	1
					20	□	MWS0135X20DB	27.3	1.075	31.3	1.232	34.3	1.350	68.3	2.689	68	2.677	0.3	.012	3.0	.118	3
					25	□	MWS0135X25DB	34.1	1.343	38.3	1.508	41.3	1.626	74.3	2.925	74	2.913	0.3	.012	3.0	.118	3
					30	□	MWS0135X30DB	40.8	1.606	45.3	1.783	48.3	1.902	82.3	3.240	82	3.228	0.3	.012	3.0	.118	3
1.397	.0550		54		1	●	MWS00550SB	1.7	.067	7.3	.287	10.6	.417	55.3	2.177	55	2.165	0.3	.012	3.175	.125	1
					12	●	MWS00550XB	17.1	.673	23.3	.917	26.6	1.047	55.3	2.177	55	2.165	0.3	.012	3.175	.125	3
1.400	.0551				1	●	MWS0140SB	1.7	.067	7.3	.287	10.3	.406	55.3	2.177	55	2.165	0.3	.012	3.0	.118	1
					5	★	MWS0140LB	7.3	.287	17.3	.681	20.3	.799	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					12	●	MWS0140XB	17.1	.673	23.3	.917	26.3	1.035	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					20	●	MWS0140X20DB	28.3	1.114	32.3	1.272	35.3	1.390	68.3	2.689	68	2.677	0.3	.012	3.0	.118	3
					25	●	MWS0140X25DB	35.3	1.390	39.3	1.547	42.3	1.665	74.3	2.925	74	2.913	0.3	.012	3.0	.118	3
					30	●	MWS0140X30DB	42.3	1.665	46.3	1.823	49.3	1.941	82.3	3.240	82	3.228	0.3	.012	3.0	.118	3
1.450	.0571				1	●	MWS0145SB	1.8	.071	7.5	.295	10.4	.409	55.3	2.177	55	2.165	0.3	.012	3.0	.118	1
					20	●	MWS0145X20DB	29.3	1.154	33.3	1.311	36.3	1.429	68.3	2.689	68	2.677	0.3	.012	3.0	.118	3
					25	□	MWS0145X25DB	36.6	1.441	41.3	1.626	43.3	1.705	74.3	2.925	74	2.913	0.3	.012	3.0	.118	3
					30	□	MWS0145X30DB	43.8	1.724	48.3	1.902	51.3	2.020	82.3	3.240	82	3.228	0.3	.012	3.0	.118	3
1.500	.0591			#1-64	1	●	MWS0150SB	1.8	.071	7.7	.303	10.5	.413	55.3	2.177	55	2.165	0.3	.012	3.0	.118	1
					5	●	MWS0150LB	7.8	.307	17.3	.681	20.3	.799	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					12	●	MWS0150XB	18.3	.720	23.3	.917	26.3	1.035	55.3	2.177	55	2.165	0.3	.012	3.0	.118	3
					20	●	MWS0150X20DB	30.3	1.193	35.3	1.390	37.3	1.469	68.3	2.689	68	2.677	0.3	.012	3.0	.118	3
					25	●	MWS0150X25DB	37.8	1.488	42.3	1.665	45.3	1.783	74.3	2.925	74	2.913	0.3	.012	3.0	.118	3
					30	●	MWS0150X30DB	45.3	1.783	50.3	1.980	52.3	2.059	82.3	3.240	82	3.228	0.3	.012	3.0	.118	3
1.502	.0591			#1-64	1	●	MWS00591SB	1.8	.071	7.7	.303	10.8	.425	55.3	2.177	55	2.165	0.3	.012	3.175	.125	1
					12	●	MWS00591XB	18.3	.720	23.3	.917	26.4	1.039	55.3	2.177	55	2.165	0.3	.012	3.175	.125	3
1.550	.0610				1	●	MWS0155SB	1.9	.075	7.9	.311	10.6	.417	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					20	●	MWS0155X20DB	31.3	1.232	36.3	1.429	38.3	1.508	78.3	3.083	78	3.071	0.3	.012	3.0	.118	3
					25	□	MWS0155X25DB	39.1	1.539	43.3	1.705	46.3	1.823	86.3	3.398	86	3.386	0.3	.012	3.0	.118	3
					30	□	MWS0155X30DB	46.8	1.843	51.3	2.020	54.3	2.138	95.3	3.752	95	3.740	0.3	.012	3.0	.118	3
1.588	.0625	1/16			1	●	MWS00625SB	1.9	.075	8.3	.327	11.3	.445	68.3	2.689	68	2.677	0.3	.012	3.175	.125	1
					12	●	MWS00625XB	19.4	.764	30.3	1.193	33.3	1.311	68.3	2.689	68	2.677	0.3	.012	3.175	.125	3
1.600	.0630				1	●	MWS0160SB	1.9	.075	8.3	.327	10.9	.429	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					5	★	MWS0160LB	8.3	.327	22.3	.878	25.3	.996	68.3	2.689	68	2.677	0.3	.012	3.0	.118	3
					12	●	MWS0160XB	19.5	.768	30.3	1.193	33.3	1.311	68.3	2.689	68	2.677	0.3	.012	3.0	.118	3
					20	●	MWS0160X20DB	32.3	1.272	37.3	1.469	39.3	1.547	78.3	3.083	78	3.071	0.3	.012	3.0	.118	3
					25	●	MWS0160X25DB	40.3	1.587	45.3	1.783	47.3	1.862	86.3	3.398	86	3.386	0.3	.012	3.0	.118	3
					30	●	MWS0160X30DB	48.3	1.902	53.3	2.098	55.3	2.177	95.3	3.752	95	3.740	0.3	.012	3.0	.118	3
1.613	.0635		52		1	●	MWS00635SB	1.9	.075	8.3	.327	11.2	.441	68.3	2.689	68	2.677	0.3	.012	3.175	.125	1
					12	●	MWS00635XB	19.7	.776	30.3	1.193	33.2	1.307	68.3	2.689	68	2.677	0.3	.012	3.175	.125	3
1.650	.0650				1	□	MWS0165SB	2.0	.079	8.5	.335	11.0	.433	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					20	□	MWS0165X20DB	33.3	1.311	38.3	1.508	40.3	1.587	78.3	3.083	78	3.071	0.3	.012	3.0	.118	3
					25	□	MWS0165X25DB	41.6	1.638	46.3	1.823	49.3	1.941	86.3	3.398	86	3.386	0.3	.012	3.0	.118	3
					30	□	MWS0165X30DB	49.8	1.961	54.3	2.138	57.3	2.256	95.3	3.752	95	3.740	0.3	.012	3.0	.118	3

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
1.700	.0669				1	●	MWS0170SB	2.0	.079	8.7	.343	11.1	.437	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					5	★	MWS0170LB	8.9	.350	22.4	.882	24.4	.961	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					12	●	MWS0170XB	20.8	.819	30.4	1.197	32.4	1.276	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					20	●	MWS0170X20DB	34.4	1.354	39.3	1.547	42.3	1.665	78.3	3.083	78	3.071	0.3	.012	3.0	.118	3
					25	●	MWS0170X25DB	42.9	1.689	48.3	1.902	50.3	1.980	86.3	3.398	86	3.386	0.3	.012	3.0	.118	3
					30	★	MWS0170X30DB	51.4	2.024	56.3	2.217	59.3	2.335	95.3	3.752	95	3.740	0.3	.012	3.0	.118	3
1.702	.0670		51		1	●	MWS00670SB	2.0	.079	8.7	.343	11.4	.449	68.3	2.689	68	2.677	0.3	.012	3.175	.125	1
					12	●	MWS00670XB	20.8	.819	30.4	1.197	33.1	1.303	68.4	2.693	68	2.677	0.4	.016	3.175	.125	3
1.750	.0689				1	●	MWS0175SB	2.1	.083	8.9	.350	11.2	.441	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					20	□	MWS0175X20DB	35.4	1.394	40.3	1.587	43.3	1.705	84.3	3.319	84	3.307	0.3	.012	3.0	.118	3
					25	□	MWS0175X25DB	44.2	1.740	49.3	1.941	51.3	2.020	94.3	3.713	94	3.701	0.3	.012	3.0	.118	3
					30	□	MWS0175X30DB	52.9	2.083	58.3	2.295	60.3	2.374	102.3	4.028	102	4.016	0.3	.012	3.0	.118	3
1.778	.0700		50	#2-56	1	●	MWS00700SB	2.1	.083	9.3	.366	11.9	.469	68.3	2.689	68	2.677	0.3	.012	3.175	.125	1
					12	●	MWS00700XB	21.7	.854	30.4	1.197	33.0	1.299	68.4	2.693	68	2.677	0.4	.016	3.175	.125	3
1.800	.0709				1	●	MWS0180SB	2.1	.083	9.3	.366	11.5	.453	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					5	★	MWS0180LB	9.4	.370	22.4	.882	24.4	.961	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					12	●	MWS0180XB	22.0	.866	30.4	1.197	32.4	1.276	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					20	●	MWS0180X20DB	36.4	1.433	41.3	1.626	44.3	1.744	84.3	3.319	84	3.307	0.3	.012	3.0	.118	3
					25	●	MWS0180X25DB	45.4	1.787	50.3	1.980	53.3	2.098	94.3	3.713	94	3.701	0.3	.012	3.0	.118	3
					30	●	MWS0180X30DB	54.4	2.142	59.3	2.335	62.3	2.453	102.3	4.028	102	4.016	0.3	.012	3.0	.118	3
1.850	.0728				1	□	MWS0185SB	2.2	.087	9.5	.374	11.6	.457	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					20	□	MWS0185X20DB	37.4	1.472	43.3	1.705	45.3	1.783	84.3	3.319	84	3.307	0.3	.012	3.0	.118	3
					25	□	MWS0185X25DB	46.7	1.839	52.3	2.059	54.3	2.138	94.3	3.713	94	3.701	0.3	.012	3.0	.118	3
					30	□	MWS0185X30DB	55.9	2.201	61.3	2.413	63.3	2.492	102.3	4.028	102	4.016	0.3	.012	3.0	.118	3
1.855	.0730		49		1	●	MWS00730SB	2.2	.087	9.5	.374	12.0	.472	68.3	2.689	68	2.677	0.3	.012	3.175	.125	1
					12	●	MWS00730XB	22.6	.890	30.4	1.197	32.9	1.295	68.4	2.693	68	2.677	0.4	.016	3.175	.125	3
1.900	.0748				1	●	MWS0190SB	2.3	.091	9.8	.386	11.9	.469	68.4	2.693	68	2.677	0.4	.016	3.0	.118	1
					5	★	MWS0190LB	9.9	.390	22.4	.882	24.4	.961	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					12	★	MWS0190XB	23.2	.913	30.4	1.197	32.4	1.276	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					20	●	MWS0190X20DB	38.4	1.512	44.4	1.748	46.4	1.827	84.4	3.323	84	3.307	0.4	.016	3.0	.118	3
					25	●	MWS0190X25DB	47.9	1.886	53.4	2.102	55.4	2.181	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					30	●	MWS0190X30DB	57.4	2.260	63.4	2.496	65.4	2.575	102.4	4.031	102	4.016	0.4	.016	3.0	.118	3
1.931	.0760		48		1	●	MWS00760SB	2.3	.091	10.0	.394	12.3	.484	68.4	2.693	68	2.677	0.4	.016	3.175	.125	1
					12	●	MWS00760XB	23.6	.929	30.4	1.197	32.7	1.287	68.4	2.693	68	2.677	0.4	.016	3.175	.125	3
1.950	.0768				1	□	MWS0195SB	2.4	.094	10.0	.394	12.0	.472	68.4	2.693	68	2.677	0.4	.016	3.0	.118	1
					20	□	MWS0195X20DB	39.4	1.551	45.4	1.787	47.4	1.866	84.4	3.323	84	3.307	0.4	.016	3.0	.118	3
					25	□	MWS0195X25DB	49.2	1.937	55.4	2.181	57.4	2.260	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					30	□	MWS0195X30DB	58.9	2.319	64.4	2.535	66.4	2.614	102.4	4.031	102	4.016	0.4	.016	3.0	.118	3
1.994	.0785				1	●	MWS00785SB	2.4	.094	10.4	.409	12.6	.496	68.4	2.693	68	2.677	0.4	.016	3.175	.125	1
					12	●	MWS00785XB	24.3	.957	30.4	1.197	32.6	1.283	68.4	2.693	68	2.677	0.4	.016	3.175	.125	3
2.000	.0787			#3-48	1	●	MWS0200SB	2.4	.094	10.4	.409	12.3	.484	68.4	2.693	68	2.677	0.4	.016	3.0	.118	1
					5	●	MWS0200LB	10.4	.409	22.4	.882	24.4	.961	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					12	●	MWS0200XB	24.4	.961	30.4	1.197	32.4	1.276	68.4	2.693	68	2.677	0.4	.016	3.0	.118	3
					20	●	MWS0200X20DB	40.4	1.591	46.4	1.827	48.4	1.906	84.4	3.323	84	3.307	0.4	.016	3.0	.118	3
					25	●	MWS0200X25DB	50.4	1.984	56.4	2.220	58.4	2.299	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					30	●	MWS0200X30DB	60.4	2.378	66.4	2.614	68.4	2.693	102.4	4.031	102	4.016	0.4	.016	3.0	.118	3

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L103
OPERATIONAL GUIDANCE ➤ L106

MICRO-MWS

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.050	.0807				1	●	MWS0205SB	2.4	.094	10.5	.413	12.3	.484	74.3	2.925	74	2.913	0.3	.012	3.0	.118	1
					20	□	MWS0205X20DB	41.4	1.630	47.4	1.866	49.4	1.945	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	□	MWS0205X25DB	51.7	2.035	57.4	2.260	59.4	2.339	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	□	MWS0205X30DB	61.9	2.437	68.4	2.693	69.4	2.732	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.058	.0810		46		1	●	MWS00810SB	2.4	.094	10.5	.413	12.6	.496	74.3	2.925	74	2.913	0.3	.012	3.175	.125	1
					12	●	MWS00810XB	25.1	.988	38.4	1.512	40.5	1.594	74.4	2.929	74	2.913	0.4	.016	3.175	.125	3
2.100	.0827				1	●	MWS0210SB	2.4	.094	10.7	.421	12.4	.488	68.3	2.689	68	2.677	0.3	.012	3.0	.118	1
					5	★	MWS0210LB	10.9	.429	28.4	1.118	30.4	1.197	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					12	●	MWS0210XB	25.6	1.008	38.4	1.512	40.4	1.591	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					20	★	MWS0210X20DB	42.4	1.669	48.4	1.906	50.4	1.984	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	★	MWS0210X25DB	52.9	2.083	59.4	2.339	60.4	2.378	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	●	MWS0210X30DB	63.4	2.496	69.4	2.732	71.4	2.811	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.150	.0846				1	□	MWS0215SB	2.5	.098	10.9	.429	12.5	.492	74.3	2.925	74	2.913	0.3	.012	3.0	.118	1
					20	□	MWS0215X20DB	43.4	1.709	49.4	1.945	51.4	2.024	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	□	MWS0215X25DB	54.2	2.134	60.4	2.378	62.4	2.457	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	□	MWS0215X30DB	64.9	2.555	71.4	2.811	73.4	2.890	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.185	.0860		44		1	●	MWS00860SB	2.5	.098	11.3	.445	13.1	.516	74.3	2.925	74	2.913	0.3	.012	3.175	.125	1
					12	●	MWS00860XB	26.6	1.047	38.4	1.512	40.2	1.583	74.4	2.929	74	2.913	0.4	.016	3.175	.125	3
2.200	.0866				1	●	MWS0220SB	2.6	.102	11.4	.449	12.9	.508	74.4	2.929	74	2.913	0.4	.016	3.0	.118	1
					5	★	MWS0220LB	11.4	.449	28.4	1.118	29.4	1.157	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					12	●	MWS0220XB	26.8	1.055	38.4	1.512	39.4	1.551	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					20	★	MWS0220X20DB	44.4	1.748	51.4	2.024	52.4	2.063	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	★	MWS0220X25DB	55.4	2.181	62.4	2.457	63.4	2.496	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	●	MWS0220X30DB	66.4	2.614	73.4	2.890	74.4	2.929	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.250	.0886				1	●	MWS0225SB	2.7	.106	11.6	.457	13.0	.512	74.4	2.929	74	2.913	0.4	.016	3.0	.118	1
					20	□	MWS0225X20DB	45.4	1.787	52.4	2.063	53.4	2.102	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	□	MWS0225X25DB	56.7	2.232	63.4	2.496	64.4	2.535	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	□	MWS0225X30DB	67.9	2.673	74.4	2.929	76.4	3.008	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.261	.0890		43	#4-40	1	●	MWS00890SB	2.6	.102	11.6	.457	13.3	.524	74.4	2.929	74	2.913	0.4	.016	3.175	.125	1
					12	●	MWS00890XB	27.5	1.083	38.4	1.512	40.1	1.579	74.4	2.929	74	2.913	0.4	.016	3.175	.125	3
2.300	.0906				1	●	MWS0230SB	2.7	.106	11.8	.465	13.1	.516	74.4	2.929	74	2.913	0.4	.016	3.0	.118	1
					5	★	MWS0230LB	11.9	.469	28.4	1.118	29.4	1.157	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					12	●	MWS0230XB	28.0	1.102	38.4	1.512	39.4	1.551	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					20	●	MWS0230X20DB	46.4	1.827	53.4	2.102	54.4	2.142	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	●	MWS0230X25DB	57.9	2.280	64.4	2.535	66.4	2.614	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	●	MWS0230X30DB	69.4	2.732	76.4	3.008	77.4	3.047	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.350	.0925				1	●	MWS0235SB	2.8	.110	12.0	.472	13.2	.520	74.4	2.929	74	2.913	0.4	.016	3.0	.118	1
					20	●	MWS0235X20DB	47.4	1.866	54.4	2.142	55.4	2.181	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	□	MWS0235X25DB	59.2	2.331	66.4	2.614	67.4	2.654	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	□	MWS0235X30DB	70.9	2.791	78.4	3.087	79.4	3.126	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.382	.0938	3/32			1	●	MWS00938SB	2.8	.110	12.4	.488	13.9	.547	74.4	2.929	74	2.913	0.4	.016	3.175	.125	1
					12	●	MWS00938XB	29.0	1.142	38.4	1.512	39.9	1.571	74.4	2.929	74	2.913	0.4	.016	3.175	.125	3

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.400	.0945				1	●	MWS0240SB	2.8	.110	12.4	.488	13.5	.531	74.4	2.929	74	2.913	0.4	.016	3.0	.118	1
					5	★	MWS0240LB	12.4	.488	28.4	1.118	29.4	1.157	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					12	●	MWS0240XB	29.2	1.150	38.4	1.512	39.4	1.551	74.4	2.929	74	2.913	0.4	.016	3.0	.118	3
					20	●	MWS0240X20DB	48.4	1.906	55.4	2.181	56.4	2.220	94.4	3.717	94	3.701	0.4	.016	3.0	.118	3
					25	●	MWS0240X25DB	60.4	2.378	67.4	2.654	68.4	2.693	107.4	4.228	107	4.213	0.4	.016	3.0	.118	3
					30	●	MWS0240X30DB	72.4	2.850	79.4	3.126	80.4	3.165	118.4	4.661	118	4.646	0.4	.016	3.0	.118	3
2.439	.0960		41		1	●	MWS00960SB	2.8	.110	12.6	.496	14.0	.551	74.4	2.929	74	2.913	0.4	.016	3.175	.125	1
					12	●	MWS00960XB	29.7	1.169	38.4	1.512	39.8	1.567	74.4	2.929	74	2.913	0.4	.016	3.175	.125	3
2.450	.0965				1	□	MWS0245SB	2.9	.114	12.6	.496	13.6	.535	74.4	2.929	74	2.913	0.4	.016	3.0	.118	1
					20	□	MWS0245X20DB	49.5	1.949	56.5	2.224	57.5	2.264	94.5	3.720	94	3.701	0.5	.020	3.0	.118	3
					25	□	MWS0245X25DB	61.8	2.433	69.5	2.736	70.5	2.776	107.5	4.232	107	4.213	0.5	.020	3.0	.118	3
					30	□	MWS0245X30DB	74.0	2.913	81.5	3.209	82.5	3.248	118.5	4.665	118	4.646	0.5	.020	3.0	.118	3
2.500	.0984				1	●	MWS0250SB	2.9	.114	12.8	.504	13.7	.539	74.4	2.929	74	2.913	0.4	.016	3.0	.118	1
					5	●	MWS0250LB	13.0	.512	28.5	1.122	29.5	1.161	74.5	2.933	74	2.913	0.5	.020	3.0	.118	3
					12	●	MWS0250XB	30.5	1.201	38.5	1.516	39.5	1.555	74.5	2.933	74	2.913	0.5	.020	3.0	.118	3
					20	●	MWS0250X20DB	50.5	1.988	58.5	2.303	59.5	2.343	94.5	3.720	94	3.701	0.5	.020	3.0	.118	3
					25	●	MWS0250X25DB	63.0	2.480	70.5	2.776	71.5	2.815	107.5	4.232	107	4.213	0.5	.020	3.0	.118	3
					30	●	MWS0250X30DB	75.5	2.972	83.5	3.287	84.5	3.327	118.5	4.665	118	4.646	0.5	.020	3.0	.118	3
2.550	.1004				1	□	MWS0255SB	3.1	.122	13.0	.512	13.0	.512	81.4	3.205	81	3.189	0.4	.016	3.0	.118	2
					20	□	MWS0255X20DB	51.5	2.028	59.5	2.343	59.5	2.343	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	□	MWS0255X25DB	64.3	2.531	71.5	2.815	71.5	2.815	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	□	MWS0255X30DB	77.0	3.031	84.5	3.327	84.5	3.327	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4
2.566	.1010				1	●	MWS01010SB	3.0	.118	13.0	.512	13.0	.512	81.4	3.205	81	3.189	0.4	.016	3.175	.125	2
					12	●	MWS01010XB	31.3	1.232	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.175	.125	4
2.600	.1024				1	●	MWS0260SB	3.1	.122	13.4	.528	13.4	.528	81.4	3.205	81	3.189	0.4	.016	3.0	.118	2
					5	★	MWS0260LB	13.5	.531	33.5	1.319	33.5	1.319	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					12	●	MWS0260XB	31.7	1.248	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					20	●	MWS0260X20DB	52.5	2.067	60.5	2.382	60.5	2.382	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	●	MWS0260X25DB	65.5	2.579	73.5	2.894	73.5	2.894	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	●	MWS0260X30DB	78.5	3.091	86.5	3.406	86.5	3.406	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4
2.642	.1040		37	#5-44	1	●	MWS01040SB	3.1	.122	13.6	.535	13.6	.535	81.4	3.205	81	3.189	0.4	.016	3.175	.125	2
					12	●	MWS01040XB	32.2	1.268	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.175	.125	4
2.650	.1043				1	□	MWS0265SB	3.2	.126	13.6	.535	13.6	.535	81.4	3.205	81	3.189	0.4	.016	3.0	.118	2
					20	□	MWS0265X20DB	53.5	2.106	61.5	2.421	61.5	2.421	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	□	MWS0265X25DB	66.8	2.630	74.5	2.933	74.5	2.933	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	□	MWS0265X30DB	80.0	3.150	87.5	3.445	87.5	3.445	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4
2.693	.1060				1	●	MWS01060SB	3.1	.122	13.8	.543	13.8	.543	81.4	3.205	81	3.189	0.4	.016	3.175	.125	2
					12	●	MWS01060XB	32.8	1.291	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.175	.125	4
2.700	.1063		36	#6-32	1	●	MWS0270SB	3.2	.126	13.8	.543	13.8	.543	81.4	3.205	81	3.189	0.4	.016	3.0	.118	2
					5	★	MWS0270LB	14.0	.551	33.5	1.319	33.5	1.319	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					12	●	MWS0270XB	32.9	1.295	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					20	★	MWS0270X20DB	54.5	2.146	62.5	2.461	62.5	2.461	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	●	MWS0270X25DB	68.0	2.677	76.5	3.012	76.5	3.012	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	●	MWS0270X30DB	81.5	3.209	89.5	3.524	89.5	3.524	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4
2.750	.1083				1	□	MWS0275SB	3.3	.130	14.0	.551	14.0	.551	81.4	3.205	81	3.189	0.4	.016	3.0	.118	2
					20	□	MWS0275X20DB	55.5	2.185	63.5	2.500	63.5	2.500	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	□	MWS0275X25DB	69.3	2.728	77.5	3.051	77.5	3.051	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	□	MWS0275X30DB	83.0	3.268	91.5	3.602	91.5	3.602	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4

MICRO-MWS

DC					L/D	Stock	Order Number	Dimensions														Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		LU		LCF		LH		OAL		LF		PL		DCON		
								mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.779	**.1094**	**7/64**			1	●	**MWS01094SB**	3.2	.126	14.4	.567	14.4	.567	81.4	3.205	81	3.189	0.4	.016	3.175	.125	2
					12	●	**MWS01094XB**	33.9	1.335	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.175	.125	4
2.800	**.1102**		**35**		1	●	**MWS0280SB**	3.3	.130	14.4	.567	14.4	.567	81.4	3.205	81	3.189	0.4	.016	3.0	.118	2
					5	★	**MWS0280LB**	14.5	.571	33.5	1.319	33.5	1.319	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					12	●	**MWS0280XB**	34.1	1.343	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					20	●	**MWS0280X20DB**	56.5	2.224	64.5	2.539	64.5	2.539	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	●	**MWS0280X25DB**	70.5	2.776	78.5	3.091	78.5	3.091	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	●	**MWS0280X30DB**	84.5	3.327	92.5	3.642	92.5	3.642	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4
2.850	**.1122**				1	□	**MWS0285SB**	3.4	.134	14.7	.579	14.7	.579	81.5	3.209	81	3.189	0.5	.020	3.0	.118	2
					20	□	**MWS0285X20DB**	57.5	2.264	66.5	2.618	66.5	2.618	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	□	**MWS0285X25DB**	71.8	2.827	80.5	3.169	80.5	3.169	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	□	**MWS0285X30DB**	86.0	3.386	94.5	3.720	94.5	3.720	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4
2.900	**.1142**				1	●	**MWS0290SB**	3.4	.134	14.9	.587	14.9	.587	81.5	3.209	81	3.189	0.5	.020	3.0	.118	2
					5	●	**MWS0290LB**	15.0	.591	33.5	1.319	33.5	1.319	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					12	●	**MWS0290XB**	35.3	1.390	45.5	1.791	45.5	1.791	81.5	3.209	81	3.189	0.5	.020	3.0	.118	4
					20	★	**MWS0290X20DB**	58.5	2.303	67.5	2.657	67.5	2.657	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	★	**MWS0290X25DB**	73.0	2.874	81.5	3.209	81.5	3.209	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	★	**MWS0290X30DB**	87.5	3.445	96.5	3.799	96.5	3.799	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4
2.950	**.1161**		**32**		1	□	**MWS0295SB**	3.5	.138	15.1	.594	15.1	.594	81.5	3.209	81	3.189	0.5	.020	3.0	.118	2
					20	□	**MWS0295X20DB**	59.5	2.343	68.5	2.697	68.5	2.697	103.5	4.075	103	4.055	0.5	.020	3.0	.118	4
					25	□	**MWS0295X25DB**	74.3	2.925	83.5	3.287	83.5	3.287	117.5	4.626	117	4.606	0.5	.020	3.0	.118	4
					30	□	**MWS0295X30DB**	89.0	3.504	97.5	3.839	97.5	3.839	132.5	5.217	132	5.197	0.5	.020	3.0	.118	4

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock ★ : Stocked in Japan □ : Made to Order

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L106

RECOMMENDED CUTTING CONDITIONS

■ MWS SB/LB/XB/DB Type (L/D<10)

Workpiece Material		Mild Steel (≤180HB) AISI 1010 etc.		Carbon Steel, Alloy Steel (180—280HB) AISI 1045, 4140 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0197	**0.50**	130 (100—150)	.0004 (.0002—.0006)	130 (100—150)	.0004 (.0002—.0006)
.0248	**0.63**	130 (100—150)	.0006 (.0003—.0008)	130 (100—150)	.0006 (.0003—.0008)
.0315	**0.80**	150 (115—165)	.0011 (.0006—.0016)	150 (115—165)	.0011 (.0006—.0016)
.0394	**1.00**	165 (130—180)	.0014 (.0008—.0020)	165 (130—180)	.0014 (.0008—.0020)
.0472	**1.20**	165 (130—180)	.0018 (.0012—.0024)	165 (130—180)	.0018 (.0012—.0024)
.0630	**1.60**	165 (130—180)	.0022 (.0014—.0031)	165 (130—180)	.0022 (.0014—.0031)
.0787	**2.00**	165 (130—180)	.0028 (.0016—.0039)	165 (130—180)	.0028 (.0016—.0039)
.0984	**2.50**	195 (150—230)	.0033 (.0020—.0049)	195 (150—215)	.0033 (.0020—.0049)

Workpiece Material		Carbon Steel, Alloy Steel (280—350HB) AISI 4340 etc.		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0197	**0.50**	100 (65—115)	.0004 (.0002—.0006)	65 (50—80)	.0003 (.0002—.0004)
.0248	**0.63**	100 (65—115)	.0006 (.0003—.0008)	65 (50—80)	.0004 (.0003—.0005)
.0315	**0.80**	115 (80—130)	.0011 (.0006—.0016)	80 (65—100)	.0008 (.0006—.0010)
.0394	**1.00**	130 (100—150)	.0014 (.0008—.0020)	100 (65—115)	.0012 (.0008—.0017)
.0472	**1.20**	130 (100—150)	.0018 (.0012—.0024)	100 (65—115)	.0016 (.0012—.0021)
.0630	**1.60**	130 (100—150)	.0022 (.0014—.0031)	100 (65—115)	.0020 (.0014—.0028)
.0787	**2.00**	130 (100—150)	.0028 (.0016—.0039)	100 (65—115)	.0024 (.0016—.0031)
.0984	**2.50**	165 (130—180)	.0033 (.0020—.0049)	130 (100—150)	.0030 (.0020—.0039)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

MICRO-MWS

RECOMMENDED CUTTING CONDITIONS

■ MWS SB/LB/XB/DB Type (L/D<10)

Workpiece Material		Gray Cast Iron (≤350MPa) No45B etc.		Ductile Cast Iron (≤450MPa) 60-40-8 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0197	**0.50**	130 (100—150)	.0004 (.0002—.0006)	100 (65—115)	.0004 (.0002—.0006)
.0248	**0.63**	130 (100—150)	.0006 (.0003—.0008)	100 (65—115)	.0006 (.0003—.0008)
.0315	**0.80**	150 (115—165)	.0011 (.0006—.0016)	115 (80—130)	.0011 (.0006—.0016)
.0394	**1.00**	165 (130—180)	.0014 (.0008—.0020)	130 (100—150)	.0014 (.0008—.0020)
.0472	**1.20**	165 (130—180)	.0018 (.0012—.0024)	130 (100—150)	.0018 (.0012—.0024)
.0630	**1.60**	165 (130—180)	.0022 (.0014—.0031)	130 (100—150)	.0022 (.0014—.0031)
.0787	**2.00**	165 (130—180)	.0028 (.0016—.0039)	130 (100—150)	.0028 (.0016—.0039)
.0984	**2.50**	195 (150—215)	.0033 (.0020—.0049)	165 (130—180)	.0033 (.0020—.0049)

Workpiece Material		Aluminum Alloy (Si<5%) ASTM A6061, A7075 etc.		Heat Resistant Alloy Inconel718 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0197	**0.50**	130 (100—150)	.0006 (.0003—.0008)	35 (15—50)	.0002 (.0002—.0003)
.0248	**0.63**	130 (100—150)	.0008 (.0005—.0012)	35 (15—50)	.0003 (.0003—.0004)
.0315	**0.80**	150 (115—165)	.0014 (.0009—.0020)	35 (15—50)	.0006 (.0005—.0008)
.0394	**1.00**	195 (150—215)	.0020 (.0012—.0030)	35 (15—50)	.0008 (.0006—.0011)
.0472	**1.20**	230 (180—245)	.0026 (.0018—.0035)	35 (15—50)	.0010 (.0009—.0013)
.0630	**1.60**	260 (195—280)	.0033 (.0021—.0047)	35 (15—50)	.0012 (.0010—.0016)
.0787	**2.00**	295 (230—310)	.0041 (.0024—.0059)	50 (35—65)	.0016 (.0013—.0020)
.0984	**2.50**	330 (260—360)	.0053 (.0030—.0079)	50 (35—65)	.0020 (.0016—.0024)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

■ MWS DB Type (L/D≥10)

Workpiece Material		Mild Steel (≤180HB) AISI 1010 etc.		Carbon Steel, Alloy Steel (180—280HB) AISI 1045, 4140 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0394	**1.0**	165 (130—180)	.0008 (.0004—.0012)	130 (100—130)	.0008 (.0004—.0012)
.0472	**1.2**	165 (130—180)	.0010 (.0006—.0015)	130 (100—130)	.0010 (.0006—.0015)
.0630	**1.6**	165 (130—180)	.0022 (.0013—.0031)	130 (100—130)	.0022 (.0013—.0031)
.0787	**2.0**	195 (150—215)	.0028 (.0016—.0039)	165 (130—180)	.0028 (.0016—.0039)
.0984	**2.5**	195 (150—215)	.0035 (.0025—.0049)	165 (130—180)	.0035 (.0022—.0049)

Workpiece Material		Carbon Steel, Alloy Steel (280—350HB) AISI 4340 etc.		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0394	**1.0**	100 (65—100)	.0006 (.0004—.0011)	100 (65—115)	.0006 (.0004—.0011)
.0472	**1.2**	100 (65—100)	.0008 (.0005—.0014)	100 (65—115)	.0008 (.0005—.0014)
.0630	**1.6**	100 (65—100)	.0020 (.0011—.0030)	100 (65—115)	.0020 (.0011—.0030)
.0787	**2.0**	165 (130—180)	.0026 (.0013—.0037)	100 (65—115)	.0026 (.0013—.0037)
.0984	**2.5**	165 (130—180)	.0031 (.0018—.0047)	130 (100—150)	.0031 (.0018—.0047)

Workpiece Material		Gray Cast Iron (≤350MPa) No45B etc.		Ductile Cast Iron (≤450MPa) 60-40-8 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0394	**1.0**	130 (100—130)	.0008 (.0004—.0012)	100 (65—100)	.0006 (.0004—.0011)
.0472	**1.2**	130 (100—130)	.0010 (.0006—.0015)	100 (65—100)	.0008 (.0005—.0014)
.0630	**1.6**	130 (100—130)	.0022 (.0013—.0031)	100 (65—100)	.0020 (.0011—.0030)
.0787	**2.0**	165 (130—180)	.0028 (.0016—.0039)	165 (130—180)	.0026 (.0013—.0037)
.0984	**2.5**	165 (130—180)	.0035 (.0022—.0049)	165 (130—180)	.0031 (.0018—.0047)

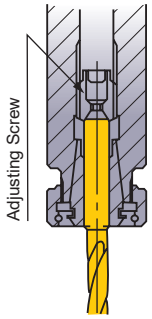
Workpiece Material		Aluminum Alloy (Si<5%) AISI A6061, A7075 etc.		Heat Resistant Alloy Inconel718 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0394	**1.0**	165 (130—180)	.0020 (.0012—.0030)	35 (15—50)	.0008 (.0006—.0011)
.0472	**1.2**	195 (150—215)	.0026 (.0018—.0035)	35 (15—50)	.0010 (.0009—.0013)
.0630	**1.6**	230 (180—245)	.0033 (.0021—.0047)	35 (15—50)	.0012 (.0010—.0016)
.0787	**2.0**	260 (195—280)	.0041 (.0024—.0059)	50 (35—65)	.0016 (.0013—.0020)
.0984	**2.5**	295 (230—310)	.0053 (.0030—.0079)	50 (35—65)	.0020 (.0016—.0024)

Note 1) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

MICRO-MWS

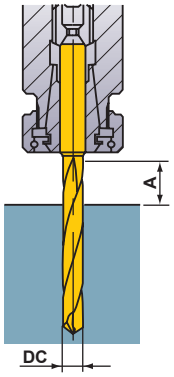
OPERATIONAL GUIDANCE FOR THE MICRO-MWS DRILLS (Φ.0200"-Φ.1200" & Φ0.50mm-Φ2.95mm)

Drill Holding



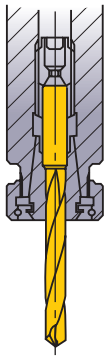
Thrust bearing type collet chuck holds the drill securely.

Drill Length



A ≥ DC x 2

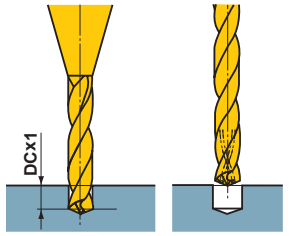
Drill Installation



NG

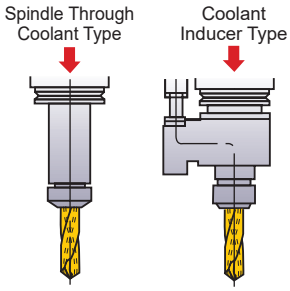
Do not clamp on the flutes.

Drill Installation



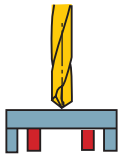
①A pilot hole must proceed application of XB or DB drill.
②Use SB drill for pilot hole.
③Depending on cutting conditions peck feeding may be necessary.

Through Coolant Type



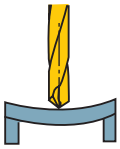
Recommended coolant pressure:
≥ 435 PSI (3MPa)
At least 220 PSI (1.5MPa) is required.

Thin Workpiece



Support the Workpiece

OK



If Bending Occurs

NG

Coolant Handling

1) Small particles of swarf will jam in the oil hole of small diameter drills. Always use a fine mesh filter as a preventative measure.

2) Dirt and dust particles adhere to the oil in old coolant and prevent an efficient flow. Regular coolant exchange is recommended.

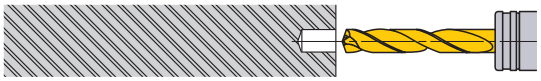
CAUTIONS FOR USE

- Please use a fine mesh filter (mesh≤5 micron) for coolant to prevent jamming in the oil hole.
- For deep drilling with the long type drill, machining a pilot hole is recommended.
  (Otherwise, centrifugal forces may cause drill breakage.)

■OPERATIONAL GUIDANCE FOR THE MICRO-MWS DRILL (Φ.0200"-Φ.1200" & Φ0.50mm-Φ2.95mm) (L/D≥10)

Flat Face Drilling ●Drilling a blind hole

■ 1. Drilling a Pilot Hole



①Use the SB type drill.
②Use a drill with the same diameter as the deep hole drill.
③Drill depth : Approx 1DC.
④Ensure a high precision hole is drilled for the guide pilot.

■ 2. Initial Cutting with the Long Type Drill

①Penetrate the pilot hole at a low revolution. (Revolution speed 500-1000 min^{-1}, feed rate .008-.012 IPR)
②Stop the long type drill .020-.039 inch short of the pilot hole bottom.

■ 3. Drill the Deep Hole

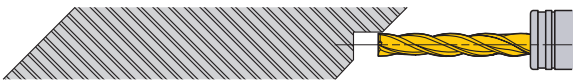
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

■ 4. Drill Retraction

①After drilling, lower the cutting revolution about .020-.039 inch short of the hole end. (Revolution speed of around 500-1000 min^{-1})
②Retract the drill to the pilot hole depth starting point at a feed rate of 120 inch/min.
③Finally clear the hole at a cutting speed of 65-100 SFM and feed rate of .008-.012 IPR.

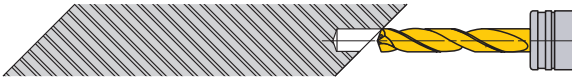
Irregular Face Drilling ●Drilling and breaking through on irregular faces or angles

■ 1. Spot Facing



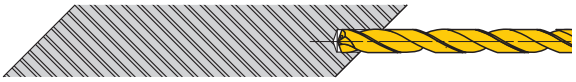
①Machine a flat on the irregular face by using an MFE (flat bottom drill) or an end mill capable of spot facing. Make the spot face diameter the same size as the required deep hole diameter.

■ 2. Drilling a Pilot Hole



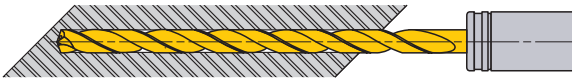
①Use a drill with the same or larger point angle than XB or DB type. The MWS-SB type is recommended.
②Ensure a high precision hole is drilled for the pilot.
③Drill depth : Approx 1DC.

■ 3. Initial Cutting with the Long Type Drill



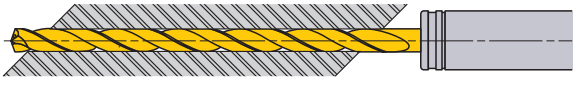
①Penetrate the pilot hole at a low revolution. (Revolution speed 500-1000 min^{-1}, feed rate .008-.012 IPR)
②Stop the long type drill .020-.039 inch short of the pilot hole bottom.

■ 4. Drill the Deep Hole



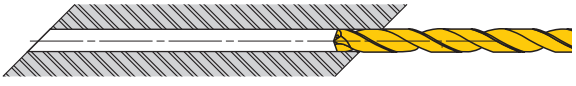
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

■ 5. Breaking Through



①When breaking through, the cutting edge can be damaged.
②Feed rate should be half the normal feed.

■ 6. Drill Retraction



①Finally clear the hole at a revolution speed of 500-1000 min^{-1}.
②Retract the drill to the pilot hole depth starting point at a feed rate of 120 IPM.

MMS

- Stainless Steel drill with unique narrow margins which reduces cutting resistance and "TRI-Cooling technology" coolant holes which provides excellent chip evacuation.
- New DP7020 grade provides excellent tool life and unique wavy cutting edge improves sharpness and cutting edge strength.

P | **M** | K | N | S | H

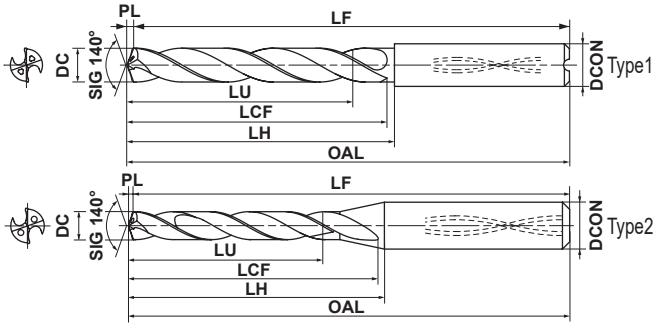
Internal Coolant

(inch)

DC=.1181	.1181<DC≤.2362	.2362<DC≤.3937	.3937<DC≤.7087	.7087<DC≤.7874
0 −0.00055	0 −0.00071	0 −0.00087	0 −0.00106	0 −0.00130
	.1181<DCON≤.2362	.2362<DCON≤.3937	.3937<DCON≤.7087	.7087<DCON≤.7874
	0 −0.00031	0 −0.00035	0 −0.00043	0 −0.00051

(mm)

DC=3	3<DC≤6	6<DC≤10	10<DC≤18	18<DC≤20
0 −0.014	0 −0.018	0 −0.022	0 −0.027	0 −0.033
	3<DCON≤6	6<DCON≤10	10<DCON≤18	18<DCON≤20
	0 −0.008	0 −0.009	0 −0.011	0 −0.013



*When looking at the coating the color can vary depending on the direction of viewing. This does not have any effect on the performance of the drill.

Note 1) MMS drills are suitable for use with shrink fit holders.

DC Metric (mm)	DC Decimal (inch)	DC Fraction (inch)	Wire / Letter	Thread size	L/D	Stock DP7020	Order Number	LU mm	LU inch	LCF mm	LCF inch	LH mm	LH inch	OAL mm	OAL inch	LF mm	LF inch	PL mm	PL inch	DCON mm	DCON inch	Type
3.000	.1181				3	●	MMS0300X3DB	9.5	.374	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0300X5DB	15.5	.610	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.048	.1200		31		3	●	MMS0305X3D060	9.7	.382	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0305X5D060	15.8	.622	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.100	.1220				3	●	MMS0310X3DB	9.9	.390	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0310X5DB	16.1	.634	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.175	.1250	1/8			3	●	MMS0318X3D060	10.1	.398	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0318X5D060	16.4	.646	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.200	.1260				3	●	MMS0320X3DB	10.2	.402	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0320X5DB	16.6	.654	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.300	.1299			M4x.7	3	●	MMS0330X3DB	10.5	.413	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0330X5DB	17.1	.673	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.400	.1339				3	●	MMS0340X3DB	10.8	.425	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0340X5DB	17.6	.693	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.500	.1378				3	●	MMS0350X3DB	11.1	.437	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	2
					5	●	MMS0350X5DB	18.1	.713	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	2
3.572	.1407	9/64			3	●	MMS0357X3D060	11.4	.449	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	2
					5	●	MMS0357X5D060	18.5	.728	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	2
3.600	.1417				3	●	MMS0360X3DB	11.5	.453	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	2
					5	●	MMS0360X5DB	18.7	.736	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	2
3.700	.1457			M4.5x.75	3	●	MMS0370X3DB	11.8	.465	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	2
					5	●	MMS0370X5DB	19.2	.756	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	2
3.800	.1496		25	#10-24	3	●	MMS0380X3DB	12.1	.476	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	2
					5	●	MMS0380X5DB	19.7	.776	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	2
3.900	.1535				3	●	MMS0390X3DB	12.4	.488	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	2
					5	●	MMS0390X5DB	20.2	.795	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	2
3.969	.1563	5/32			3	●	MMS0397X3D060	12.6	.496	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	2
					5	●	MMS0397X5D060	20.6	.811	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	2
4.000	.1575				3	●	MMS0400X3DB	12.7	.500	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	2
					5	●	MMS0400X5DB	20.7	.815	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	2
4.039	.1590		21	#10-32	3	●	MMS0404X3D060	12.8	.504	24.7	.972	26.7	1.051	73.7	2.902	73	2.874	0.7	.028	6	.236	2
					5	●	MMS0404X5D060	20.9	.823	33.7	1.327	35.7	1.406	82.7	3.256	82	3.228	0.7	.028	6	.236	2
4.100	.1614				3	●	MMS0410X3DB	13.0	.512	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	2
					5	●	MMS0410X5DB	21.2	.835	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	2

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
Note 2) The coolant hole of 5.9mm diameter or less will be round shape.

● : USA Stock

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
4.200	.1654			M5x.8	3	●	MMS0420X3DB	13.4	.528	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	2
					5	●	MMS0420X5DB	21.8	.858	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	2
4.300	.1693				3	●	MMS0430X3DB	13.7	.539	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	2
					5	●	MMS0430X5DB	22.3	.878	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	2
4.366	.1719	11/64			3	●	MMS0437X3D060	13.9	.547	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	2
					5	●	MMS0437X5D060	22.6	.890	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	2
4.400	.1732		17		3	●	MMS0440X3DB	14.0	.551	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	2
					5	●	MMS0440X5DB	22.8	.898	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	2
4.500	.1772		16	#12-24	3	●	MMS0450X3DB	14.3	.563	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	2
					5	●	MMS0450X5DB	23.3	.917	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	2
4.600	.1811				3	●	MMS0460X3DB	14.6	.575	25.8	1.016	28.8	1.134	75.8	2.984	75	2.953	0.8	.031	6	.236	1
					5	●	MMS0460X5DB	23.8	.937	35.8	1.409	38.8	1.528	85.8	3.378	85	3.346	0.8	.031	6	.236	1
4.700	.1850		13		3	●	MMS0470X3DB	15.0	.591	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	●	MMS0470X5DB	24.4	.961	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
4.763	.1875	3/16			3	●	MMS0476X3D060	15.1	.594	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	●	MMS0476X5D060	24.7	.972	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
4.800	.1890				3	●	MMS0480X3DB	15.3	.602	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	●	MMS0480X5DB	24.9	.980	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
4.900	.1929				3	●	MMS0490X3DB	15.6	.614	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	●	MMS0490X5DB	25.4	1.000	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
5.000	.1969			M6x1.0	3	●	MMS0500X3DB	15.9	.626	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	●	MMS0500X5DB	25.9	1.020	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
5.100	.2008		7	1/4-20	3	●	MMS0510X3DB	16.2	.638	28.9	1.138	30.9	1.217	81.9	3.224	81	3.189	0.9	.035	6	.236	1
					5	●	MMS0510X5DB	26.4	1.039	39.9	1.571	42.9	1.689	89.9	3.539	89	3.504	0.9	.035	6	.236	1
5.160	.2032	13/64			3	●	MMS0516X3D060	16.4	.646	28.9	1.138	30.9	1.217	81.9	3.224	81	3.189	0.9	.035	6	.236	1
					5	●	MMS0516X5D060	26.7	1.051	39.9	1.571	42.9	1.689	89.9	3.539	89	3.504	0.9	.035	6	.236	1
5.200	.2047				3	●	MMS0520X3DB	16.5	.650	29.0	1.142	31.0	1.220	82.0	3.228	81	3.189	1.0	.039	6	.236	1
					5	●	MMS0520X5DB	26.9	1.059	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	1
5.300	.2087		4		3	●	MMS0530X3DB	16.9	.665	29.0	1.142	31.0	1.220	82.0	3.228	81	3.189	1.0	.039	6	.236	1
					5	●	MMS0530X5DB	27.5	1.083	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	1
5.400	.2126		3	1/4-28	3	●	MMS0540X3DB	17.2	.677	29.0	1.142	31.0	1.220	82.0	3.228	81	3.189	1.0	.039	6	.236	1
					5	●	MMS0540X5DB	28.0	1.102	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	1
5.500	.2165				3	●	MMS0550X3DB	17.5	.689	29.0	1.142	31.0	1.220	820	3.228	81	3.189	1.0	.039	6	.236	1
					5	●	MMS0550X5DB	28.5	1.122	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	1
5.557	.2188	7/32			3	●	MMS0556X3D060	17.7	.697	31.0	1.220	31.0	1.220	82.0	3.228	81	3.189	1.0	.039	6	.236	1
					5	●	MMS0556X5D060	28.8	1.134	43.0	1.693	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	1
5.600	.2205		2		3	●	MMS0560X3DB	17.8	.701	31.0	1.220	31.0	1.220	82.0	3.228	81	3.189	1.0	.039	6	.236	1
					5	●	MMS0560X5DB	29.0	1.142	43.0	1.693	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	1
5.700	.2244				3	●	MMS0570X3DB	18.1	.713	31.0	1.220	31.0	1.220	82.0	3.228	81	3.189	1.0	.039	6	.236	1
					5	●	MMS0570X5DB	29.5	1.161	43.0	1.693	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	1
5.800	.2283		1		3	●	MMS0580X3DB	18.5	.728	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	1
					5	●	MMS0580X5DB	30.1	1.185	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	1
5.900	.2323				3	●	MMS0590X3DB	18.8	.740	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	1
					5	●	MMS0590X5DB	30.6	1.205	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	1
5.954	.2344	15/64	A		3	●	MMS0595X3D060	18.9	.744	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	1
					5	●	MMS0595X5D060	30.8	1.213	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	1
6.000	.2362			M7x1.0	3	●	MMS0600X3DB	19.1	.752	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	1
					5	●	MMS0600X5DB	31.1	1.224	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	1

MMS

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
6.100	.2402				3	●	MMS0610X3DB	19.4	.764	34.1	1.343	36.1	1.421	87.1	3.429	86	3.386	1.1	.043	8	.315	1
					5	●	MMS0610X5DB	31.6	1.244	47.1	1.854	49.1	1.933	96.1	3.783	95	3.740	1.1	.043	8	.315	1
6.200	.2441				3	●	MMS0620X3DB	19.7	.776	34.1	1.343	36.1	1.421	87.1	3.429	86	3.386	1.1	.043	8	.315	1
					5	●	MMS0620X5DB	32.1	1.264	47.1	1.854	49.1	1.933	96.1	3.783	95	3.740	1.1	.043	8	.315	1
6.300	.2480				3	●	MMS0630X3DB	20.0	.787	34.2	1.346	36.2	1.425	87.2	3.433	86	3.386	1.2	.047	8	.315	1
					5	●	MMS0630X5DB	32.6	1.283	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	1
6.350	.2500	1/4	E		3	●	MMS0635X3D080	20.2	.795	34.2	1.346	36.2	1.425	87.2	3.433	86	3.386	1.2	.047	8	.315	1
					5	●	MMS0635X5D080	32.9	1.295	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	1
6.400	.2520				3	●	MMS0640X3DB	20.4	.803	34.2	1.346	36.2	1.425	87.2	3.433	86	3.386	1.2	.047	8	.315	1
					5	●	MMS0640X5DB	33.2	1.307	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	1
6.500	.2559				3	●	MMS0650X3DB	20.7	.815	34.2	1.346	36.2	1.425	87.2	3.433	86	3.386	1.2	.047	8	.315	1
					5	●	MMS0650X5DB	33.7	1.327	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	1
6.528	.2570		F	5/16-18	3	●	MMS0653X3D080	20.8	.819	36.2	1.425	38.2	1.504	91.2	3.591	90	3.543	1.2	.047	8	.315	1
					5	●	MMS0653X5D080	33.8	1.331	50.2	1.976	52.2	2.055	99.2	3.906	98	3.858	1.2	.047	8	.315	1
6.600	.2598				3	●	MMS0660X3DB	21.0	.827	36.2	1.425	38.2	1.504	91.2	3.591	90	3.543	1.2	.047	8	.315	1
					5	●	MMS0660X5DB	34.2	1.346	50.2	1.976	52.2	2.055	99.2	3.906	98	3.858	1.2	.047	8	.315	1
6.700	.2638			M8x1.25	3	●	MMS0670X3DB	21.3	.839	36.2	1.425	38.2	1.504	91.2	3.591	90	3.543	1.2	.047	8	.315	1
					5	●	MMS0670X5DB	34.7	1.366	50.2	1.976	52.2	2.055	99.2	3.906	98	3.858	1.2	.047	8	.315	1
6.747	.2657	17/64			3	●	MMS0675X3D080	21.5	.846	36.2	1.425	38.2	1.504	91.2	3.591	90	3.543	1.2	.047	8	.315	1
					5	●	MMS0675X5D080	34.9	1.374	50.2	1.976	52.2	2.055	99.2	3.906	98	3.858	1.2	.047	8	.315	1
6.800	.2677				3	●	MMS0680X3DB	21.6	.850	36.2	1.425	38.2	1.504	91.2	3.591	90	3.543	1.2	.047	8	.315	1
					5	●	MMS0680X5DB	35.2	1.386	50.2	1.976	52.2	2.055	99.2	3.906	98	3.858	1.2	.047	8	.315	1
6.900	.2717		I	5/16-24	3	●	MMS0690X3DB	22.0	.866	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	1
					5	●	MMS0690X5DB	35.8	1.409	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	1
7.000	.2756			M8x1.0	3	●	MMS0700X3DB	22.3	.878	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	1
					5	●	MMS0700X5DB	36.3	1.429	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	1
7.100	.2795				3	●	MMS0710X3DB	22.6	.890	39.3	1.547	40.3	1.587	91.3	3.594	90	3.543	1.3	.051	8	.315	1
					5	●	MMS0710X5DB	36.8	1.449	54.3	2.138	57.3	2.256	104.3	4.106	103	4.055	1.3	.051	8	.315	1
7.144	.2813	9/32	K		3	●	MMS0714X3D080	22.7	.894	39.3	1.547	40.3	1.587	91.3	3.594	90	3.543	1.3	.051	8	.315	1
					5	●	MMS0714X5D080	37.0	1.457	54.3	2.138	57.3	2.256	104.3	4.106	103	4.055	1.3	.051	8	.315	1
7.200	.2835				3	●	MMS0720X3DB	22.9	.902	39.3	1.547	40.3	1.587	91.3	3.594	90	3.543	1.3	.051	8	.315	1
					5	●	MMS0720X5DB	37.3	1.469	54.3	2.138	57.3	2.256	104.3	4.106	103	4.055	1.3	.051	8	.315	1
7.300	.2874				3	●	MMS0730X3DB	23.2	.913	39.3	1.547	40.3	1.587	91.3	3.594	90	3.543	1.3	.051	8	.315	1
					5	●	MMS0730X5DB	37.8	1.488	54.3	2.138	57.3	2.256	104.3	4.106	103	4.055	1.3	.051	8	.315	1
7.400	.2913				3	●	MMS0740X3DB	23.5	.925	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0740X5DB	38.3	1.508	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1
7.500	.2953		M		3	●	MMS0750X3DB	23.9	.941	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0750X5DB	38.9	1.531	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1
7.541	.2969	19/64			3	●	MMS0754X3D080	24.0	.945	41.4	1.630	41.4	1.630	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0754X5D080	39.1	1.539	57.4	2.260	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1
7.600	.2992				3	●	MMS0760X3DB	24.2	.953	41.4	1.630	41.4	1.630	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0760X5DB	39.4	1.551	57.4	2.260	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1
7.700	.3031				3	●	MMS0770X3DB	24.5	.965	41.4	1.630	41.4	1.630	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0770X5DB	39.9	1.571	57.4	2.260	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1
7.800	.3071				3	●	MMS0780X3DB	24.8	.976	41.4	1.630	41.4	1.630	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0780X5DB	40.4	1.591	57.4	2.260	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1
7.900	.3110				3	●	MMS0790X3DB	25.1	.988	41.4	1.630	41.4	1.630	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0790X5DB	40.9	1.610	57.4	2.260	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
7.938	.3125	5/16		3/8-16	3	●	MMS0794X3D080	25.2	.992	41.4	1.630	41.4	1.630	91.4	3.598	90	3.543	1.4	.055	8	.315	1
					5	●	MMS0794X5D080	41.1	1.618	57.4	2.260	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	1
8.000	.3150				3	●	MMS0800X3DB	25.5	1.004	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	1
					5	●	MMS0800X5DB	41.5	1.634	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	1
8.100	.3189				3	●	MMS0810X3DB	25.8	1.016	44.5	1.752	46.5	1.831	97.5	3.839	96	3.780	1.5	.059	10	.394	1
					5	●	MMS0810X5DB	42.0	1.654	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	1
8.200	.3228		P		3	●	MMS0820X3DB	26.1	1.028	44.5	1.752	46.5	1.831	97.5	3.839	96	3.780	1.5	.059	10	.394	1
					5	●	MMS0820X5DB	42.5	1.673	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	1
8.300	.3268				3	●	MMS0830X3DB	26.4	1.039	44.5	1.752	46.5	1.831	97.5	3.839	96	3.780	1.5	.059	10	.394	1
					5	●	MMS0830X5DB	43.0	1.693	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	1
8.335	.3282	21/64			3	●	MMS0833X3D100	26.5	1.043	44.5	1.752	46.5	1.831	97.5	3.839	96	3.780	1.5	.059	10	.394	1
					5	●	MMS0833X5D100	43.2	1.701	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	1
8.400	.3307				3	●	MMS0840X3DB	26.7	1.051	44.5	1.752	46.5	1.831	97.5	3.839	96	3.780	1.5	.059	10	.394	1
					5	●	MMS0840X5DB	43.5	1.713	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	1
8.433	.3320		Q	3/8-24	3	●	MMS0843X3D100	26.8	1.055	44.5	1.752	46.5	1.831	97.5	3.839	96	3.780	1.5	.059	10	.394	1
					5	●	MMS0843X5D100	43.7	1.720	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	1
8.500	.3346			M10x1.5	3	●	MMS0850X3DB	27.0	1.063	44.6	1.756	46.6	1.835	97.6	3.843	96	3.780	1.6	.063	10	.394	1
					5	●	MMS0850X5DB	44.0	1.732	61.6	2.425	63.6	2.504	114.6	4.512	113	4.449	1.6	.063	10	.394	1
8.600	.3386		R		3	●	MMS0860X3DB	27.4	1.079	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	1
					5	●	MMS0860X5DB	44.6	1.756	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	1
8.700	.3425			M10x1.25	3	●	MMS0870X3DB	27.7	1.091	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	1
					5	●	MMS0870X5DB	45.1	1.776	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	1
8.732	.3438	11/32			3	●	MMS0873X3D100	27.8	1.094	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	1
					5	●	MMS0873X5D100	45.2	1.780	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	1
8.800	.3465				3	●	MMS0880X3DB	28.0	1.102	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	1
					5	●	MMS0880X5DB	45.6	1.795	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	1
8.900	.3504				3	●	MMS0890X3DB	28.3	1.114	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	1
					5	●	MMS0890X5DB	46.1	1.815	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	1
9.000	.3543				3	●	MMS0900X3DB	28.6	1.126	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	1
					5	●	MMS0900X5DB	46.6	1.835	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	1
9.100	.3583		T		3	●	MMS0910X3DB	29.0	1.142	49.7	1.957	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0910X5DB	47.2	1.858	68.7	2.705	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.129	.3594	23/64			3	●	MMS0913X3D100	29.0	1.142	49.7	1.957	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0913X5D100	47.3	1.862	68.7	2.705	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.200	.3622				3	●	MMS0920X3DB	29.3	1.154	49.7	1.957	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0920X5DB	47.7	1.878	68.7	2.705	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.300	.3661				3	●	MMS0930X3DB	29.6	1.165	49.7	1.957	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0930X5DB	48.2	1.898	68.7	2.705	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.348	.3680		U	7/16-14	3	●	MMS0935X3D100	29.7	1.169	49.7	1.957	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0935X5D100	48.4	1.906	68.7	2.705	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.400	.3701				3	●	MMS0940X3DB	29.9	1.177	49.7	1.957	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0940X5DB	48.7	1.917	68.7	2.705	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.500	.3740				3	●	MMS0950X3DB	30.2	1.189	49.7	1.957	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0950X5DB	49.2	1.937	68.7	2.705	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.525	.3750	3/8			3	●	MMS0953X3D100	30.3	1.193	51.7	2.035	51.7	2.035	102.7	4.043	101	3.976	1.7	.067	10	.394	1
					5	●	MMS0953X5D100	49.3	1.941	71.7	2.823	71.7	2.823	122.7	4.831	121	4.764	1.7	.067	10	.394	1
9.600	.3780				3	●	MMS0960X3DB	30.5	1.201	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	1
					5	●	MMS0960X5DB	49.7	1.957	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	1

MMS

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
9.700	.3819		Tube Sheet		3	●	MMS0970X3DB	30.9	1.217	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	1
					5	●	MMS0970X5DB	50.3	1.980	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	1
9.800	.3858		W		3	●	MMS0980X3DB	31.2	1.228	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	1
					5	●	MMS0980X5DB	50.8	2.000	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	1
9.900	.3898				3	●	MMS0990X3DB	31.5	1.240	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	1
					5	●	MMS0990X5DB	51.3	2.020	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	1
9.922	.3907	25/64		7/16-20	3	●	MMS0992X3D100	31.5	1.240	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	1
					5	●	MMS0992X5D100	51.4	2.024	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	1
10.000	.3937				3	●	MMS1000X3DB	31.8	1.252	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	1
					5	●	MMS1000X5DB	51.8	2.039	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	1
10.100	.3976				3	●	MMS1010X3DB	32.1	1.264	54.8	2.157	56.8	2.236	112.8	4.441	111	4.370	1.8	.071	12	.472	1
					5	●	MMS1010X5DB	52.3	2.059	75.8	2.984	79.8	3.142	135.8	5.346	134	5.276	1.8	.071	12	.472	1
10.200	.4016			M12x1.75	3	●	MMS1020X3DB	32.5	1.280	54.9	2.161	56.9	2.240	112.9	4.445	111	4.370	1.9	.075	12	.472	1
					5	●	MMS1020X5DB	52.9	2.083	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	1
10.300	.4055				3	●	MMS1030X3DB	32.8	1.291	54.9	2.161	56.9	2.240	112.9	4.445	111	4.370	1.9	.075	12	.472	1
					5	●	MMS1030X5DB	53.4	2.102	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	1
10.319	.4063	13/32			3	●	MMS1032X3D120	32.8	1.291	54.9	2.161	56.9	2.240	112.9	4.445	111	4.370	1.9	.075	12	.472	1
					5	●	MMS1032X5D120	53.5	2.106	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	1
10.400	.4094				3	●	MMS1040X3DB	33.1	1.303	54.9	2.161	56.9	2.240	112.9	4.445	111	4.370	1.9	.075	12	.472	1
					5	●	MMS1040X5DB	53.9	2.122	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	1
10.500	.4134		Z		3	●	MMS1050X3DB	33.4	1.315	54.9	2.161	56.9	2.240	112.9	4.445	111	4.370	1.9	.075	12	.472	1
					5	●	MMS1050X5DB	54.4	2.142	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	1
10.600	.4173				3	●	MMS1060X3DB	33.7	1.327	56.9	2.240	57.9	2.280	117.9	4.642	116	4.567	1.9	.075	12	.472	1
					5	●	MMS1060X5DB	54.9	2.161	78.9	3.106	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	1
10.700	.4213				3	●	MMS1070X3DB	34.0	1.339	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1070X5DB	55.4	2.181	79.0	3.110	80.0	3.150	136.0	5.354	134	5.276	2.0	.079	12	.472	1
10.716	.4219	27/64		1/2-13	3	●	MMS1072X3D120	34.1	1.343	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1072X5D120	55.5	2.185	79.0	3.110	80.0	3.150	136.0	5.354	134	5.276	2.0	.079	12	.472	1
10.800	.4252			M12X1.25	3	●	MMS1080X3DB	34.4	1.354	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1080X5DB	56.0	2.205	79.0	3.110	80.0	3.150	136.0	5.354	134	5.276	2.0	.079	12	.472	1
10.900	.4291				3	●	MMS1090X3DB	34.7	1.366	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1090X5DB	56.5	2.224	79.0	3.110	80.0	3.150	136.0	5.354	134	5.276	2.0	.079	12	.472	1
11.000	.4331				3	●	MMS1100X3DB	35.0	1.378	57.0	2.244	58.0	2.283	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1100X5DB	57.0	2.244	79.0	3.110	80.0	3.150	136.0	5.354	134	5.276	2.0	.079	12	.472	1
11.100	.4370				3	●	MMS1110X3DB	35.3	1.390	60.0	2.362	62.0	2.441	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1110X5DB	57.5	2.264	83.0	3.268	86.0	3.386	142.0	5.591	140	5.512	2.0	.079	12	.472	1
11.113	.4375	7/16			3	●	MMS1111X3D120	35.3	1.390	60.0	2.362	62.0	2.441	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1111X5D120	57.6	2.268	83.0	3.268	86.0	3.386	142.0	5.591	140	5.512	2.0	.079	12	.472	1
11.200	.4409				3	●	MMS1120X3DB	35.6	1.402	60.0	2.362	62.0	2.441	118.0	4.646	116	4.567	2.0	.079	12	.472	1
					5	●	MMS1120X5DB	58.0	2.283	83.0	3.268	86.0	3.386	142.0	5.591	140	5.512	2.0	.079	12	.472	1
11.300	.4449				3	●	MMS1130X3DB	36.0	1.417	60.1	2.366	62.1	2.445	118.1	4.650	116	4.567	2.1	.083	12	.472	1
					5	●	MMS1130X5DB	58.6	2.307	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	1
11.400	.4488				3	●	MMS1140X3DB	36.3	1.429	60.1	2.366	62.1	2.445	118.1	4.650	116	4.567	2.1	.083	12	.472	1
					5	●	MMS1140X5DB	59.1	2.327	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	1
11.500	.4528				3	●	MMS1150X3DB	36.6	1.441	60.1	2.366	62.1	2.445	118.1	4.650	116	4.567	2.1	.083	12	.472	1
					5	●	MMS1150X5DB	59.6	2.346	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	1
11.510	.4532	29/64		1/2-20	3	●	MMS1151X3D120	36.6	1.441	62.1	2.445	62.1	2.445	118.1	4.650	116	4.567	2.1	.083	12	.472	1
					5	●	MMS1151X5D120	59.6	2.346	86.1	3.390	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	1

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
11.600	.4567				3	●	MMS1160X3DB	36.9	1.453	62.1	2.445	62.1	2.445	118.1	4.650	116	4.567	2.1	.083	12	.472	1
					5	●	MMS1160X5DB	60.1	2.366	86.1	3.390	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	1
11.700	.4606				3	●	MMS1170X3DB	37.2	1.465	62.1	2.445	62.1	2.445	118.1	4.650	116	4.567	2.1	.083	12	.472	1
					5	●	MMS1170X5DB	60.6	2.386	86.1	3.390	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	1
11.800	.4646				3	●	MMS1180X3DB	37.5	1.476	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	1
					5	●	MMS1180X5DB	61.1	2.406	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	1
11.900	.4685				3	●	MMS1190X3DB	37.9	1.492	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	1
					5	●	MMS1190X5DB	61.7	2.429	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	1
12.000	.4724			M14x2.0	3	●	MMS1200X3DB	38.2	1.504	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	1
					5	●	MMS1200X5DB	62.2	2.449	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	1
12.100	.4764				3	●	MMS1210X3DB	38.5	1.516	65.2	2.567	68.2	2.685	124.2	4.890	122	4.803	2.2	.087	14	.551	1
					5	●	MMS1210X5DB	62.7	2.469	90.2	3.551	94.2	3.709	150.2	5.913	148	5.827	2.2	.087	14	.551	1
12.200	.4803				3	●	MMS1220X3DB	38.8	1.528	65.2	2.567	68.2	2.685	124.2	4.890	122	4.803	2.2	.087	14	.551	1
					5	●	MMS1220X5DB	63.2	2.488	90.2	3.551	94.2	3.709	150.2	5.913	148	5.827	2.2	.087	14	.551	1
12.300	.4843			9/16-12	3	●	MMS1230X3DB	39.1	1.539	65.2	2.567	68.2	2.685	124.2	4.890	122	4.803	2.2	.087	14	.551	1
					5	●	MMS1230X5DB	63.7	2.508	90.2	3.551	94.2	3.709	150.2	5.913	148	5.827	2.2	.087	14	.551	1
12.400	.4882				3	●	MMS1240X3DB	39.5	1.555	65.3	2.571	68.3	2.689	124.3	4.894	122	4.803	2.3	.091	14	.551	1
					5	●	MMS1240X5DB	64.3	2.531	90.3	3.555	94.3	3.713	150.3	5.917	148	5.827	2.3	.091	14	.551	1
12.500	.4921			M14x1.5	3	●	MMS1250X3DB	39.8	1.567	65.3	2.571	68.3	2.689	124.3	4.894	122	4.803	2.3	.091	14	.551	1
					5	●	MMS1250X5DB	64.8	2.551	90.3	3.555	94.3	3.713	150.3	5.917	148	5.827	2.3	.091	14	.551	1
12.600	.4961				3	●	MMS1260X3DB	40.1	1.579	67.3	2.650	68.3	2.689	124.3	4.894	122	4.803	2.3	.091	14	.551	1
					5	●	MMS1260X5DB	65.3	2.571	93.3	3.673	94.3	3.713	150.3	5.917	148	5.827	2.3	.091	14	.551	1
12.700	.5000	1/2			3	●	MMS1270X3DB	40.4	1.591	67.3	2.650	68.3	2.689	124.3	4.894	122	4.803	2.3	.091	14	.551	1
					5	●	MMS1270X5DB	65.8	2.591	93.3	3.673	94.3	3.713	150.3	5.917	148	5.827	2.3	.091	14	.551	1
12.800	.5039				3	●	MMS1280X3DB	40.7	1.602	67.3	2.650	68.3	2.689	124.3	4.894	122	4.803	2.3	.091	14	.551	1
					5	●	MMS1280X5DB	66.3	2.610	93.3	3.673	94.3	3.713	150.3	5.917	148	5.827	2.3	.091	14	.551	1
12.900	.5079				3	●	MMS1290X3DB	41.0	1.614	67.4	2.654	68.4	2.693	124.4	4.898	122	4.803	2.4	.094	14	.551	1
					5	●	MMS1290X5DB	66.8	2.630	93.4	3.677	94.4	3.717	150.4	5.921	148	5.827	2.4	.094	14	.551	1
13.000	.5118				3	●	MMS1300X3DB	41.4	1.630	67.4	2.654	68.4	2.693	124.4	4.898	122	4.803	2.4	.094	14	.551	1
					5	●	MMS1300X5DB	67.4	2.654	93.4	3.677	94.4	3.717	150.4	5.921	148	5.827	2.4	.094	14	.551	1
13.100	.5157			9/16-18	3	●	MMS1310X3DB	41.7	1.642	70.4	2.772	72.4	2.850	128.4	5.055	126	4.961	2.4	.094	14	.551	1
					5	●	MMS1310X5DB	67.9	2.673	97.4	3.835	100.4	3.953	156.4	6.157	154	6.063	2.4	.094	14	.551	1
13.200	.5197				3	●	MMS1320X3DB	42.0	1.654	70.4	2.772	72.4	2.850	128.4	5.055	126	4.961	2.4	.094	14	.551	1
					5	●	MMS1320X5DB	68.4	2.693	97.4	3.835	100.4	3.953	156.4	6.157	154	6.063	2.4	.094	14	.551	1
13.300	.5236				3	●	MMS1330X3DB	42.3	1.665	70.4	2.772	72.4	2.850	128.4	5.055	126	4.961	2.4	.094	14	.551	1
					5	●	MMS1330X5DB	68.9	2.713	97.4	3.835	100.4	3.953	156.4	6.157	154	6.063	2.4	.094	14	.551	1
13.400	.5276				3	●	MMS1340X3DB	42.6	1.677	70.4	2.772	72.4	2.850	128.4	5.055	126	4.961	2.4	.094	14	.551	1
					5	●	MMS1340X5DB	69.4	2.732	97.4	3.835	100.4	3.953	156.4	6.157	154	6.063	2.4	.094	14	.551	1
13.500	.5315			5/8-11	3	●	MMS1350X3DB	43.0	1.693	70.5	2.776	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	1
					5	●	MMS1350X5DB	70.0	2.756	97.5	3.839	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	1
13.600	.5354				3	●	MMS1360X3DB	43.3	1.705	72.5	2.854	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	1
					5	●	MMS1360X5DB	70.5	2.776	100.5	3.957	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	1
13.700	.5394				3	●	MMS1370X3DB	43.6	1.717	72.5	2.854	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	1
					5	●	MMS1370X5DB	71.0	2.795	100.5	3.957	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	1
13.800	.5433				3	●	MMS1380X3DB	43.9	1.728	72.5	2.854	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	1
					5	●	MMS1380X5DB	71.5	2.815	100.5	3.957	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	1
13.891	.5469	35/64			3	●	MMS1389X3D140	44.2	1.740	72.5	2.854	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	1
					5	●	MMS1389X5D140	72.0	2.835	100.5	3.957	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	1

MMS

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
13.900	.5472				3	●	MMS1390X3DB	44.2	1.740	72.5	2.854	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	1
					5	●	MMS1390X5DB	72.0	2.835	100.5	3.957	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	1
14.000	.5512			M16x2.0	3	●	MMS1400X3DB	44.5	1.752	72.6	2.858	72.6	2.858	128.6	5.063	126	4.961	2.6	.102	14	.551	1
					5	●	MMS1400X5DB	72.5	2.854	100.6	3.961	100.6	3.961	156.6	6.165	154	6.063	2.6	.102	14	.551	1
14.100	.5551				3	●	MMS1410X3DB	44.9	1.768	75.6	2.976	78.6	3.094	137.6	5.417	135	5.315	2.6	.102	16	.630	1
					5	●	MMS1410X5DB	73.1	2.878	104.6	4.118	108.6	4.276	167.6	6.598	165	6.496	2.6	.102	16	.630	1
14.200	.5591				3	●	MMS1420X3DB	45.2	1.780	75.6	2.976	78.6	3.094	137.6	5.417	135	5.315	2.6	.102	16	.630	1
					5	●	MMS1420X5DB	73.6	2.898	104.6	4.118	108.6	4.276	167.6	6.598	165	6.496	2.6	.102	16	.630	1
14.288	.5625	9/16			3	●	MMS1429X3D160	45.4	1.787	75.6	2.976	78.6	3.094	137.6	5.417	135	5.315	2.6	.102	16	.630	1
					5	●	MMS1429X5D160	74.0	2.913	104.6	4.118	108.6	4.276	167.6	6.598	165	6.496	2.6	.102	16	.630	1
14.300	.5630				3	●	MMS1430X3DB	45.5	1.791	75.6	2.976	78.6	3.094	137.6	5.417	135	5.315	2.6	.102	16	.630	1
					5	●	MMS1430X5DB	74.1	2.917	104.6	4.118	108.6	4.276	167.6	6.598	165	6.496	2.6	.102	16	.630	1
14.400	.5569				3	●	MMS1440X3DB	45.8	1.803	75.6	2.976	78.6	3.094	137.6	5.417	135	5.315	2.6	.102	16	.630	1
					5	●	MMS1440X5DB	74.6	2.937	104.6	4.118	108.6	4.276	167.6	6.598	165	6.496	2.6	.102	16	.630	1
14.500	.5709			M16x1.5	3	●	MMS1450X3DB	46.1	1.815	75.6	2.976	78.6	3.094	137.6	5.417	135	5.315	2.6	.102	16	.630	1
					5	●	MMS1450X5DB	75.1	2.957	104.6	4.118	108.6	4.276	167.6	6.598	165	6.496	2.6	.102	16	.630	1
14.600	.5748				3	●	MMS1460X3DB	46.5	1.831	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	1
					5	●	MMS1460X5DB	75.7	2.980	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	1
14.684	.5782	37/64		5/8-18	3	●	MMS1468X3D160	46.7	1.839	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	1
					5	●	MMS1468X5D160	76.1	2.996	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	1
14.700	.5787				3	●	MMS1470X3DB	46.8	1.843	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	1
					5	●	MMS1470X5DB	76.2	3.000	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	1
14.800	.5827				3	●	MMS1480X3DB	47.1	1.854	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	1
					5	●	MMS1480X5DB	76.7	3.020	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	1
14.900	.5866				3	●	MMS1490X3DB	47.4	1.866	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	1
					5	●	MMS1490X5DB	77.2	3.039	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	1
15.000	.5906				3	●	MMS1500X3DB	47.7	1.878	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	1
					5	●	MMS1500X5DB	77.7	3.059	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	1
15.082	.5938	19/32			3	●	MMS1508X3D160	48.0	1.890	80.7	3.177	82.7	3.256	141.7	5.579	139	5.472	2.7	.106	16	.630	1
					5	●	MMS1508X5D160	78.1	3.075	111.7	4.398	114.7	4.516	173.7	6.839	171	6.732	2.7	.106	16	.630	1
15.100	.5945				3	●	MMS1510X3DB	48.0	1.890	80.8	3.181	82.8	3.260	141.8	5.583	139	5.472	2.8	.110	16	.630	1
					5	●	MMS1510X5DB	78.2	3.079	111.8	4.402	114.8	4.520	173.8	6.843	171	6.732	2.8	.110	16	.630	1
15.200	.5984				3	●	MMS1520X3DB	48.4	1.906	80.8	3.181	82.8	3.260	141.8	5.583	139	5.472	2.8	.110	16	.630	1
					5	●	MMS1520X5DB	78.8	3.102	111.8	4.402	114.8	4.520	173.8	6.843	171	6.732	2.8	.110	16	.630	1
15.300	.6024				3	●	MMS1530X3DB	48.7	1.917	80.8	3.181	82.8	3.260	141.8	5.583	139	5.472	2.8	.110	16	.630	1
					5	●	MMS1530X5DB	79.3	3.122	111.8	4.402	114.8	4.520	173.8	6.843	171	6.732	2.8	.110	16	.630	1
15.400	.6063				3	●	MMS1540X3DB	49.0	1.929	80.8	3.181	82.8	3.260	141.8	5.583	139	5.472	2.8	.110	16	.630	1
					5	●	MMS1540X5DB	79.8	3.142	111.8	4.402	114.8	4.520	173.8	6.843	171	6.732	2.8	.110	16	.630	1
15.479	.6094	39/64			3	●	MMS1548X3D160	49.2	1.937	80.8	3.181	82.8	3.260	141.8	5.583	139	5.472	2.8	.110	16	.630	1
					5	●	MMS1548X5D160	80.2	3.157	111.8	4.402	114.8	4.520	173.8	6.843	171	6.732	2.8	.110	16	.630	1
15.500	.6102			M18x2.5	3	●	MMS1550X3DB	49.3	1.941	80.8	3.181	82.8	3.260	141.8	5.583	139	5.472	2.8	.110	16	.630	1
					5	●	MMS1550X5DB	80.3	3.161	111.8	4.402	114.8	4.520	173.8	6.843	171	6.732	2.8	.110	16	.630	1
15.600	.6142				3	●	MMS1560X3DB	49.6	1.953	82.8	3.260	82.8	3.260	141.8	5.583	139	5.472	2.8	.110	16	.630	1
					5	●	MMS1560X5DB	80.8	3.181	114.8	4.520	114.8	4.520	173.8	6.843	171	6.732	2.8	.110	16	.630	1
15.700	.6181				3	●	MMS1570X3DB	50.0	1.969	82.9	3.264	82.9	3.264	141.9	5.587	139	5.472	2.9	.114	16	.630	1
					5	●	MMS1570X5DB	81.4	3.205	114.9	4.524	114.9	4.524	173.9	6.846	171	6.732	2.9	.114	16	.630	1
15.800	.6220				3	●	MMS1580X3DB	50.3	1.980	82.9	3.264	82.9	3.264	141.9	5.587	139	5.472	2.9	.114	16	.630	1
					5	●	MMS1580X5DB	81.9	3.224	114.9	4.524	114.9	4.524	173.9	6.846	171	6.732	2.9	.114	16	.630	1

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
15.875	.6250	5/8			3	●	MMS1588X3D160	50.5	1.988	82.9	3.264	82.9	3.264	141.9	5.587	139	5.472	2.9	.114	16	.630	1
					5	●	MMS1588X5D160	82.2	3.236	114.9	4.524	114.9	4.524	173.9	6.846	171	6.732	2.9	.114	16	.630	1
15.900	.6260				3	●	MMS1590X3DB	50.6	1.992	82.9	3.264	82.9	3.264	141.9	5.587	139	5.472	2.9	.114	16	.630	1
					5	●	MMS1590X5DB	82.4	3.244	114.9	4.524	114.9	4.524	173.9	6.846	171	6.732	2.9	.114	16	.630	1
16.000	.6299				3	●	MMS1600X3DB	50.9	2.004	82.9	3.264	82.9	3.264	141.9	5.587	139	5.472	2.9	.114	16	.630	1
					5	●	MMS1600X5DB	82.9	3.264	114.9	4.524	114.9	4.524	173.9	6.846	171	6.732	2.9	.114	16	.630	1
16.100	.6339				3	□	MMS1610X3DB	81.2	3.197	85.9	3.382	88.9	3.500	147.9	5.823	145	5.709	2.9	.114	18	.709	1
					5	□	MMS1610X5DB	83.4	3.283	118.9	4.681	122.9	4.839	181.9	7.161	179	7.047	2.9	.114	18	.709	1
16.200	.6378				3	□	MMS1620X3DB	51.5	2.028	86.0	3.386	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	□	MMS1620X5DB	83.9	3.303	119.0	4.685	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.272	.6407	41/64			3	●	MMS1627X3D180	51.7	2.035	86.0	3.386	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	●	MMS1627X5D180	84.3	3.319	119.0	4.685	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.300	.6417				3	□	MMS1630X3DB	51.9	2.043	86.0	3.386	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	□	MMS1630X5DB	84.5	3.327	119.0	4.685	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.400	.6457				3	□	MMS1640X3DB	52.2	2.055	86.0	3.386	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	□	MMS1640X5DB	85.0	3.346	119.0	4.685	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.500	.6496			M18x1.5	3	●	MMS1650X3DB	52.5	2.067	86.0	3.386	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	●	MMS1650X5DB	85.5	3.366	119.0	4.685	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.600	.6535				3	□	MMS1660X3DB	52.8	2.079	88.0	3.465	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	□	MMS1660X5DB	86.0	3.386	122.0	4.803	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.669	.6563	21/32		3/4-10	3	●	MMS1667X3D180	53.0	2.087	88.0	3.465	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	●	MMS1667X5D180	86.4	3.402	122.0	4.803	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.700	.6575				3	□	MMS1670X3DB	53.1	2.091	88.0	3.465	89.0	3.504	148.0	5.827	145	5.709	3.0	.118	18	.709	1
					5	□	MMS1670X5DB	86.5	3.406	122.0	4.803	123.0	4.843	182.0	7.165	179	7.047	3.0	.118	18	.709	1
16.800	.6614				3	□	MMS1680X3DB	53.5	2.106	88.1	3.469	89.1	3.508	148.1	5.831	145	5.709	3.1	.122	18	.709	1
					5	□	MMS1680X5DB	87.1	3.429	122.1	4.807	123.1	4.846	182.1	7.169	179	7.047	3.1	.122	18	.709	1
16.900	.6654				3	□	MMS1690X3DB	53.8	2.118	88.1	3.469	89.1	3.508	148.1	5.831	145	5.709	3.1	.122	18	.709	1
					5	□	MMS1690X5DB	87.6	3.449	122.1	4.807	123.1	4.846	182.1	7.169	179	7.047	3.1	.122	18	.709	1
17.000	.6693		Tube Sheet		3	●	MMS1700X3DB	54.1	2.130	88.1	3.469	89.1	3.508	148.1	5.831	145	5.709	3.1	.122	18	.709	1
					5	●	MMS1700X5DB	88.1	3.469	122.1	4.807	123.1	4.846	182.1	7.169	179	7.047	3.1	.122	18	.709	1
17.066	.6719	43/64			3	●	MMS1707X3D180	54.3	2.138	91.1	3.587	93.1	3.665	152.1	5.988	149	5.866	3.1	.122	18	.709	1
					5	●	MMS1707X5D180	88.4	3.480	126.1	4.965	129.1	5.083	188.1	7.406	185	7.283	3.1	.122	18	.709	1
17.100	.6732				3	□	MMS1710X3DB	54.4	2.142	91.1	3.587	93.1	3.665	152.1	5.988	149	5.866	3.1	.122	18	.709	1
					5	□	MMS1710X5DB	88.6	3.488	126.1	4.965	129.1	5.083	188.1	7.406	185	7.283	3.1	.122	18	.709	1
17.200	.6772				3	□	MMS1720X3DB	54.7	2.154	91.1	3.587	93.1	3.665	152.1	5.988	149	5.866	3.1	.122	18	.709	1
					5	□	MMS1720X5DB	89.1	3.508	126.1	4.965	129.1	5.083	188.1	7.406	185	7.283	3.1	.122	18	.709	1
17.300	.6811				3	□	MMS1730X3DB	55.0	2.165	91.2	3.591	93.2	3.669	152.2	5.992	149	5.866	3.2	.126	18	.709	1
					5	□	MMS1730X5DB	89.6	3.528	126.2	4.969	129.2	5.087	188.2	7.409	185	7.283	3.2	.126	18	.709	1
17.400	.6850				3	□	MMS1740X3DB	55.4	2.181	91.2	3.591	93.2	3.669	152.2	5.992	149	5.866	3.2	.126	18	.709	1
					5	□	MMS1740X5DB	90.2	3.551	126.2	4.969	129.2	5.087	188.2	7.409	185	7.283	3.2	.126	18	.709	1
17.463	.6875	11/16		3/4-16	3	●	MMS1746X3D180	55.5	2.185	91.2	3.591	93.2	3.669	152.2	5.992	149	5.866	3.2	.126	18	.709	1
					5	●	MMS1746X5D180	90.5	3.563	126.2	4.969	129.2	5.087	188.2	7.409	185	7.283	3.2	.126	18	.709	1
17.500	.6890			M20x2.5	3	●	MMS1750X3DB	55.7	2.193	91.2	3.591	93.2	3.669	152.2	5.992	149	5.866	3.2	.126	18	.709	1
					5	●	MMS1750X5DB	90.7	3.571	126.2	4.969	129.2	5.087	188.2	7.409	185	7.283	3.2	.126	18	.709	1
17.600	.6929				3	□	MMS1760X3DB	56.0	2.205	93.2	3.669	93.2	3.669	152.2	5.992	149	5.866	3.2	.126	18	.709	1
					5	□	MMS1760X5DB	91.2	3.591	129.2	5.087	129.2	5.087	188.2	7.409	185	7.283	3.2	.126	18	.709	1
17.700	.6969				3	□	MMS1770X3DB	56.3	2.217	93.2	3.669	93.2	3.669	152.2	5.992	149	5.866	3.2	.126	18	.709	1
					5	□	MMS1770X5DB	91.7	3.610	129.2	5.087	129.2	5.087	188.2	7.409	185	7.283	3.2	.126	18	.709	1

MMS

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
17.800	.7008				3	□	MMS1780X3DB	56.6	2.228	93.2	3.669	93.2	3.669	152.2	5.992	149	5.866	3.2	.126	18	.709	1
					5	□	MMS1780X5DB	92.2	3.630	129.2	5.087	129.2	5.087	188.2	7.409	185	7.283	3.2	.126	18	.709	1
17.860	.7032	45/64			3	●	MMS1786X3D180	56.8	2.236	93.3	3.673	93.3	3.673	152.3	5.996	149	5.866	3.3	.130	18	.709	1
					5	●	MMS1786X5D180	92.5	3.642	129.3	5.091	129.3	5.091	188.3	7.413	185	7.283	3.3	.130	18	.709	1
17.900	.7047				3	□	MMS1790X3DB	57.0	2.244	93.3	3.673	93.3	3.673	152.3	5.996	149	5.866	3.3	.130	18	.709	1
					5	□	MMS1790X5DB	92.8	3.654	129.3	5.091	129.3	5.091	188.3	7.413	185	7.283	3.3	.130	18	.709	1
18.000	.7087				3	●	MMS1800X3DB	57.3	2.256	93.3	3.673	93.3	3.673	152.3	5.996	149	5.866	3.3	.130	18	.709	1
					5	●	MMS1800X5DB	93.3	3.673	129.3	5.091	129.3	5.091	188.3	7.413	185	7.283	3.3	.130	18	.709	1
18.100	.7126				3	□	MMS1810X3DB	57.6	2.268	96.3	3.791	99.3	3.909	160.3	6.311	157	6.181	3.3	.130	20	.787	1
					5	□	MMS1810X5DB	93.8	3.693	133.3	5.248	137.3	5.406	198.3	7.807	195	7.677	3.3	.130	20	.787	1
18.200	.7165				3	□	MMS1820X3DB	57.9	2.280	96.3	3.791	99.3	3.909	160.3	6.311	157	6.181	3.3	.130	20	.787	1
					5	□	MMS1820X5DB	94.3	3.713	133.3	5.248	137.3	5.406	198.3	7.807	195	7.677	3.3	.130	20	.787	1
18.257	.7188	23/32			3	●	MMS1826X3D200	58.1	2.287	96.3	3.791	99.3	3.909	160.3	6.311	157	6.181	3.3	.130	20	.787	1
					5	●	MMS1826X5D200	94.6	3.724	133.3	5.248	137.3	5.406	198.3	7.807	195	7.677	3.3	.130	20	.787	1
18.300	.7205				3	□	MMS1830X3DB	58.2	2.291	96.3	3.791	99.3	3.909	160.3	6.311	157	6.181	3.3	.130	20	.787	1
					5	□	MMS1830X5DB	94.8	3.732	133.3	5.248	137.3	5.406	198.3	7.807	195	7.677	3.3	.130	20	.787	1
18.400	.7244				3	□	MMS1840X3DB	58.5	2.303	96.4	3.795	99.4	3.913	160.4	6.315	157	6.181	3.4	.134	20	.787	1
					5	□	MMS1840X5DB	95.3	3.752	133.4	5.252	137.4	5.409	198.4	7.811	195	7.677	3.4	.134	20	.787	1
18.500	.7283			M20x1.5	3	●	MMS1850X3DB	58.9	2.319	96.4	3.795	99.4	3.913	160.4	6.315	157	6.181	3.4	.134	20	.787	1
					5	●	MMS1850X5DB	95.9	3.776	133.4	5.252	137.4	5.409	198.4	7.811	195	7.677	3.4	.134	20	.787	1
18.600	.7323				3	□	MMS1860X3DB	59.2	2.331	98.4	3.874	99.4	3.913	160.4	6.315	157	6.181	3.4	.134	20	.787	1
					5	□	MMS1860X5DB	96.4	3.795	136.4	5.370	137.4	5.409	198.4	7.811	195	7.677	3.4	.134	20	.787	1
18.654	.7344	47/64			3	●	MMS1865X3D200	59.3	2.335	98.4	3.874	99.4	3.913	160.4	6.315	157	6.181	3.4	.134	20	.787	1
					5	●	MMS1865X5D200	96.6	3.803	136.4	5.370	137.4	5.409	198.4	7.811	195	7.677	3.4	.134	20	.787	1
18.700	.7362				3	□	MMS1870X3DB	59.5	2.343	98.4	3.874	99.4	3.913	160.4	6.315	157	6.181	3.4	.134	20	.787	1
					5	□	MMS1870X5DB	96.9	3.815	136.4	5.370	137.4	5.409	198.4	7.811	195	7.677	3.4	.134	20	.787	1
18.800	.7402				3	□	MMS1880X3DB	59.8	2.354	98.4	3.874	99.4	3.913	160.4	6.315	157	6.181	3.4	.134	20	.787	1
					5	□	MMS1880X5DB	97.4	3.835	136.4	5.370	137.4	5.409	198.4	7.811	195	7.677	3.4	.134	20	.787	1
18.900	.7441				3	□	MMS1890X3DB	60.1	2.366	98.4	3.874	99.4	3.913	160.4	6.315	157	6.181	3.4	.134	20	.787	1
					5	□	MMS1890X5DB	97.9	3.854	136.4	5.370	137.4	5.409	198.4	7.811	195	7.677	3.4	.134	20	.787	1
19.000	.7480				3	●	MMS1900X3DB	60.5	2.382	98.5	3.878	99.5	3.917	160.5	6.319	157	6.181	3.5	.138	20	.787	1
					5	●	MMS1900X5DB	98.5	3.878	136.5	5.374	137.5	5.413	198.5	7.815	195	7.677	3.5	.138	20	.787	1
19.050	.7500	3/4			3	●	MMS1905X3D200	60.6	2.386	101.5	3.996	103.5	4.075	164.5	6.476	161	6.339	3.5	.138	20	.787	1
					5	●	MMS1905X5D200	98.7	3.886	140.5	5.531	143.5	5.650	204.5	8.051	201	7.913	3.5	.138	20	.787	1
19.100	.7520				3	□	MMS1910X3DB	60.8	2.394	101.5	3.996	103.5	4.075	164.5	6.476	161	6.339	3.5	.138	20	.787	1
					5	□	MMS1910X5DB	99.0	3.898	140.5	5.531	143.5	5.650	204.5	8.051	201	7.913	3.5	.138	20	.787	1
19.200	.7559				3	□	MMS1920X3DB	61.1	2.406	101.5	3.996	103.5	4.075	164.5	6.476	161	6.339	3.5	.138	20	.787	1
					5	□	MMS1920X5DB	99.5	3.917	140.5	5.531	143.5	5.650	204.5	8.051	201	7.913	3.5	.138	20	.787	1
19.254	.7580		Tube Sheet		3	●	MMS1925X3D200	61.2	2.409	101.5	3.996	103.5	4.075	164.5	6.476	161	6.339	3.5	.138	20	.787	1
					5	●	MMS1925X5D200	99.7	3.925	140.5	5.531	143.5	5.650	204.5	8.051	201	7.913	3.5	.138	20	.787	1
19.300	.7598				3	□	MMS1930X3DB	61.4	2.417	101.5	3.996	103.5	4.075	164.5	6.476	161	6.339	3.5	.138	20	.787	1
					5	□	MMS1930X5DB	100.0	3.937	140.5	5.531	143.5	5.650	204.5	8.051	201	7.913	3.5	.138	20	.787	1
19.400	.7638				3	□	MMS1940X3DB	61.7	2.429	101.5	3.996	103.5	4.075	164.5	6.476	161	6.339	3.5	.138	20	.787	1
					5	□	MMS1940X5DB	100.5	3.957	140.5	5.531	143.5	5.650	204.5	8.051	201	7.913	3.5	.138	20	.787	1
19.447	.7657	49/64		7/8-9	3	●	MMS1945X3D200	61.8	2.433	101.5	3.996	103.5	4.075	164.5	6.476	161	6.339	3.5	.138	20	.787	1
					5	●	MMS1945X5D200	100.7	3.965	140.5	5.531	143.5	5.650	204.5	8.051	201	7.913	3.5	.138	20	.787	1
19.500	.7677			M22x2.5	3	●	MMS1950X3DB	62.0	2.441	101.6	4.000	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787	1
					5	●	MMS1950X5DB	101.0	3.976	140.6	5.535	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787	1

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		DP7020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
19.600	.7717				3	□	MMS1960X3DB	62.4	2.457	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787	1
					5	□	MMS1960X5DB	101.6	4.000	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787	1
19.700	.7756				3	□	MMS1970X3DB	62.7	2.469	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787	1
					5	□	MMS1970X5DB	102.1	4.020	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787	1
19.800	.7795				3	□	MMS1980X3DB	63.0	2.480	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787	1
					5	□	MMS1980X5DB	102.6	4.039	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787	1
19.844	.7813	25/32			3	●	MMS1984X3D200	63.1	2.484	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787	1
					5	●	MMS1984X5D200	102.8	4.047	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787	1
19.900	.7835				3	□	MMS1990X3DB	63.3	2.492	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787	1
					5	□	MMS1990X5DB	103.1	4.059	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787	1
20.000	.7874				3	●	MMS2000X3DB	63.6	2.504	103.6	4.079	103.6	4.079	164.6	6.480	161	6.339	3.6	.142	20	.787	1
					5	●	MMS2000X5DB	103.6	4.079	143.6	5.654	143.6	5.654	204.6	8.055	201	7.913	3.6	.142	20	.787	1

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.		Austenitic Stainless Steel (>200HB) AISI 304LN, 316LN etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1181	**3.0**	260 (195—330)	.0051 (.0031—.0071)	195 (150—260)	.0039 (.0020—.0059)
.1575	**4.0**	260 (195—330)	.0059 (.0039—.0079)	195 (150—260)	.0047 (.0031—.0071)
.1969	**5.0**	260 (195—330)	.0059 (.0039—.0079)	195 (150—260)	.0047 (.0031—.0071)
.2480	**6.3**	260 (195—330)	.0067 (.0047—.0087)	195 (150—260)	.0059 (.0039—.0079)
.3150	**8.0**	260 (195—330)	.0075 (.0055—.0094)	195 (150—260)	.0067 (.0047—.0087)
.3937	**10.0**	195 (150—230)	.0079 (.0059—.0098)	165 (130—195)	.0071 (.0051—.0091)
.4724	**12.0**	195 (150—230)	.0083 (.0063—.0102)	165 (130—195)	.0075 (.0055—.0094)
.6299	**16.0**	195 (150—230)	.0087 (.0067—.0106)	165 (130—195)	.0079 (.0059—.0098)
.7874	**20.0**	195 (150—230)	.0091 (.0071—.0110)	165 (130—195)	.0083 (.0063—.0102)

Workpiece Material		Duplex Steel (≤280HB) AISI 329 etc.		Ferritic, Martensitic Stainless Steel (≤200HB) AISI 410, 430 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1181	**3.0**	165 (130—195)	.0039 (.0020—.0059)	260 (195—330)	.0051 (.0031—.0071)
.1575	**4.0**	165 (130—195)	.0047 (.0031—.0071)	260 (195—330)	.0059 (.0039—.0079)
.1969	**5.0**	165 (130—195)	.0047 (.0031—.0071)	260 (195—330)	.0059 (.0039—.0079)
.2480	**6.3**	165 (130—195)	.0059 (.0039—.0079)	260 (195—330)	.0067 (.0047—.0087)
.3150	**8.0**	165 (130—195)	.0067 (.0047—.0087)	260 (195—330)	.0075 (.0055—.0094)
.3937	**10.0**	130 (100—165)	.0071 (.0051—.0091)	195 (150—260)	.0079 (.0059—.0098)
.4724	**12.0**	130 (100—165)	.0075 (.0055—.0094)	195 (150—260)	.0083 (.0063—.0102)
.6299	**16.0**	130 (100—165)	.0079 (.0059—.0098)	195 (150—260)	.0087 (.0067—.0106)
.7874	**20.0**	130 (100—165)	.0083 (.0063—.0102)	195 (150—260)	.0083 (.0071—.0110)

Note 1) For stable machining, internal coolant supply with high pressure is recommended.
Note 2) Emulsion type of water coolant is recommended.
Note 3) Recommended cutting conditions are for machining under the conditions of favorable machining environment and coolant. Please lower the cutting conditions if there is a problem in the rigidity of machine and workpiece, and coolant property or discharge amount.
Note 4) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

MMS

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		Ferritic, Martensitic Stainless Steel (>200HB) AISI 431, 420 etc.		PH Stainless Steel (<450HB) S17400, S17700 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1181	**3.0**	195 (150—260)	.0039 (.0020—.0059)	165 (130—195)	.0039 (.0020—.0059)
.1575	**4.0**	195 (150—260)	.0047 (.0031—.0071)	165 (130—195)	.0047 (.0031—.0071)
.1969	**5.0**	195 (150—260)	.0047 (.0031—.0071)	165 (130—195)	.0047 (.0031—.0071)
.2480	**6.3**	195 (150—260)	.0059 (.0039—.0079)	165 (130—195)	.0059 (.0039—.0079)
.3150	**8.0**	195 (150—260)	.0067 (.0047—.0087)	165 (130—195)	.0067 (.0047—.0087)
.3937	**10.0**	165 (130—195)	.0071 (.0051—.0091)	130 (100—165)	.0071 (.0051—.0091)
.4724	**12.0**	165 (130—195)	.0075 (.0055—.0094)	130 (100—165)	.0075 (.0055—.0094)
.6299	**16.0**	165 (130—195)	.0079 (.0059—.0098)	130 (100—165)	.0079 (.0059—.0098)
.7874	**20.0**	165 (130—195)	.0083 (.0063—.0102)	130 (100—165)	.0083 (.0063—.0102)

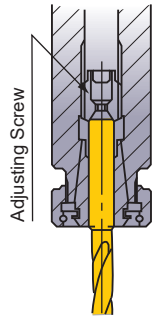
Note 1) For stable machining, internal coolant supply with high pressure is recommended.
Note 2) Emulsion type of water coolant is recommended.
Note 3) Recommended cutting conditions are for machining under the conditions of favorable machining environment and coolant. Please lower the cutting conditions if there is a problem in the rigidity of machine and workpiece, and coolant property or discharge amount.
Note 4) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

STAINLESS STEEL CROSS REFERENCE LIST

Workpiece Material	No	USA	Japan	Germany	
		AISI/SAE	**JIS**	W-no.	DIN
Ferritic, Martensitic Stainless Steel	**1**	416	SUS416	1.4005	X12CrS3
		410	SUS410	1.4006	X10Cr13
		430	SUS430	1.4016	X6Cr17
		434	SUS434	1.4113	X6CrMo17
		430Ti	SUS430LX	1.4510	X6CrTi17
		409	—	1.4512	X6CrTi12
	2	420	SUS420J1	1.4021	X20Cr13
		431	SUS431	1.4057	X20CrNi17-2
		420	SUS420J2	1.4028	X30Cr13
		440C	SUS440C	1.4125	X10CrMo17
PH Stainless Steel	**3**	630 (17-4PH)	SUS630	1.4542	X5CrNiCuNb16 4
		S15500 (15-5PH)	—	1.4545	—
		631 (17-7PH)	SUS631	1.4568	X7CrNiAl17 7
Austenitic Stainless Steel	**4**	304	SUS304	1.4301	X5CrNi18 10
		305	SUS305	1.4303	X5CrNi8-12
		303	SUS303	1.4305	X12CrNiS18-9
		304L	SUS304L	1.4307	X2CrNi19-11
		316	SUS316	1.4401	X5CrNiMo17 12 2
	5	304LN	SUS304LN	1.4311	X2CrNiN18 10
		316L	SUS316L	1.4404	X2CrNiMo17 12 2
		316LN	SUS316LN	1.4406	X2CrNiMoN17 12 2
		—	SUS316L	1.4435	X2CrNiMo18 14 3
		317L	SUS317L	1.4438	X2CrNiMo18 15 4
		N08926	—	1.4529	X1NiCrMoCuN25 20 7
		321	SUS321	1.4541	X6CrNiTi18-10
		347	SUS347	1.4550	X6CrNiNb18-10
		316Ti	SUS316Ti	1.4571	X6CrNiMoTi17 12 2
Duplex Steel	**6**	—	—	1.4362	X2CrNiN23 4
		S32750	SCS14A	1.4410	X2CrNiMoN25 7 4
		329	SUS329J1	1.4460	X3CrNiMoN27 5 2
		S31803	SUS329J3L	1.4462	X2CrNiMoN22 5 3

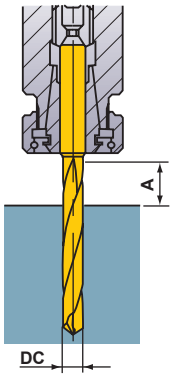
■OPERATIONAL GUIDANCE FOR THE MMS DRILL

Drill Holding



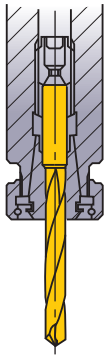
Thrust bearing type collet chuck holds the drill securely.

Drill Length



A ≥ DC x 1.5

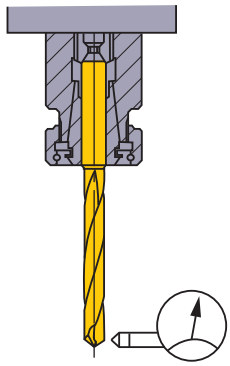
Drill Installation



NG

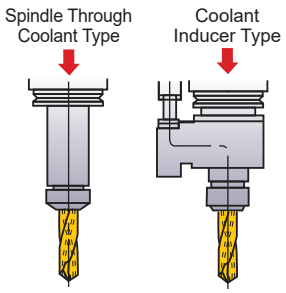
Do not clamp on the flutes.

Installation Tolerance



Runout ≤ .001"

Through Coolant Type



Coolant pressure is approx. 70 - 1015 PSI (0.5 - 7MPa).

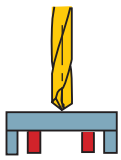
Coolant Handling

< MMS type >

1) Dirt and dust particles in old coolant can clog the oil hole and prevent effective flow. Regular coolant exchange is recommended.

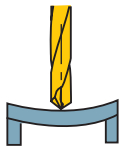
2) Small particles of swarf will jam in the oil hole. Use a filter as a preventative measure. When using small diameter drills, use a fine mesh filter.

Thin Workpiece



Support the Workpiece

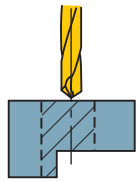
OK



If bending Occurs

NG

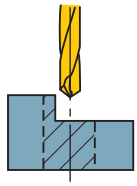
Interrupted Cutting



One Process

OK

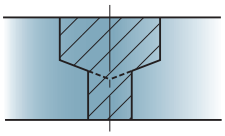
①Lower the feed when drilling the interrupted part.



Requires Prior Machining

①Spot face with an end mill prior to drilling.

Stepped Holes

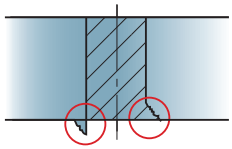


①Divide the machining into two processes.

②Drill the larger hole first.

*Tools for chamfering and spot facing can be produced to order.

Burring and Workpiece Chipping



①Lower the feed rate when breaking through.

②Add a chamfer.

③Change the point angle.

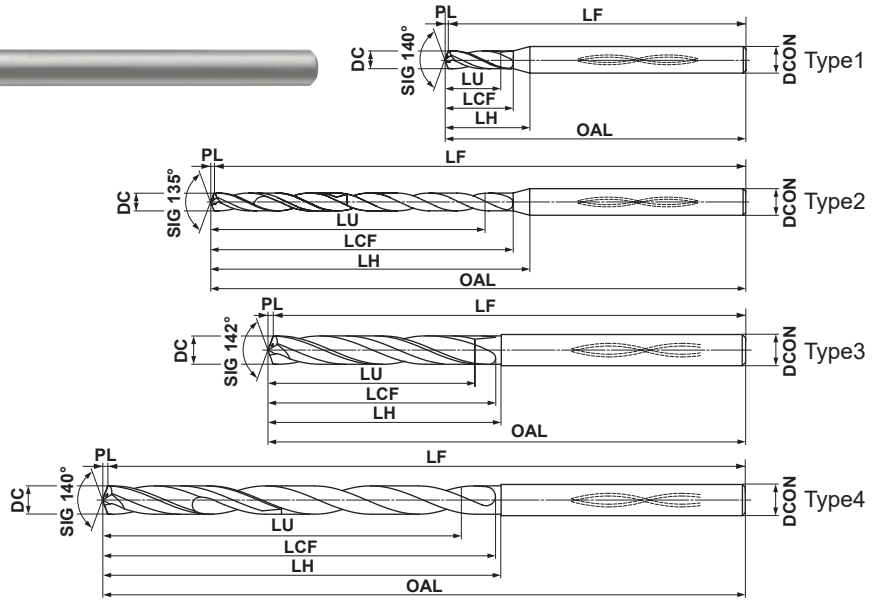
MHS

- Solid carbide drills for die & mold machining
- High buckling strength and unique double margin.
- Non-step drilling with long tool life for hardened steel, 35HRC-55HRC

P | M | K | N | S | H

METRIC STANDARD

Internal Coolant



DC≤3	3<DC≤6	6<DC≤10	10<DC≤12
+0.010 −0.002	+0.010 −0.002	+0.010 −0.005	+0.010 −0.008
DCON=3	3<DCON≤6	6<DCON≤10	10<DCON≤12
0 −0.006	0 −0.008	0 −0.009	0 −0.011

Note 1) MHS drills are suitable for use with shrink fit holders.
Note 2) For L/D ≥ 10 recommend use of smallest L/D available in respective DC as pilot drill.

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
0.950	.0374				3	★	MHS0095L006B	3.0	.118	6.17	.243	9.97	.393	60.17	2.369	60	2.362	0.17	.007	3	.118	1
					6	★	MHS0095L009B	5.9	.232	9.20	.362	13.00	.512	60.20	2.370	60	2.362	0.20	.008	3	.118	2
					13	★	MHS0095L015B	12.5	.492	15.20	.598	19.00	.748	60.20	2.370	60	2.362	0.20	.008	3	.118	2
					23	★	MHS0095L025B	22.0	.866	25.20	.992	29.00	1.142	60.20	2.370	60	2.362	0.20	.008	3	.118	2
					30	★	MHS0095L035B	28.7	1.130	35.20	1.386	39.00	1.535	80.20	3.157	80	3.150	0.20	.008	3	.118	2
1.000	.0394				3	★	MHS0100L006B	3.2	.126	6.2	.244	9.9	.390	60.2	2.370	60	2.362	0.2	.008	3	.118	1
					6	★	MHS0100L009B	6.2	.244	9.2	.362	12.9	.508	60.2	2.370	60	2.362	0.2	.008	3	.118	2
					12	★	MHS0100L015B	12.2	.480	15.2	.598	18.9	.744	60.2	2.370	60	2.362	0.2	.008	3	.118	2
					22	★	MHS0100L025B	22.2	.874	25.2	.992	28.9	1.138	60.2	2.370	60	2.362	0.2	.008	3	.118	2
					30	★	MHS0100L035B	30.2	1.189	35.2	1.386	38.9	1.531	80.2	3.157	80	3.150	0.2	.008	3	.118	2
1.100	.0433				2	★	MHS0110L006B	2.4	.094	6.2	.244	9.7	.382	60.2	2.370	60	2.362	0.2	.008	3	.118	1
					5	★	MHS0110L009B	5.7	.224	9.2	.362	12.7	.500	60.2	2.370	60	2.362	0.2	.008	3	.118	2
					11	★	MHS0110L015B	12.3	.484	15.2	.598	18.7	.736	60.2	2.370	60	2.362	0.2	.008	3	.118	2
					20	★	MHS0110L025B	22.2	.874	25.2	.992	28.7	1.130	60.2	2.370	60	2.362	0.2	.008	3	.118	2
					29	★	MHS0110L035B	32.1	1.264	35.2	1.386	38.7	1.524	80.2	3.157	80	3.150	0.2	.008	3	.118	2
1.200	.0472				2	★	MHS0120L006B	2.6	.102	6.2	.244	9.6	.378	60.2	2.370	60	2.362	0.2	.008	3	.118	1
					5	★	MHS0120L009B	6.2	.244	9.3	.366	12.7	.500	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					10	★	MHS0120L015B	12.2	.480	15.3	.602	18.7	.736	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					18	★	MHS0120L025B	21.8	.858	25.3	.996	28.7	1.130	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					26	★	MHS0120L035B	31.4	1.236	35.3	1.390	38.7	1.524	80.3	3.161	80	3.150	0.3	.012	3	.118	2
1.300	.0512				2	★	MHS0130L007B	2.8	.110	7.2	.283	10.4	.409	60.2	2.370	60	2.362	0.2	.008	3	.118	1
					5	★	MHS0130L011B	6.8	.268	11.3	.445	14.5	.571	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					12	★	MHS0130L020B	15.9	.626	20.3	.799	23.5	.925	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					20	★	MHS0130L030B	26.3	1.035	30.3	1.193	33.5	1.319	80.3	3.161	80	3.150	0.3	.012	3	.118	2
					30	★	MHS0130L045B	39.3	1.547	45.3	1.783	48.5	1.909	80.3	3.161	80	3.150	0.3	.012	3	.118	2

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					2	★	**MHS0140L007B**	3.1	.122	7.3	.287	10.3	.406	60.3	2.374	60	2.362	0.3	.012	3	.118	1
					5	★	**MHS0140L011B**	7.3	.287	11.3	.445	14.3	.563	60.3	2.374	60	2.362	0.3	.012	3	.118	2
1.400	**.0551**				11	★	**MHS0140L020B**	15.7	.618	20.3	.799	23.3	.917	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					18	★	**MHS0140L030B**	25.5	1.004	30.3	1.193	33.3	1.311	80.3	3.161	80	3.150	0.3	.012	3	.118	2
					29	★	**MHS0140L045B**	40.9	1.610	45.3	1.783	48.3	1.902	80.3	3.161	80	3.150	0.3	.012	3	.118	2
					3	★	**MHS0145L008B**	4.7	.185	8.3	.327	11.2	.441	60.3	2.374	60	2.362	0.3	.012	3	.118	1
					6	★	**MHS0145L013B**	9.0	.354	13.3	.524	16.2	.638	60.3	2.374	60	2.362	0.3	.012	3	.118	2
1.450	**.0571**				11	★	**MHS0145L020B**	16.3	.642	20.3	.799	23.2	.913	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					21	★	**MHS0145L035B**	30.8	1.213	35.3	1.390	38.2	1.504	80.3	3.161	80	3.150	0.3	.012	3	.118	2
					30	★	**MHS0145L055B**	43.8	1.724	55.3	2.177	58.2	2.291	100.3	3.949	100	3.937	0.3	.012	3	.118	2
					2	★	**MHS0150L008B**	3.3	.130	8.3	.327	11.1	.437	60.3	2.374	60	2.362	0.3	.012	3	.118	1
					6	★	**MHS0150L013B**	9.3	.366	13.3	.524	16.1	.634	60.3	2.374	60	2.362	0.3	.012	3	.118	2
1.500	**.0591**			**#1-64**	10	★	**MHS0150L020B**	15.3	.602	20.3	.799	23.1	.909	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					20	★	**MHS0150L035B**	30.3	1.193	35.3	1.390	38.1	1.500	80.3	3.161	80	3.150	0.3	.012	3	.118	2
					30	★	**MHS0150L055B**	45.3	1.783	55.3	2.177	58.1	2.287	100.3	3.949	100	3.937	0.3	.012	3	.118	2
					2	★	**MHS0160L008B**	3.5	.138	8.3	.327	10.9	.429	60.3	2.374	60	2.362	0.3	.012	3	.118	1
					5	★	**MHS0160L013B**	8.3	.327	13.3	.524	15.9	.626	60.3	2.374	60	2.362	0.3	.012	3	.118	2
1.600	**.0630**				10	★	**MHS0160L020B**	16.3	.642	20.3	.799	22.9	.902	60.3	2.374	60	2.362	0.3	.012	3	.118	2
					19	★	**MHS0160L035B**	30.7	1.209	35.3	1.390	37.9	1.492	80.3	3.161	80	3.150	0.3	.012	3	.118	2
					30	★	**MHS0160L055B**	48.3	1.902	55.3	2.177	57.9	2.280	100.3	3.949	100	3.937	0.3	.012	3	.118	2
					2	★	**MHS0170L008B**	3.7	.146	8.3	.327	10.7	.421	60.3	2.374	60	2.362	0.3	.012	3	.118	1
					5	★	**MHS0170L013B**	8.9	.350	13.4	.528	15.8	.622	60.4	2.378	60	2.362	0.4	.016	3	.118	2
1.700	**.0669**				9	★	**MHS0170L020B**	15.7	.618	20.4	.803	22.8	.898	60.4	2.378	60	2.362	0.4	.016	3	.118	2
					18	★	**MHS0170L035B**	31.0	1.220	35.4	1.394	37.8	1.488	80.4	3.165	80	3.150	0.4	.016	3	.118	2
					29	★	**MHS0170L055B**	49.7	1.957	55.4	2.181	57.8	2.276	100.4	3.953	100	3.937	0.4	.016	3	.118	2
					3	★	**MHS0180L010B**	5.7	.224	10.3	.406	12.5	.492	60.3	2.374	60	2.362	0.3	.012	3	.118	1
					5	★	**MHS0180L015B**	9.4	.370	15.4	.606	17.6	.693	60.4	2.378	60	2.362	0.4	.016	3	.118	2
1.800	**.0709**				11	★	**MHS0180L025B**	20.2	.795	25.4	1.000	27.6	1.087	60.4	2.378	60	2.362	0.4	.016	3	.118	2
					22	★	**MHS0180L045B**	40.0	1.575	45.4	1.787	47.6	1.874	80.4	3.165	80	3.150	0.4	.016	3	.118	2
					30	★	**MHS0180L065B**	54.4	2.142	65.4	2.575	67.6	2.661	100.4	3.953	100	3.937	0.4	.016	3	.118	2
					2	★	**MHS0190L010B**	4.1	.161	10.4	.409	12.5	.492	60.4	2.378	60	2.362	0.4	.016	3	.118	1
					5	★	**MHS0190L015B**	9.9	.390	15.4	.606	17.5	.689	60.4	2.378	60	2.362	0.4	.016	3	.118	2
1.900	**.0748**				10	★	**MHS0190L025B**	19.4	.764	25.4	1.000	27.5	1.083	60.4	2.378	60	2.362	0.4	.016	3	.118	2
					21	★	**MHS0190L045B**	40.3	1.587	45.4	1.787	47.5	1.870	80.4	3.165	80	3.150	0.4	.016	3	.118	2
					30	★	**MHS0190L065B**	57.4	2.260	65.4	2.575	67.5	2.657	100.4	3.953	100	3.937	0.4	.016	3	.118	2
					2	★	**MHS0195L010B**	4.3	.169	10.4	.409	12.4	.488	60.4	2.378	60	2.362	0.4	.016	3	.118	1
					5	★	**MHS0195L015B**	10.2	.402	15.4	.606	17.4	.685	60.4	2.378	60	2.362	0.4	.016	3	.118	2
1.950	**.0768**				10	★	**MHS0195L025B**	19.9	.783	25.4	1.000	27.4	1.079	60.4	2.378	60	2.362	0.4	.016	3	.118	2
					20	★	**MHS0195L045B**	39.4	1.551	45.4	1.787	47.4	1.866	80.4	3.165	80	3.150	0.4	.016	3	.118	2
					30	★	**MHS0195L065B**	58.9	2.319	65.4	2.575	67.4	2.654	100.4	3.953	100	3.937	0.4	.016	3	.118	2
					2	★	**MHS0200L010B**	4.4	.173	10.4	.409	12.3	.484	60.4	2.378	60	2.362	0.4	.016	3	.118	1
					5	★	**MHS0200L015B**	10.4	.409	15.4	.606	17.3	.681	60.4	2.378	60	2.362	0.4	.016	3	.118	2
2.000	**.0787**			**#3-48**	9	★	**MHS0200L025B**	18.4	.724	25.4	1.000	27.3	1.075	60.4	2.378	60	2.362	0.4	.016	3	.118	2
					20	★	**MHS0200L045B**	40.4	1.591	45.4	1.787	47.3	1.862	80.4	3.165	80	3.150	0.4	.016	3	.118	2
					30	★	**MHS0200L065B**	60.4	2.378	65.4	2.575	67.3	2.650	100.4	3.953	100	3.937	0.4	.016	3	.118	2

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.100	.0827				3	★	MHS0210L012B	6.7	.264	12.4	.488	14.1	.555	60.4	2.378	60	2.362	0.4	.016	3	.118	1
					7	★	MHS0210L020B	15.1	.594	20.4	.803	22.1	.870	60.4	2.378	60	2.362	0.4	.016	3	.118	2
					11	★	MHS0210L030B	23.5	.925	30.4	1.197	32.1	1.264	80.4	3.165	80	3.150	0.4	.016	3	.118	2
					23	★	MHS0210L055B	48.7	1.917	55.4	2.181	57.1	2.248	100.4	3.953	100	3.937	0.4	.016	3	.118	2
					30	★	MHS0210L075B	63.4	2.496	75.4	2.969	77.1	3.035	120.4	4.740	120	4.724	0.4	.016	3	.118	2
2.200	.0866				2	★	MHS0220L012B	4.8	.189	12.4	.488	13.9	.547	60.4	2.378	60	2.362	0.4	.016	3	.118	1
					6	★	MHS0220L020B	13.7	.539	20.5	.807	22.0	.866	60.5	2.382	60	2.362	0.5	.020	3	.118	2
					11	★	MHS0220L030B	24.7	.972	30.5	1.201	32.0	1.260	80.5	3.169	80	3.150	0.5	.020	3	.118	2
					22	★	MHS0220L055B	48.9	1.925	55.5	2.185	57.0	2.244	100.5	3.957	100	3.937	0.5	.020	3	.118	2
					30	★	MHS0220L075B	66.5	2.618	75.5	2.972	77.0	3.031	120.5	4.744	120	4.724	0.5	.020	3	.118	2
2.300	.0906				2	★	MHS0230L012B	5.0	.197	12.4	.488	13.7	.539	60.4	2.378	60	2.362	0.4	.016	3	.118	1
					6	★	MHS0230L020B	14.3	.563	20.5	.807	21.8	.858	60.5	2.382	60	2.362	0.5	.020	3	.118	2
					10	★	MHS0230L030B	23.5	.925	30.5	1.201	31.8	1.252	80.5	3.169	80	3.150	0.5	.020	3	.118	2
					21	★	MHS0230L055B	48.8	1.921	55.5	2.185	56.8	2.236	100.5	3.957	100	3.937	0.5	.020	3	.118	2
					30	★	MHS0230L075B	69.5	2.736	75.5	2.972	76.8	3.024	120.5	4.744	120	4.724	0.5	.020	3	.118	2
2.400	.0945				2	★	MHS0240L012B	5.2	.205	12.4	.488	13.5	.531	60.4	2.378	60	2.362	0.4	.016	3	.118	1
					5	★	MHS0240L020B	12.5	.492	20.5	.807	21.6	.850	60.5	2.382	60	2.362	0.5	.020	3	.118	2
					9	★	MHS0240L030B	22.1	.870	30.5	1.201	31.6	1.244	80.5	3.169	80	3.150	0.5	.020	3	.118	2
					20	★	MHS0240L055B	48.5	1.909	55.5	2.185	56.6	2.228	100.5	3.957	100	3.937	0.5	.020	3	.118	2
					28	★	MHS0240L075B	67.7	2.665	75.5	2.972	76.6	3.016	120.5	4.744	120	4.724	0.5	.020	3	.118	2
2.450	.0965				2	★	MHS0245L013B	5.3	.209	13.5	.531	14.5	.571	70.5	2.776	70	2.756	0.5	.020	4	.157	1
					5	★	MHS0245L020B	12.8	.504	20.5	.807	21.5	.846	70.5	2.776	70	2.756	0.5	.020	4	.157	2
					11	★	MHS0245L035B	27.5	1.083	35.5	1.398	36.5	1.437	90.5	3.563	90	3.543	0.5	.020	4	.157	2
					24	★	MHS0245L065B	59.3	2.335	65.5	2.579	66.5	2.618	110.5	4.350	110	4.331	0.5	.020	4	.157	2
					30	★	MHS0245L090B	74.0	2.913	90.5	3.563	91.5	3.602	140.5	5.531	140	5.512	0.5	.020	4	.157	2
2.500	.0984				2	★	MHS0250L013B	5.5	.217	13.5	.531	16.3	.642	70.5	2.776	70	2.756	0.5	.020	4	.157	1
					5	★	MHS0250L020B	13.0	.512	20.5	.807	23.3	.917	70.5	2.776	70	2.756	0.5	.020	4	.157	2
					11	★	MHS0250L035B	28.0	1.102	35.5	1.398	38.3	1.508	90.5	3.563	90	3.543	0.5	.020	4	.157	2
					23	★	MHS0250L065B	58.0	2.283	65.5	2.579	68.3	2.689	110.5	4.350	110	4.331	0.5	.020	4	.157	2
					30	★	MHS0250L090B	75.5	2.972	90.5	3.563	93.3	3.673	140.5	5.531	140	5.512	0.5	.020	4	.157	2
2.600	.1024				2	★	MHS0260L013B	5.7	.224	13.5	.531	16.1	.634	70.5	2.776	70	2.756	0.5	.020	4	.157	1
					5	★	MHS0260L020B	13.5	.531	20.5	.807	23.1	.909	70.5	2.776	70	2.756	0.5	.020	4	.157	2
					10	★	MHS0260L035B	26.5	1.043	35.5	1.398	38.1	1.500	90.5	3.563	90	3.543	0.5	.020	4	.157	2
					22	★	MHS0260L065B	57.7	2.272	65.5	2.579	68.1	2.681	110.5	4.350	110	4.331	0.5	.020	4	.157	2
					30	★	MHS0260L090B	78.5	3.091	90.5	3.563	93.1	3.665	140.5	5.531	140	5.512	0.5	.020	4	.157	2
2.700	.1063		36	#6-32	2	★	MHS0270L013B	5.9	.232	13.5	.531	15.9	.626	70.5	2.776	70	2.756	0.5	.020	4	.157	1
					4	★	MHS0270L020B	11.4	.449	20.6	.811	23.0	.906	70.6	2.780	70	2.756	0.6	.024	4	.157	2
					10	★	MHS0270L035B	27.6	1.087	35.6	1.402	38.0	1.496	90.6	3.567	90	3.543	0.6	.024	4	.157	2
					21	★	MHS0270L065B	57.3	2.256	65.6	2.583	68.0	2.677	110.6	4.354	110	4.331	0.6	.024	4	.157	2
					30	★	MHS0270L090B	81.6	3.213	90.6	3.567	93.0	3.661	140.6	5.535	140	5.512	0.6	.024	4	.157	2
2.800	.1102		35		2	★	MHS0280L014B	6.1	.240	14.5	.571	16.7	.657	70.5	2.776	70	2.756	0.5	.020	4	.157	1
					4	★	MHS0280L020B	11.8	.465	20.6	.811	22.8	.898	70.6	2.780	70	2.756	0.6	.024	4	.157	2
					9	★	MHS0280L035B	25.8	1.016	35.6	1.402	37.8	1.488	90.6	3.567	90	3.543	0.6	.024	4	.157	2
					20	★	MHS0280L065B	56.6	2.228	65.6	2.583	67.8	2.669	110.6	4.354	110	4.331	0.6	.024	4	.157	2
					29	★	MHS0280L090B	81.8	3.220	90.6	3.567	92.8	3.654	140.6	5.535	140	5.512	0.6	.024	4	.157	2

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.900	.1142				2	★	MHS0290L014B	6.3	.248	14.5	.571	16.6	.654	70.5	2.776	70	2.756	0.5	.020	4	.157	1
					4	★	MHS0290L020B	12.2	.480	20.6	.811	22.7	.894	70.6	2.780	70	2.756	0.6	.024	4	.157	2
					9	★	MHS0290L035B	26.7	1.051	35.6	1.402	37.7	1.484	90.6	3.567	90	3.543	0.6	.024	4	.157	2
					19	★	MHS0290L065B	55.7	2.193	65.6	2.583	67.7	2.665	110.6	4.354	110	4.331	0.6	.024	4	.157	2
					28	★	MHS0290L090B	81.8	3.220	90.6	3.567	92.7	3.650	140.6	5.535	140	5.512	0.6	.024	4	.157	2
2.950	.1161		32		2	★	MHS0295L014B	6.4	.252	14.5	.571	16.5	.650	70.5	2.776	70	2.756	0.5	.020	4	.157	1
					4	★	MHS0295L020B	12.4	.488	20.6	.811	22.6	.890	70.6	2.780	70	2.756	0.6	.024	4	.157	2
					9	★	MHS0295L035B	27.2	1.071	35.6	1.402	37.6	1.480	90.6	3.567	90	3.543	0.6	.024	4	.157	2
					19	★	MHS0295L065B	56.7	2.232	65.6	2.583	67.6	2.661	110.6	4.354	110	4.331	0.6	.024	4	.157	2
					28	★	MHS0295L090B	83.2	3.276	90.6	3.567	92.6	3.646	140.6	5.535	140	5.512	0.6	.024	4	.157	2
3.000	.1181				4	★	MHS0300L020B	12.5	.492	19.6	.772	20.6	.811	70.6	2.780	70	2.756	0.6	.024	4	.157	3
					10	★	MHS0300L040B	30.5	1.201	39.6	1.559	40.6	1.598	90.6	3.567	90	3.543	0.6	.024	4	.157	4
					17	★	MHS0300L060B	51.5	2.028	59.6	2.346	60.6	2.386	110.6	4.354	110	4.331	0.6	.024	4	.157	4
					27	★	MHS0300L090B	81.5	3.209	89.6	3.528	90.6	3.567	140.6	5.535	140	5.512	0.6	.024	4	.157	4
3.100	.1220				4	□	MHS0310L020B	12.9	.508	20.1	.791	20.6	.811	70.6	2.780	70	2.756	0.6	.024	4	.157	3
					10	□	MHS0310L040B	31.6	1.244	40.1	1.579	40.6	1.598	90.6	3.567	90	3.543	0.6	.024	4	.157	4
					17	□	MHS0310L060B	53.3	2.098	60.1	2.366	60.6	2.386	110.6	4.354	110	4.331	0.6	.024	4	.157	4
					26	□	MHS0310L090B	81.2	3.197	90.1	3.547	90.6	3.567	140.6	5.535	140	5.512	0.6	.024	4	.157	4
3.200	.1260				4	□	MHS0320L020B	13.4	.528	20.2	.795	20.7	.815	70.7	2.783	70	2.756	0.7	.028	4	.157	3
					10	□	MHS0320L040B	32.6	1.283	40.1	1.579	40.6	1.598	90.6	3.567	90	3.543	0.6	.024	4	.157	4
					16	□	MHS0320L060B	51.8	2.039	60.1	2.366	60.6	2.386	110.6	4.354	110	4.331	0.6	.024	4	.157	4
					25	□	MHS0320L090B	80.6	3.173	90.1	3.547	90.6	3.567	140.6	5.535	140	5.512	0.6	.024	4	.157	4
3.300	.1299			M4x.7	3	□	MHS0330L020B	10.5	.413	20.2	.795	20.7	.815	70.7	2.783	70	2.756	0.7	.028	4	.157	3
					9	□	MHS0330L040B	30.3	1.193	40.1	1.579	40.6	1.598	90.6	3.567	90	3.543	0.6	.024	4	.157	4
					16	□	MHS0330L060B	53.4	2.102	60.1	2.366	60.6	2.386	110.6	4.354	110	4.331	0.6	.024	4	.157	4
					25	□	MHS0330L090B	83.1	3.272	90.1	3.547	90.6	3.567	140.6	5.535	140	5.512	0.6	.024	4	.157	4
3.400	.1339				3	□	MHS0340L020B	10.8	.425	20.2	.795	20.7	.815	70.7	2.783	70	2.756	0.7	.028	4	.157	3
					9	□	MHS0340L040B	31.2	1.228	40.1	1.579	40.6	1.598	90.6	3.567	90	3.543	0.6	.024	4	.157	4
					15	□	MHS0340L060B	51.6	2.031	60.1	2.366	60.6	2.386	110.6	4.354	110	4.331	0.6	.024	4	.157	4
					24	□	MHS0340L090B	82.2	3.236	90.1	3.547	90.6	3.567	140.6	5.535	140	5.512	0.6	.024	4	.157	4
3.500	.1378				3	★	MHS0350L020B	11.1	.437	20.2	.795	20.7	.815	70.7	2.783	70	2.756	0.7	.028	4	.157	3
					9	★	MHS0350L040B	32.1	1.264	40.1	1.579	40.6	1.598	90.6	3.567	90	3.543	0.6	.024	4	.157	4
					14	★	MHS0350L060B	49.6	1.953	60.1	2.366	60.6	2.386	110.6	4.354	110	4.331	0.6	.024	4	.157	4
					23	★	MHS0350L090B	81.1	3.193	90.1	3.547	90.6	3.567	140.6	5.535	140	5.512	0.6	.024	4	.157	4
3.600	.1417				3	□	MHS0360L020B	11.4	.449	20.8	.819	20.8	.819	70.8	2.787	70	2.756	0.8	.031	4	.157	3
					9	□	MHS0360L040B	33.1	1.303	40.7	1.602	40.7	1.602	90.7	3.571	90	3.543	0.7	.028	4	.157	4
					14	□	MHS0360L060B	51.1	2.012	60.7	2.390	60.7	2.390	110.7	4.358	110	4.331	0.7	.028	4	.157	4
					22	□	MHS0360L090B	79.9	3.146	90.7	3.571	90.7	3.571	140.7	5.539	140	5.512	0.7	.028	4	.157	4
					30	□	MHS0360L120B	108.7	4.280	120.7	4.752	120.7	4.752	170.7	6.720	170	6.693	0.7	.028	4	.157	4
3.700	.1457			M4.5x.75	3	□	MHS0370L020B	11.7	.461	20.8	.819	20.8	.819	70.8	2.787	70	2.756	0.8	.031	4	.157	3
					8	□	MHS0370L040B	30.3	1.193	40.7	1.602	40.7	1.602	90.7	3.571	90	3.543	0.7	.028	4	.157	4
					14	□	MHS0370L060B	52.5	2.067	60.7	2.390	60.7	2.390	110.7	4.358	110	4.331	0.7	.028	4	.157	4
					22	□	MHS0370L090B	82.1	3.232	90.7	3.571	90.7	3.571	140.7	5.539	140	5.512	0.7	.028	4	.157	4
					30	□	MHS0370L120B	111.7	4.398	120.7	4.752	120.7	4.752	170.7	6.720	170	6.693	0.7	.028	4	.157	4

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.800	.1496		25	#10-24	3	★	MHS0380L020B	12.1	.476	20.8	.819	20.8	.819	70.8	2.787	70	2.756	0.8	.031	4	.157	3
					8	★	MHS0380L040B	31.1	1.224	40.7	1.602	40.7	1.602	90.7	3.571	90	3.543	0.7	.028	4	.157	4
					13	★	MHS0380L060B	50.1	1.972	60.7	2.390	60.7	2.390	110.7	4.358	110	4.331	0.7	.028	4	.157	4
					21	★	MHS0380L090B	80.5	3.169	90.7	3.571	90.7	3.571	140.7	5.539	140	5.512	0.7	.028	4	.157	4
					29	★	MHS0380L120B	110.9	4.366	120.7	4.752	120.7	4.752	170.7	6.720	170	6.693	0.7	.028	4	.157	4
3.900	.1535				3	★	MHS0390L020B	12.4	.488	20.8	.819	20.8	.819	70.8	2.787	70	2.756	0.8	.031	4	.157	3
					8	★	MHS0390L040B	31.9	1.256	40.7	1.602	40.7	1.602	90.7	3.571	90	3.543	0.7	.028	4	.157	4
					13	★	MHS0390L060B	51.4	2.024	60.7	2.390	60.7	2.390	110.7	4.358	110	4.331	0.7	.028	4	.157	4
					21	□	MHS0390L090B	82.6	3.252	90.7	3.571	90.7	3.571	140.7	5.539	140	5.512	0.7	.028	4	.157	4
					28	□	MHS0390L120B	109.9	4.327	120.7	4.752	120.7	4.752	170.7	6.720	170	6.693	0.7	.028	4	.157	4
4.000	.1575				2	★	MHS0400L020B	8.7	.343	20.8	.819	20.8	.819	70.8	2.787	70	2.756	0.8	.031	4	.157	3
					7	★	MHS0400L040B	28.7	1.130	40.7	1.602	40.7	1.602	90.7	3.571	90	3.543	0.7	.028	4	.157	4
					12	★	MHS0400L060B	48.7	1.917	60.7	2.390	60.7	2.390	110.7	4.358	110	4.331	0.7	.028	4	.157	4
					20	★	MHS0400L090B	80.7	3.177	90.7	3.571	90.7	3.571	140.7	5.539	140	5.512	0.7	.028	4	.157	4
					27	★	MHS0400L120B	108.7	4.280	120.7	4.752	120.7	4.752	170.7	6.720	170	6.693	0.7	.028	4	.157	4
4.100	.1614				2	□	MHS0410L020B	8.9	.350	19.4	.764	20.9	.823	70.9	2.791	70	2.756	0.9	.035	6	.236	3
					7	□	MHS0410L040B	29.4	1.157	39.3	1.547	40.8	1.606	90.8	3.575	90	3.543	0.8	.031	6	.236	4
					12	□	MHS0410L060B	49.9	1.965	59.3	2.335	60.8	2.394	110.8	4.362	110	4.331	0.8	.031	6	.236	4
					19	□	MHS0410L090B	78.6	3.094	89.3	3.516	90.8	3.575	140.8	5.543	140	5.512	0.8	.031	6	.236	4
					26	□	MHS0410L120B	107.3	4.224	119.3	4.697	120.8	4.756	170.8	6.724	170	6.693	0.8	.031	6	.236	4
4.200	.1654			M5x.8	2	□	MHS0420L020B	9.1	.358	19.4	.764	20.9	.823	70.9	2.791	70	2.756	0.9	.035	6	.236	3
					7	□	MHS0420L040B	30.2	1.189	39.3	1.547	40.8	1.606	90.8	3.575	90	3.543	0.8	.031	6	.236	4
					11	□	MHS0420L060B	47.0	1.850	59.3	2.335	60.8	2.394	110.8	4.362	110	4.331	0.8	.031	6	.236	4
					19	□	MHS0420L090B	80.6	3.173	89.3	3.516	90.8	3.575	140.8	5.543	140	5.512	0.8	.031	6	.236	4
					26	□	MHS0420L120B	110.0	4.331	119.3	4.697	120.8	4.756	170.8	6.724	170	6.693	0.8	.031	6	.236	4
4.300	.1693				2	□	MHS0430L020B	9.3	.366	19.4	.764	20.9	.823	70.9	2.791	70	2.756	0.9	.035	6	.236	3
					6	□	MHS0430L040B	26.6	1.047	39.3	1.547	40.8	1.606	90.8	3.575	90	3.543	0.8	.031	6	.236	4
					11	□	MHS0430L060B	48.1	1.894	59.3	2.335	60.8	2.394	110.8	4.362	110	4.331	0.8	.031	6	.236	4
					18	□	MHS0430L090B	78.2	3.079	89.3	3.516	90.8	3.575	140.8	5.543	140	5.512	0.8	.031	6	.236	4
					25	□	MHS0430L120B	108.3	4.264	119.3	4.697	120.8	4.756	170.8	6.724	170	6.693	0.8	.031	6	.236	4
4.400	.1732		17		2	★	MHS0440L020B	9.6	.378	19.4	.764	20.9	.823	70.9	2.791	70	2.756	0.9	.035	6	.236	3
					6	□	MHS0440L040B	27.2	1.071	39.3	1.547	40.8	1.606	90.8	3.575	90	3.543	0.8	.031	6	.236	4
					11	□	MHS0440L060B	49.2	1.937	59.3	2.335	60.8	2.394	110.8	4.362	110	4.331	0.8	.031	6	.236	4
					18	□	MHS0440L090B	80.0	3.150	89.3	3.516	90.8	3.575	140.8	5.543	140	5.512	0.8	.031	6	.236	4
					24	□	MHS0440L120B	106.4	4.189	119.3	4.697	120.8	4.756	170.8	6.724	170	6.693	0.8	.031	6	.236	4
4.500	.1772		16	#12-24	2	★	MHS0450L020B	9.8	.386	19.4	.764	20.9	.823	70.9	2.791	70	2.756	0.9	.035	6	.236	3
					6	★	MHS0450L040B	27.8	1.094	39.3	1.547	40.8	1.606	90.8	3.575	90	3.543	0.8	.031	6	.236	4
					10	★	MHS0450L060B	45.8	1.803	59.3	2.335	60.8	2.394	110.8	4.362	110	4.331	0.8	.031	6	.236	4
					17	★	MHS0450L090B	77.3	3.043	89.3	3.516	90.8	3.575	140.8	5.543	140	5.512	0.8	.031	6	.236	4
					24	★	MHS0450L120B	108.8	4.283	119.3	4.697	120.8	4.756	170.8	6.724	170	6.693	0.8	.031	6	.236	4
4.600	.1811				2	□	MHS0460L020B	10.0	.394	20.0	.787	21.0	.827	71.0	2.795	70	2.756	1.0	.039	6	.236	3
					6	□	MHS0460L040B	28.4	1.118	39.8	1.567	40.8	1.606	90.8	3.575	90	3.543	0.8	.031	6	.236	4
					10	□	MHS0460L060B	46.8	1.843	59.8	2.354	60.8	2.394	110.8	4.362	110	4.331	0.8	.031	6	.236	4
					17	□	MHS0460L090B	79.0	3.110	89.8	3.535	90.8	3.575	140.8	5.543	140	5.512	0.8	.031	6	.236	4
					23	□	MHS0460L120B	106.6	4.197	119.8	4.717	120.8	4.756	170.8	6.724	170	6.693	0.8	.031	6	.236	4
					30	□	MHS0460L150B	138.8	5.465	149.8	5.898	150.8	5.937	200.8	7.906	200	7.874	0.8	.031	6	.236	4

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
4.700	.1850		13		2	□	MHS0470L020B	10.2	.402	20.0	.787	21.0	.827	71.0	2.795	70	2.756	1.0	.039	6	.236	3
					6	□	MHS0470L040B	29.1	1.146	39.9	1.571	40.9	1.610	90.9	3.579	90	3.543	0.9	.035	6	.236	4
					10	□	MHS0470L060B	47.9	1.886	59.9	2.358	60.9	2.398	110.9	4.366	110	4.331	0.9	.035	6	.236	4
					16	□	MHS0470L090B	76.1	2.996	89.9	3.539	90.9	3.579	140.9	5.547	140	5.512	0.9	.035	6	.236	4
					23	□	MHS0470L120B	109.0	4.291	119.9	4.720	120.9	4.760	170.9	6.728	170	6.693	0.9	.035	6	.236	4
					29	□	MHS0470L150B	137.2	5.402	149.9	5.902	150.9	5.941	200.9	7.909	200	7.874	0.9	.035	6	.236	4
4.800	.1890		12		1	★	MHS0480L020B	5.6	.220	20.0	.787	21.0	.827	71.0	2.795	70	2.756	1.0	.039	6	.236	3
					6	★	MHS0480L040B	29.7	1.169	39.9	1.571	40.9	1.610	90.9	3.579	90	3.543	0.9	.035	6	.236	4
					10	★	MHS0480L060B	48.9	1.925	59.9	2.358	60.9	2.398	110.9	4.366	110	4.331	0.9	.035	6	.236	4
					16	★	MHS0480L090B	77.7	3.059	89.9	3.539	90.9	3.579	140.9	5.547	140	5.512	0.9	.035	6	.236	4
					22	★	MHS0480L120B	106.5	4.193	119.9	4.720	120.9	4.760	170.9	6.728	170	6.693	0.9	.035	6	.236	4
					29	★	MHS0480L150B	140.1	5.516	149.9	5.902	150.9	5.941	200.9	7.909	200	7.874	0.9	.035	6	.236	4
4.900	.1929				1	□	MHS0490L020B	5.7	.224	20.0	.787	21.0	.827	71.0	2.795	70	2.756	1.0	.039	6	.236	3
					5	□	MHS0490L040B	25.4	1.000	39.9	1.571	40.9	1.610	90.9	3.579	90	3.543	0.9	.035	6	.236	4
					10	□	MHS0490L060B	49.9	1.965	59.9	2.358	60.9	2.398	110.9	4.366	110	4.331	0.9	.035	6	.236	4
					16	□	MHS0490L090B	79.3	3.122	89.9	3.539	90.9	3.579	140.9	5.547	140	5.512	0.9	.035	6	.236	4
					22	□	MHS0490L120B	108.7	4.280	119.9	4.720	120.9	4.760	170.9	6.728	170	6.693	0.9	.035	6	.236	4
					28	□	MHS0490L150B	138.1	5.437	149.9	5.902	150.9	5.941	200.9	7.909	200	7.874	0.9	.035	6	.236	4
5.000	.1969			M6x10	1	★	MHS0500L020B	5.9	.232	20.0	.787	21.0	.827	71.0	2.795	70	2.756	1.0	.039	6	.236	3
					5	★	MHS0500L040B	25.9	1.020	39.9	1.571	40.9	1.610	90.9	3.579	90	3.543	0.9	.035	6	.236	4
					9	★	MHS0500L060B	45.9	1.807	59.9	2.358	60.9	2.398	110.9	4.366	110	4.331	0.9	.035	6	.236	4
					15	★	MHS0500L090B	75.9	2.988	89.9	3.539	90.9	3.579	140.9	5.547	140	5.512	0.9	.035	6	.236	4
					21	★	MHS0500L120B	105.9	4.169	119.9	4.720	120.9	4.760	170.9	6.728	170	6.693	0.9	.035	6	.236	4
					27	★	MHS0500L150B	135.9	5.350	149.9	5.902	150.9	5.941	200.9	7.909	200	7.874	0.9	.035	6	.236	4
5.100	.2008		7	1/4-20	3	□	MHS0510L030B	16.2	.638	30.6	1.205	31.1	1.224	81.1	3.193	80	3.150	1.1	.043	6	.236	3
					9	□	MHS0510L060B	46.8	1.843	60.4	2.378	60.9	2.398	110.9	4.366	110	4.331	0.9	.035	6	.236	4
					15	□	MHS0510L090B	77.4	3.047	90.4	3.559	90.9	3.579	140.9	5.547	140	5.512	0.9	.035	6	.236	4
					21	□	MHS0510L120B	108.0	4.252	120.4	4.740	120.9	4.760	170.9	6.728	170	6.693	0.9	.035	6	.236	4
					27	□	MHS0510L150B	138.6	5.457	150.4	5.921	150.9	5.941	200.9	7.909	200	7.874	0.9	.035	6	.236	4
5.200	.2047				3	□	MHS0520L030B	16.5	.650	30.6	1.205	31.1	1.224	81.1	3.193	80	3.150	1.1	.043	6	.236	3
					9	□	MHS0520L060B	47.7	1.878	60.5	2.382	61.0	2.402	111.0	4.370	110	4.331	1.0	.039	6	.236	4
					15	□	MHS0520L090B	78.9	3.106	90.5	3.563	91.0	3.583	141.0	5.551	140	5.512	1.0	.039	6	.236	4
					20	□	MHS0520L120B	104.9	4.130	120.5	4.744	121.0	4.764	171.0	6.732	170	6.693	1.0	.039	6	.236	4
					26	□	MHS0520L150B	136.1	5.358	150.5	5.925	151.0	5.945	201.0	7.913	200	7.874	1.0	.039	6	.236	4
5.300	.2087		4		3	□	MHS0530L030B	16.8	.661	30.6	1.205	31.1	1.224	81.1	3.193	80	3.150	1.1	.043	6	.236	3
					9	□	MHS0530L060B	48.7	1.917	60.5	2.382	61.0	2.402	111.0	4.370	110	4.331	1.0	.039	6	.236	4
					14	★	MHS0530L090B	75.2	2.961	90.5	3.563	91.0	3.583	141.0	5.551	140	5.512	1.0	.039	6	.236	4
					20	□	MHS0530L120B	107.0	4.213	120.5	4.744	121.0	4.764	171.0	6.732	170	6.693	1.0	.039	6	.236	4
					26	□	MHS0530L150B	138.8	5.465	150.5	5.925	151.0	5.945	201.0	7.913	200	7.874	1.0	.039	6	.236	4
5.400	.2126		3	1/4-28	3	□	MHS0540L030B	17.1	.673	30.6	1.205	31.1	1.224	81.1	3.193	80	3.150	1.1	.043	6	.236	3
					9	□	MHS0540L060B	49.6	1.953	60.5	2.382	61.0	2.402	111.0	4.370	110	4.331	1.0	.039	6	.236	4
					14	□	MHS0540L090B	76.6	3.016	90.5	3.563	91.0	3.583	141.0	5.551	140	5.512	1.0	.039	6	.236	4
					20	□	MHS0540L120B	109.0	4.291	120.5	4.744	121.0	4.764	171.0	6.732	170	6.693	1.0	.039	6	.236	4
					25	□	MHS0540L150B	136.0	5.354	150.5	5.925	151.0	5.945	201.0	7.913	200	7.874	1.0	.039	6	.236	4

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
5.500	.2165				3	★	MHS0550L030B	17.4	.685	30.6	1.205	31.1	1.224	81.1	3.193	80	3.150	1.1	.043	6	.236	3
					8	★	MHS0550L060B	45.0	1.772	60.5	2.382	61.0	2.402	111.0	4.370	110	4.331	1.0	.039	6	.236	4
					14	★	MHS0550L090B	78.0	3.071	90.5	3.563	91.0	3.583	141.0	5.551	140	5.512	1.0	.039	6	.236	4
					19	★	MHS0550L120B	105.5	4.154	120.5	4.744	121.0	4.764	171.0	6.732	170	6.693	1.0	.039	6	.236	4
					25	★	MHS0550L150B	138.5	5.453	150.5	5.925	151.0	5.945	201.0	7.913	200	7.874	1.0	.039	6	.236	4
5.600	.2205		2		3	□	MHS0560L030B	17.8	.701	31.2	1.228	31.2	1.228	81.2	3.197	80	3.150	1.2	.047	6	.236	3
					8	□	MHS0560L060B	45.8	1.803	61.0	2.402	61.0	2.402	111.0	4.370	110	4.331	1.0	.039	6	.236	4
					14	□	MHS0560L090B	79.4	3.126	91.0	3.583	91.0	3.583	141.0	5.551	140	5.512	1.0	.039	6	.236	4
					19	□	MHS0560L120B	107.4	4.228	121.0	4.764	121.0	4.764	171.0	6.732	170	6.693	1.0	.039	6	.236	4
					24	□	MHS0560L150B	135.4	5.331	151.0	5.945	151.0	5.945	201.0	7.913	200	7.874	1.0	.039	6	.236	4
5.700	.2244				3	□	MHS0570L030B	18.1	.713	31.2	1.228	31.2	1.228	81.2	3.197	80	3.150	1.2	.047	6	.236	3
					8	□	MHS0570L060B	46.6	1.835	61.0	2.402	61.0	2.402	111.0	4.370	110	4.331	1.0	.039	6	.236	4
					13	□	MHS0570L090B	75.1	2.957	91.0	3.583	91.0	3.583	141.0	5.551	140	5.512	1.0	.039	6	.236	4
					19	□	MHS0570L120B	109.3	4.303	121.0	4.764	121.0	4.764	171.0	6.732	170	6.693	1.0	.039	6	.236	4
					24	□	MHS0570L150B	137.8	5.425	151.0	5.945	151.0	5.945	201.0	7.913	200	7.874	1.0	.039	6	.236	4
5.800	.2283		1		3	★	MHS0580L030B	18.4	.724	31.2	1.228	31.2	1.228	81.2	3.197	80	3.150	1.2	.047	6	.236	3
					8	★	MHS0580L060B	47.5	1.870	61.1	2.406	61.1	2.406	111.1	4.374	110	4.331	1.1	.043	6	.236	4
					13	★	MHS0580L090B	76.5	3.012	91.1	3.587	91.1	3.587	141.1	5.555	140	5.512	1.1	.043	6	.236	4
					18	★	MHS0580L120B	105.5	4.154	121.1	4.768	121.1	4.768	171.1	6.736	170	6.693	1.1	.043	6	.236	4
					23	★	MHS0580L150B	134.5	5.295	151.1	5.949	151.1	5.949	201.1	7.917	200	7.874	1.1	.043	6	.236	4
5.900	.2323				3	□	MHS0590L030B	18.7	.736	31.2	1.228	31.2	1.228	81.2	3.197	80	3.150	1.2	.047	6	.236	3
					8	□	MHS0590L060B	48.3	1.902	61.1	2.406	61.1	2.406	111.1	4.374	110	4.331	1.1	.043	6	.236	4
					13	□	MHS0590L090B	77.8	3.063	91.1	3.587	91.1	3.587	141.1	5.555	140	5.512	1.1	.043	6	.236	4
					18	□	MHS0590L120B	107.3	4.224	121.1	4.768	121.1	4.768	171.1	6.736	170	6.693	1.1	.043	6	.236	4
					23	□	MHS0590L150B	136.8	5.386	151.1	5.949	151.1	5.949	201.1	7.917	200	7.874	1.1	.043	6	.236	4
6.000	.2362			M7x1.0	2	★	MHS0600L030B	13.0	.512	31.2	1.228	31.2	1.228	81.2	3.197	80	3.150	1.2	.047	6	.236	3
					7	★	MHS0600L060B	43.1	1.697	61.1	2.406	61.1	2.406	111.1	4.374	110	4.331	1.1	.043	6	.236	4
					12	★	MHS0600L090B	73.1	2.878	91.1	3.587	91.1	3.587	141.1	5.555	140	5.512	1.1	.043	6	.236	4
					17	★	MHS0600L120B	103.1	4.059	121.1	4.768	121.1	4.768	171.1	6.736	170	6.693	1.1	.043	6	.236	4
					22	★	MHS0600L150B	133.1	5.240	151.1	5.949	151.1	5.949	201.1	7.917	200	7.874	1.1	.043	6	.236	4
6.100	.2402				2	□	MHS0610L030B	13.3	.524	29.8	1.173	31.3	1.232	81.3	3.201	80	3.150	1.3	.051	8	.315	3
					7	□	MHS0610L060B	43.8	1.724	59.6	2.346	61.1	2.406	111.1	4.374	110	4.331	1.1	.043	8	.315	4
					12	□	MHS0610L090B	74.3	2.925	89.6	3.528	91.1	3.587	141.1	5.555	140	5.512	1.1	.043	8	.315	4
					17	□	MHS0610L120B	104.8	4.126	119.6	4.709	121.1	4.768	171.1	6.736	170	6.693	1.1	.043	8	.315	4
					22	□	MHS0610L150B	135.3	5.327	149.6	5.890	151.1	5.949	201.1	7.917	200	7.874	1.1	.043	8	.315	4
6.200	.2441				2	□	MHS0620L030B	13.5	.531	29.8	1.173	31.3	1.232	81.3	3.201	80	3.150	1.3	.051	8	.315	3
					7	□	MHS0620L060B	44.5	1.752	59.6	2.346	61.1	2.406	111.1	4.374	110	4.331	1.1	.043	8	.315	4
					12	□	MHS0620L090B	75.5	2.972	89.6	3.528	91.1	3.587	141.1	5.555	140	5.512	1.1	.043	8	.315	4
					17	□	MHS0620L120B	106.5	4.193	119.6	4.709	121.1	4.768	171.1	6.736	170	6.693	1.1	.043	8	.315	4
					21	□	MHS0620L150B	131.3	5.169	149.6	5.890	151.1	5.949	201.1	7.917	200	7.874	1.1	.043	8	.315	4
6.300	.2480				2	□	MHS0630L030B	13.7	.539	29.8	1.173	31.3	1.232	81.3	3.201	80	3.150	1.3	.051	8	.315	3
					7	□	MHS0630L060B	45.2	1.780	59.7	2.350	61.2	2.409	111.2	4.378	110	4.331	1.2	.047	8	.315	4
					12	□	MHS0630L090B	76.7	3.020	89.7	3.531	91.2	3.591	141.2	5.559	140	5.512	1.2	.047	8	.315	4
					16	□	MHS0630L120B	101.9	4.012	119.7	4.713	121.2	4.772	171.2	6.740	170	6.693	1.2	.047	8	.315	4
					21	□	MHS0630L150B	133.4	5.252	149.7	5.894	151.2	5.953	201.2	7.921	200	7.874	1.2	.047	8	.315	4

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
6.400	.2520				2	□	MHS0640L030B	13.9	.547	29.8	1.173	31.3	1.232	81.3	3.201	80	3.150	1.3	.051	8	.315	3
					7	□	MHS0640L060B	46.0	1.811	59.7	2.350	61.2	2.409	111.2	4.378	110	4.331	1.2	.047	8	.315	4
					11	□	MHS0640L090B	71.6	2.819	89.7	3.531	91.2	3.591	141.2	5.559	140	5.512	1.2	.047	8	.315	4
					16	□	MHS0640L120B	103.6	4.079	119.7	4.713	121.2	4.772	171.2	6.740	170	6.693	1.2	.047	8	.315	4
					21	□	MHS0640L150B	135.6	5.339	149.7	5.894	151.2	5.953	201.2	7.921	200	7.874	1.2	.047	8	.315	4
6.500	.2559				2	★	MHS0650L030B	14.1	.555	29.9	1.177	31.4	1.236	81.4	3.205	80	3.150	1.4	.055	8	.315	3
					6	★	MHS0650L060B	40.2	1.583	59.7	2.350	61.2	2.409	111.2	4.378	110	4.331	1.2	.047	8	.315	4
					11	★	MHS0650L090B	72.7	2.862	89.7	3.531	91.2	3.591	141.2	5.559	140	5.512	1.2	.047	8	.315	4
					16	★	MHS0650L120B	105.2	4.142	119.7	4.713	121.2	4.772	171.2	6.740	170	6.693	1.2	.047	8	.315	4
					20	★	MHS0650L150B	131.2	5.165	149.7	5.894	151.2	5.953	201.2	7.921	200	7.874	1.2	.047	8	.315	4
6.600	.2598				2	□	MHS0660L030B	14.3	.563	30.4	1.197	31.4	1.236	81.4	3.205	80	3.150	1.4	.055	8	.315	3
					6	□	MHS0660L060B	40.8	1.606	60.2	2.370	61.2	2.409	111.2	4.378	110	4.331	1.2	.047	8	.315	4
					11	□	MHS0660L090B	73.8	2.906	90.2	3.551	91.2	3.591	141.2	5.559	140	5.512	1.2	.047	8	.315	4
					16	□	MHS0660L120B	106.8	4.205	120.2	4.732	121.2	4.772	171.2	6.740	170	6.693	1.2	.047	8	.315	4
					20	□	MHS0660L150B	133.2	5.244	150.2	5.913	151.2	5.953	201.2	7.921	200	7.874	1.2	.047	8	.315	4
					28	□	MHS0660L200B	186.0	7.323	200.2	7.882	201.2	7.921	251.2	9.890	250	9.843	1.2	.047	8	.315	4
6.700	.2638			M8x1.25	2	□	MHS0670L030B	14.6	.575	30.4	1.197	31.4	1.236	81.4	3.205	80	3.150	1.4	.055	8	.315	3
					6	□	MHS0670L060B	41.4	1.630	60.2	2.370	61.2	2.409	111.2	4.378	110	4.331	1.2	.047	8	.315	4
					11	□	MHS0670L090B	74.9	2.949	90.2	3.551	91.2	3.591	141.2	5.559	140	5.512	1.2	.047	8	.315	4
					15	□	MHS0670L120B	101.7	4.004	120.2	4.732	121.2	4.772	171.2	6.740	170	6.693	1.2	.047	8	.315	4
					20	□	MHS0670L150B	135.2	5.323	150.2	5.913	151.2	5.953	201.2	7.921	200	7.874	1.2	.047	8	.315	4
					27	□	MHS0670L200B	182.1	7.169	200.2	7.882	201.2	7.921	251.2	9.890	250	9.843	1.2	.047	8	.315	4
6.800	.2677				2	★	MHS0680L030B	14.8	.583	30.4	1.197	31.4	1.236	81.4	3.205	80	3.150	1.4	.055	8	.315	3
					6	★	MHS0680L060B	42.0	1.654	60.2	2.370	61.2	2.409	111.2	4.378	110	4.331	1.2	.047	8	.315	4
					11	★	MHS0680L090B	76.0	2.992	90.2	3.551	91.2	3.591	141.2	5.559	140	5.512	1.2	.047	8	.315	4
					15	★	MHS0680L120B	103.2	4.063	120.2	4.732	121.2	4.772	171.2	6.740	170	6.693	1.2	.047	8	.315	4
					19	★	MHS0680L150B	130.4	5.134	150.2	5.913	151.2	5.953	201.2	7.921	200	7.874	1.2	.047	8	.315	4
					27	★	MHS0680L200B	184.8	7.276	200.2	7.882	201.2	7.921	251.2	9.890	250	9.843	1.2	.047	8	.315	4
6.900	.2717		I	5/16-24	2	□	MHS0690L030B	15.0	.591	30.4	1.197	31.4	1.236	81.4	3.205	80	3.150	1.4	.055	8	.315	3
					6	□	MHS0690L060B	42.7	1.681	60.3	2.374	61.3	2.413	111.3	4.382	110	4.331	1.3	.051	8	.315	4
					10	□	MHS0690L090B	70.3	2.768	90.3	3.555	91.3	3.594	141.3	5.563	140	5.512	1.3	.051	8	.315	4
					15	□	MHS0690L120B	104.8	4.126	120.3	4.736	121.3	4.776	171.3	6.744	170	6.693	1.3	.051	8	.315	4
					19	□	MHS0690L150B	132.4	5.213	150.3	5.917	151.3	5.957	201.3	7.925	200	7.874	1.3	.051	8	.315	4
					26	□	MHS0690L200B	180.7	7.114	200.3	7.886	201.3	7.925	251.3	9.894	250	9.843	1.3	.051	8	.315	4
7.000	.2756			M8x1.0	2	★	MHS0700L030B	15.2	.598	30.5	1.201	31.5	1.240	81.5	3.209	80	3.150	1.5	.059	8	.315	3
					6	★	MHS0700L060B	43.3	1.705	60.3	2.374	61.3	2.413	111.3	4.382	110	4.331	1.3	.051	8	.315	4
					10	★	MHS0700L090B	71.3	2.807	90.3	3.555	91.3	3.594	141.3	5.563	140	5.512	1.3	.051	8	.315	4
					14	★	MHS0700L120B	99.3	3.909	120.3	4.736	121.3	4.776	171.3	6.744	170	6.693	1.3	.051	8	.315	4
					19	★	MHS0700L150B	134.3	5.287	150.3	5.917	151.3	5.957	201.3	7.925	200	7.874	1.3	.051	8	.315	4
					26	★	MHS0700L200B	183.3	7.217	200.3	7.886	201.3	7.925	251.3	9.894	250	9.843	1.3	.051	8	.315	4
7.100	.2795				2	□	MHS0710L030B	15.4	.606	31.0	1.220	31.5	1.240	81.5	3.209	80	3.150	1.5	.059	8	.315	3
					6	□	MHS0710L060B	43.9	1.728	60.8	2.394	61.3	2.413	111.3	4.382	110	4.331	1.3	.051	8	.315	4
					10	□	MHS0710L090B	72.3	2.846	90.8	3.575	91.3	3.594	141.3	5.563	140	5.512	1.3	.051	8	.315	4
					14	□	MHS0710L120B	100.7	3.965	120.8	4.756	121.3	4.776	171.3	6.744	170	6.693	1.3	.051	8	.315	4
					19	□	MHS0710L150B	136.2	5.362	150.8	5.937	151.3	5.957	201.3	7.925	200	7.874	1.3	.051	8	.315	4
					26	□	MHS0710L200B	185.9	7.319	200.8	7.906	201.3	7.925	251.3	9.894	250	9.843	1.3	.051	8	.315	4

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
7.200	.2835				2	□	MHS0720L030B	15.6	.614	31.0	1.220	31.5	1.240	81.5	3.209	80	3.150	1.5	.059	8	.315	3
					6	□	MHS0720L060B	44.5	1.752	60.8	2.394	61.3	2.413	111.3	4.382	110	4.331	1.3	.051	8	.315	4
					10	□	MHS0720L090B	73.3	2.886	90.8	3.575	91.3	3.594	141.3	5.563	140	5.512	1.3	.051	8	.315	4
					14	□	MHS0720L120B	102.1	4.020	120.8	4.756	121.3	4.776	171.3	6.744	170	6.693	1.3	.051	8	.315	4
					18	□	MHS0720L150B	130.9	5.154	150.8	5.937	151.3	5.957	201.3	7.925	200	7.874	1.3	.051	8	.315	4
					25	□	MHS0720L200B	181.3	7.138	200.8	7.906	201.3	7.925	251.3	9.894	250	9.843	1.3	.051	8	.315	4
7.300	.2874				2	□	MHS0730L030B	15.9	.626	31.0	1.220	31.5	1.240	81.5	3.209	80	3.150	1.5	.059	8	.315	3
					6	□	MHS0730L060B	45.1	1.776	60.8	2.394	61.3	2.413	111.3	4.382	110	4.331	1.3	.051	8	.315	4
					10	□	MHS0730L090B	74.3	2.925	90.8	3.575	91.3	3.594	141.3	5.563	140	5.512	1.3	.051	8	.315	4
					14	□	MHS0730L120B	103.5	4.075	120.8	4.756	121.3	4.776	171.3	6.744	170	6.693	1.3	.051	8	.315	4
					18	□	MHS0730L150B	132.7	5.224	150.8	5.937	151.3	5.957	201.3	7.925	200	7.874	1.3	.051	8	.315	4
					25	□	MHS0730L200B	183.8	7.236	200.8	7.906	201.3	7.925	251.3	9.894	250	9.843	1.3	.051	8	.315	4
7.400	.2913				1	□	MHS0740L030B	8.7	.343	31.0	1.220	31.5	1.240	81.5	3.209	80	3.150	1.5	.059	8	.315	3
					6	□	MHS0740L060B	45.7	1.799	60.9	2.398	61.4	2.417	111.4	4.386	110	4.331	1.4	.055	8	.315	4
					10	□	MHS0740L090B	75.3	2.965	90.9	3.579	91.4	3.598	141.4	5.567	140	5.512	1.4	.055	8	.315	4
					14	□	MHS0740L120B	104.9	4.130	120.9	4.760	121.4	4.780	171.4	6.748	170	6.693	1.4	.055	8	.315	4
					18	□	MHS0740L150B	134.5	5.295	150.9	5.941	151.4	5.961	201.4	7.929	200	7.874	1.4	.055	8	.315	4
					24	□	MHS0740L200B	178.9	7.043	200.9	7.909	201.4	7.929	251.4	9.898	250	9.843	1.4	.055	8	.315	4
7.500	.2953		M		1	★	MHS0750L030B	8.8	.346	31.1	1.224	31.6	1.244	81.6	3.213	80	3.150	1.6	.063	8	.315	3
					5	★	MHS0750L060B	38.9	1.531	60.9	2.398	61.4	2.417	111.4	4.386	110	4.331	1.4	.055	8	.315	4
					9	★	MHS0750L090B	68.9	2.713	90.9	3.579	91.4	3.598	141.4	5.567	140	5.512	1.4	.055	8	.315	4
					13	★	MHS0750L120B	98.9	3.894	120.9	4.760	121.4	4.780	171.4	6.748	170	6.693	1.4	.055	8	.315	4
					17	★	MHS0750L150B	128.9	5.075	150.9	5.941	151.4	5.961	201.4	7.929	200	7.874	1.4	.055	8	.315	4
					24	★	MHS0750L200B	181.4	7.142	200.9	7.909	201.4	7.929	251.4	9.898	250	9.843	1.4	.055	8	.315	4
7.600	.2992				1	□	MHS0760L030B	8.9	.350	31.6	1.244	31.6	1.244	81.6	3.213	80	3.150	1.6	.063	8	.315	3
					5	□	MHS0760L060B	39.4	1.551	61.4	2.417	61.4	2.417	111.4	4.386	110	4.331	1.4	.055	8	.315	4
					9	□	MHS0760L090B	69.8	2.748	91.4	3.598	91.4	3.598	141.4	5.567	140	5.512	1.4	.055	8	.315	4
					13	□	MHS0760L120B	100.2	3.945	121.4	4.780	121.4	4.780	171.4	6.748	170	6.693	1.4	.055	8	.315	4
					17	□	MHS0760L150B	130.6	5.142	151.4	5.961	151.4	5.961	201.4	7.929	200	7.874	1.4	.055	8	.315	4
					24	□	MHS0760L200B	183.8	7.236	201.4	7.929	201.4	7.929	251.4	9.898	250	9.843	1.4	.055	8	.315	4
					30	□	MHS0760L250B	229.4	9.031	251.4	9.898	251.4	9.898	301.4	11.866	300	11.811	1.4	.055	8	.315	4
7.700	.3031				1	□	MHS0770L030B	9.0	.354	31.6	1.244	31.6	1.244	81.6	3.213	80	3.150	1.6	.063	8	.315	3
					5	□	MHS0770L060B	39.9	1.571	61.4	2.417	61.4	2.417	111.4	4.386	110	4.331	1.4	.055	8	.315	4
					9	□	MHS0770L090B	70.7	2.783	91.4	3.598	91.4	3.598	141.4	5.567	140	5.512	1.4	.055	8	.315	4
					13	□	MHS0770L120B	101.5	3.996	121.4	4.780	121.4	4.780	171.4	6.748	170	6.693	1.4	.055	8	.315	4
					17	□	MHS0770L150B	132.3	5.209	151.4	5.961	151.4	5.961	201.4	7.929	200	7.874	1.4	.055	8	.315	4
					23	□	MHS0770L200B	178.5	7.028	201.4	7.929	201.4	7.929	251.4	9.898	250	9.843	1.4	.055	8	.315	4
					30	□	MHS0770L250B	232.4	9.150	251.4	9.898	251.4	9.898	301.4	11.866	300	11.811	1.4	.055	8	.315	4
7.800	.3071				1	★	MHS0780L030B	9.1	.358	31.6	1.244	31.6	1.244	81.6	3.213	80	3.150	1.6	.063	8	.315	3
					5	★	MHS0780L060B	40.4	1.591	61.4	2.417	61.4	2.417	111.4	4.386	110	4.331	1.4	.055	8	.315	4
					9	★	MHS0780L090B	71.6	2.819	91.4	3.598	91.4	3.598	141.4	5.567	140	5.512	1.4	.055	8	.315	4
					13	★	MHS0780L120B	102.8	4.047	121.4	4.780	121.4	4.780	171.4	6.748	170	6.693	1.4	.055	8	.315	4
					17	★	MHS0780L150B	134.0	5.276	151.4	5.961	151.4	5.961	201.4	7.929	200	7.874	1.4	.055	8	.315	4
					23	★	MHS0780L200B	180.8	7.118	201.4	7.929	201.4	7.929	251.4	9.898	250	9.843	1.4	.055	8	.315	4
					30	★	MHS0780L250B	235.4	9.268	251.4	9.898	251.4	9.898	301.4	11.866	300	11.811	1.4	.055	8	.315	4

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
7.900	.3110				1	□	MHS0790L030B	9.3	.366	31.6	1.244	31.6	1.244	81.6	3.213	80	3.150	1.6	.063	8	.315	3
					5	□	MHS0790L060B	40.9	1.610	61.4	2.417	61.4	2.417	111.4	4.386	110	4.331	1.4	.055	8	.315	4
					9	□	MHS0790L090B	72.5	2.854	91.4	3.598	91.4	3.598	141.4	5.567	140	5.512	1.4	.055	8	.315	4
					13	□	MHS0790L120B	104.1	4.098	121.4	4.780	121.4	4.780	171.4	6.748	170	6.693	1.4	.055	8	.315	4
					16	□	MHS0790L150B	127.8	5.031	151.4	5.961	151.4	5.961	201.4	7.929	200	7.874	1.4	.055	8	.315	4
					23	□	MHS0790L200B	183.1	7.209	201.4	7.929	201.4	7.929	251.4	9.898	250	9.843	1.4	.055	8	.315	4
					29	□	MHS0790L250B	230.5	9.075	251.4	9.898	251.4	9.898	301.4	11.866	300	11.811	1.4	.055	8	.315	4
8.000	.3150				1	★	MHS0800L030B	9.4	.370	31.7	1.248	31.7	1.248	81.7	3.217	80	3.150	1.7	.067	8	.315	3
					5	★	MHS0800L060B	41.5	1.634	61.5	2.421	61.5	2.421	111.5	4.390	110	4.331	1.5	.059	8	.315	4
					9	★	MHS0800L090B	73.5	2.894	91.5	3.602	91.5	3.602	141.5	5.571	140	5.512	1.5	.059	8	.315	4
					12	★	MHS0800L120B	97.5	3.839	121.5	4.783	121.5	4.783	171.5	6.752	170	6.693	1.5	.059	8	.315	4
					16	★	MHS0800L150B	129.5	5.098	151.5	5.965	151.5	5.965	201.5	7.933	200	7.874	1.5	.059	8	.315	4
					22	★	MHS0800L200B	177.5	6.988	201.5	7.933	201.5	7.933	251.5	9.902	250	9.843	1.5	.059	8	.315	4
					29	★	MHS0800L250B	233.5	9.193	251.5	9.902	251.5	9.902	301.5	11.870	300	11.811	1.5	.059	8	.315	4
8.100	.3189				2	□	MHS0810L040B	17.6	.693	40.2	1.583	41.7	1.642	101.7	4.004	100	3.937	1.7	.067	10	.394	3
					8	□	MHS0810L090B	66.3	2.610	90.0	3.543	91.5	3.602	151.5	5.965	150	5.906	1.5	.059	10	.394	4
					12	□	MHS0810L120B	98.7	3.886	120.0	4.724	121.5	4.783	181.5	7.146	180	7.087	1.5	.059	10	.394	4
					16	□	MHS0810L150B	131.1	5.161	150.0	5.906	151.5	5.965	211.5	8.327	210	8.268	1.5	.059	10	.394	4
					22	□	MHS0810L200B	179.7	7.075	200.0	7.874	201.5	7.933	261.5	10.295	260	10.236	1.5	.059	10	.394	4
					28	□	MHS0810L250B	228.3	8.988	250.0	9.843	251.5	9.902	311.5	12.264	310	12.205	1.5	.059	10	.394	4
8.200	.3228		P		2	□	MHS0820L040B	17.8	.701	40.2	1.583	41.7	1.642	101.7	4.004	100	3.937	1.7	.067	10	.394	3
					8	□	MHS0820L090B	67.1	2.642	90.0	3.543	91.5	3.602	151.5	5.965	150	5.906	1.5	.059	10	.394	4
					12	□	MHS0820L120B	99.9	3.933	120.0	4.724	121.5	4.783	181.5	7.146	180	7.087	1.5	.059	10	.394	4
					16	□	MHS0820L150B	132.7	5.224	150.0	5.906	151.5	5.965	211.5	8.327	210	8.268	1.5	.059	10	.394	4
					22	□	MHS0820L200B	181.9	7.161	200.0	7.874	201.5	7.933	261.5	10.295	260	10.236	1.5	.059	10	.394	4
					28	□	MHS0820L250B	231.1	9.098	250.0	9.843	251.5	9.902	311.5	12.264	310	12.205	1.5	.059	10	.394	4
8.300	.3268				2	□	MHS0830L040B	18.0	.709	40.2	1.583	41.7	1.642	101.7	4.004	100	3.937	1.7	.067	10	.394	3
					8	□	MHS0830L090B	67.9	2.673	90.0	3.543	91.5	3.602	151.5	5.965	150	5.906	1.5	.059	10	.394	4
					12	□	MHS0830L120B	101.1	3.980	120.0	4.724	121.5	4.783	181.5	7.146	180	7.087	1.5	.059	10	.394	4
					15	□	MHS0830L150B	126.0	4.961	150.0	5.906	151.5	5.965	211.5	8.327	210	8.268	1.5	.059	10	.394	4
					21	□	MHS0830L200B	175.8	6.921	200.0	7.874	201.5	7.933	261.5	10.295	260	10.236	1.5	.059	10	.394	4
					27	□	MHS0830L250B	225.6	8.882	250.0	9.843	251.5	9.902	311.5	12.264	310	12.205	1.5	.059	10	.394	4
8.400	.3307				2	□	MHS0840L040B	18.2	.717	40.2	1.583	41.7	1.642	101.7	4.004	100	3.937	1.7	.067	10	.394	3
					8	□	MHS0840L090B	68.7	2.705	90.0	3.543	91.5	3.602	151.5	5.965	150	5.906	1.5	.059	10	.394	4
					12	□	MHS0840L120B	102.3	4.028	120.0	4.724	121.5	4.783	181.5	7.146	180	7.087	1.5	.059	10	.394	4
					15	□	MHS0840L150B	127.5	5.020	150.0	5.906	151.5	5.965	211.5	8.327	210	8.268	1.5	.059	10	.394	4
					21	□	MHS0840L200B	177.9	7.004	200.0	7.874	201.5	7.933	261.5	10.295	260	10.236	1.5	.059	10	.394	4
					27	□	MHS0840L250B	228.3	8.988	250.0	9.843	251.5	9.902	311.5	12.264	310	12.205	1.5	.059	10	.394	4
8.500	.3346			M10x1.5	2	★	MHS0850L040B	18.5	.728	40.3	1.587	41.8	1.646	101.8	4.008	100	3.937	1.8	.071	10	.394	3
					8	★	MHS0850L090B	69.5	2.736	90.1	3.547	91.6	3.606	151.6	5.969	150	5.906	1.6	.063	10	.394	4
					11	★	MHS0850L120B	95.0	3.740	120.1	4.728	121.6	4.787	181.6	7.150	180	7.087	1.6	.063	10	.394	4
					15	★	MHS0850L150B	129.0	5.079	150.1	5.909	151.6	5.969	211.6	8.331	210	8.268	1.6	.063	10	.394	4
					21	★	MHS0850L200B	180.0	7.087	200.1	7.878	201.6	7.937	261.6	10.299	260	10.236	1.6	.063	10	.394	4
					27	★	MHS0850L250B	231.0	9.094	250.1	9.846	251.6	9.906	311.6	12.268	310	12.205	1.6	.063	10	.394	4

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
8.600	.3386		R		2	□	MHS0860L040B	18.7	.736	40.8	1.606	41.8	1.646	101.8	4.008	100	3.937	1.8	.071	10	.394	3
					8	□	MHS0860L090B	70.4	2.772	90.6	3.567	91.6	3.606	151.6	5.969	150	5.906	1.6	.063	10	.394	4
					11	□	MHS0860L120B	96.2	3.787	120.6	4.748	121.6	4.787	181.6	7.150	180	7.087	1.6	.063	10	.394	4
					15	□	MHS0860L150B	130.6	5.142	150.6	5.929	151.6	5.969	211.6	8.331	210	8.268	1.6	.063	10	.394	4
					21	□	MHS0860L200B	182.2	7.173	200.6	7.898	201.6	7.937	261.6	10.299	260	10.236	1.6	.063	10	.394	4
					26	□	MHS0860L250B	225.2	8.866	250.6	9.866	251.6	9.906	311.6	12.268	310	12.205	1.6	.063	10	.394	4
8.700	.3425			M10x1.25	2	□	MHS0870L040B	18.9	.744	40.8	1.606	41.8	1.646	101.8	4.008	100	3.937	1.8	.071	10	.394	3
					8	□	MHS0870L090B	71.2	2.803	90.6	3.567	91.6	3.606	151.6	5.969	150	5.906	1.6	.063	10	.394	4
					11	□	MHS0870L120B	97.3	3.831	120.6	4.748	121.6	4.787	181.6	7.150	180	7.087	1.6	.063	10	.394	4
					15	□	MHS0870L150B	132.1	5.201	150.6	5.929	151.6	5.969	211.6	8.331	210	8.268	1.6	.063	10	.394	4
					20	□	MHS0870L200B	175.6	6.913	200.6	7.898	201.6	7.937	261.6	10.299	260	10.236	1.6	.063	10	.394	4
					26	□	MHS0870L250B	227.8	8.969	250.6	9.866	251.6	9.906	311.6	12.268	310	12.205	1.6	.063	10	.394	4
8.800	.3465				2	★	MHS0880L040B	19.1	.752	40.8	1.606	41.8	1.646	101.8	4.008	100	3.937	1.8	.071	10	.394	3
					8	★	MHS0880L090B	72.0	2.835	90.6	3.567	91.6	3.606	151.6	5.969	150	5.906	1.6	.063	10	.394	4
					11	★	MHS0880L120B	98.4	3.874	120.6	4.748	121.6	4.787	181.6	7.150	180	7.087	1.6	.063	10	.394	4
					14	★	MHS0880L150B	124.8	4.913	150.6	5.929	151.6	5.969	211.6	8.331	210	8.268	1.6	.063	10	.394	4
					20	★	MHS0880L200B	177.6	6.992	200.6	7.898	201.6	7.937	261.6	10.299	260	10.236	1.6	.063	10	.394	4
					26	★	MHS0880L250B	230.4	9.071	250.6	9.866	251.6	9.906	311.6	12.268	310	12.205	1.6	.063	10	.394	4
8.900	.3504				2	□	MHS0890L040B	19.3	.760	40.8	1.606	41.8	1.646	101.8	4.008	100	3.937	1.8	.071	10	.394	3
					7	□	MHS0890L090B	63.9	2.516	90.6	3.567	91.6	3.606	151.6	5.969	150	5.906	1.6	.063	10	.394	4
					11	□	MHS0890L120B	99.5	3.917	120.6	4.748	121.6	4.787	181.6	7.150	180	7.087	1.6	.063	10	.394	4
					14	□	MHS0890L150B	126.2	4.969	150.6	5.929	151.6	5.969	211.6	8.331	210	8.268	1.6	.063	10	.394	4
					20	□	MHS0890L200B	179.6	7.071	200.6	7.898	201.6	7.937	261.6	10.299	260	10.236	1.6	.063	10	.394	4
					25	□	MHS0890L250B	224.1	8.823	250.6	9.866	251.6	9.906	311.6	12.268	310	12.205	1.6	.063	10	.394	4
9.000	.3543				2	★	MHS0900L040B	19.5	.768	40.9	1.610	41.9	1.650	101.9	4.012	100	3.937	1.9	.075	10	.394	3
					7	★	MHS0900L090B	64.6	2.543	90.6	3.567	91.6	3.606	151.6	5.969	150	5.906	1.6	.063	10	.394	4
					11	★	MHS0900L120B	100.6	3.961	120.6	4.748	121.6	4.787	181.6	7.150	180	7.087	1.6	.063	10	.394	4
					14	★	MHS0900L150B	127.6	5.024	150.6	5.929	151.6	5.969	211.6	8.331	210	8.268	1.6	.063	10	.394	4
					20	★	MHS0900L200B	181.6	7.150	200.6	7.898	201.6	7.937	261.6	10.299	260	10.236	1.6	.063	10	.394	4
					25	★	MHS0900L250B	226.6	8.921	250.6	9.866	251.6	9.906	311.6	12.268	310	12.205	1.6	.063	10	.394	4
9.100	.3583		T		2	□	MHS0910L040B	19.8	.780	41.4	1.630	41.9	1.650	101.9	4.012	100	3.937	1.9	.075	10	.394	3
					7	□	MHS0910L090B	65.4	2.575	91.2	3.591	91.7	3.610	151.7	5.972	150	5.906	1.7	.067	10	.394	4
					11	□	MHS0910L120B	101.8	4.008	121.2	4.772	121.7	4.791	181.7	7.154	180	7.087	1.7	.067	10	.394	4
					14	□	MHS0910L150B	129.1	5.083	151.2	5.953	151.7	5.972	211.7	8.335	210	8.268	1.7	.067	10	.394	4
					19	□	MHS0910L200B	174.6	6.874	201.2	7.921	201.7	7.941	261.7	10.303	260	10.236	1.7	.067	10	.394	4
					25	□	MHS0910L250B	229.2	9.024	251.2	9.890	251.7	9.909	311.7	12.272	310	12.205	1.7	.067	10	.394	4
					30	□	MHS0910L300B	274.7	10.815	301.2	11.858	301.7	11.878	361.7	14.240	360	14.173	1.7	.067	10	.394	4
9.200	.3622				2	□	MHS0920L040B	20.0	.787	41.4	1.630	41.9	1.650	101.9	4.012	100	3.937	1.9	.075	10	.394	3
					7	□	MHS0920L090B	66.1	2.602	91.2	3.591	91.7	3.610	151.7	5.972	150	5.906	1.7	.067	10	.394	4
					10	□	MHS0920L120B	93.7	3.689	121.2	4.772	121.7	4.791	181.7	7.154	180	7.087	1.7	.067	10	.394	4
					14	□	MHS0920L150B	130.5	5.138	151.2	5.953	151.7	5.972	211.7	8.335	210	8.268	1.7	.067	10	.394	4
					19	□	MHS0920L200B	176.5	6.949	201.2	7.921	201.7	7.941	261.7	10.303	260	10.236	1.7	.067	10	.394	4
					25	□	MHS0920L250B	231.7	9.122	251.2	9.890	251.7	9.909	311.7	12.272	310	12.205	1.7	.067	10	.394	4
					30	□	MHS0920L300B	277.7	10.933	301.2	11.858	301.7	11.878	361.7	14.240	360	14.173	1.7	.067	10	.394	4

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
9.300	.3661				2	□	MHS0930L040B	20.2	.795	41.4	1.630	41.9	1.650	101.9	4.012	100	3.937	1.9	.075	10	.394	3
					7	□	MHS0930L090B	66.8	2.630	91.2	3.591	91.7	3.610	151.7	5.972	150	5.906	1.7	.067	10	.394	4
					10	□	MHS0930L120B	94.7	3.728	121.2	4.772	121.7	4.791	181.7	7.154	180	7.087	1.7	.067	10	.394	4
					14	□	MHS0930L150B	131.9	5.193	151.2	5.953	151.7	5.972	211.7	8.335	210	8.268	1.7	.067	10	.394	4
					19	□	MHS0930L200B	178.4	7.024	201.2	7.921	201.7	7.941	261.7	10.303	260	10.236	1.7	.067	10	.394	4
					24	□	MHS0930L250B	224.9	8.854	251.2	9.890	251.7	9.909	311.7	12.272	310	12.205	1.7	.067	10	.394	4
					30	□	MHS0930L300B	280.7	11.051	301.2	11.858	301.7	11.878	361.7	14.240	360	14.173	1.7	.067	10	.394	4
9.400	.3701				2	□	MHS0940L040B	20.4	.803	41.5	1.634	42.0	1.654	102.0	4.016	100	3.937	2.0	.079	10	.394	3
					7	□	MHS0940L090B	67.5	2.657	91.2	3.591	91.7	3.610	151.7	5.972	150	5.906	1.7	.067	10	.394	4
					10	□	MHS0940L120B	95.7	3.768	121.2	4.772	121.7	4.791	181.7	7.154	180	7.087	1.7	.067	10	.394	4
					13	□	MHS0940L150B	123.9	4.878	151.2	5.953	151.7	5.972	211.7	8.335	210	8.268	1.7	.067	10	.394	4
					19	□	MHS0940L200B	180.3	7.098	201.2	7.921	201.7	7.941	261.7	10.303	260	10.236	1.7	.067	10	.394	4
					24	□	MHS0940L250B	227.3	8.949	251.2	9.890	251.7	9.909	311.7	12.272	310	12.205	1.7	.067	10	.394	4
					29	□	MHS0940L300B	274.3	10.799	301.2	11.858	301.7	11.878	361.7	14.240	360	14.173	1.7	.067	10	.394	4
9.500	.3740				2	★	MHS0950L040B	20.6	.811	41.5	1.634	42.0	1.654	102.0	4.016	100	3.937	2.0	.079	10	.394	3
					7	★	MHS0950L090B	68.2	2.685	91.2	3.591	91.7	3.610	151.7	5.972	150	5.906	1.7	.067	10	.394	4
					10	★	MHS0950L120B	96.7	3.807	121.2	4.772	121.7	4.791	181.7	7.154	180	7.087	1.7	.067	10	.394	4
					13	★	MHS0950L150B	125.2	4.929	151.2	5.953	151.7	5.972	211.7	8.335	210	8.268	1.7	.067	10	.394	4
					18	★	MHS0950L200B	172.7	6.799	201.2	7.921	201.7	7.941	261.7	10.303	260	10.236	1.7	.067	10	.394	4
					24	★	MHS0950L250B	229.7	9.043	251.2	9.890	251.7	9.909	311.7	12.272	310	12.205	1.7	.067	10	.394	4
					29	★	MHS0950L300B	277.2	10.913	301.2	11.858	301.7	11.878	361.7	14.240	360	14.173	1.7	.067	10	.394	4
9.600	.3780				2	□	MHS0960L040B	20.9	.823	42.0	1.654	42.0	1.654	102.0	4.016	100	3.937	2.0	.079	10	.394	3
					7	□	MHS0960L090B	68.9	2.713	91.8	3.614	91.8	3.614	151.8	5.976	150	5.906	1.8	.071	10	.394	4
					10	□	MHS0960L120B	97.7	3.846	121.8	4.795	121.8	4.795	181.8	7.157	180	7.087	1.8	.071	10	.394	4
					13	□	MHS0960L150B	126.5	4.980	151.8	5.976	151.8	5.976	211.8	8.339	210	8.268	1.8	.071	10	.394	4
					18	□	MHS0960L200B	174.5	6.870	201.8	7.945	201.8	7.945	261.8	10.307	260	10.236	1.8	.071	10	.394	4
					24	□	MHS0960L250B	232.1	9.138	251.8	9.913	251.8	9.913	311.8	12.276	310	12.205	1.8	.071	10	.394	4
					29	□	MHS0960L300B	280.1	11.028	301.8	11.882	301.8	11.882	361.8	14.244	360	14.173	1.8	.071	10	.394	4
9.700	.3819		Tube Sheet		2	□	MHS0970L040B	21.1	.831	42.0	1.654	42.0	1.654	102.0	4.016	100	3.937	2.0	.079	10	.394	3
					7	□	MHS0970L090B	69.7	2.744	91.8	3.614	91.8	3.614	151.8	5.976	150	5.906	1.8	.071	10	.394	4
					10	□	MHS0970L120B	98.8	3.890	121.8	4.795	121.8	4.795	181.8	7.157	180	7.087	1.8	.071	10	.394	4
					13	□	MHS0970L150B	127.9	5.035	151.8	5.976	151.8	5.976	211.8	8.339	210	8.268	1.8	.071	10	.394	4
					18	□	MHS0970L200B	176.4	6.945	201.8	7.945	201.8	7.945	261.8	10.307	260	10.236	1.8	.071	10	.394	4
					23	□	MHS0970L250B	224.9	8.854	251.8	9.913	251.8	9.913	311.8	12.276	310	12.205	1.8	.071	10	.394	4
					28	□	MHS0970L300B	273.4	10.764	301.8	11.882	301.8	11.882	361.8	14.244	360	14.173	1.8	.071	10	.394	4
9.800	.3858		W		2	★	MHS0980L040B	21.3	.839	42.0	1.654	42.0	1.654	102.0	4.016	100	3.937	2.0	.079	10	.394	3
					7	★	MHS0980L090B	70.4	2.772	91.8	3.614	91.8	3.614	151.8	5.976	150	5.906	1.8	.071	10	.394	4
					10	★	MHS0980L120B	99.8	3.929	121.8	4.795	121.8	4.795	181.8	7.157	180	7.087	1.8	.071	10	.394	4
					13	★	MHS0980L150B	129.2	5.087	151.8	5.976	151.8	5.976	211.8	8.339	210	8.268	1.8	.071	10	.394	4
					18	★	MHS0980L200B	178.2	7.016	201.8	7.945	201.8	7.945	261.8	10.307	260	10.236	1.8	.071	10	.394	4
					23	★	MHS0980L250B	227.2	8.945	251.8	9.913	251.8	9.913	311.8	12.276	310	12.205	1.8	.071	10	.394	4
					28	★	MHS0980L300B	276.2	10.874	301.8	11.882	301.8	11.882	361.8	14.244	360	14.173	1.8	.071	10	.394	4

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
9.900	.3898				2	□	MHS0990L040B	21.5	.846	42.1	1.657	42.1	1.657	102.1	4.020	100	3.937	2.1	.083	10	.394	3
					7	□	MHS0990L090B	71.1	2.799	91.8	3.614	91.8	3.614	151.8	5.976	150	5.906	1.8	.071	10	.394	4
					10	□	MHS0990L120B	100.8	3.969	121.8	4.795	121.8	4.795	181.8	7.157	180	7.087	1.8	.071	10	.394	4
					13	□	MHS0990L150B	130.5	5.138	151.8	5.976	151.8	5.976	211.8	8.339	210	8.268	1.8	.071	10	.394	4
					18	□	MHS0990L200B	180.0	7.087	201.8	7.945	201.8	7.945	261.8	10.307	260	10.236	1.8	.071	10	.394	4
					23	□	MHS0990L250B	229.5	9.035	251.8	9.913	251.8	9.913	311.8	12.276	310	12.205	1.8	.071	10	.394	4
					28	□	MHS0990L300B	279.0	10.984	301.8	11.882	301.8	11.882	361.8	14.244	360	14.173	1.8	.071	10	.394	4
10.000	.3937				1	★	MHS1000L040B	11.7	.461	42.1	1.657	42.1	1.657	102.1	4.020	100	3.937	2.1	.083	10	.394	3
					6	★	MHS1000L090B	61.8	2.433	91.8	3.614	91.8	3.614	151.8	5.976	150	5.906	1.8	.071	10	.394	4
					9	★	MHS1000L120B	91.8	3.614	121.8	4.795	121.8	4.795	181.8	7.157	180	7.087	1.8	.071	10	.394	4
					12	★	MHS1000L150B	121.8	4.795	151.8	5.976	151.8	5.976	211.8	8.339	210	8.268	1.8	.071	10	.394	4
					17	★	MHS1000L200B	171.8	6.764	201.8	7.945	201.8	7.945	261.8	10.307	260	10.236	1.8	.071	10	.394	4
					22	★	MHS1000L250B	221.8	8.732	251.8	9.913	251.8	9.913	311.8	12.276	310	12.205	1.8	.071	10	.394	4
					27	★	MHS1000L300B	271.8	10.701	301.8	11.882	301.8	11.882	361.8	14.244	360	14.173	1.8	.071	10	.394	4
10.100	.3976				1	□	MHS1010L040B	11.8	.465	40.6	1.598	42.1	1.657	102.1	4.020	100	3.937	2.1	.083	12	.472	3
					6	□	MHS1010L090B	62.4	2.457	90.3	3.555	91.8	3.614	151.8	5.976	150	5.906	1.8	.071	12	.472	4
					9	□	MHS1010L120B	92.7	3.650	120.3	4.736	121.8	4.795	181.8	7.157	180	7.087	1.8	.071	12	.472	4
					12	□	MHS1010L150B	123.0	4.843	150.3	5.917	151.8	5.976	211.8	8.339	210	8.268	1.8	.071	12	.472	4
					17	□	MHS1010L200B	173.5	6.831	200.3	7.886	201.8	7.945	261.8	10.307	260	10.236	1.8	.071	12	.472	4
					22	□	MHS1010L250B	224.0	8.819	250.3	9.854	251.8	9.913	311.8	12.276	310	12.205	1.8	.071	12	.472	4
					27	□	MHS1010L300B	274.5	10.807	300.3	11.823	301.8	11.882	361.8	14.244	360	14.173	1.8	.071	12	.472	4
10.200	.4016			M12x1.75	1	□	MHS1020L040B	12.0	.472	40.6	1.598	42.1	1.657	102.1	4.020	100	3.937	2.1	.083	12	.472	3
					6	□	MHS1020L090B	63.1	2.484	90.4	3.559	91.9	3.618	151.9	5.980	150	5.906	1.9	.075	12	.472	4
					9	□	MHS1020L120B	93.7	3.689	120.4	4.740	121.9	4.799	181.9	7.161	180	7.087	1.9	.075	12	.472	4
					12	□	MHS1020L150B	124.3	4.894	150.4	5.921	151.9	5.980	211.9	8.343	210	8.268	1.9	.075	12	.472	4
					17	□	MHS1020L200B	175.3	6.902	200.4	7.890	201.9	7.949	261.9	10.311	260	10.236	1.9	.075	12	.472	4
					22	□	MHS1020L250B	226.3	8.909	250.4	9.858	251.9	9.917	311.9	12.280	310	12.205	1.9	.075	12	.472	4
					27	□	MHS1020L300B	277.3	10.917	300.4	11.827	301.9	11.886	361.9	14.248	360	14.173	1.9	.075	12	.472	4
10.300	.4055				1	□	MHS1030L040B	12.1	.476	40.6	1.598	42.1	1.657	102.1	4.020	100	3.937	2.1	.083	12	.472	3
					6	□	MHS1030L090B	63.7	2.508	90.4	3.559	91.9	3.618	151.9	5.980	150	5.906	1.9	.075	12	.472	4
					9	□	MHS1030L120B	94.6	3.724	120.4	4.740	121.9	4.799	181.9	7.161	180	7.087	1.9	.075	12	.472	4
					12	□	MHS1030L150B	125.5	4.941	150.4	5.921	151.9	5.980	211.9	8.343	210	8.268	1.9	.075	12	.472	4
					17	□	MHS1030L200B	177.0	6.969	200.4	7.890	201.9	7.949	261.9	10.311	260	10.236	1.9	.075	12	.472	4
					22	□	MHS1030L250B	228.5	8.996	250.4	9.858	251.9	9.917	311.9	12.280	310	12.205	1.9	.075	12	.472	4
					26	□	MHS1030L300B	269.7	10.618	300.4	11.827	301.9	11.886	361.9	14.248	360	14.173	1.9	.075	12	.472	4
10.400	.4094				1	□	MHS1040L040B	12.2	.480	40.7	1.602	42.2	1.661	102.2	4.024	100	3.937	2.2	.087	12	.472	3
					6	□	MHS1040L090B	64.3	2.531	90.4	3.559	91.9	3.618	151.9	5.980	150	5.906	1.9	.075	12	.472	4
					9	□	MHS1040L120B	95.5	3.760	120.4	4.740	121.9	4.799	181.9	7.161	180	7.087	1.9	.075	12	.472	4
					12	□	MHS1040L150B	126.7	4.988	150.4	5.921	151.9	5.980	211.9	8.343	210	8.268	1.9	.075	12	.472	4
					17	□	MHS1040L200B	178.7	7.035	200.4	7.890	201.9	7.949	261.9	10.311	260	10.236	1.9	.075	12	.472	4
					21	□	MHS1040L250B	220.3	8.673	250.4	9.858	251.9	9.917	311.9	12.280	310	12.205	1.9	.075	12	.472	4
					26	□	MHS1040L300B	272.3	10.720	300.4	11.827	301.9	11.886	361.9	14.248	360	14.173	1.9	.075	12	.472	4

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
10.500	.4134		Z		1	★	MHS1050L040B	12.3	.484	40.7	1.602	42.2	1.661	102.2	4.024	100	3.937	2.2	.087	12	.472	3
					6	★	MHS1050L090B	64.9	2.555	90.4	3.559	91.9	3.618	151.9	5.980	150	5.906	1.9	.075	12	.472	4
					9	★	MHS1050L120B	96.4	3.795	120.4	4.740	121.9	4.799	181.9	7.161	180	7.087	1.9	.075	12	.472	4
					12	★	MHS1050L150B	127.9	5.035	150.4	5.921	151.9	5.980	211.9	8.343	210	8.268	1.9	.075	12	.472	4
					16	★	MHS1050L200B	169.9	6.689	200.4	7.890	201.9	7.949	261.9	10.311	260	10.236	1.9	.075	12	.472	4
					21	★	MHS1050L250B	222.4	8.756	250.4	9.858	251.9	9.917	311.9	12.280	310	12.205	1.9	.075	12	.472	4
					26	★	MHS1050L300B	274.9	10.823	300.4	11.827	301.9	11.886	361.9	14.248	360	14.173	1.9	.075	12	.472	4
10.600	.4173				1	□	MHS1060L040B	12.4	.488	41.2	1.622	42.2	1.661	102.2	4.024	100	3.937	2.2	.087	12	.472	3
					6	□	MHS1060L090B	65.5	2.579	90.9	3.579	91.9	3.618	151.9	5.980	150	5.906	1.9	.075	12	.472	4
					9	□	MHS1060L120B	97.3	3.831	120.9	4.760	121.9	4.799	181.9	7.161	180	7.087	1.9	.075	12	.472	4
					12	□	MHS1060L150B	129.1	5.083	150.9	5.941	151.9	5.980	211.9	8.343	210	8.268	1.9	.075	12	.472	4
					16	□	MHS1060L200B	171.5	6.752	200.9	7.909	201.9	7.949	261.9	10.311	260	10.236	1.9	.075	12	.472	4
					21	□	MHS1060L250B	224.5	8.839	250.9	9.878	251.9	9.917	311.9	12.280	310	12.205	1.9	.075	12	.472	4
					26	□	MHS1060L300B	277.5	10.925	300.9	11.846	301.9	11.886	361.9	14.248	360	14.173	1.9	.075	12	.472	4
10.700	.4213				1	□	MHS1070L040B	12.5	.492	41.2	1.622	42.2	1.661	102.2	4.024	100	3.937	2.2	.087	12	.472	3
					6	□	MHS1070L090B	66.1	2.602	91.0	3.583	92.0	3.622	152.0	5.984	150	5.906	2.0	.079	12	.472	4
					9	□	MHS1070L120B	98.2	3.866	121.0	4.764	122.0	4.803	182.0	7.165	180	7.087	2.0	.079	12	.472	4
					11	□	MHS1070L150B	119.6	4.709	151.0	5.945	152.0	5.984	212.0	8.346	210	8.268	2.0	.079	12	.472	4
					16	□	MHS1070L200B	173.1	6.815	201.0	7.913	202.0	7.953	262.0	10.315	260	10.236	2.0	.079	12	.472	4
					21	□	MHS1070L250B	226.6	8.921	251.0	9.882	252.0	9.921	312.0	12.283	310	12.205	2.0	.079	12	.472	4
					25	□	MHS1070L300B	269.4	10.606	301.0	11.850	302.0	11.890	362.0	14.252	360	14.173	2.0	.079	12	.472	4
10.800	.4252			M12x1.25	1	★	MHS1080L040B	12.7	.500	41.2	1.622	42.2	1.661	102.2	4.024	100	3.937	2.2	.087	12	.472	3
					6	★	MHS1080L090B	66.8	2.630	91.0	3.583	92.0	3.622	152.0	5.984	150	5.906	2.0	.079	12	.472	4
					9	★	MHS1080L120B	99.2	3.906	121.0	4.764	122.0	4.803	182.0	7.165	180	7.087	2.0	.079	12	.472	4
					11	★	MHS1080L150B	120.8	4.756	151.0	5.945	152.0	5.984	212.0	8.346	210	8.268	2.0	.079	12	.472	4
					16	★	MHS1080L200B	174.8	6.882	201.0	7.913	202.0	7.953	262.0	10.315	260	10.236	2.0	.079	12	.472	4
					21	★	MHS1080L250B	228.8	9.008	251.0	9.882	252.0	9.921	312.0	12.283	310	12.205	2.0	.079	12	.472	4
					25	★	MHS1080L300B	272.0	10.709	301.0	11.850	302.0	11.890	362.0	14.252	360	14.173	2.0	.079	12	.472	4
10.900	.4291				1	□	MHS1090L040B	12.8	.504	41.3	1.626	42.3	1.665	102.3	4.028	100	3.937	2.3	.091	12	.472	3
					6	□	MHS1090L090B	67.4	2.654	91.0	3.583	92.0	3.622	152.0	5.984	150	5.906	2.0	.079	12	.472	4
					8	□	MHS1090L120B	89.2	3.512	121.0	4.764	122.0	4.803	182.0	7.165	180	7.087	2.0	.079	12	.472	4
					11	□	MHS1090L150B	121.9	4.799	151.0	5.945	152.0	5.984	212.0	8.346	210	8.268	2.0	.079	12	.472	4
					16	□	MHS1090L200B	176.4	6.945	201.0	7.913	202.0	7.953	262.0	10.315	260	10.236	2.0	.079	12	.472	4
					20	□	MHS1090L250B	220.0	8.661	251.0	9.882	252.0	9.921	312.0	12.283	310	12.205	2.0	.079	12	.472	4
					25	□	MHS1090L300B	274.5	10.807	301.0	11.850	302.0	11.890	362	14.252	360	14.173	2.0	.079	12	.472	4
11.000	.4331				1	★	MHS1100L040B	12.9	.508	41.3	1.626	42.3	1.665	102.3	4.028	100	3.937	2.3	.091	12	.472	3
					6	★	MHS1100L090B	68.0	2.677	91.0	3.583	92.0	3.622	152.0	5.984	150	5.906	2.0	.079	12	.472	4
					8	★	MHS1100L120B	90.0	3.543	121.0	4.764	122.0	4.803	182.0	7.165	180	7.087	2.0	.079	12	.472	4
					11	★	MHS1100L150B	123.0	4.843	151.0	5.945	152.0	5.984	212.0	8.346	210	8.268	2.0	.079	12	.472	4
					16	★	MHS1100L200B	178.0	7.008	201.0	7.913	202.0	7.953	262.0	10.315	260	10.236	2.0	.079	12	.472	4
					20	★	MHS1100L250B	222.0	8.740	251.0	9.882	252.0	9.921	312.0	12.283	310	12.205	2.0	.079	12	.472	4
					25	★	MHS1100L300B	277.0	10.906	301.0	11.850	302.0	11.890	362.0	14.252	360	14.173	2.0	.079	12	.472	4

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

Drill Diameter DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
11.100	.4370				1	□	MHS1110L040B	13.0	.512	41.8	1.646	42.3	1.665	102.3	4.028	100	3.937	2.3	.091	12	.472	3
					6	□	MHS1110L090B	68.6	2.701	91.5	3.602	92.0	3.622	152.0	5.984	150	5.906	2.0	.079	12	.472	4
					8	□	MHS1110L120B	90.8	3.575	121.5	4.783	122.0	4.803	182.0	7.165	180	7.087	2.0	.079	12	.472	4
					11	□	MHS1110L150B	124.1	4.886	151.5	5.965	152.0	5.984	212.0	8.346	210	8.268	2.0	.079	12	.472	4
					15	□	MHS1110L200B	168.5	6.634	201.5	7.933	202.0	7.953	262.0	10.315	260	10.236	2.0	.079	12	.472	4
					20	□	MHS1110L250B	224.0	8.819	251.5	9.902	252.0	9.921	312.0	12.283	310	12.205	2.0	.079	12	.472	4
					24	□	MHS1110L300B	268.4	10.567	301.5	11.870	302.0	11.890	362.0	14.252	360	14.173	2.0	.079	12	.472	4
11.200	.4409				1	□	MHS1120L040B	13.1	.516	41.8	1.646	42.3	1.665	102.3	4.028	100	3.937	2.3	.091	12	.472	3
					5	□	MHS1120L090B	58.0	2.283	91.5	3.602	92.0	3.622	152.0	5.984	150	5.906	2.0	.079	12	.472	4
					8	□	MHS1120L120B	91.6	3.606	121.5	4.783	122.0	4.803	182.0	7.165	180	7.087	2.0	.079	12	.472	4
					11	□	MHS1120L150B	125.2	4.929	151.5	5.965	152.0	5.984	212.0	8.346	210	8.268	2.0	.079	12	.472	4
					15	□	MHS1120L200B	170.0	6.693	201.5	7.933	202.0	7.953	262.0	10.315	260	10.236	2.0	.079	12	.472	4
					20	□	MHS1120L250B	226.0	8.898	251.5	9.902	252.0	9.921	312.0	12.283	310	12.205	2.0	.079	12	.472	4
					24	□	MHS1120L300B	270.8	10.661	301.5	11.870	302.0	11.890	362	14.252	360	14.173	2.0	.079	12	.472	4
11.300	.4449				1	□	MHS1130L040B	13.2	.520	41.8	1.646	42.3	1.665	102.3	4.028	100	3.937	2.3	.091	12	.472	3
					5	□	MHS1130L090B	58.6	2.307	91.6	3.606	92.1	3.626	152.1	5.988	150	5.906	2.1	.083	12	.472	4
					8	□	MHS1130L120B	92.5	3.642	121.6	4.787	122.1	4.807	182.1	7.169	180	7.087	2.1	.083	12	.472	4
					11	□	MHS1130L150B	126.4	4.976	151.6	5.969	152.1	5.988	212.1	8.350	210	8.268	2.1	.083	12	.472	4
					15	□	MHS1130L200B	171.6	6.756	201.6	7.937	202.1	7.957	262.1	10.319	260	10.236	2.1	.083	12	.472	4
					20	□	MHS1130L250B	228.1	8.980	251.6	9.906	252.1	9.925	312.1	12.287	310	12.205	2.1	.083	12	.472	4
					24	□	MHS1130L300B	273.3	10.760	301.6	11.874	302.1	11.894	362.1	14.256	360	14.173	2.1	.083	12	.472	4
11.400	.4488				1	□	MHS1140L040B	13.4	.528	41.9	1.650	42.4	1.669	102.4	4.031	100	3.937	2.4	.094	12	.472	3
					5	□	MHS1140L090B	59.1	2.327	91.6	3.606	92.1	3.626	152.1	5.988	150	5.906	2.1	.083	12	.472	4
					8	□	MHS1140L120B	93.3	3.673	121.6	4.787	122.1	4.807	182.1	7.169	180	7.087	2.1	.083	12	.472	4
					11	□	MHS1140L150B	127.5	5.020	151.6	5.969	152.1	5.988	212.1	8.350	210	8.268	2.1	.083	12	.472	4
					15	□	MHS1140L200B	173.1	6.815	201.6	7.937	202.1	7.957	262.1	10.319	260	10.236	2.1	.083	12	.472	4
					19	□	MHS1140L250B	218.7	8.610	251.6	9.906	252.1	9.925	312.1	12.287	310	12.205	2.1	.083	12	.472	4
					24	□	MHS1140L300B	275.7	10.854	301.6	11.874	302.1	11.894	362.1	14.256	360	14.173	2.1	.083	12	.472	4
11.500	.4528				1	★	MHS1150L040B	13.5	.531	41.9	1.650	42.4	1.669	102.4	4.031	100	3.937	2.4	.094	12	.472	3
					5	★	MHS1150L090B	59.6	2.346	91.6	3.606	92.1	3.626	152.1	5.988	150	5.906	2.1	.083	12	.472	4
					8	★	MHS1150L120B	94.1	3.705	121.6	4.787	122.1	4.807	182.1	7.169	180	7.087	2.1	.083	12	.472	4
					10	★	MHS1150L150B	117.1	4.610	151.6	5.969	152.1	5.988	212.1	8.350	210	8.268	2.1	.083	12	.472	4
					15	★	MHS1150L200B	174.6	6.874	201.6	7.937	202.1	7.957	262.1	10.319	260	10.236	2.1	.083	12	.472	4
					19	★	MHS1150L250B	220.6	8.685	251.6	9.906	252.1	9.925	312.1	12.287	310	12.205	2.1	.083	12	.472	4
					24	★	MHS1150L300B	278.1	10.949	301.6	11.874	302.1	11.894	362.1	14.256	360	14.173	2.1	.083	12	.472	4
11.600	.4567				1	□	MHS1160L040B	13.6	.535	42.4	1.669	42.4	1.669	102.4	4.031	100	3.937	2.4	.094	12	.472	3
					5	□	MHS1160L090B	60.1	2.366	92.1	3.626	92.1	3.626	152.1	5.988	150	5.906	2.1	.083	12	.472	4
					8	□	MHS1160L120B	94.9	3.736	122.1	4.807	122.1	4.807	182.1	7.169	180	7.087	2.1	.083	12	.472	4
					10	□	MHS1160L150B	118.1	4.650	152.1	5.988	152.1	5.988	212.1	8.350	210	8.268	2.1	.083	12	.472	4
					15	□	MHS1160L200B	176.1	6.933	202.1	7.957	202.1	7.957	262.1	10.319	260	10.236	2.1	.083	12	.472	4
					19	□	MHS1160L250B	222.5	8.760	252.1	9.925	252.1	9.925	312.1	12.287	310	12.205	2.1	.083	12	.472	4
					23	□	MHS1160L300B	268.9	10.587	302.1	11.894	302.1	11.894	362.1	14.256	360	14.173	2.1	.083	12	.472	4

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

Drill Diameter **DC**					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread size		VP15TF		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
11.700	**.4606**				1	□	**MHS1170L040B**	13.7	.539	42.4	1.669	42.4	1.669	102.4	4.031	100	3.937	2.4	.094	12	.472	3
					5	□	**MHS1170L090B**	60.6	2.386	92.1	3.626	92.1	3.626	152.1	5.988	150	5.906	2.1	.083	12	.472	4
					8	□	**MHS1170L120B**	95.7	3.768	122.1	4.807	122.1	4.807	182.1	7.169	180	7.087	2.1	.083	12	.472	4
					10	□	**MHS1170L150B**	119.1	4.689	152.1	5.988	152.1	5.988	212.1	8.350	210	8.268	2.1	.083	12	.472	4
					15	□	**MHS1170L200B**	177.6	6.992	202.1	7.957	202.1	7.957	262.1	10.319	260	10.236	2.1	.083	12	.472	4
					19	□	**MHS1170L250B**	224.4	8.835	252.1	9.925	252.1	9.925	312.1	12.287	310	12.205	2.1	.083	12	.472	4
					23	□	**MHS1170L300B**	271.2	10.677	302.1	11.894	302.1	11.894	362.1	14.256	360	14.173	2.1	.083	12	.472	4
11.800	**.4646**				1	★	**MHS1180L040B**	13.8	.543	42.4	1.669	42.4	1.669	102.4	4.031	100	3.937	2.4	.094	12	.472	3
					5	★	**MHS1180L090B**	61.1	2.406	92.2	3.630	92.2	3.630	152.2	5.992	150	5.906	2.2	.087	12	.472	4
					8	★	**MHS1180L120B**	96.5	3.799	122.2	4.811	122.2	4.811	182.2	7.173	180	7.087	2.2	.087	12	.472	4
					10	★	**MHS1180L150B**	120.1	4.728	152.2	5.992	152.2	5.992	212.2	8.354	210	8.268	2.2	.087	12	.472	4
					14	★	**MHS1180L200B**	167.3	6.587	202.2	7.961	202.2	7.961	262.2	10.323	260	10.236	2.2	.087	12	.472	4
					19	★	**MHS1180L250B**	226.3	8.909	252.2	9.929	252.2	9.929	312.2	12.291	310	12.205	2.2	.087	12	.472	4
					23	★	**MHS1180L300B**	273.5	10.768	302.2	11.898	302.2	11.898	362.2	14.260	360	14.173	2.2	.087	12	.472	4
11.900	**.4685**				1	□	**MHS1190L040B**	13.9	.547	42.5	1.673	42.5	1.673	102.5	4.035	100	3.937	2.5	.098	12	.472	3
					5	□	**MHS1190L090B**	61.7	2.429	92.2	3.630	92.2	3.630	152.2	5.992	150	5.906	2.2	.087	12	.472	4
					8	□	**MHS1190L120B**	97.4	3.835	122.2	4.811	122.2	4.811	182.2	7.173	180	7.087	2.2	.087	12	.472	4
					10	□	**MHS1190L150B**	121.2	4.772	152.2	5.992	152.2	5.992	212.2	8.354	210	8.268	2.2	.087	12	.472	4
					14	□	**MHS1190L200B**	168.8	6.646	202.2	7.961	202.2	7.961	262.2	10.323	260	10.236	2.2	.087	12	.472	4
					19	□	**MHS1190L250B**	228.3	8.988	252.2	9.929	252.2	9.929	312.2	12.291	310	12.205	2.2	.087	12	.472	4
					23	□	**MHS1190L300B**	275.9	10.862	302.2	11.898	302.2	11.898	362.2	14.260	360	14.173	2.2	.087	12	.472	4
12.000	**.4724**			M14x2.0	1	★	**MHS1200L040B**	14.1	.555	42.5	1.673	42.5	1.673	102.5	4.035	100	3.937	2.5	.098	12	.472	3
					5	★	**MHS1200L090B**	62.2	2.449	92.2	3.630	92.2	3.630	152.2	5.992	150	5.906	2.2	.087	12	.472	4
					7	★	**MHS1200L120B**	86.2	3.394	122.2	4.811	122.2	4.811	182.2	7.173	180	7.087	2.2	.087	12	.472	4
					10	★	**MHS1200L150B**	122.2	4.811	152.2	5.992	152.2	5.992	212.2	8.354	210	8.268	2.2	.087	12	.472	4
					14	★	**MHS1200L200B**	170.2	6.701	202.2	7.961	202.2	7.961	262.2	10.323	260	10.236	2.2	.087	12	.472	4
					18	★	**MHS1200L250B**	218.2	8.591	252.2	9.929	252.2	9.929	312.2	12.291	310	12.205	2.2	.087	12	.472	4
					22	★	**MHS1200L300B**	266.2	10.480	302.2	11.898	302.2	11.898	362.2	14.260	360	14.173	2.2	.087	12	.472	4

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L136
OPERATIONAL GUIDANCE ➤ L137

MHS

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		Mild Steel (≤180HB) Carbon Steel, Alloy Steel (180-280HB) AISI 1010, 1045, 4140 etc.			Austenitic Stainless Steel (≤200HB) Ferritic, Martensitic Stainless Steel (>200HB) AISI 304, 316 AISI 431, 420 etc.		
Drill Dia.		Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Feed **fr** (Min.—Max.) (IPR)
inch	mm						
.0394	**1.0**	130	12700	.0012 (.0008—.0016)	65	6400	.0012 (.0008—.0016)
.0472	**1.2**	160	13200	.0014 (.0010—.0020)	95	8000	.0014 (.0010—.0020)
.0630	**1.6**	195	11900	.0020 (.0012—.0026)	130	8000	.0020 (.0012—.0026)
.0787	**2.0**	230	11100	.0024 (.0016—.0031)	160	8000	.0024 (.0016—.0031)
.0984	**2.5**	260	10200	.0030 (.0020—.0039)	195	7600	.0030 (.0020—.0039)
.1260	**3.2**	260	8000	.0039 (.0028—.0051)	195	6000	.0039 (.0028—.0051)
.1575	**4.0**	260	6400	.0039 (.0035—.0043)	190	4800	.0035 (.0031—.0035)
.1969	**5.0**	260	5100	.0051 (.0043—.0055)	195	3800	.0043 (.0039—.0047)
.2480	**6.3**	260	4000	.0063 (.0055—.0071)	195	3000	.0055 (.0051—.0059)
.3150	**8.0**	255	3200	.0079 (.0071—.0091)	190	2400	.0067 (.0063—.0075)
.3937	**10.0**	255	2600	.0098 (.0087—.0110)	195	1900	.0087 (.0079—.0091)
.4724	**12.0**	260	2100	.0118 (.0106—.0134)	185	1600	.0102 (.0094—.0110)

Workpiece Materiall		Pre-hardened Steel (35-45HRC) Alloy Tool Steel (≤350HB) AISI P21, P20 ASTM H13, AISI L6 etc.			Hardened Steel (40-55HRC) Precipitation Hardening Martensitic Stainless Steel (<450HB) AISI 431, 420 S17400, S17700 etc.		
Drill Dia.		Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Feed **fr** (Min.—Max.) (IPR)
inch	mm						
.0394	**1.0**	65	6400	.0010 (.0008—.0012)	65	6400	.0008 (.0006—.0010)
.0472	**1.2**	95	8000	.0012 (.0008—.0014)	95	8000	.0010 (.0008—.0012)
.0630	**1.6**	130	8000	.0016 (.0012—.0018)	130	8000	.0014 (.0010—.0016)
.0787	**2.0**	160	8000	.0018 (.0014—.0024)	160	8000	.0016 (.0012—.0020)
.0984	**2.5**	195	7600	.0024 (.0018—.0030)	195	7600	.0020 (.0016—.0026)
.1260	**3.2**	195	6000	.0031 (.0024—.0035)	195	6000	.0024 (.0020—.0031)
.1575	**4.0**	190	4800	.0031 (.0028—.0039)	190	4800	.0031 (.0024—.0039)
.1969	**5.0**	195	3800	.0043 (.0035—.0051)	195	3800	.0039 (.0031—.0051)
.2480	**6.3**	195	3000	.0051 (.0043—.0063)	195	3000	.0043 (.0035—.0051)
.3150	**8.0**	190	2400	.0067 (.0055—.0079)	190	2400	.0055 (.0047—.0063)
.3937	**10.0**	195	1900	.0083 (.0067—.0098)	195	1900	.0067 (.0055—.0079)
.4724	**12.0**	185	1600	.0098 (.0083—.0118)	185	1600	.0083 (.0067—.0094)

Workpiece Material		Hardened Steel (40-55HRC) Heat Resistant Alloy ASTM H13, AISI L6 Inconel718 etc.		
Drill Dia.		Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Feed **fr** (Min.—Max.) (IPR)
inch	mm			
.0394	**1.0**	30	3200	.0006 (.0006—.0008)
.0472	**1.2**	30	2700	.0008 (.0006—.0010)
.0630	**1.6**	30	2000	.0010 (.0008—.0012)
.0787	**2.0**	60	3200	.0014 (.0010—.0016)
.0984	**2.5**	65	2600	.0016 (.0012—.0020)
.1260	**3.2**	60	2000	.0020 (.0016—.0028)
.1575	**4.0**	95	2400	.0028 (.0020—.0031)
.1969	**5.0**	95	1900	.0031 (.0024—.0039)
.2480	**6.3**	95	1500	.0035 (.0031—.0043)
.3150	**8.0**	120	1500	.0047 (.0039—.0051)
.3937	**10.0**	120	1300	.0059 (.0051—.0067)
.4724	**12.0**	120	1100	.0071 (.0059—.0079)

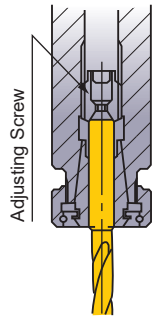
Note 1) When using the drill with a length over L/D 10, it is necessary to use a pilot hole as a guide. (If no pilot hole is used then drill breakage can occur)

Note 2) Use the shortest drill with L/D<10 available in respective DC as a pilot drill.

Note 3) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

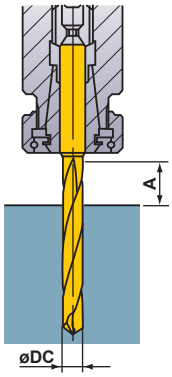
OPERATIONAL GUIDANCE FOR THE MHS DRILL

Drill Holding



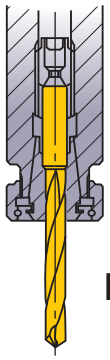
Thrust bearing type collet chuck holds the drill securely.

Drill Length



A ≥ DC x 2

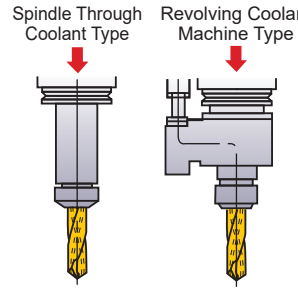
Drill Installation



NG

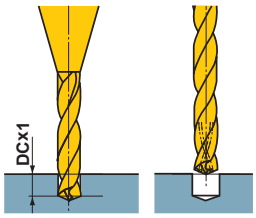
Do not clamp on the flutes.

Through Coolant Type



Less than ø.118 : 1.5MPa-7MP
More than ø.118 : 0.5MPa-7MPa
More than 3MPa is recommended.

Drill Installation



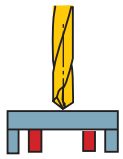
① Drill a prepared hole about 1DC using the shortest flute length of MHS. (DC=drill diameter)
② Use the prepared hole as a guide when using a drill with an oil hole. Depending on the cutting conditions, peck feed is recommended.

Coolant Handling

1) Small particles of swarf will jam in the oil hole of small diameter drills. Always use a fine mesh filter as a preventative measure.

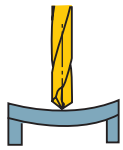
2) Dirt and dust particles adhere to the oil in old coolant and prevent an efficient flow. Regular coolant exchange is recommended.

Thin Workpiece



Support the Workpiece

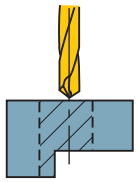
OK



If Bending Occurs

NG

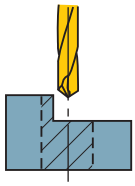
Interrupted Cutting



One Process

OK

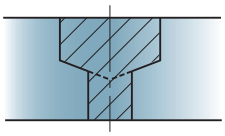
①Lower the feed when drilling the interrupted part.



Requires Prior Machining

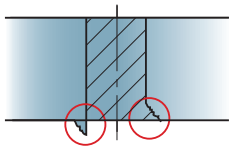
①Spot face with an end mill prior to drilling.

Stepped Holes



①Divide the two processes.
②Drill the larger hole first.
*A tool for machining both chamfer and spot face can be produced to order.

Burring and Workpiece Chipping



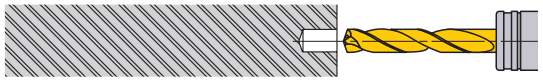
①Lower the feed rate by 50% at the end of through cutting.
②Change the point angle.

MHS

■ OPERATIONAL GUIDANCE FOR THE MHS LONG TYPE DRILL (L/D≥10)

Flat Face Drilling ●Drilling a blind hole

■ 1. Drilling a Pilot Hole

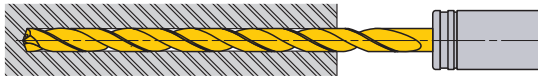


①Use a drill with the same or larger point angle than the super long type. Use the shortest flute possible.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx 1DC.
(Adjust the pilot hole depth according to the length of the long type drill.)

■ 2. Initial Cutting with the Long Type Drill

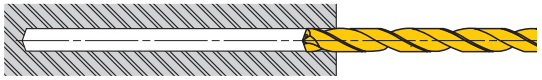
①Penetrate the guide hole at low revolution.
(Revolution 1000 min^{-1}, feed rate .008—.012 IPR)
②Stop the long type drill .020—.039 inch short of the guide hole bottom.

■ 3. Drill the Deep Hole



①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

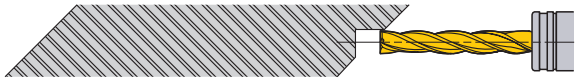
■ 4. Drill Retraction



①After drilling, lower the cutting revolution about .020—.039 inch short of the hole end. (Revolution 1000 min^{-1})
②Retract the drill to the pilot hole depth starting point at a feed rate of 118.1 IPM.
③Finally, clear the hole at a cutting speed of 66—98 SFM and feed rate of .008—.012 IPR.

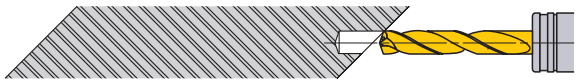
Interruped Drilling ●Drilling and breaking through on irregular faces or angles

■ 1. Spot Facing



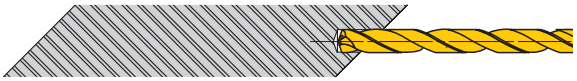
①Machine a flat on the irregular face by using an MFE (flat bottom drill) or an end mill capable of spot facing. Make the spot face diameter the same size as the required deep hole diameter.

■ 2. Drilling a Pilot Hole



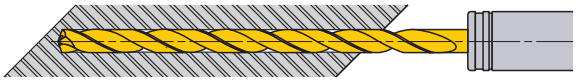
①Use a drill with the same or larger point angle than the super long type. Use the shortest flute possible.
②Ensure a high precision hole is drilled for the guide.
③Drill depth : Approx 1DC.
(Adjust the pilot hole depth according to the length of the long type drill.)

■ 3. Initial Cutting with the Long Type Drill



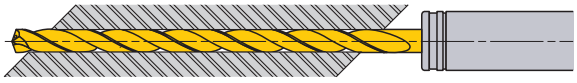
①Penetrate the guide hole at a low revolution.
(Revolution 1000 min^{-1}, feed rate .008—.012 IPR)
②Stop the long type drill .020—.039 inch short of the guide hole bottom.

■ 4. Drill the Deep Hole



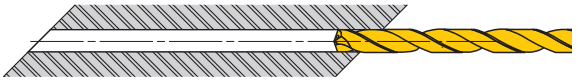
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.
②Feed as usual until breaking through.

■ 5. Breaking Through



①When breaking through, the cutting edge can be damaged.
②Recommend about half rate of the usual feed rate after breaking through.

■ 6. Drill Retraction



①Finally clear the hole at a revolution speed 1000 min^{-1} and feed rate of .008—.012 IPR.
②Retract the drill to the pilot hole depth starting point at a feed rate of 118.1 IPM.

Memo

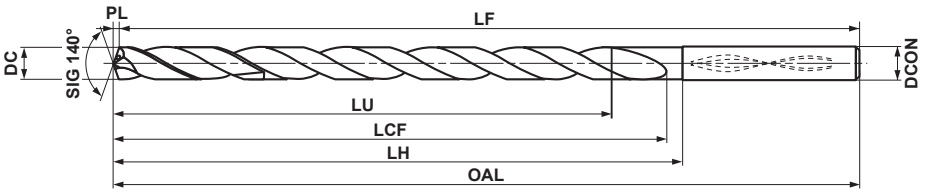
MNS

- Unique 4 hole, high flow, coolant delivery system prevents built-up-edge.
- Long drill life and highly efficient drilling of holes in aluminum.

P | M | K | **N** | S | H

METRIC STANDARD

Internal Coolant



DC=3	3<DC≤6	6<DC≤10	10<DC≤14
0 −0.014	0 −0.018	0 −0.022	0 −0.027
DCON=3	**3<DCON≤6**	**6<DCON≤10**	**10<DCON≤14**
0 −0.006	0 −0.008	0 −0.009	0 −0.011

Note 1) MNS drills are suitable for use with shrink fit holders.
Note 2) 4.5 or smaller diameter drills are designed with 2 colant holes.

DC (mm)	L/D	Stock TF15	Order Number	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON
3.0	5	★	MNS0300LB	15.5	33.5	33.5	81.5	81	0.5	3
	10	★	MNS0300X10DB	30.5	39.5	42.5	90.5	90	0.5	3
	20	★	MNS0300X20DB	60.5	69.5	72.5	120.5	120	0.5	3
	30	★	MNS0300X30DB	90.5	99.5	102.5	150.5	150	0.5	3
3.1	5	★	MNS0310LB	16.1	39.6	39.6	87.6	87	0.6	4
	10	□	MNS0310X10DB	31.6	46.6	49.6	97.6	97	0.6	4
	20	□	MNS0310X20DB	62.6	81.6	84.6	132.6	132	0.6	4
	30	□	MNS0310X30DB	93.6	116.6	119.6	167.6	167	0.6	4
3.2	5	★	MNS0320LB	16.6	39.6	39.6	87.6	87	0.6	4
	10	★	MNS0320X10DB	32.6	46.6	49.6	97.6	97	0.6	4
	20	★	MNS0320X20DB	64.6	81.6	84.6	132.6	132	0.6	4
	30	★	MNS0320X30DB	96.6	116.6	119.6	167.6	167	0.6	4
3.3	5	★	MNS0330LB	17.1	39.6	39.6	87.6	87	0.6	4
	10	□	MNS0330X10DB	33.6	46.6	49.6	97.6	97	0.6	4
	20	□	MNS0330X20DB	66.6	81.6	84.6	132.6	132	0.6	4
	30	□	MNS0330X30DB	99.6	116.6	119.6	167.6	167	0.6	4
3.4	5	★	MNS0340LB	17.6	39.6	39.6	87.6	87	0.6	4
	10	★	MNS0340X10DB	34.6	46.6	49.6	97.6	97	0.6	4
	20	★	MNS0340X20DB	68.6	81.6	84.6	132.6	132	0.6	4
	30	★	MNS0340X30DB	102.6	116.6	119.6	167.6	167	0.6	4
3.5	5	★	MNS0350LB	18.1	39.6	39.6	87.6	87	0.6	4
	10	□	MNS0350X10DB	35.6	46.6	49.6	97.6	97	0.6	4
	20	□	MNS0350X20DB	70.6	81.6	84.6	132.6	132	0.6	4
	30	□	MNS0350X30DB	105.6	116.6	119.6	167.6	167	0.6	4
3.6	5	★	MNS0360LB	18.7	44.7	44.7	92.7	92	0.7	4
	10	★	MNS0360X10DB	36.7	52.7	55.7	103.7	103	0.7	4
	20	★	MNS0360X20DB	72.7	92.7	95.7	143.7	143	0.7	4
	30	★	MNS0360X30DB	108.7	132.7	135.7	183.7	183	0.7	4
3.7	5	★	MNS0370LB	19.2	44.7	44.7	92.7	92	0.7	4
	10	□	MNS0370X10DB	37.7	52.7	55.7	103.7	103	0.7	4
	20	□	MNS0370X20DB	74.7	92.7	95.7	143.7	143	0.7	4
	30	□	MNS0370X30DB	111.7	132.7	135.7	183.7	183	0.7	4
3.8	5	★	MNS0380LB	19.7	44.7	44.7	92.7	92	0.7	4
	10	□	MNS0380X10DB	38.7	52.7	55.7	103.7	103	0.7	4
	20	□	MNS0380X20DB	76.7	92.7	95.7	143.7	143	0.7	4
	30	□	MNS0380X30DB	114.7	132.7	135.7	183.7	183	0.7	4
3.9	5	★	MNS0390LB	20.2	44.7	44.7	92.7	92	0.7	4
	10	★	MNS0390X10DB	39.7	52.7	55.7	103.7	103	0.7	4
	20	★	MNS0390X20DB	78.7	92.7	95.7	143.7	143	0.7	4
	30	★	MNS0390X30DB	117.7	132.7	135.7	183.7	183	0.7	4
4.0	5	★	MNS0400LB	20.7	44.7	44.7	92.7	92	0.7	4
	10	★	MNS0400X10DB	40.7	52.7	55.7	103.7	103	0.7	4
	20	★	MNS0400X20DB	80.7	92.7	95.7	143.7	143	0.7	4
	30	★	MNS0400X30DB	120.7	132.7	135.7	183.7	183	0.7	4
4.1	5	★	MNS0410LB	21.2	50.7	50.7	100.7	100	0.7	5
	10	□	MNS0410X10DB	41.7	59.7	62.7	112.7	112	0.7	5
	20	□	MNS0410X20DB	82.7	104.7	107.7	157.7	157	0.7	5
	30	□	MNS0410X30DB	123.7	149.7	152.7	202.7	202	0.7	5
4.2	5	★	MNS0420LB	21.8	50.8	50.8	100.8	100	0.8	5
	10	□	MNS0420X10DB	42.8	59.8	62.8	112.8	112	0.8	5
	20	□	MNS0420X20DB	84.8	104.8	107.8	157.8	157	0.8	5
	30	□	MNS0420X30DB	126.8	149.8	152.8	202.8	202	0.8	5
4.3	5	★	MNS0430LB	22.3	50.8	50.8	100.8	100	0.8	5
	10	□	MNS0430X10DB	43.8	59.8	62.8	112.8	112	0.8	5
	20	□	MNS0430X20DB	86.8	104.8	107.8	157.8	157	0.8	5
	30	□	MNS0430X30DB	129.8	149.8	152.8	202.8	202	0.8	5

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).
★ : Stock in Japan □ : Made to Order

DC (mm)	L/D	Stock TF15	Order Number	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON
4.4	5	★	MNS0440LB	22.8	50.8	50.8	100.8	100	0.8	5
	10	□	MNS0440X10DB	44.8	59.8	62.8	112.8	112	0.8	5
	20	□	MNS0440X20DB	88.8	104.8	107.8	157.8	157	0.8	5
	30	□	MNS0440X30DB	132.8	149.8	152.8	202.8	202	0.8	5
4.5	5	★	MNS0450LB	23.3	50.8	50.8	100.8	100	0.8	5
	10	□	MNS0450X10DB	45.8	59.8	62.8	112.8	112	0.8	5
	20	□	MNS0450X20DB	90.8	104.8	107.8	157.8	157	0.8	5
	30	□	MNS0450X30DB	135.8	149.8	152.8	202.8	202	0.8	5
4.6	5	★	MNS0460LB	23.8	55.8	55.8	105.8	105	0.8	5
	10	□	MNS0460X10DB	46.8	65.8	68.8	118.8	118	0.8	5
	20	□	MNS0460X20DB	92.8	115.8	118.8	168.8	168	0.8	5
	30	□	MNS0460X30DB	138.8	165.8	168.8	218.8	218	0.8	5
4.7	5	★	MNS0470LB	24.4	55.9	55.9	105.9	105	0.9	5
	10	□	MNS0470X10DB	47.9	65.9	68.9	118.9	118	0.9	5
	20	□	MNS0470X20DB	94.9	115.9	118.9	168.9	168	0.9	5
	30	□	MNS0470X30DB	141.9	165.9	168.9	218.9	218	0.9	5
4.8	5	★	MNS0480LB	24.9	55.9	55.9	105.9	105	0.9	5
	10	□	MNS0480X10DB	48.9	65.9	68.9	118.9	118	0.9	5
	20	□	MNS0480X20DB	96.9	115.9	118.9	168.9	168	0.9	5
	30	□	MNS0480X30DB	144.9	165.9	168.9	218.9	218	0.9	5
4.9	5	★	MNS0490LB	25.4	55.9	55.9	105.9	105	0.9	5
	10	★	MNS0490X10DB	49.9	65.9	68.9	118.9	118	0.9	5
	20	★	MNS0490X20DB	98.9	115.9	118.9	168.9	168	0.9	5
	30	★	MNS0490X30DB	147.9	165.9	168.9	218.9	218	0.9	5
5.0	5	★	MNS0500LB	25.9	44.9	44.9	100.9	100	0.9	6
	10	★	MNS0500X10DB	50.9	65.9	68.9	118.9	118	0.9	5
	20	★	MNS0500X20DB	100.9	115.9	118.9	168.9	168	0.9	5
	30	★	MNS0500X30DB	150.9	165.9	168.9	218.9	218	0.9	5
5.1	5	★	MNS0510LB	26.4	44.9	44.9	100.9	100	0.9	6
	10	★	MNS0510X10DB	51.9	72.9	75.9	127.9	127	0.9	6
	20	★	MNS0510X20DB	102.9	127.9	130.9	182.9	182	0.9	6
	30	★	MNS0510X30DB	153.9	182.9	185.9	237.9	237	0.9	6
5.2	5	★	MNS0520LB	26.9	44.9	44.9	100.9	100	0.9	6
	10	□	MNS0520X10DB	52.9	72.9	75.9	127.9	127	0.9	6
	20	□	MNS0520X20DB	104.9	127.9	130.9	182.9	182	0.9	6
	30	□	MNS0520X30DB	156.9	182.9	185.9	237.9	237	0.9	6
5.3	5	★	MNS0530LB	27.5	45.0	45.0	101.0	100	1.0	6
	10	□	MNS0530X10DB	54.0	73.0	76.0	128.0	127	1.0	6
	20	□	MNS0530X20DB	107.0	128.0	131.0	183.0	182	1.0	6
	30	□	MNS0530X30DB	160.0	183.0	186.0	238.0	237	1.0	6
5.4	5	★	MNS0540LB	28.0	45.0	45.0	101.0	100	1.0	6
	10	□	MNS0540X10DB	55.0	73.0	76.0	128.0	127	1.0	6
	20	□	MNS0540X20DB	109.0	128.0	131.0	183.0	182	1.0	6
	30	□	MNS0540X30DB	163.0	183.0	186.0	238.0	237	1.0	6

DC (mm)	L/D	Stock TF15	Order Number	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON
5.5	5	★	MNS0550LB	28.5	45.0	45.0	101.0	100	1.0	6
	10	★	MNS0550X10DB	56.0	73.0	76.0	128.0	127	1.0	6
	20	★	MNS0550X20DB	111.0	128.0	131.0	183.0	182	1.0	6
	30	★	MNS0550X30DB	166.0	183.0	186.0	238.0	237	1.0	6
5.6	5	★	MNS0560LB	29.0	49.0	49.0	101.0	100	1.0	6
	10	□	MNS0560X10DB	57.0	79.0	82.0	134.0	133	1.0	6
	20	□	MNS0560X20DB	113.0	139.0	142.0	194.0	193	1.0	6
	30	□	MNS0560X30DB	169.0	199.0	202.0	254.0	253	1.0	6
5.7	5	★	MNS0570LB	29.5	49.0	49.0	101.0	100	1.0	6
	10	□	MNS0570X10DB	58.0	79.0	82.0	134.0	133	1.0	6
	20	□	MNS0570X20DB	115.0	139.0	142.0	194.0	193	1.0	6
	30	□	MNS0570X30DB	172.0	199.0	202.0	254.0	253	1.0	6
5.8	5	★	MNS0580LB	30.1	49.1	49.1	101.1	100	1.1	6
	10	□	MNS0580X10DB	59.1	79.1	82.1	134.1	133	1.1	6
	20	□	MNS0580X20DB	117.1	139.1	142.1	194.1	193	1.1	6
	30	□	MNS0580X30DB	175.1	199.1	202.1	254.1	253	1.1	6
5.9	5	★	MNS0590LB	30.6	49.1	49.1	101.1	100	1.1	6
	10	□	MNS0590X10DB	60.1	79.1	82.1	134.1	133	1.1	6
	20	□	MNS0590X20DB	119.1	139.1	142.1	194.1	193	1.1	6
	30	□	MNS0590X30DB	178.1	199.1	202.1	254.1	253	1.1	6
6.0	5	★	MNS0600LB	31.1	49.1	49.1	101.1	100	1.1	6
	10	★	MNS0600X10DB	61.1	79.1	82.1	134.1	133	1.1	6
	20	★	MNS0600X20DB	121.1	139.1	142.1	194.1	193	1.1	6
	30	★	MNS0600X30DB	181.1	199.1	202.1	254.1	253	1.1	6
6.1	5	★	MNS0610LB	31.6	53.1	53.1	110.1	109	1.1	7
	10	★	MNS0610X10DB	62.1	86.1	89.1	142.1	141	1.1	7
	20	★	MNS0610X20DB	123.1	151.1	154.1	207.1	206	1.1	7
	30	★	MNS0610X30DB	184.1	216.1	219.1	272.1	271	1.1	7
6.2	5	★	MNS0620LB	32.1	53.1	53.1	110.1	109	1.1	7
	10	□	MNS0620X10DB	63.1	86.1	89.1	142.1	141	1.1	7
	20	□	MNS0620X20DB	125.1	151.1	154.1	207.1	206	1.1	7
	30	□	MNS0620X30DB	187.1	216.1	219.1	272.1	271	1.1	7
6.3	5	★	MNS0630LB	32.6	53.1	53.1	110.1	109	1.1	7
	10	□	MNS0630X10DB	64.1	86.1	89.1	142.1	141	1.1	7
	20	□	MNS0630X20DB	127.1	151.1	154.1	207.1	206	1.1	7
	30	□	MNS0630X30DB	190.1	216.1	219.1	272.1	271	1.1	7
6.4	5	★	MNS0640LB	33.2	53.2	53.2	110.2	109	1.2	7
	10	□	MNS0640X10DB	65.2	86.2	89.2	142.2	141	1.2	7
	20	□	MNS0640X20DB	129.2	151.2	154.2	207.2	206	1.2	7
	30	□	MNS0640X30DB	193.2	216.2	219.2	272.2	271	1.2	7
6.5	5	★	MNS0650LB	33.7	53.2	53.2	110.2	109	1.2	7
	10	★	MNS0650X10DB	66.2	86.2	89.2	142.2	141	1.2	7
	20	★	MNS0650X20DB	131.2	151.2	154.2	207.2	206	1.2	7
	30	★	MNS0650X30DB	196.2	216.2	219.2	272.2	271	1.2	7

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L145
OPERATIONAL GUIDANCE ➤ L147

MNS

DC (mm)	L/D	Stock TF15	Order Number	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON
6.6	5	★	MNS0660LB	34.2	57.2	57.2	110.2	109	1.2	7
	10	□	MNS0660X10DB	67.2	92.2	95.2	148.2	147	1.2	7
	20	□	MNS0660X20DB	133.2	162.2	165.2	218.2	217	1.2	7
	30	□	MNS0660X30DB	199.2	232.2	235.2	288.2	287	1.2	7
6.7	5	★	MNS0670LB	34.7	57.2	57.2	110.2	109	1.2	7
	10	★	MNS0670X10DB	68.2	92.2	95.2	148.2	147	1.2	7
	20	★	MNS0670X20DB	135.2	162.2	165.2	218.2	217	1.2	7
	30	★	MNS0670X30DB	202.2	232.2	235.2	288.2	287	1.2	7
6.8	5	★	MNS0680LB	35.2	57.2	57.2	110.2	109	1.2	7
	10	□	MNS0680X10DB	69.2	92.2	95.2	148.2	147	1.2	7
	20	□	MNS0680X20DB	137.2	162.2	165.2	218.2	217	1.2	7
	30	□	MNS0680X30DB	205.2	232.2	235.2	288.2	287	1.2	7
6.9	5	★	MNS0690LB	35.8	57.3	57.3	110.3	109	1.3	7
	10	□	MNS0690X10DB	70.3	92.3	95.3	148.3	147	1.3	7
	20	□	MNS0690X20DB	139.3	162.3	165.3	218.3	217	1.3	7
	30	□	MNS0690X30DB	208.3	232.3	235.3	288.3	287	1.3	7
7.0	5	★	MNS0700LB	36.3	57.3	57.3	110.3	109	1.3	7
	10	★	MNS0700X10DB	71.3	92.3	95.3	148.3	147	1.3	7
	20	★	MNS0700X20DB	141.3	162.3	165.3	218.3	217	1.3	7
	30	★	MNS0700X30DB	211.3	232.3	235.3	288.3	287	1.3	7
7.1	5	★	MNS0710LB	36.8	61.3	65.3	119.3	118	1.3	8
	10	□	MNS0710X10DB	72.3	99.3	102.3	156.3	155	1.3	8
	20	□	MNS0710X20DB	143.3	174.3	177.3	231.3	230	1.3	8
	30	□	MNS0710X30DB	214.3	249.3	252.3	306.3	305	1.3	8
7.2	5	★	MNS0720LB	37.3	61.3	65.3	119.3	118	1.3	8
	10	★	MNS0720X10DB	73.3	99.3	102.3	156.3	155	1.3	8
	20	★	MNS0720X20DB	145.3	174.3	177.3	231.3	230	1.3	8
	30	★	MNS0720X30DB	217.3	249.3	252.3	306.3	305	1.3	8
7.3	5	★	MNS0730LB	37.8	61.3	65.3	119.3	118	1.3	8
	10	□	MNS0730X10DB	74.3	99.3	102.3	156.3	155	1.3	8
	20	□	MNS0730X20DB	147.3	174.3	177.3	231.3	230	1.3	8
	30	□	MNS0730X30DB	220.3	249.3	252.3	306.3	305	1.3	8
7.4	5	★	MNS0740LB	38.3	61.3	65.3	119.3	118	1.3	8
	10	□	MNS0740X10DB	75.3	99.3	102.3	156.3	155	1.3	8
	20	□	MNS0740X20DB	149.3	174.3	177.3	231.3	230	1.3	8
	30	□	MNS0740X30DB	223.3	249.3	252.3	306.3	305	1.3	8
7.5	5	★	MNS0750LB	38.9	61.4	65.4	119.4	118	1.4	8
	10	□	MNS0750X10DB	76.4	99.4	102.4	156.4	155	1.4	8
	20	□	MNS0750X20DB	151.4	174.4	177.4	231.4	230	1.4	8
	30	□	MNS0750X30DB	226.4	249.4	252.4	306.4	305	1.4	8
7.6	5	★	MNS0760LB	39.4	65.4	65.4	119.4	118	1.4	8
	10	□	MNS0760X10DB	77.4	105.4	108.4	162.4	161	1.4	8
	20	□	MNS0760X20DB	153.4	185.4	188.4	242.4	241	1.4	8
	30	□	MNS0760X30DB	229.4	265.4	268.4	322.4	321	1.4	8
7.7	5	★	MNS0770LB	39.9	65.4	65.4	119.4	118	1.4	8
	10	□	MNS0770X10DB	78.4	105.4	108.4	162.4	161	1.4	8
	20	□	MNS0770X20DB	155.4	185.4	188.4	242.4	241	1.4	8
	30	□	MNS0770X30DB	232.4	265.4	268.4	322.4	321	1.4	8
7.8	5	★	MNS0780LB	40.4	65.4	65.4	119.4	118	1.4	8
	10	★	MNS0780X10DB	79.4	105.4	108.4	162.4	161	1.4	8
	20	★	MNS0780X20DB	157.4	185.4	188.4	242.4	241	1.4	8
	30	★	MNS0780X30DB	235.4	265.4	268.4	322.4	321	1.4	8
7.9	5	★	MNS0790LB	40.9	65.4	65.4	119.4	118	1.4	8
	10	□	MNS0790X10DB	80.4	105.4	108.4	162.4	161	1.4	8
	20	□	MNS0790X20DB	159.4	185.4	188.4	242.4	241	1.4	8
	30	□	MNS0790X30DB	238.4	265.4	268.4	322.4	321	1.4	8
8.0	5	★	MNS0800LB	41.5	65.5	65.5	119.5	118	1.5	8
	10	★	MNS0800X10DB	81.5	105.5	108.5	162.5	161	1.5	8
	20	★	MNS0800X20DB	161.5	185.5	188.5	242.5	241	1.5	8
	30	★	MNS0800X30DB	241.5	265.5	268.5	322.5	321	1.5	8
8.1	5	★	MNS0810LB	42.0	69.5	73.5	128.5	127	1.5	9
	10	□	MNS0810X10DB	82.5	112.5	115.5	170.5	169	1.5	9
	20	□	MNS0810X20DB	163.5	197.5	200.5	255.5	254	1.5	9
	30	□	MNS0810X30DB	244.5	282.5	285.5	340.5	339	1.5	9
8.2	5	★	MNS0820LB	42.5	69.5	73.5	128.5	127	1.5	9
	10	□	MNS0820X10DB	83.5	112.5	115.5	170.5	169	1.5	9
	20	□	MNS0820X20DB	165.5	197.5	200.5	255.5	254	1.5	9
	30	□	MNS0820X30DB	247.5	282.5	285.5	340.5	339	1.5	9
8.3	5	★	MNS0830LB	43.0	69.5	73.5	128.5	127	1.5	9
	10	□	MNS0830X10DB	84.5	112.5	115.5	170.5	169	1.5	9
	20	□	MNS0830X20DB	167.5	197.5	200.5	255.5	254	1.5	9
	30	□	MNS0830X30DB	250.5	282.5	285.5	340.5	339	1.5	9
8.4	5	★	MNS0840LB	43.5	69.5	73.5	128.5	127	1.5	9
	10	□	MNS0840X10DB	85.5	112.5	115.5	170.5	169	1.5	9
	20	□	MNS0840X20DB	169.5	197.5	200.5	255.5	254	1.5	9
	30	□	MNS0840X30DB	253.5	282.5	285.5	340.5	339	1.5	9
8.5	5	★	MNS0850LB	44.0	69.5	73.5	128.5	127	1.5	9
	10	□	MNS0850X10DB	86.5	112.5	115.5	170.5	169	1.5	9
	20	□	MNS0850X20DB	171.5	197.5	200.5	255.5	254	1.5	9
	30	□	MNS0850X30DB	256.5	282.5	285.5	340.5	339	1.5	9
8.6	5	★	MNS0860LB	44.6	73.6	73.6	128.6	127	1.6	9
	10	□	MNS0860X10DB	87.6	118.6	121.6	176.6	175	1.6	9
	20	□	MNS0860X20DB	173.6	208.6	211.6	266.6	265	1.6	9
	30	□	MNS0860X30DB	259.6	298.6	301.6	356.6	355	1.6	9
8.7	5	★	MNS0870LB	45.1	73.6	73.6	128.6	127	1.6	9
	10	□	MNS0870X10DB	88.6	118.6	121.6	176.6	175	1.6	9
	20	□	MNS0870X20DB	175.6	208.6	211.6	266.6	265	1.6	9
	30	□	MNS0870X30DB	262.6	298.6	301.6	356.6	355	1.6	9

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stock in Japan □ : Made to Order

DC (mm)	L/D	Stock TF15	Order Number	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON
8.8	5	★	MNS0880LB	45.6	73.6	73.6	128.6	127	1.6	9
	10	□	MNS0880X10DB	89.6	118.6	121.6	176.6	175	1.6	9
	20	□	MNS0880X20DB	177.6	208.6	211.6	266.6	265	1.6	9
	30	□	MNS0880X30DB	265.6	298.6	301.6	356.6	355	1.6	9
8.9	5	★	MNS0890LB	46.1	73.6	73.6	128.6	127	1.6	9
	10	□	MNS0890X10DB	90.6	118.6	121.6	176.6	175	1.6	9
	20	□	MNS0890X20DB	179.6	208.6	211.6	266.6	265	1.6	9
	30	□	MNS0890X30DB	268.6	298.6	301.6	356.6	355	1.6	9
9.0	5	★	MNS0900LB	46.6	73.6	73.6	128.6	127	1.6	9
	10	★	MNS0900X10DB	91.6	118.6	121.6	176.6	175	1.6	9
	20	★	MNS0900X20DB	181.6	208.6	211.6	266.6	265	1.6	9
	30	★	MNS0900X30DB	271.6	298.6	301.6	356.6	355	1.6	9
9.1	5	★	MNS0910LB	47.2	77.7	81.7	137.7	136	1.7	10
	10	□	MNS0910X10DB	92.7	125.7	128.7	183.7	182	1.7	10
	20	□	MNS0910X20DB	183.7	220.7	223.7	278.7	277	1.7	10
	30	□	MNS0910X30DB	274.7	315.7	318.7	373.7	372	1.7	10
9.2	5	★	MNS0920LB	47.7	77.7	81.7	137.7	136	1.7	10
	10	□	MNS0920X10DB	93.7	125.7	128.7	183.7	182	1.7	10
	20	□	MNS0920X20DB	185.7	220.7	223.7	278.7	277	1.7	10
	30	□	MNS0920X30DB	277.7	315.7	318.7	373.7	372	1.7	10
9.3	5	★	MNS0930LB	48.2	77.7	81.7	137.7	136	1.7	10
	10	□	MNS0930X10DB	94.7	125.7	128.7	183.7	182	1.7	10
	20	□	MNS0930X20DB	187.7	220.7	223.7	278.7	277	1.7	10
	30	□	MNS0930X30DB	280.7	315.7	318.7	373.7	372	1.7	10
9.4	5	★	MNS0940LB	48.7	77.7	81.7	137.7	136	1.7	10
	10	□	MNS0940X10DB	95.7	125.7	128.7	183.7	182	1.7	10
	20	□	MNS0940X20DB	189.7	220.7	223.7	278.7	277	1.7	10
	30	□	MNS0940X30DB	283.7	315.7	318.7	373.7	372	1.7	10
9.5	5	★	MNS0950LB	49.2	77.7	81.7	137.7	136	1.7	10
	10	□	MNS0950X10DB	96.7	125.7	128.7	183.7	182	1.7	10
	20	□	MNS0950X20DB	191.7	220.7	223.7	278.7	277	1.7	10
	30	□	MNS0950X30DB	286.7	315.7	318.7	373.7	372	1.7	10
9.6	5	★	MNS0960LB	49.7	81.7	81.7	137.7	136	1.7	10
	10	□	MNS0960X10DB	97.7	131.7	134.7	189.7	188	1.7	10
	20	□	MNS0960X20DB	193.7	231.7	234.7	289.7	288	1.7	10
	30	□	MNS0960X30DB	289.7	331.7	334.7	389.7	388	1.7	10
9.7	5	★	MNS0970LB	50.3	81.8	81.8	137.8	136	1.8	10
	10	□	MNS0970X10DB	98.8	131.8	134.8	189.8	188	1.8	10
	20	□	MNS0970X20DB	195.8	231.8	234.8	289.8	288	1.8	10
	30	□	MNS0970X30DB	292.8	331.8	334.8	389.8	388	1.8	10
9.8	5	★	MNS0980LB	50.8	81.8	81.8	137.8	136	1.8	10
	10	★	MNS0980X10DB	99.8	131.8	134.8	189.8	188	1.8	10
	20	★	MNS0980X20DB	197.8	231.8	234.8	289.8	288	1.8	10
	30	★	MNS0980X30DB	295.8	331.8	334.8	389.8	388	1.8	10

DC (mm)	L/D	Stock TF15	Order Number	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON
9.9	5	★	MNS0990LB	51.3	81.8	81.8	137.8	136	1.8	10
	10	□	MNS0990X10DB	100.8	131.8	134.8	189.8	188	1.8	10
	20	□	MNS0990X20DB	199.8	231.8	234.8	289.8	288	1.8	10
	30	□	MNS0990X30DB	298.8	331.8	334.8	389.8	388	1.8	10
10.0	5	★	MNS1000LB	51.8	81.8	81.8	137.8	136	1.8	10
	10	★	MNS1000X10DB	101.8	131.8	134.8	189.8	188	1.8	10
	20	★	MNS1000X20DB	201.8	231.8	234.8	289.8	288	1.8	10
	30	★	MNS1000X30DB	301.8	331.8	334.8	389.8	388	1.8	10
10.1	5	★	MNS1010LB	52.3	85.8	89.8	150.8	149	1.8	11
	10	□	MNS1010X10DB	102.8	138.8	141.8	202.8	201	1.8	11
	20	□	MNS1010X20DB	203.8	243.8	246.8	307.8	306	1.8	11
10.2	5	★	MNS1020LB	52.9	85.9	89.9	150.9	149	1.9	11
	10	□	MNS1020X10DB	103.9	138.9	141.9	202.9	201	1.9	11
	20	□	MNS1020X20DB	205.9	243.9	246.9	307.9	306	1.9	11
10.3	5	★	MNS1030LB	53.4	85.9	89.9	150.9	149	1.9	11
	10	□	MNS1030X10DB	104.9	138.9	141.9	202.9	201	1.9	11
	20	□	MNS1030X20DB	207.9	243.9	246.9	307.9	306	1.9	11
10.4	5	★	MNS1040LB	53.9	85.9	89.9	150.9	149	1.9	11
	10	□	MNS1040X10DB	105.9	138.9	141.9	202.9	201	1.9	11
	20	□	MNS1040X20DB	209.9	243.9	246.9	307.9	306	1.9	11
10.5	5	★	MNS1050LB	54.4	85.9	89.9	150.9	149	1.9	11
	10	★	MNS1050X10DB	106.9	138.9	141.9	202.9	201	1.9	11
	20	★	MNS1050X20DB	211.9	243.9	246.9	307.9	306	1.9	11
10.6	5	★	MNS1060LB	54.9	89.9	89.9	150.9	149	1.9	11
	10	□	MNS1060X10DB	107.9	144.9	147.9	208.9	207	1.9	11
	20	□	MNS1060X20DB	213.9	254.9	257.9	318.9	317	1.9	11
10.7	5	★	MNS1070LB	55.4	89.9	89.9	150.9	149	1.9	11
	10	□	MNS1070X10DB	108.9	144.9	147.9	208.9	207	1.9	11
	20	□	MNS1070X20DB	215.9	254.9	257.9	318.9	317	1.9	11
10.8	5	★	MNS1080LB	56.0	90.0	90.0	151.0	149	2.0	11
	10	□	MNS1080X10DB	110.0	145.0	148.0	209.0	207	2.0	11
	20	□	MNS1080X20DB	218.0	255.0	258.0	319.0	317	2.0	11
10.9	5	★	MNS1090LB	56.5	90.0	90.0	151.0	149	2.0	11
	10	□	MNS1090X10DB	111.0	145.0	148.0	209.0	207	2.0	11
	20	□	MNS1090X20DB	220.0	255.0	258.0	319.0	317	2.0	11
11.0	5	★	MNS1100LB	57.0	90.0	90.0	151.0	149	2.0	11
	10	★	MNS1100X10DB	112.0	145.0	148.0	209.0	207	2.0	11
	20	★	MNS1100X20DB	222.0	255.0	258.0	319.0	317	2.0	11
11.1	5	★	MNS1110LB	57.5	94.0	98.0	160.0	158	2.0	12
	10	□	MNS1110X10DB	113.0	152.0	155.0	217.0	215	2.0	12
	20	□	MNS1110X20DB	224.0	267.0	270.0	332.0	330	2.0	12
11.2	5	★	MNS1120LB	58.0	94.0	98.0	160.0	158	2.0	12
	10	□	MNS1120X10DB	114.0	152.0	155.0	217.0	215	2.0	12
	20	□	MNS1120X20DB	226.0	267.0	270.0	332.0	330	2.0	12

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L145
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MNS

DC (mm)	L/D	Stock TF15	Order Number	Dimensions (mm) LU	LCF	LH	OAL	LF	PL	DCON
11.3	5	★	MNS1130LB	58.6	94.1	98.1	160.1	158	2.1	12
	10	□	MNS1130X10DB	115.1	152.1	155.1	217.1	215	2.1	12
	20	□	MNS1130X20DB	228.1	267.1	270.1	332.1	330	2.1	12
11.4	5	★	MNS1140LB	59.1	94.1	98.1	160.1	158	2.1	12
	10	□	MNS1140X10DB	116.1	152.1	155.1	217.1	215	2.1	12
	20	□	MNS1140X20DB	230.1	267.1	270.1	332.1	330	2.1	12
11.5	5	★	MNS1150LB	59.6	94.1	98.1	160.1	158	2.1	12
	10	□	MNS1150X10DB	117.1	152.1	155.1	217.1	215	2.1	12
	20	□	MNS1150X20DB	232.1	267.1	270.1	332.1	330	2.1	12
11.6	5	★	MNS1160LB	60.1	98.1	98.1	160.1	158	2.1	12
	10	□	MNS1160X10DB	118.1	158.1	161.1	223.1	221	2.1	12
	20	□	MNS1160X20DB	234.1	278.1	281.1	343.1	341	2.1	12
11.7	5	★	MNS1170LB	60.6	98.1	98.1	160.1	158	2.1	12
	10	□	MNS1170X10DB	119.1	158.1	161.1	223.1	221	2.1	12
	20	□	MNS1170X20DB	236.1	278.1	281.1	343.1	341	2.1	12
11.8	5	★	MNS1180LB	61.1	98.1	98.1	160.1	158	2.1	12
	10	□	MNS1180X10DB	120.1	158.1	161.1	223.1	221	2.1	12
	20	□	MNS1180X20DB	238.1	278.1	281.1	343.1	341	2.1	12
11.9	5	★	MNS1190LB	61.7	98.2	98.2	160.2	158	2.2	12
	10	□	MNS1190X10DB	121.2	158.2	161.2	223.2	221	2.2	12
	20	□	MNS1190X20DB	240.2	278.2	281.2	343.2	341	2.2	12
12.0	5	★	MNS1200LB	62.2	98.2	98.2	160.2	158	2.2	12
	10	★	MNS1200X10DB	122.2	158.2	161.2	223.2	221	2.2	12
	20	★	MNS1200X20DB	242.2	278.2	281.2	343.2	341	2.2	12
12.1	5	★	MNS1210LB	62.7	102.2	106.2	169.2	167	2.2	13
	10	□	MNS1210X10DB	123.2	165.2	168.2	231.2	229	2.2	13
	20	□	MNS1210X20DB	244.2	290.2	293.2	356.2	354	2.2	13
12.2	5	★	MNS1220LB	63.2	102.2	106.2	169.2	167	2.2	13
	10	□	MNS1220X10DB	124.2	165.2	168.2	231.2	229	2.2	13
	20	□	MNS1220X20DB	246.2	290.2	293.2	356.2	354	2.2	13
12.3	5	★	MNS1230LB	63.7	102.2	106.2	169.2	167	2.2	13
	10	□	MNS1230X10DB	125.2	165.2	168.2	231.2	229	2.2	13
	20	□	MNS1230X20DB	248.2	290.2	293.2	356.2	354	2.2	13
12.4	5	★	MNS1240LB	64.3	102.3	106.3	169.3	167	2.3	13
	10	□	MNS1240X10DB	126.3	165.3	168.3	231.3	229	2.3	13
	20	□	MNS1240X20DB	250.3	290.3	293.3	356.3	354	2.3	13
12.5	5	★	MNS1250LB	64.8	102.3	106.3	169.3	167	2.3	13
	10	□	MNS1250X10DB	127.3	165.3	168.3	231.3	229	2.3	13
	20	□	MNS1250X20DB	252.3	290.3	293.3	356.3	354	2.3	13
12.6	5	★	MNS1260LB	65.3	106.3	106.3	169.3	167	2.3	13
	10	□	MNS1260X10DB	128.3	171.3	174.3	237.3	235	2.3	13
	20	□	MNS1260X20DB	254.3	301.3	304.3	367.3	365	2.3	13
12.7	5	★	MNS1270LB	65.8	106.3	106.3	169.3	167	2.3	13
	10	□	MNS1270X10DB	129.3	171.3	174.3	237.3	235	2.3	13
	20	□	MNS1270X20DB	256.3	301.3	304.3	367.3	365	2.3	13
12.8	5	★	MNS1280LB	66.3	106.3	106.3	169.3	167	2.3	13
	10	□	MNS1280X10DB	130.3	171.3	174.3	237.3	235	2.3	13
	20	□	MNS1280X20DB	258.3	301.3	304.3	367.3	365	2.3	13
12.9	5	★	MNS1290LB	66.8	106.3	106.3	169.3	167	2.3	13
	10	□	MNS1290X10DB	131.3	171.3	174.3	237.3	235	2.3	13
	20	□	MNS1290X20DB	260.3	301.3	304.3	367.3	365	2.3	13
13.0	5	★	MNS1300LB	67.4	106.4	106.4	169.4	167	2.4	13
	10	★	MNS1300X10DB	132.4	171.4	174.4	237.4	235	2.4	13
	20	★	MNS1300X20DB	262.4	301.4	304.4	367.4	365	2.4	13
13.1	5	★	MNS1310LB	67.9	110.4	114.4	178.4	176	2.4	14
	10	□	MNS1310X10DB	133.4	178.4	181.4	245.4	243	2.4	14
	20	□	MNS1310X20DB	264.4	313.4	316.4	380.4	378	2.4	14
13.2	5	★	MNS1320LB	68.4	110.4	114.4	178.4	176	2.4	14
	10	□	MNS1320X10DB	134.4	178.4	181.4	245.4	243	2.4	14
	20	□	MNS1320X20DB	266.4	313.4	316.4	380.4	378	2.4	14
13.3	5	★	MNS1330LB	68.9	110.4	114.4	178.4	176	2.4	14
	10	□	MNS1330X10DB	135.4	178.4	181.4	245.4	243	2.4	14
	20	□	MNS1330X20DB	268.4	313.4	316.4	380.4	378	2.4	14
13.4	5	★	MNS1340LB	69.4	110.4	114.4	178.4	176	2.4	14
	10	□	MNS1340X10DB	136.4	178.4	181.4	245.4	243	2.4	14
	20	□	MNS1340X20DB	270.4	313.4	316.4	380.4	378	2.4	14
13.5	5	★	MNS1350LB	70.0	110.5	114.5	178.5	176	2.5	14
	10	□	MNS1350X10DB	137.5	178.5	181.5	245.5	243	2.5	14
	20	□	MNS1350X20DB	272.5	313.5	316.5	380.5	378	2.5	14
13.6	5	★	MNS1360LB	70.5	114.5	114.5	178.5	176	2.5	14
	10	□	MNS1360X10DB	138.5	184.5	187.5	251.5	249	2.5	14
	20	□	MNS1360X20DB	274.5	324.5	327.5	391.5	389	2.5	14
13.7	5	★	MNS1370LB	71.0	114.5	114.5	178.5	176	2.5	14
	10	□	MNS1370X10DB	139.5	184.5	187.5	251.5	249	2.5	14
	20	□	MNS1370X20DB	276.5	324.5	327.5	391.5	389	2.5	14
13.8	5	★	MNS1380LB	71.5	114.5	114.5	178.5	176	2.5	14
	10	□	MNS1380X10DB	140.5	184.5	187.5	251.5	249	2.5	14
	20	□	MNS1380X20DB	278.5	324.5	327.5	391.5	389	2.5	14
13.9	5	★	MNS1390LB	72.0	114.5	114.5	178.5	176	2.5	14
	10	□	MNS1390X10DB	141.5	184.5	187.5	251.5	249	2.5	14
	20	□	MNS1390X20DB	280.5	324.5	327.5	391.5	389	2.5	14
14.0	5	★	MNS1400LB	72.5	114.5	114.5	178.5	176	2.5	14
	10	★	MNS1400X10DB	142.5	184.5	187.5	251.5	249	2.5	14
	20	★	MNS1400X20DB	282.5	324.5	327.5	391.5	389	2.5	14

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stock in Japan □ : Made to Order

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L147

RECOMMENDED CUTTING CONDITIONS

■ LB Type

Workpiece		Aluminum Alloy (Si<5%) AISI A6061, A7075 etc.		Austenitic Stainless Steel (5%≤Si≤10%) ASTM 333.0 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1181	**3.0**	395 (310—460)	.0039 (.0043—.0063)	395 (310—460)	.0059 (.0063—.0083)
.1575	**4.0**	395 (310—460)	.0059 (.0051—.0079)	395 (310—460)	.0079 (.0079—.0106)
.1969	**5.0**	395 (310—460)	.0079 (.0067—.0098)	395 (310—460)	.0098 (.0098—.0130)
.2480	**6.3**	490 (395—560)	.0098 (.0083—.0126)	490 (395—560)	.0138 (.0126—.0165)
.3150	**8.0**	490 (395—560)	.0118 (.0106—.0157)	490 (395—560)	.0177 (.0157—.0209)
.3937	**10.0**	490 (395—560)	.0157 (.0130—.0197)	490 (395—560)	.0217 (.0197—.0264)
.4724	**12.0**	655 (525—755)	.0197 (.0157—.0236)	655 (525—755)	.0276 (.0236—.0315)
.5512	**14.0**	655 (525—755)	.0197 (.0157—.0236)	655 (525—755)	.0276 (.0236—.0315)

Workpiece		Aluminum Alloy (Si>10%) ASTM 380.0, A390.0 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm		
.1181	**3.0**	395 (310—460)	.0059 (.0063—.0083)
.1575	**4.0**	395 (310—460)	.0079 (.0079—.0106)
.1969	**5.0**	395 (310—460)	.0098 (.0098—.0130)
.2480	**6.3**	490 (395—560)	.0138 (.0126—.0165)
.3150	**8.0**	490 (395—560)	.0177 (.0157—.0209)
.3937	**10.0**	490 (395—560)	.0217 (.0197—.0264)
.4724	**12.0**	655 (525—755)	.0276 (.0236—.0315)
.5512	**14.0**	655 (525—755)	.0276 (.0236—.0315)

Note 1) When using the drill with a length over L/D 10, it is necessary to use a prep hole as the pilot. (If no prep-hole is used then drill breakage can occur)
Note 2) For pilot hole drilling, Mitsubishi Materials MNS-LB, MAE-MB or MAS-MB drill is recommended.

MNS

RECOMMENDED CUTTING CONDITIONS

■ DB Type

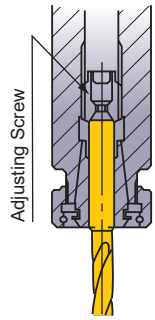
Workpiece		Aluminum Alloy (Si<5%) AISI A6061, A7075 etc.		Austenitic Stainless Steel (5%≤Si≤10%) ASTM 333.0 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.1181	**3.0**	295 (230—330)	.0039 (.0043—.0063)	295 (230—330)	.0059 (.0063—.0083)
.1575	**4.0**	295 (230—330)	.0059 (.0051—.0079)	295 (230—330)	.0079 (.0079—.0106)
.1969	**5.0**	295 (230—330)	.0079 (.0067—.0098)	295 (230—330)	.0098 (.0098—.0130)
.2480	**6.3**	395 (310—460)	.0098 (.0083—.0126)	395 (310—460)	.0138 (.0126—.0165)
.3150	**8.0**	395 (310—460)	.0118 (.0106—.0157)	395 (310—460)	.0177 (.0157—.0209)
.3937	**10.0**	395 (310—460)	.0157 (.0130—.0197)	395 (310—460)	.0217 (.0197—.0264)
.4724	**12.0**	525 (410—590)	.0197 (.0157—.0236)	525 (410—590)	.0276 (.0236—.0315)
.5512	**14.0**	525 (410—590)	.0197 (.0157—.0236)	525 (410—590)	.0276 (.0236—.0315)

Workpiece		Aluminum Alloy (Si>10%) ASTM 383.0, A390.0 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm		
.1181	**3.0**	295 (230—330)	.0059 (.0063—.0083)
.1575	**4.0**	295 (230—330)	.0079 (.0079—.0106)
.1969	**5.0**	295 (230—330)	.0098 (.0098—.0130)
.2480	**6.3**	395 (310—460)	.0138 (.0126—.0165)
.3150	**8.0**	395 (310—460)	.0177 (.0157—.0209)
.3937	**10.0**	395 (310—460)	.0217 (.0197—.0264)
.4724	**12.0**	525 (410—590)	.0276 (.0236—.0315)
.5512	**14.0**	525 (410—590)	.0276 (.0236—.0315)

Note 1) When using the drill with a length over L/D 10, it is necessary to use a prep hole as the pilot. (If no prep-hole is used then drill breakage can occur)
Note 2) For pilot hole drilling, Mitsubishi Materials MNS-LB, MAE-MB or MAS-MB drill is recommended.
Note 3) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

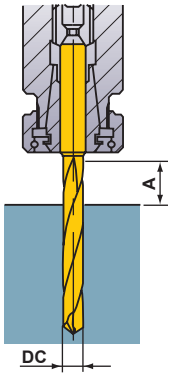
■ OPERATIONAL GUIDANCE FOR THE MNS...LB DRILL

Drill Holding



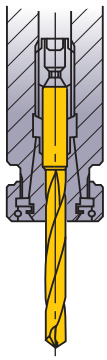
Thrust bearing type collet chuck holds the drill securely.

Drill Length



A ≥ DC x 1.5

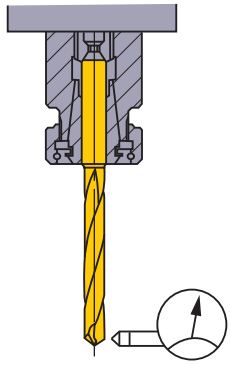
Drill Installation



NG

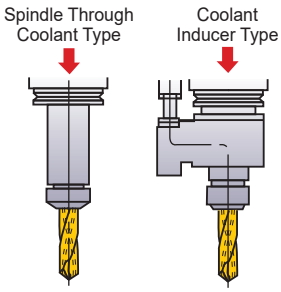
Do not clamp on the flutes.

Installation Tolerance



Runout ≤ .001″

Through Coolant Type



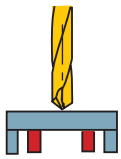
Recommended coolant pressure: 70 - 1015 PSI (0.5 - 7MPa).

Coolant Handling

1) Small particles of swarf will jam in the oil hole of small diameter drills. Always use a fine mesh filter as a preventative measure.

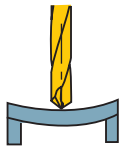
2) Dirt and dust particles adhere to the oil in old coolant and prevent an efficient flow. Regular coolant exchange is recommended.

Thin Workpiece



Support the Workpiece

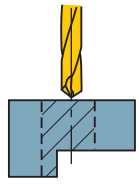
OK



If Bending Occurs

NG

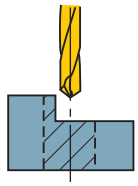
Interrupted Cutting



One Process

OK

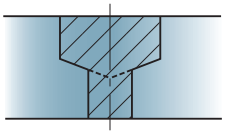
①Lower the feed when drilling the interrupted part.



Requires Prior Machining

①Spot face with an end mill prior to drilling.

Stepped Holes

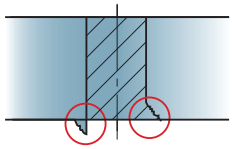


①Divide the machining into two processes.

②Drill the larger hole first.

*Tools for chamfering and spot facing can be produced to order.

Burring and Workpiece Chipping



①Lower the feed rate when breaking through.

②Add a chamfer.

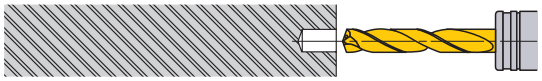
③Change the point angle.

MNS...DB

■ OPERATIONAL GUIDANCE FOR THE MNS...DB DRILL

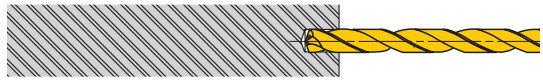
Flat Face Drilling ●Drilling a blind hole

■ 1. Drilling a Pilot Hole



①Use a drill with the same or larger point angle than the MNS...DB type. Mitsubishi type MNS-LB, MAE-MB or MAS-MB drill is recommended.
②Ensure a high precision hole is drilled for the pilot.
③Drill depth : Approx 1DC or deeper.
(Adjust the pilot hole depth according to the length of the MNS...DB type.)

■ 2. Initial Cutting with the Long Type Drill

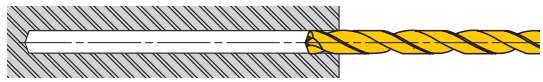


①Penetrate the pilot hole at a low revolution. (Cutting speed 65-100 SFM, feed rate .008-.012 IPR)
②Stop the long type drill .039-.118 inch short of the pilot hole bottom.

■ 3. Drill the Deep Hole

①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

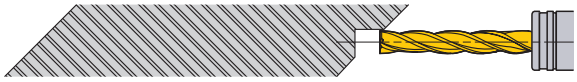
■ 4. Drill Retraction



①After drilling, lower the cutting revolution about .039-.079 inch short of the hole end. (Cutting speed of around 65-100 SFM)
②Retract the drill to the pilot hole depth starting point at a feed rate of 120 inch/min.
③Finally clear the hole at a cutting speed of 65-100 SFM and feed rate of .008-.012 IPR.

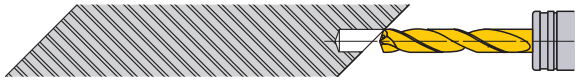
Irregular Face Drilling ●Drilling and breaking through on irregular faces or angles

■ 1. Spot Facing



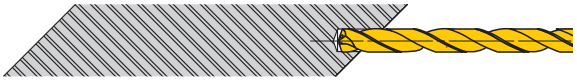
①Machine a flat on the irregular face by using an MFE (flat bottom drill) or an end mill capable of spot facing. Make the spot face diameter the same size as the required deep hole diameter.

■ 2. Drilling a Pilot Hole



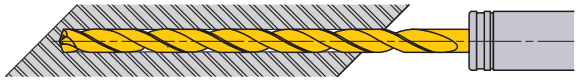
①Use a drill with the same or larger point angle than the super long type. Mitsubishi type MNS-LB, MAE-MB or MAS-MB drill is recommended.
②Ensure a high precision hole is drilled for the pilot.
③Drill depth : Approx 1DC or deeper.
(Adjust the pilot hole depth according to the length of the super long type.)

■ 3. Initial Cutting with the Long Type Drill



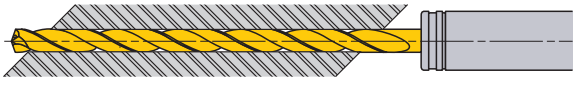
①Penetrate the pilot hole at a low revolution. (Cutting speed 65-100 SFM, feed rate .008-.012 IPR)
②Stop the long type drill .039-.118 inch short of the pilot hole bottom.

■ 4. Drill the Deep Hole



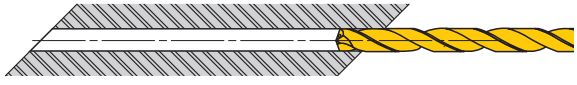
①Start cutting at the recommended speed and feed with a non-peck (continuous feed) cycle.

■ 5. Breaking Through



①When breaking through, the cutting edge can be damaged.
②A feed rate of .002-.004 IPR is recommended.

■ 6. Drill Retraction



①Finally clear the hole at a cutting speed of 65-100 SFM.
②Retract the drill to the pilot hole depth starting point at a feed rate of 120 IPM.

Memo

MAS

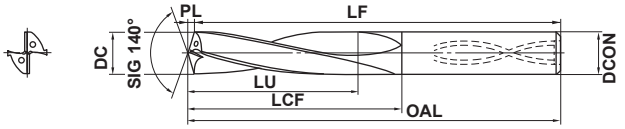
- Specialized in aluminum and cast iron drilling.
- High hole accuracy.
- Pre-hole drilling for rolled tap.
- Helical coolant hole enables high speed machining.

P | M | **K** | **N** | S | H

INCH STANDARD

L/D=3

Internal Coolant



.1250≤DC≤.2344	.2500≤DC≤.3906	.4062≤DC≤.7031	.7188≤DC≤.7812
+0.00020 0	+0.00020 0	+0.00020 0	+0.00020 0
.1250≤DCON≤.2362	**.2500≤DCON≤.3937**	**.4062≤DCON≤.7087**	**.7188≤DCON≤.7874**
0 −0.00031	0 −0.00035	0 −0.00043	0 −0.00051

Note 1) MAS drills bigger than .2031" have a recess in the end face.
Note 2) MAS drills are suitable for use with shrink fit holders.

DC (inch)	Order Number	Stock HTi10	LU	LCF	OAL	LF	PL	DCON	Rolled Thread Tap Size
.1250	MAS01250MB	●	.398	.968	2.543	2.520	.023	.1575	
.1406	MAS01406MB	●	.447	1.128	2.703	2.677	.026	.1575	
.1495	MAS01495MB	●	.475	1.129	2.704	2.677	.027	.1575	10-24NC
.1563	MAS01563MB	●	.497	1.130	2.705	2.677	.028	.1575	
.1590	MAS01590MB	●	.506	1.249	2.824	2.795	.029	.1969	10-32NF
.1719	MAS01719MB	●	.547	1.251	2.826	2.795	.031	.1969	
.1875	MAS01875MB	●	.596	1.333	2.908	2.874	.034	.1969	
.2031	MAS02031MB	●	.646	1.454	3.029	2.992	.037	.2362	
.2165	MAS02165MB	●	.688	1.456	3.031	2.992	.039	.2362	
.2188	MAS02188MB	●	.696	1.575	3.150	3.110	.040	.2362	
.2344	MAS02344MB	●	.745	1.578	3.153	3.110	.043	.2362	
.2500	MAS02500MB	●	.795	1.700	3.353	3.307	.046	.2756	1/16-27NS
.2570	MAS02570MB	●	.817	1.701	3.354	3.307	.047	.2756	5/16-18NC
.2656	MAS02656MB	●	.845	1.702	3.355	3.307	.048	.2756	
.2720	MAS02720MB	●	.865	1.704	3.357	3.307	.050	.2756	5/16-24NF
.2812	MAS02812MB	●	.894	1.941	3.594	3.543	.051	.3150	
.2969	MAS02969MB	●	.944	1.944	3.597	3.543	.054	.3150	
.3125	MAS03125MB	●	.994	1.947	3.600	3.543	.057	.3150	3/8-16NC
.3281	MAS03281MB	●	1.043	2.029	3.761	3.701	.060	.3543	1/8-27NPT
.3320	MAS03320MB	●	1.056	2.029	3.761	3.701	.060	.3543	3/8-24NF
.3438	MAS03438MB	●	1.093	2.032	3.764	3.701	.063	.3543	
.3594	MAS03594MB	●	1.143	2.152	3.884	3.819	.065	.3937	
.3680	MAS03680MB	●	1.170	2.154	3.886	3.819	.067	.3937	7/16-14NC
.3750	MAS03750MB	●	1.193	2.155	3.887	3.819	.068	.3937	
.3906	MAS03906MB	●	1.242	2.158	3.890	3.819	.071	.3937	7/16-20NF
.4062	MAS04062MB	●	1.292	2.239	4.050	3.976	.074	.4331	
.4219	MAS04219MB	●	1.342	2.242	4.053	3.976	.077	.4331	1/2-13, 1/2-12
.4375	MAS04375MB	●	1.391	2.442	4.253	4.173	.080	.4724	1/4-18NPT
.4531	MAS04531MB	●	1.441	2.444	4.255	4.173	.082	.4724	1/2-20, 1/4-18NS
.4688	MAS04688MB	●	1.491	2.447	4.258	4.173	.085	.4724	
.4844	MAS04844MB	●	1.540	2.647	4.616	4.528	.088	.5118	9/16-12NC
.5000	MAS05000MB	●	1.590	2.650	4.619	4.528	.091	.5118	
.5118	MAS05118MB	●	1.628	2.652	4.621	4.528	.093	.5118	
.5156	MAS05156MB	●	1.640	2.850	4.818	4.724	.094	.5512	9/16-18NF
.5312	MAS05312MB	●	1.689	2.853	4.821	4.724	.097	.5512	5/8-11NC
.5469	MAS05469MB	●	1.739	2.856	4.824	4.724	.100	.5512	
.5625	MAS05625MB	●	1.789	2.937	5.220	5.118	.102	.5906	3/8-18NPT
.5781	MAS05781MB	●	1.838	2.940	5.223	5.118	.105	.5906	5/8-18NF
.5937	MAS05937MB	●	1.888	3.100	5.384	5.276	.108	.6299	3/8-18NS
.6094	MAS06094MB	●	1.938	3.103	5.387	5.276	.111	.6299	
.6250	MAS06250MB	●	1.988	3.106	5.390	5.276	.114	.6299	
.6406	MAS06406MB	●	2.037	3.267	5.550	5.433	.117	.6693	
.6563	MAS06563MB	●	2.087	3.269	5.552	5.433	.119	.6693	3/4-10NC
.6718	MAS06718MB	●	2.136	3.468	5.752	5.630	.122	.7087	
.6875	MAS06875MB	●	2.186	3.471	5.755	5.630	.125	.7087	3/4-16NF
.7031	MAS07031MB	●	2.236	3.474	5.758	5.630	.128	.7087	1/2-14NPT
.7188	MAS07188MB	●	2.286	3.674	5.958	5.827	.131	.7480	
.7344	MAS07344MB	●	2.335	3.677	5.961	5.827	.134	.7480	7/8-9, 1/2-14NS
.7500	MAS07500MB	●	2.385	3.877	6.161	6.024	.137	.7874	
.7656	MAS07656MB	●	2.435	3.879	6.163	6.024	.139	.7874	
.7812	MAS07812MB	●	2.484	3.882	6.166	6.024	.142	.7874	

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

● : USA Stock

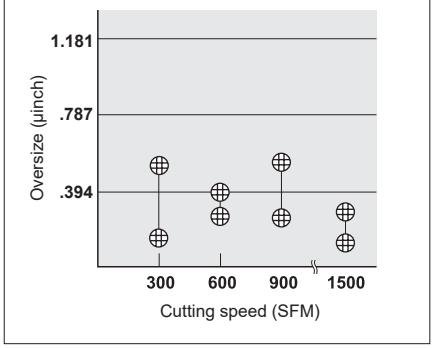
RECOMMENDED CUTTING CONDITIONS

	Workpiece Material	Drill Dia. **ϕ.1250" – ϕ.2344"**		Drill Dia. **ϕ.2500" – ϕ.3906"**		Drill Dia. **ϕ.4062" – ϕ.7812"**	
		Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)
N	Aluminum Alloy Casting	330 (195—490)	.006 (.002—.012)	390 (260—555)	.008 (.004—.012)	490 (330—655)	.010 (.004—.016)
	Aluminum Alloy Die Casting	390 (260—555)	.005 (.002—.010)	490 (330—590)	.006 (.002—.010)	525 (390—655)	.008 (.004—.012)
K	Gray Cast Iron	195 (130—260)	.006 (.004—.008)	260 (195—360)	.008 (.004—.012)	330 (230—425)	.012 (.008—.016)
	Ductile Cast Iron	145 (100—195)	.004 (.002—.006)	195 (130—260)	.005 (.002—.008)	260 (195—330)	.008 (.004—.012)

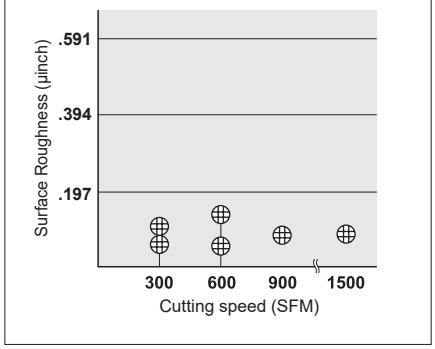
■ MACHINED HOLE ACCURACY

Tool : MAS1000MB Workpiece Material : 330 Aluminum Feed : .008 IPR Drilled Depth : 1.18 inch (Through hole) WSO (10%)

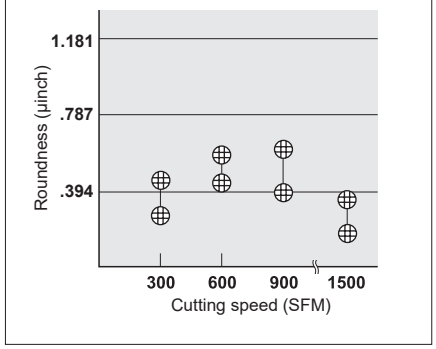
Oversize



Surface Roughness



Roundness



MAE/MAS

- Specialized in aluminum and cast iron drilling.
- High hole accuracy.
- Pre-hole drilling for rolled tap.
- Helical coolant hole enables high speed machining.

UWC | 140° | N

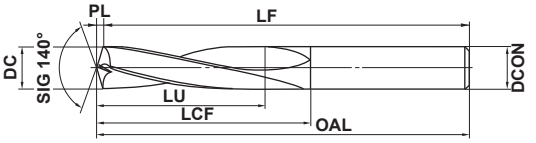
MAS only

P | M | K | N | S | H

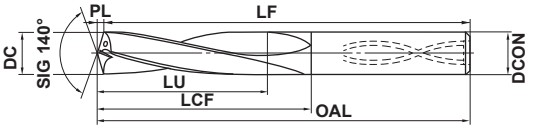
DC=3	3<DC≤6	6<DC≤10	10<DC≤16
+0.005 0	+0.005 0	+0.005 0	+0.005 0
DCON=3	**3<DCON≤6**	**6<DCON≤10**	**10<DCON≤16**
0 −0.006	0 −0.008	0 −0.009	0 −0.011

METRIC STANDARD

MAE (External Coolant)



MAS (Internal Coolant)



Note 1) MAS type larger than ϕ5.0mm have a recess in the shank end face.
Note 2) MAE/MAS type can be used for shrink fit holders.

DC (mm)	L/D	Coolant (Int./Ext.)	Stock HTi10	Order Number	Dimensions (mm) LU	LCF	OAL	LF	PL	DCON
3.0	3	Ext.	★	MAE0300MB	9.5	21.5	61.5	61	0.5	3
	3	Int.	□	MAS0300MB	9.9	21.5	61.5	61	0.5	3
	6	Int.	★	MAS0300LB	10.2	30.5	70.5	70	0.5	3
3.1	3	Ext.	★	MAE0310MB	10.5	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0310MB	10.8	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0310LB	11.1	34.6	74.6	74	0.6	4
3.2	3	Ext.	★	MAE0320MB	11.5	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0320MB	11.7	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0320LB	11.8	34.6	74.6	74	0.6	4
3.3	3	Ext.	★	MAE0330MB	12.1	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0330MB	12.4	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0330LB	12.7	34.6	74.6	74	0.6	4
3.4	3	Ext.	★	MAE0340MB	13.0	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0340MB	13.4	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0340LB	13.7	34.6	74.6	74	0.6	4
3.5	3	Ext.	★	MAE0350MB	14.0	24.6	64.6	64	0.6	4
	3	Int.	□	MAS0350MB	14.3	24.6	64.6	64	0.6	4
	6	Int.	★	MAS0350LB	14.6	34.6	74.6	74	0.6	4
3.6	3	Ext.	★	MAE0360MB	15.0	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0360MB	15.3	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0360LB	15.6	40.7	80.7	80	0.7	4
3.65	3	Ext.	★	*MAE0365MB	15.9	28.7	68.7	68	0.7	4
	3	Int.	□	*MAS0365MB	16.2	28.7	68.7	68	0.7	4
	6	Int.	★	*MAS0365LB	16.5	40.7	80.7	80	0.7	4
3.7	3	Ext.	★	MAE0370MB	16.9	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0370MB	17.2	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0370LB	17.5	40.7	80.7	80	0.7	4
3.8	3	Ext.	★	MAE0380MB	17.8	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0380MB	18.1	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0380LB	18.5	40.7	80.7	80	0.7	4
3.9	3	Ext.	★	MAE0390MB	18.8	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0390MB	19.1	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0390LB	19.4	40.7	80.7	80	0.7	4
4.0	3	Ext.	★	MAE0400MB	19.7	28.7	68.7	68	0.7	4
	3	Int.	□	MAS0400MB	20.0	28.7	68.7	68	0.7	4
	6	Int.	★	MAS0400LB	20.4	40.7	80.7	80	0.7	4
4.1	3	Ext.	★	MAE0410MB	20.7	31.7	71.7	71	0.7	5
	3	Int.	□	MAS0410MB	21.0	31.7	71.7	71	0.7	5
	6	Int.	★	MAS0410LB	21.3	44.7	84.7	84	0.7	5
4.2	3	Ext.	★	MAE0420MB	21.6	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0420MB	22.0	31.8	71.8	71	0.8	5
	6	Int.	★	MAS0420LB	22.3	44.8	84.8	84	0.8	5
4.3	3	Ext.	★	MAE0430MB	22.6	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0430MB	22.9	31.8	71.8	71	0.8	5
	6	Int.	★	MAS0430LB	23.2	44.8	84.8	84	0.8	5
4.4	3	Ext.	★	MAE0440MB	23.4	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0440MB	23.5	31.8	71.8	71	0.8	5
	6	Int.	★	MAS0440LB	23.9	44.8	84.8	84	0.8	5
4.5	3	Ext.	★	MAE0450MB	24.2	31.8	71.8	71	0.8	5
	3	Int.	□	MAS0450MB	24.5	31.8	71.8	71	0.8	5
	6	Int.	★	MAS0450LB	24.8	44.8	84.8	84	0.8	5
4.6	3	Ext.	★	*MAE0460MB	25.1	33.8	73.8	73	0.8	5
	3	Int.	□	*MAS0460MB	25.5	33.8	73.8	73	0.8	5
	6	Int.	★	*MAS0460LB	25.8	48.8	88.8	88	0.8	5
4.7	3	Ext.	★	MAE0470MB	26.1	33.9	73.9	73	0.9	5
	3	Int.	□	MAS0470MB	26.4	33.9	73.9	73	0.9	5
	6	Int.	★	MAS0470LB	26.7	48.9	88.9	88	0.9	5
4.8	3	Ext.	★	MAE0480MB	27.0	33.9	73.9	73	0.9	5
	3	Int.	□	MAS0480MB	27.4	33.9	73.9	73	0.9	5
	6	Int.	★	MAS0480LB	27.7	48.9	88.9	88	0.9	5

★ : Standard hole size for rolled thread tap.

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

DC (mm)	L/D	Coolant (Int./Ext.)	Stock	Order Number	Dimensions (mm)					
			HTi10		LU	LCF	OAL	LF	PL	DCON
4.9	3	Ext.	★	MAE0490MB	28.0	33.9	73.9	73	0.9	5
	3	Int.	□	MAS0490MB	28.3	33.9	73.9	73	0.9	5
	6	Int.	★	MAS0490LB	28.6	48.9	88.9	88	0.9	5
5.0	3	Ext.	★	MAE0500MB	29.0	33.9	73.9	73	0.9	5
	3	Int.	★	MAS0500MB	29.3	33.9	73.9	73	0.9	5
	6	Int.	★	MAS0500LB	29.3	48.9	88.9	88	0.9	5
5.1	3	Ext.	★	MAE0510MB	29.6	36.9	76.9	76	0.9	6
	3	Int.	□	MAS0510MB	29.9	36.9	76.9	76	0.9	6
	6	Int.	★	MAS0510LB	30.2	52.9	92.9	92	0.9	6
5.2	3	Ext.	★	MAE0520MB	30.5	36.9	76.9	76	0.9	6
	3	Int.	□	MAS0520MB	30.9	36.9	76.9	76	0.9	6
	6	Int.	★	MAS0520LB	31.2	52.9	92.9	92	0.9	6
5.3	3	Ext.	★	MAE0530MB	31.5	37.0	77.0	76	1.0	6
	3	Int.	□	MAS0530MB	31.8	37.0	77.0	76	1.0	6
	6	Int.	★	MAS0530LB	32.1	53.0	93.0	92	1.0	6
5.4	3	Ext.	★	MAE0540MB	32.5	37.0	77.0	76	1.0	6
	3	Int.	□	MAS0540MB	32.8	37.0	77.0	76	1.0	6
	6	Int.	★	MAS0540LB	33.1	53.0	93.0	92	1.0	6
5.5	3	Ext.	★	*MAE0550MB	33.4	37.0	77.0	76	1.0	6
	3	Int.	★	*MAS0550MB	33.7	37.0	77.0	76	1.0	6
	6	Int.	★	*MAS0550LB	34.0	53.0	93.0	92	1.0	6
5.6	3	Ext.	★	MAE0560MB	34.4	40.0	80.0	79	1.0	6
	3	Int.	□	MAS0560MB	34.7	40.0	80.0	79	1.0	6
	6	Int.	★	MAS0560LB	35.0	58.0	98.0	97	1.0	6
5.7	3	Ext.	★	MAE0570MB	35.2	40.0	80.0	79	1.0	6
	3	Int.	□	MAS0570MB	35.3	40.0	80.0	79	1.0	6
	6	Int.	★	MAS0570LB	35.6	58.0	98.0	97	1.0	6
5.8	3	Ext.	★	MAE0580MB	36.0	40.1	80.1	79	1.1	6
	3	Int.	□	MAS0580MB	36.3	40.1	80.1	79	1.1	6
	6	Int.	★	MAS0580LB	36.6	58.1	98.1	97	1.1	6
5.9	3	Ext.	★	MAE0590MB	36.9	40.1	80.1	79	1.1	6
	3	Int.	□	MAS0590MB	37.2	40.1	80.1	79	1.1	6
	6	Int.	★	MAS0590LB	37.5	58.1	98.1	97	1.1	6
6.0	3	Ext.	★	MAE0600MB	37.9	40.1	80.1	79	1.1	6
	3	Int.	★	MAS0600MB	38.2	40.1	80.1	79	1.1	6
	6	Int.	★	MAS0600LB	38.5	58.1	98.1	97	1.1	6
6.1	3	Ext.	★	MAE0610MB	38.8	43.1	85.1	84	1.1	7
	3	Int.	□	MAS0610MB	39.1	43.1	85.1	84	1.1	7
	6	Int.	★	MAS0610LB	39.5	63.1	105.1	104	1.1	7
6.2	3	Ext.	★	MAE0620MB	39.8	43.1	85.1	84	1.1	7
	3	Int.	□	MAS0620MB	40.1	43.1	85.1	84	1.1	7
	6	Int.	★	MAS0620LB	40.4	63.1	105.1	104	1.1	7
6.3	3	Ext.	★	MAE0630MB	40.7	43.1	85.1	84	1.1	7
	3	Int.	□	MAS0630MB	41.0	43.1	85.1	84	1.1	7
	6	Int.	★	MAS0630LB	41.3	63.1	105.1	104	1.1	7
6.4	3	Ext.	★	MAE0640MB	41.4	43.2	85.2	84	1.2	7
	3	Int.	□	MAS0640MB	41.7	43.2	85.2	84	1.2	7
	6	Int.	★	MAS0640LB	42.0	63.2	105.2	104	1.2	7
6.5	3	Ext.	★	MAE0650MB	42.3	43.2	85.2	84	1.2	7
	3	Int.	★	MAS0650MB	42.6	43.2	85.2	84	1.2	7
	6	Int.	★	MAS0650LB	43.0	63.2	105.2	104	1.2	7
6.6	3	Ext.	★	MAE0660MB	43.3	43.2	85.2	84	1.2	7
	3	Int.	□	MAS0660MB	43.6	43.2	85.2	84	1.2	7
	6	Int.	★	MAS0660LB	43.9	66.2	108.2	107	1.2	7
6.7	3	Ext.	★	MAE0670MB	44.2	43.2	85.2	84	1.2	7
	3	Int.	□	MAS0670MB	44.5	43.2	85.2	84	1.2	7
	6	Int.	★	MAS0670LB	44.9	66.2	108.2	107	1.2	7
6.8	3	Ext.	★	MAE0680MB	45.2	43.2	85.2	84	1.2	7
	3	Int.	★	MAS0680MB	45.5	43.2	85.2	84	1.2	7
	6	Int.	★	MAS0680LB	45.8	66.2	108.2	107	1.2	7
6.9	3	Ext.	★	MAE0690MB	46.1	43.3	85.3	84	1.3	7
	3	Int.	□	MAS0690MB	46.5	43.3	85.3	84	1.3	7
	6	Int.	★	MAS0690LB	46.8	66.3	108.3	107	1.3	7
7.0	3	Ext.	★	MAE0700MB	47.1	43.3	85.3	84	1.3	7
	3	Int.	★	MAS0700MB	47.4	43.3	85.3	84	1.3	7
	6	Int.	★	MAS0700LB	47.6	66.3	108.3	107	1.3	7
7.1	3	Ext.	★	MAE0710MB	47.7	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0710MB	48.0	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0710LB	48.4	69.3	111.3	110	1.3	8
7.2	3	Ext.	★	MAE0720MB	48.7	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0720MB	49.0	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0720LB	49.3	69.3	111.3	110	1.3	8
7.3	3	Ext.	★	MAE0730MB	49.6	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0730MB	50.0	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0730LB	50.3	69.3	111.3	110	1.3	8
7.35	3	Ext.	★	*MAE0735MB	50.6	49.3	91.3	90	1.3	8
	3	Int.	★	*MAS0735MB	50.9	49.3	91.3	90	1.3	8
	6	Int.	★	*MAS0735LB	18.5	69.3	111.3	110	1.3	8
7.4	3	Ext.	★	MAE0740MB	9.5	49.3	91.3	90	1.3	8
	3	Int.	□	MAS0740MB	19.2	49.3	91.3	90	1.3	8
	6	Int.	★	MAS0740LB	9.9	69.3	111.3	110	1.3	8
7.5	3	Ext.	★	MAE0750MB	19.8	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0750MB	10.2	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0750LB	20.4	69.4	111.4	110	1.4	8
7.6	3	Ext.	★	MAE0760MB	10.5	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0760MB	21.0	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0760LB	10.8	73.4	115.4	114	1.4	8
7.7	3	Ext.	★	MAE0770MB	21.6	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0770MB	11.1	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0770LB	22.3	73.4	115.4	114	1.4	8

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L157

MAE/MAS

DC (mm)	L/D	Coolant (Int./Ext.)	Stock HTi10	Order Number	Dimensions (mm) LU	LCF	OAL	LF	PL	DCON
7.8	3	Ext.	★	MAE0780MB	11.5	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0780MB	22.6	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0780LB	11.7	73.4	115.4	114	1.4	8
7.9	3	Ext.	★	MAE0790MB	22.9	49.4	91.4	90	1.4	8
	3	Int.	□	MAS0790MB	11.8	49.4	91.4	90	1.4	8
	6	Int.	★	MAS0790LB	23.5	73.4	115.4	114	1.4	8
8.0	3	Ext.	★	MAE0800MB	12.1	49.5	91.5	90	1.5	8
	3	Int.	★	MAS0800MB	24.1	49.5	91.5	90	1.5	8
	6	Int.	★	MAS0800LB	12.4	73.5	115.5	114	1.5	8
8.1	3	Ext.	★	MAE0810MB	24.7	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0810MB	12.7	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0810LB	25.3	76.5	120.5	119	1.5	9
8.2	3	Ext.	★	MAE0820MB	13.0	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0820MB	26.0	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0820LB	13.4	76.5	120.5	119	1.5	9
8.3	3	Ext.	★	MAE0830MB	26.6	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0830MB	13.7	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0830LB	27.2	76.5	120.5	119	1.5	9
8.4	3	Ext.	★	MAE0840MB	14.0	51.5	95.5	94	1.5	9
	3	Int.	□	MAS0840MB	27.8	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0840LB	14.3	76.5	120.5	119	1.5	9
8.5	3	Ext.	★	MAE0850MB	28.4	51.5	95.5	94	1.5	9
	3	Int.	★	MAS0850MB	14.6	51.5	95.5	94	1.5	9
	6	Int.	★	MAS0850LB	29.1	76.5	120.5	119	1.5	9
8.6	3	Ext.	★	MAE0860MB	15.0	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0860MB	29.7	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0860LB	15.3	78.6	122.6	121	1.6	9
8.7	3	Ext.	★	MAE0870MB	30.3	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0870MB	15.6	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0870LB	30.9	78.6	122.6	121	1.6	9
8.8	3	Ext.	★	MAE0880MB	15.9	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0880MB	31.5	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0880LB	16.2	78.6	122.6	121	1.6	9
8.9	3	Ext.	★	MAE0890MB	32.1	51.6	95.6	94	1.6	9
	3	Int.	□	MAS0890MB	16.5	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0890LB	32.8	78.6	122.6	121	1.6	9
9.0	3	Ext.	★	MAE0900MB	16.9	51.6	95.6	94	1.6	9
	3	Int.	★	MAS0900MB	33.4	51.6	95.6	94	1.6	9
	6	Int.	★	MAS0900LB	17.2	78.6	122.6	121	1.6	9
9.1	3	Ext.	★	MAE0910MB	34.0	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0910MB	17.5	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0910LB	34.6	82.7	126.7	125	1.7	10
9.2	3	Ext.	★	MAE0920MB	17.8	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0920MB	35.2	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0920LB	18.1	82.7	126.7	125	1.7	10
9.21	3	Ext.	★	*MAE0921MB	35.9	54.7	98.7	97	1.7	10
	3	Int.	★	*MAS0921MB	18.5	54.7	98.7	97	1.7	10
	6	Int.	★	*MAS0921LB	36.5	82.7	126.7	125	1.7	10
9.3	3	Ext.	★	MAE0930MB	18.8	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0930MB	37.1	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0930LB	19.1	82.7	126.7	125	1.7	10
9.4	3	Ext.	★	MAE0940MB	37.7	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0940MB	19.4	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0940LB	38.3	82.7	126.7	125	1.7	10
9.5	3	Ext.	★	MAE0950MB	19.7	54.7	98.7	97	1.7	10
	3	Int.	★	MAS0950MB	38.9	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0950LB	20.0	82.7	126.7	125	1.7	10
9.6	3	Ext.	★	MAE0960MB	39.6	54.7	98.7	97	1.7	10
	3	Int.	□	MAS0960MB	20.4	54.7	98.7	97	1.7	10
	6	Int.	★	MAS0960LB	40.2	82.7	126.7	125	1.7	10
9.7	3	Ext.	★	MAE0970MB	20.7	54.8	98.8	97	1.8	10
	3	Int.	□	MAS0970MB	40.8	54.8	98.8	97	1.8	10
	6	Int.	★	MAS0970LB	21.0	82.8	126.8	125	1.8	10
9.8	3	Ext.	★	MAE0980MB	41.4	54.8	98.8	97	1.8	10
	3	Int.	□	MAS0980MB	21.3	54.8	98.8	97	1.8	10
	6	Int.	★	MAS0980LB	42.0	82.8	126.8	125	1.8	10
9.9	3	Ext.	★	MAE0990MB	21.6	54.8	98.8	97	1.8	10
	3	Int.	□	MAS0990MB	42.7	54.8	98.8	97	1.8	10
	6	Int.	★	MAS0990LB	22.0	82.8	126.8	125	1.8	10
10.0	3	Ext.	★	MAE1000MB	43.3	54.8	98.8	97	1.8	10
	3	Int.	★	MAS1000MB	22.3	54.8	98.8	97	1.8	10
	6	Int.	★	MAS1000LB	43.9	82.8	126.8	125	1.8	10
10.1	3	Ext.	□	MAE1010MB	22.6	56.8	102.8	101	1.8	11
	3	Int.	□	MAS1010MB	44.5	56.8	102.8	101	1.8	11
	6	Int.	□	MAS1010LB	22.9	90.8	136.8	135	1.8	11
10.2	3	Ext.	□	MAE1020MB	45.1	56.9	102.9	101	1.9	11
	3	Int.	□	MAS1020MB	23.2	56.9	102.9	101	1.9	11
	6	Int.	□	MAS1020LB	45.4	90.9	136.9	135	1.9	11
10.3	3	Ext.	★	MAE1030MB	23.4	56.9	102.9	101	1.9	11
	3	Int.	★	MAS1030MB	45.7	56.9	102.9	101	1.9	11
	6	Int.	★	MAS1030LB	23.5	90.9	136.9	135	1.9	11
10.4	3	Ext.	□	MAE1040MB	46.4	56.9	102.9	101	1.9	11
	3	Int.	□	MAS1040MB	23.9	56.9	102.9	101	1.9	11
	6	Int.	□	MAS1040LB	47.0	90.9	136.9	135	1.9	11
10.5	3	Ext.	★	MAE1050MB	24.2	56.9	102.9	101	1.9	11
	3	Int.	★	MAS1050MB	47.6	56.9	102.9	101	1.9	11
	6	Int.	★	MAS1050LB	24.5	90.9	136.9	135	1.9	11
10.6	3	Ext.	□	MAE1060MB	48.2	56.9	102.9	101	1.9	11
	3	Int.	□	MAS1060MB	24.8	56.9	102.9	101	1.9	11
	6	Int.	□	MAS1060LB	48.8	90.9	136.9	135	1.9	11

★ : Standard hole size for rolled thread tap.

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

DC (mm)	L/D	Coolant (Int./Ext.)	Stock	Order Number	Dimensions (mm)					
			HTi10		LU	LCF	OAL	LF	PL	DCON
	3	Ext.	□	**MAE1070MB**	25.1	56.9	102.9	101	1.9	11
10.7	3	Int.	□	**MAS1070MB**	49.5	56.9	102.9	101	1.9	11
	6	Int.	□	**MAS1070LB**	25.5	90.9	136.9	135	1.9	11
	3	Ext.	□	**MAE1080MB**	50.1	57.0	103.0	101	2.0	11
10.8	3	Int.	□	**MAS1080MB**	25.8	57.0	103.0	101	2.0	11
	6	Int.	□	**MAS1080LB**	50.7	91.0	137.0	135	2.0	11
	3	Ext.	□	**MAE1090MB**	26.1	57.0	103.0	101	2.0	11
10.9	3	Int.	□	**MAS1090MB**	51.3	57.0	103.0	101	2.0	11
	6	Int.	□	**MAS1090LB**	26.4	91.0	137.0	135	2.0	11
	3	Ext.	★	**MAE1100MB**	51.9	57.0	103.0	101	2.0	11
11.0	3	Int.	★	**MAS1100MB**	26.7	57.0	103.0	101	2.0	11
	6	Int.	★	**MAS1100LB**	52.5	91.0	137.0	135	2.0	11
	3	Ext.	★	***MAE1108MB**	27.0	62.0	108.0	106	2.0	12
11.08	3	Int.	★	***MAS1108MB**	53.2	62.0	108.0	106	2.0	12
	6	Int.	★	***MAS1108LB**	27.4	96.0	142.0	140	2.0	12
	3	Ext.	□	**MAE1110MB**	53.8	62.0	108.0	106	2.0	12
11.1	3	Int.	□	**MAS1110MB**	27.7	62.0	108.0	106	2.0	12
	6	Int.	□	**MAS1110LB**	54.4	96.0	142.0	140	2.0	12
	3	Ext.	□	**MAE1120MB**	28.0	62.0	108.0	106	2.0	12
11.2	3	Int.	□	**MAS1120MB**	55.0	62.0	108.0	106	2.0	12
	6	Int.	□	**MAS1120LB**	28.3	96.0	142.0	140	2.0	12
	3	Ext.	□	**MAE1130MB**	55.6	62.1	108.1	106	2.1	12
11.3	3	Int.	□	**MAS1130MB**	28.6	62.1	108.1	106	2.1	12
	6	Int.	□	**MAS1130LB**	56.3	96.1	142.1	140	2.1	12
	3	Ext.	□	**MAE1140MB**	29.0	62.1	108.1	106	2.1	12
11.4	3	Int.	□	**MAS1140MB**	56.9	62.1	108.1	106	2.1	12
	6	Int.	□	**MAS1140LB**	29.3	96.1	142.1	140	2.1	12
	3	Ext.	□	**MAE1150MB**	57.0	62.1	108.1	106	2.1	12
11.5	3	Int.	□	**MAS1150MB**	29.3	62.1	108.1	106	2.1	12
	6	Int.	□	**MAS1150LB**	57.5	96.1	142.1	140	2.1	12
	3	Ext.	□	**MAE1160MB**	29.6	62.1	108.1	106	2.1	12
11.6	3	Int.	□	**MAS1160MB**	58.1	62.1	108.1	106	2.1	12
	6	Int.	□	**MAS1160LB**	29.9	96.1	142.1	140	2.1	12
	3	Ext.	□	**MAE1170MB**	58.7	62.1	108.1	106	2.1	12
11.7	3	Int.	□	**MAS1170MB**	30.2	62.1	108.1	106	2.1	12
	6	Int.	□	**MAS1170LB**	59.3	96.1	142.1	140	2.1	12
	3	Ext.	□	**MAE1180MB**	30.5	62.1	108.1	106	2.1	12
11.8	3	Int.	□	**MAS1180MB**	60.0	62.1	108.1	106	2.1	12
	6	Int.	□	**MAS1180LB**	30.9	96.1	142.1	140	2.1	12
	3	Ext.	□	**MAE1190MB**	60.6	62.2	108.2	106	2.2	12
11.9	3	Int.	□	**MAS1190MB**	31.2	62.2	108.2	106	2.2	12
	6	Int.	□	**MAS1190LB**	61.2	96.2	142.2	140	2.2	12
	3	Ext.	★	**MAE1200MB**	31.5	62.2	108.2	106	2.2	12
12.0	3	Int.	★	**MAS1200MB**	61.8	62.2	108.2	106	2.2	12
	6	Int.	★	**MAS1200LB**	31.8	96.2	142.2	140	2.2	12

DC (mm)	L/D	Coolant (Int./Ext.)	Stock	Order Number	Dimensions (mm)					
			HTi10		LU	LCF	OAL	LF	PL	DCON
	3	Ext.	□	**MAE1210MB**	62.4	67.2	117.2	115	2.2	13
12.1	3	Int.	□	**MAS1210MB**	32.1	67.2	117.2	115	2.2	13
	6	Int.	□	**MAS1210LB**	63.1	102.2	152.2	150	2.2	13
	3	Ext.	□	**MAE1220MB**	32.5	67.2	117.2	115	2.2	13
12.2	3	Int.	□	**MAS1220MB**	63.7	67.2	117.2	115	2.2	13
	6	Int.	□	**MAS1220LB**	32.8	102.2	152.2	150	2.2	13
	3	Ext.	□	**MAE1230MB**	64.3	67.2	117.2	115	2.2	13
12.3	3	Int.	□	**MAS1230MB**	33.1	67.2	117.2	115	2.2	13
	6	Int.	□	**MAS1230LB**	64.9	102.2	152.2	150	2.2	13
	3	Ext.	□	**MAE1240MB**	33.4	67.3	117.3	115	2.3	13
12.4	3	Int.	□	**MAS1240MB**	65.5	67.3	117.3	115	2.3	13
	6	Int.	□	**MAS1240LB**	33.7	102.3	152.3	150	2.3	13
	3	Ext.	★	**MAE1250MB**	66.1	67.3	117.3	115	2.3	13
12.5	3	Int.	★	**MAS1250MB**	34.0	67.3	117.3	115	2.3	13
	6	Int.	★	**MAS1250LB**	66.8	102.3	152.3	150	2.3	13
	3	Ext.	□	**MAE1260MB**	34.4	67.3	117.3	115	2.3	13
12.6	3	Int.	□	**MAS1260MB**	67.4	67.3	117.3	115	2.3	13
	6	Int.	□	**MAS1260LB**	34.7	102.3	152.3	150	2.3	13
	3	Ext.	□	**MAE1270MB**	68.0	67.3	117.3	115	2.3	13
12.7	3	Int.	□	**MAS1270MB**	35.0	67.3	117.3	115	2.3	13
	6	Int.	□	**MAS1270LB**	68.5	102.3	152.3	150	2.3	13
	3	Ext.	□	**MAE1280MB**	35.2	67.3	117.3	115	2.3	13
12.8	3	Int.	□	**MAS1280MB**	68.6	67.3	117.3	115	2.3	13
	6	Int.	□	**MAS1280LB**	35.3	102.3	152.3	150	2.3	13
	3	Ext.	□	**MAE1290MB**	69.2	67.3	117.3	115	2.3	13
12.9	3	Int.	□	**MAS1290MB**	35.6	67.3	117.3	115	2.3	13
	6	Int.	□	**MAS1290LB**	69.9	102.3	152.3	150	2.3	13
	3	Ext.	★	***MAE1296MB**	36.0	67.4	117.4	115	2.4	13
12.96	3	Int.	★	***MAS1296MB**	70.5	67.4	117.4	115	2.4	13
	6	Int.	★	***MAS1296LB**	36.3	102.4	152.4	150	2.4	13
	3	Ext.	★	**MAE1300MB**	71.1	67.4	117.4	115	2.4	13
13.0	3	Int.	★	**MAS1300MB**	36.6	67.4	117.4	115	2.4	13
	6	Int.	★	**MAS1300LB**	71.7	102.4	152.4	150	2.4	13
	3	Ext.	□	**MAE1310MB**	36.9	72.4	122.4	120	2.4	14
13.1	3	Int.	□	**MAS1310MB**	72.3	72.4	122.4	120	2.4	14
	6	Int.	□	**MAS1310LB**	37.2	112.4	162.4	160	2.4	14
	3	Ext.	□	**MAE1320MB**	72.9	72.4	122.4	120	2.4	14
13.2	3	Int.	□	**MAS1320MB**	37.5	72.4	122.4	120	2.4	14
	6	Int.	□	**MAS1320LB**	73.6	112.4	162.4	160	2.4	14
	3	Ext.	□	**MAE1330MB**	37.9	72.4	122.4	120	2.4	14
13.3	3	Int.	□	**MAS1330MB**	74.2	72.4	122.4	120	2.4	14
	6	Int.	□	**MAS1330LB**	38.2	112.4	162.4	160	2.4	14
	3	Ext.	□	**MAE1340MB**	74.8	72.4	122.4	120	2.4	14
13.4	3	Int.	□	**MAS1340MB**	38.5	72.4	122.4	120	2.4	14
	6	Int.	□	**MAS1340LB**	75.4	112.4	162.4	160	2.4	14

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MAE/MAS

DC (mm)	L/D	Coolant (Int./Ext.)	Stock HTi10	Order Number	Dimensions (mm) LU	LCF	OAL	LF	PL	DCON
13.5	3	Ext.	★	MAE1350MB	38.8	72.5	122.5	120	2.5	14
	3	Int.	★	MAS1350MB	76.0	72.5	122.5	120	2.5	14
	6	Int.	★	MAS1350LB	39.1	112.5	162.5	160	2.5	14
13.6	3	Ext.	□	MAE1360MB	76.7	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1360MB	39.5	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1360LB	77.3	112.5	162.5	160	2.5	14
13.7	3	Ext.	□	MAE1370MB	39.8	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1370MB	77.9	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1370LB	40.1	112.5	162.5	160	2.5	14
13.8	3	Ext.	□	MAE1380MB	78.5	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1380MB	40.4	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1380LB	79.1	112.5	162.5	160	2.5	14
13.9	3	Ext.	□	MAE1390MB	40.7	72.5	122.5	120	2.5	14
	3	Int.	□	MAS1390MB	79.7	72.5	122.5	120	2.5	14
	6	Int.	□	MAS1390LB	41.0	112.5	162.5	160	2.5	14
14.0	3	Ext.	★	*MAE1400MB	80.2	72.5	122.5	120	2.5	14
	3	Int.	★	*MAS1400MB	41.3	72.5	122.5	120	2.5	14
	6	Int.	★	*MAS1400LB	80.4	112.5	162.5	160	2.5	14
14.1	3	Ext.	□	MAE1410MB	41.4	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1410MB	81.0	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1410LB	41.7	117.6	175.6	173	2.6	15
14.2	3	Ext.	□	MAE1420MB	81.6	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1420MB	42.0	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1420LB	82.2	117.6	175.6	173	2.6	15
14.3	3	Ext.	□	MAE1430MB	42.3	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1430MB	82.8	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1430LB	42.6	117.6	175.6	173	2.6	15
14.4	3	Ext.	□	MAE1440MB	83.5	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1440MB	43.0	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1440LB	84.1	117.6	175.6	173	2.6	15
14.5	3	Ext.	□	MAE1450MB	43.3	74.6	132.6	130	2.6	15
	3	Int.	□	MAS1450MB	84.7	74.6	132.6	130	2.6	15
	6	Int.	□	MAS1450LB	43.6	117.6	175.6	173	2.6	15
14.6	3	Ext.	□	MAE1460MB	85.3	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1460MB	43.9	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1460LB	85.9	117.7	175.7	173	2.7	15
14.7	3	Ext.	□	MAE1470MB	44.2	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1470MB	86.5	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1470LB	44.5	117.7	175.7	173	2.7	15
14.8	3	Ext.	□	MAE1480MB	87.2	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1480MB	44.9	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1480LB	87.8	117.7	175.7	173	2.7	15
14.9	3	Ext.	□	MAE1490MB	45.2	74.7	132.7	130	2.7	15
	3	Int.	□	MAS1490MB	88.4	74.7	132.7	130	2.7	15
	6	Int.	□	MAS1490LB	45.5	117.7	175.7	173	2.7	15
14.96	3	Ext.	★	*MAE1496MB	89.0	74.7	132.7	130	2.7	15
	3	Int.	★	*MAS1496MB	45.8	74.7	132.7	130	2.7	15
	6	Int.	★	*MAS1496LB	89.6	117.7	175.7	173	2.7	15
15.0	3	Ext.	★	MAE1500MB	46.1	74.7	132.7	130	2.7	15
	3	Int.	★	MAS1500MB	90.3	74.7	132.7	130	2.7	15
	6	Int.	★	MAS1500LB	46.5	117.7	175.7	173	2.7	15
15.1	3	Ext.	□	MAE1510MB	90.9	78.7	136.7	134	2.7	16
	3	Int.	□	MAS1510MB	46.8	78.7	136.7	134	2.7	16
	6	Int.	□	MAS1510LB	91.5	122.7	180.7	178	2.7	16
15.2	3	Ext.	□	MAE1520MB	47.1	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1520MB	92.1	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1520LB	47.4	122.8	180.8	178	2.8	16
15.3	3	Ext.	□	MAE1530MB	92.5	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1530MB	47.6	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1530LB	92.7	122.8	180.8	178	2.8	16
15.4	3	Ext.	□	MAE1540MB	47.7	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1540MB	93.3	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1540LB	48.0	122.8	180.8	178	2.8	16
15.5	3	Ext.	□	MAE1550MB	94.0	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1550MB	48.4	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1550LB	94.6	122.8	180.8	178	2.8	16
15.6	3	Ext.	□	MAE1560MB	48.7	78.8	136.8	134	2.8	16
	3	Int.	□	MAS1560MB	95.2	78.8	136.8	134	2.8	16
	6	Int.	□	MAS1560LB	49.0	122.8	180.8	178	2.8	16
15.7	3	Ext.	□	MAE1570MB	95.8	78.9	136.9	134	2.9	16
	3	Int.	□	MAS1570MB	49.3	78.9	136.9	134	2.9	16
	6	Int.	□	MAS1570LB	96.4	122.9	180.9	178	2.9	16
15.8	3	Ext.	□	*MAE1580MB	49.6	78.9	136.9	134	2.9	16
	3	Int.	□	*MAS1580MB	97.1	78.9	136.9	134	2.9	16
	6	Int.	□	*MAS1580LB	50.0	122.9	180.9	178	2.9	16
15.9	3	Ext.	□	MAE1590MB	97.7	78.9	136.9	134	2.9	16
	3	Int.	□	MAS1590MB	50.3	78.9	136.9	134	2.9	16
	6	Int.	□	MAS1590LB	98.3	122.9	180.9	178	2.9	16
16.0	3	Ext.	★	MAE1600MB	50.6	78.9	136.9	134	2.9	16
	3	Int.	★	MAS1600MB	98.9	78.9	136.9	134	2.9	16
	6	Int.	★	MAS1600LB	50.9	122.9	180.9	178	2.9	16

★ : Standard hole size for rolled thread tap.
Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

★ : Stocked in Japan □ : Made to Order

RECOMMENDED CUTTING CONDITIONS

Tool		Workpiece Material	Drill Diameter ø3.0—ø6.0 mm ø.118"—ø.236"		Drill Diameter ø6.0—ø10.0 mm ø.240"—ø.394"		Drill Diameter ø10.0—ø16.0 mm ø.398"—ø.630"	
			Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)
MAE	N	Cast Aluminum Alloy	295 (130—460)	.006 (.002—.012)	330 (165—490)	.008 (.002—.012)	395 (195—560)	.010 (.004—.016)
		Die Cast Aluminum Alloy	330 (195—490)	.005 (.002—.010)	360 (230—525)	.006 (.002—.010)	425 (260—590)	.008 (.004—.012)
	K	Gray Cast Iron	130 (65—195)	.006 (.004—.008)	195 (130—260)	.008 (.004—.012)	260 (195—330)	.012 (.008—.016)
		Ductile Cast Iron	100 (65—130)	.004 (.002—.006)	130 (65—195)	.005 (.002—.008)	195 (130—260)	.008 (.004—.012)
MAS	N	Cast Aluminum Alloy	300 (195—490)	.006 (.002—.012)	390 (260—555)	.008 (.004—.012)	490 (330—655)	.010 (.004—.016)
		Die Cast Aluminum Alloy	390 (260—555)	.005 (.002—.010)	490 (330—590)	.006 (.002—.010)	525 (390—655)	.008 (.004—.012)
	K	Gray Cast Iron	195 (130—260)	.006 (.004—.008)	260 (195—360)	.008 (.004—.012)	330 (230—425)	.012 (.008—.016)
		Ductile Cast Iron	145 (100—195)	.004 (.002—.006)	195 (130—260)	.005 (.002—.008)	260 (195—330)	.008 (.004—.012)

■HOLE AND DRILL DIAMETERS FOR THREAD

Thread Size	Thread Tapping			Roll Thread Tapping		
	Super Burnish Drill Diameter (**DC**mm)	Hole Diameter Tolerance (ømm)		Super Burnish Drill Diameter (**DC**mm)	Hole Diameter Tolerance (ømm)	
		Max.	Min.		Max.	Min.
M4x0.7	**3.3**	3.242	3.422	**3.65**	3.65	3.70
M5x0.8	**4.2**	4.134	4.334	**4.60**	4.59	4.66
M6x1.0	**5.0**	4.917	5.153	**5.50**	5.48	5.57
M8x1.25	**6.8**	6.647	6.912	**7.35**	7.34	7.41
M10x1.5	**8.5**	8.376	8.676	**9.21**	9.18	9.28
M12x1.75	**10.3**	10.106	10.441	**11.08**	11.05	11.15
M14x2	**12.0**	11.835	12.210	**12.96**	12.92	13.04
M16x2	**14.0**	13.835	14.210	**14.96**	14.92	15.04

MSE

- Wide flute prevents chip packing.
- Stable, small diameter machining.

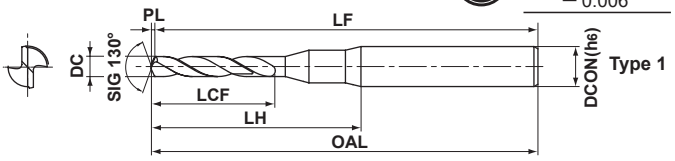
P M K N S H

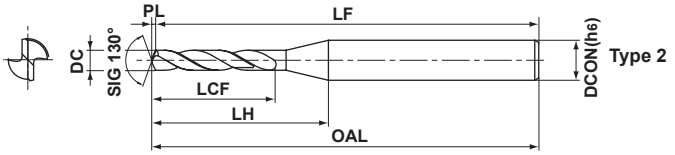
0.10≤DC≤0.99 0 −0.009

DCON=3 h6 0 −0.006

METRIC STANDARD

External Coolant





Note 1) MSE type can be used for shrink fit holders.

DC (mm)	Stock VP20MF	Stock VP15TF	Order Number	Dimensions (mm) LCF	LH	OAL	LF	PL	DCON	Type
0.10	★		MSE0010SB	1.22	9.72	38.02	38	0.02	3	1
0.11	★		MSE0011SB	1.23	9.73	38.03	38	0.03	3	1
0.12	★		MSE0012SB	1.43	9.73	38.03	38	0.03	3	1
0.13	★		MSE0013SB	1.43	9.73	38.03	38	0.03	3	1
0.14	★		MSE0014SB	2.03	9.73	38.03	38	0.03	3	1
0.15	★		MSE0015SB	2.03	9.73	38.03	38	0.03	3	1
0.16	★		MSE0016SB	2.04	9.74	38.04	38	0.04	3	1
0.17	★		MSE0017SB	2.04	9.74	38.04	38	0.04	3	1
0.18	★		MSE0018SB	2.04	9.74	38.04	38	0.04	3	1
0.19	★		MSE0019SB	2.04	9.74	38.04	38	0.04	3	1
0.20	★		MSE0020SB	2.55	9.75	38.05	38	0.05	3	1
0.21	★		MSE0021SB	2.55	9.75	38.05	38	0.05	3	1
0.22	★		MSE0022SB	2.55	9.75	38.05	38	0.05	3	1
0.23	★		MSE0023SB	2.55	9.75	38.05	38	0.05	3	1
0.24	★		MSE0024SB	3.06	9.76	38.06	38	0.06	3	1
0.25	★		MSE0025SB	3.06	9.76	38.06	38	0.06	3	1
0.26	★		MSE0026SB	3.06	9.76	38.06	38	0.06	3	1
0.27	★		MSE0027SB	3.06	9.76	38.06	38	0.06	3	1
0.28	★		MSE0028SB	3.07	9.77	38.07	38	0.07	3	1
0.29	★		MSE0029SB	3.07	9.77	38.07	38	0.07	3	1
0.30		★	MSE0030SB	5.07	10.27	38.07	38	0.07	3	2
0.31		★	MSE0031SB	5.07	10.27	38.07	38	0.07	3	2
0.32		★	MSE0032SB	5.07	10.27	38.07	38	0.07	3	2
0.33		★	MSE0033SB	5.08	10.28	38.08	38	0.08	3	2
0.34		★	MSE0034SB	6.08	11.28	38.08	38	0.08	3	2
0.35		★	MSE0035SB	6.08	11.18	38.08	38	0.08	3	2
0.36		★	MSE0036SB	6.08	11.18	38.08	38	0.08	3	2
0.37		★	MSE0037SB	6.09	11.19	38.09	38	0.09	3	2
0.38		★	MSE0038SB	6.09	11.19	38.09	38	0.09	3	2
0.39		★	MSE0039SB	6.09	11.19	38.09	38	0.09	3	2
0.40		★	MSE0040SB	7.09	12.19	38.09	38	0.09	3	2
0.41		★	MSE0041SB	7.10	12.10	38.10	38	0.10	3	2

DC (mm)	Stock VP20MF	Stock VP15TF	Order Number	Dimensions (mm) LCF	LH	OAL	LF	PL	DCON	Type
0.42		★	MSE0042SB	7.10	12.10	38.10	38	0.10	3	2
0.43		★	MSE0043SB	7.10	12.10	38.10	38	0.10	3	2
0.44		★	MSE0044SB	7.10	12.10	38.10	38	0.10	3	2
0.45		★	MSE0045SB	7.10	12.10	38.10	38	0.10	3	2
0.46		★	MSE0046SB	7.11	12.01	38.11	38	0.11	3	2
0.47		★	MSE0047SB	7.11	12.01	38.11	38	0.11	3	2
0.48		★	MSE0048SB	7.11	12.01	38.11	38	0.11	3	2
0.49		★	MSE0049SB	7.11	12.01	38.11	38	0.11	3	2
0.50		★	MSE0050SB	7.12	12.02	38.12	38	0.12	3	2
0.51		★	MSE0051SB	7.12	11.92	38.12	38	0.12	3	2
0.52		★	MSE0052SB	7.12	11.92	38.12	38	0.12	3	2
0.53		★	MSE0053SB	7.12	11.92	38.12	38	0.12	3	2
0.54		★	MSE0054SB	7.13	11.93	38.13	38	0.13	3	2
0.55		★	MSE0055SB	7.13	11.93	38.13	38	0.13	3	2
0.56		★	MSE0056SB	7.13	11.93	38.13	38	0.13	3	2
0.57		★	MSE0057SB	7.13	11.83	38.13	38	0.13	3	2
0.58		★	MSE0058SB	7.14	11.84	38.14	38	0.14	3	2
0.59		★	MSE0059SB	7.14	11.84	38.14	38	0.14	3	2
0.60		★	MSE0060SB	7.14	11.84	38.14	38	0.14	3	2
0.61		★	MSE0061SB	7.14	11.84	38.14	38	0.14	3	2
0.62		★	MSE0062SB	7.14	11.74	38.14	38	0.14	3	2
0.63		★	MSE0063SB	7.15	11.75	38.15	38	0.15	3	2
0.64		★	MSE0064SB	7.15	11.75	38.15	38	0.15	3	2
0.65		★	MSE0065SB	7.15	11.75	38.15	38	0.15	3	2
0.66		★	MSE0066SB	7.15	11.75	38.15	38	0.15	3	2
0.67		★	MSE0067SB	7.16	11.66	38.16	38	0.16	3	2
0.68		★	MSE0068SB	7.16	11.66	38.16	38	0.16	3	2
0.69		★	MSE0069SB	7.16	11.66	38.16	38	0.16	3	2
0.70		★	MSE0070SB	8.16	12.66	38.16	38	0.16	3	2
0.71		★	MSE0071SB	8.17	12.67	38.17	38	0.17	3	2
0.72		★	MSE0072SB	8.17	12.67	38.17	38	0.17	3	2
0.73		★	MSE0073SB	8.17	12.57	38.17	38	0.17	3	2

Note 1) Please contact Mitsubishi Materials for any geometry that is not in the catalog (e.g. different dia. and length).

DC (mm)	Stock VP20MF	Stock VP15TF	Order Number	Dimensions (mm) LCF	LH	OAL	LF	PL	DCON	Type
0.74		★	**MSE0074SB**	8.17	12.57	38.17	38	0.17	3	2
0.75		★	**MSE0075SB**	8.17	12.57	38.17	38	0.17	3	2
0.76		★	**MSE0076SB**	8.18	12.58	38.18	38	0.18	3	2
0.77		★	**MSE0077SB**	8.18	12.58	38.18	38	0.18	3	2
0.78		★	**MSE0078SB**	8.18	12.48	38.18	38	0.18	3	2
0.79		★	**MSE0079SB**	8.18	12.48	38.18	38	0.18	3	2
0.80		★	**MSE0080SB**	10.19	14.49	38.19	38	0.19	3	2
0.81		★	**MSE0081SB**	10.19	14.49	38.19	38	0.19	3	2
0.82		★	**MSE0082SB**	10.19	14.49	38.19	38	0.19	3	2
0.83		★	**MSE0083SB**	10.19	14.49	38.19	38	0.19	3	2
0.84		★	**MSE0084SB**	10.20	14.40	38.20	38	0.20	3	2
0.85		★	**MSE0085SB**	10.20	14.40	38.20	38	0.20	3	2
0.86		★	**MSE0086SB**	10.20	14.40	38.20	38	0.20	3	2
0.87		★	**MSE0087SB**	10.20	14.40	38.20	38	0.20	3	2
0.88		★	**MSE0088SB**	10.21	14.41	38.21	38	0.21	3	2
0.89		★	**MSE0089SB**	10.21	14.31	38.21	38	0.21	3	2
0.90		★	**MSE0090SB**	10.21	14.31	38.21	38	0.21	3	2
0.91		★	**MSE0091SB**	10.21	14.31	38.21	38	0.21	3	2
0.92		★	**MSE0092SB**	10.21	14.31	38.21	38	0.21	3	2
0.93		★	**MSE0093SB**	10.22	14.32	38.22	38	0.22	3	2
0.94		★	**MSE0094SB**	10.22	14.22	38.22	38	0.22	3	2
0.95		★	**MSE0095SB**	10.22	14.22	38.22	38	0.22	3	2
0.96		★	**MSE0096SB**	10.22	14.22	38.22	38	0.22	3	2
0.97		★	**MSE0097SB**	10.23	14.23	38.23	38	0.23	3	2
0.98		★	**MSE0098SB**	10.23	14.23	38.23	38	0.23	3	2
0.99		★	**MSE0099SB**	10.23	14.23	38.23	38	0.23	3	2

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		Mild Steel (≤180HB) AISI 1010 etc.			Carbon Steel, Alloy Steel (180—280HB) AISI 1045, 4140 etc.		
Drill Dia. **DC** inch	Drill Dia. **DC** mm	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)
.00394	**0.10**	20 (15—25)	.0001 (.00004—.0001)	.0008	20 (15—25)	.0001 (.00004—.0001)	.0008
.00472	**0.12**	25 (15—35)	.0001 (.00004—.0001)	.0008	25 (15—35)	.0001 (.00004—.0001)	.0008
.00630	**0.16**	35 (20—45)	.0001 (.00004—.0001)	.0008	35 (20—45)	.0001 (.00004—.0001)	.0008
.00787	**0.20**	40 (25—50)	.0001 (.0001—.0002)	.0016	40 (25—50)	.0001 (.0001—.0002)	.0016
.00984	**0.25**	50 (35—65)	.0001 (.0001—.0002)	.0016	50 (35—65)	.0001 (.0001—.0002)	.0016
.01260	**0.32**	65 (45—85)	.0002 (.0001—.0002)	.0020	65 (45—85)	.0002 (.0001—.0002)	.0020
.01575	**0.40**	80 (50—105)	.0002 (.0001—.0002)	.0020	80 (50—105)	.0002 (.0001—.0002)	.0020
.01969	**0.50**	105 (65—115)	.0002 (.0002—.0003)	.0039	105 (65—115)	.0002 (.0002—.0003)	.0039
.02480	**0.63**	130 (80—150)	.0003 (.0002—.0004)	.0039	130 (80—150)	.0003 (.0002—.0004)	.0039
.03150	**0.80**	165 (115—195)	.0008 (.0006—.0010)	.0118	165 (115—195)	.0006 (.0005—.0007)	.0118
.03937	**0.99**	205 (130—230)	.0016 (.0012—.0020)	.0118	205 (130—230)	.0008 (.0006—.0010)	.0118

Note 1) You must use the MSP starter drill when using the MSE drill. (Order number : MSP0300SB, Cutting conditions on page L162.)
Note 2) Change cutting conditions depending on your machine and workpiece material rigidity.
Note 3) When machining holes over DCx5, reduce the step stated above.
Note 4) The use of water-soluble fluid (diluted by 20 times) is recommended for drilling under the cutting conditions above. Lower the revolutions if you use oil fluid or mist.
Note 5) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

MSE

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		Carbon Steel, Alloy Steel (280—350HB) AISI 4340 etc.			Pre-hardened Steel AISI P21, P20 etc.		
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)
inch	mm						
.00394	**0.10**	20 (15—25)	.0001 (.00004—.0001)	.0008	20 (15—25)	.0001 (.00004—.0001)	.0008
.00472	**0.12**	25 (15—35)	.0001 (.00004—.0001)	.0008	25 (15—35)	.0001 (.00004—.0001)	.0008
.00630	**0.16**	35 (20—45)	.0001 (.00004—.0001)	.0008	35 (20—45)	.0001 (.00004—.0001)	.0008
.00787	**0.20**	40 (25—50)	.0001 (.00008—.0002)	.0016	40 (25—50)	.0001 (.00008—.0002)	.0016
.00984	**0.25**	50 (35—65)	.0001 (.00008—.0002)	.0016	50 (35—65)	.0001 (.00008—.0002)	.0016
.01260	**0.32**	65 (45—85)	.0002 (.00012—.0002)	.0020	65 (45—85)	.0002 (.00012—.0002)	.0020
.01575	**0.40**	80 (50—105)	.0002 (.00012—.0002)	.0020	80 (50—105)	.0002 (.00012—.0002)	.0020
.01969	**0.50**	105 (65—115)	.0002 (.00020—.0003)	.0039	105 (65—115)	.0002 (.00020—.0003)	.0039
.02480	**0.63**	130 (80—150)	.0003 (.00024—.0004)	.0039	130 (80—150)	.0003 (.00024—.0004)	.0039
.03150	**0.80**	165 (115—195)	.0006 (.00047—.0007)	.0118	165 (115—195)	.0006 (.00047—.0007)	.0118
.03937	**0.99**	205 (130—230)	.0008 (.00059—.0010)	.0118	205 (130—230)	.0008 (.00059—.0010)	.0118

Workpiece Material		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.			Gray Cast Iron (≤350MPa) No45B etc.		
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)
inch	mm						
.00394	**0.10**	20 (15—25)	.0001 (.00004—.0001)	.0008	20 (15—25)	.0001 (.00004—.0001)	.0008
.00472	**0.12**	25 (15—35)	.0001 (.00004—.0001)	.0008	25 (15—35)	.0001 (.00004—.0001)	.0008
.00630	**0.16**	35 (20—45)	.0001 (.00004—.0001)	.0008	35 (20—45)	.0001 (.00004—.0001)	.0008
.00787	**0.20**	35 (20—45)	.0001 (.00008—.0002)	.0016	40 (25—50)	.0001 (.00008—.0002)	.0016
.00984	**0.25**	45 (25—60)	.0001 (.00008—.0002)	.0016	50 (35—65)	.0001 (.00008—.0002)	.0016
.01260	**0.32**	50 (35—65)	.0002 (.00012—.0002)	.0020	65 (45—85)	.0002 (.00012—.0002)	.0020
.01575	**0.40**	50 (35—60)	.0002 (.00012—.0002)	.0020	80 (50—105)	.0002 (.00012—.0002)	.0020
.01969	**0.50**	50 (35—65)	.0002 (.00020—.0003)	.0039	105 (65—115)	.0002 (.00020—.0003)	.0039
.02480	**0.63**	50 (35—65)	.0003 (.00024—.0004)	.0039	130 (80—150)	.0003 (.00024—.0004)	.0039
.03150	**0.80**	50 (35—65)	.0006 (.00047—.0007)	.0079	165 (115—195)	.0008 (.00059—.0010)	.0118
.03937	**0.99**	50 (35—65)	.0008 (.00059—.0010)	.0079	205 (130—230)	.0016 (.00118—.0020)	.0118

Workpiece Material		Aluminum Alloy (Si<5%) ASTM A6061, A7075 etc.			Heat Resistant Alloy Inconel718 etc.		
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Peck (inch)
inch	mm						
.00394	**0.10**	20 (15—25)	.0001 (.00004—.0001)	.0020	5 (5—15)	.00004 (.00002—.00004)	.0008
.00472	**0.12**	25 (15—35)	.0001 (.00008—.0002)	.0020	10 (5—15)	.00004 (.00002—.00004)	.0008
.00630	**0.16**	35 (20—45)	.0002 (.00012—.0002)	.0020	15 (10—20)	.00004 (.00002—.00004)	.0008
.00787	**0.20**	40 (25—50)	.0002 (.00020—.0003)	.0039	15 (10—20)	.00008 (.00004—.00008)	.0016
.00984	**0.25**	50 (35—65)	.0003 (.00024—.0004)	.0039	15 (10—20)	.00008 (.00004—.00008)	.0016
.01260	**0.32**	65 (45—85)	.0004 (.00031—.0005)	.0118	15 (10—20)	.00008 (.00004—.00008)	.0020
.01575	**0.40**	80 (50—105)	.0008 (.00059—.0010)	.0118	15 (15—20)	.00008 (.00004—.00008)	.0020
.01969	**0.50**	105 (65—115)	.0012 (.00098—.0014)	.0197	15 (15—35)	.00012 (.00004—.00012)	.0039
.02480	**0.63**	130 (80—150)	.0016 (.00138—.0018)	.0197	20 (15—35)	.00016 (.00008—.00016)	.0039
.03150	**0.80**	165 (115—195)	.0020 (.00177—.0022)	.0315	20 (15—35)	.00024 (.00016—.00024)	.0079
.03937	**0.99**	205 (130—230)	.0024 (.00217—.0026)	.0315	20 (15—35)	.00039 (.00031—.00039)	.0079

Note 1) You must use the MSP starter drill when using the MSE drill. (Order number : MSP0300SB, Cutting conditions on page L162.)
Note 2) Change cutting conditions depending on your machine and workpiece material rigidity.
Note 3) When machining holes over DCx5, reduce the step stated above.
Note 4) The use of water-soluble fluid (diluted by 20 times) is recommended for drilling under the cutting conditions above. Lower the revolutions if you use oil fluid or mist.
Note 5) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

REFERENCE TABLE OF PRE-HOLE DIMENSIONS

Unit : mm

Description	Cutting Dia.	Pre-hole Diameter	Pre-hole Depth
MSE0010SB	0.10	0.060—0.080	0.030—0.040
MSE0011SB	0.11	0.066—0.088	0.033—0.044
MSE0012SB	0.12	0.072—0.096	0.036—0.048
MSE0013SB	0.13	0.078—0.104	0.039—0.052
MSE0014SB	0.14	0.084—0.112	0.042—0.056
MSE0015SB	0.15	0.090—0.120	0.045—0.060
MSE0016SB	0.16	0.096—0.128	0.048—0.064
MSE0017SB	0.17	0.102—0.136	0.051—0.068
MSE0018SB	0.18	0.108—0.144	0.054—0.072
MSE0019SB	0.19	0.114—0.152	0.057—0.076
MSE0020SB	0.20	0.120—0.160	0.060—0.080
MSE0021SB	0.21	0.126—0.168	0.063—0.084
MSE0022SB	0.22	0.132—0.176	0.066—0.088
MSE0023SB	0.23	0.138—0.184	0.069—0.092
MSE0024SB	0.24	0.144—0.192	0.072—0.096
MSE0025SB	0.25	0.150—0.200	0.075—0.100
MSE0026SB	0.26	0.156—0.208	0.078—0.104
MSE0027SB	0.27	0.162—0.216	0.081—0.108
MSE0028SB	0.28	0.168—0.224	0.084—0.112
MSE0029SB	0.29	0.174—0.232	0.087—0.116
MSE0030SB	0.30	0.180—0.240	0.090—0.120
MSE0031SB	0.31	0.186—0.248	0.093—0.124
MSE0032SB	0.32	0.192—0.256	0.096—0.128
MSE0033SB	0.33	0.198—0.264	0.099—0.132
MSE0034SB	0.34	0.204—0.272	0.102—0.136
MSE0035SB	0.35	0.210—0.280	0.105—0.140
MSE0036SB	0.36	0.216—0.288	0.108—0.144
MSE0037SB	0.37	0.222—0.296	0.111—0.148
MSE0038SB	0.38	0.228—0.304	0.114—0.152
MSE0039SB	0.39	0.234—0.312	0.117—0.156
MSE0040SB	0.40	0.240—0.320	0.120—0.160
MSE0041SB	0.41	0.246—0.328	0.123—0.164
MSE0042SB	0.42	0.252—0.336	0.126—0.168
MSE0043SB	0.43	0.258—0.344	0.129—0.172
MSE0044SB	0.44	0.264—0.352	0.132—0.176
MSE0045SB	0.45	0.270—0.360	0.135—0.180
MSE0046SB	0.46	0.276—0.368	0.138—0.184
MSE0047SB	0.47	0.282—0.376	0.141—0.188
MSE0048SB	0.48	0.288—0.384	0.144—0.192
MSE0049SB	0.49	0.294—0.392	0.147—0.196
MSE0050SB	0.50	0.300—0.400	0.150—0.200
MSE0051SB	0.51	0.306—0.408	0.153—0.204
MSE0052SB	0.52	0.312—0.416	0.156—0.208
MSE0053SB	0.53	0.318—0.424	0.159—0.212
MSE0054SB	0.54	0.324—0.432	0.162—0.216

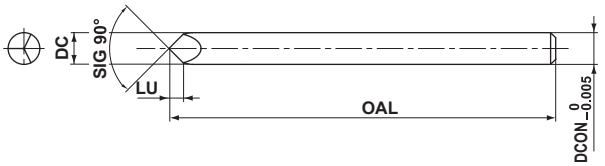
Description	Cutting Dia.	Pre-hole Diameter	Pre-hole Depth
MSE0055SB	0.55	0.330—0.440	0.165—0.220
MSE0056SB	0.56	0.336—0.448	0.168—0.224
MSE0057SB	0.57	0.342—0.456	0.171—0.228
MSE0058SB	0.58	0.348—0.464	0.174—0.232
MSE0059SB	0.59	0.354—0.472	0.177—0.236
MSE0060SB	0.60	0.360—0.480	0.180—0.240
MSE0061SB	0.61	0.366—0.488	0.183—0.244
MSE0062SB	0.62	0.372—0.496	0.186—0.248
MSE0063SB	0.63	0.378—0.504	0.189—0.252
MSE0064SB	0.64	0.384—0.512	0.192—0.256
MSE0065SB	0.65	0.390—0.520	0.195—0.260
MSE0066SB	0.66	0.396—0.528	0.198—0.264
MSE0067SB	0.67	0.402—0.536	0.201—0.268
MSE0068SB	0.68	0.408—0.544	0.204—0.272
MSE0069SB	0.69	0.414—0.552	0.207—0.276
MSE0070SB	0.70	0.420—0.560	0.210—0.280
MSE0071SB	0.71	0.426—0.568	0.213—0.284
MSE0072SB	0.72	0.432—0.576	0.216—0.288
MSE0073SB	0.73	0.438—0.584	0.219—0.292
MSE0074SB	0.74	0.444—0.592	0.222—0.296
MSE0075SB	0.75	0.450—0.600	0.225—0.300
MSE0076SB	0.76	0.456—0.608	0.228—0.304
MSE0077SB	0.77	0.462—0.616	0.231—0.308
MSE0078SB	0.78	0.468—0.624	0.234—0.312
MSE0079SB	0.79	0.474—0.632	0.237—0.316
MSE0080SB	0.80	0.480—0.640	0.240—0.320
MSE0081SB	0.81	0.486—0.648	0.243—0.324
MSE0082SB	0.82	0.492—0.656	0.246—0.328
MSE0083SB	0.83	0.498—0.664	0.249—0.332
MSE0084SB	0.84	0.504—0.672	0.252—0.336
MSE0085SB	0.85	0.510—0.680	0.255—0.340
MSE0086SB	0.86	0.516—0.688	0.258—0.344
MSE0087SB	0.87	0.522—0.696	0.261—0.348
MSE0088SB	0.88	0.528—0.704	0.264—0.352
MSE0089SB	0.89	0.534—0.712	0.267—0.356
MSE0090SB	0.90	0.540—0.720	0.270—0.360
MSE0091SB	0.91	0.546—0.728	0.273—0.364
MSE0092SB	0.92	0.552—0.736	0.276—0.368
MSE0093SB	0.93	0.558—0.744	0.279—0.372
MSE0094SB	0.94	0.564—0.752	0.282—0.376
MSE0095SB	0.95	0.570—0.760	0.285—0.380
MSE0096SB	0.96	0.576—0.768	0.288—0.384
MSE0097SB	0.97	0.582—0.776	0.291—0.388
MSE0098SB	0.98	0.588—0.784	0.294—0.392
MSE0099SB	0.99	0.594—0.792	0.297—0.396

MSP
STARTER Drill

●For use with MSE Type drill only.

P M K N S H

METRIC STANDARD
External Coolant



Note 1) MSP type can be used for shrink fit holders.

Order Number	Grade	Stock	Dimensions (mm)				Range of Diameter (mm)
			DC	OAL	DCON	LU	
MSP0300SB	**VP15TF**	●	3.0	38	3.0	1.5	**0.1—3.0**

RECOMMENDED CUTTING CONDITIONS

DC (mm)	Cutting Speed **vc** (SFM)	Revolution **n** (min^{-1})	Feed **fr** (Min.—Max.) (IPR)
0.1—3.0	10—310	10000	.00002 (.00001—.00004)

L
DRILLING

● : USA Stock

ISO13399 ➤ L003

Memo

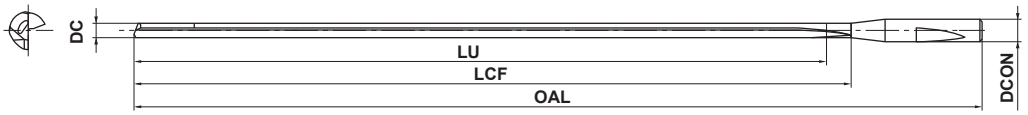
MICRO-MGS

- Small diameter deep hole drilling.
- High hole accuracy is possible.
- Can be used with machining and turning center.

P M K N S H

METRIC STANDARD

Internal Coolant



DC≤3
0 −0.005

Note 1) MGS type can be used for shrink fit holders.

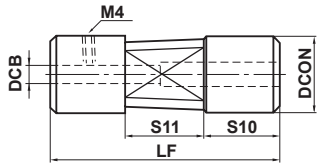
DC (mm)	L/D	Stock HTi10	Order Number	Dimensions (mm) LU	LCF	OAL	DCON
0.7	50	★	MGS0070L040B	35.0	40	80	3
	80	★	MGS0070L060B	56.0	60	100	3
0.8	45	★	MGS0080L040B	36.0	40	80	3
	70	★	MGS0080L060B	56.0	60	100	3
0.9	40	★	MGS0090L040B	36.0	40	80	3
	60	★	MGS0090L060B	54.0	60	100	3
1.0	35	★	MGS0100L040B	35.0	40	80	3
	55	★	MGS0100L060B	55.0	60	100	3
	75	★	MGS0100L080B	75.0	80	120	3
1.1	30	★	MGS0110L040B	33.0	40	80	3
	50	★	MGS0110L060B	55.0	60	100	3
	65	★	MGS0110L080B	71.5	80	120	3
1.2	30	★	MGS0120L040B	36.0	40	80	3
	45	★	MGS0120L060B	54.0	60	100	3
	60	★	MGS0120L080B	72.0	80	120	3
1.3	40	★	MGS0130L060B	52.0	60	100	3
	55	★	MGS0130L080B	71.5	80	120	3
	70	★	MGS0130L100B	91.0	100	140	3
1.4	35	★	MGS0140L060B	49.0	60	100	3
	50	★	MGS0140L080B	70.0	80	120	3
	65	★	MGS0140L100B	91.0	100	140	3
1.5	35	★	MGS0150L060B	52.5	60	100	3
	50	★	MGS0150L080B	75.0	80	120	3
	60	★	MGS0150L100B	90.0	100	140	3
1.6	30	★	MGS0160L060B	48.0	60	100	3
	45	★	MGS0160L080B	72.0	80	120	3
	55	★	MGS0160L100B	88.0	100	140	3
1.7	30	★	MGS0170L060B	51.0	60	100	3
	40	★	MGS0170L080B	68.0	80	120	3
	55	★	MGS0170L100B	93.5	100	140	3

DC (mm)	L/D	Stock HTi10	Order Number	Dimensions (mm) LU	LCF	OAL	DCON
1.8	30	★	MGS0180L060B	54.0	60	100	3
	40	★	MGS0180L080B	72.0	80	120	3
	50	★	MGS0180L100B	90.0	100	140	3
1.9	25	★	MGS0190L060B	47.5	60	100	3
	35	★	MGS0190L080B	66.5	80	120	3
	45	★	MGS0190L100B	85.5	100	140	3
2.0	25	★	MGS0200L060B	50.0	60	100	3
	35	★	MGS0200L080B	70.0	80	120	3
	45	★	MGS0200L100B	90.0	100	140	3
2.1	35	★	MGS0210L080B	73.5	80	120	3
	40	★	MGS0210L100B	84.0	100	140	3
2.2	30	★	MGS0220L080B	66.0	80	120	3
	40	★	MGS0220L100B	88.0	100	140	3
2.3	30	★	MGS0230L080B	69.0	80	120	3
	40	★	MGS0230L100B	92.0	100	140	3
2.4	30	★	MGS0240L080B	72.0	80	120	3
	35	★	MGS0240L100B	84.0	100	140	3
2.5	25	★	MGS0250L080B	62.5	80	120	3
	35	★	MGS0250L100B	87.5	100	140	3
2.6	25	★	MGS0260L080B	65.0	80	120	3
	35	★	MGS0260L100B	91.0	100	140	3
2.7	25	★	MGS0270L080B	67.5	80	120	3
	30	★	MGS0270L100B	81.0	100	140	3
2.8	25	★	MGS0280L080B	70.0	80	120	3
	30	★	MGS0280L100B	84.0	100	140	3
2.9	20	★	MGS0290L080B	58.0	80	120	3
	30	★	MGS0290L100B	87.0	100	140	3
3.0	20	★	MGS0300L080B	60.0	80	120	3
	30	★	MGS0300L100B	90.0	100	140	3

Note 1) Contact Mitsubishi Materials regarding coated products.

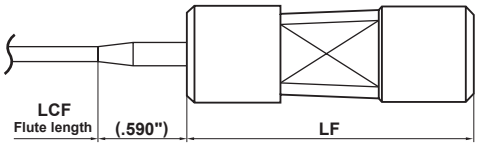
★ : Stocked in Japan

■ DRIVER



Order Number	Stock	Dimensions (inch)						
		DCON	DCB	LF	S10	S11	Clamp Screw	Wrench
MGD38	★	.500	.118	1.500	.496	.500	HSS04004	HKY20F
MGD70	★	.500	.118	2.756	.984	.787	HSS04004	HKY20F

■ When connected with a driver.



RECOMMENDED CUTTING CONDITIONS

Workpiece Material		Mild Steel (≤180HB) AISI 1010 etc.		Carbon Steel, Alloy Steel (180—280HB) AISI 1045, 4140 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0315	**0.8**	165 (130—195)	.0004 (.0002—.0006)	130 (100—165)	.0004 (.0002—.0006)
.0394	**1.0**	165 (130—195)	.0004 (.0003—.0008)	130 (100—165)	.0004 (.0003—.0008)
.0472	**1.2**	195 (150—245)	.0006 (.0003—.0009)	165 (130—195)	.0006 (.0003—.0009)
.0630	**1.6**	195 (150—245)	.0008 (.0004—.0013)	165 (130—195)	.0008 (.0004—.0013)
.0787	**2.0**	195 (150—245)	.0010 (.0005—.0016)	165 (130—195)	.0010 (.0005—.0016)
.0984	**2.5**	230 (180—280)	.0012 (.0007—.0020)	195 (150—245)	.0012 (.0007—.0020)
.1181	**3.0**	230 (180—280)	.0016 (.0008—.0024)	195 (150—245)	.0016 (.0008—.0024)

Workpiece Material		Carbon Steel, Alloy Steel (280—350HB) AISI 4340 etc.		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0315	**0.8**	100 (65—130)	.0002 (.0002—.0002)	100 (65—130)	.0004 (.0002—.0006)
.0394	**1.0**	100 (65—130)	.0002 (.0002—.0003)	100 (65—130)	.0004 (.0003—.0008)
.0472	**1.2**	130 (100—165)	.0002 (.0002—.0003)	100 (65—130)	.0006 (.0003—.0009)
.0630	**1.6**	130 (100—165)	.0004 (.0003—.0004)	130 (100—165)	.0008 (.0004—.0013)
.0787	**2.0**	130 (100—165)	.0004 (.0004—.0005)	130 (100—165)	.0010 (.0005—.0016)
.0984	**2.5**	165 (130—195)	.0006 (.0005—.0007)	130 (100—165)	.0012 (.0007—.0020)
.1181	**3.0**	165 (130—195)	.0006 (.0006—.0008)	130 (100—165)	.0016 (.0008—.0024)

Note 1) A pilot hole or guide bushing is required.
Note 2) Coolant filter must be less than 5 microns. Fine filtration is necessary to prevent blockage of the coolant holes.
Note 3) For safety and success, high pressure coolant is required. **(Minimum coolant pressure = 1,000PSI)**
Note 4) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

ISO13399 ➤ L003
HOW TO USE ➤ L166

MICRO-MGS

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		Gray Cast Iron (≤350MPa) No45B etc.		Ductile Cast Iron (≤450MPa) 60-40-8 etc.	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0315	**0.8**	165 (130—195)	.0004 (.0003—.0006)	130 (100—165)	.0002 (.0002—.0003)
.0394	**1.0**	165 (130—195)	.0006 (.0004—.0008)	130 (100—165)	.0002 (.0003—.0004)
.0472	**1.2**	195 (150—245)	.0006 (.0005—.0009)	165 (130—195)	.0004 (.0003—.0005)
.0630	**1.6**	195 (150—245)	.0008 (.0006—.0013)	165 (130—195)	.0004 (.0004—.0006)
.0787	**2.0**	195 (150—245)	.0012 (.0008—.0016)	165 (130—195)	.0006 (.0005—.0008)
.0984	**2.5**	230 (180—280)	.0014 (.0010—.0020)	195 (150—245)	.0008 (.0007—.0010)
.1181	**3.0**	230 (180—280)	.0018 (.0012—.0024)	195 (150—245)	.0010 (.0008—.0012)

Workpiece Material		Aluminum Alloy (Si<5%) ASTM A6061, 7075 etc.		Copper, Copper alloy	
Drill Dia. **DC**		Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (Min.—Max.) (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm				
.0315	**0.8**	165 (130—195)	.0004 (.0003—.0006)	130 (100—165)	.0004 (.0003—.0006)
.0394	**1.0**	195 (150—245)	.0006 (.0004—.0008)	165 (130—195)	.0006 (.0004—.0008)
.0472	**1.2**	230 (180—280)	.0006 (.0005—.0009)	195 (150—245)	.0006 (.0005—.0009)
.0630	**1.6**	260 (195—330)	.0008 (.0006—.0013)	230 (180—280)	.0008 (.0006—.0013)
.0787	**2.0**	295 (230—360)	.0012 (.0008—.0016)	260 (195—330)	.0012 (.0008—.0016)
.0984	**2.5**	330 (260—395)	.0014 (.0010—.0020)	295 (230—360)	.0014 (.0010—.0020)
.1181	**3.0**	330 (260—395)	.0018 (.0012—.0024)	330 (260—395)	.0018 (.0012—.0024)

Note 1) A pilot hole or guide bushing is required.
Note 2) Coolant filter must be less than **5 microns**. Fine filtration is necessary to prevent blockage of the coolant holes.
Note 3) For safety and success, high pressure coolant is required. **(Minimum coolant pressure = 1,000PSI)**
Note 4) For the spindle revolution of diameters not shown in the table, please adjust to the conditions of larger and closest diameter, or calculate from the cutting speed of the closest diameter. For the feed rate per revolution, please set up within the recommended feed rate of the closest diameter appropriately.

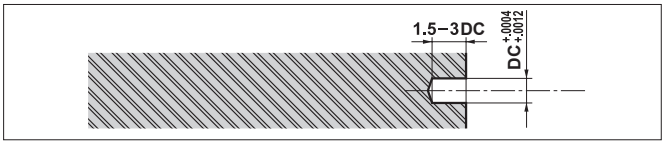
■ Special Application Notes :

- For safety and success, high pressure coolant is required. **(Minimum coolant pressure = 1000PSI)**
- Coolant filter must be less than **5 microns**. Fine filtration is necessary to prevent blockage of the coolant holes.
- A pilot hole or guide bushing is required.

HOW TO USE

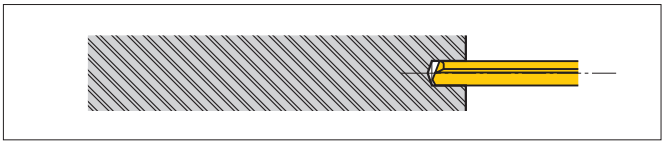
■ 1. Pilot hole drilling.

(Mitsubishi's MICRO-MVS/MICRO-MWS Drill is recommended.)

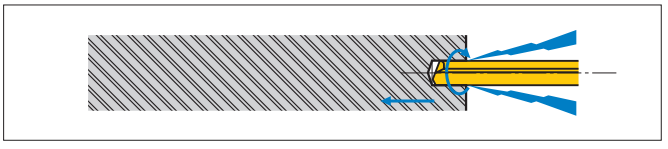


■ 2. Drill is inserted into the pilot hole with the MGS drill rotation stopped or rotating CCW at 300 min-1 or less.

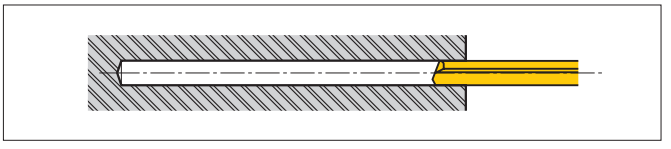
(Drill is not rotating.)



■ 3. Coolant is turned ON, raise cutting speed and feed to the recommended cutting condition.



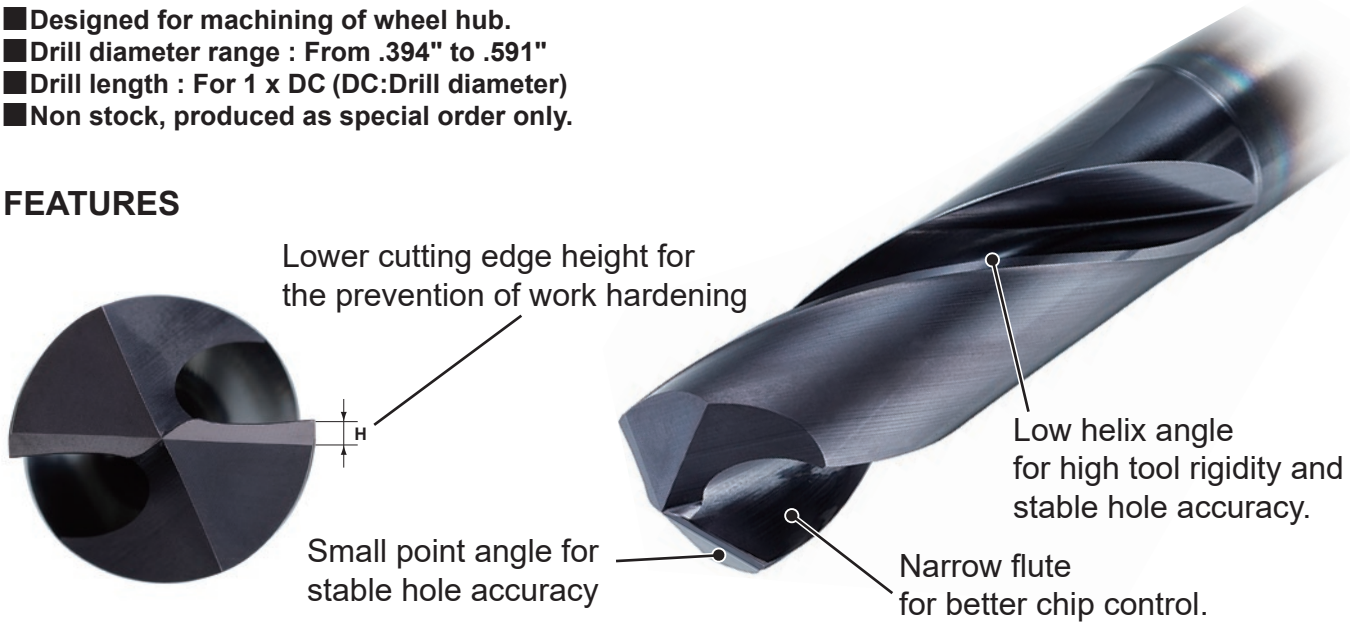
■ 4. Return to "Pos 2" after drilling end, coolant turned OFF and drill rotation is stopped.



MHE (Drill for WHEEL HUB)

- Designed for machining of wheel hub.
- Drill diameter range : From .394" to .591"
- Drill length : For 1 x DC (DC:Drill diameter)
- Non stock, produced as special order only.

FEATURES

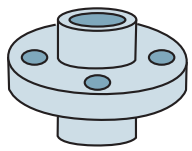


RECOMMENDED CUTTING CONDITIONS

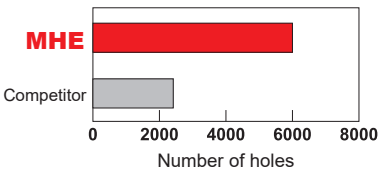
Workpiece Material		Hardness	ϕ.394" – ϕ.591"	
			Cutting Speed **vc** (SFM)	Feed **fr** (IPR)
P	Carbon Steel	<180HB	245 (195—295)	.010 (.006—.012)

Note 1) The above cutting conditions should be used as a guide and need to be adjusted according to the machine rigidity, workpiece material clamping and shape.

APPLICATION EXAMPLES

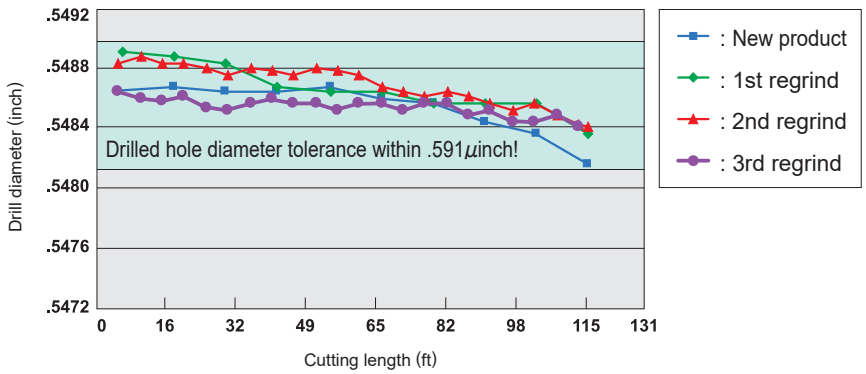


Tool : ϕ.500" x 4" x ϕ.500"
Component : Hub
Workpiece Material : Carbon steel
Cutting speed : 195 SFM
Feed : .006 IPR
Coolant : WSO



CUTTING PERFORMANCE

Hole Accuracy



Chip Geometry

Chip breaking properties
The workpiece material surface is not damaged due to the fine chips that were generated.

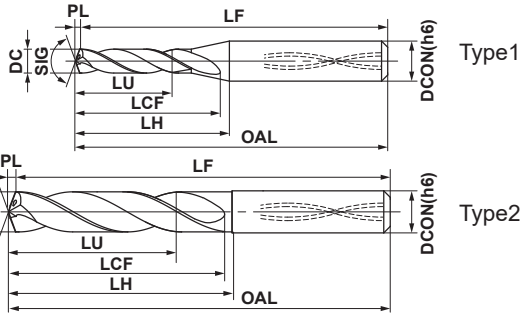
DSA

- Solid carbide drill for machining heat resistant alloys.
- The specially designed thin margin minimizes contact area with hole surface.

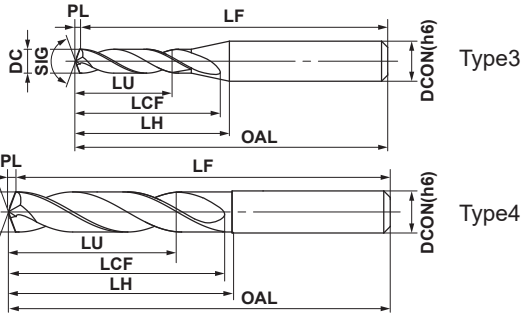
UWC | DP9 | only DSAS | 140° | X

P | M | K | N | **S** | H

DSAS (Internal Coolant)



DSAE (External Coolant)



* When looking at coating the color can vary depending on the direction of viewing.This does not have any effect on the performance of the drill.

(inch)

Type	Tolerance	DC=.1181	.1181<DC≤.2362	.2362<DC≤.3937	.3937<DC≤.5906
Type1,2,3,4	DC	0 −.00071	0 −.00071	0 −.00087	0 −.00106
	DCON	0 −.00031	0 −.00031	0 −.00035	0 −.00043

(mm)

Type	Tolerance	DC=3	3<DC≤6	6<DC≤10	10<DC≤15
Type1,2,3,4	DC	0 −0.018	0 −0.018	0 −0.022	0 −0.027
	DCON	0 −0.008	0 −0.008	0 −0.009	0 −0.011

DC Metric (mm)	DC Decimal (inch)	DC Fraction (inch)	Wire / Letter	Thread Size	L/D	Coolant (Int./Ext.)	Stock DP9020	Order Number	LU mm	LU inch	LCF mm	LCF inch	LH mm	LH inch	OAL mm	OAL inch	LF mm	LF inch	PL mm	PL inch	DCON mm	DCON inch	Type
3.000	**.1181**				3	Ext.	★	**DSAE0300X03S060**	9.5	.374	21.5	.846	23.5	.925	70.5	2.776	70	2.756	0.5	.020	6	.236	3
					3	Int.	●	**DSAS0300X03S060**	9.5	.374	21.5	.846	23.5	.925	70.5	2.776	70	2.756	0.5	.020	6	.236	1
					5	Int.	●	**DSAS0300X05S060**	15.5	.610	28.5	1.122	31.5	1.240	78.5	3.091	78	3.071	0.5	.020	6	.236	1
3.100	**.1220**				3	Int.	●	**DSAS0310X03S060**	9.9	.390	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1
					5	Int.	●	**DSAS0310X05S060**	16.1	.634	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	1
3.175	**.1250**	**1/8**			3	Int.	●	**DSAS0318X03S060**	10.1	.398	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1
					5	Int.	●	**DSAS0318X05S060**	16.5	.650	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	1
3.200	**.1260**				3	Int.	●	**DSAS0320X03S060**	10.2	.402	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1
					5	Int.	●	**DSAS0320X05S060**	16.6	.654	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	1
3.260	**.1283**				3	Int.	●	**DSAS0326X03S060**	10.4	.409	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1
					5	Int.	★	**DSAS0326X05S060**	16.9	.665	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	1
3.300	**.1299**			**M4x.7**	3	Int.	●	**DSAS0330X03S060**	10.5	.413	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1
					5	Int.	●	**DSAS0330X05S060**	17.1	.673	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	1
3.400	**.1339**				3	Ext.	★	**DSAE0340X03S060**	10.8	.425	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	3
					3	Int.	●	**DSAS0340X03S060**	10.8	.425	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1
					5	Int.	●	**DSAS0340X05S060**	17.6	.693	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	1
3.500	**.1378**				3	Int.	●	**DSAS0350X03S060**	11.1	.437	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1
					5	Int.	●	**DSAS0350X05S060**	18.1	.713	28.6	1.126	31.6	1.244	78.6	3.094	78	3.071	0.6	.024	6	.236	1

Note 1) The coolant hole of ø.1875" (ø4.763mm) or less will be round shape.

● = NEW

● : USA Stock ★ : Stocked in Japan

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread Size			DP9020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.572	.1407	9/64			3	Int.	●	DSAS0357X03S060	11.4	.449	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1
					5	Int.	●	DSAS0357X05S060	18.6	.732	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	1
3.600	.1417				3	Int.	●	DSAS0360X03S060	11.5	.453	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1
					5	Int.	★	DSAS0360X05S060	18.7	.736	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	1
3.700	.1457			M4.5x.75	3	Int.	●	DSAS0370X03S060	11.8	.465	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1
					5	Int.	●	DSAS0370X05S060	19.2	.756	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	1
3.800	.1496		25	#10-24	3	Int.	●	DSAS0380X03S060	12.1	.476	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1
					5	Int.	●	DSAS0380X05S060	19.7	.776	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	1
3.900	.1535				3	Int.	●	DSAS0390X03S060	12.4	.488	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1
					5	Int.	●	DSAS0390X05S060	20.2	.795	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	1
3.969	.1563	5/32			3	Int.	●	DSAS0397X03S060	12.6	.496	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1
					5	Int.	●	DSAS0397X05S060	20.5	.807	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	1
4.000	.1575				3	Ext.	★	DSAE0400X03S060	12.7	.500	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	3
					3	Int.	●	DSAS0400X03S060	12.7	.500	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1
					5	Int.	●	DSAS0400X05S060	20.7	.815	30.7	1.209	31.7	1.248	78.7	3.098	78	3.071	0.7	.028	6	.236	1
4.100	.1614				3	Int.	●	DSAS0410X03S060	13.0	.512	24.7	.972	26.7	1.051	73.7	2.902	73	2.874	0.7	.028	6	.236	1
					5	Int.	●	DSAS0410X05S060	21.2	.835	33.7	1.327	35.7	1.406	82.7	3.256	82	3.228	0.7	.028	6	.236	1
4.200	.1654			M5x.8	3	Int.	●	DSAS0420X03S060	13.4	.528	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1
					5	Int.	●	DSAS0420X05S060	21.8	.858	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	1
4.300	.1693				3	Ext.	★	DSAE0430X03S060	13.7	.539	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	3
					3	Int.	●	DSAS0430X03S060	13.7	.539	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1
					5	Int.	●	DSAS0430X05S060	22.3	.878	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	1
4.366	.1719	11/64			3	Int.	●	DSAS0437X03S060	13.9	.547	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1
					5	Int.	●	DSAS0437X05S060	22.6	.890	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	1
4.400	.1732		17		3	Int.	●	DSAS0440X03S060	14.0	.551	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1
					5	Int.	●	DSAS0440X05S060	22.8	.898	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	1
4.500	.1772		16	#12-24	3	Ext.	★	DSAE0450X03S060	14.3	.563	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	3
					3	Int.	●	DSAS0450X03S060	14.3	.563	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1
					5	Int.	●	DSAS0450X05S060	23.3	.917	33.8	1.331	35.8	1.409	82.8	3.260	82	3.228	0.8	.031	6	.236	1
4.600	.1811				3	Int.	●	DSAS0460X03S060	14.6	.575	25.8	1.016	28.8	1.134	75.8	2.984	75	2.953	0.8	.031	6	.236	1
					5	Int.	●	DSAS0460X05S060	23.8	.937	35.8	1.409	38.8	1.528	85.8	3.378	85	3.346	0.8	.031	6	.236	1
4.700	.1850		13		3	Int.	●	DSAS0470X03S060	15.0	.591	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	Int.	●	DSAS0470X05S060	24.4	.961	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
4.763	.1875	3/16			3	Int.	●	DSAS0476X03S060	15.2	.598	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	Int.	●	DSAS0476X05S060	24.7	.972	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
4.800	.1890		12		3	Int.	●	DSAS0480X03S060	15.3	.602	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	Int.	●	DSAS0480X05S060	24.9	.980	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
4.865	.1915				3	Int.	●	DSAS0486X03S060	15.5	.610	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	Int.	★	DSAS0486X05S060	25.2	.992	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
4.900	.1929				3	Int.	●	DSAS0490X03S060	15.6	.614	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1
					5	Int.	★	DSAS0490X05S060	25.4	1.000	35.9	1.413	38.9	1.531	85.9	3.382	85	3.346	0.9	.035	6	.236	1
5.000	.1969			M6x1.0	3	Ext.	★	DSAE0500X03S060	15.9	.626	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	4
					3	Int.	●	DSAS0500X03S060	15.9	.626	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	2
					5	Int.	●	DSAS0500X05S060	25.9	1.020	39.9	1.571	42.9	1.689	89.9	3.539	89	3.504	0.9	.035	6	.236	2
5.100	.2008		7	1/4-20	3	Ext.	★	DSAE0510X03S060	16.2	.638	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	4
					3	Int.	●	DSAS0510X03S060	16.2	.638	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	2
					5	Int.	●	DSAS0510X05S060	26.4	1.039	39.9	1.571	42.9	1.689	89.9	3.539	89	3.504	0.9	.035	6	.236	2
5.160	.2032	13/64			3	Int.	●	DSAS0516X03S060	16.5	.650	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2
					5	Int.	●	DSAS0516X05S060	26.8	1.055	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	2
5.200	.2047				3	Int.	●	DSAS0520X03S060	16.6	.654	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2
					5	Int.	●	DSAS0520X05S060	27.0	1.063	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	2
5.300	.2087		4		3	Int.	●	DSAS0530X03S060	16.9	.665	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2
					5	Int.	●	DSAS0530X05S060	27.5	1.083	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	2

Note 1) The coolant hole of ø.1875" (ø4.763mm) or less will be round shape.

● = NEW

DSA

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP9020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					3	Ext.	★	DSAE0540X03S060	17.2	.677	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	4
5.400	.2126		3	1/4-28	3	Int.	●	DSAS0540X03S060	17.2	.677	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2
					5	Int.	●	DSAS0540X05S060	28.0	1.102	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	2
					3	Ext.	★	DSAE0550X03S060	17.5	.689	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	4
5.500	.2165				3	Int.	●	DSAS0550X03S060	17.5	.689	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2
					5	Int.	●	DSAS0550X05S060	28.5	1.122	40.0	1.575	43.0	1.693	90.0	3.543	89	3.504	1.0	.039	6	.236	2
					3	Int.	●	DSAS0556X03S060	17.8	.701	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2
5.557	.2188	7/32			5	Int.	●	DSAS0556X05S060	28.9	1.138	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	2
					3	Ext.	★	DSAE0560X03S060	17.9	.705	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	4
5.600	.2205		2		3	Int.	●	DSAS0560X03S060	17.9	.705	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2
					5	Int.	●	DSAS0560X05S060	29.1	1.146	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	2
					3	Int.	●	DSAS0570X03S060	18.2	.717	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2
5.700	.2244				5	Int.	●	DSAS0570X05S060	29.6	1.165	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	2
					3	Int.	●	DSAS0580X03S060	18.5	.728	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2
5.800	.2283		1		5	Int.	●	DSAS0580X05S060	30.1	1.185	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	2
					3	Ext.	★	DSAE0590X03S060	18.8	.740	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	4
5.900	.2323				3	Int.	●	DSAS0590X03S060	18.8	.740	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2
					5	Int.	●	DSAS0590X05S060	30.6	1.205	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	2
					3	Int.	●	DSAS0595X03S060	19.0	.748	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2
5.954	.2344	15/64	A		5	Int.	●	DSAS0595X05S060	30.9	1.217	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	2
					3	Ext.	★	DSAE0600X03S060	19.1	.752	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	4
6.000	.2362			M7x1.0	3	Int.	●	DSAS0600X03S060	19.1	.752	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2
					5	Int.	●	DSAS0600X05S060	31.1	1.224	43.1	1.697	43.1	1.697	90.1	3.547	89	3.504	1.1	.043	6	.236	2
					3	Ext.	★	DSAE0610X03S080	19.5	.768	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	4
6.100	.2402				3	Int.	●	DSAS0610X03S080	19.5	.768	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2
					5	Int.	●	DSAS0610X05S080	31.7	1.248	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	2
					3	Ext.	★	DSAE0620X03S080	19.8	.780	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	4
6.200	.2441				3	Int.	●	DSAS0620X03S080	19.8	.780	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2
					5	Int.	●	DSAS0620X05S080	32.2	1.268	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	2
					3	Int.	●	DSAS0630X03S080	20.1	.791	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2
6.300	.2480				5	Int.	★	DSAS0630X05S080	32.7	1.287	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	2
					3	Int.	●	DSAS0635X03S080	20.3	.799	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2
6.350	.2500	1/4	E		5	Int.	●	DSAS0635X05S080	33.0	1.299	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	2
					3	Ext.	★	DSAE0640X03S080	20.4	.803	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	4
6.400	.2520				3	Int.	●	DSAS0640X03S080	20.4	.803	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2
					5	Int.	●	DSAS0640X05S080	33.2	1.307	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	2
					3	Int.	●	DSAS0650X03S080	20.7	.815	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2
6.500	.2559				5	Int.	●	DSAS0650X05S080	33.7	1.327	47.2	1.858	49.2	1.937	96.2	3.787	95	3.740	1.2	.047	8	.315	2
					3	Int.	●	DSAS0660X03S080	21.1	.831	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2
6.600	.2598				5	Int.	●	DSAS0660X05S080	34.3	1.350	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	2
					3	Int.	●	DSAS0670X03S080	21.4	.843	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2
6.700	.2638			M8x1.25	5	Int.	★	DSAS0670X05S080	34.8	1.370	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	2
					3	Int.	●	DSAS0675X03S080	21.5	.846	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2
6.747	.2657	17/64			5	Int.	●	DSAS0675X05S080	35.0	1.378	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	2
					3	Ext.	★	DSAE0680X03S080	21.7	.854	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	4
6.800	.2677				3	Int.	●	DSAS0680X03S080	21.7	.854	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2
					5	Int.	●	DSAS0680X05S080	35.3	1.390	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	2
					3	Ext.	★	DSAE0690X03S080	22.0	.866	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	4
6.900	.2717		I	5/16-24	3	Int.	●	DSAS0690X03S080	22.0	.866	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2
					5	Int.	●	DSAS0690X05S080	35.8	1.409	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	2
					3	Int.	●	DSAS0695X03S080	22.2	.874	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2
6.950	.2736				5	Int.	★	DSAS0695X05S080	36.1	1.421	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	2

● = NEW

● : USA Stock ★ : Stocked in Japan

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP9020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
					3	Ext.	★	DSAE0700X03S080	22.3	.878	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	4
7.000	.2756			M8x1.0	3	Int.	●	DSAS0700X03S080	22.3	.878	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2
					5	Int.	●	DSAS0700X05S080	36.3	1.429	50.3	1.980	52.3	2.059	99.3	3.909	98	3.858	1.3	.051	8	.315	2
					3	Ext.	★	DSAE0710X03S080	22.7	.894	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	4
7.100	.2795				3	Int.	●	DSAS0710X03S080	22.7	.894	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2
					5	Int.	●	DSAS0710X05S080	36.9	1.453	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	2
					3	Int.	●	DSAS0714X03S080	22.8	.898	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2
7.144	.2813	9/32	K		5	Int.	●	DSAS0714X05S080	37.1	1.461	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	2
					3	Int.	●	DSAS0720X03S080	23.0	.906	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2
7.200	.2835				5	Int.	●	DSAS0720X05S080	37.4	1.472	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	2
					3	Int.	●	DSAS0730X03S080	23.3	.917	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2
7.300	.2874				5	Int.	★	DSAS0730X05S080	37.9	1.492	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	2
					3	Int.	●	DSAS0740X03S080	23.6	.929	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2
7.400	.2913				5	Int.	●	DSAS0740X05S080	38.4	1.512	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	2
					3	Int.	●	DSAS0750X03S080	23.9	.941	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2
7.500	.2953		M		5	Int.	●	DSAS0750X05S080	38.9	1.531	54.4	2.142	57.4	2.260	104.4	4.110	103	4.055	1.4	.055	8	.315	2
					3	Int.	●	DSAS0754X03S080	24.1	.949	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2
7.541	.2969	19/64			5	Int.	●	DSAS0754X05S080	39.2	1.543	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	2
					3	Int.	●	DSAS0760X03S080	24.3	.957	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2
7.600	.2992				5	Int.	★	DSAS0760X05S080	39.5	1.555	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	2
					3	Int.	●	DSAS0770X03S080	24.6	.969	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2
7.700	.3031				5	Int.	●	DSAS0770X05S080	40.0	1.575	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	2
					3	Ext.	★	DSAE0780X03S080	24.9	.980	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	4
7.800	.3071				3	Int.	●	DSAS0780X03S080	24.9	.980	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2
					5	Int.	●	DSAS0780X05S080	40.5	1.594	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	2
					3	Int.	●	DSAS0790X03S080	25.2	.992	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2
7.900	.3110				5	Int.	●	DSAS0790X05S080	41.0	1.614	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	2
					3	Int.	●	DSAS0794X03S080	25.3	.996	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2
7.938	.3125	5/16		3/8-16	5	Int.	●	DSAS0794X05S080	41.2	1.622	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	2
					3	Ext.	★	DSAE0800X03S080	25.5	1.004	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	4
8.000	.3150				3	Int.	●	DSAS0800X03S080	25.5	1.004	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2
					5	Int.	●	DSAS0800X05S080	41.5	1.634	57.5	2.264	57.5	2.264	104.5	4.114	103	4.055	1.5	.059	8	.315	2
					3	Ext.	★	DSAE0810X03S100	25.8	1.016	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4
8.100	.3189				3	Int.	●	DSAS0810X03S100	25.8	1.016	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2
					5	Int.	★	DSAS0810X05S100	42.0	1.654	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	2
					3	Ext.	★	DSAE0820X03S100	26.1	1.028	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4
8.200	.3228		P		3	Int.	●	DSAS0820X03S100	26.1	1.028	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2
					5	Int.	★	DSAS0820X05S100	42.5	1.673	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	2
					3	Int.	●	DSAS0830X03S100	26.4	1.039	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2
8.300	.3268				5	Int.	●	DSAS0830X05S100	43.0	1.693	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	2
					3	Int.	●	DSAS0833X03S100	26.5	1.043	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2
8.335	.3282	21/64			5	Int.	●	DSAS0833X05S100	43.2	1.701	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	2
					3	Ext.	★	DSAE0840X03S100	26.7	1.051	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4
8.400	.3307				3	Int.	●	DSAS0840X03S100	26.7	1.051	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2
					5	Int.	★	DSAS0840X05S100	43.5	1.713	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	2
					3	Ext.	★	DSAE0850X03S100	27.0	1.063	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4
8.500	.3346			M10x1.5	3	Int.	●	DSAS0850X03S100	27.0	1.063	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2
					5	Int.	●	DSAS0850X05S100	44.0	1.732	61.5	2.421	63.5	2.500	114.5	4.508	113	4.449	1.5	.059	10	.394	2
					3	Int.	●	DSAS0860X03S100	27.4	1.079	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2
8.600	.3386		R		5	Int.	●	DSAS0860X05S100	44.6	1.756	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	2
					3	Int.	●	DSAS0870X03S100	27.7	1.091	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2
8.700	.3425			M10x1.25	5	Int.	●	DSAS0870X05S100	45.1	1.776	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	2

● = NEW

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L174

DSA

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP9020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
8.732	.3438	11/32			3	Int.	●	DSAS0873X03S100	27.8	1.094	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2
					5	Int.	●	DSAS0873X05S100	45.3	1.783	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	2
8.800	.3465				3	Int.	●	DSAS0880X03S100	28.0	1.102	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2
					5	Int.	●	DSAS0880X05S100	45.6	1.795	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	2
8.900	.3504				3	Int.	●	DSAS0890X03S100	28.3	1.114	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2
					5	Int.	●	DSAS0890X05S100	46.1	1.815	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	2
9.000	.3543				3	Ext.	★	DSAE0900X03S100	28.6	1.126	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	4
					3	Int.	●	DSAS0900X03S100	28.6	1.126	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2
					5	Int.	●	DSAS0900X05S100	46.6	1.835	64.6	2.543	66.6	2.622	117.6	4.630	116	4.567	1.6	.063	10	.394	2
9.100	.3583		T		3	Int.	●	DSAS0910X03S100	29.1	1.146	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	★	DSAS0910X05S100	47.3	1.862	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.200	.3622				3	Int.	●	DSAS0920X03S100	29.4	1.157	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	★	DSAS0920X05S100	47.8	1.882	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.300	.3661				3	Int.	●	DSAS0930X03S100	29.7	1.169	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	★	DSAS0930X05S100	48.3	1.902	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.400	.3701				3	Int.	●	DSAS0940X03S100	30.0	1.181	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	★	DSAS0940X05S100	48.8	1.921	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.500	.3740				3	Int.	●	DSAS0950X03S100	30.3	1.193	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	●	DSAS0950X05S100	49.3	1.941	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.525	.3750	3/8			3	Int.	●	DSAS0953X03S100	30.4	1.197	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	●	DSAS0953X05S100	49.4	1.945	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.600	.3780				3	Int.	●	DSAS0960X03S100	30.6	1.205	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	★	DSAS0960X05S100	49.8	1.961	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.700	.3819		Tube Sheet		3	Int.	●	DSAS0970X03S100	30.9	1.217	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	★	DSAS0970X05S100	50.3	1.980	68.8	2.709	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.800	.3858		W		3	Int.	●	DSAS0980X03S100	31.2	1.228	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	●	DSAS0980X05S100	50.8	2.000	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.900	.3898				3	Int.	●	DSAS0990X03S100	31.5	1.240	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	★	DSAS0990X05S100	51.3	2.020	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
9.922	.3907	25/64		7/16-20	3	Int.	●	DSAS0992X03S100	31.6	1.244	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	●	DSAS0992X05S100	51.4	2.024	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
10.000	.3937				3	Ext.	★	DSAE1000X03S100	31.8	1.252	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	4
					3	Int.	●	DSAS1000X03S100	31.8	1.252	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	2
					5	Int.	●	DSAS1000X05S100	51.8	2.039	71.8	2.827	71.8	2.827	122.8	4.835	121	4.764	1.8	.071	10	.394	2
10.100	.3976				3	Int.	●	DSAS1010X03S120	32.2	1.268	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	★	DSAS1010X05S120	52.4	2.063	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2
10.200	.4016			M12x1.75	3	Int.	●	DSAS1020X03S120	32.5	1.280	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	★	DSAS1020X05S120	52.9	2.083	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2
10.300	.4055				3	Int.	●	DSAS1030X03S120	32.8	1.291	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	★	DSAS1030X05S120	53.4	2.102	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2
10.319	.4063	13/32			3	Int.	●	DSAS1032X03S120	32.9	1.295	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	●	DSAS1032X05S120	53.5	2.106	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2
10.400	.4094				3	Int.	●	DSAS1040X03S120	33.1	1.303	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	★	DSAS1040X05S120	53.9	2.122	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2
10.500	.4134		Z		3	Ext.	★	DSAE1050X03S120	33.4	1.315	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	4
					3	Int.	●	DSAS1050X03S120	33.4	1.315	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	●	DSAS1050X05S120	54.4	2.142	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2
10.600	.4173				3	Int.	●	DSAS1060X03S120	33.7	1.327	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	★	DSAS1060X05S120	54.9	2.161	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2
10.700	.4213				3	Ext.	★	DSAE1070X03S120	34.0	1.339	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	4
					3	Int.	●	DSAS1070X03S120	34.0	1.339	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2
					5	Int.	★	DSAS1070X05S120	55.4	2.181	75.9	2.988	79.9	3.146	135.9	5.350	134	5.276	1.9	.075	12	.472	2

● = NEW

● : USA Stock ★ : Stocked in Japan

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP9020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
10.716	.4219	27/64		1/2-13	3	Int.	●	DSAS1072X03S120	34.1	1.343	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	2
					5	Int.	●	DSAS1072X05S120	55.6	2.189	79.0	3.110	80.0	3.150	142.0	5.591	140	5.512	2.0	.079	12	.472	2
10.800	.4252			M12x1.25	3	Int.	●	DSAS1080X03S120	34.4	1.354	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	2
					5	Int.	★	DSAS1080X05S120	56.0	2.205	79.0	3.110	80.0	3.150	142.0	5.591	140	5.512	2.0	.079	12	.472	2
10.900	.4291				3	Int.	●	DSAS1090X03S120	34.7	1.366	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	2
					5	Int.	★	DSAS1090X05S120	56.5	2.224	79.0	3.110	80.0	3.150	142.0	5.591	140	5.512	2.0	.079	12	.472	2
11.000	.4331				3	Ext.	★	DSAE1100X03S120	35.0	1.378	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	4
					3	Int.	●	DSAS1100X03S120	35.0	1.378	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	2
					5	Int.	●	DSAS1100X05S120	57.0	2.244	79.0	3.110	80.0	3.150	142.0	5.591	140	5.512	2.0	.079	12	.472	2
11.100	.4370				3	Int.	●	DSAS1110X03S120	35.4	1.394	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	2
					5	Int.	★	DSAS1110X05S120	57.6	2.268	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	2
11.113	.4375	7/16			3	Int.	●	DSAS1111X03S120	35.4	1.394	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	2
					5	Int.	●	DSAS1111X05S120	57.7	2.272	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	2
11.200	.4409				3	Int.	●	DSAS1120X03S120	35.7	1.406	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	2
					5	Int.	★	DSAS1120X05S120	58.1	2.287	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	2
11.300	.4449				3	Int.	●	DSAS1130X03S120	36.0	1.417	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	2
					5	Int.	★	DSAS1130X05S120	58.6	2.307	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	2
11.400	.4488				3	Int.	●	DSAS1140X03S120	36.3	1.429	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	2
					5	Int.	★	DSAS1140X05S120	59.1	2.327	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	2
11.500	.4528				3	Ext.	★	DSAE1150X03S120	36.6	1.441	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	4
					3	Int.	●	DSAS1150X03S120	36.6	1.441	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	2
					5	Int.	●	DSAS1150X05S120	59.6	2.346	83.1	3.272	86.1	3.390	142.1	5.594	140	5.512	2.1	.083	12	.472	2
11.510	.4532	29/64		1/2-20	3	Int.	●	DSAS1151X03S120	36.7	1.445	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	2
					5	Int.	★	DSAS1151X05S120	59.7	2.350	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	2
11.600	.4567				3	Int.	●	DSAS1160X03S120	37.0	1.457	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	2
					5	Int.	★	DSAS1160X05S120	60.2	2.370	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	2
11.700	.4606				3	Int.	●	DSAS1170X03S120	37.3	1.469	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	2
					5	Int.	★	DSAS1170X05S120	60.7	2.390	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	2
11.800	.4646				3	Int.	●	DSAS1180X03S120	37.6	1.480	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	2
					5	Int.	★	DSAS1180X05S120	61.2	2.409	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	2
11.900	.4685				3	Int.	●	DSAS1190X03S120	37.9	1.492	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	2
					5	Int.	★	DSAS1190X05S120	61.7	2.429	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	2
12.000	.4724			M14x2.0	3	Ext.	★	DSAE1200X03S120	38.2	1.504	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	4
					3	Int.	●	DSAS1200X03S120	38.2	1.504	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	2
					5	Int.	●	DSAS1200X05S120	62.2	2.449	86.2	3.394	86.2	3.394	142.2	5.598	140	5.512	2.2	.087	12	.472	2
12.300	.4843				3	Int.	●	DSAS1230X03S140	39.1	1.539	65.2	2.567	68.2	2.685	124.2	4.890	122	4.803	2.2	.087	14	.551	2
					5	Int.	●	DSAS1230X05S140	63.7	2.508	90.2	3.551	94.2	3.709	150.2	5.913	148	5.827	2.2	.087	14	.551	2
12.400	.4882				3	Int.	●	DSAS1240X03S140	39.5	1.555	65.3	2.571	68.3	2.689	124.3	4.894	122	4.803	2.3	.091	14	.551	2
					5	Int.	●	DSAS1240X05S140	64.3	2.531	90.3	3.555	94.3	3.713	150.3	5.917	148	5.827	2.3	.091	14	.551	2
12.500	.4921			M14x1.5	3	Int.	●	DSAS1250X03S140	39.8	1.567	65.3	2.571	68.3	2.689	124.3	4.894	122	4.803	2.3	.091	14	.551	2
					5	Int.	●	DSAS1250X05S140	64.8	2.551	90.3	3.555	94.3	3.713	150.3	5.917	148	5.827	2.3	.091	14	.551	2
12.700	.5000	1/2			3	Int.	●	DSAS1270X03S140	40.4	1.591	67.3	2.650	68.3	2.689	128.3	5.051	126	4.961	2.3	.091	14	.551	2
					5	Int.	●	DSAS1270X05S140	65.8	2.591	93.3	3.673	94.3	3.713	156.3	6.154	154	6.063	2.3	.091	14	.551	2
13.000	.5118				3	Int.	●	DSAS1300X03S140	41.4	1.630	67.4	2.654	68.4	2.693	128.4	5.055	126	4.961	2.4	.094	14	.551	2
					5	Int.	●	DSAS1300X05S140	67.4	2.654	93.4	3.677	94.4	3.717	156.4	6.157	154	6.063	2.4	.094	14	.551	2
13.100	.5157			9/16-18	3	Int.	●	DSAS1310X03S140	41.7	1.642	70.4	2.772	72.4	2.850	128.4	5.055	126	4.961	2.4	.094	14	.551	2
					5	Int.	●	DSAS1310X05S140	67.9	2.673	97.4	3.835	100.4	3.953	156.4	6.157	154	6.063	2.4	.094	14	.551	2
13.500	.5315			5/8-11	3	Int.	●	DSAS1350X03S140	43.0	1.693	70.5	2.776	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	2
					5	Int.	●	DSAS1350X05S140	70.0	2.756	97.5	3.839	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	2
14.000	.5512			M16x2.0	3	Int.	●	DSAS1400X03S140	44.5	1.752	72.5	2.854	72.5	2.854	128.5	5.059	126	4.961	2.5	.098	14	.551	2
					5	Int.	●	DSAS1400X05S140	72.5	2.854	100.5	3.957	100.5	3.957	156.5	6.161	154	6.063	2.5	.098	14	.551	2

● = NEW

DSA

DC					L/D	Coolant (Int./Ext.)	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size			DP9020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
14.500	**.5709**			**M16x1.5**	3	Int.	●	**DSAS1450X03S160**	46.1	1.815	75.6	2.976	78.6	3.094	137.6	5.417	135	5.315	2.6	.102	16	.630	2
					5	Int.	●	**DSAS1450X05S160**	75.1	2.957	104.6	4.118	108.6	4.276	167.6	6.598	165	6.496	2.6	.102	16	.630	2
14.600	**.5748**				3	Int.	●	**DSAS1460X03S160**	46.5	1.831	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	2
					5	Int.	●	**DSAS1460X05S160**	75.7	2.980	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	2
14.700	**.5787**				3	Int.	●	**DSAS1470X03S160**	46.8	1.843	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	2
					5	Int.	●	**DSAS1470X05S160**	76.2	3.000	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	2
15.000	**.5906**				3	Int.	●	**DSAS1500X03S160**	47.7	1.878	77.7	3.059	78.7	3.098	137.7	5.421	135	5.315	2.7	.106	16	.630	2
					5	Int.	●	**DSAS1500X05S160**	77.7	3.059	107.7	4.240	108.7	4.280	167.7	6.602	165	6.496	2.7	.106	16	.630	2

● = NEW

RECOMMENDED CUTTING CONDITIONS

(inch)

Workpiece Material			Heat Resistant Alloys Inconel718 etc.		Titanium Alloys Ti-6Al-4V etc.	
DC inch	DC mm	L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
.1181	**3.000**	**≦ 5**	30	.002 (.002—.004)	130	.003 (.002—.005)
.1575	**4.000**	**≦ 5**	30	.002 (.002—.004)	130	.004 (.003—.006)
.1969	**5.000**	**≦ 5**	40	.003 (.002—.005)	130	.005 (.003—.008)
.2362	**6.000**	**≦ 5**	50	.004 (.003—.006)	130	.006 (.004—.008)
.3150	**8.000**	**≦ 5**	50	.004 (.003—.006)	130	.007 (.006—.010)
.3937	**10.000**	**≦ 5**	60	.004 (.003—.006)	130	.009 (.007—.011)
.4724	**12.000**	**≦ 5**	65	.005 (.003—.006)	130	.009 (.008—.012)
.5512	**14.000**	**≦ 5**	65	.005 (.003—.006)	130	.009 (.008—.012)

Note 1) Spindle through & high pressure coolant system is recommended to make stable holes.
Note 2) Emulsion type of water-soluble coolant is recommended.
Note 3) In non water-insoluble coolant, reduce the cutting speed by 10%-20%.
Note 4) When drilling length of DCx1 or more with the use of external coolant system, step drilling is recommended in every DCx0.5 to encourage chips to break.

DWAE

NEW
Mini Size

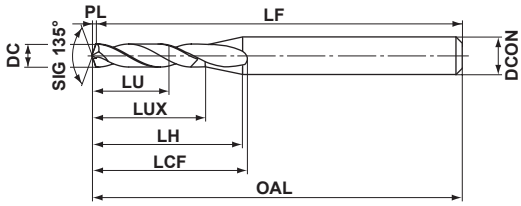
UWC | DP1A | 135° | XR DC<.0787 | X DC≥.0787

P | M | K | N | S | H

METRIC STANDARD

External Coolant

DC<.0787 DC≥.0787



Type1

	DC≤.1181			
	0 −.00055			
h6	DCON=.1181	DCON=.1575		
	0 −.00024	0 −.00031		

DC Metric (mm)	DC Decimal (inch)	DC Wire / Letter	DC Thread Size	L/D	Stock DP102A	Order Number	LU mm	LU inch	LUX mm	LUX inch	LCF mm	LCF inch	LH mm	LH inch	OAL mm	OAL inch	LF mm	LF inch	PL mm	PL inch	DCON mm	DCON inch	Type
1.0	.0394			2	●	DWAE0100X02S030	2.2	.087	5.0	.197	7.7	.303	8.7	.343	45	1.772	44.8	1.764	0.2	.008	3	.118	1
				4	●	DWAE0100X04S030	4.2	.165	7.0	.276	9.9	.390	10.7	.421	45	1.772	44.8	1.764	0.2	.008	3	.118	1
1.1	.0433			2	●	DWAE0110X02S030	2.4	.094	5.4	.213	8.1	.319	8.9	.350	45	1.772	44.8	1.764	0.2	.008	3	.118	1
				4	★	DWAE0110X04S030	4.6	.181	7.6	.299	10.5	.413	11.1	.437	45	1.772	44.8	1.764	0.2	.008	3	.118	1
1.2	.0472			2	●	DWAE0120X02S030	2.6	.102	5.8	.228	8.5	.335	9.2	.362	45	1.772	44.8	1.764	0.2	.008	3	.118	1
				4	●	DWAE0120X04S030	5.0	.197	8.2	.323	11.1	.437	11.6	.457	45	1.772	44.8	1.764	0.2	.008	3	.118	1
1.3	.0512			2	●	DWAE0130X02S030	2.9	.114	6.3	.248	9.0	.354	9.5	.374	45	1.772	44.7	1.760	0.3	.012	3	.118	1
				4	★	DWAE0130X04S030	5.5	.217	8.9	.350	11.9	.469	12.1	.476	45	1.772	44.7	1.760	0.3	.012	3	.118	1
1.4	.0551			2	★	DWAE0140X02S030	3.1	.122	6.7	.264	9.4	.370	9.7	.382	45	1.772	44.7	1.760	0.3	.012	3	.118	1
				4	★	DWAE0140X04S030	5.9	.232	9.5	.374	12.5	.492	12.5	.492	45	1.772	44.7	1.760	0.3	.012	3	.118	1
1.5	.0591		#1-64	2	●	DWAE0150X02S030	3.3	.130	7.1	.280	9.8	.386	9.9	.390	45	1.772	44.7	1.760	0.3	.012	3	.118	1
				4	●	DWAE0150X04S030	6.3	.248	10.1	.398	13.1	.516	12.9	.508	45	1.772	44.7	1.760	0.3	.012	3	.118	1
1.6	.0630			2	●	DWAE0160X02S030	3.5	.138	7.5	.295	10.2	.402	10.1	.398	45	1.772	44.7	1.760	0.3	.012	3	.118	1
				4	●	DWAE0160X04S030	6.7	.264	10.7	.421	13.7	.539	13.3	.524	45	1.772	44.7	1.760	0.3	.012	3	.118	1
1.7	.0669			2	●	DWAE0170X02S030	3.8	.150	8.0	.315	10.7	.421	10.4	.409	45	1.772	44.6	1.756	0.4	.016	3	.118	1
				4	★	DWAE0170X04S030	7.2	.283	11.4	.449	14.4	.567	13.8	.543	45	1.772	44.6	1.756	0.4	.016	3	.118	1
1.8	.0709			2	●	DWAE0180X02S030	4.0	.157	8.4	.331	11.1	.437	10.6	.417	45	1.772	44.6	1.756	0.4	.016	3	.118	1
				4	★	DWAE0180X04S030	7.6	.299	12.0	.472	15.1	.594	14.2	.559	45	1.772	44.6	1.756	0.4	.016	3	.118	1
1.9	.0748			2	★	DWAE0190X02S030	4.2	.165	8.8	.346	11.5	.453	10.9	.429	45	1.772	44.6	1.756	0.4	.016	3	.118	1
				4	★	DWAE0190X04S030	8.0	.315	12.6	.496	15.7	.618	14.7	.579	45	1.772	44.6	1.756	0.4	.016	3	.118	1
2.0	.0787		#3-48	2	●	DWAE0200X02S040	4.4	.173	9.2	.362	12.8	.504	12.9	.508	50	1.969	49.6	1.953	0.4	.016	4	.157	1
				4	●	DWAE0200X04S040	8.4	.331	13.2	.520	17.2	.677	16.9	.665	50	1.969	49.6	1.953	0.4	.016	4	.157	1
2.1	.0827			2	●	DWAE0210X02S040	4.6	.181	9.6	.378	13.2	.520	13.1	.516	50	1.969	49.6	1.953	0.4	.016	4	.157	1
				4	★	DWAE0210X04S040	8.8	.346	13.8	.543	17.8	.701	17.3	.681	50	1.969	49.6	1.953	0.4	.016	4	.157	1
2.2	.0866			2	●	DWAE0220X02S040	4.9	.193	10.1	.398	13.7	.539	13.5	.531	50	1.969	49.5	1.949	0.5	.020	4	.157	1
				4	★	DWAE0220X04S040	9.3	.366	14.5	.571	18.5	.728	17.9	.705	50	1.969	49.5	1.949	0.5	.020	4	.157	1
2.3	.0906			2	●	DWAE0230X02S040	5.1	.201	10.5	.413	14.1	.555	13.7	.539	50	1.969	49.5	1.949	0.5	.020	4	.157	1
				4	★	DWAE0230X04S040	9.7	.382	15.1	.594	19.2	.756	18.3	.720	50	1.969	49.5	1.949	0.5	.020	4	.157	1
2.4	.0945			2	●	DWAE0240X02S040	5.3	.209	10.9	.429	14.5	.571	13.9	.547	50	1.969	49.5	1.949	0.5	.020	4	.157	1
				4	●	DWAE0240X04S040	10.1	.398	15.7	.618	19.8	.780	18.7	.736	50	1.969	49.5	1.949	0.5	.020	4	.157	1
2.5	.0984			2	●	DWAE0250X02S040	5.5	.217	11.3	.445	14.9	.587	14.1	.555	50	1.969	49.5	1.949	0.5	.020	4	.157	1
				4	●	DWAE0250X04S040	10.5	.413	16.3	.642	20.4	.803	19.1	.752	50	1.969	49.5	1.949	0.5	.020	4	.157	1
2.6	.1024			2	●	DWAE0260X02S040	5.7	.224	11.7	.461	15.3	.602	14.3	.563	50	1.969	49.5	1.949	0.5	.020	4	.157	1
				4	★	DWAE0260X04S040	10.9	.429	16.9	.665	21.0	.827	19.5	.768	50	1.969	49.5	1.949	0.5	.020	4	.157	1
2.7	.1063	36	#6-32	2	★	DWAE0270X02S040	6.0	.236	12.2	.480	15.8	.622	14.6	.575	50	1.969	49.4	1.945	0.6	.024	4	.157	1
				4	●	DWAE0270X04S040	11.4	.449	17.6	.693	21.7	.854	20.0	.787	50	1.969	49.4	1.945	0.6	.024	4	.157	1
2.8	.1102	35		2	●	DWAE0280X02S040	6.2	.244	12.6	.496	16.2	.638	14.8	.583	50	1.969	49.4	1.945	0.6	.024	4	.157	1
				4	●	DWAE0280X04S040	11.8	.465	18.2	.717	22.4	.882	20.4	.803	50	1.969	49.4	1.945	0.6	.024	4	.157	1
2.9	.1142			2	●	DWAE0290X02S040	6.4	.252	13.0	.512	16.6	.654	15.1	.594	50	1.969	49.4	1.945	0.6	.024	4	.157	1
				4	●	DWAE0290X04S040	12.2	.480	18.8	.740	23.0	.906	20.9	.823	50	1.969	49.4	1.945	0.6	.024	4	.157	1

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L181

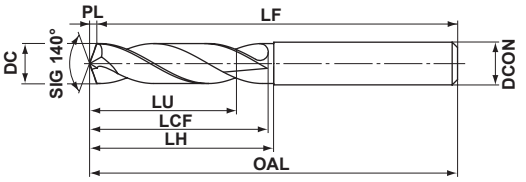
DWAE

NEW

P M K N S H

METRIC STANDARD

External Coolant



Type1

DC=.1181	.1181<DC≤.2362	.2362<DC≤.3937	.3937<DC≤.5512
0 −.00055	0 −.00071	0 −.00087	0 −.00106
DCON=.1181	.1181<DCON≤.2362	.2362<DCON≤.3937	.3937<DCON≤.5512
0 −.00024	0 −.00031	0 −.00035	0 −.00043

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP102A		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.0	.1181				2	●	DWAE0300X02S030	6.5	.256	12.5	.492	14.5	.571	45.5	1.791	45	1.772	0.5	.020	3	.118	1
					4	★	DWAE0300X04S030	12.5	.492	21.5	.846	23.5	.925	55.5	2.185	55	2.165	0.5	.020	3	.118	1
3.1	.1220				2	●	DWAE0310X02S040	6.8	.268	12.6	.496	14.6	.575	55.6	2.189	55	2.165	0.6	.024	4	.157	1
					4	★	DWAE0310X04S040	13.0	.512	21.6	.850	23.6	.929	60.6	2.386	60	2.362	0.6	.024	4	.157	1
3.2	.1260				2	●	DWAE0320X02S040	7.0	.276	13.6	.535	15.6	.614	55.6	2.189	55	2.165	0.6	.024	4	.157	1
					4	★	DWAE0320X04S040	13.4	.528	22.6	.890	24.6	.969	60.6	2.386	60	2.362	0.6	.024	4	.157	1
3.3	.1299			M4x.7	2	●	DWAE0330X02S040	7.2	.283	13.6	.535	15.6	.614	55.6	2.189	55	2.165	0.6	.024	4	.157	1
					4	●	DWAE0330X04S040	13.8	.543	23.6	.929	25.6	1.008	60.6	2.386	60	2.362	0.6	.024	4	.157	1
3.4	.1339				2	●	DWAE0340X02S040	7.4	.291	13.6	.535	15.6	.614	55.6	2.189	55	2.165	0.6	.024	4	.157	1
					4	★	DWAE0340X04S040	14.2	.559	23.6	.929	25.6	1.008	60.6	2.386	60	2.362	0.6	.024	4	.157	1
3.5	.1378				2	●	DWAE0350X02S040	7.6	.299	14.6	.575	16.6	.654	55.6	2.189	55	2.165	0.6	.024	4	.157	1
					4	●	DWAE0350X04S040	14.6	.575	24.6	.969	26.6	1.047	60.6	2.386	60	2.362	0.6	.024	4	.157	1
3.6	.1417				2	●	DWAE0360X02S040	7.9	.311	14.7	.579	16.7	.657	55.7	2.193	55	2.165	0.7	.028	4	.157	1
					4	★	DWAE0360X04S040	15.1	.594	25.7	1.012	27.7	1.091	60.7	2.390	60	2.362	0.7	.028	4	.157	1
3.7	.1457			M4.5x.75	2	●	DWAE0370X02S040	8.1	.319	14.7	.579	16.7	.657	55.7	2.193	55	2.165	0.7	.028	4	.157	1
					4	★	DWAE0370X04S040	15.5	.610	25.7	1.012	27.7	1.091	60.7	2.390	60	2.362	0.7	.028	4	.157	1
3.8	.1496		25	#10-24	2	●	DWAE0380X02S040	8.3	.327	15.7	.618	17.7	.697	55.7	2.193	55	2.165	0.7	.028	4	.157	1
					4	●	DWAE0380X04S040	15.9	.626	26.7	1.051	28.7	1.130	60.7	2.390	60	2.362	0.7	.028	4	.157	1
3.9	.1535				2	●	DWAE0390X02S040	8.5	.335	15.7	.618	17.7	.697	55.7	2.193	55	2.165	0.7	.028	4	.157	1
					4	●	DWAE0390X04S040	16.3	.642	27.7	1.091	29.7	1.169	60.7	2.390	60	2.362	0.7	.028	4	.157	1
4.0	.1575				2	●	DWAE0400X02S040	8.7	.343	15.7	.618	17.7	.697	55.7	2.193	55	2.165	0.7	.028	4	.157	1
					4	●	DWAE0400X04S040	16.7	.657	27.7	1.091	29.7	1.169	60.7	2.390	60	2.362	0.7	.028	4	.157	1
4.1	.1614				2	●	DWAE0410X02S050	8.9	.350	16.7	.657	18.7	.736	62.7	2.469	62	2.441	0.7	.028	5	.197	1
					4	★	DWAE0410X04S050	17.1	.673	28.7	1.130	30.7	1.209	80.7	3.177	80	3.150	0.7	.028	5	.197	1
4.2	.1654			M5x.8	2	●	DWAE0420X02S050	9.2	.362	16.8	.661	18.8	.740	62.8	2.472	62	2.441	0.8	.031	5	.197	1
					4	●	DWAE0420X04S050	17.6	.693	29.8	1.173	31.8	1.252	80.8	3.181	80	3.150	0.8	.031	5	.197	1
4.3	.1693				2	●	DWAE0430X02S050	9.4	.370	17.8	.701	19.8	.780	62.8	2.472	62	2.441	0.8	.031	5	.197	1
					4	★	DWAE0430X04S050	18.0	.709	30.8	1.213	32.8	1.291	80.8	3.181	80	3.150	0.8	.031	5	.197	1
4.4	.1732		17		2	●	DWAE0440X02S050	9.6	.378	17.8	.701	19.8	.780	62.8	2.472	62	2.441	0.8	.031	5	.197	1
					4	★	DWAE0440X04S050	18.4	.724	30.8	1.213	32.8	1.291	80.8	3.181	80	3.150	0.8	.031	5	.197	1
4.5	.1772		16	#12-24	2	●	DWAE0450X02S050	9.8	.386	17.8	.701	19.8	.780	62.8	2.472	62	2.441	0.8	.031	5	.197	1
					4	★	DWAE0450X04S050	18.8	.740	31.8	1.252	33.8	1.331	80.8	3.181	80	3.150	0.8	.031	5	.197	1

● : USA Stock ★ : Stocked in Japan

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread Size		DP102A		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
4.6	.1811				2	●	DWAE0460X02S050	10.0	.394	18.8	.740	20.8	.819	62.8	2.472	62	2.441	0.8	.031	5	.197	1
					4	★	DWAE0460X04S050	19.2	.756	32.8	1.291	34.8	1.370	80.8	3.181	80	3.150	0.8	.031	5	.197	1
4.7	.1850		13		2	●	DWAE0470X02S050	10.3	.406	18.9	.744	20.9	.823	62.9	2.476	62	2.441	0.9	.035	5	.197	1
					4	★	DWAE0470X04S050	19.7	.776	32.9	1.295	34.9	1.374	80.9	3.185	80	3.150	0.9	.035	5	.197	1
4.8	.1890		12		2	●	DWAE0480X02S050	10.5	.413	18.9	.744	20.9	.823	62.9	2.476	62	2.441	0.9	.035	5	.197	1
					4	●	DWAE0480X04S050	20.1	.791	33.9	1.335	35.9	1.413	80.9	3.185	80	3.150	0.9	.035	5	.197	1
4.9	.1929				2	●	DWAE0490X02S050	10.7	.421	19.9	.783	21.9	.862	62.9	2.476	62	2.441	0.9	.035	5	.197	1
					4	★	DWAE0490X04S050	20.5	.807	34.9	1.374	36.9	1.453	80.9	3.185	80	3.150	0.9	.035	5	.197	1
5.0	.1969			M6x1.0	2	●	DWAE0500X02S050	10.9	.429	19.9	.783	21.9	.862	62.9	2.476	62	2.441	0.9	.035	5	.197	1
					4	●	DWAE0500X04S050	20.9	.823	34.9	1.374	36.9	1.453	80.9	3.185	80	3.150	0.9	.035	5	.197	1
5.1	.2008		7	1/4-20	2	●	DWAE0510X02S060	11.1	.437	21.9	.862	23.9	.941	66.9	2.634	66	2.598	0.9	.035	6	.236	1
					4	★	DWAE0510X04S060	21.3	.839	35.9	1.413	37.9	1.492	80.9	3.185	80	3.150	0.9	.035	6	.236	1
5.2	.2047				2	●	DWAE0520X02S060	11.3	.445	21.9	.862	23.9	.941	66.9	2.634	66	2.598	0.9	.035	6	.236	1
					4	●	DWAE0520X04S060	21.7	.854	36.9	1.453	38.9	1.531	80.9	3.185	80	3.150	0.9	.035	6	.236	1
5.3	.2087		4		2	●	DWAE0530X02S060	11.6	.457	22.0	.866	24.0	.945	67.0	2.638	66	2.598	1.0	.039	6	.236	1
					4	★	DWAE0530X04S060	22.2	.874	37.0	1.457	39.0	1.535	81.0	3.189	80	3.150	1.0	.039	6	.236	1
5.4	.2126		3	1/4-28	2	●	DWAE0540X02S060	11.8	.465	22.0	.866	24.0	.945	67.0	2.638	66	2.598	1.0	.039	6	.236	1
					4	★	DWAE0540X04S060	22.6	.890	38.0	1.496	40.0	1.575	81.0	3.189	80	3.150	1.0	.039	6	.236	1
5.5	.2165				2	●	DWAE0550X02S060	12.0	.472	22.0	.866	24.0	.945	67.0	2.638	66	2.598	1.0	.039	6	.236	1
					4	★	DWAE0550X04S060	23.0	.906	39.0	1.535	41.0	1.614	81.0	3.189	80	3.150	1.0	.039	6	.236	1
5.6	.2205		2		2	●	DWAE0560X02S060	12.2	.480	24.0	.945	26.0	1.024	67.0	2.638	66	2.598	1.0	.039	6	.236	1
					4	★	DWAE0560X04S060	23.4	.921	39.0	1.535	41.0	1.614	81.0	3.189	80	3.150	1.0	.039	6	.236	1
5.7	.2244				2	●	DWAE0570X02S060	12.4	.488	24.0	.945	26.0	1.024	67.0	2.638	66	2.598	1.0	.039	6	.236	1
					4	★	DWAE0570X04S060	23.8	.937	39.0	1.535	41.0	1.614	81.0	3.189	80	3.150	1.0	.039	6	.236	1
5.8	.2283		1		2	●	DWAE0580X02S060	12.7	.500	24.1	.949	26.1	1.028	67.1	2.642	66	2.598	1.1	.043	6	.236	1
					4	★	DWAE0580X04S060	24.3	.957	41.1	1.618	43.1	1.697	81.1	3.193	80	3.150	1.1	.043	6	.236	1
5.9	.2323				2	●	DWAE0590X02S060	12.9	.508	24.1	.949	26.1	1.028	67.1	2.642	66	2.598	1.1	.043	6	.236	1
					4	●	DWAE0590X04S060	24.7	.972	41.1	1.618	43.1	1.697	81.1	3.193	80	3.150	1.1	.043	6	.236	1
6.0	.2362			M7x1.0	2	●	DWAE0600X02S060	13.1	.516	24.1	.949	26.1	1.028	67.1	2.642	66	2.598	1.1	.043	6	.236	1
					4	●	DWAE0600X04S060	25.1	.988	42.1	1.657	44.1	1.736	81.1	3.193	80	3.150	1.1	.043	6	.236	1
6.1	.2402				2	★	DWAE0610X02S070	13.3	.524	26.1	1.028	28.1	1.106	75.1	2.957	74	2.913	1.1	.043	7	.276	1
					4	★	DWAE0610X04S070	25.5	1.004	44.1	1.736	46.1	1.815	84.1	3.311	83	3.268	1.1	.043	7	.276	1
6.2	.2441				2	●	DWAE0620X02S070	13.5	.531	26.1	1.028	28.1	1.106	75.1	2.957	74	2.913	1.1	.043	7	.276	1
					4	★	DWAE0620X04S070	25.9	1.020	44.1	1.736	46.1	1.815	84.1	3.311	83	3.268	1.1	.043	7	.276	1
6.3	.2480				2	●	DWAE0630X02S070	13.7	.539	26.1	1.028	28.1	1.106	75.1	2.957	74	2.913	1.1	.043	7	.276	1
					4	●	DWAE0630X04S070	26.3	1.035	44.1	1.736	46.1	1.815	84.1	3.311	83	3.268	1.1	.043	7	.276	1
6.4	.2520				2	●	DWAE0640X02S070	14.0	.551	26.2	1.031	28.2	1.110	75.2	2.961	74	2.913	1.2	.047	7	.276	1
					4	★	DWAE0640X04S070	26.8	1.055	44.2	1.740	46.2	1.819	84.2	3.315	83	3.268	1.2	.047	7	.276	1
6.5	.2559				2	●	DWAE0650X02S070	14.2	.559	26.2	1.031	28.2	1.110	75.2	2.961	74	2.913	1.2	.047	7	.276	1
					4	★	DWAE0650X04S070	27.2	1.071	44.2	1.740	46.2	1.819	84.2	3.315	83	3.268	1.2	.047	7	.276	1
6.6	.2598				2	●	DWAE0660X02S070	14.4	.567	28.2	1.110	30.2	1.189	75.2	2.961	74	2.913	1.2	.047	7	.276	1
					4	★	DWAE0660X04S070	27.6	1.087	46.2	1.819	48.2	1.898	84.2	3.315	83	3.268	1.2	.047	7	.276	1
6.7	.2638				2	●	DWAE0670X02S070	14.6	.575	28.2	1.110	30.2	1.189	75.2	2.961	74	2.913	1.2	.047	7	.276	1
					4	●	DWAE0670X04S070	28.0	1.102	46.2	1.819	48.2	1.898	84.2	3.315	83	3.268	1.2	.047	7	.276	1
6.8	.2677				2	●	DWAE0680X02S070	14.8	.583	28.2	1.110	30.2	1.189	75.2	2.961	74	2.913	1.2	.047	7	.276	1
					4	●	DWAE0680X04S070	28.4	1.118	46.2	1.819	48.2	1.898	84.2	3.315	83	3.268	1.2	.047	7	.276	1
6.9	.2717		I	5/16-24	2	●	DWAE0690X02S070	15.1	.594	28.3	1.114	30.3	1.193	75.3	2.965	74	2.913	1.3	.051	7	.276	1
					4	★	DWAE0690X04S070	28.9	1.138	46.3	1.823	48.3	1.902	84.3	3.319	83	3.268	1.3	.051	7	.276	1
7.0	.2756			M8x1.0	2	●	DWAE0700X02S070	15.3	.602	28.3	1.114	30.3	1.193	75.3	2.965	74	2.913	1.3	.051	7	.276	1
					4	★	DWAE0700X04S070	29.3	1.154	46.3	1.823	48.3	1.902	84.3	3.319	83	3.268	1.3	.051	7	.276	1

DWAE

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP102A		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
7.1	.2795				2	●	DWAE0710X02S080	15.5	.610	29.3	1.154	31.3	1.232	80.3	3.161	79	3.110	1.3	.051	8	.315	1
					4	★	DWAE0710X04S080	29.7	1.169	51.3	2.020	53.3	2.098	91.3	3.594	90	3.543	1.3	.051	8	.315	1
7.2	.2835				2	●	DWAE0720X02S080	15.7	.618	29.3	1.154	31.3	1.232	80.3	3.161	79	3.110	1.3	.051	8	.315	1
					4	★	DWAE0720X04S080	30.1	1.185	51.3	2.020	53.3	2.098	91.3	3.594	90	3.543	1.3	.051	8	.315	1
7.3	.2874				2	●	DWAE0730X02S080	15.9	.626	29.3	1.154	31.3	1.232	80.3	3.161	79	3.110	1.3	.051	8	.315	1
					4	★	DWAE0730X04S080	30.5	1.201	51.3	2.020	53.3	2.098	91.3	3.594	90	3.543	1.3	.051	8	.315	1
7.4	.2913				2	●	DWAE0740X02S080	16.1	.634	29.3	1.154	31.3	1.232	80.3	3.161	79	3.110	1.3	.051	8	.315	1
					4	●	DWAE0740X04S080	30.9	1.217	51.3	2.020	53.3	2.098	91.3	3.594	90	3.543	1.3	.051	8	.315	1
7.5	.2953		M		2	★	DWAE0750X02S080	16.4	.646	29.4	1.157	31.4	1.236	80.4	3.165	79	3.110	1.4	.055	8	.315	1
					4	★	DWAE0750X04S080	31.4	1.236	51.4	2.024	53.4	2.102	91.4	3.598	90	3.543	1.4	.055	8	.315	1
7.6	.2992				2	●	DWAE0760X02S080	16.6	.654	31.4	1.236	33.4	1.315	80.4	3.165	79	3.110	1.4	.055	8	.315	1
					4	★	DWAE0760X04S080	31.8	1.252	53.4	2.102	55.4	2.181	91.4	3.598	90	3.543	1.4	.055	8	.315	1
7.7	.3031				2	●	DWAE0770X02S080	16.8	.661	31.4	1.236	33.4	1.315	80.4	3.165	79	3.110	1.4	.055	8	.315	1
					4	★	DWAE0770X04S080	32.2	1.268	53.4	2.102	55.4	2.181	91.4	3.598	90	3.543	1.4	.055	8	.315	1
7.8	.3071				2	★	DWAE0780X02S080	17.0	.669	31.4	1.236	33.4	1.315	80.4	3.165	79	3.110	1.4	.055	8	.315	1
					4	★	DWAE0780X04S080	32.6	1.283	53.4	2.102	55.4	2.181	91.4	3.598	90	3.543	1.4	.055	8	.315	1
7.9	.3110				2	★	DWAE0790X02S080	17.2	.677	31.4	1.236	33.4	1.315	80.4	3.165	79	3.110	1.4	.055	8	.315	1
					4	★	DWAE0790X04S080	33.0	1.299	53.4	2.102	55.4	2.181	91.4	3.598	90	3.543	1.4	.055	8	.315	1
8.0	.3150				2	●	DWAE0800X02S080	17.5	.689	31.5	1.240	33.5	1.319	80.5	3.169	79	3.110	1.5	.059	8	.315	1
					4	●	DWAE0800X04S080	33.5	1.319	53.5	2.106	55.5	2.185	91.5	3.602	90	3.543	1.5	.059	8	.315	1
8.1	.3189				2	●	DWAE0810X02S090	17.7	.697	33.5	1.319	35.5	1.398	85.5	3.366	84	3.307	1.5	.059	9	.354	1
					4	★	DWAE0810X04S090	33.9	1.335	57.5	2.264	59.5	2.343	99.5	3.917	98	3.858	1.5	.059	9	.354	1
8.2	.3228		P		2	●	DWAE0820X02S090	17.9	.705	33.5	1.319	35.5	1.398	85.5	3.366	84	3.307	1.5	.059	9	.354	1
					4	★	DWAE0820X04S090	34.3	1.350	57.5	2.264	59.5	2.343	99.5	3.917	98	3.858	1.5	.059	9	.354	1
8.3	.3268				2	★	DWAE0830X02S090	18.1	.713	33.5	1.319	35.5	1.398	85.5	3.366	84	3.307	1.5	.059	9	.354	1
					4	★	DWAE0830X04S090	34.7	1.366	57.5	2.264	59.5	2.343	99.5	3.917	98	3.858	1.5	.059	9	.354	1
8.4	.3307				2	●	DWAE0840X02S090	18.3	.720	33.5	1.319	35.5	1.398	85.5	3.366	84	3.307	1.5	.059	9	.354	1
					4	★	DWAE0840X04S090	35.1	1.382	57.5	2.264	59.5	2.343	99.5	3.917	98	3.858	1.5	.059	9	.354	1
8.5	.3346			M10x1.5	2	●	DWAE0850X02S090	18.5	.728	33.5	1.319	35.5	1.398	85.5	3.366	84	3.307	1.5	.059	9	.354	1
					4	●	DWAE0850X04S090	35.5	1.398	57.5	2.264	59.5	2.343	99.5	3.917	98	3.858	1.5	.059	9	.354	1
8.6	.3386		R		2	●	DWAE0860X02S090	18.8	.740	34.6	1.362	36.6	1.441	85.6	3.370	84	3.307	1.6	.063	9	.354	1
					4	★	DWAE0860X04S090	36.0	1.417	61.6	2.425	63.6	2.504	99.6	3.921	98	3.858	1.6	.063	9	.354	1
8.7	.3425			M10x1.25	2	●	DWAE0870X02S090	19.0	.748	34.6	1.362	36.6	1.441	85.6	3.370	84	3.307	1.6	.063	9	.354	1
					4	★	DWAE0870X04S090	36.4	1.433	61.6	2.425	63.6	2.504	99.6	3.921	98	3.858	1.6	.063	9	.354	1
8.8	.3465				2	●	DWAE0880X02S090	19.2	.756	34.6	1.362	36.6	1.441	85.6	3.370	84	3.307	1.6	.063	9	.354	1
					4	★	DWAE0880X04S090	36.8	1.449	61.6	2.425	63.6	2.504	99.6	3.921	98	3.858	1.6	.063	9	.354	1
8.9	.3504				2	●	DWAE0890X02S090	19.4	.764	34.6	1.362	36.6	1.441	85.6	3.370	84	3.307	1.6	.063	9	.354	1
					4	★	DWAE0890X04S090	37.2	1.465	61.6	2.425	63.6	2.504	99.6	3.921	98	3.858	1.6	.063	9	.354	1
9.0	.3543				2	●	DWAE0900X02S090	19.6	.772	34.6	1.362	36.6	1.441	85.6	3.370	84	3.307	1.6	.063	9	.354	1
					4	●	DWAE0900X04S090	37.6	1.480	61.6	2.425	63.6	2.504	99.6	3.921	98	3.858	1.6	.063	9	.354	1
9.1	.3583		T		2	★	DWAE0910X02S100	19.9	.783	36.7	1.445	38.7	1.524	90.7	3.571	89	3.504	1.7	.067	10	.394	1
					4	★	DWAE0910X04S100	38.1	1.500	63.7	2.508	65.7	2.587	106.7	4.201	105	4.134	1.7	.067	10	.394	1
9.2	.3622				2	★	DWAE0920X02S100	20.1	.791	36.7	1.445	38.7	1.524	90.7	3.571	89	3.504	1.7	.067	10	.394	1
					4	★	DWAE0920X04S100	38.5	1.516	63.7	2.508	65.7	2.587	106.7	4.201	105	4.134	1.7	.067	10	.394	1
9.3	.3661				2	★	DWAE0930X02S100	20.3	.799	36.7	1.445	38.7	1.524	90.7	3.571	89	3.504	1.7	.067	10	.394	1
					4	★	DWAE0930X04S100	38.9	1.531	63.7	2.508	65.7	2.587	106.7	4.201	105	4.134	1.7	.067	10	.394	1
9.4	.3701				2	●	DWAE0940X02S100	20.5	.807	36.7	1.445	38.7	1.524	90.7	3.571	89	3.504	1.7	.067	10	.394	1
					4	★	DWAE0940X04S100	39.3	1.547	63.7	2.508	65.7	2.587	106.7	4.201	105	4.134	1.7	.067	10	.394	1
9.5	.3740				2	★	DWAE0950X02S100	20.7	.815	36.7	1.445	38.7	1.524	90.7	3.571	89	3.504	1.7	.067	10	.394	1
					4	★	DWAE0950X04S100	39.7	1.563	63.7	2.508	65.7	2.587	106.7	4.201	105	4.134	1.7	.067	10	.394	1

● : USA Stock ★ : Stocked in Japan

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread Size		DP102A		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
9.6	.3780				2	●	DWAE0960X02S100	20.9	.823	37.7	1.484	39.7	1.563	90.7	3.571	89	3.504	1.7	.067	10	.394	1
					4	●	DWAE0960X04S100	40.1	1.579	66.7	2.626	68.7	2.705	106.7	4.201	105	4.134	1.7	.067	10	.394	1
9.7	.3819		Tube Sheet		2	●	DWAE0970X02S100	21.2	.835	37.8	1.488	39.8	1.567	90.8	3.575	89	3.504	1.8	.071	10	.394	1
					4	★	DWAE0970X04S100	40.6	1.598	66.8	2.630	68.8	2.709	106.8	4.205	105	4.134	1.8	.071	10	.394	1
9.8	.3858		W		2	●	DWAE0980X02S100	21.4	.843	37.8	1.488	39.8	1.567	90.8	3.575	89	3.504	1.8	.071	10	.394	1
					4	★	DWAE0980X04S100	41.0	1.614	66.8	2.630	68.8	2.709	106.8	4.205	105	4.134	1.8	.071	10	.394	1
9.9	.3898				2	★	DWAE0990X02S100	21.6	.850	37.8	1.488	39.8	1.567	90.8	3.575	89	3.504	1.8	.071	10	.394	1
					4	★	DWAE0990X04S100	41.4	1.630	66.8	2.630	68.8	2.709	106.8	4.205	105	4.134	1.8	.071	10	.394	1
10.0	.3937				2	●	DWAE1000X02S100	21.8	.858	37.8	1.488	39.8	1.567	90.8	3.575	89	3.504	1.8	.071	10	.394	1
					4	●	DWAE1000X04S100	41.8	1.646	66.8	2.630	68.8	2.709	106.8	4.205	105	4.134	1.8	.071	10	.394	1
10.1	.3976				2	●	DWAE1010X02S110	22.0	.866	40.8	1.606	42.8	1.685	101.8	4.008	100	3.937	1.8	.071	11	.433	1
					4	●	DWAE1010X04S110	42.2	1.661	71.8	2.827	73.8	2.906	115.8	4.559	114	4.488	1.8	.071	11	.433	1
10.2	.4016			M12x1.75	2	★	DWAE1020X02S110	22.3	.878	40.9	1.610	42.9	1.689	101.9	4.012	100	3.937	1.9	.075	11	.433	1
					4	★	DWAE1020X04S110	42.7	1.681	71.9	2.831	73.9	2.909	115.9	4.563	114	4.488	1.9	.075	11	.433	1
10.3	.4055				2	★	DWAE1030X02S110	22.5	.886	40.9	1.610	42.9	1.689	101.9	4.012	100	3.937	1.9	.075	11	.433	1
					4	●	DWAE1030X04S110	43.1	1.697	71.9	2.831	73.9	2.909	115.9	4.563	114	4.488	1.9	.075	11	.433	1
10.4	.4094				2	★	DWAE1040X02S110	22.7	.894	40.9	1.610	42.9	1.689	101.9	4.012	100	3.937	1.9	.075	11	.433	1
					4	★	DWAE1040X04S110	43.5	1.713	71.9	2.831	73.9	2.909	115.9	4.563	114	4.488	1.9	.075	11	.433	1
10.5	.4134		Z		2	●	DWAE1050X02S110	22.9	.902	40.9	1.610	42.9	1.689	101.9	4.012	100	3.937	1.9	.075	11	.433	1
					4	★	DWAE1050X04S110	43.9	1.728	71.9	2.831	73.9	2.909	115.9	4.563	114	4.488	1.9	.075	11	.433	1
10.6	.4173				2	★	DWAE1060X02S110	23.1	.909	41.9	1.650	43.9	1.728	101.9	4.012	100	3.937	1.9	.075	11	.433	1
					4	★	DWAE1060X04S110	44.3	1.744	72.9	2.870	74.9	2.949	115.9	4.563	114	4.488	1.9	.075	11	.433	1
10.7	.4213				2	●	DWAE1070X02S110	23.3	.917	41.9	1.650	43.9	1.728	101.9	4.012	100	3.937	1.9	.075	11	.433	1
					4	★	DWAE1070X04S110	44.7	1.760	72.9	2.870	74.9	2.949	115.9	4.563	114	4.488	1.9	.075	11	.433	1
10.8	.4252			M12x1.25	2	●	DWAE1080X02S110	23.6	.929	42.0	1.654	44.0	1.732	102.0	4.016	100	3.937	2.0	.079	11	.433	1
					4	★	DWAE1080X04S110	45.2	1.780	73.0	2.874	75.0	2.953	116.0	4.567	114	4.488	2.0	.079	11	.433	1
10.9	.4291				2	★	DWAE1090X02S110	23.8	.937	42.0	1.654	44.0	1.732	102.0	4.016	100	3.937	2.0	.079	11	.433	1
					4	★	DWAE1090X04S110	45.6	1.795	73.0	2.874	75.0	2.953	116.0	4.567	114	4.488	2.0	.079	11	.433	1
11.0	.4331				2	●	DWAE1100X02S110	24.0	.945	42.0	1.654	44.0	1.732	102.0	4.016	100	3.937	2.0	.079	11	.433	1
					4	●	DWAE1100X04S110	46.0	1.811	73.0	2.874	75.0	2.953	116.0	4.567	114	4.488	2.0	.079	11	.433	1
11.1	.4370				2	●	DWAE1110X02S120	24.2	.953	45.0	1.772	47.0	1.850	102.0	4.016	100	3.937	2.0	.079	12	.472	1
					4	★	DWAE1110X04S120	46.4	1.827	77.0	3.031	79.0	3.110	123.0	4.843	121	4.764	2.0	.079	12	.472	1
11.2	.4409				2	★	DWAE1120X02S120	24.4	.961	45.0	1.772	47.0	1.850	102.0	4.016	100	3.937	2.0	.079	12	.472	1
					4	★	DWAE1120X04S120	46.8	1.843	77.0	3.031	79.0	3.110	123.0	4.843	121	4.764	2.0	.079	12	.472	1
11.3	.4449				2	★	DWAE1130X02S120	24.7	.972	45.1	1.776	47.1	1.854	102.1	4.020	100	3.937	2.1	.083	12	.472	1
					4	★	DWAE1130X04S120	47.3	1.862	77.1	3.035	79.1	3.114	123.1	4.846	121	4.764	2.1	.083	12	.472	1
11.4	.4488				2	★	DWAE1140X02S120	24.9	.980	45.1	1.776	47.1	1.854	102.1	4.020	100	3.937	2.1	.083	12	.472	1
					4	★	DWAE1140X04S120	47.7	1.878	77.1	3.035	79.1	3.114	123.1	4.846	121	4.764	2.1	.083	12	.472	1
11.5	.4528				2	★	DWAE1150X02S120	25.1	.988	45.1	1.776	47.1	1.854	102.1	4.020	100	3.937	2.1	.083	12	.472	1
					4	●	DWAE1150X04S120	48.1	1.894	77.1	3.035	79.1	3.114	123.1	4.846	121	4.764	2.1	.083	12	.472	1
11.6	.4567				2	★	DWAE1160X02S120	25.3	.996	47.1	1.854	49.1	1.933	102.1	4.020	100	3.937	2.1	.083	12	.472	1
					4	★	DWAE1160X04S120	48.5	1.909	79.1	3.114	81.1	3.193	123.1	4.846	121	4.764	2.1	.083	12	.472	1
11.7	.4606				2	★	DWAE1170X02S120	25.5	1.004	47.1	1.854	49.1	1.933	102.1	4.020	100	3.937	2.1	.083	12	.472	1
					4	★	DWAE1170X04S120	48.9	1.925	79.1	3.114	81.1	3.193	123.1	4.846	121	4.764	2.1	.083	12	.472	1
11.8	.4646				2	★	DWAE1180X02S120	25.7	1.012	47.1	1.854	49.1	1.933	102.1	4.020	100	3.937	2.1	.083	12	.472	1
					4	★	DWAE1180X04S120	49.3	1.941	79.1	3.114	81.1	3.193	123.1	4.846	121	4.764	2.1	.083	12	.472	1
11.9	.4685				2	★	DWAE1190X02S120	26.0	1.024	47.2	1.858	49.2	1.937	102.2	4.024	100	3.937	2.2	.087	12	.472	1
					4	★	DWAE1190X04S120	49.8	1.961	79.2	3.118	81.2	3.197	123.2	4.850	121	4.764	2.2	.087	12	.472	1
12.0	.4724			M14x2.0	2	●	DWAE1200X02S120	26.2	1.031	47.2	1.858	49.2	1.937	102.2	4.024	100	3.937	2.2	.087	12	.472	1
					4	★	DWAE1200X04S120	50.2	1.976	79.2	3.118	81.2	3.197	123.2	4.850	121	4.764	2.2	.087	12	.472	1

DWAE

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		LF		PL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP102A		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
12.1	.4764				2	★	DWAE1210X02S130	26.4	1.039	49.2	1.937	51.2	2.016	102.2	4.024	100	3.937	2.2	.087	13	.512	1
					4	★	DWAE1210X04S130	50.6	1.992	82.2	3.236	84.2	3.315	139.2	5.480	137	5.394	2.2	.087	13	.512	1
12.2	.4803				2	★	DWAE1220X02S130	26.6	1.047	49.2	1.937	51.2	2.016	102.2	4.024	100	3.937	2.2	.087	13	.512	1
					4	★	DWAE1220X04S130	51.0	2.008	82.2	3.236	84.2	3.315	139.2	5.480	137	5.394	2.2	.087	13	.512	1
12.3	.4843			9/16-12	2	●	DWAE1230X02S130	26.8	1.055	49.2	1.937	51.2	2.016	102.2	4.024	100	3.937	2.2	.087	13	.512	1
					4	★	DWAE1230X04S130	51.4	2.024	82.2	3.236	84.2	3.315	139.2	5.480	137	5.394	2.2	.087	13	.512	1
12.4	.4882				2	★	DWAE1240X02S130	27.1	1.067	49.3	1.941	51.3	2.020	102.3	4.028	100	3.937	2.3	.091	13	.512	1
					4	★	DWAE1240X04S130	51.9	2.043	82.3	3.240	84.3	3.319	139.3	5.484	137	5.394	2.3	.091	13	.512	1
12.5	.4921			M14x1.5	2	★	DWAE1250X02S130	27.3	1.075	49.3	1.941	51.3	2.020	102.3	4.028	100	3.937	2.3	.091	13	.512	1
					4	★	DWAE1250X04S130	52.3	2.059	82.3	3.240	84.3	3.319	139.3	5.484	137	5.394	2.3	.091	13	.512	1
12.6	.4961				2	★	DWAE1260X02S130	27.5	1.083	52.3	2.059	54.3	2.138	102.3	4.028	100	3.937	2.3	.091	13	.512	1
					4	★	DWAE1260X04S130	52.7	2.075	84.3	3.319	86.3	3.398	139.3	5.484	137	5.394	2.3	.091	13	.512	1
12.7	.5000	1/2			2	●	DWAE1270X02S130	27.7	1.091	52.3	2.059	54.3	2.138	102.3	4.028	100	3.937	2.3	.091	13	.512	1
					4	●	DWAE1270X04S130	53.1	2.091	84.3	3.319	86.3	3.398	139.3	5.484	137	5.394	2.3	.091	13	.512	1
12.8	.5039				2	★	DWAE1280X02S130	27.9	1.098	52.3	2.059	54.3	2.138	102.3	4.028	100	3.937	2.3	.091	13	.512	1
					4	★	DWAE1280X04S130	53.5	2.106	84.3	3.319	86.3	3.398	139.3	5.484	137	5.394	2.3	.091	13	.512	1
12.9	.5079				2	★	DWAE1290X02S130	28.1	1.106	52.3	2.059	54.3	2.138	102.3	4.028	100	3.937	2.3	.091	13	.512	1
					4	★	DWAE1290X04S130	53.9	2.122	84.3	3.319	86.3	3.398	139.3	5.484	137	5.394	2.3	.091	13	.512	1
13.0	.5118				2	★	DWAE1300X02S130	28.4	1.118	52.4	2.063	54.4	2.142	102.4	4.031	100	3.937	2.4	.094	13	.512	1
					4	★	DWAE1300X04S130	54.4	2.142	84.4	3.323	86.4	3.402	139.4	5.488	137	5.394	2.4	.094	13	.512	1
13.1	.5157			9/16-18	2	●	DWAE1310X02S140	28.6	1.126	55.4	2.181	57.4	2.260	102.4	4.031	100	3.937	2.4	.094	14	.551	1
					4	●	DWAE1310X04S140	54.8	2.157	92.4	3.638	94.4	3.717	149.4	5.882	147	5.787	2.4	.094	14	.551	1
13.2	.5197				2	★	DWAE1320X02S140	28.8	1.134	55.4	2.181	57.4	2.260	102.4	4.031	100	3.937	2.4	.094	14	.551	1
					4	★	DWAE1320X04S140	55.2	2.173	92.4	3.638	94.4	3.717	149.4	5.882	147	5.787	2.4	.094	14	.551	1
13.3	.5236				2	★	DWAE1330X02S140	29.0	1.142	55.4	2.181	57.4	2.260	102.4	4.031	100	3.937	2.4	.094	14	.551	1
					4	★	DWAE1330X04S140	55.6	2.189	92.4	3.638	94.4	3.717	149.4	5.882	147	5.787	2.4	.094	14	.551	1
13.4	.5276				2	★	DWAE1340X02S140	29.2	1.150	55.4	2.181	57.4	2.260	102.4	4.031	100	3.937	2.4	.094	14	.551	1
					4	★	DWAE1340X04S140	56.0	2.205	92.4	3.638	94.4	3.717	149.4	5.882	147	5.787	2.4	.094	14	.551	1
13.5	.5315			5/8-11	2	●	DWAE1350X02S140	29.5	1.161	55.5	2.185	57.5	2.264	102.5	4.035	100	3.937	2.5	.098	14	.551	1
					4	●	DWAE1350X04S140	56.5	2.224	92.5	3.642	94.5	3.720	149.5	5.886	147	5.787	2.5	.098	14	.551	1
13.6	.5354				2	★	DWAE1360X02S140	29.7	1.169	57.5	2.264	59.5	2.343	102.5	4.035	100	3.937	2.5	.098	14	.551	1
					4	★	DWAE1360X04S140	56.9	2.240	97.5	3.839	99.5	3.917	149.5	5.886	147	5.787	2.5	.098	14	.551	1
13.7	.5394				2	★	DWAE1370X02S140	29.9	1.177	57.5	2.264	59.5	2.343	102.5	4.035	100	3.937	2.5	.098	14	.551	1
					4	★	DWAE1370X04S140	57.3	2.256	97.5	3.839	99.5	3.917	149.5	5.886	147	5.787	2.5	.098	14	.551	1
13.8	.5433				2	★	DWAE1380X02S140	30.1	1.185	57.5	2.264	59.5	2.343	102.5	4.035	100	3.937	2.5	.098	14	.551	1
					4	★	DWAE1380X04S140	57.7	2.272	97.5	3.839	99.5	3.917	149.5	5.886	147	5.787	2.5	.098	14	.551	1
13.9	.5472				2	★	DWAE1390X02S140	30.3	1.193	57.5	2.264	59.5	2.343	102.5	4.035	100	3.937	2.5	.098	14	.551	1
					4	★	DWAE1390X04S140	58.1	2.287	97.5	3.839	99.5	3.917	149.5	5.886	147	5.787	2.5	.098	14	.551	1
14.0	.5512			M16x2.0	2	★	DWAE1400X02S140	30.5	1.201	57.5	2.264	59.5	2.343	102.5	4.035	100	3.937	2.5	.098	14	.551	1
					4	●	DWAE1400X04S140	58.5	2.303	97.5	3.839	99.5	3.917	149.5	5.886	147	5.787	2.5	.098	14	.551	1

● : USA Stock ★ : Stocked in Japan

RECOMMENDED CUTTING CONDITIONS

(inch)

Workpiece Material			Mild Steels (≤180HB) AISI 1010 etc.		Carbon Steels, Alloy Steels (180—250HB) AISI 1045,4140 etc.	
DC		L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
mm	inch					
1.0	**.0394**	**2, 4**	100	.0012 (.0008—.0016)	100	.0012 (.0008—.0016)
1.5	**.0591**	**2, 4**	100	.0020 (.0012—.0024)	100	.0020 (.0012—.0024)
2.0	**.0787**	**2, 4**	180	.0024 (.0016—.0031)	180	.0024 (.0016—.0031)
2.5	**.0984**	**2, 4**	180	.0031 (.0020—.0039)	180	.0031 (.0020—.0039)
3.0	**.1181**	**2, 4**	210	.0035 (.0028—.0043)	195	.0035 (.0028—.0043)
4.0	**.1575**	**2, 4**	230	.0045 (.0035—.0055)	210	.0045 (.0035—.0055)
5.0	**.1969**	**2, 4**	230	.0057 (.0043—.0071)	210	.0057 (.0043—.0071)
6.0	**.2362**	**2, 4**	260	.0069 (.0055—.0083)	245	.0069 (.0055—.0083)
7.0	**.2756**	**2, 4**	260	.0081 (.0063—.0098)	245	.0081 (.0063—.0098)
8.0	**.3150**	**2, 4**	280	.0091 (.0071—.0110)	260	.0091 (.0071—.0110)
10.0	**.3937**	**2, 4**	295	.0104 (.0083—.0126)	280	.0104 (.0083—.0126)
12.0	**.4724**	**2, 4**	310	.0110 (.0087—.0134)	295	.0110 (.0087—.0134)
14.0	**.5512**	**2, 4**	310	.0114 (.0091—.0138)	295	.0114 (.0091—.0138)

Workpiece Material			Carbon Steels, Alloy Steels (280—350HB) AISI 4340 etc.		Austenitic Stainless Steels (≤200HB) Ferritic, Precipitation Hardening Stainless Steels (>200HB) AISI 304, 431 etc.	
DC		L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
mm	inch					
1.0	**.0394**	**2, 4**	80	.0008 (.0004—.0012)	100	.0008 (.0004—.0012)
1.5	**.0591**	**2, 4**	80	.0016 (.0008—.0020)	100	.0016 (.0008—.0020)
2.0	**.0787**	**2, 4**	165	.0020 (.0012—.0028)	115	.0016 (.0008—.0024)
2.5	**.0984**	**2, 4**	165	.0028 (.0016—.0035)	115	.0024 (.0012—.0031)
3.0	**.1181**	**2, 4**	180	.0030 (.0024—.0035)	130	.0028 (.0016—.0039)
4.0	**.1575**	**2, 4**	195	.0041 (.0031—.0051)	130	.0030 (.0020—.0039)
5.0	**.1969**	**2, 4**	195	.0051 (.0039—.0063)	130	.0039 (.0020—.0059)
6.0	**.2362**	**2, 4**	230	.0061 (.0047—.0075)	130	.0041 (.0024—.0059)
7.0	**.2756**	**2, 4**	230	.0071 (.0055—.0087)	130	.0047 (.0024—.0071)
8.0	**.3150**	**2, 4**	245	.0081 (.0063—.0098)	130	.0051 (.0024—.0079)
10.0	**.3937**	**2, 4**	260	.0094 (.0079—.0110)	130	.0055 (.0031—.0079)
12.0	**.4724**	**2, 4**	280	.0098 (.0079—.0118)	130	.0069 (.0039—.0098)
14.0	**.5512**	**2, 4**	280	.0098 (.0079—.0118)	130	.0069 (.0039—.0098)

Note 1) The above cutting conditions are when water-soluble coolant is used. For stainless steels, water-insoluble coolant is recommended.
Note 2) When using a water-insoluble coolant, reduce the cutting speed by 20% to ensure adequate lubrication (excluding the recommended cutting conditions as with stainless steel).
Note 3) Check the condition of chips and perform step machining if necessary. * Reference of step length: DC×.2 to DC×1.0
Note 4) Adjust the cutting conditions according to machine tool and workpiece clamp rigidity and machining geometry, etc.
Note 5) Machining depths exceeding flute length (LU) are not recommended.
Note 6) Clamp the drill so that the drill runout is within .0012".
Note 7) Do not clamp the flute part of the drill.

DWAE

RECOMMENDED CUTTING CONDITIONS

(inch)

Workpiece Material			Gray Cast Irons (≤350MPa) AISI No.45B etc.		Ductile Cast Irons (≤450MPa) AISI 60-40-18 etc.	
DC		L/D	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
mm	inch					
1.0	**.0394**	**2, 4**	100	.0012 (.0008—.0016)	80	.0008 (.0004—.0012)
1.5	**.0591**	**2, 4**	100	.0020 (.0012—.0024)	80	.0016 (.0008—.0020)
2.0	**.0787**	**2, 4**	180	.0024 (.0016—.0031)	165	.0020 (.0012—.0028)
2.5	**.0984**	**2, 4**	180	.0031 (.0020—.0039)	165	.0028 (.0016—.0035)
3.0	**.1181**	**2, 4**	195	.0041 (.0024—.0059)	180	.0033 (.0020—.0047)
4.0	**.1575**	**2, 4**	210	.0051 (.0031—.0071)	195	.0047 (.0028—.0067)
5.0	**.1969**	**2, 4**	210	.0059 (.0039—.0079)	195	.0055 (.0031—.0079)
6.0	**.2362**	**2, 4**	245	.0069 (.0047—.0091)	230	.0059 (.0039—.0079)
7.0	**.2756**	**2, 4**	245	.0069 (.0047—.0091)	230	.0069 (.0047—.0091)
8.0	**.3150**	**2, 4**	260	.0083 (.0067—.0098)	245	.0079 (.0059—.0098)
10.0	**.3937**	**2, 4**	280	.0091 (.0071—.0110)	260	.0091 (.0071—.0110)
12.0	**.4724**	**2, 4**	295	.0098 (.0079—.0118)	280	.0098 (.0079—.0118)
14.0	**.5512**	**2, 4**	295	.0098 (.0079—.0118)	280	.0098 (.0079—.0118)

Note 1) The above cutting conditions are when water-soluble coolant is used. For stainless steels, water-insoluble coolant is recommended.
Note 2) When using a water-insoluble coolant, reduce the cutting speed by 20% to ensure adequate lubrication (excluding the recommended cutting conditions as with stainless steel).
Note 3) Check the condition of chips and perform step machining if necessary. * Reference of step length: DC×.2 to DC×1.0
Note 4) Adjust the cutting conditions according to machine tool and workpiece clamp rigidity and machining geometry, etc.
Note 5) Machining depths exceeding flute length (LU) are not recommended.
Note 6) Clamp the drill so that the drill runout is within .0012”.
Note 7) Do not clamp the flute part of the drill.

MFE

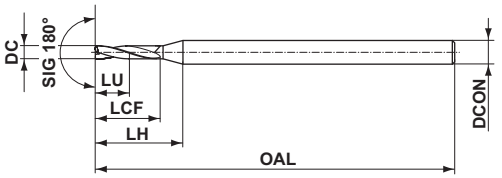
for Small Diameter

SOLID CARBIDE FLAT BOTTOM DRILLS

- Sharp cutting edges with long tool life
- Combination of different radius sizes provides strong cutting edge and excellent chip control

P M K N S H

External Coolant



Type1

(inch)

.0295≤DC≤.1161			
0 −.00055			
DCON=.118	.118< DCON≤.157		
h6 0 −.00024	0 −.00031		

(inch)

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction	Wire / Letter	Thread Size		DP102A		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
0.750	.0295				2	●	MFE0075X02S030	1.5	.059	3.0	.118	7.7	.303	45	1.772	3	.118	1
0.800	.0315				2	●	MFE0080X02S030	1.6	.063	3.2	.126	7.8	.307	45	1.772	3	.118	1
0.850	.0335				2	●	MFE0085X02S030	1.7	.067	3.4	.134	7.9	.311	45	1.772	3	.118	1
0.900	.0354				2	●	MFE0090X02S030	1.8	.071	3.6	.142	8.0	.315	45	1.772	3	.118	1
0.950	.0374				2	●	MFE0095X02S030	1.9	.075	3.8	.150	8.1	.319	45	1.772	3	.118	1
1.000	.0394				2	●	MFE0100X02S030	2.0	.079	4.0	.157	8.2	.323	45	1.772	3	.118	1
1.050	.0413				2	●	MFE0105X02S030	2.1	.083	4.2	.165	8.3	.327	45	1.772	3	.118	1
1.100	.0433				2	●	MFE0110X02S030	2.2	.087	4.4	.173	8.4	.331	45	1.772	3	.118	1
1.150	.0453				2	●	MFE0115X02S030	2.3	.091	4.6	.181	8.6	.339	45	1.772	3	.118	1
1.200	.0472				2	●	MFE0120X02S030	2.4	.094	4.8	.189	8.7	.343	45	1.772	3	.118	1
1.250	.0492				2	●	MFE0125X02S030	2.5	.098	5.0	.197	8.8	.346	45	1.772	3	.118	1
1.300	.0512				2	●	MFE0130X02S030	2.6	.102	5.2	.205	8.9	.350	45	1.772	3	.118	1
1.350	.0531				2	●	MFE0135X02S030	2.7	.106	5.4	.213	9.0	.354	45	1.772	3	.118	1
1.400	.0551				2	●	MFE0140X02S030	2.8	.110	5.6	.220	9.1	.358	45	1.772	3	.118	1
1.450	.0571				2	●	MFE0145X02S030	2.9	.114	5.8	.228	9.2	.362	45	1.772	3	.118	1
1.500	.0591			#1-64	2	●	MFE0150X02S030	3.0	.118	6.0	.236	9.3	.366	45	1.772	3	.118	1
1.550	.0610				2	●	MFE0155X02S030	3.1	.122	6.2	.244	9.4	.370	45	1.772	3	.118	1
1.600	.0630				2	●	MFE0160X02S030	3.2	.126	6.4	.252	9.5	.374	45	1.772	3	.118	1
1.650	.0650				2	●	MFE0165X02S030	3.3	.130	6.6	.260	9.6	.378	45	1.772	3	.118	1
1.700	.0669				2	●	MFE0170X02S030	3.4	.134	6.8	.268	9.7	.382	45	1.772	3	.118	1
1.750	.0689				2	●	MFE0175X02S030	3.5	.138	7.0	.276	9.8	.386	45	1.772	3	.118	1
1.800	.0709				2	●	MFE0180X02S030	3.6	.142	7.2	.283	9.9	.390	45	1.772	3	.118	1
1.850	.0728				2	●	MFE0185X02S030	3.7	.146	7.4	.291	10.0	.394	45	1.772	3	.118	1
1.900	.0748				2	●	MFE0190X02S030	3.8	.150	7.6	.299	10.2	.402	45	1.772	3	.118	1
1.950	.0768				2	●	MFE0195X02S030	3.9	.154	7.8	.307	10.3	.406	45	1.772	3	.118	1
2.000	.0787			#3-48	2	●	MFE0200X02S040	4.0	.157	8.0	.315	12.2	.480	50	1.969	4	.157	1
2.050	.0807				2	●	MFE0205X02S040	4.1	.161	8.2	.323	12.3	.484	50	1.969	4	.157	1
2.100	.0827				2	●	MFE0210X02S040	4.2	.165	8.4	.331	12.4	.488	50	1.969	4	.157	1
2.150	.0846				2	●	MFE0215X02S040	4.3	.169	8.6	.339	12.6	.496	50	1.969	4	.157	1
2.200	.0866				2	●	MFE0220X02S040	4.4	.173	8.8	.346	12.7	.500	50	1.969	4	.157	1
2.250	.0886				2	●	MFE0225X02S040	4.5	.177	9.0	.354	12.8	.504	50	1.969	4	.157	1
2.300	.0906				2	●	MFE0230X02S040	4.6	.181	9.2	.362	12.9	.508	50	1.969	4	.157	1

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L189
OPERATIONAL GUIDANCE ➤ L190

MFE

(inch)

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP102A		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
2.350	**.0925**				2	●	**MFE0235X02S040**	4.7	.185	9.4	.370	13.0	.512	50	1.969	4	.157	1
2.400	**.0945**				2	●	**MFE0240X02S040**	4.8	.189	9.6	.378	13.1	.516	50	1.969	4	.157	1
2.450	**.0965**				2	●	**MFE0245X02S040**	4.9	.193	9.8	.386	13.2	.520	50	1.969	4	.157	1
2.500	**.0984**				2	●	**MFE0250X02S040**	5.0	.197	10.0	.394	13.3	.524	50	1.969	4	.157	1
2.550	**.1004**				2	●	**MFE0255X02S040**	5.1	.201	10.2	.402	13.4	.528	50	1.969	4	.157	1
2.600	**.1024**				2	●	**MFE0260X02S040**	5.2	.205	10.4	.409	13.5	.531	50	1.969	4	.157	1
2.650	**.1043**				2	●	**MFE0265X02S040**	5.3	.209	10.6	.417	13.6	.535	50	1.969	4	.157	1
2.700	**.1063**		**36**	**#6-32**	2	●	**MFE0270X02S040**	5.4	.213	10.8	.425	13.7	.539	50	1.969	4	.157	1
2.750	**.1083**				2	●	**MFE0275X02S040**	5.5	.217	11.0	.433	13.8	.543	50	1.969	4	.157	1
2.800	**.1102**		**35**		2	●	**MFE0280X02S040**	5.6	.220	11.2	.441	13.9	.547	50	1.969	4	.157	1
2.850	**.1122**				2	●	**MFE0285X02S040**	5.7	.224	11.4	.449	14.0	.551	50	1.969	4	.157	1
2.900	**.1142**				2	●	**MFE0290X02S040**	5.8	.228	11.6	.457	14.2	.559	50	1.969	4	.157	1
2.950	**.1161**		**32**		2	●	**MFE0295X02S040**	5.9	.232	11.8	.465	14.3	.563	50	1.969	4	.157	1

● : USA Stock

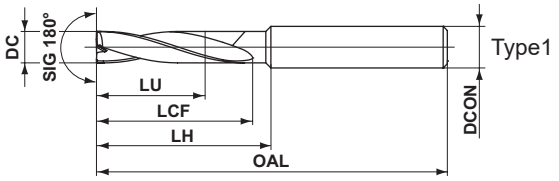
MFE

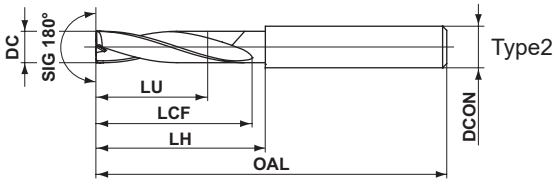
SOLID CARBIDE FLAT BOTTOM DRILLS

- Sharp cutting edges with long tool life
- Combination of different radius sizes provides strong cutting edge and excellent chip control

P | M | K | N | S | H

External Coolant





(inch)

.118≤DC≤.236	.236 < DC≤.394	.394 < DC≤.709	.709 < DC≤.787
0 −.00047	0 −.00059	0 −.00071	0 −.00083
DCON=.236	.276, .315, .394	.472, .551, .630, .709	.787
0 −.00031	0 −.00035	0 −.00043	0 −.00051

(inch)

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
3.000	.1181				2	●	MFE0300X02S060	6.0	.236	12	.472	19.6	.772	55	2.165	6	.236	1
3.048	.1200		31		2	●	MFE0305X02S060	6.1	.240	14	.551	21.5	.846	55	2.165	6	.236	1
3.100	.1220				2	●	MFE0310X02S060	6.2	.244	14	.551	21.4	.843	55	2.165	6	.236	1
3.175	.1250	1/8			2	●	MFE0318X02S060	6.4	.252	14	.551	21.3	.839	55	2.165	6	.236	1
3.200	.1260				2	●	MFE0320X02S060	6.4	.252	14	.551	21.2	.835	55	2.165	6	.236	1
3.300	.1299			M4x.7	2	●	MFE0330X02S060	6.6	.260	14	.551	21.0	.827	55	2.165	6	.236	1
3.400	.1339				2	●	MFE0340X02S060	6.8	.268	14	.551	20.9	.823	55	2.165	6	.236	1
3.500	.1378				2	●	MFE0350X02S060	7.0	.276	14	.551	20.7	.815	55	2.165	6	.236	1
3.572	.1407	9/64			2	●	MFE0357X02S060	7.1	.280	16	.630	22.5	.886	55	2.165	6	.236	1
3.600	.1417				2	●	MFE0360X02S060	7.2	.283	16	.630	22.5	.886	55	2.165	6	.236	1
3.700	.1457			M4.5x.75	2	●	MFE0370X02S060	7.4	.291	16	.630	22.3	.878	55	2.165	6	.236	1
3.800	.1496		25	#10-24	2	●	MFE0380X02S060	7.6	.299	16	.630	22.1	.870	55	2.165	6	.236	1
3.900	.1535				2	●	MFE0390X02S060	7.8	.307	16	.630	21.9	.862	55	2.165	6	.236	1
3.969	.1563	5/32			2	●	MFE0397X02S060	7.9	.311	16	.630	21.8	.858	55	2.165	6	.236	1
4.000	.1575				2	●	MFE0400X02S060	8.0	.315	16	.630	21.7	.854	55	2.165	6	.236	1
4.039	.1590		21	#10-32	2	●	MFE0404X02S060	8.1	.319	18	.709	23.7	.933	62	2.441	6	.236	1
4.100	.1614				2	●	MFE0410X02S060	8.2	.323	18	.709	23.5	.925	62	2.441	6	.236	1
4.200	.1654			M5x.8	2	●	MFE0420X02S060	8.4	.331	18	.709	23.4	.921	62	2.441	6	.236	1
4.300	.1693				2	●	MFE0430X02S060	8.6	.339	18	.709	23.2	.913	62	2.441	6	.236	1
4.366	.1719	11/64			2	●	MFE0437X02S060	8.7	.343	18	.709	23.0	.906	62	2.441	6	.236	1
4.400	.1732		17		2	●	MFE0440X02S060	8.8	.346	18	.709	23.0	.906	62	2.441	6	.236	1
4.500	.1772		16	#12-24	2	●	MFE0450X02S060	9.0	.354	18	.709	22.8	.898	62	2.441	6	.236	1
4.600	.1811				2	●	MFE0460X02S060	9.2	.362	20	.787	23.7	.933	62	2.441	6	.236	1
4.700	.1850		13		2	●	MFE0470X02S060	9.4	.370	20	.787	23.7	.933	62	2.441	6	.236	1
4.763	.1875	3/16			2	●	MFE0476X02S060	9.5	.374	20	.787	23.6	.929	62	2.441	6	.236	1
4.800	.1890		12		2	●	MFE0480X02S060	9.6	.378	20	.787	23.6	.929	62	2.441	6	.236	1
4.900	.1929				2	●	MFE0490X02S060	9.8	.386	20	.787	23.6	.929	62	2.441	6	.236	1
5.000	.1969			M6x1.0	2	●	MFE0500X02S060	10.0	.394	20	.787	23.5	.925	62	2.441	6	.236	1
5.100	.2008		7	1/4-20	2	●	MFE0510X02S060	10.2	.402	22	.866	25.5	1.004	62	2.441	6	.236	1
5.160	.2032	13/64			2	●	MFE0516X02S060	10.3	.406	22	.866	25.4	1.000	62	2.441	6	.236	1
5.200	.2047				2	●	MFE0520X02S060	10.4	.409	22	.866	25.4	1.000	62	2.441	6	.236	1
5.300	.2087				2	●	MFE0530X02S060	10.6	.417	22	.866	25.4	1.000	62	2.441	6	.236	1

ISO13399 ➤ L003
CUTTING CONDITIONS ➤ L189
OPERATIONAL GUIDANCE ➤ L190

MFE

(inch)

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
5.400	.2126		3	1/4-28	2	●	MFE0540X02S060	10.8	.425	22	.866	25.3	.996	62	2.441	6	.236	1
5.500	.2165				2	●	MFE0550X02S060	11.0	.433	22	.866	25.3	.996	62	2.441	6	.236	1
5.557	.2188	7/32			2	●	MFE0556X02S060	11.1	.437	24	.945	27.2	1.071	62	2.441	6	.236	1
5.600	.2205		2		2	●	MFE0560X02S060	11.2	.441	24	.945	27.2	1.071	62	2.441	6	.236	1
5.700	.2244				2	●	MFE0570X02S060	11.4	.449	24	.945	27.2	1.071	62	2.441	6	.236	1
5.800	.2283		1		2	●	MFE0580X02S060	11.6	.457	24	.945	27.1	1.067	62	2.441	6	.236	1
5.900	.2323				2	●	MFE0590X02S060	11.8	.465	24	.945	27.1	1.067	62	2.441	6	.236	1
5.954	.2344	15/64	A		2	●	MFE0595X02S060	11.9	.469	24	.945	27.0	1.063	62	2.441	6	.236	1
6.000	.2362			M7x1.0	2	●	MFE0600X02S060	12.0	.472	24	.945	27.0	1.063	62	2.441	6	.236	1
6.100	.2402				2	★	MFE0610X02S070	12.2	.480	26	1.024	29.5	1.161	74	2.913	7	.276	1
6.100	.2402				2	●	MFE0610X02S080	12.2	.480	26	1.024	30.0	1.181	74	2.913	8	.315	1
6.200	.2441				2	★	MFE0620X02S070	12.4	.488	26	1.024	29.4	1.157	74	2.913	7	.276	1
6.200	.2441				2	●	MFE0620X02S080	12.4	.488	26	1.024	29.9	1.177	74	2.913	8	.315	1
6.300	.2480				2	★	MFE0630X02S070	12.6	.496	26	1.024	29.4	1.157	74	2.913	7	.276	1
6.300	.2480				2	●	MFE0630X02S080	12.6	.496	26	1.024	29.9	1.177	74	2.913	8	.315	1
6.350	.2500	1/4	E		2	●	MFE0635X02S080	12.7	.500	26	1.024	29.8	1.173	74	2.913	8	.315	1
6.400	.2520				2	★	MFE0640X02S070	12.8	.504	26	1.024	29.3	1.154	74	2.913	7	.276	1
6.400	.2520				2	●	MFE0640X02S080	12.8	.504	26	1.024	29.8	1.173	74	2.913	8	.315	1
6.500	.2559				2	★	MFE0650X02S070	13.0	.512	26	1.024	29.3	1.154	74	2.913	7	.276	1
6.500	.2559				2	●	MFE0650X02S080	13.0	.512	26	1.024	29.8	1.173	74	2.913	8	.315	1
6.528	.2570		F	5/16-18	2	●	MFE0653X02S080	13.1	.516	28	1.102	31.7	1.248	74	2.913	8	.315	1
6.600	.2598				2	★	MFE0660X02S070	13.2	.520	28	1.102	31.2	1.228	74	2.913	7	.276	1
6.600	.2598				2	●	MFE0660X02S080	13.2	.520	28	1.102	31.7	1.248	74	2.913	8	.315	1
6.700	.2638			M8x1.25	2	★	MFE0670X02S070	13.4	.528	28	1.102	31.2	1.228	74	2.913	7	.276	1
6.700	.2638			M8x1.25	2	●	MFE0670X02S080	13.4	.528	28	1.102	31.7	1.248	74	2.913	8	.315	1
6.747	.2657	17/64			2	●	MFE0675X02S080	13.5	.531	28	1.102	31.6	1.244	74	2.913	8	.315	1
6.800	.2677				2	★	MFE0680X02S070	13.6	.535	28	1.102	31.1	1.224	74	2.913	7	.276	1
6.800	.2677				2	●	MFE0680X02S080	13.6	.535	28	1.102	31.6	1.244	74	2.913	8	.315	1
6.900	.2717		I	5/16-24	2	★	MFE0690X02S070	13.8	.543	28	1.102	31.1	1.224	74	2.913	7	.276	1
6.900	.2717		I	5/16-24	2	●	MFE0690X02S080	13.8	.543	28	1.102	31.6	1.244	74	2.913	8	.315	1
7.000	.2756			M8x1.0	2	★	MFE0700X02S070	14.0	.551	28	1.102	31.0	1.220	74	2.913	7	.276	1
7.000	.2756			M8x1.0	2	●	MFE0700X02S080	14.0	.551	28	1.102	31.5	1.240	74	2.913	8	.315	1
7.100	.2795				2	●	MFE0710X02S080	14.2	.559	30	1.181	33.5	1.319	74	2.913	8	.315	1
7.144	.2813	9/32	K		2	●	MFE0714X02S080	14.3	.563	30	1.181	33.4	1.315	74	2.913	8	.315	1
7.200	.2835				2	●	MFE0720X02S080	14.4	.567	30	1.181	33.4	1.315	74	2.913	8	.315	1
7.300	.2874				2	●	MFE0730X02S080	14.6	.575	30	1.181	33.4	1.315	74	2.913	8	.315	1
7.400	.2913				2	●	MFE0740X02S080	14.8	.583	30	1.181	33.3	1.311	74	2.913	8	.315	1
7.500	.2953		M		2	●	MFE0750X02S080	15.0	.591	30	1.181	33.3	1.311	74	2.913	8	.315	1
7.541	.2969	19/64			2	●	MFE0754X02S080	15.1	.594	32	1.260	35.2	1.386	74	2.913	8	.315	1
7.600	.2992				2	●	MFE0760X02S080	15.2	.598	32	1.260	35.2	1.386	74	2.913	8	.315	1
7.700	.3031				2	●	MFE0770X02S080	15.4	.606	32	1.260	35.2	1.386	74	2.913	8	.315	1
7.800	.3071				2	●	MFE0780X02S080	15.6	.614	32	1.260	35.1	1.382	74	2.913	8	.315	1
7.900	.3110				2	●	MFE0790X02S080	15.8	.622	32	1.260	35.1	1.382	74	2.913	8	.315	1
7.938	.3125	5/16		3/8-16	2	●	MFE0794X02S080	15.9	.626	32	1.260	35.0	1.378	74	2.913	8	.315	1

● : USA Stock ★ : Stocked in Japan

(inch)

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
8.000	.3150				2	●	MFE0800X02S080	16.0	.630	32	1.260	35.0	1.378	74	2.913	8	.315	1
8.100	.3189				2	●	MFE0810X02S100	16.2	.638	34	1.339	38.0	1.496	84	3.307	10	.394	1
8.200	.3228		P		2	●	MFE0820X02S100	16.4	.646	34	1.339	37.9	1.492	84	3.307	10	.394	1
8.300	.3268				2	●	MFE0830X02S100	16.6	.654	34	1.339	37.9	1.492	84	3.307	10	.394	1
8.335	.3282	21/64			2	●	MFE0833X02S100	16.7	.657	34	1.339	37.8	1.488	84	3.307	10	.394	1
8.400	.3307				2	●	MFE0840X02S100	16.8	.661	34	1.339	37.8	1.488	84	3.307	10	.394	1
8.433	.3320		Q	3/8-24	2	●	MFE0843X02S100	16.9	.665	34	1.343	37.8	1.488	84	3.307	10	.394	1
8.500	.3346			M10x1.5	2	●	MFE0850X02S100	17.0	.669	34	1.339	37.8	1.488	84	3.307	10	.394	1
8.600	.3386		R		2	●	MFE0860X02S100	17.2	.677	36	1.417	39.7	1.563	84	3.307	10	.394	1
8.700	.3425			M10x1.25	2	●	MFE0870X02S100	17.4	.685	36	1.417	39.7	1.563	84	3.307	10	.394	1
8.732	.3438	11/32			2	●	MFE0873X02S100	17.5	.689	36	1.417	39.6	1.559	84	3.307	10	.394	1
8.800	.3465				2	●	MFE0880X02S100	17.6	.693	36	1.417	39.6	1.559	84	3.307	10	.394	1
8.900	.3504				2	●	MFE0890X02S100	17.8	.701	36	1.417	39.6	1.559	84	3.307	10	.394	1
9.000	.3543				2	●	MFE0900X02S100	18.0	.709	36	1.417	39.5	1.555	84	3.307	10	.394	1
9.100	.3583		T		2	●	MFE0910X02S100	18.2	.717	38	1.496	41.5	1.634	84	3.307	10	.394	1
9.129	.3594	23/64			2	●	MFE0913X02S100	18.3	.720	38	1.496	41.4	1.630	84	3.307	10	.394	1
9.200	.3622				2	●	MFE0920X02S100	18.4	.724	38	1.496	41.4	1.630	84	3.307	10	.394	1
9.300	.3661				2	●	MFE0930X02S100	18.6	.732	38	1.496	41.4	1.630	84	3.307	10	.394	1
9.348	.3680		U	7/16-14	2	●	MFE0935X02S100	18.7	.736	38	1.496	41.3	1.626	84	3.307	10	.394	1
9.400	.3701				2	●	MFE0940X02S100	18.8	.740	38	1.496	41.3	1.626	84	3.307	10	.394	1
9.500	.3740				2	●	MFE0950X02S100	19.0	.748	38	1.496	41.3	1.626	84	3.307	10	.394	1
9.525	.3750	3/8			2	●	MFE0953X02S100	19.1	.752	40	1.575	43.2	1.701	84	3.307	10	.394	1
9.600	.3780				2	●	MFE0960X02S100	19.2	.756	40	1.575	43.2	1.701	84	3.307	10	.394	1
9.700	.3819		Tube Sheet		2	●	MFE0970X02S100	19.4	.764	40	1.575	43.2	1.701	84	3.307	10	.394	1
9.800	.3858		W		2	●	MFE0980X02S100	19.6	.772	40	1.575	43.1	1.697	84	3.307	10	.394	1
9.900	.3898				2	●	MFE0990X02S100	19.8	.780	40	1.575	43.1	1.697	84	3.307	10	.394	1
9.922	.3907	25/64		7/16-20	2	●	MFE0992X02S100	19.8	.780	40	1.575	43.0	1.693	84	3.307	10	.394	1
10.000	.3937				2	●	MFE1000X02S100	20.0	.787	40	1.575	43.0	1.693	84	3.307	10	.394	1
10.100	.3976				2	●	MFE1010X02S120	20.2	.795	42	1.654	46.0	1.811	95	3.740	12	.472	1
10.200	.4016			M12x1.75	2	●	MFE1020X02S120	20.4	.803	42	1.654	45.9	1.807	95	3.740	12	.472	1
10.300	.4055				2	●	MFE1030X02S120	20.6	.811	42	1.654	45.9	1.807	95	3.740	12	.472	1
10.319	.4063	13/32			2	●	MFE1032X02S120	20.6	.811	42	1.654	45.8	1.803	95	3.740	12	.472	1
10.400	.4094				2	●	MFE1040X02S120	20.8	.819	42	1.654	45.8	1.803	95	3.740	12	.472	1
10.500	.4134		Z		2	●	MFE1050X02S120	21.0	.827	42	1.654	45.8	1.803	95	3.740	12	.472	1
10.600	.4173				2	●	MFE1060X02S120	21.2	.835	44	1.732	47.7	1.878	95	3.740	12	.472	1
10.700	.4213				2	●	MFE1070X02S120	21.4	.843	44	1.732	47.7	1.878	95	3.740	12	.472	1
10.716	.4219	27/64		1/2-13	2	●	MFE1072X02S120	21.4	.843	44	1.732	47.6	1.874	95	3.744	12	.472	1
10.800	.4252			M12x1.25	2	●	MFE1080X02S120	21.6	.850	44	1.732	47.6	1.874	95	3.740	12	.472	1
10.900	.4291				2	●	MFE1090X02S120	21.8	.858	44	1.732	47.6	1.874	95	3.740	12	.472	1
11.000	.4331				2	●	MFE1100X02S120	22.0	.866	44	1.732	47.5	1.870	95	3.740	12	.472	1
11.100	.4370				2	●	MFE1110X02S120	22.2	.874	46	1.811	49.5	1.949	95	3.740	12	.472	1
11.113	.4375	7/16			2	●	MFE1111X02S120	22.2	.874	46	1.811	49.4	1.945	95	3.740	12	.472	1
11.200	.4409				2	●	MFE1120X02S120	22.4	.882	46	1.811	49.4	1.945	95	3.740	12	.472	1
11.300	.4449				2	●	MFE1130X02S120	22.6	.890	46	1.811	49.4	1.945	95	3.740	12	.472	1

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MFE

(inch)

DC					L/D	Stock	Order Number	LU		LCF		LH		OAL		DCON		Type
Metric (mm)	Decimal (inch)	Fraction (inch)	Wire / Letter	Thread Size		DP1020		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
11.400	.4488				2	●	MFE1140X02S120	22.8	.898	46	1.811	49.3	1.941	95	3.740	12	.472	1
11.500	.4528				2	●	MFE1150X02S120	23.0	.906	46	1.811	49.3	1.941	95	3.740	12	.472	1
11.510	.4532	29/64		1/2-20	2	●	MFE1151X02S120	23.0	.906	48	1.890	51.2	2.016	95	3.740	12	.472	1
11.600	.4567				2	●	MFE1160X02S120	23.2	.913	48	1.890	51.2	2.016	95	3.740	12	.472	1
11.700	.4606				2	●	MFE1170X02S120	23.4	.921	48	1.890	51.2	2.016	95	3.740	12	.472	1
11.800	.4646				2	●	MFE1180X02S120	23.6	.929	48	1.890	51.1	2.012	95	3.740	12	.472	1
11.900	.4685				2	●	MFE1190X02S120	23.8	.937	48	1.890	51.1	2.012	95	3.740	12	.472	1
12.000	.4724			M14x2.0	2	●	MFE1200X02S120	24.0	.945	48	1.890	51.0	2.008	95	3.740	12	.472	1
12.304	.4844	31/64		9/16-12	2	●	MFE1230X02S140	24.6	.969	50	1.969	53.0	2.087	102	4.016	14	.551	2
12.500	.4921			M14x1.5	2	●	MFE1250X02S140	25.0	.984	50	1.969	53.0	2.087	102	4.016	14	.551	2
12.700	.5000	1/2			2	●	MFE1270X02S140	25.4	1.000	52	2.047	55.0	2.165	102	4.016	14	.551	2
13.000	.5118				2	●	MFE1300X02S140	26.0	1.024	52	2.047	55.0	2.165	102	4.016	14	.551	2
13.100	.5157			9/16-18	2	●	MFE1310X02S140	26.2	1.031	54	2.126	57.0	2.244	102	4.016	14	.551	2
13.500	.5315			5/8-11	2	●	MFE1350X02S140	27.0	1.063	54	2.126	57.0	2.244	102	4.016	14	.551	2
13.891	.5469	35/64			2	●	MFE1389X02S140	27.8	1.094	56	2.205	59.0	2.323	102	4.016	14	.551	2
14.000	.5512			M16x2.0	2	●	MFE1400X02S140	28.0	1.102	56	2.205	59.0	2.323	102	4.016	14	.551	2
14.288	.5625	9/16			2	●	MFE1429X02S160	28.6	1.126	58	2.283	61.0	2.402	111	4.370	16	.630	2
14.500	.5709			M16x1.5	2	●	MFE1450X02S160	29.0	1.142	58	2.283	61.0	2.402	111	4.370	16	.630	2
14.685	.5782	37/64		5/8-18	2	●	MFE1468X02S160	29.4	1.157	60	2.362	63.0	2.480	111	4.370	16	.630	2
15.000	.5906				2	●	MFE1500X02S160	30.0	1.181	60	2.362	63.0	2.480	111	4.370	16	.630	2
15.082	.5938	19/32			2	●	MFE1508X02S160	30.2	1.189	62	2.441	65.0	2.559	111	4.370	16	.630	2
15.479	.6094	39/64			2	●	MFE1548X02S160	31.0	1.220	62	2.441	65.0	2.559	111	4.370	16	.630	2
15.500	.6102			M18x2.5	2	●	MFE1550X02S160	31.0	1.220	62	2.441	65.0	2.559	111	4.370	16	.630	2
15.875	.6250	5/8			2	●	MFE1588X02S160	31.8	1.252	64	2.520	67.0	2.638	111	4.374	16	.630	2
16.000	.6299				2	●	MFE1600X02S160	32.0	1.260	64	2.520	67.0	2.638	111	4.370	16	.630	2
16.272	.6407	41/64			2	●	MFE1627X02S180	32.5	1.280	66	2.598	69.0	2.717	119	4.685	18	.709	2
16.500	.6496			M18x1.5	2	●	MFE1650X02S180	33.0	1.299	66	2.598	69.0	2.717	119	4.685	18	.709	2
16.669	.6563	21/32		3/4-10	2	●	MFE1667X02S180	33.3	1.311	68	2.677	71.0	2.795	119	4.685	18	.709	2
17.000	.6693		Tube Sheet		2	●	MFE1700X02S180	34.0	1.339	68	2.677	71.0	2.795	119	4.685	18	.709	2
17.066	.6719	43/64			2	●	MFE1707X02S180	34.1	1.343	70	2.756	73.0	2.874	119	4.685	18	.709	2
17.463	.6875	11/16		3/4-16	2	●	MFE1746X02S180	34.9	1.374	70	2.756	73.0	2.874	119	4.685	18	.709	2
17.500	.6890			M20x2.5	2	●	MFE1750X02S180	35.0	1.378	70	2.756	73.0	2.874	119	4.685	18	.709	2
17.860	.7032	45/64			2	●	MFE1786X02S180	35.7	1.406	72	2.835	75.0	2.953	119	4.685	18	.709	2
18.000	.7087				2	●	MFE1800X02S180	36.0	1.417	72	2.835	75.0	2.953	119	4.685	18	.709	2
18.257	.7188	23/32			2	●	MFE1826X02S200	36.5	1.437	74	2.913	77.0	3.031	127	5.000	20	.787	2
18.500	.7283			M20x1.5	2	●	MFE1850X02S200	37.0	1.457	74	2.913	77.0	3.031	127	5.000	20	.787	2
18.654	.7344	47/64			2	●	MFE1865X02S200	37.3	1.469	76	2.992	79.0	3.110	127	5.000	20	.787	2
19.000	.7480				2	●	MFE1900X02S200	38.0	1.496	76	2.992	79.0	3.110	127	5.000	20	.787	2
19.050	.7500	3/4			2	●	MFE1905X02S200	38.1	1.500	78	3.071	81.0	3.189	127	5.000	20	.787	2
19.254	.7580		Tube Sheet		2	●	MFE1925X02S200	38.5	1.516	78	3.071	81.0	3.189	127	5.000	20	.787	2
19.447	.7657	49/64		7/8-9	2	●	MFE1945X02S200	38.9	1.531	78	3.071	81.0	3.189	127	5.000	20	.787	2
19.500	.7677			M22x2.5	2	●	MFE1950X02S200	39.0	1.535	78	3.071	81.0	3.189	127	5.000	20	.787	2
19.844	.7813	25/32			2	●	MFE1984X02S200	39.7	1.563	80	3.150	83.0	3.268	127	5.000	20	.787	2
20.000	.7874				2	●	MFE2000X02S200	40.0	1.575	80	3.150	83.0	3.268	127	5.000	20	.787	2

● : USA Stock

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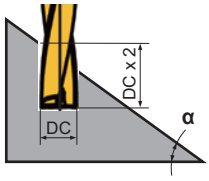
RECOMMENDED CUTTING CONDITIONS

(inch)

Workpiece Material		Mild Steel (≤180HB) AISI 1010 etc.		Carbon Steel, Alloy Steel (180—280HB) AISI 1045, 4140 etc.		Carbon Steel, Alloy Steel (280—350HB) AISI 4340 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm						
.0295	**0.75**	180	.0012 (.0004—.0020)	150	.0012 (.0004—.0020)	130	.0012 (.0004—.0020)
.0394	**1.0**	180	.0012 (.0004—.0020)	150	.0012 (.0004—.0020)	130	.0012 (.0004—.0020)
.0591	**1.5**	190	.0014 (.0006—.0022)	155	.0014 (.0006—.0022)	130	.0014 (.0006—.0020)
.0787	**2.0**	195	.0016 (.0008—.0024)	165	.0016 (.0008—.0024)	140	.0016 (.0008—.0024)
.0984	**2.5**	205	.0020 (.0012—.0028)	170	.0020 (.0012—.0028)	150	.0020 (.0012—.0028)
.1181	**3.0**	245	.0024 (.0016—.0031)	245	.0024 (.0016—.0031)	210	.0024 (.0016—.0031)
.1575	**4.0**	245	.0031 (.0024—.0039)	245	.0031 (.0024—.0039)	210	.0031 (.0024—.0039)
.1969	**5.0**	245	.0039 (.0031—.0051)	245	.0039 (.0031—.0051)	210	.0039 (.0031—.0051)
.2362	**6.0**	245	.0051 (.0039—.0059)	245	.0051 (.0039—.0059)	210	.0051 (.0039—.0059)
.3150	**8.0**	245	.0059 (.0051—.0067)	245	.0059 (.0051—.0067)	210	.0059 (.0051—.0067)
.3937	**10.0**	245	.0067 (.0059—.0079)	245	.0067 (.0059—.0079)	210	.0067 (.0059—.0079)
.4724	**12.0**	245	.0079 (.0067—.0098)	245	.0079 (.0067—.0098)	210	.0079 (.0067—.0098)
.6299	**16.0**	245	.0098 (.0079—.0118)	245	.0098 (.0079—.0118)	210	.0098 (.0079—.0118)
.7874	**20.0**	245	.0118 (.0098—.0138)	245	.0118 (.0098—.0138)	210	.0118 (.0098—.0138)

Workpiece Material		Austenitic Stainless Steel (≤200HB) AISI 304, 316 etc.		Gray Cast Iron (≤350MPa) AISI No45B etc.		Ductile Cast Iron (≤450MPa) AISI 60-40-18 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm						
.0295	**0.75**	80	.0003 (.0001—.0004)	180	.0012 (.0004—.0020)	130	.0004 (.0002—.0006)
.0394	**1.0**	80	.0003 (.0001—.0004)	180	.0012 (.0004—.0020)	130	.0004 (.0002—.0006)
.0591	**1.5**	80	.0004 (.0002—.0006)	190	.0014 (.0006—.0022)	155	.0008 (.0004—.0012)
.0787	**2.0**	100	.0006 (.0004—.0008)	195	.0016 (.0008—.0024)	180	.0012 (.0006—.0018)
.0984	**2.5**	100	.0006 (.0004—.0008)	205	.0020 (.0012—.0028)	190	.0018 (.0010—.0026)
.1181	**3.0**	100	.0008 (.0004—.0012)	245	.0024 (.0016—.0031)	210	.0020 (.0016—.0024)
.1575	**4.0**	100	.0012 (.0008—.0016)	245	.0031 (.0024—.0039)	230	.0024 (.0020—.0031)
.1969	**5.0**	100	.0016 (.0012—.0020)	245	.0039 (.0031—.0047)	230	.0031 (.0024—.0039)
.2362	**6.0**	100	.0020 (.0016—.0024)	245	.0047 (.0039—.0055)	230	.0039 (.0031—.0047)
.3150	**8.0**	100	.0024 (.0020—.0031)	245	.0055 (.0047—.0063)	230	.0047 (.0039—.0059)
.3937	**10.0**	100	.0031 (.0024—.0039)	245	.0063 (.0055—.0071)	230	.0059 (.0047—.0071)
.4724	**12.0**	100	.0039 (.0031—.0047)	245	.0071 (.0063—.0079)	230	.0071 (.0059—.0079)
.6299	**16.0**	100	.0047 (.0039—.0059)	245	.0079 (.0071—.0094)	230	.0079 (.0071—.0098)
.7874	**20.0**	100	.0059 (.0047—.0079)	245	.0094 (.0079—.0110)	230	.0098 (.0079—.0118)

Workpiece Material		Aluminum Alloy (Si<5%) AISI 6061, 7075 etc.	
DC		Cutting Speed **vc** (SFM)	Feed **fr** (Min.—Max.) (IPR)
inch	mm		
.0295	**0.75**	330	.0008 (.0004—.0012)
.0394	**1.0**	330	.0008 (.0004—.0012)
.0591	**1.5**	330	.0008 (.0004—.0012)
.0787	**2.0**	360	.0020 (.0012—.0028)
.0984	**2.5**	360	.0024 (.0016—.0035)
.1181	**3.0**	360	.0024 (.0016—.0035)
.1575	**4.0**	360	.0031 (.0024—.0039)
.1969	**5.0**	360	.0039 (.0031—.0051)
.2362	**6.0**	360	.0051 (.0039—.0063)
.3150	**8.0**	360	.0063 (.0051—.0079)
.3937	**10.0**	360	.0079 (.0063—.0094)
.4724	**12.0**	360	.0094 (.0079—.0110)
.6299	**16.0**	360	.0110 (.0094—.0126)
.7874	**20.0**	360	.0126 (.0110—.0142)

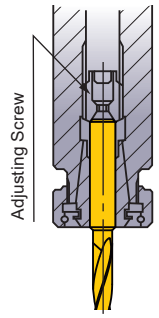


Note 1) The recommended hole depth is DCx2. This should be the depth from the uppermost surface of the workpiece when machining on an angled surface. (Refer to diagram)
Note 2) The above cutting table assumes drilling on a flat surface.
For hole drilling on an angled surface, adjust the feed rate in accordance with the inclination angle.
When the inclination angle α is 30° or less, adjust the feed rate to 70% or lower as a guideline.
When the inclination angle α is greater than 30°, adjust the feed rate to 50% or lower as a guideline.
Note 3) This product is a tool intended for hole drilling. It cannot be used for cross-feed machining or helical machining.

MFE

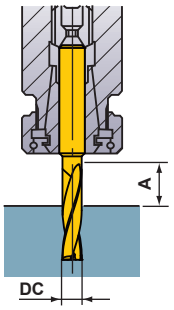
OPERATIONAL GUIDANCE FOR THE MFE DRILL

Drill Holding



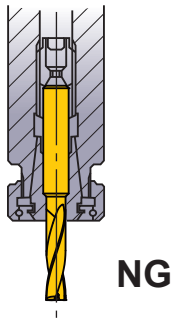
Thrust bearing type collet chuck holds the drill securely.

Drill Length



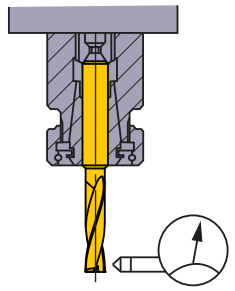
A > DC x 1.5

Drill Installation



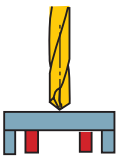
Do not clamp on the flutes.

Installation Tolerance



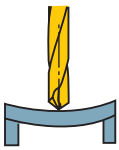
Run-out ≤ .0012 inch

Thin Workpiece



Support the Workpiece

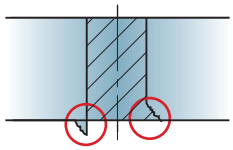
OK



If Bending Occurs

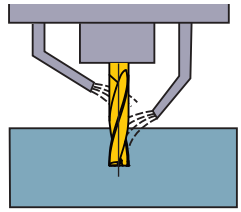
NG

Burring and Workpiece Chipping



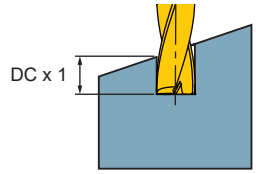
①Lower the feed rate by 50% at the end of through cutting.
②Add a chamfer.

Coolant Method (MFE)



Two coolant positions, at the end and at the center are ideal.

Inclined Face Drilling



① When machining a deep hole into an inclined surface, use MFE drill (L/D=2) as a drill for a guide hole.
② Set the drill depth at approx. DC x 1 to obtain anaccurate guide hole.

Memo

DLE
LEADING DRILL SERIES

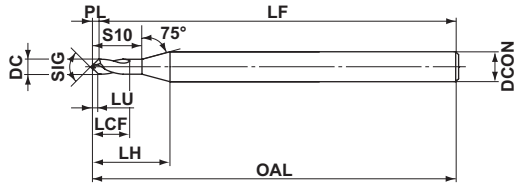
- Solid carbide drills for centering and chamfering
- Two-step point angles
- Excellent sharpness and chipping resistance and stable machining of stainless steels

P M K N S H

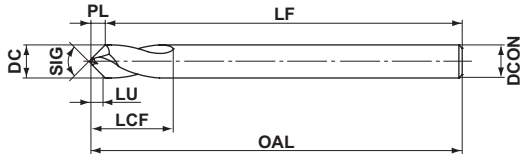
METRIC STANDARD

External Coolant

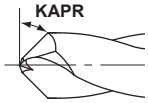
■ **Tip angle shape SIG 60º, 90º**



Type1



Type2



(mm)

DCON=3	3 < DCON ≤ 6	6 < DCON ≤ 10	10 < DCON ≤ 16
h7 0 −0.010	0 −0.012	0 −0.015	0 −0.018

(inch)

DCON=.1181	.1181 < DCON ≤ .2362	.2362 < DCON ≤ .3937	.3937 < DCON ≤ .6299
h7 0 −.0004	0 −.0005	0 −.0006	0 −.0007

	DC (mm)	DC (inch)	SIG	Stock DP1020	Stock DP102A	Order Number	LU (mm)	LU (inch)	LCF (mm)	LCF (inch)	LH (mm)	LH (inch)
NEW	3.0	.1181	60°	●		**DLE0300S030P060**	2.0	.079	9	.354	—	—
NEW	4.0	.1575	60°	●		**DLE0400S040P060**	2.7	.106	12	.472	—	—
NEW	5.0	.1969	60°	●		**DLE0500S050P060**	3.4	.134	14	.551	—	—
NEW	6.0	.2362	60°	●		**DLE0600S060P060**	4.0	.157	15	.591	—	—
NEW	7.0	.2756	60°	●		**DLE0700S070P060**	4.7	.185	18	.709	—	—
NEW	8.0	.3150	60°	●		**DLE0800S080P060**	5.4	.213	20	.787	—	—
NEW	10.0	.3937	60°	●		**DLE1000S100P060**	6.8	.268	24	.945	—	—
NEW	12.0	.4724	60°	●		**DLE1200S120P060**	8.1	.319	28	1.102		—
NEW	1.0	.0394	90°		●	**DLE0100S030P090**	0.35	.014	2	.079	6.7	.264
NEW	1.5	.0591	90°		●	**DLE0150S030P090**	0.55	.022	3	.118	7.3	.287
NEW	2.0	.0787	90°		●	**DLE0200S030P090**	0.80	.031	4	.157	7.9	.311
NEW	2.5	.0984	90°		●	**DLE0250S030P090**	1.00	.039	5	.197	7.9	.311
	3.0	.1181	90°	●		**DLE0300S030P090**	1.2	.047	9	.354	—	—
	4.0	.1575	90°	●		**DLE0400S040P090**	1.6	.063	12	.472	—	—
	5.0	.1969	90°	●		**DLE0500S050P090**	2.0	.079	14	.551	—	—
	6.0	.2362	90°	●		**DLE0600S060P090**	2.4	.094	15	.591	—	—
	7.0	.2756	90°	●		**DLE0700S070P090**	2.8	.110	18	.709	—	—
	8.0	.3150	90°	●		**DLE0800S080P090**	3.2	.126	20	.787	—	—
	10.0	.3937	90°	●		**DLE1000S100P090**	4.1	.161	24	.945	—	—
	12.0	.4724	90°	●		**DLE1200S120P090**	4.9	.193	28	1.102	—	—
	16.0	.6299	90°	●		**DLE1600S160P090**	6.6	.260	35	1.378	—	—

Note 1) In the region of roughly **DC**/4, which is the region of the two-step point angles, the central area will not have a 60°, 90° bottom hole angle. Chamfering will also not be possible in this region.

Note 2) The centering diameter should be less than the drill diameter (processing diameter) **DC** and the usable length **LU** should be referred to as a guideline.

● : **USA Stock**

S10		OAL		LF		PL		KAPR	DCON		DC/4		Fig.
(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)		(mm)	(inch)	(mm)	(inch)	
–	–	45	1.772	42.9	1.689	2.1	.083	60°	3	.118	.750	.030	2
–	–	50	1.969	47.2	1.858	2.8	.110	60°	4	.157	1.000	.039	2
–	–	60	2.362	56.5	2.224	3.5	.138	60°	5	.197	1.250	.049	2
–	–	66	2.598	61.8	2.433	4.2	.165	60°	6	.236	1.500	.059	2
–	–	74	2.913	69.1	2.720	4.9	.193	60°	7	.276	1.750	.069	2
–	–	74	2.913	68.4	2.693	5.6	.220	60°	8	.315	2.000	.079	2
–	–	84	3.307	77	3.031	7.0	.276	60°	10	.394	2.500	.098	2
–	–	95	3.740	86.6	3.409	8.4	.331	60°	12	.472	3.000	.118	2
3.0	.118	45	1.772	44.6	1.756	0.4	.016	45°	3	.118	.250	.010	1
4.5	.177	45	1.772	44.4	1.748	0.6	.024	45°	3	.118	.380	.015	1
6.1	.240	45	1.772	44.1	1.736	0.9	.035	45°	3	.118	.500	.020	1
7.1	.280	45	1.772	43.9	1.728	1.1	.043	45°	3	.118	.630	.025	1
–	–	45	1.772	43.7	1.720	1.3	.051	45°	3	.118	.750	.030	2
–	–	50	1.969	48.3	1.902	1.7	.067	45°	4	.157	1.000	.039	2
–	–	60	2.362	57.9	2.280	2.1	.083	45°	5	.197	1.250	.049	2
–	–	66	2.598	63.4	2.496	2.6	.102	45°	6	.236	1.500	.059	2
–	–	74	2.913	71.0	2.795	3.0	.118	45°	7	.276	1.750	.069	2
–	–	74	2.913	70.6	2.780	3.4	.134	45°	8	.315	2.000	.079	2
–	–	84	3.307	79.7	3.138	4.3	.169	45°	10	.394	2.500	.098	2
–	–	95	3.740	89.9	3.539	5.1	.201	45°	12	.472	3.000	.118	2
–	–	113	4.449	106.2	4.181	6.8	.268	45°	16	.630	4.000	.157	2

ISO13399 ➤ L003
OPERATIONAL GUIDANCE ➤ L197
CUTTING CONDITIONS ➤ L197

DLE
LEADING DRILL SERIES

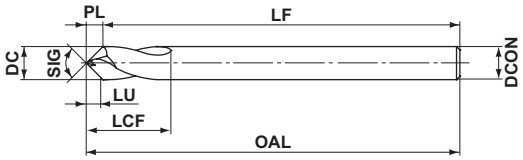
- Solid carbide drills for centering and chamfering
- Two-step point angles
- Excellent sharpness and chipping resistance and stable machining of stainless steels

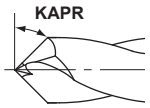
P M K N S H

METRIC STANDARD

External Coolant

■ Tip angle shape SIG 120º, 145º





(mm)

h7	DCON=3	3 < DCON≤6	6<DCON≤10	10<DCON≤16
	0 −0.010	0 −0.012	0 −0.015	0 −0.018

(inch)

h7	DCON=.1181	.1181 < DCON≤.2362	.2362 < DCON≤.3937	.3937 < DCON≤.6299
	0 −.0004	0 −.0005	0 −.0006	0 −.0007

	DC (mm)	DC (inch)	SIG	DP1020	Order Number	LU (mm)	LU (inch)	LCF (mm)	LCF (inch)	OAL (mm)	OAL (inch)	LF (mm)	LF (inch)	PL (mm)	PL (inch)	KAPR	DCON (mm)	DCON (inch)
NEW	3.0	.1181	120°	●	**DLE0300S030P120**	0.8	.031	9	.354	45	1.772	44.1	1.736	0.9	.035	30°	3	.118
NEW	4.0	.1575	120°	●	**DLE0400S040P120**	1.1	.043	12	.472	50	1.969	48.8	1.921	1.2	.047	30°	4	.157
NEW	5.0	.1969	120°	●	**DLE0500S050P120**	1.3	.051	14	.551	60	2.362	58.6	2.307	1.4	.055	30°	5	.197
NEW	6.0	.2362	120°	●	**DLE0600S060P120**	1.6	.063	15	.591	66	2.598	64.3	2.531	1.7	.067	30°	6	.236
NEW	7.0	.2756	120°	●	**DLE0700S070P120**	1.9	.075	18	.709	74	2.913	72.0	2.835	2.0	.079	30°	7	.276
NEW	8.0	.3150	120°	●	**DLE0800S080P120**	2.2	.087	20	.787	74	2.913	71.7	2.823	2.3	.091	30°	8	.315
NEW	10.0	.3937	120°	●	**DLE1000S100P120**	2.8	.110	24	.945	84	3.307	81.1	3.193	2.9	.114	30°	10	.394
NEW	12.0	.4724	120°	●	**DLE1200S120P120**	3.3	.130	28	1.102	95	3.740	91.5	3.602	3.5	.138	30°	12	.472
NEW	3.0	.1181	145°	●	**DLE0300S030P145**	0.4	.016	9	.354	45	1.772	44.5	1.752	0.5	.020	17.5°	3	.118
NEW	4.0	.1575	145°	●	**DLE0400S040P145**	0.5	.020	12	.472	50	1.969	49.4	1.945	0.6	.024	17.5°	4	.157
NEW	5.0	.1969	145°	●	**DLE0500S050P145**	0.7	.028	14	.551	60	2.362	59.2	2.331	0.8	.031	17.5°	5	.197
NEW	6.0	.2362	145°	●	**DLE0600S060P145**	0.8	.031	15	.591	66	2.598	65.1	2.563	0.9	.035	17.5°	6	.236
NEW	7.0	.2756	145°	●	**DLE0700S070P145**	1.0	.039	18	.709	74	2.913	72.9	2.870	1.1	.043	17.5°	7	.276
NEW	8.0	.3150	145°	●	**DLE0800S080P145**	1.1	.043	20	.787	74	2.913	72.7	2.862	1.3	.051	17.5°	8	.315
NEW	10.0	.3937	145°	●	**DLE1000S100P145**	1.4	.055	24	.945	84	3.307	82.4	3.244	1.6	.063	17.5°	10	.394
NEW	12.0	.4724	145°	●	**DLE1200S120P145**	1.7	.067	28	1.102	95	3.740	93.1	3.665	1.9	.075	17.5°	12	.472

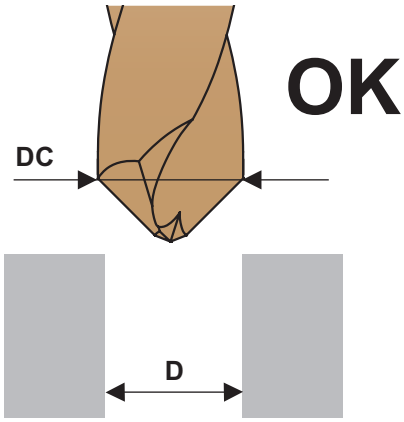
Note 1) The centering diameter should be less than the drill diameter (processing diameter) **DC** and the usable length **LU** should be referred to as a guideline.

ISO13399 ➤ L003

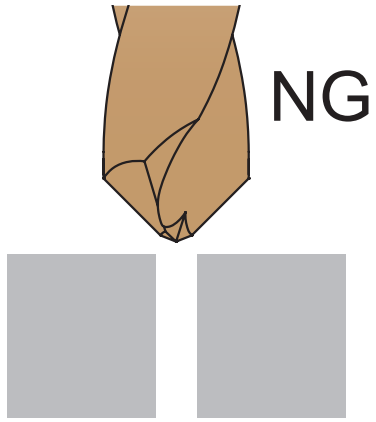
Drill Diameter Selection

When Chamfering

With respect to guide hole diameter **D**, select the drill diameter (cutting diameter) **DC** to be within the range of **D** < **DC** < 2**D**.

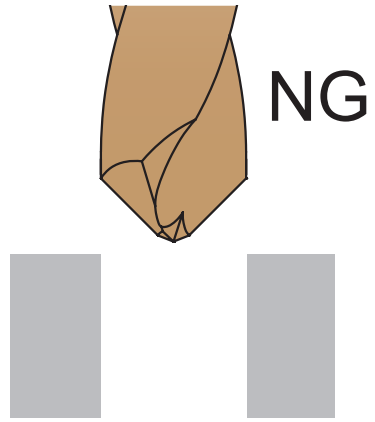


Example) If guide hole diameter **D** is .197":
Drill diameter **DC** should be equal to or greater than .236" but less than .394".
Select a **DC** of .236", .276", or .315".



If DC is equal to or greater than 2D:

If drill diameter **DC** is too large compared to guide hole diameter **D** (equal to or greater than 2**D**), chamfering cannot be performed.

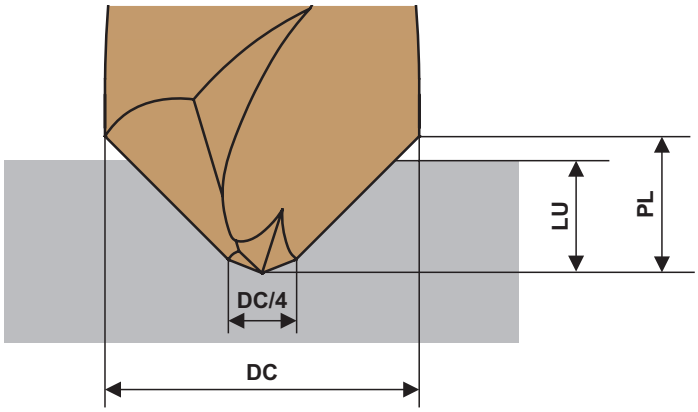


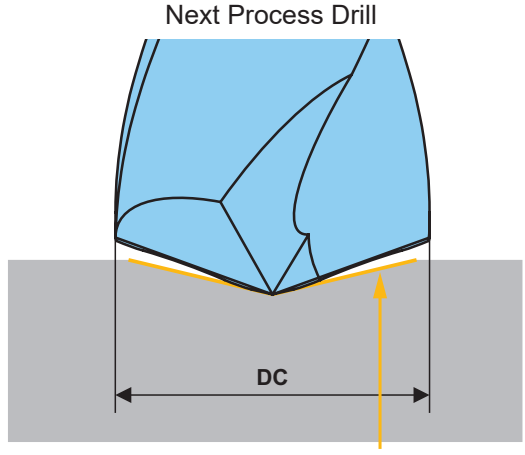
If DC is a drill diameter equal to D:

Chamfering cannot be performed if drill diameter **DC** is the same as guide hole diameter **D**.

When Centering

The centering diameter should be less than the drill diameter (processing diameter) **DC** and the usable length **LU** should be referred to as a guideline.
The central area of holes (approx 25% of the full diameter) formed by two step point angles will not have their respective 60º and 90º angles. Chamfering is also not possible in the center areas.
Select a centering drill with a larger point angle than the final hole drill if is desired to make initial contact with the center.





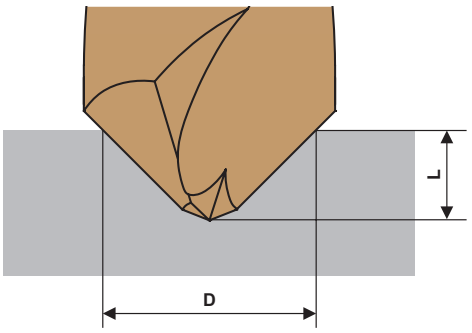
Centering of Point Angle SIG145°

OPERATIONAL GUIDANCE ➤ L197
CUTTING CONDITIONS ➤ L197

DLE

LEADING DRILL SERIES

Drilling Depth (L) Chart by Tool Diameter



(inch)

DC		SIG 90°			
		Min.		Max.	
(mm)	(inch)	D	L	D	L
1.0	**.0394**	.020	.007	.031	.013
1.5	**.0591**	.031	.011	.051	.021
2.0	**.0787**	.039	.014	.075	.031
2.5	**.0984**	.051	.019	.094	.039
3.0	**.1181**	.059	.020	.110	.047
4.0	**.1575**	.079	.028	.150	.063
5.0	**.1969**	.098	.035	.185	.079
6.0	**.2362**	.118	.043	.224	.094
7.0	**.2756**	.138	.047	.260	.110
8.0	**.3150**	.157	.055	.299	.126
10.0	**.3937**	.197	.071	.382	.161
12.0	**.4724**	.236	.083	.457	.193
16.0	**.6299**	.315	.110	.610	.260

DC		SIG 60°				SIG 120°				SIG 145°			
		Min.		Max.		Min.		Max.		Min.		Max.	
(mm)	(inch)	D	L	D	L	D	L	D	L	D	L	D	L
3.0	**.1181**	.059	.031	.114	.079	.059	.016	.110	.031	.059	.008	.098	.016
4.0	**.1575**	.079	.043	.154	.106	.079	.024	.150	.043	.079	.012	.126	.020
5.0	**.1969**	.098	.051	.193	.134	.098	.028	.177	.051	.098	.016	.173	.028
6.0	**.2362**	.118	.063	.228	.157	.118	.035	.217	.063	.118	.020	.201	.031
7.0	**.2756**	.138	.075	.268	.185	.138	.039	.260	.075	.138	.024	.248	.039
8.0	**.3150**	.157	.083	.307	.213	.157	.047	.299	.087	.157	.024	.276	.043
10.0	**.3937**	.197	.106	.386	.268	.197	.055	.382	.110	.197	.031	.350	.055
12.0	**.4724**	.236	.126	.457	.319	.236	.067	.449	.130	.236	.035	.425	.067

Point Angle SIG 60°

RECOMMENDED CUTTING CONDITIONS

(inch)

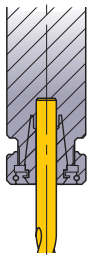
Workpiece Material		Mild Steels (≤180HB) AISI 1010 etc.		Carbon Steels, Alloy Steels (180—280HB) AISI 1045, 4140 etc.		Carbon Steels, Alloy Steels (280—350HB) AISI 4340 etc.	
DC		Cutting Speed (SFM)	Feed (Min.—Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.—Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.—Max.) (IPR)
(mm)	(inch)						
3	**.1181**	245	.0020 (.0012—.0028)	210	.0020 (.0012—.0028)	195	.0016 (.0008—.0024)
4	**.1575**	245	.0020 (.0012—.0028)	210	.0020 (.0012—.0028)	195	.0016 (.0008—.0024)
5	**.1969**	260	.0024 (.0016—.0031)	230	.0024 (.0016—.0031)	210	.0020 (.0012—.0028)
6	**.2362**	260	.0024 (.0016—.0031)	230	.0024 (.0016—.0031)	210	.0020 (.0012—.0028)
7	**.2756**	260	.0028 (.0016—.0035)	230	.0028 (.0016—.0035)	210	.0020 (.0012—.0028)
8	**.3150**	260	.0028 (.0016—.0035)	230	.0028 (.0016—.0035)	210	.0020 (.0012—.0028)
10	**.3937**	280	.0031 (.0016—.0039)	245	.0031 (.0016—.0039)	230	.0024 (.0012—.0031)
12	**.4724**	280	.0031 (.0016—.0039)	245	.0031 (.0016—.0039)	230	.0024 (.0012—.0031)

Workpiece Material		Austenitic Stainless Steels (≤200HB) AISI 304, 316 etc.		Gray Cast Irons (≤350MPa) AISI No45B etc.		Ductile Cast Irons (≤450MPa) AISI 60-40-18 etc.	
DC		Cutting Speed (SFM)	Feed (Min.—Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.—Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.—Max.) (IPR)
(mm)	(inch)						
3	**.1181**	50	.0012 (.0004—.0020)	245	.0020 (.0012—.0028)	180	.0020 (.0012—.0028)
4	**.1575**	50	.0012 (.0004—.0020)	245	.0020 (.0012—.0028)	180	.0020 (.0012—.0028)
5	**.1969**	65	.0016 (.0008—.0024)	260	.0024 (.0016—.0031)	195	.0024 (.0016—.0031)
6	**.2362**	65	.0016 (.0008—.0024)	260	.0024 (.0016—.0031)	195	.0024 (.0016—.0031)
7	**.2756**	65	.0016 (.0008—.0024)	260	.0028 (.0016—.0035)	195	.0024 (.0016—.0031)
8	**.3150**	65	.0016 (.0008—.0024)	260	.0028 (.0016—.0035)	195	.0024 (.0016—.0031)
10	**.3937**	65	.0016 (.0008—.0024)	280	.0031 (.0016—.0039)	195	.0028 (.0016—.0035)
12	**.4724**	65	.0016 (.0008—.0024)	280	.0031 (.0016—.0039)	195	.0028 (.0016—.0035)

Note 1) When chamfering a circumference of a guide hole, make sure that the tool diameter(**DC**) is **D** <**DC** <2**D**.
Note 2) When centering into curved or inclined surfaces, please reduce the feed rate.
Note 3) When V-grooving and chamfering, please reduce cutting conditions.
Note 4) When chatter vibration or abnormal noise is generated, please shorten the time of dwell program or lower the rotation speed.
Note 5) When centering, please do not exceed the **LU** (usable length).

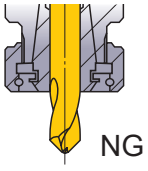
■ OPERATIONAL GUIDANCE FOR THE DLE DRILL

Drill Holding



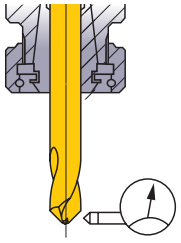
Collet chuck holds the drill securely.

Drill Installation



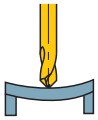
Do not clamp on the flutes.

Installation Tolerance

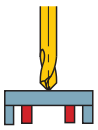


Run-out ≤ .001 inch

Thin Workpiece

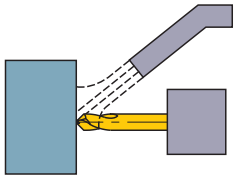


NG
If Bending Occurs



OK
Support the Workpiece

Coolant Method



Coolant positions,at the end at the center are ideal.

DLE

LEADING DRILL SERIES

Point Angle SIG 90°, 120° and 145°

RECOMMENDED CUTTING CONDITIONS

(inch)

Workpiece Material		Mild Steels (≤180HB) AISI 1010 etc.		Carbon Steels, Alloy Steels (180−280HB) AISI 1045, 4140 etc.		Carbon Steels, Alloy Steels (280−350HB) AISI 4340 etc.	
DC		Cutting Speed (SFM)	Feed (Min.−Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.−Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.−Max.) (IPR)
(mm)	(inch)						
1.0	**.0394**	100	.0008 (.0004—.0012)	65	.0008 (.0004—.0012)	15	.0008 (.0004—.0012)
1.5	**.0591**	150	.0008 (.0004—.0012)	115	.0008 (.0004—.0012)	30	.0008 (.0004—.0012)
2.0	**.0787**	195	.0016 (.0012—.0020)	165	.0016 (.0012—.0020)	45	.0016 (.0012—.0020)
2.5	**.0984**	245	.0016 (.0012—.0020)	210	.0016 (.0012—.0020)	195	.0016 (.0012—.0020)
3.0	**.1181**	245	.0024 (.0016—.0031)	210	.0024 (.0016—.0031)	195	.0020 (.0012—.0028)
4.0	**.1575**	245	.0024 (.0016—.0031)	210	.0024 (.0016—.0031)	195	.0020 (.0012—.0028)
5.0	**.1969**	260	.0028 (.0020—.0035)	230	.0028 (.0020—.0035)	210	.0024 (.0016—.0031)
6.0	**.2362**	260	.0028 (.0020—.0035)	230	.0028 (.0020—.0035)	210	.0024 (.0016—.0031)
7.0	**.2756**	260	.0031 (.0020—.0039)	230	.0031 (.0020—.0039)	210	.0024 (.0016—.0031)
8.0	**.3150**	260	.0031 (.0020—.0039)	230	.0031 (.0020—.0039)	210	.0024 (.0016—.0031)
10.0	**.3937**	280	.0035 (.0020—.0043)	245	.0035 (.0020—.0043)	230	.0028 (.0016—.0035)
12.0	**.4724**	280	.0035 (.0020—.0043)	245	.0035 (.0020—.0043)	230	.0028 (.0016—.0035)
16.0	**.6299**	295	.0047 (.0039—.0055)	260	.0047 (.0039—.0055)	245	.0031 (.0024—.0039)

Workpiece Material		Austenitic Stainless Steels (≤200HB) AISI 304, 316 etc.		Gray Cast Irons (≤350MPa) AISI No45B etc.		Ductile Cast Irons (≤450MPa) AISI 60-40-18 etc.	
DC		Cutting Speed (SFM)	Feed (Min.−Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.−Max.) (IPR)	Cutting Speed (SFM)	Feed (Min.−Max.) (IPR)
(mm)	(inch)						
1.0	**.0394**	65	.0004 (.0002—.0006)	100	.0008 (.0004—.0012)	30	.0008 (.0004—.0012)
1.5	**.0591**	65	.0004 (.0002—.0006)	150	.0008 (.0004—.0012)	80	.0008 (.0004—.0012)
2.0	**.0787**	65	.0016 (.0012—.0020)	195	.0016 (.0012—.0020)	130	.0016 (.0012—.0020)
2.5	**.0984**	65	.0016 (.0012—.0020)	245	.0016 (.0012—.0020)	180	.0016 (.0012—.0020)
3.0	**.1181**	65	.0016 (.0008—.0024)	245	.0024 (.0016—.0031)	180	.0024 (.0016—.0031)
4.0	**.1575**	65	.0016 (.0008—.0024)	245	.0024 (.0016—.0031)	180	.0024 (.0016—.0031)
5.0	**.1969**	65	.0024 (.0016—.0031)	260	.0028 (.0020—.0035)	195	.0028 (.0020—.0035)
6.0	**.2362**	65	.0024 (.0016—.0031)	260	.0028 (.0020—.0035)	195	.0028 (.0020—.0035)
7.0	**.2756**	65	.0024 (.0016—.0031)	260	.0031 (.0020—.0039)	195	.0028 (.0020—.0035)
8.0	**.3150**	65	.0024 (.0016—.0031)	260	.0031 (.0020—.0039)	195	.0028 (.0020—.0035)
10.0	**.3937**	65	.0024 (.0016—.0031)	280	.0035 (.0020—.0043)	195	.0031 (.0020—.0039)
12.0	**.4724**	65	.0024 (.0016—.0031)	280	.0035 (.0020—.0043)	195	.0031 (.0020—.0039)
16.0	**.6299**	65	.0031 (.0024—.0039)	295	.0047 (.0039—.0055)	195	.0043 (.0035—.0051)

Note 1) When chamfering a circumference of a guide hole, make sure that the tool diameter(**DC**) is **D** <**DC** <2**D**.
Note 2) When centering into curved or inclined surfaces, please reduce the feed rate.
Note 3) When V-grooving and chamfering, please reduce cutting conditions.
Note 4) When chatter vibration or abnormal noise is generated, please shorten the time of dwell program or lower the rotation speed.
Note 5) When centering, please do not exceed the **LU** (usable length).

● : **USA Stock**

MVX ø.562"—ø.656"

- Ideal combination of outer CVD insert and inner PVD insert.
- High rigidity body that enables L/D=6 deep hole machining.

P | M | K | N | S | H

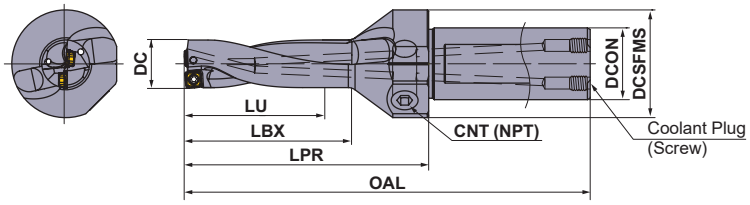
Inch Standard

Internal Coolant

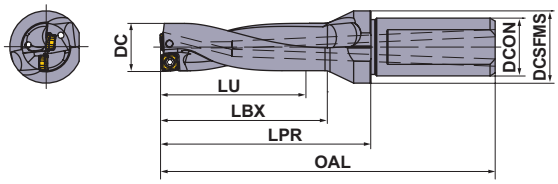
Machining Tolerance (Guide)(inch)

L/D	ø.562"—ø.656"
2, 3	$^{+.0098}_{0}$
4, 5	$^{+.0138}_{0}$

Type 1

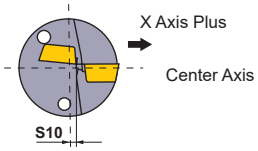


Type 2



Side Coolant Not Available.

Maximum Offset for Turning



(inch)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Type	Insert Type	*1 Clamp Screw	Wrench	NPT Plug (Side) CNT	(Back) Coolant Plug (Screw)	Coolant Plug (Wrench)
.562	2	MVX0562X2C075	●	2	1.12	1.40	2.19	4.19	.750	1.25	.026	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	3	MVX0562X3C075	●	2	1.69	1.96	2.75	4.75	.750	1.25	.026	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	4	MVX0562X4C075	●	2	2.25	2.52	3.32	5.32	.750	1.25	.026	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	5	MVX0562X5F075	●	2	2.81	3.09	3.61	5.61	.750	.98	.026	2	SO□X05	TPS20-1	TIP06F	—	—	—
.593	2	MVX0593X2C075	●	2	1.19	1.46	2.25	4.25	.750	1.25	.016	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	3	MVX0593X3C075	●	2	1.78	2.06	2.85	4.85	.750	1.25	.016	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	4	MVX0593X4C075	●	2	2.37	2.65	3.44	5.44	.750	1.25	.016	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	5	MVX0593X5F075	●	2	2.97	3.24	3.77	5.77	.750	.98	.016	2	SO□X05	TPS20-1	TIP06F	—	—	—
.625	2	MVX0625X2C075	●	2	1.25	1.53	2.32	4.32	.750	1.25	.013	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	3	MVX0625X3C075	●	2	1.88	2.15	2.94	4.94	.750	1.25	.013	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	4	MVX0625X4C075	●	2	2.50	2.78	3.57	5.57	.750	1.25	.013	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	5	MVX0625X5F075	●	2	3.13	3.40	3.93	5.93	.750	.98	.013	2	SO□X05	TPS20-1	TIP06F	—	—	—
.656	2	MVX0656X2C075	●	2	1.31	1.59	2.38	4.38	.750	1.25	.009	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	3	MVX0656X3C075	●	2	1.97	2.24	3.04	5.04	.750	1.25	.009	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	4	MVX0656X4C075	●	2	2.62	2.90	3.69	5.69	.750	1.25	.009	1	SO□X05	TPS20-1	TIP06F	1/8	HSS05006	HKY25R
	5	MVX0656X5F075	●	2	3.28	3.56	4.08	6.08	.750	.98	.009	2	SO□X05	TPS20-1	TIP06F	—	—	—

*1 Clamp Torque (lbf-in) : TPS20-1=5.3

*2 Number of Teeth

ISO13399 ➤ L003
INSERTS ➤ L203
CUTTING CONDITIONS ➤ L213
USAGE NOTE ➤ L218
SPARE PARTS ➤ M001

MVX ø.687"–ø2.500"

- Ideal combination of outer CVD insert and inner PVD insert.
- High rigidity body that enables L/D=6 deep hole machining.

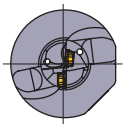
P | M | K | N | S | H

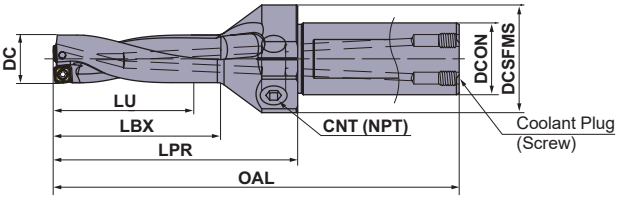
Inch Standard

Internal Coolant

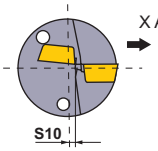
Machining Tolerance (Guide)(inch)

L/D	ø.687"–ø1.312"	ø1.375"–ø1.812"	ø1.875"–ø2.500"
2, 3	+.0098 0	+.0118 0	+.0118 0
4, 5	+.0138 0	+.0157 0	+.0177 0
6	+.0177 0	+.0236 0	–





Maximum Offset for Turning



(inch)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	F W Wrench	NPT Plug (Side) CNT	(Back) Coolant Plug (Screw)	Coolant Plug (Wrench)
.687	2	MVX0687X2C100	●	2	1.37	1.65	2.72	4.97	1.000	1.50	.023	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	3	MVX0687X3C100	●	2	2.06	2.34	3.41	5.66	1.000	1.50	.023	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	4	MVX0687X4C100	●	2	2.75	3.03	4.09	6.34	1.000	1.50	.023	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	5	MVX0687X5C100	●	2	3.44	3.71	4.78	7.03	1.000	1.50	.023	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	6	MVX0687X6C100	●	2	4.12	4.40	5.47	7.72	1.000	1.50	.023	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
.750	2	MVX0750X2C100	●	2	1.50	1.78	2.91	5.16	1.000	1.50	.016	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	3	MVX0750X3C100	●	2	2.25	2.53	3.66	5.91	1.000	1.50	.016	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	4	MVX0750X4C100	●	2	3.00	3.28	4.41	6.66	1.000	1.50	.016	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	5	MVX0750X5C100	●	2	3.75	4.03	5.16	7.41	1.000	1.50	.016	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
	6	MVX0750X6C100	●	2	4.50	4.78	5.91	8.16	1.000	1.50	.016	SO○X06	TPS25	TIP07F	1/8	HSS05006	HKY25R
.812	2	MVX0812X2C100	●	2	1.62	1.90	3.01	5.26	1.000	1.50	.027	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	3	MVX0812X3C100	●	2	2.44	2.71	3.82	6.07	1.000	1.50	.027	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	4	MVX0812X4C100	●	2	3.25	3.53	4.63	6.88	1.000	1.50	.027	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	5	MVX0812X5C100	●	2	4.06	4.34	5.44	7.69	1.000	1.50	.027	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	6	MVX0812X6C100	●	2	4.87	5.15	6.26	8.51	1.000	1.50	.027	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
.875	2	MVX0875X2C100	●	2	1.75	2.03	3.12	5.37	1.000	1.50	.020	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	3	MVX0875X3C100	●	2	2.63	2.90	4.00	6.25	1.000	1.50	.020	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	4	MVX0875X4C100	●	2	3.50	3.78	4.87	7.12	1.000	1.50	.020	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	5	MVX0875X5C100	●	2	4.38	4.65	5.75	8.00	1.000	1.50	.020	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
	6	MVX0875X6C100	●	2	5.25	5.53	6.62	8.87	1.000	1.50	.020	SO○X07	TPS3	TIP10F	1/8	HSS05006	HKY25R
.937	2	MVX0937X2C100	●	2	1.87	2.15	3.24	5.49	1.000	1.50	.037	SO○X08	TPS351	TIP10W	1/8	HSS05006	HKY25R
	3	MVX0937X3C100	●	2	2.81	3.09	4.17	6.42	1.000	1.50	.037	SO○X08	TPS351	TIP10W	1/8	HSS05006	HKY25R
	4	MVX0937X4C100	●	2	3.75	4.03	5.11	7.36	1.000	1.50	.037	SO○X08	TPS351	TIP10W	1/8	HSS05006	HKY25R
	5	MVX0937X5C100	●	2	4.69	4.96	6.05	8.30	1.000	1.50	.037	SO○X08	TPS351	TIP10W	1/8	HSS05006	HKY25R
	6	MVX0937X6C100	●	2	5.62	5.90	6.99	9.24	1.000	1.50	.037	SO○X08	TPS351	TIP10W	1/8	HSS05006	HKY25R
1.000	2	MVX1000X2C125	●	2	2.00	2.28	3.35	5.73	1.250	1.75	.030	SO○X08	TPS351	TIP10W	1/8	HSS06008	HKY30R
	3	MVX1000X3C125	●	2	3.00	3.28	4.35	6.73	1.250	1.75	.030	SO○X08	TPS351	TIP10W	1/8	HSS06008	HKY30R
	4	MVX1000X4C125	●	2	4.00	4.28	5.35	7.73	1.250	1.75	.030	SO○X08	TPS351	TIP10W	1/8	HSS06008	HKY30R
	5	MVX1000X5C125	●	2	5.00	5.28	6.35	8.73	1.250	1.75	.030	SO○X08	TPS351	TIP10W	1/8	HSS06008	HKY30R
	6	MVX1000X6C125	●	2	6.00	6.28	7.35	9.73	1.250	1.75	.030	SO○X08	TPS351	TIP10W	1/8	HSS06008	HKY30R

*1 Clamp Torque (lbf-in) : TPS25=8.9, TPS3=17.7, TPS351=22
*2 Number of Teeth

● : USA Stock

(inch)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	Wrench	NPT Plug (Side) CNT	(Back) Coolant Plug (Screw)	Coolant Plug (Wrench)
	2	**MVX1062X2C125**	●	2	2.12	2.40	3.46	5.84	1.250	1.75	.022	**SO○X08**	TPS351	TIP10W	1/8	HSS06008	HKY30R
	3	**MVX1062X3C125**	●	2	3.19	3.46	4.53	6.90	1.250	1.75	.022	**SO○X08**	TPS351	TIP10W	1/8	HSS06008	HKY30R
1.062	4	**MVX1062X4C125**	●	2	4.25	4.53	5.59	7.96	1.250	1.75	.022	**SO○X08**	TPS351	TIP10W	1/8	HSS06008	HKY30R
	5	**MVX1062X5C125**	●	2	5.31	5.59	6.65	9.03	1.250	1.75	.022	**SO○X08**	TPS351	TIP10W	1/8	HSS06008	HKY30R
	6	**MVX1062X6C125**	●	2	6.37	6.65	7.71	10.09	1.250	1.75	.022	**SO○X08**	TPS351	TIP10W	1/8	HSS06008	HKY30R
	2	**MVX1125X2C125**	●	2	2.25	2.53	3.64	6.01	1.250	1.75	.040	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	3	**MVX1125X3C125**	●	2	3.38	3.65	4.76	7.14	1.250	1.75	.040	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
1.125	4	**MVX1125X4C125**	●	2	4.50	4.78	5.89	8.26	1.250	1.75	.040	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	5	**MVX1125X5C125**	●	2	5.63	5.90	7.01	9.39	1.250	1.75	.040	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	6	**MVX1125X6C125**	●	2	6.75	7.03	8.14	10.51	1.250	1.75	.040	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	2	**MVX1187X2C125**	●	2	2.37	2.65	3.76	6.13	1.250	1.75	.033	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	3	**MVX1187X3C125**	●	2	3.56	3.84	4.94	7.32	1.250	1.75	.033	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
1.187	4	**MVX1187X4C125**	●	2	4.75	5.03	6.13	8.51	1.250	1.75	.033	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	5	**MVX1187X5C125**	●	2	5.94	6.21	7.32	9.69	1.250	1.75	.033	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	6	**MVX1187X6C125**	●	2	7.12	7.40	8.51	10.88	1.250	1.75	.033	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	2	**MVX1250X2C150**	●	2	2.50	2.78	3.87	6.62	1.500	2.00	.025	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	3	**MVX1250X3C150**	●	2	3.75	4.03	5.12	7.87	1.500	2.00	.025	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
1.250	4	**MVX1250X4C150**	●	2	5.00	5.28	6.37	9.12	1.500	2.00	.025	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	5	**MVX1250X5C150**	●	2	6.25	6.53	7.62	10.37	1.500	2.00	.025	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	6	**MVX1250X6C150**	●	2	7.50	7.78	8.87	11.62	1.500	2.00	.025	**SO○X09**	TPS4	TIP15W	1/8	HSS06008	HKY30R
	2	**MVX1312X2C150**	●	2	2.62	2.90	4.40	7.15	1.500	2.00	.049	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	**MVX1312X3C150**	●	2	3.94	4.21	5.71	8.46	1.500	2.00	.049	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.312	4	**MVX1312X4C150**	●	2	5.25	5.53	7.02	9.77	1.500	2.00	.049	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	**MVX1312X5C150**	●	2	6.56	6.84	8.33	11.08	1.500	2.00	.049	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	6	**MVX1312X6C150**	●	2	7.87	8.15	9.65	12.40	1.500	2.00	.049	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	2	**MVX1375X2C150**	●	2	2.75	3.03	4.52	7.27	1.500	2.00	.041	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	**MVX1375X3C150**	●	2	4.13	4.40	5.90	8.65	1.500	2.00	.041	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.375	4	**MVX1375X4C150**	●	2	5.50	5.78	7.27	10.02	1.500	2.00	.041	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	**MVX1375X5C150**	●	2	6.88	7.15	8.65	11.40	1.500	2.00	.041	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	6	**MVX1375X6C150**	●	2	8.25	8.53	10.02	12.77	1.500	2.00	.041	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	2	**MVX1437X2C150**	●	2	2.87	3.15	4.65	7.40	1.500	2.00	.036	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	**MVX1437X3C150**	●	2	4.31	4.59	6.08	8.83	1.500	2.00	.036	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.437	4	**MVX1437X4C150**	●	2	5.75	6.03	7.52	10.27	1.500	2.00	.036	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	**MVX1437X5C150**	●	2	7.19	7.46	8.96	11.71	1.500	2.00	.036	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	6	**MVX1437X6C150**	●	2	8.62	8.90	10.40	13.15	1.500	2.00	.036	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	2	**MVX1500X2C150**	●	2	3.00	3.28	4.77	7.52	1.500	2.00	.031	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	**MVX1500X3C150**	●	2	4.50	4.78	6.27	9.02	1.500	2.00	.031	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.500	4	**MVX1500X4C150**	●	2	6.00	6.28	7.77	10.52	1.500	2.00	.031	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	**MVX1500X5C150**	●	2	7.50	7.78	9.27	12.02	1.500	2.00	.031	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	6	**MVX1500X6C150**	●	2	9.00	9.28	10.77	13.52	1.500	2.00	.031	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	2	**MVX1562X2C150**	●	2	3.12	3.40	4.90	7.65	1.500	2.00	.021	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	**MVX1562X3C150**	●	2	4.69	4.96	6.46	9.21	1.500	2.00	.021	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.562	4	**MVX1562X4C150**	●	2	6.25	6.53	8.02	10.77	1.500	2.00	.021	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	**MVX1562X5C150**	●	2	7.81	8.09	9.58	12.33	1.500	2.00	.021	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R
	6	**MVX1562X6C150**	●	2	9.37	9.65	11.15	13.90	1.500	2.00	.021	**SO○X11**	TPS43	TIP15W	1/4	HSS08010	HKY40R

*1 Clamp Torque (lbf-in) : TPS351=22, TPS4=31, TPS43=31

*2 Number of Teeth

ISO13399 ➤ L003
INSERTS ➤ L203
CUTTING CONDITIONS ➤ L213
USAGE NOTE ➤ L218
SPARE PARTS ➤ M001

MVX ø.687"—ø2.500"

(inch)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	W D Wrench	NPT Plug (Side) CNT	(Back) Coolant Plug (Screw)	Coolant Plug (Wrench)
1.625	2	MVX1625X2C150	●	2	3.25	3.53	5.02	7.77	1.500	2.00	.053	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	MVX1625X3C150	●	2	4.88	5.15	6.65	9.40	1.500	2.00	.053	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	4	MVX1625X4C150	●	2	6.50	6.78	8.27	11.02	1.500	2.00	.053	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	MVX1625X5C150	●	2	8.13	8.40	9.90	12.65	1.500	2.00	.053	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	6	MVX1625X6C150	●	2	9.75	10.03	11.52	14.27	1.500	2.00	.053	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.687	2	MVX1687X2C150	●	2	3.37	3.65	5.15	7.90	1.500	2.00	.047	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	MVX1687X3C150	●	2	5.06	5.34	6.83	9.58	1.500	2.00	.047	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	4	MVX1687X4C150	●	2	6.75	7.03	8.52	11.27	1.500	2.00	.047	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	MVX1687X5C150	●	2	8.44	8.71	10.21	12.96	1.500	2.00	.047	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	6	MVX1687X6C150	●	2	10.12	10.40	11.90	14.65	1.500	2.00	.047	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.750	2	MVX1750X2C150	●	2	3.50	3.78	5.27	8.02	1.500	2.00	.041	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	MVX1750X3C150	●	2	5.25	5.53	7.02	9.77	1.500	2.00	.041	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	4	MVX1750X4C150	●	2	7.00	7.28	8.77	11.52	1.500	2.00	.041	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	MVX1750X5C150	●	2	8.75	9.03	10.52	13.27	1.500	2.00	.041	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.812	2	MVX1812X2C150	●	2	3.62	3.90	5.40	8.15	1.500	2.00	.031	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	3	MVX1812X3C150	●	2	5.44	5.71	7.21	9.96	1.500	2.00	.031	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	4	MVX1812X4C150	●	2	7.25	7.53	9.02	11.77	1.500	2.00	.031	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
	5	MVX1812X5C150	●	2	9.06	9.34	10.83	13.58	1.500	2.00	.031	SO○X13	TPS43	TIP15W	1/4	HSS08010	HKY40R
1.875	2	MVX1875X2C150	●	2	3.75	4.03	5.60	8.35	1.500	2.48	.072	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	3	MVX1875X3C150	●	2	5.63	5.90	7.48	10.23	1.500	2.48	.072	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	4	MVX1875X4C150	●	2	7.50	7.78	9.35	12.10	1.500	2.48	.072	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	5	MVX1875X5C150	●	2	9.38	9.65	11.23	13.98	1.500	2.48	.072	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
1.937	2	MVX1937X2C150	●	2	3.87	4.15	5.73	8.48	1.500	2.48	.066	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	3	MVX1937X3C150	●	2	5.81	6.09	7.66	10.41	1.500	2.48	.066	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	4	MVX1937X4C150	●	2	7.75	8.03	9.60	12.35	1.500	2.48	.066	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	5	MVX1937X5C150	●	2	9.69	9.96	11.54	14.29	1.500	2.48	.066	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
2.000	2	MVX2000X2C150	●	2	4.00	4.28	5.85	8.60	1.500	2.48	.060	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	3	MVX2000X3C150	●	2	6.00	6.28	7.85	10.60	1.500	2.48	.060	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	4	MVX2000X4C150	●	2	8.00	8.28	9.85	12.60	1.500	2.48	.060	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	5	MVX2000X5C150	●	2	10.00	10.28	11.85	14.60	1.500	2.48	.060	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
2.125	2	MVX2125X2C150	●	2	4.25	4.53	6.10	8.85	1.500	2.48	.047	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	3	MVX2125X3C150	●	2	6.38	6.65	8.23	10.98	1.500	2.48	.047	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	4	MVX2125X4C150	●	2	8.50	8.78	10.35	13.10	1.500	2.48	.047	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
	5	MVX2125X5C150	●	2	10.63	10.90	12.48	15.23	1.500	2.48	.047	SO○X16	TPS54	TIP25D	1/4	HSS10012	HKY50R
2.250	2	MVX2250X2C150	●	2	4.50	4.78	6.35	9.10	1.500	2.68	.057	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	3	MVX2250X3C150	●	2	6.75	7.03	8.60	11.35	1.500	2.68	.057	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	4	MVX2250X4C150	●	2	9.00	9.28	10.85	13.60	1.500	2.68	.057	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	5	MVX2250X5C150	●	2	11.25	11.53	13.10	15.85	1.500	2.68	.057	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
2.375	2	MVX2375X2C150	●	2	4.75	5.03	6.60	9.35	1.500	2.68	.044	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	3	MVX2375X3C150	●	2	7.13	7.40	8.98	11.73	1.500	2.68	.044	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	4	MVX2375X4C150	●	2	9.50	9.78	11.35	14.10	1.500	2.68	.044	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	5	MVX2375X5C150	●	2	11.88	12.15	13.73	16.48	1.500	2.68	.044	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
2.500	2	MVX2500X2C150	●	2	5.00	5.28	6.85	9.60	1.500	2.68	.031	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	3	MVX2500X3C150	●	2	7.50	7.78	9.35	12.10	1.500	2.68	.031	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	4	MVX2500X4C150	●	2	10.00	10.28	11.85	14.60	1.500	2.68	.031	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R
	5	MVX2500X5C150	●	2	12.50	12.78	14.35	17.10	1.500	2.68	.031	SO○X18	TPS54	TIP25D	1/4	HSS10012	HKY50R

*1 Clamp Torque (lbf-in) : TPS43=31, TPS54=66
*2 Number of Teeth

● : USA Stock
<10 inserts in one case><CBN inserts are available in 1 piece in one case.>

INSERTS

(inch)

Shape	Drill Dia.	Order Number	IC	S	RE	Coated				Carbide		Geometry
						MC5020	MC1020	VP15TF	DP8020	TF15		
UM	ø.562"—ø.656"	**SOMX052704-UM**	.197	.106	.016	●	●	●				ø.562"—ø.656"
	ø.687"—ø.750"	**SOMX063005-UM**	.236	.118	.020	●	●	●				
	ø.812"—ø.875"	**SOMX073505-UM**	.276	.138	.020	●	●	●				
	ø.937"—ø1.062"	**SOMX084005-UM**	.327	.157	.020	●	●	●				
	ø1.125"—ø1.250"	**SOMX094506-UM**	.382	.177	.024	●	●	●				
	ø1.312"—ø1.562"	**SOMX115506-UM**	.457	.217	.024	●	●	●				ø.687"—ø2.500"
	ø1.625"—ø1.812"	**SOMX136008-UM**	.543	.236	.031	●	●	●				
	ø1.875"—ø2.125"	**SOMX166508-UM**	.650	.256	.031	●	●	●				
General Purpose	ø2.250"—ø2.500"	**SOMX187008-UM**	.717	.276	.031	●	●	●				
US	ø.687"—ø.750"	**SOMX063005-US**	.236	.118	.020			●				
	ø.812"—ø.875"	**SOMX073505-US**	.276	.138	.020			●				
	ø.937"—ø1.062"	**SOMX084005-US**	.327	.157	.020			●				
	ø1.125"—ø1.250"	**SOMX094506-US**	.382	.177	.024			●				
	ø1.312"—ø1.562"	**SOMX115506-US**	.457	.217	.024			●				
	ø1.625"—ø1.812"	**SOMX136008-US**	.543	.236	.031			●				
	ø1.875"—ø2.125"	**SOMX166508-US**	.650	.256	.031			●				
For Stainless Steel and Inner Edge	ø2.250"—ø2.500"	**SOMX187008-US**	.717	.276	.031			●				
UH	ø.687"—ø.750"	**SOMX062905-UH**	.236	.114	.020				●			
	ø.812"—ø.875"	**SOMX073405-UH**	.276	.134	.020				●			
	ø.937"—ø1.062"	**SOMX083905-UH**	.327	.154	.020				●			
	ø1.125"—ø1.250"	**SOMX094406-UH**	.382	.173	.024				●			
	ø1.312"—ø1.562"	**SOMX115406-UH**	.457	.213	.024				●			
	ø1.625"—ø1.812"	**SOMX135908-UH**	.543	.232	.031				●			
	ø1.875"—ø2.125"	**SOMX166408-UH**	.650	.252	.031				●			
Strong Cutting Edge Type and Inner Edge	ø2.250"—ø2.500"	**SOMX186908-UH**	.717	.272	.031				●			
UN	ø.687"—ø.750"	**SOGX063005-UN**	.236	.118	.020					●		
	ø.812"—ø.875"	**SOGX073505-UN**	.276	.138	.020					●		
	ø.937"—ø1.062"	**SOGX084005-UN**	.327	.157	.020					●		
	ø1.125"—ø1.250"	**SOGX094506-UN**	.382	.177	.024					●		
	ø1.312"—ø1.562"	**SOGX115506-UN**	.457	.217	.024					●		
	ø1.625"—ø1.812"	**SOGX136008-UN**	.543	.236	.031					●		
	ø1.875"—ø2.125"	**SOGX166508-UN**	.650	.256	.031					●		
For Aluminum Alloy	ø2.250"—ø2.500"	**SOGX187008-UN**	.717	.276	.031					●		

Note 1) MC1020 and MC5020 are made exclusively for use as an outer insert.

INSERT RECOMMENDATION

Workpiece Material		1st Recommendation		When outer insert fractures	
		Outer Insert	Inner Insert	Outer Insert	Inner Insert
P	Mild Steel, Alloy Steel	MC1020 **UM Breaker**	VP15TF **UM Breaker**	VP15TF **UM Breaker**	VP15TF **UM Breaker**
M	Stainless Steel	MC1020 **UM Breaker**	VP15TF **US Breaker**	VP15TF **UM Breaker**	VP15TF **US Breaker**
K	Cast Iron	MC5020 **UM Breaker**	VP15TF **UM Breaker**	VP15TF **UM Breaker**	VP15TF **UM Breaker**

Workpiece Material		1st Recommendation		When outer insert fractures	
		Outer Insert	Inner Insert	Outer Insert	Inner Insert
H	Hardened Steel	MC1020 **UM Breaker**	DP8020 **UH Breaker**	VP15TF **UM Breaker**	DP8020 **UH Breaker**
N	Aluminum Alloy	TF15 **UN Breaker**	TF15 **UN Breaker**		

USAGE NOTE ➤ L218
SPARE PARTS ➤ M001

MVX

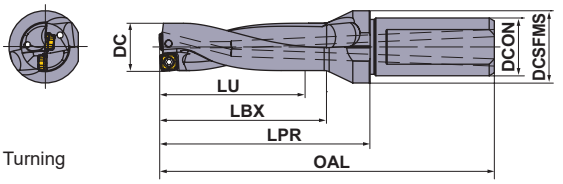
P M K N S H

Metric Standard

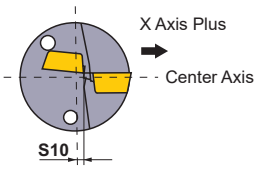
Internal Coolant

Machining Tolerance (Guide)(mm)

L/D	ø14—ø33	ø33.5—ø47	ø48—ø63
2, 3	+ 0.25 0	+ 0.3 0	+ 0.3 0
4, 5	+ 0.35 0	+ 0.4 0	+ 0.45 0
6	+ 0.45 0	+ 0.6 0	—



Maximum Offset for Turning



(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	Wrench
14.0	2	MVX1400X2F20	★	2	28	35	50	93	20	25	0.6	SO○X05	TPS20-1	TIP06F
	3	MVX1400X3F20	★	2	42	49	64	107	20	25	0.6	SO○X05	TPS20-1	TIP06F
	4	MVX1400X4F20	★	2	56	63	78	121	20	25	0.6	SO○X05	TPS20-1	TIP06F
	5	MVX1400X5F20	★	2	70	77	92	135	20	25	0.6	SO○X05	TPS20-1	TIP06F
14.5	2	MVX1450X2F20	★	2	29	36	51	94	20	25	0.5	SO○X05	TPS20-1	TIP06F
	3	MVX1450X3F20	★	2	43.5	50.5	65.5	108.5	20	25	0.5	SO○X05	TPS20-1	TIP06F
	4	MVX1450X4F20	★	2	58	65	80	123	20	25	0.5	SO○X05	TPS20-1	TIP06F
	5	MVX1450X5F20	★	2	72.5	79.5	94.5	137.5	20	25	0.5	SO○X05	TPS20-1	TIP06F
15.0	2	MVX1500X2F20	★	2	30	37	52	95	20	25	0.35	SO○X05	TPS20-1	TIP06F
	3	MVX1500X3F20	★	2	45	52	67	110	20	25	0.35	SO○X05	TPS20-1	TIP06F
	4	MVX1500X4F20	★	2	60	67	82	125	20	25	0.35	SO○X05	TPS20-1	TIP06F
	5	MVX1500X5F20	★	2	75	82	97	140	20	25	0.35	SO○X05	TPS20-1	TIP06F
15.5	2	MVX1550X2F20	★	2	31	38	53	96	20	25	0.3	SO○X05	TPS20-1	TIP06F
	3	MVX1550X3F20	★	2	46.5	53.5	68.5	111.5	20	25	0.3	SO○X05	TPS20-1	TIP06F
	4	MVX1550X4F20	★	2	62	69	84	127	20	25	0.3	SO○X05	TPS20-1	TIP06F
	5	MVX1550X5F20	★	2	77.5	84.5	99.5	142.5	20	25	0.3	SO○X05	TPS20-1	TIP06F
16.0	2	MVX1600X2F20	★	2	32	39	54	97	20	25	0.25	SO○X05	TPS20-1	TIP06F
	3	MVX1600X3F20	★	2	48	55	70	113	20	25	0.25	SO○X05	TPS20-1	TIP06F
	4	MVX1600X4F20	★	2	64	71	86	129	20	25	0.25	SO○X05	TPS20-1	TIP06F
	5	MVX1600X5F20	★	2	80	87	102	145	20	25	0.25	SO○X05	TPS20-1	TIP06F
16.5	2	MVX1650X2F20	★	2	33	40	55	98	20	25	0.25	SO○X05	TPS20-1	TIP06F
	3	MVX1650X3F20	★	2	49.5	56.5	71.5	114.5	20	25	0.25	SO○X05	TPS20-1	TIP06F
	4	MVX1650X4F20	★	2	66	73	88	131	20	25	0.25	SO○X05	TPS20-1	TIP06F
	5	MVX1650X5F20	★	2	82.5	89.5	104.5	147.5	20	25	0.25	SO○X05	TPS20-1	TIP06F
17.0	2	MVX1700X2F20	★	2	34	41	56	99	20	25	0.5	SO○X06	TPS25	TIP07F
	3	MVX1700X3F20	★	2	51	58	73	116	20	25	0.5	SO○X06	TPS25	TIP07F
	4	MVX1700X4F20	★	2	68	75	90	133	20	25	0.5	SO○X06	TPS25	TIP07F
	5	MVX1700X5F20	★	2	85	92	107	150	20	25	0.5	SO○X06	TPS25	TIP07F
	6	MVX1700X6F20	★	2	102	109	124	167	20	25	0.5	SO○X06	TPS25	TIP07F

*1 Clamp Torque (lbf-in) : TPS20-1=5.3, TPS25=8.9
*2 Number of Teeth

★ : Stocked in Japan

(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	W F Wrench
17.5	2	MVX1750X2F25	★	2	35	42	62	112	25	32	0.45	SO○X06	TPS25	TIP07F
	3	MVX1750X3F25	★	2	52.5	59.5	79.5	129.5	25	32	0.45	SO○X06	TPS25	TIP07F
	4	MVX1750X4F25	★	2	70	77	97	147	25	32	0.45	SO○X06	TPS25	TIP07F
	5	MVX1750X5F25	★	2	87.5	94.5	114.5	164.5	25	32	0.45	SO○X06	TPS25	TIP07F
	6	MVX1750X6F25	★	2	105	112	132	182	25	32	0.45	SO○X06	TPS25	TIP07F
18.0	2	MVX1800X2F25	★	2	36	43	63	113	25	32	0.4	SO○X06	TPS25	TIP07F
	3	MVX1800X3F25	★	2	54	61	81	131	25	32	0.4	SO○X06	TPS25	TIP07F
	4	MVX1800X4F25	★	2	72	79	99	149	25	32	0.4	SO○X06	TPS25	TIP07F
	5	MVX1800X5F25	★	2	90	97	117	167	25	32	0.4	SO○X06	TPS25	TIP07F
	6	MVX1800X6F25	★	2	108	115	135	185	25	32	0.4	SO○X06	TPS25	TIP07F
18.5	2	MVX1850X2F25	★	2	37	44	64	114	25	32	0.35	SO○X06	TPS25	TIP07F
	3	MVX1850X3F25	★	2	55.5	62.5	82.5	132.5	25	32	0.35	SO○X06	TPS25	TIP07F
	4	MVX1850X4F25	★	2	74	81	101	151	25	32	0.35	SO○X06	TPS25	TIP07F
	5	MVX1850X5F25	★	2	92.5	99.5	119.5	169.5	25	32	0.35	SO○X06	TPS25	TIP07F
	6	MVX1850X6F25	★	2	111	118	138	188	25	32	0.35	SO○X06	TPS25	TIP07F
19.0	2	MVX1900X2F25	★	2	38	45	65	115	25	32	0.3	SO○X06	TPS25	TIP07F
	3	MVX1900X3F25	★	2	57	64	84	134	25	32	0.3	SO○X06	TPS25	TIP07F
	4	MVX1900X4F25	★	2	76	83	103	153	25	32	0.3	SO○X06	TPS25	TIP07F
	5	MVX1900X5F25	★	2	95	102	122	172	25	32	0.3	SO○X06	TPS25	TIP07F
	6	MVX1900X6F25	★	2	114	121	141	191	25	32	0.3	SO○X06	TPS25	TIP07F
19.5	2	MVX1950X2F25	★	2	39	46	66	116	25	32	0.25	SO○X06	TPS25	TIP07F
	3	MVX1950X3F25	★	2	58.5	65.5	85.5	135.5	25	32	0.25	SO○X06	TPS25	TIP07F
	4	MVX1950X4F25	★	2	78	85	105	155	25	32	0.25	SO○X06	TPS25	TIP07F
	5	MVX1950X5F25	★	2	97.5	104.5	124.5	174.5	25	32	0.25	SO○X06	TPS25	TIP07F
	6	MVX1950X6F25	★	2	117	124	144	194	25	32	0.25	SO○X06	TPS25	TIP07F
20.0	2	MVX2000X2F25	★	2	40	47	67	117	25	32	0.6	SO○X07	TPS3	TIP10W
	3	MVX2000X3F25	★	2	60	67	87	137	25	32	0.6	SO○X07	TPS3	TIP10W
	4	MVX2000X4F25	★	2	80	87	107	157	25	32	0.6	SO○X07	TPS3	TIP10W
	5	MVX2000X5F25	★	2	100	107	127	177	25	32	0.6	SO○X07	TPS3	TIP10W
	6	MVX2000X6F25	★	2	120	127	147	197	25	32	0.6	SO○X07	TPS3	TIP10W
20.5	2	MVX2050X2F25	★	2	41	48	68	118	25	32	0.55	SO○X07	TPS3	TIP10W
	3	MVX2050X3F25	★	2	61.5	68.5	88.5	138.5	25	32	0.55	SO○X07	TPS3	TIP10W
21.0	2	MVX2100X2F25	★	2	42	49	69	119	25	32	0.5	SO○X07	TPS3	TIP10W
	3	MVX2100X3F25	★	2	63	70	90	140	25	32	0.5	SO○X07	TPS3	TIP10W
	4	MVX2100X4F25	★	2	84	91	111	161	25	32	0.5	SO○X07	TPS3	TIP10W
	5	MVX2100X5F25	★	2	105	112	132	182	25	32	0.5	SO○X07	TPS3	TIP10W
	6	MVX2100X6F25	★	2	126	133	153	203	25	32	0.5	SO○X07	TPS3	TIP10W
21.5	2	MVX2150X2F25	★	2	43	50	70	120	25	32	0.45	SO○X07	TPS3	TIP10W
	3	MVX2150X3F25	★	2	64.5	71.5	91.5	141.5	25	32	0.45	SO○X07	TPS3	TIP10W
22.0	2	MVX2200X2F25	★	2	44	51	71	121	25	32	0.4	SO○X07	TPS3	TIP10W
	3	MVX2200X3F25	★	2	66	73	93	143	25	32	0.4	SO○X07	TPS3	TIP10W
	4	MVX2200X4F25	★	2	88	95	115	165	25	32	0.4	SO○X07	TPS3	TIP10W
	5	MVX2200X5F25	★	2	110	117	137	187	25	32	0.4	SO○X07	TPS3	TIP10W
	6	MVX2200X6F25	★	2	132	139	159	209	25	32	0.4	SO○X07	TPS3	TIP10W
22.5	2	MVX2250X2F25	★	2	45	52	72	122	25	32	0.35	SO○X07	TPS3	TIP10W
	3	MVX2250X3F25	★	2	67.5	74.5	94.5	144.5	25	32	0.35	SO○X07	TPS3	TIP10W

*1 Clamp Torque (lbf-in) : TPS25=8.9, TPS3=17.7

*2 Number of Teeth

ISO13399 ➤ L003

INSERTS ➤ L212

CUTTING CONDITIONS ➤ L213

USAGE NOTE ➤ L218

SPARE PARTS ➤ M001

MVX

(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	*1 Wrench
23.0	2	MVX2300X2F25	★	2	46	53	73	123	25	32	0.8	SO○X08	TPS351	TIP10W
	3	MVX2300X3F25	★	2	69	76	96	146	25	32	0.8	SO○X08	TPS351	TIP10W
	4	MVX2300X4F25	★	2	92	99	119	169	25	32	0.8	SO○X08	TPS351	TIP10W
	5	MVX2300X5F25	★	2	115	122	142	192	25	32	0.8	SO○X08	TPS351	TIP10W
	6	MVX2300X6F25	★	2	138	145	165	215	25	32	0.8	SO○X08	TPS351	TIP10W
23.5	2	MVX2350X2F25	★	2	47	54	74	124	25	32	0.75	SO○X08	TPS351	TIP10W
	3	MVX2350X3F25	★	2	70.5	77.5	97.5	147.5	25	32	0.75	SO○X08	TPS351	TIP10W
24.0	2	MVX2400X2F25	★	2	48	55	75	125	25	32	0.7	SO○X08	TPS351	TIP10W
	3	MVX2400X3F25	★	2	72	79	99	149	25	32	0.7	SO○X08	TPS351	TIP10W
	4	MVX2400X4F25	★	2	96	103	123	173	25	32	0.7	SO○X08	TPS351	TIP10W
	5	MVX2400X5F25	★	2	120	127	147	197	25	32	0.7	SO○X08	TPS351	TIP10W
	6	MVX2400X6F25	★	2	144	151	171	221	25	32	0.7	SO○X08	TPS351	TIP10W
24.5	2	MVX2450X2F25	★	2	49	56	76	126	25	32	0.65	SO○X08	TPS351	TIP10W
	3	MVX2450X3F25	★	2	73.5	80.5	100.5	150.5	25	32	0.65	SO○X08	TPS351	TIP10W
25.0	2	MVX2500X2F25	★	2	50	57	77	127	25	32	0.6	SO○X08	TPS351	TIP10W
	3	MVX2500X3F25	★	2	75	82	102	152	25	32	0.6	SO○X08	TPS351	TIP10W
	4	MVX2500X4F25	★	2	100	107	127	177	25	32	0.6	SO○X08	TPS351	TIP10W
	5	MVX2500X5F25	★	2	125	132	152	202	25	32	0.6	SO○X08	TPS351	TIP10W
	6	MVX2500X6F25	★	2	150	157	177	227	25	32	0.6	SO○X08	TPS351	TIP10W
25.5	2	MVX2550X2F25	★	2	51	58	78	128	25	32	0.6	SO○X08	TPS351	TIP10W
	3	MVX2550X3F25	★	2	76.5	83.5	103.5	153.5	25	32	0.6	SO○X08	TPS351	TIP10W
26.0	2	MVX2600X2F32	★	2	52	59	79	134	32	42	0.5	SO○X08	TPS351	TIP10W
	3	MVX2600X3F32	★	2	78	85	105	160	32	42	0.5	SO○X08	TPS351	TIP10W
	4	MVX2600X4F32	★	2	104	111	131	186	32	42	0.5	SO○X08	TPS351	TIP10W
	5	MVX2600X5F32	★	2	130	137	157	212	32	42	0.5	SO○X08	TPS351	TIP10W
	6	MVX2600X6F32	★	2	156	163	183	238	32	42	0.5	SO○X08	TPS351	TIP10W
26.5	2	MVX2650X2F32	★	2	53	60	80	135	32	42	0.5	SO○X08	TPS351	TIP10W
	3	MVX2650X3F32	★	2	79.5	86.5	106.5	161.5	32	42	0.5	SO○X08	TPS351	TIP10W
27.0	2	MVX2700X2F32	★	2	54	61	81	136	32	42	0.45	SO○X08	TPS351	TIP10W
	3	MVX2700X3F32	★	2	81	88	108	163	32	42	0.45	SO○X08	TPS351	TIP10W
	4	MVX2700X4F32	★	2	108	115	135	190	32	42	0.45	SO○X08	TPS351	TIP10W
	5	MVX2700X5F32	★	2	135	142	162	217	32	42	0.45	SO○X08	TPS351	TIP10W
	6	MVX2700X6F32	★	2	162	169	189	244	32	42	0.45	SO○X08	TPS351	TIP10W
27.5	2	MVX2750X2F32	★	2	55	62	82	137	32	42	0.4	SO○X08	TPS351	TIP10W
	3	MVX2750X3F32	★	2	82.5	89.5	109.5	164.5	32	42	0.4	SO○X08	TPS351	TIP10W
28.0	2	MVX2800X2F32	★	2	56	63	83	138	32	42	0.85	SO○X09	TPS4	TIP15W
	3	MVX2800X3F32	★	2	84	91	111	166	32	42	0.85	SO○X09	TPS4	TIP15W
	4	MVX2800X4F32	★	2	112	119	139	194	32	42	0.85	SO○X09	TPS4	TIP15W
	5	MVX2800X5F32	★	2	140	147	167	222	32	42	0.85	SO○X09	TPS4	TIP15W
	6	MVX2800X6F32	★	2	168	175	195	250	32	42	0.85	SO○X09	TPS4	TIP15W
28.5	2	MVX2850X2F32	★	2	57	64	84	139	32	42	0.8	SO○X09	TPS4	TIP15W
	3	MVX2850X3F32	★	2	85.5	92.5	112.5	167.5	32	42	0.8	SO○X09	TPS4	TIP15W

*1 Clamp Torque (lbf-in) : TPS351=22, TPS4=31

*2 Number of Teeth

★ : Stocked in Japan

(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	Wrench
	2	**MVX2900X2F32**	★	2	58	65	85	140	32	42	0.75	**SO○X09**	TPS4	TIP15W
	3	**MVX2900X3F32**	★	2	87	94	114	169	32	42	0.75	**SO○X09**	TPS4	TIP15W
29.0	4	**MVX2900X4F32**	★	2	116	123	143	198	32	42	0.75	**SO○X09**	TPS4	TIP15W
	5	**MVX2900X5F32**	★	2	145	152	172	227	32	42	0.75	**SO○X09**	TPS4	TIP15W
	6	**MVX2900X6F32**	★	2	174	181	201	256	32	42	0.75	**SO○X09**	TPS4	TIP15W
29.5	2	**MVX2950X2F32**	★	2	59	66	86	141	32	42	0.7	**SO○X09**	TPS4	TIP15W
	3	**MVX2950X3F32**	★	2	88.5	95.5	115.5	170.5	32	42	0.7	**SO○X09**	TPS4	TIP15W
	2	**MVX3000X2F32**	★	2	60	67	87	142	32	42	0.65	**SO○X09**	TPS4	TIP15W
	3	**MVX3000X3F32**	★	2	90	97	117	172	32	42	0.65	**SO○X09**	TPS4	TIP15W
30.0	4	**MVX3000X4F32**	★	2	120	127	147	202	32	42	0.65	**SO○X09**	TPS4	TIP15W
	5	**MVX3000X5F32**	★	2	150	157	177	232	32	42	0.65	**SO○X09**	TPS4	TIP15W
	6	**MVX3000X6F32**	★	2	180	187	207	262	32	42	0.65	**SO○X09**	TPS4	TIP15W
30.5	3	**MVX3050X3F32**	★	2	91.5	98.5	118.5	173.5	32	42	0.6	**SO○X09**	TPS4	TIP15W
	2	**MVX3100X2F40**	★	2	62	69	89	154	40	50	0.55	**SO○X09**	TPS4	TIP15W
	3	**MVX3100X3F40**	★	2	93	100	120	185	40	50	0.55	**SO○X09**	TPS4	TIP15W
31.0	4	**MVX3100X4F40**	★	2	124	131	151	216	40	50	0.55	**SO○X09**	TPS4	TIP15W
	5	**MVX3100X5F40**	★	2	155	162	182	247	40	50	0.55	**SO○X09**	TPS4	TIP15W
	6	**MVX3100X6F40**	★	2	186	193	213	278	40	50	0.55	**SO○X09**	TPS4	TIP15W
31.5	3	**MVX3150X3F40**	★	2	94.5	101.5	121.5	186.5	40	50	0.55	**SO○X09**	TPS4	TIP15W
	2	**MVX3200X2F40**	★	2	64	71	91	156	40	50	0.45	**SO○X09**	TPS4	TIP15W
	3	**MVX3200X3F40**	★	2	96	103	123	188	40	50	0.45	**SO○X09**	TPS4	TIP15W
32.0	4	**MVX3200X4F40**	★	2	128	135	155	220	40	50	0.45	**SO○X09**	TPS4	TIP15W
	5	**MVX3200X5F40**	★	2	160	167	187	252	40	50	0.45	**SO○X09**	TPS4	TIP15W
	6	**MVX3200X6F40**	★	2	192	199	219	284	40	50	0.45	**SO○X09**	TPS4	TIP15W
32.5	3	**MVX3250X3F40**	★	2	97.5	104.5	124.5	189.5	40	50	0.45	**SO○X09**	TPS4	TIP15W
	2	**MVX3300X2F40**	★	2	66	73	93	158	40	50	0.4	**SO○X09**	TPS4	TIP15W
	3	**MVX3300X3F40**	★	2	99	106	126	191	40	50	0.4	**SO○X09**	TPS4	TIP15W
33.0	4	**MVX3300X4F40**	★	2	132	139	159	224	40	50	0.4	**SO○X09**	TPS4	TIP15W
	5	**MVX3300X5F40**	★	2	165	172	192	257	40	50	0.4	**SO○X09**	TPS4	TIP15W
	6	**MVX3300X6F40**	★	2	198	205	225	290	40	50	0.4	**SO○X09**	TPS4	TIP15W
33.5	3	**MVX3350X3F40**	★	2	100.5	107.5	127.5	192.5	40	50	1.15	**SO○X11**	TPS43	TIP15W
	2	**MVX3400X2F40**	★	2	68	75	105	170	40	50	1.11	**SO○X11**	TPS43	TIP15W
	3	**MVX3400X3F40**	★	2	102	109	139	204	40	50	1.11	**SO○X11**	TPS43	TIP15W
34.0	4	**MVX3400X4F40**	★	2	136	143	173	238	40	50	1.11	**SO○X11**	TPS43	TIP15W
	5	**MVX3400X5F40**	★	2	170	177	207	272	40	50	1.11	**SO○X11**	TPS43	TIP15W
	6	**MVX3400X6F40**	★	2	204	211	241	306	40	50	1.1	**SO○X11**	TPS43	TIP15W
34.5	3	**MVX3450X3F40**	★	2	103.5	110.5	140.5	205.5	40	50	1.08	**SO○X11**	TPS43	TIP15W
	2	**MVX3500X2F40**	★	2	70	77	107	172	40	50	1.03	**SO○X11**	TPS43	TIP15W
	3	**MVX3500X3F40**	★	2	105	112	142	207	40	50	1.03	**SO○X11**	TPS43	TIP15W
35.0	4	**MVX3500X4F40**	★	2	140	147	177	242	40	50	1.03	**SO○X11**	TPS43	TIP15W
	5	**MVX3500X5F40**	★	2	175	182	212	277	40	50	1.03	**SO○X11**	TPS43	TIP15W
	6	**MVX3500X6F40**	★	2	210	217	247	312	40	50	1.02	**SO○X11**	TPS43	TIP15W

*1 Clamp Torque (lbf-in) : TPS4=31, TPS43=31

*2 Number of Teeth

ISO13399 ➤ L003
INSERTS ➤ L212
CUTTING CONDITIONS ➤ L213
USAGE NOTE ➤ L218
SPARE PARTS ➤ M001

MVX

(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	Wrench
35.5	3	**MVX3550X3F40**	★	2	106.5	113.5	143.5	208.5	40	50	0.99	**SO○X11**	TPS43	TIP15W
36.0	2	**MVX3600X2F40**	★	2	72	79	109	174	40	50	0.95	**SO○X11**	TPS43	TIP15W
	3	**MVX3600X3F40**	★	2	108	115	145	210	40	50	0.95	**SO○X11**	TPS43	TIP15W
	4	**MVX3600X4F40**	★	2	144	151	181	246	40	50	0.95	**SO○X11**	TPS43	TIP15W
	5	**MVX3600X5F40**	★	2	180	187	217	282	40	50	0.95	**SO○X11**	TPS43	TIP15W
	6	**MVX3600X6F40**	★	2	216	223	253	318	40	50	0.94	**SO○X11**	TPS43	TIP15W
37.0	2	**MVX3700X2F40**	★	2	74	81	111	176	40	50	0.87	**SO○X11**	TPS43	TIP15W
	3	**MVX3700X3F40**	★	2	111	118	148	213	40	50	0.87	**SO○X11**	TPS43	TIP15W
	4	**MVX3700X4F40**	★	2	148	155	185	250	40	50	0.87	**SO○X11**	TPS43	TIP15W
	5	**MVX3700X5F40**	★	2	185	192	222	287	40	50	0.87	**SO○X11**	TPS43	TIP15W
	6	**MVX3700X6F40**	★	2	222	229	259	324	40	50	0.86	**SO○X11**	TPS43	TIP15W
38.0	2	**MVX3800X2F40**	★	2	76	83	113	178	40	50	0.79	**SO○X11**	TPS43	TIP15W
	3	**MVX3800X3F40**	★	2	114	121	151	216	40	50	0.79	**SO○X11**	TPS43	TIP15W
	4	**MVX3800X4F40**	★	2	152	159	189	254	40	50	0.79	**SO○X11**	TPS43	TIP15W
	5	**MVX3800X5F40**	★	2	190	197	227	292	40	50	0.79	**SO○X11**	TPS43	TIP15W
	6	**MVX3800X6F40**	★	2	228	235	265	330	40	50	0.78	**SO○X11**	TPS43	TIP15W
39.0	2	**MVX3900X2F40**	★	2	78	85	115	180	40	50	0.71	**SO○X11**	TPS43	TIP15W
	3	**MVX3900X3F40**	★	2	117	124	154	219	40	50	0.71	**SO○X11**	TPS43	TIP15W
	4	**MVX3900X4F40**	★	2	156	163	193	258	40	50	0.71	**SO○X11**	TPS43	TIP15W
	5	**MVX3900X5F40**	★	2	195	202	232	297	40	50	0.71	**SO○X11**	TPS43	TIP15W
	6	**MVX3900X6F40**	★	2	234	241	271	336	40	50	0.7	**SO○X11**	TPS43	TIP15W
40.0	2	**MVX4000X2F40**	★	2	80	87	117	182	40	50	1.46	**SO○X13**	TPS43	TIP15W
	3	**MVX4000X3F40**	★	2	120	127	157	222	40	50	1.46	**SO○X13**	TPS43	TIP15W
	4	**MVX4000X4F40**	★	2	160	167	197	262	40	50	1.46	**SO○X13**	TPS43	TIP15W
	5	**MVX4000X5F40**	★	2	200	207	237	302	40	50	1.46	**SO○X13**	TPS43	TIP15W
	6	**MVX4000X6F40**	★	2	240	247	277	342	40	50	1.45	**SO○X13**	TPS43	TIP15W
41.0	2	**MVX4100X2F40**	★	2	82	89	119	184	40	50	1.36	**SO○X13**	TPS43	TIP15W
	3	**MVX4100X3F40**	★	2	123	130	160	225	40	50	1.36	**SO○X13**	TPS43	TIP15W
	4	**MVX4100X4F40**	★	2	164	171	201	266	40	50	1.36	**SO○X13**	TPS43	TIP15W
	5	**MVX4100X5F40**	★	2	205	212	242	307	40	50	1.36	**SO○X13**	TPS43	TIP15W
	6	**MVX4100X6F40**	★	2	246	253	283	348	40	50	1.35	**SO○X13**	TPS43	TIP15W
42.0	2	**MVX4200X2F40**	★	2	84	91	121	186	40	50	1.27	**SO○X13**	TPS43	TIP15W
	3	**MVX4200X3F40**	★	2	126	133	163	228	40	50	1.27	**SO○X13**	TPS43	TIP15W
	4	**MVX4200X4F40**	★	2	168	175	205	270	40	63	1.27	**SO○X13**	TPS43	TIP15W
	4	**MVX4200X4F50**	★	2	168	175	205	280	50	63	1.27	**SO○X13**	TPS43	TIP15W
	5	**MVX4200X5F40**	★	2	210	217	247	312	40	63	1.27	**SO○X13**	TPS43	TIP15W
	5	**MVX4200X5F50**	★	2	210	217	247	322	50	63	1.27	**SO○X13**	TPS43	TIP15W
	6	**MVX4200X6F40**	★	2	252	259	289	354	40	63	1.27	**SO○X13**	TPS43	TIP15W
	6	**MVX4200X6F50**	★	2	252	259	289	364	50	63	1.26	**SO○X13**	TPS43	TIP15W

*1 Clamp Torque (lbf-in) : TPS43=31

*2 Number of Teeth

★ : **Stocked in Japan**

(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	W D Wrench
43.0	2	**MVX4300X2F40**	★	2	86	93	123	188	40	50	1.18	**SO○X13**	TPS43	TIP15W
	3	**MVX4300X3F40**	★	2	129	136	166	231	40	50	1.18	**SO○X13**	TPS43	TIP15W
	4	**MVX4300X4F40**	★	2	172	179	209	274	40	63	1.18	**SO○X13**	TPS43	TIP15W
	4	**MVX4300X4F50**	★	2	172	179	209	284	50	63	1.18	**SO○X13**	TPS43	TIP15W
	5	**MVX4300X5F40**	★	2	215	222	252	317	40	63	1.18	**SO○X13**	TPS43	TIP15W
	5	**MVX4300X5F50**	★	2	215	222	252	327	50	63	1.18	**SO○X13**	TPS43	TIP15W
	6	**MVX4300X6F40**	★	2	258	265	295	360	40	63	1.17	**SO○X13**	TPS43	TIP15W
	6	**MVX4300X6F50**	★	2	258	265	295	370	50	63	1.17	**SO○X13**	TPS43	TIP15W
44.0	2	**MVX4400X2F40**	★	2	88	95	125	190	40	50	1.08	**SO○X13**	TPS43	TIP15W
	3	**MVX4400X3F40**	★	2	132	139	169	234	40	50	1.08	**SO○X13**	TPS43	TIP15W
	4	**MVX4400X4F40**	★	2	176	183	213	278	40	63	1.08	**SO○X13**	TPS43	TIP15W
	4	**MVX4400X4F50**	★	2	176	183	213	288	50	63	1.08	**SO○X13**	TPS43	TIP15W
	5	**MVX4400X5F40**	★	2	220	227	257	322	40	63	1.08	**SO○X13**	TPS43	TIP15W
	5	**MVX4400X5F50**	★	2	220	227	257	332	50	63	1.08	**SO○X13**	TPS43	TIP15W
45.0	2	**MVX4500X2F40**	★	2	90	97	127	192	40	50	0.99	**SO○X13**	TPS43	TIP15W
	3	**MVX4500X3F40**	★	2	135	142	172	237	40	50	0.99	**SO○X13**	TPS43	TIP15W
	4	**MVX4500X4F40**	★	2	180	187	217	282	40	63	0.99	**SO○X13**	TPS43	TIP15W
	4	**MVX4500X4F50**	★	2	180	187	217	292	50	63	0.99	**SO○X13**	TPS43	TIP15W
	5	**MVX4500X5F40**	★	2	225	232	262	327	40	63	0.99	**SO○X13**	TPS43	TIP15W
	5	**MVX4500X5F50**	★	2	225	232	262	337	50	63	0.99	**SO○X13**	TPS43	TIP15W
46.0	2	**MVX4600X2F40**	★	2	92	99	129	194	40	50	0.89	**SO○X13**	TPS43	TIP15W
	3	**MVX4600X3F40**	★	2	138	145	175	240	40	50	0.89	**SO○X13**	TPS43	TIP15W
	4	**MVX4600X4F40**	★	2	184	191	221	286	40	63	0.89	**SO○X13**	TPS43	TIP15W
	4	**MVX4600X4F50**	★	2	184	191	221	296	50	63	0.89	**SO○X13**	TPS43	TIP15W
	5	**MVX4600X5F40**	★	2	230	237	267	332	40	63	0.89	**SO○X13**	TPS43	TIP15W
	5	**MVX4600X5F50**	★	2	230	237	267	342	50	63	0.89	**SO○X13**	TPS43	TIP15W
47.0	2	**MVX4700X2F40**	★	2	94	101	141	206	40	63	1.9	**SO○X16**	TPS54	TIP25D
	3	**MVX4700X3F40**	★	2	141	148	188	253	40	63	1.9	**SO○X16**	TPS54	TIP25D
	4	**MVX4700X4F40**	★	2	188	195	235	300	40	63	1.9	**SO○X16**	TPS54	TIP25D
	4	**MVX4700X4F50**	★	2	188	195	235	310	50	63	1.9	**SO○X16**	TPS54	TIP25D
	5	**MVX4700X5F40**	★	2	235	242	282	347	40	63	1.9	**SO○X16**	TPS54	TIP25D
	5	**MVX4700X5F50**	★	2	235	242	282	357	50	63	1.9	**SO○X16**	TPS54	TIP25D
48.0	2	**MVX4800X2F40**	★	2	96	103	143	208	40	63	1.8	**SO○X16**	TPS54	TIP25D
	3	**MVX4800X3F40**	★	2	144	151	191	256	40	63	1.8	**SO○X16**	TPS54	TIP25D
	4	**MVX4800X4F40**	★	2	192	199	239	304	40	63	1.8	**SO○X16**	TPS54	TIP25D
	4	**MVX4800X4F50**	★	2	192	199	239	314	50	63	1.8	**SO○X16**	TPS54	TIP25D
	5	**MVX4800X5F40**	★	2	240	247	287	352	40	63	1.8	**SO○X16**	TPS54	TIP25D
	5	**MVX4800X5F50**	★	2	240	247	287	362	50	63	1.8	**SO○X16**	TPS54	TIP25D
49.0	2	**MVX4900X2F40**	★	2	98	105	145	210	40	63	1.7	**SO○X16**	TPS54	TIP25D
	3	**MVX4900X3F40**	★	2	147	154	194	259	40	63	1.7	**SO○X16**	TPS54	TIP25D
	4	**MVX4900X4F40**	★	2	196	203	243	308	40	63	1.7	**SO○X16**	TPS54	TIP25D
	4	**MVX4900X4F50**	★	2	196	203	243	318	50	63	1.7	**SO○X16**	TPS54	TIP25D
	5	**MVX4900X5F40**	★	2	245	252	292	357	40	63	1.7	**SO○X16**	TPS54	TIP25D
	5	**MVX4900X5F50**	★	2	245	252	292	367	50	63	1.7	**SO○X16**	TPS54	TIP25D

*1 Clamp Torque (lbf-in) : TPS43=31, TPS54=66

*2 Number of Teeth

ISO13399 ➤ L003
INSERTS ➤ L212
CUTTING CONDITIONS ➤ L213
USAGE NOTE ➤ L218
SPARE PARTS ➤ M001

MVX

(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	Wrench
50.0	2	MVX5000X2F40	★	2	100	107	147	212	40	63	1.6	SO○X16	TPS54	TIP25D
	3	MVX5000X3F40	★	2	150	157	197	262	40	63	1.6	SO○X16	TPS54	TIP25D
	4	MVX5000X4F40	★	2	200	207	247	312	40	63	1.6	SO○X16	TPS54	TIP25D
	4	MVX5000X4F50	★	2	200	207	247	322	50	63	1.6	SO○X16	TPS54	TIP25D
	5	MVX5000X5F40	★	2	250	257	297	362	40	63	1.6	SO○X16	TPS54	TIP25D
	5	MVX5000X5F50	★	2	250	257	297	372	50	63	1.6	SO○X16	TPS54	TIP25D
51.0	2	MVX5100X2F40	★	2	102	109	149	214	40	63	1.5	SO○X16	TPS54	TIP25D
	3	MVX5100X3F40	★	2	153	160	200	265	40	63	1.5	SO○X16	TPS54	TIP25D
	4	MVX5100X4F40	★	2	204	211	251	316	40	63	1.5	SO○X16	TPS54	TIP25D
	4	MVX5100X4F50	★	2	204	211	251	326	50	63	1.5	SO○X16	TPS54	TIP25D
	5	MVX5100X5F40	★	2	255	262	302	367	40	63	1.5	SO○X16	TPS54	TIP25D
	5	MVX5100X5F50	★	2	255	262	302	377	50	63	1.5	SO○X16	TPS54	TIP25D
52.0	2	MVX5200X2F40	★	2	104	111	151	216	40	63	1.39	SO○X16	TPS54	TIP25D
	3	MVX5200X3F40	★	2	156	163	203	268	40	63	1.39	SO○X16	TPS54	TIP25D
	4	MVX5200X4F40	★	2	208	215	255	320	40	63	1.39	SO○X16	TPS54	TIP25D
	4	MVX5200X4F50	★	2	208	215	255	330	50	63	1.39	SO○X16	TPS54	TIP25D
	5	MVX5200X5F40	★	2	260	267	307	372	40	63	1.39	SO○X16	TPS54	TIP25D
	5	MVX5200X5F50	★	2	260	267	307	382	50	63	1.39	SO○X16	TPS54	TIP25D
53.0	2	MVX5300X2F40	★	2	106	113	153	218	40	63	1.29	SO○X16	TPS54	TIP25D
	3	MVX5300X3F40	★	2	159	166	206	271	40	63	1.29	SO○X16	TPS54	TIP25D
	4	MVX5300X4F40	★	2	212	219	259	324	40	63	1.29	SO○X16	TPS54	TIP25D
	4	MVX5300X4F50	★	2	212	219	259	334	50	63	1.29	SO○X16	TPS54	TIP25D
	5	MVX5300X5F40	★	2	265	272	312	377	40	63	1.29	SO○X16	TPS54	TIP25D
	5	MVX5300X5F50	★	2	265	272	312	387	50	63	1.29	SO○X16	TPS54	TIP25D
54.0	2	MVX5400X2F40	★	2	108	115	155	220	40	63	1.19	SO○X16	TPS54	TIP25D
	3	MVX5400X3F40	★	2	162	169	209	274	40	63	1.19	SO○X16	TPS54	TIP25D
	4	MVX5400X4F40	★	2	216	223	263	328	40	63	1.19	SO○X16	TPS54	TIP25D
	4	MVX5400X4F50	★	2	216	223	263	338	50	63	1.19	SO○X16	TPS54	TIP25D
	5	MVX5400X5F40	★	2	270	277	317	382	40	63	1.19	SO○X16	TPS54	TIP25D
	5	MVX5400X5F50	★	2	270	277	317	392	50	63	1.19	SO○X16	TPS54	TIP25D
55.0	2	MVX5500X2F40	★	2	110	117	157	222	40	63	1.08	SO○X16	TPS54	TIP25D
	3	MVX5500X3F40	★	2	165	172	212	277	40	63	1.08	SO○X16	TPS54	TIP25D
	4	MVX5500X4F40	★	2	220	227	267	332	40	63	1.08	SO○X16	TPS54	TIP25D
	4	MVX5500X4F50	★	2	220	227	267	342	50	63	1.08	SO○X16	TPS54	TIP25D
	5	MVX5500X5F40	★	2	275	282	322	387	40	63	1.08	SO○X16	TPS54	TIP25D
	5	MVX5500X5F50	★	2	275	282	322	397	50	63	1.08	SO○X16	TPS54	TIP25D
56.0	2	MVX5600X2F40	★	2	112	119	159	224	40	63	0.98	SO○X16	TPS54	TIP25D
	3	MVX5600X3F40	★	2	168	175	215	280	40	63	0.98	SO○X16	TPS54	TIP25D
	4	MVX5600X4F40	★	2	224	231	271	336	40	63	0.98	SO○X16	TPS54	TIP25D
	4	MVX5600X4F50	★	2	224	231	271	346	50	63	0.98	SO○X16	TPS54	TIP25D
	5	MVX5600X5F40	★	2	280	287	327	392	40	63	0.98	SO○X16	TPS54	TIP25D
	5	MVX5600X5F50	★	2	280	287	327	402	50	63	0.98	SO○X16	TPS54	TIP25D

*1 Clamp Torque (lbf-in) : TPS54=66

*2 Number of Teeth

★ : Stocked in Japan

(mm)

DC	L/D	Order Number	Stock	*2 No.T	LU	LBX	LPR	OAL	DCON	DCSFMS	S10	Insert Type	*1 Clamp Screw	Wrench
57.0	2	MVX5700X2F40	★	2	114	121	161	226	40	68	1.47	SO○X18	TPS54	TIP25D
	3	MVX5700X3F40	★	2	171	178	218	283	40	68	1.47	SO○X18	TPS54	TIP25D
	4	MVX5700X4F40	★	2	228	235	275	340	40	68	1.47	SO○X18	TPS54	TIP25D
	4	MVX5700X4F50	★	2	228	235	275	350	50	68	1.47	SO○X18	TPS54	TIP25D
	5	MVX5700X5F40	★	2	285	292	332	397	40	68	1.47	SO○X18	TPS54	TIP25D
	5	MVX5700X5F50	★	2	285	292	332	407	50	68	1.47	SO○X18	TPS54	TIP25D
58.0	2	MVX5800X2F40	★	2	116	123	163	228	40	68	1.37	SO○X18	TPS54	TIP25D
	3	MVX5800X3F40	★	2	174	181	221	286	40	68	1.37	SO○X18	TPS54	TIP25D
	4	MVX5800X4F40	★	2	232	239	279	344	40	68	1.37	SO○X18	TPS54	TIP25D
	4	MVX5800X4F50	★	2	232	239	279	354	50	68	1.37	SO○X18	TPS54	TIP25D
	5	MVX5800X5F40	★	2	290	297	337	402	40	68	1.37	SO○X18	TPS54	TIP25D
	5	MVX5800X5F50	★	2	290	297	337	412	50	68	1.37	SO○X18	TPS54	TIP25D
59.0	2	MVX5900X2F40	★	2	118	125	165	230	40	68	1.26	SO○X18	TPS54	TIP25D
	3	MVX5900X3F40	★	2	177	184	224	289	40	68	1.26	SO○X18	TPS54	TIP25D
	4	MVX5900X4F40	★	2	236	243	283	348	40	68	1.26	SO○X18	TPS54	TIP25D
	4	MVX5900X4F50	★	2	236	243	283	358	50	68	1.26	SO○X18	TPS54	TIP25D
	5	MVX5900X5F40	★	2	295	302	342	407	40	68	1.26	SO○X18	TPS54	TIP25D
	5	MVX5900X5F50	★	2	295	302	342	417	50	68	1.26	SO○X18	TPS54	TIP25D
60.0	2	MVX6000X2F40	★	2	120	127	167	232	40	68	1.16	SO○X18	TPS54	TIP25D
	3	MVX6000X3F40	★	2	180	187	227	292	40	68	1.16	SO○X18	TPS54	TIP25D
	4	MVX6000X4F40	★	2	240	247	287	352	40	68	1.16	SO○X18	TPS54	TIP25D
	4	MVX6000X4F50	★	2	240	247	287	362	50	68	1.16	SO○X18	TPS54	TIP25D
	5	MVX6000X5F40	★	2	300	307	347	412	40	68	1.16	SO○X18	TPS54	TIP25D
	5	MVX6000X5F50	★	2	300	307	347	422	50	68	1.16	SO○X18	TPS54	TIP25D
61.0	2	MVX6100X2F40	★	2	122	129	169	234	40	68	1.05	SO○X18	TPS54	TIP25D
	3	MVX6100X3F40	★	2	183	190	230	295	40	68	1.05	SO○X18	TPS54	TIP25D
	4	MVX6100X4F40	★	2	244	251	291	356	40	68	1.05	SO○X18	TPS54	TIP25D
	4	MVX6100X4F50	★	2	244	251	291	366	50	68	1.05	SO○X18	TPS54	TIP25D
	5	MVX6100X5F40	★	2	305	312	352	417	40	68	1.05	SO○X18	TPS54	TIP25D
	5	MVX6100X5F50	★	2	305	312	352	427	50	68	1.05	SO○X18	TPS54	TIP25D
62.0	2	MVX6200X2F40	★	2	124	131	171	236	40	68	0.95	SO○X18	TPS54	TIP25D
	3	MVX6200X3F40	★	2	186	193	233	298	40	68	0.95	SO○X18	TPS54	TIP25D
	4	MVX6200X4F40	★	2	248	255	295	360	40	68	0.95	SO○X18	TPS54	TIP25D
	4	MVX6200X4F50	★	2	248	255	295	370	50	68	0.95	SO○X18	TPS54	TIP25D
	5	MVX6200X5F40	★	2	310	317	357	422	40	68	0.95	SO○X18	TPS54	TIP25D
	5	MVX6200X5F50	★	2	310	317	357	432	50	68	0.95	SO○X18	TPS54	TIP25D
63.0	2	MVX6300X2F40	★	2	126	133	173	238	40	68	0.85	SO○X18	TPS54	TIP25D
	3	MVX6300X3F40	★	2	189	196	236	301	40	68	0.85	SO○X18	TPS54	TIP25D
	4	MVX6300X4F40	★	2	252	259	299	364	40	68	0.85	SO○X18	TPS54	TIP25D
	4	MVX6300X4F50	★	2	252	259	299	374	50	68	0.85	SO○X18	TPS54	TIP25D
	5	MVX6300X5F40	★	2	315	322	362	427	40	68	0.85	SO○X18	TPS54	TIP25D
	5	MVX6300X5F50	★	2	315	322	362	437	50	68	0.85	SO○X18	TPS54	TIP25D

*1 Clamp Torque (lbf-in) : TPS54=66

*2 Number of Teeth

ISO13399 ➤ L003
INSERTS ➤ L212
CUTTING CONDITIONS ➤ L213
USAGE NOTE ➤ L218
SPARE PARTS ➤ M001

MVX

INSERTS

(mm)

Shape	Drill Dia.	Order Number	IC	S	RE	Coated					Geometry
						MC5020	MC1020	VP15TF	DP8020	TF15	
UM	ø14—ø16.5	**SOMX052704-UM**	5	2.7	0.4	●	●	●			ø.14—ø16.5
	ø17—ø19.5	**SOMX063005-UM**	6	3	0.5	●	●	●			
	ø20—ø22.5	**SOMX073505-UM**	7	3.5	0.5	●	●	●			
	ø23—ø27.5	**SOMX084005-UM**	8.3	4	0.5	●	●	●			
	ø28—ø33	**SOMX094506-UM**	9.7	4.5	0.6	●	●	●			
	ø33.5—ø39	**SOMX115506-UM**	11.6	5.5	0.6	●	●	●			ø17—ø63
	ø40—ø46	**SOMX136008-UM**	13.8	6	0.8	●	●	●			
	ø47—ø56	**SOMX166508-UM**	16.5	6.5	0.8	●	●	●			
General Purpose	ø57—ø63	**SOMX187008-UM**	18.2	7	0.8	●	●	●			
US	ø17—ø19.5	**SOMX063005-US**	6	3	0.5			●			
	ø20—ø22.5	**SOMX073505-US**	7	3.5	0.5			●			
	ø23—ø27.5	**SOMX084005-US**	8.3	4	0.5			●			
	ø28—ø33	**SOMX094506-US**	9.7	4.5	0.6			●			
	ø33.5—ø39	**SOMX115506-US**	11.6	5.5	0.6			●			
	ø40—ø46	**SOMX136008-US**	13.8	6	0.8			●			
	ø47—ø56	**SOMX166508-US**	16.5	6.5	0.8			●			
For Stainless Steel and Inner Edge	ø57—ø63	**SOMX187008-US**	18.2	7	0.8			●			
UH	ø17—ø19.5	**SOMX062905-UH**	6	2.9	0.5				●		
	ø20—ø22.5	**SOMX073405-UH**	7	3.4	0.5				●		
	ø23—ø27.5	**SOMX083905-UH**	8.3	3.9	0.5				●		
	ø28—ø33	**SOMX094406-UH**	9.7	4.4	0.6				●		
	ø33.5—ø39	**SOMX115406-UH**	11.6	5.4	0.6				●		
	ø40—ø46	**SOMX135908-UH**	13.8	5.9	0.8				●		
	ø47—ø56	**SOMX166408-UH**	16.5	6.4	0.8				●		
Strong Cutting Edge Type and Inner Edge	ø57—ø63	**SOMX186908-UH**	18.2	6.9	0.8				●		
UN	ø17—ø19.5	**SOGX063005-UN**	6	3	0.5					●	
	ø20—ø22.5	**SOGX073505-UN**	7	3.5	0.5					●	
	ø23—ø27.5	**SOGX084005-UN**	8.3	4	0.5					●	
	ø28—ø33	**SOGX094506-UN**	9.7	4.5	0.6					●	
	ø33.5—ø39	**SOGX115506-UN**	11.6	5.5	0.6					●	
	ø40—ø46	**SOGX136008-UN**	13.8	6	0.8					●	
	ø47—ø56	**SOGX166508-UN**	16.5	6.5	0.8					●	
For Aluminum Alloy	ø57—ø63	**SOGX187008-UN**	18.2	7	0.8					●	

Note 1) MC1020 and MC5020 are made exclusively for use as an outer insert.

INSERT RECOMMENDATION

		1st Recommendation		When outer insert fractures	
		Outer Insert	Inner Insert	Outer Insert	Inner Insert
P	Mild Steel, Alloy Steel	MC1020	VP15TF	VP15TF	VP15TF
		UM Breaker	**UM Breaker**	**UM Breaker**	**UM Breaker**
M	Stainless Steel	MC1020	VP15TF	VP15TF	VP15TF
		UM Breaker	**US Breaker**	**UM Breaker**	**US Breaker**
K	Cast Iron	MC5020	VP15TF	VP15TF	VP15TF
		UM Breaker	**UM Breaker**	**UM Breaker**	**UM Breaker**

		1st Recommendation		When outer insert fractures	
		Outer Insert	Inner Insert	Outer Insert	Inner Insert
H	Hardened Steel	MC1020	DP8020	VP15TF	DP8020
		UM Breaker	**UH Breaker**	**UM Breaker**	**UH Breaker**
N	Aluminum Alloy	TF15	TF15		
		UN Breaker	**UN Breaker**		

● : **USA Stock**
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

(inch)

	Workpiece Material	Properties	Cutting Speed **vc** (SFM)	Inner Chip Breaker	**ϕ.562"—ϕ.656" ϕ14.0—ϕ16.5mm** Feed **fr** (IPR)		
			L/D=2—6		L/D=2, 3	L/D=4	L/D=5
P	Mild Steel	≤180HB	655 (590—770)	UM	.0020 (.0016—.0024)	.0020 (.0016—.0024)	.0020 (.0016—.0024)
				UH	—	—	—
	Carbon Steel, Alloy Steel	180—280HB	460 (375—590)	UM	.0031 (.0024—.0055)	.0031 (.0024—.0035)	.0031 (.0024—.0035)
				UH	—	—	—
	Carbon Steel, Alloy Steel	280—350HB	330 (245—460)	UM	.0031 (.0024—.0055)	.0031 (.0024—.0035)	.0031 (.0024—.0035)
				UH	—	—	—
	Alloy Tool Steel	≤350HB	440 (330—560)	UM	.0031 (.0024—.0055)	.0031 (.0024—.0035)	.0031 (.0024—.0035)
				UH	—	—	—
M	Austenitic Stainless Steel	≤200HB	425 (260—590)	US	—	—	—
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)
	Austenitic Stainless Steel	>200HB	425 (260—590)	US	—	—	—
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)
	Ferritic and Martensitic Stainless Steel	≤200HB	395 (260—540)	US	—	—	—
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)
	Ferritic and Martensitic Stainless Steel	>200HB	395 (260—540)	US	—	—	—
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)
K	Gray Cast Iron	Tensile Strength ≤350MPa	525 (425—640)	UM	.0039 (.0024—.0055)	.0031 (.0024—.0039)	.0031 (.0024—.0039)
	Ductile Cast Iron	Tensile Strength ≤450MPa	330 (260—440)	UM	.0039 (.0024—.0055)	.0031 (.0024—.0039)	.0031 (.0024—.0039)
	Ductile Cast Iron	Tensile Strength ≤800MPa	330 (230—410)	UM	.0031 (.0024—.0047)	.0028 (.0024—.0031)	.0028 (.0024—.0031)
N	Aluminum Alloy	Si<5%	655 (330—1150)	UN	—	—	—
	Aluminum Alloy	5%≤Si≤10%	490 (330—655)	UN	—	—	—
	Aluminum Alloy	Si>10%	490 (330—655)	UN	—	—	—
H	Hardened Steel	38—45HRC	165 (100—260)	UH	—	—	—

Note 1) Reduce the cutting speed by around 30% when using VP15TF for outer insert.
Note 2) Recommend maximum drilling depth L/D≤3 for using outer coolant system.
Note 3) Spindle through & high pressure coolant system is recommended to make stable holes for stainless steel.

USAGE NOTE ➤ L218
SPARE PARTS ➤ M001

MVX

RECOMMENDED CUTTING CONDITIONS

	Workpiece Material	Properties	Cutting Speed **vc** (SFM)	Inner Chip Breaker	**ϕ.687"—ϕ.750" ϕ17.0—ϕ19.5mm** Feed **fr** (IPR)			
			L/D=2—6		L/D=2, 3	L/D=4	L/D=5	L/D=6
P	Mild Steel	≤180HB	655 (590—770)	UM	.0020 (.0016—.0024)	.0020 (.0016—.0024)	.0020 (.0016—.0024)	.0016 (.0016—.0020)
				UH				
	Carbon Steel, Alloy Steel	180—280HB	460 (375—590)	UM	.0031 (.0024—.0055)	.0031 (.0024—.0035)	.0031 (.0024—.0035)	.0020 (.0016—.0024)
				UH				
	Carbon Steel, Alloy Steel	280—350HB	330 (245—460)	UM	.0031 (.0024—.0055)	.0031 (.0024—.0035)	.0031 (.0024—.0035)	.0020 (.0016—.0024)
				UH				
	Alloy Tool Steel	≤350HB	440 (330—560)	UM	.0024 (.0024—.0055)	.0031 (.0024—.0035)	.0031 (.0024—.0035)	.0020 (.0016—.0024)
				UH				
M	Austenitic Stainless Steel	≤200HB	425 (260—590)	US	.0031 (.0024—.0047)	.0024 (.0016—.0031)	.0024 (.0016—.0031)	.0020 (.0016—.0024)
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)	.0016 (.0016—.0020)
	Austenitic Stainless Steel	>200HB	425 (260—590)	US	.0031 (.0024—.0047)	.0024 (.0016—.0031)	.0024 (.0016—.0031)	.0020 (.0016—.0024)
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)	.0016 (.0016—.0020)
	Ferritic and Martensitic Stainless Steel	≤200HB	395 (260—540)	US	.0031 (.0024—.0047)	.0024 (.0016—.0031)	.0024 (.0016—.0031)	.0020 (.0016—.0024)
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)	.0016 (.0016—.0020)
	Ferritic and Martensitic Stainless Steel	>200HB	395 (260—540)	US	.0031 (.0024—.0047)	.0024 (.0016—.0031)	.0024 (.0016—.0031)	.0020 (.0016—.0024)
				UM	.0024 (.0016—.0031)	.0020 (.0016—.0024)	.0020 (.0016—.0024)	.0016 (.0016—.0020)
K	Gray Cast Iron	Tensile Strength ≤350MPa	525 (425—640)	UM	.0043 (.0031—.0055)	.0035 (.0031—.0039)	.0035 (.0031—.0039)	.0020 (.0016—.0024)
	Ductile Cast Iron	Tensile Strength ≤450MPa	330 (260—440)	UM	.0043 (.0031—.0055)	.0035 (.0031—.0039)	.0035 (.0031—.0039)	.0020 (.0016—.0024)
	Ductile Cast Iron	Tensile Strength ≤800MPa	330 (230—410)	UM	.0043 (.0031—.0055)	.0035 (.0031—.0039)	.0035 (.0031—.0039)	.0020 (.0016—.0024)
N	Aluminum Alloy	Si<5%	655 (330—1150)	UN	.0048 (.0020—.0072)	.0048 (.0020—.0072)	.0048 (.0020—.0072)	.0032 (.0020—.0048)
	Aluminum Alloy	5%≤Si≤10%	490 (330—655)	UN	.0048 (.0020—.0072)	.0048 (.0020—.0072)	.0048 (.0020—.0072)	.0032 (.0020—.0048)
	Aluminum Alloy	Si>10%	490 (330—655)	UN	.0048 (.0020—.0072)	.0048 (.0020—.0072)	.0048 (.0020—.0072)	.0032 (.0020—.0048)
H	Hardened Steel	38—45HRC	165 (100—260)	UH	.0032 (.0016—.0048)	.0024 (.0016—.0036)	—	—

Note 1) Reduce the cutting speed by around 30% when using VP15TF for outer insert.
Note 2) Recommend maximum drilling depth L/D≤3 for using outer coolant system.
Note 3) Spindle through & high pressure coolant system is recommended to make stable holes for stainless steel.

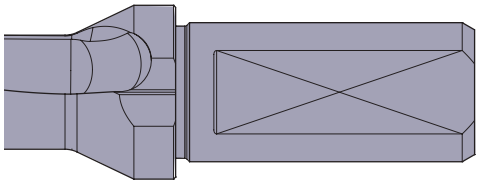
(inch)

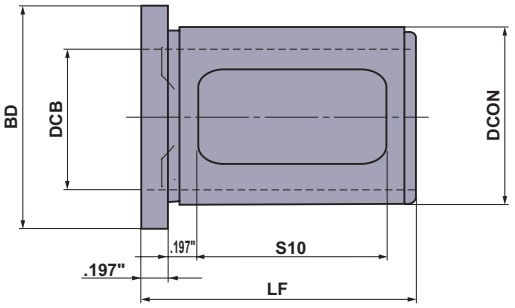
	ϕ.812"—ϕ.937" ϕ20.0—ϕ23.5mm				ϕ1.000"—ϕ1.125" ϕ24.0—ϕ29.5mm				ϕ1.187"—ϕ2.500" ϕ30.0—ϕ63mm			
	Feed **fr** (IPR)				Feed **fr** (IPR)				Feed **fr** (IPR)			
	L/D=2, 3	L/D=4	L/D=5	L/D=6	L/D=2, 3	L/D=4	L/D=5	L/D=6	L/D=2, 3	L/D=4	L/D=5	L/D=6
	.0024 (.0016–.0031)	.0024 (.0016–.0028)	.0024 (.0016–.0028)	.0016 (.0016–.0020)	.0028 (.0016–.0031)	.0024 (.0016–.0028)	.0024 (.0016–.0028)	.0020 (.0016–.0024)	.0031 (.0024–.0039)	.0028 (.0024–.0031)	.0028 (.0024–.0031)	.0024 (.0024–.0028)
	.0039 (.0024–.0071)	.0035 (.0024–.0047)	.0035 (.0024–.0047)	.0028 (.0024–.0031)	.0047 (.0031–.0071)	.0039 (.0031–.0047)	.0039 (.0031–.0047)	.0035 (.0031–.0039)	.0055 (.0031–.0094)	.0047 (.0031–.0063)	.0047 (.0031–.0063)	.0043 (.0039–.0047)
	.0039 (.0024–.0071)	.0035 (.0024–.0047)	.0035 (.0024–.0047)	.0028 (.0024–.0031)	.0047 (.0031–.0071)	.0039 (.0031–.0047)	.0039 (.0031–.0047)	.0035 (.0031–.0039)	.0055 (.0031–.0094)	.0047 (.0031–.0063)	.0047 (.0031–.0063)	.0043 (.0039–.0047)
	.0039 (.0024–.0071)	.0035 (.0024–.0047)	.0035 (.0024–.0047)	.0028 (.0024–.0031)	.0047 (.0031–.0071)	.0039 (.0031–.0047)	.0039 (.0031–.0047)	.0035 (.0031–.0039)	.0055 (.0031–.0094)	.0047 (.0031–.0063)	.0047 (.0031–.0063)	.0039 (.0031–.0047)
	.0039 (.0024–.0055)	.0028 (.0024–.0031)	.0028 (.0024–.0031)	.0024 (.0024–.0028)	.0039 (.0024–.0055)	.0031 (.0024–.0039)	.0031 (.0024–.0039)	.0028 (.0024–.0031)	.0039 (.0024–.0055)	.0035 (.0024–.0047)	.0035 (.0024–.0047)	.0028 (.0024–.0039)
	.0039 (.0024–.0047)	.0028 (.0024–.0031)	.0028 (.0024–.0031)	.0024 (.0024–.0028)	.0035 (.0024–.0047)	.0028 (.0024–.0035)	.0028 (.0024–.0035)	.0024 (.0024–.0031)	.0035 (.0024–.0047)	.0031 (.0024–.0039)	.0031 (.0024–.0039)	.0028 (.0024–.0031)
	.0039 (.0024–.0055)	.0028 (.0024–.0031)	.0028 (.0024–.0031)	.0024 (.0024–.0028)	.0039 (.0024–.0055)	.0031 (.0024–.0039)	.0031 (.0024–.0039)	.0028 (.0024–.0031)	.0039 (.0024–.0055)	.0035 (.0024–.0047)	.0035 (.0024–.0047)	.0028 (.0024–.0039)
	.0039 (.0024–.0047)	.0028 (.0024–.0031)	.0028 (.0024–.0031)	.0024 (.0024–.0028)	.0035 (.0024–.0047)	.0028 (.0024–.0035)	.0028 (.0024–.0035)	.0024 (.0024–.0031)	.0035 (.0024–.0047)	.0031 (.0024–.0039)	.0031 (.0024–.0039)	.0028 (.0024–.0031)
	.0039 (.0024–.0055)	.0028 (.0024–.0031)	.0028 (.0024–.0031)	.0024 (.0024–.0028)	.0039 (.0024–.0055)	.0031 (.0024–.0039)	.0031 (.0024–.0039)	.0028 (.0024–.0031)	.0039 (.0024–.0055)	.0035 (.0024–.0047)	.0035 (.0024–.0047)	.0028 (.0024–.0039)
	.0039 (.0024–.0047)	.0028 (.0024–.0031)	.0028 (.0024–.0031)	.0024 (.0024–.0028)	.0035 (.0024–.0047)	.0028 (.0024–.0035)	.0028 (.0024–.0035)	.0024 (.0024–.0031)	.0035 (.0024–.0047)	.0031 (.0024–.0039)	.0031 (.0024–.0039)	.0028 (.0024–.0031)
	.0055 (.0039–.0071)	.0039 (.0039–.0047)	.0039 (.0039–.0047)	.0028 (.0024–.0031)	.0059 (.0039–.0079)	.0043 (.0039–.0051)	.0043 (.0039–.0051)	.0035 (.0031–.0039)	.0059 (.0039–.0079)	.0047 (.0039–.0051)	.0047 (.0039–.0051)	.0043 (.0039–.0047)
	.0051 (.0039–.0063)	.0039 (.0039–.0043)	.0039 (.0039–.0043)	.0028 (.0024–.0031)	.0055 (.0039–.0071)	.0043 (.0039–.0047)	.0043 (.0039–.0047)	.0035 (.0031–.0039)	.0059 (.0039–.0079)	.0047 (.0039–.0051)	.0047 (.0039–.0051)	.0043 (.0039–.0047)
	.0051 (.0039–.0063)	.0039 (.0039–.0043)	.0039 (.0039–.0043)	.0028 (.0024–.0031)	.0055 (.0039–.0071)	.0043 (.0039–.0047)	.0043 (.0039–.0047)	.0035 (.0031–.0039)	.0059 (.0039–.0079)	.0047 (.0039–.0051)	.0047 (.0039–.0051)	.0043 (.0039–.0047)
	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)	.0048 (.0020–.0080)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)
	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)	.0048 (.0020–.0080)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)
	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)	.0048 (.0020–.0080)	.0048 (.0020–.0072)	.0048 (.0020–.0072)	.0032 (.0020–.0048)
	.0036 (.0024–.0056)	.0028 (.0024–.0036)	—	—	.0036 (.0024–.0056)	.0028 (.0024–.0036)	—	—	.0044 (.0024–.0064)	.0036 (.0024–.0048)	—	—

JUST FIT SLEEVE [JFS]

Inch Standard

● A sleeve for the shank of the drill to allow the cutting diameter to be increased.





(inch)

Order Number	Stock	DCB	DCON	BD	LF	S10	✱Increase (S11×2)	MVX Order Number The Last Four Letters
JFS125100-005	●	1.000	1.250	1.813	2.250	1.625	.005	C100
JFS125100-010	●	1.000	1.250	1.813	2.250	1.625	.010	C100
JFS125100-015	●	1.000	1.250	1.813	2.250	1.625	.015	C100
JFS125100-020	●	1.000	1.250	1.813	2.250	1.625	.020	C100
JFS125100-025	●	1.000	1.250	1.813	2.250	1.625	.025	C100
JFS150125-005	●	1.250	1.500	2.063	2.370	1.750	.005	C125
JFS150125-010	●	1.250	1.500	2.063	2.370	1.750	.010	C125
JFS150125-015	●	1.250	1.500	2.063	2.370	1.750	.015	C125
JFS150125-020	●	1.250	1.500	2.063	2.370	1.750	.020	C125
JFS150125-025	●	1.250	1.500	2.063	2.370	1.750	.025	C125
JFS175150-005	●	1.500	1.750	2.313	2.780	2.156	.005	C150
JFS175150-010	●	1.500	1.750	2.313	2.780	2.156	.010	C150
JFS175150-015	●	1.500	1.750	2.313	2.780	2.156	.015	C150
JFS175150-020	●	1.500	1.750	2.313	2.780	2.156	.020	C150
JFS175150-025	●	1.500	1.750	2.313	2.780	2.156	.025	C150

Not available in .750" shank diameter.

✱Increase : Size of the increase in the cutting diameter.

■ Guideline for Selecting a JUST FIT SLEEVE

Desired = (Drillø+ Increase of JFS) + .005"

(Eg.) Desired diameter is 1.015" (oversize is taken as .005").

ø1.015=(MVX1000 X ◌C125+JFS150125-010)+.005

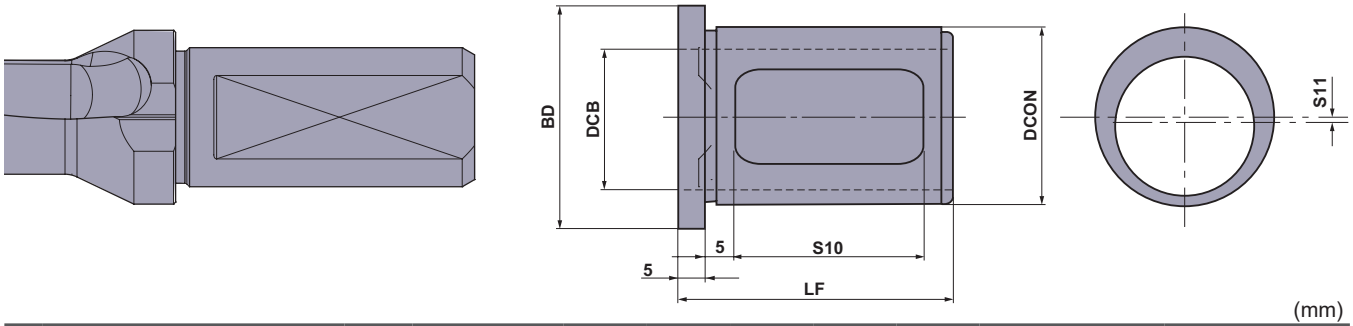
- 1.000" Drill
- Using JFS an Increase of .010".
- Oversize

<Tool Selected>
MVX : **MVX1000 X ◌C125**
JUST FIT SLEEVE [JFS]
: **JFS150125-010**

Note 1) Oversize can vary due to the cutting conditions used, please use the above as a guideline.

Metric Standard

● A sleeve for the shank of the drill to allow the cutting diameter to be increased.



(mm)

Order Number	Stock	Set Order Number	DCB	DCON	BD	LF	S10	✱Increase (S11×2)	MVX Order Number The Last Three Letters
JFS2520-10	★	**JFS-1**	20	25	33	43	30	0.1	F20
JFS2520-20	★	**JFS-1**	20	25	33	43	30	0.2	F20
JFS2520-30	★	**JFS-1**	20	25	33	43	30	0.3	F20
JFS2520-40	★	**JFS-1**	20	25	33	43	30	0.4	F20
JFS2520-50	★	**JFS-1**	20	25	33	43	30	0.5	F20
JFS3225-10	★	**JFS-2**	25	32	40	50	34	0.1	F25
JFS3225-20	★	**JFS-2**	25	32	40	50	34	0.2	F25
JFS3225-30	★	**JFS-2**	25	32	40	50	34	0.3	F25
JFS3225-40	★	**JFS-2**	25	32	40	50	34	0.4	F25
JFS3225-50	★	**JFS-2**	25	32	40	50	34	0.5	F25
JFS4032-10	★	**JFS-3**	32	40	48	55	40	0.1	F32
JFS4032-20	★	**JFS-3**	32	40	48	55	40	0.2	F32
JFS4032-30	★	**JFS-3**	32	40	48	55	40	0.3	F32
JFS4032-40	★	**JFS-3**	32	40	48	55	40	0.4	F32
JFS4032-50	★	**JFS-3**	32	40	48	55	40	0.5	F32
JFS5040-10	★	–	40	50	68	65	50	0.1	F40
JFS5040-20	★	–	40	50	68	65	50	0.2	F40
JFS5040-30	★	–	40	50	68	65	50	0.3	F40
JFS5040-40	★	–	40	50	68	65	50	0.4	F40
JFS5040-50	★	–	40	50	68	65	50	0.5	F40

Not available in 50 mm shank diameter.

✱Increase : Size of the increase in the cutting diameter.

■ Guideline for Selecting a JUST FIT SLEEVE

Desired = (Drillø+ Increase of JFS) + 0.1mm

(Eg.) Desired diameter is 20.3mm (oversize is taken as 0.1mm).

ø20.3=(MVX2000 X ◌F25+JFS3225-20)+0.1

- (MVX2000 X ◌F25): ø20mm Drill
- (JFS3225-20): Using JFS an Increase of 0.2mm.
- +0.1: Oversize

<Tool Selected>
MVX : **MVX2000 X ◌F25**
JUST FIT SLEEVE [JFS]
: **JFS3225-20**

Note 1) Oversize can vary due to the cutting conditions used, please use the above as a guideline.

■ Ordering the JUST FIT SLEEVE

● **Purchasing Method 1**

Oversize can vary due to the cutting conditions used. Therefore it is recommended to purchase as a set. (5 sleeves/set)When placing an order, please use the set order number.

● **Purchasing Method 2**

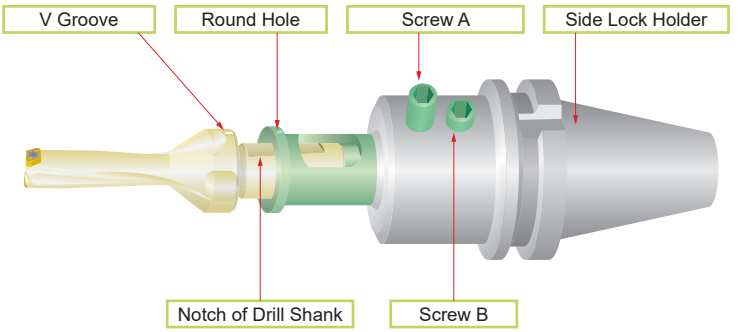
It is possible to order individually. When placing an order, please use the order number.

JUST FIT SLEEVE [JFS]

Application of JUST FIT SLEEVE

1 When inserting the drill into the side lock holder, aligin the V groove on the outer peripheral edge of the drill flange, as well as the round holes of the outer peripheral edge of the sleeve flange and the screws of the side lock holder for fixing the drill. (If the drill does not have a V groove, align the notch of the drill shank with the round holes of the sleeve.)

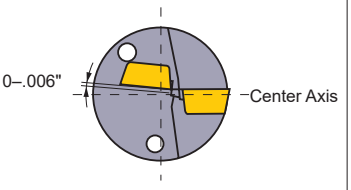
2 Insert screws A of the side lock holder directly to the open window of the sleeve and fix the drill. Tighten screw B to a degree so as not to damage the sleeve.



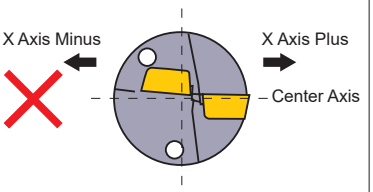
Application of MVX Type Drill

●Use on a Lathe

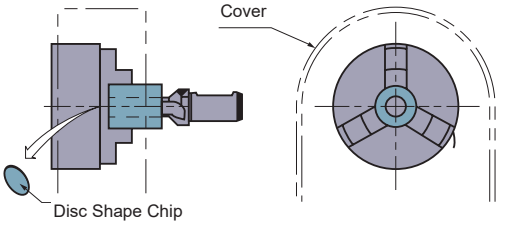
(1) The outer insert and machine X axis must be set parallel. The drill is designed that the center of the inner insert is 0-.006" lower when matching the drill center and the machine spindle center.
*The inner insert may fracture if the center height of inner insert is higher than the machine X axis.



(2) To adjust the hole diameter by off-setting the drill, please adjust to X axis plus direction (expanding direction of the hole diameter). Refer to the holder dimension list for the maximum adjustment rate of each holder.
*It is not recommended to adjust to X axis minus direction (reducing direction of the hole diameter) as the holder may interfere with the hole.



(3) When through hole drilling on a lathe the disc produced by the drill exiting the workpiece may be expelled at high velocity. To reduce the possibility of injury or damage, a cover guard is highly recommended.



STAW

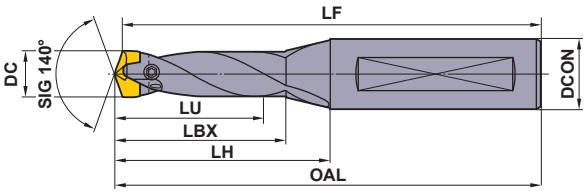
- Wavy cutting edge design for good chip control.
- Highly rigid clamping system offers stability and reliability for small hole drilling.

P | M | K | N | S | H

DC=.3906"	.3906"<DC<.7188"
0 −.00087"	0 −.00106"

INCH STANDARD

Internal Coolant



HOLDERS

DC (inch)	L/D	Holder Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	Wrench	Insert Order Number	Stock VP15TF
.3906	1.5	STAWSS0026	●	.661	.937	1.33	3.22	3.15	.625	TIP06F	* STAWN0025TH	●
	3	STAWSN0026	●	1.252	1.531	1.92	3.81	3.74	.625	TIP06F	STAWN0025TH	●
	5	STAWMN0026	●	2.039	2.311	2.71	4.60	4.53	.625	TIP06F	STAWN0025TH	●
	8	STAWLN0026	●	3.220	3.501	3.89	5.78	5.71	.625	TIP06F	STAWN0025TH	●
.4062	1.5	STAWSS0026	●	.661	.940	1.33	3.22	3.15	.625	TIP06F	* STAWN0026TH	●
	3	STAWSN0026	●	1.252	1.534	1.92	3.81	3.74	.625	TIP06F	STAWN0026TH	●
	5	STAWMN0026	●	2.039	2.314	2.71	4.60	4.53	.625	TIP06F	STAWN0026TH	●
	8	STAWLN0026	●	3.220	3.504	3.89	5.78	5.71	.625	TIP06F	STAWN0026TH	●
.4219	1.5	STAWSS0027	●	.697	.943	1.34	3.23	3.15	.625	TIP06F	* STAWN0027TH	●
	3	STAWSN0027	●	1.315	1.537	1.93	3.82	3.74	.625	TIP06F	STAWN0027TH	●
	5	STAWMN0027	●	2.142	2.317	2.72	4.61	4.53	.625	TIP06F	STAWN0027TH	●
	8	STAWLN0027	●	3.382	3.507	3.90	5.79	5.71	.625	TIP06F	STAWN0027TH	●
.4375	1.5	STAWSS0028	●	.728	1.064	1.50	3.39	3.31	.625	TIP06F	* STAWN0028TH	●
	3	STAWSN0028	●	1.378	1.690	2.13	4.02	3.94	.625	TIP06F	STAWN0028TH	●
	5	STAWMN0028	●	2.244	2.680	3.11	5.00	4.92	.625	TIP06F	STAWN0028TH	●
	8	STAWLN0028	●	3.543	3.860	4.29	6.18	6.10	.625	TIP06F	STAWN0028TH	●
.4531	1.5	STAWSS0030	●	.764	1.067	1.50	3.39	3.31	.625	TIP06F	* STAWN0029TH	●
	3	STAWSN0030	●	1.441	1.693	2.13	4.02	3.94	.625	TIP06F	STAWN0029TH	●
	5	STAWMN0030	●	2.346	2.683	3.11	5.00	4.92	.625	TIP06F	STAWN0029TH	●
	8	STAWLN0030	●	3.705	3.863	4.29	6.18	6.10	.625	TIP06F	STAWN0029TH	●
.4688	1.5	STAWSS0030	●	.764	1.069	1.51	3.40	3.31	.625	TIP06F	* STAWN0030TH	●
	3	STAWSN0030	●	1.441	1.695	2.14	4.03	3.94	.625	TIP06F	STAWN0030TH	●
	5	STAWMN0030	●	2.346	2.685	3.12	5.01	4.92	.625	TIP06F	STAWN0030TH	●
	8	STAWLN0030	●	3.705	3.865	4.30	6.19	6.10	.625	TIP06F	STAWN0030TH	●
.4844	1.5	STAWSS0031	●	.795	1.148	1.63	3.52	3.43	.625	TIP06F	* STAWN0031TH	●
	3	STAWSN0031	●	1.504	1.858	2.33	4.22	4.13	.625	TIP06F	STAWN0031TH	●
	5	STAWMN0031	●	2.449	2.848	3.32	5.21	5.12	.625	TIP06F	STAWN0031TH	●
	8	STAWLN0031	●	3.866	4.218	4.70	6.59	6.50	.625	TIP06F	STAWN0031TH	●
.5000	1.5	STAWSS0032	●	.831	1.151	1.63	3.52	3.43	.625	TIP06F	* STAWN0032TH	●
	3	STAWSN0032	●	1.567	1.861	2.33	4.22	4.13	.625	TIP06F	STAWN0032TH	●
	5	STAWMN0032	●	2.551	2.851	3.32	5.21	5.12	.625	TIP06F	STAWN0032TH	●
	8	STAWLN0032	●	4.028	4.221	4.70	6.59	6.50	.625	TIP06F	STAWN0032TH	●
.5156	1.5	STAWSS0034	●	.862	1.274	1.79	3.67	3.58	.625	TIP08W	* STAWN0033TH	●
	3	STAWSN0034	●	1.630	2.024	2.53	4.42	4.33	.625	TIP08W	STAWN0033TH	●
	5	STAWMN0034	●	2.654	3.004	3.52	5.40	5.31	.625	TIP08W	STAWN0033TH	●
	8	STAWLN0034	●	4.189	4.584	5.09	6.98	6.89	.625	TIP08W	STAWN0033TH	●
.5312	1.5	STAWSS0034	●	.862	1.277	1.80	3.68	3.58	.625	TIP08W	* STAWN0034TH	●
	3	STAWSN0034	●	1.630	2.027	2.54	4.43	4.33	.625	TIP08W	STAWN0034TH	●
	5	STAWMN0034	●	2.654	3.007	3.53	5.41	5.31	.625	TIP08W	STAWN0034TH	●
	8	STAWLN0034	●	4.189	4.587	5.10	6.99	6.89	.625	TIP08W	STAWN0034TH	●
.5469	1.5	STAWSS0035	●	.898	1.280	1.80	3.68	3.58	.625	TIP08W	* STAWN0035TH	●
	3	STAWSN0035	●	1.693	2.030	2.54	4.43	4.33	.625	TIP08W	STAWN0035TH	●
	5	STAWMN0035	●	2.756	3.010	3.53	5.41	5.31	.625	TIP08W	STAWN0035TH	●
	8	STAWLN0035	●	4.350	4.590	5.10	6.99	6.89	.625	TIP08W	STAWN0035TH	●

Note 1) The above dimensions (*) are for when installing the inserts.

Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

ISO13399 ➤ L003
INSERTS ➤ L223
CUTTING CONDITIONS ➤ L226
HOW TO USE ➤ L227

STAW

DC (inch)	L/D	Holder		Dimensions (inch)						Wrench	Insert	
		Order Number	Stock	LU	LBX	LH	OAL	LF	DCON		Order Number	Stock VP15TF
.5625	1.5	STAWSS0036	●	.925	1.322	1.87	3.76	3.66	.625	TIP08W	* STAWN0036TH	●
	3	STAWSN0036	●	1.752	2.192	2.74	4.63	4.53	.625	TIP08W	STAWN0036TH	●
	5	STAWMN0036	●	2.854	3.372	3.92	5.81	5.71	.625	TIP08W	STAWN0036TH	●
	8	STAWLN0036	●	4.508	4.902	5.49	7.38	7.28	.625	TIP08W	STAWN0036TH	●
.5781	1.5	STAWSS0037	●	.961	1.325	1.88	3.77	3.66	.625	TIP08W	* STAWN0037TH	●
	3	STAWSN0037	●	1.815	2.195	2.75	4.64	4.53	.625	TIP08W	STAWN0037TH	●
	5	STAWMN0037	●	2.957	3.375	3.93	5.82	5.71	.625	TIP08W	STAWN0037TH	●
	8	STAWLN0037	●	4.669	4.905	5.50	7.39	7.28	.625	TIP08W	STAWN0037TH	●
.5938	1.5	STAWSS0039	●	.992	1.408	2.00	3.97	3.86	.750	TIP08W	* STAWN0038TH	●
	3	STAWSN0039	●	1.878	2.468	3.06	5.03	4.92	.750	TIP08W	STAWN0038TH	●
	5	STAWMN0039	●	3.059	3.648	4.24	6.21	6.10	.750	TIP08W	STAWN0038TH	●
	8	STAWLN0039	●	4.831	5.228	5.94	7.91	7.80	.750	TIP08W	STAWN0038TH	●
.6094	1.5	STAWSS0039	●	.992	1.411	2.00	3.97	3.86	.750	TIP08W	* STAWN0039TH	●
	3	STAWSN0039	●	1.878	2.471	3.06	5.03	4.92	.750	TIP08W	STAWN0039TH	●
	5	STAWMN0039	●	3.059	3.651	4.24	6.21	6.10	.750	TIP08W	STAWN0039TH	●
	8	STAWLN0039	●	4.831	5.231	5.94	7.91	7.80	.750	TIP08W	STAWN0039TH	●
.6250	1.5	STAWSS0041	●	1.028	1.454	2.08	4.05	3.94	.750	TIP10W	* STAWN0040T	●
	3	STAWSN0041	●	1.941	2.474	3.26	5.23	5.12	.750	TIP10W	STAWN0040T	●
	5	STAWMN0041	●	3.161	3.654	4.64	6.61	6.50	.750	TIP10W	STAWN0040T	●
	8	STAWLN0041	●	4.992	5.544	6.33	8.30	8.19	.750	TIP10W	STAWN0040T	●
.6406	1.5	STAWSS0041	●	1.028	1.457	2.09	4.06	3.94	.750	TIP10W	* STAWN0041T	●
	3	STAWSN0041	●	1.941	2.477	3.27	5.24	5.12	.750	TIP10W	STAWN0041T	●
	5	STAWMN0041	●	3.161	3.657	4.65	6.62	6.50	.750	TIP10W	STAWN0041T	●
	8	STAWLN0041	●	4.992	5.547	6.34	8.31	8.19	.750	TIP10W	STAWN0041T	●
.6563	1.5	STAWSS0044	●	1.094	1.539	2.21	4.18	4.06	.750	TIP10W	* STAWN0042T	●
	3	STAWSN0044	●	2.067	2.519	3.47	5.43	5.31	.750	TIP10W	STAWN0042T	●
	5	STAWMN0044	●	3.366	3.859	4.84	6.81	6.69	.750	TIP10W	STAWN0042T	●
	8	STAWLN0044	●	5.315	5.859	6.66	8.62	8.50	.750	TIP10W	STAWN0042T	●
.6719	1.5	STAWSS0044	●	1.094	1.542	2.21	4.18	4.06	.750	TIP10W	* STAWN0043T	●
	3	STAWSN0044	●	2.067	2.522	3.47	5.43	5.31	.750	TIP10W	STAWN0043T	●
	5	STAWMN0044	●	3.366	3.862	4.84	6.81	6.69	.750	TIP10W	STAWN0043T	●
	8	STAWLN0044	●	5.315	5.862	6.66	8.62	8.50	.750	TIP10W	STAWN0043T	●
.6875	1.5	STAWSS0044	●	1.094	1.545	2.22	4.19	4.06	.750	TIP10W	* STAWN0044T	●
	3	STAWSN0044	●	2.067	2.525	3.48	5.44	5.31	.750	TIP10W	STAWN0044T	●
	5	STAWMN0044	●	3.366	3.865	4.85	6.82	6.69	.750	TIP10W	STAWN0044T	●
	8	STAWLN0044	●	5.315	5.865	6.67	8.63	8.50	.750	TIP10W	STAWN0044T	●
.7031	1.5	STAWSS0046	●	1.161	1.588	2.30	4.26	4.13	.750	TIP10W	* STAWN0045T	●
	3	STAWSN0046	●	2.193	2.648	3.67	5.64	5.51	.750	TIP10W	STAWN0045T	●
	5	STAWMN0046	●	3.571	4.068	5.05	7.02	6.89	.750	TIP10W	STAWN0045T	●
	8	STAWLN0046	●	5.638	6.188	6.98	8.95	8.82	.750	TIP10W	STAWN0045T	●
.7188	1.5	STAWSS0046	●	1.161	1.591	2.30	4.26	4.13	.750	TIP10W	* STAWN0046T	●
	3	STAWSN0046	●	2.193	2.651	3.67	5.64	5.51	.750	TIP10W	STAWN0046T	●
	5	STAWMN0046	●	3.571	4.071	5.05	7.02	6.89	.750	TIP10W	STAWN0046T	●
	8	STAWLN0046	●	5.638	6.191	6.98	8.95	8.82	.750	TIP10W	STAWN0046T	●

Note 1) The above dimensions (*) are for when installing the inserts.
Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

STAW

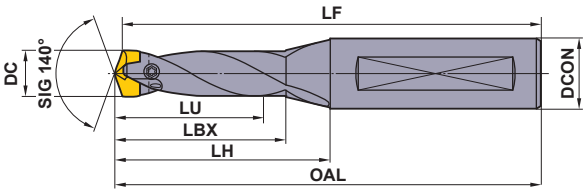
- Wavy cutting edge design for good chip control.
- Highly rigid clamping system offers stability and reliability for small hole drilling.

P | M | K | N | S | H

DC=10	10<DC<18.4
0 −0.022	0 −0.027

METRIC STANDARD

Internal Coolant



■HOLDERS

DC (mm)	L/D	Holder Order Number	Stock	Dimensions (mm) LU	LBX	LH	OAL	LF	DCON	①② Wrench	Insert DC (mm)	Order Number	Stock VP15TF
10.0 | 10.4	1.5	STAWSS1000S16	★	15	23.8	33.8	81.8	80	16	①TIP06F	10.0	* STAWN1000TH	★
	3	STAWSN1000S16	★	30	38.8	48.8	96.8	95	16	①TIP06F	10.1	STAWN1010TH	★
	5	STAWMN1000S16	★	50	58.9	68.9	116.9	115	16	①TIP06F	10.2	STAWN1020TH	★
	8	STAWLN1000S16	★	80	88.9	98.9	146.9	145	16	①TIP06F	10.3	STAWN1030TH	★
											10.4	STAWN1040TH	★
10.5 | 10.9	1.5	STAWSS1050S16	★	15.75	23.9	33.9	81.9	80	16	①TIP06F	10.5	* STAWN1050TH	★
	3	STAWSN1050S16	★	31.5	38.9	48.9	96.9	95	16	①TIP06F	10.6	STAWN1060TH	★
	5	STAWMN1050S16	★	52.5	59.0	69.0	117.0	115	16	①TIP06F	10.7	STAWN1070TH	★
	8	STAWLN1050S16	★	84	89.0	99.0	147.0	145	16	①TIP06F	10.8	STAWN1080TH	★
											10.9	STAWN1090TH	★
11.0 | 11.4	1.5	STAWSS1100S16	★	16.5	27.0	38.0	86.0	84	16	①TIP06F	11.0	* STAWN1100TH	★
	3	STAWSN1100S16	★	33	43.0	54.0	102.0	100	16	①TIP06F	11.1	STAWN1110TH	★
	5	STAWMN1100S16	★	55	68.1	79.1	127.1	125	16	①TIP06F	11.2	STAWN1120TH	★
	8	STAWLN1100S16	★	88	98.1	109.1	157.1	155	16	①TIP06F	11.3	STAWN1130TH	★
											11.4	STAWN1140TH	★
11.5 | 11.9	1.5	STAWSS1150S16	★	17.25	27.1	38.1	86.1	84	16	①TIP06F	11.5	* STAWN1150TH	★
	3	STAWSN1150S16	★	34.5	43.1	54.1	102.1	100	16	①TIP06F	11.6	STAWN1160TH	★
	5	STAWMN1150S16	★	57.5	68.1	79.1	127.1	125	16	①TIP06F	11.7	STAWN1170TH	★
	8	STAWLN1150S16	★	92	98.2	109.2	157.2	155	16	①TIP06F	11.8	STAWN1180TH	★
											11.9	STAWN1190TH	★
12.0 | 12.4	1.5	STAWSS1200S16	★	18	29.2	41.2	89.2	87	16	①TIP06F	12.0	* STAWN1200TH	★
	3	STAWSN1200S16	★	36	47.2	59.2	107.2	105	16	①TIP06F	12.1	STAWN1210TH	★
	5	STAWMN1200S16	★	60	72.2	84.2	132.2	130	16	①TIP06F	12.2	STAWN1220TH	★
	8	STAWLN1200S16	★	96	107.3	119.3	167.3	165	16	①TIP06F	12.3	STAWN1230TH	★
											12.4	STAWN1240TH	★
12.5 | 12.9	1.5	STAWSS1250S16	★	18.75	29.3	41.3	89.3	87	16	①TIP06F	12.5	* STAWN1250TH	★
	3	STAWSN1250S16	★	37.5	47.3	59.3	107.3	105	16	①TIP06F	12.6	STAWN1260TH	★
	5	STAWMN1250S16	★	62.5	72.3	84.3	132.3	130	16	①TIP06F	12.7	STAWN1270TH	★
	8	STAWLN1250S16	★	100	107.3	119.3	167.3	165	16	①TIP06F	12.8	STAWN1280TH	★
											12.9	STAWN1290TH	★
13.0 | 13.4	1.5	STAWSS1300S16	★	19.5	32.4	45.4	93.4	91	16	②TIP08W	13.0	* STAWN1300TH	★
	3	STAWSN1300S16	★	39	51.4	64.4	112.4	110	16	②TIP08W	13.1	STAWN1310TH	★
	5	STAWMN1300S16	★	65	76.4	89.4	137.4	135	16	②TIP08W	13.2	STAWN1320TH	★
	8	STAWLN1300S16	★	104	116.4	129.4	177.4	175	16	②TIP08W	13.3	STAWN1330TH	★
											13.4	STAWN1340TH	★
13.5 | 13.9	1.5	STAWSS1350S16	★	20.25	32.5	45.5	93.5	91	16	②TIP08W	13.5	* STAWN1350TH	★
	3	STAWSN1350S16	★	40.5	51.5	64.5	112.5	110	16	②TIP08W	13.6	STAWN1360TH	★
	5	STAWMN1350S16	★	67.5	76.5	89.5	137.5	135	16	②TIP08W	13.7	STAWN1370TH	★
	8	STAWLN1350S16	★	108	116.5	129.5	177.5	175	16	②TIP08W	13.8	STAWN1380TH	★
											13.9	STAWN1390TH	★
14.0 | 14.4	1.5	STAWSS1400S16	★	21	33.5	47.5	95.5	93	16	②TIP08W	14.0	* STAWN1400TH	★
	3	STAWSN1400S16	★	42	55.6	69.6	117.6	115	16	②TIP08W	14.1	STAWN1410TH	★
	5	STAWMN1400S16	★	70	85.6	99.6	147.6	145	16	②TIP08W	14.2	STAWN1420TH	★
	8	STAWLN1400S16	★	112	124.6	139.6	187.6	185	16	②TIP08W	14.3	STAWN1430TH	★
											14.4	STAWN1440TH	★

Note 1) The above dimensions (*) are for when installing the inserts.

Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

ISO13399 ➤ L003
INSERTS ➤ L223
CUTTING CONDITIONS ➤ L226
HOW TO USE ➤ L227

STAW

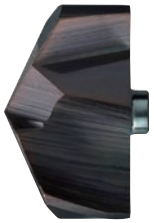
DC (mm)	L/D	Holder Order Number	Stock	Dimensions (mm) LU	LBX	LH	OAL	LF	DCON	Wrench	Insert DC (mm)	Order Number	Stock VP15TF
14.5 | 14.9	1.5	STAWSS1450S16	★	21.75	33.6	47.6	95.6	93	16	TIP08W	14.5	* STAWN1450TH	★
	3	STAWSN1450S16	★	43.5	55.7	69.7	117.7	115	16	TIP08W	14.6	STAWN1460TH	★
	5	STAWMN1450S16	★	72.5	85.7	99.7	147.7	145	16	TIP08W	14.7	STAWN1470TH	★
	8	STAWLN1450S16	★	116	124.7	139.7	187.7	185	16	TIP08W	14.8	STAWN1480TH	★
											14.9	STAWN1490TH	★
15.0 | 15.4	1.5	STAWSS1500S20	★	22.5	35.7	50.7	100.7	98	20	TIP08W	15.0	* STAWN1500TH	★
	3	STAWSN1500S20	★	45	62.7	77.7	127.7	125	20	TIP08W	15.1	STAWN1510TH	★
	5	STAWMN1500S20	★	75	92.8	107.8	157.8	155	20	TIP08W	15.2	STAWN1520TH	★
	8	STAWLN1500S20	★	120	132.8	150.8	200.8	198	20	TIP08W	15.3	STAWN1530TH	★
											15.4	STAWN1540TH	★
15.5 | 16.4	1.5	STAWSS1600S20	★	24	36.8	52.8	102.8	100	20	TIP10W	15.5	* STAWN1550T	★
											15.6	STAWN1560T	★
											15.7	STAWN1570T	★
	3	STAWSN1600S20	★	48	62.9	82.9	132.9	130	20	TIP10W	15.8	STAWN1580T	★
											15.9	STAWN1590T	★
	5	STAWMN1600S20	★	80	92.9	117.9	167.9	165	20	TIP10W	16.0	STAWN1600T	★
											16.1	STAWN1610T	★
											16.2	STAWN1620T	★
	8	STAWLN1600S20	★	128	140.9	160.9	210.9	208	20	TIP10W	16.3	STAWN1630T	★
											16.4	STAWN1640T	★
16.5 | 17.4	1.5	STAWSS1700S20	★	25.5	39.0	56.0	106.0	103	20	TIP10W	16.5	* STAWN1650T	★
											16.6	STAWN1660T	★
											16.7	STAWN1670T	★
	3	STAWSN1700S20	★	51	64.0	88.0	138.0	135	20	TIP10W	16.8	STAWN1680T	★
											16.9	STAWN1690T	★
	5	STAWMN1700S20	★	85	98.1	123.1	173.1	170	20	TIP10W	17.0	STAWN1700T	★
											17.1	STAWN1710T	★
											17.2	STAWN1720T	★
	8	STAWLN1700S20	★	136	149.1	169.1	219.1	216	20	TIP10W	17.3	STAWN1730T	★
											17.4	STAWN1740T	★
17.5 | 18.4	1.5	STAWSS1800S20	★	27	40.2	58.2	108.2	105	20	TIP10W	17.5	* STAWN1750T	★
											17.6	STAWN1760T	★
											17.7	STAWN1770T	★
	3	STAWSN1800S20	★	54	67.2	93.2	143.2	140	20	TIP10W	17.8	STAWN1780T	★
											17.9	STAWN1790T	★
	5	STAWMN1800S20	★	90	103.3	128.3	178.3	175	20	TIP10W	18.0	STAWN1800T	★
											18.1	STAWN1810T	★
											18.2	STAWN1820T	★
	8	STAWLN1800S20	★	144	157.3	177.3	227.3	224	20	TIP10W	18.3	STAWN1830T	★
											18.4	STAWN1840T	★

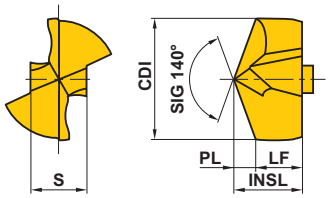
Note 1) The above dimensions (*) are for when installing the inserts.
Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

● : USA Stock ★ : Stocked in Japan
<One insert in one case>

INSERTS

INCH STANDARD





For General Use

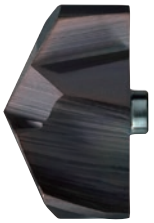
Order Number	Coated	Dimensions (inch)					Applicable Holder	
	VP15TF	CDI	INSL	LF	PL	S	inch	metric
STAWN0025TH	●	.3906	.216	.150	.066	.181	STAW○○0026	STAW○○1000S16
STAWN0026TH	●	.4062	.216	.150	.066	.181	STAW○○0026	STAW○○1000S16
STAWN0027TH	●	.4219	.226	.157	.069	.190	STAW○○0027	STAW○○1050S16
STAWN0028TH	●	.4375	.237	.165	.073	.199	STAW○○0028	STAW○○1100S16
STAWN0029TH	●	.4531	.248	.172	.076	.208	STAW○○0030	STAW○○1150S16
STAWN0030TH	●	.4688	.248	.172	.076	.208	STAW○○0030	STAW○○1150S16
STAWN0031TH	●	.4844	.259	.180	.079	.217	STAW○○0031	STAW○○1200S16
STAWN0032TH	●	.5000	.270	.187	.083	.226	STAW○○0032	STAW○○1250S16
STAWN0033TH	●	.5156	.280	.194	.086	.235	STAW○○0034	STAW○○1300S16
STAWN0034TH	●	.5312	.280	.194	.086	.235	STAW○○0034	STAW○○1300S16
STAWN0035TH	●	.5469	.291	.202	.089	.244	STAW○○0035	STAW○○1350S16
STAWN0036TH	●	.5625	.302	.209	.093	.254	STAW○○0036	STAW○○1400S16
STAWN0037TH	●	.5781	.313	.217	.096	.263	STAW○○0037	STAW○○1450S16
STAWN0038TH	●	.5938	.324	.224	.099	.272	STAW○○0039	STAW○○1500S20
STAWN0039TH	●	.6094	.324	.224	.099	.272	STAW○○0039	STAW○○1500S20
STAWN0040T	●	.6250	.334	.232	.102	.281	STAW○○0041	STAW○○1600S20
STAWN0041T	●	.6406	.334	.232	.102	.281	STAW○○0041	STAW○○1600S20
STAWN0042T	●	.6563	.356	.247	.109	.299	STAW○○0044	STAW○○1700S20
STAWN0043T	●	.6719	.356	.247	.109	.299	STAW○○0044	STAW○○1700S20
STAWN0044T	●	.6875	.356	.247	.109	.299	STAW○○0044	STAW○○1700S20
STAWN0045T	●	.7031	.378	.262	.116	.317	STAW○○0046	STAW○○1800S20
STAWN0046T	●	.7188	.378	.262	.116	.317	STAW○○0046	STAW○○1800S20

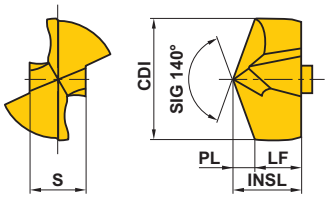
CUTTING CONDITIONS ➤ L226
HOW TO USE ➤ L227

STAW

INSERTS

METRIC STANDARD





For General Use

Order Number	Coated	Dimensions (mm)					Applicable Holder	
	VP15TF	CDI	INSL	LF	PL	S	inch	metric
STAWN1000TH	●	10.0	5.6	3.8	1.8	4.6	STAW○○0026	STAW○○1000S16
STAWN1010TH	●	10.1	5.6	3.8	1.8	4.6	STAW○○0026	STAW○○1000S16
STAWN1020TH	●	10.2	5.7	3.8	1.9	4.6	STAW○○0026	STAW○○1000S16
STAWN1030TH	●	10.3	5.7	3.8	1.9	4.6	STAW○○0026	STAW○○1000S16
STAWN1040TH	●	10.4	5.7	3.8	1.9	4.6	STAW○○0026	STAW○○1000S16
STAWN1050TH	●	10.5	5.9	4.0	1.9	4.8	STAW○○0027	STAW○○1050S16
STAWN1060TH	●	10.6	5.9	4.0	1.9	4.8	STAW○○0027	STAW○○1050S16
STAWN1070TH	●	10.7	5.9	4.0	1.9	4.8	STAW○○0027	STAW○○1050S16
STAWN1080TH	●	10.8	6.0	4.0	2.0	4.8	STAW○○0027	STAW○○1050S16
STAWN1090TH	●	10.9	6.0	4.0	2.0	4.8	STAW○○0027	STAW○○1050S16
STAWN1100TH	●	11.0	6.2	4.2	2.0	5.1	STAW○○0028	STAW○○1100S16
STAWN1110TH	●	11.1	6.2	4.2	2.0	5.1	STAW○○0028	STAW○○1100S16
STAWN1120TH	●	11.2	6.2	4.2	2.0	5.1	STAW○○0028	STAW○○1100S16
STAWN1130TH	●	11.3	6.3	4.2	2.1	5.1	STAW○○0028	STAW○○1100S16
STAWN1140TH	●	11.4	6.3	4.2	2.1	5.1	STAW○○0028	STAW○○1100S16
STAWN1150TH	●	11.5	6.5	4.4	2.1	5.3	STAW○○0030	STAW○○1150S16
STAWN1160TH	●	11.6	6.5	4.4	2.1	5.3	STAW○○0030	STAW○○1150S16
STAWN1170TH	●	11.7	6.5	4.4	2.1	5.3	STAW○○0030	STAW○○1150S16
STAWN1180TH	●	11.8	6.5	4.4	2.1	5.3	STAW○○0030	STAW○○1150S16
STAWN1190TH	●	11.9	6.6	4.4	2.2	5.3	STAW○○0030	STAW○○1150S16
STAWN1200TH	●	12.0	6.8	4.6	2.2	5.5	STAW○○0031	STAW○○1200S16
STAWN1210TH	●	12.1	6.8	4.6	2.2	5.5	STAW○○0031	STAW○○1200S16
STAWN1220TH	●	12.2	6.8	4.6	2.2	5.5	STAW○○0031	STAW○○1200S16
STAWN1230TH	●	12.3	6.8	4.6	2.2	5.5	STAW○○0031	STAW○○1200S16
STAWN1240TH	●	12.4	6.9	4.6	2.3	5.5	STAW○○0031	STAW○○1200S16
STAWN1250TH	●	12.5	7.1	4.8	2.3	5.8	STAW○○0032	STAW○○1250S16
STAWN1260TH	●	12.6	7.1	4.8	2.3	5.8	STAW○○0032	STAW○○1250S16
STAWN1270TH	●	12.7	7.1	4.8	2.3	5.8	STAW○○0032	STAW○○1250S16
STAWN1280TH	●	12.8	7.1	4.8	2.3	5.8	STAW○○0032	STAW○○1250S16
STAWN1290TH	●	12.9	7.1	4.8	2.3	5.8	STAW○○0032	STAW○○1250S16
STAWN1300TH	●	13.0	7.3	4.9	2.4	6.0	STAW○○0034	STAW○○1300S16
STAWN1310TH	●	13.1	7.3	4.9	2.4	6.0	STAW○○0034	STAW○○1300S16
STAWN1320TH	●	13.2	7.3	4.9	2.4	6.0	STAW○○0034	STAW○○1300S16
STAWN1330TH	●	13.3	7.3	4.9	2.4	6.0	STAW○○0034	STAW○○1300S16
STAWN1340TH	●	13.4	7.3	4.9	2.4	6.0	STAW○○0034	STAW○○1300S16
STAWN1350TH	●	13.5	7.6	5.1	2.5	6.2	STAW○○0035	STAW○○1350S16
STAWN1360TH	●	13.6	7.6	5.1	2.5	6.2	STAW○○0035	STAW○○1350S16
STAWN1370TH	●	13.7	7.6	5.1	2.5	6.2	STAW○○0035	STAW○○1350S16

● : USA Stock
<One insert in one case>

Order Number	Coated	Dimensions (mm)					Applicable Holder	
	VP15TF	CDI	INSL	LF	PL	S	inch	metric
STAWN1380TH	●	13.8	7.6	5.1	2.5	6.2	STAW○○0035	STAW○○1350S16
STAWN1390TH	●	13.9	7.6	5.1	2.5	6.2	STAW○○0035	STAW○○1350S16
STAWN1400TH	●	14.0	7.8	5.3	2.5	6.4	STAW○○0036	STAW○○1400S16
STAWN1410TH	●	14.1	7.9	5.3	2.6	6.4	STAW○○0036	STAW○○1400S16
STAWN1420TH	●	14.2	7.9	5.3	2.6	6.4	STAW○○0036	STAW○○1400S16
STAWN1430TH	●	14.3	7.9	5.3	2.6	6.4	STAW○○0036	STAW○○1400S16
STAWN1440TH	●	14.4	7.9	5.3	2.6	6.4	STAW○○0036	STAW○○1400S16
STAWN1450TH	●	14.5	8.1	5.5	2.6	6.7	STAW○○0037	STAW○○1450S16
STAWN1460TH	●	14.6	8.2	5.5	2.7	6.7	STAW○○0037	STAW○○1450S16
STAWN1470TH	●	14.7	8.2	5.5	2.7	6.7	STAW○○0037	STAW○○1450S16
STAWN1480TH	●	14.8	8.2	5.5	2.7	6.7	STAW○○0037	STAW○○1450S16
STAWN1490TH	●	14.9	8.2	5.5	2.7	6.7	STAW○○0037	STAW○○1450S16
STAWN1500TH	●	15.0	8.4	5.7	2.7	6.9	STAW○○0039	STAW○○1500S16
STAWN1510TH	●	15.1	8.4	5.7	2.7	6.9	STAW○○0039	STAW○○1500S16
STAWN1520TH	●	15.2	8.5	5.7	2.8	6.9	STAW○○0039	STAW○○1500S16
STAWN1530TH	●	15.3	8.5	5.7	2.8	6.9	STAW○○0039	STAW○○1500S16
STAWN1540TH	●	15.4	8.5	5.7	2.8	6.9	STAW○○0039	STAW○○1500S16
STAWN1550T	●	15.5	8.7	5.9	2.8	7.1	STAW○○0041	STAW○○1600S16
STAWN1560T	●	15.6	8.7	5.9	2.8	7.1	STAW○○0041	STAW○○1600S16
STAWN1570T	●	15.7	8.8	5.9	2.9	7.1	STAW○○0041	STAW○○1600S16
STAWN1580T	●	15.8	8.8	5.9	2.9	7.1	STAW○○0041	STAW○○1600S16
STAWN1590T	●	15.9	8.8	5.9	2.9	7.1	STAW○○0041	STAW○○1600S16
STAWN1600T	●	16.0	8.8	5.9	2.9	7.1	STAW○○0041	STAW○○1600S16
STAWN1610T	●	16.1	8.8	5.9	2.9	7.1	STAW○○0041	STAW○○1600S16
STAWN1620T	●	16.2	8.8	5.9	2.9	7.1	STAW○○0041	STAW○○1600S16
STAWN1630T	●	16.3	8.9	5.9	3.0	7.1	STAW○○0041	STAW○○1600S16
STAWN1640T	●	16.4	8.9	5.9	3.0	7.1	STAW○○0041	STAW○○1600S16
STAWN1650T	●	16.5	9.3	6.3	3.0	7.6	STAW○○0044	STAW○○1700S16
STAWN1660T	●	16.6	9.3	6.3	3.0	7.6	STAW○○0044	STAW○○1700S16
STAWN1670T	●	16.7	9.3	6.3	3.0	7.6	STAW○○0044	STAW○○1700S16
STAWN1680T	●	16.8	9.4	6.3	3.1	7.6	STAW○○0044	STAW○○1700S16
STAWN1690T	●	16.9	9.4	6.3	3.1	7.6	STAW○○0044	STAW○○1700S16
STAWN1700T	●	17.0	9.4	6.3	3.1	7.6	STAW○○0044	STAW○○1700S16
STAWN1710T	●	17.1	9.4	6.3	3.1	7.6	STAW○○0044	STAW○○1700S16
STAWN1720T	●	17.2	9.4	6.3	3.1	7.6	STAW○○0044	STAW○○1700S16
STAWN1730T	●	17.3	9.4	6.3	3.1	7.6	STAW○○0044	STAW○○1700S16
STAWN1740T	●	17.4	9.5	6.3	3.2	7.6	STAW○○0044	STAW○○1700S16
STAWN1750T	●	17.5	9.9	6.7	3.2	8.1	STAW○○0046	STAW○○1800S16
STAWN1760T	●	17.6	9.9	6.7	3.2	8.1	STAW○○0046	STAW○○1800S16
STAWN1770T	●	17.7	9.9	6.7	3.2	8.1	STAW○○0046	STAW○○1800S16
STAWN1780T	●	17.8	9.9	6.7	3.2	8.1	STAW○○0046	STAW○○1800S16
STAWN1790T	●	17.9	10.0	6.7	3.3	8.1	STAW○○0046	STAW○○1800S16
STAWN1800T	●	18.0	10.0	6.7	3.3	8.1	STAW○○0046	STAW○○1800S16
STAWN1810T	●	18.1	10.0	6.7	3.3	8.1	STAW○○0046	STAW○○1800S16
STAWN1820T	●	18.2	10.0	6.7	3.3	8.1	STAW○○0046	STAW○○1800S16
STAWN1830T	●	18.3	10.0	6.7	3.3	8.1	STAW○○0046	STAW○○1800S16
STAWN1840T	●	18.4	10.0	6.7	3.3	8.1	STAW○○0046	STAW○○1800S16

STAW

HONE WIDTH

If an insert with honing other than standard is needed, please order using the symbols below.

(Insert Order Number)

S T A W N 1 0 0 0 T ○

- S T A W: TAW Product Name
- N: N : General Use / K : Cuting tooth form for cast iron
- 1 0 0 0: Insert Diameter
- T: Honing Symbol
- ○: Honing Type

(Honing Standard)

Honing Type	Hone Width (inch)
F	0
G	.0008 — .0020
H	.0020 — .0039
-	.0039 — .0059
K	.0059 — .0079
S	.0079 — .0098
M	.0098 — .0118

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		DC Conditions / Hardness	ϕ.3906"—ϕ.5000" ϕ10.0—ϕ12.9mm		ϕ.5156"—ϕ.5469" ϕ13.0—ϕ13.9mm		ϕ.5625"—ϕ.6094" ϕ14.0—ϕ15.4mm		ϕ.62506"—ϕ.7188" ϕ15.5—ϕ18.4mm	
			Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)
P	Mild Steel	≤180HB	260 (195—330)	.008 (.006—.010)	295 (230—360)	.010 (.008—.012)	330 (260—390)	.012 (.010—.014)	330 (260—390)	.014 (.010—.016)
P	Carbon Steel Alloy Steel	180—280HB	260 (195—330)	.008 (.006—.010)	295 (230—360)	.010 (.008—.012)	330 (260—390)	.012 (.010—.014)	330 (260—390)	.014 (.010—.016)
P	Carbon Steel Alloy Steel	280—350HB	230 (195—295)	.008 (.006—.010)	260 (195—330)	.010 (.008—.012)	295 (230—360)	.010 (.008—.012)	295 (230—360)	.012 (.008—.014)
M	Stainless Steel	≤200HB	130 (100—165)	.005 (.004—.006)	165 (130—195)	.006 (.005—.007)	195 (165—230)	.007 (.006—.008)	195 (165—230)	.006 (.005—.008)
K	Gray Cast Iron	Tensile Strength ≤350MPa	260 (195—330)	.008 (.006—.010)	295 (230—360)	.010 (.008—.012)	330 (260—390)	.012 (.010—.014)	390 (260—460)	.018 (.014—.022)
K	Ductile Cast Iron	Tensile Strength ≤450MPa	230 (195—295)	.008 (.006—.010)	260 (195—330)	.010 (.008—.012)	295 (230—360)	.012 (.010—.014)	330 (260—390)	.014 (.010—.016)

Note 1) When using a drill for DCx1.5 depth of hole, it is possible to increase the feed rate by approx. 20%.
Note 2) When using a drill for DCx8 depth of hole, please decrease the cutting speed by approx. 20%.
Note 3) When using a drill for DCx8 depth of hole, it is recommended to make a pilot hole of the same size.
Note 4) For stainless steel, please use internal coolant. (Mist & MQL are not recommended).

SPARE PARTS

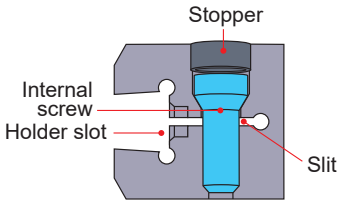
Applicable Holder	inch	mm	Pack Order Number (Internal screw & stopper)	Internal Screw	Stopper
STAWSS STAWSN STAWMN STAWLN	0026	1000S16	WS203107TPS-35LH	WS203107TPS	WS35LH
	0027	1050S16	WS203107TPS-35LH	WS203107TPS	WS35LH
	0028	1100S16	WS203108TPS-35LH	WS203108TPS	WS35LH
	0030	1150S16	WS203108TPS-35LH	WS203108TPS	WS35LH
	0031	1200S16	WS203108TPS-35LH	WS203108TPS	WS35LH
	0032	1250S16	WS203108TPS-35LH	WS203108TPS	WS35LH
	0034	1300S16	WS253909TPS-45LH	WS253909TPS	WS45LH
	0035	1350S16	WS253909TPS-45LH	WS253909TPS	WS45LH
	0036	1400S16	WS253909TPS-45LH	WS253909TPS	WS45LH
	0037	1450S16	WS253909TPS-45LH	WS253909TPS	WS45LH
	0039	1500S20	WS253909TPS-45LH	WS253909TPS	WS45LH
	0041	1600S20	WS304912TPS-55LH	WS304912TPS	WS55LH
	0044	1700S20	WS304912TPS-55LH	WS304912TPS	WS55LH
	0046	1800S20	WS304912TPS-55LH	WS304912TPS	WS55LH

* Clamp Torque (lbf-in) : WS203107TPS=8.9, WS203108TPS=8.9, WS253909TPS=17.7, WS304912TPS=22.1
Note 1) The parts included in the package are internal screw, stopper and operation manual. Please replace the parts in accordance with the operation manual.

NOTES ON USE

■INSERT INSTALLATION

1. Before inserting the insert into the holder, ensure that there are no foreign objects or dirt in the holder slot or slit. Clean using compressed air if necessary.



2. Use the wrench provided to loosen the inner screw to open the tip of the holder, then place the insert into the holder slot as shown in figure 1.
   *Ensure that the wrench is firmly in contact with the base of the inner screw head when tightening.

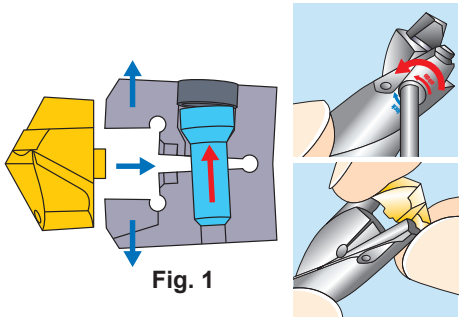


Fig. 1

3. After the insert has been set in the holder slot, tighten the inner screw while pushing the insert lightly into the pocket as shown in figure 2 to securely clamp and locate the insert.
   *Ensure that the wrench is firmly in contact with the base of the inner screw head when tightening.

Tighten clamp screws referring to the table for torque.

DC		Clamping Force	
		lbf-in	N · m
.3906"－.4844"	10mm－12.5mm	8.9	1
.5000"－.5781"	13mm－15mm	17.7	2
.5938"－.7188"	16mm－18mm	22.1	2.5

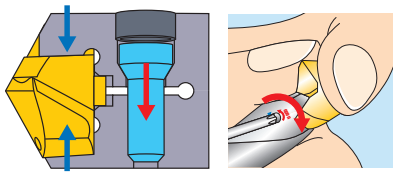
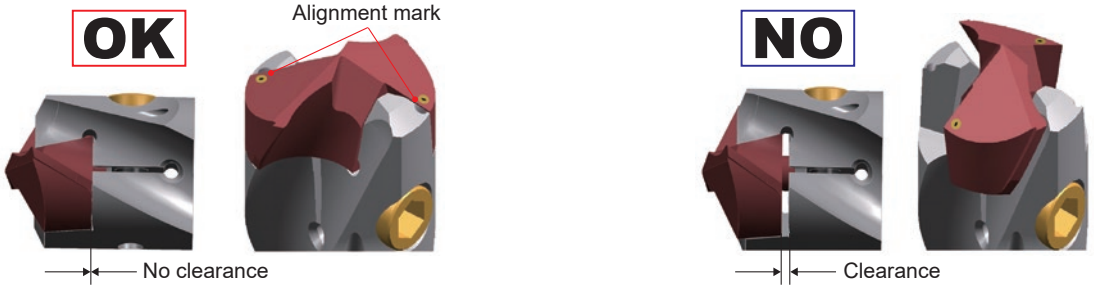


Fig. 2

4. Check there is no gap between the bottom of the insert and holder slot.



Note 1) Poor or incorrect clamping of inserts can cause poor drilling performance and/or drill breakage.
Therefore ensure that the alignment marks on both the body and insert are aligned when setting.
When machining, use safety guards and goggles.

TAW

- Wavy cutting edge design for good chip control.
- Serration geometry for accurate insert location.

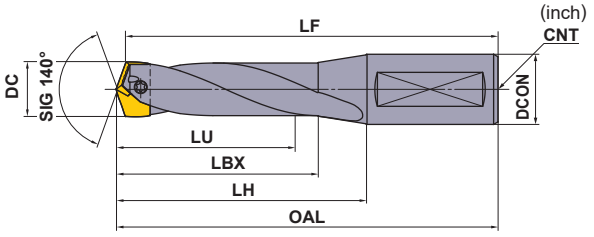
P | M | K | N | S | H

.5625≤DC≤.6875	.7031≤DC≤1.1719	DC=1.1875
−.00063 −.00134	−.00079 −.00161	−.00098 −.00197

INCH STANDARD

L/D=3

Internal Coolant



Holder		Dimensions (inch)							*				DC (inch)	Insert	
Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	CNT	Insert Screw	Wrench	Plate	Anti-seize Lubricant		Order Number	Stock VP15TF
TAWSN0049	●	2.319	2.811	4.032	6.282	6.148	1.000	1/8-27	WS304517T	TKY10T	WPT4405	MK1KS	.7344	*TAWNH0047T	●
													.7500	TAWNH0048T	●
													.7656	TAWNH0049T	●
TAWSN0051	●	2.441	2.977	4.040	6.290	6.148	1.000	1/8-27	WS304518T	TKY10T	WPT4405	MK1KS	.7813	*TAWNH0050T	●
													.7969	TAWNH0051T	●
TAWSN0054	●	2.567	3.101	4.046	6.296	6.148	1.000	1/8-27	WS304518T	TKY10T	WPT4405	MK1KS	.8125	*TAWNH0052T	●
													.8281	TAWNH0053T	●
													.8438	TAWNH0054T	●
TAWSN0056	●	2.693	3.266	4.250	6.500	6.344	1.000	1/8-27	WS355520T	TKY15T	WPT4405	MK1KS	.8594	*TAWNH0055T	●
													.8750	TAWNH0056T	●
TAWSN0059	●	2.819	3.390	4.256	6.506	6.344	1.000	1/8-27	WS355521T	TKY15T	WPT4405	MK1KS	.8906	*TAWNH0057T	●
													.9063	TAWNH0058T	●
													.9219	TAWNH0059T	●
TAWSN0061	●	2.945	3.557	4.502	6.877	6.706	1.250	1/4-18	WS355521T	TKY15T	WPT4405	MK1KS	.9375	*TAWNH0060T	●
													.9531	TAWNH0061T	●
TAWSN0100	●	3.071	3.641	4.507	6.882	6.706	1.250	1/4-18	WS406023T	TKY25T	WPT4405	MK1KS	.9688	*TAWNH0062T	●
													.9844	TAWNH0063T	●
													1.0000	TAWNH0100T	●
TAWSN0102	●	3.193	3.807	4.713	7.088	6.903	1.250	1/4-18	WS406024T	TKY25T	WPT4405	MK1KS	1.0156	*TAWNH0101T	●
													1.0313	TAWNH0102T	●

* Clamp Torque (lbf-in) : WS304517T=31, WS304518T=31, WS355520T=49, WS355521T=49, WS406023T=75, WS406024T=75

Note 1) The above dimensions (*) are for when installing the inserts.

Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

● : USA Stock

Holder		Dimensions (inch)							*				DC (inch)	Insert	
Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	CNT	Insert Screw	Wrench	Plate	Anti-seize Lubricant		Order Number	Stock VP15TF
TAWSN0105	●	3.319	3.892	4.719	7.094	6.903	1.250	1/4-18	WS406024T	TKY25T	WPT4405	MK1KS	1.0469	*TAWNH0103T	●
													1.0625	**TAWNH0104T**	●
													1.0781	**TAWNH0105T**	●
TAWSN0107	●	3.445	4.018	4.923	7.298	7.099	1.250	1/4-18	WS508026T	TKY27T	WPT4405	MK1KS	1.0938	*TAWNH0106T	●
													1.1094	**TAWNH0107T**	●
TAWSN0110	●	3.571	4.142	5.126	7.501	7.296	1.250	1/4-18	WS508027T	TKY27T	WPT4405	MK1KS	1.1250	*TAWNH0108T	●
													1.1406	**TAWNH0109T**	●
													1.1563	**TAWNH0110T**	●
TAWSN0112	●	3.697	4.307	5.134	7.509	7.296	1.250	1/4-18	WS508027T	TKY27T	WPT4405	MK1KS	1.1719	*TAWNH0111T	●
													1.1875	**TAWNH0112T**	●

* Clamp Torque (lbf-in) : WS406024T=75, WS508026T=110, WS508027T=110

ISO13399 ➤ L003
INSERTS ➤ L237
CUTTING CONDITIONS ➤ L236
HOW TO USE ➤ L236

TAW

- Wavy cutting edge design for good chip control.
- Serration geometry for accurate insert location.

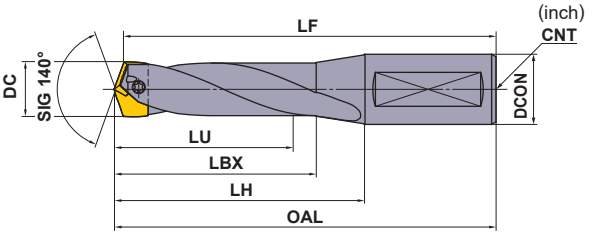
P | M | K | N | S | H

.5625≤DC≤.6875	.7031≤DC≤1.1719	DC=1.1875
−.00063 −.00134	−.00079 −.00161	−.00098 −.00197

INCH STANDARD

L/D=5

Internal Coolant



Holder		Dimensions (inch)							*				DC (inch)	Insert	
Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	CNT	Insert Screw	Wrench	Plate	Anti-seize Lubricant		Order Number	Stock VP15TF
TAWMN0049	●	3.776	4.347	5.410	7.660	7.526	1.000	1/8-27	WS304517T	TKY10T	WPT4405	MK1KS	.7344	*TAWNH0047T	●
													.7500	TAWNH0048T	●
													.7656	TAWNH0049T	●
TAWMN0051	●	3.976	4.591	5.614	7.864	7.722	1.000	1/8-27	WS304518T	TKY10T	WPT4405	MK1KS	.7813	*TAWNH0050T	●
													.7969	TAWNH0051T	●
TAWMN0054	●	4.181	4.794	5.620	7.870	7.722	1.000	1/8-27	WS304518T	TKY10T	WPT4405	MK1KS	.8125	*TAWNH0052T	●
													.8281	TAWNH0053T	●
													.8438	TAWNH0054T	●
TAWMN0056	●	4.386	5.038	5.825	8.075	7.919	1.000	1/8-27	WS355520T	TKY15T	WPT4405	MK1KS	.8594	*TAWNH0055T	●
													.8750	TAWNH0056T	●
TAWMN0059	●	4.591	5.241	6.225	8.475	8.313	1.000	1/8-27	WS355521T	TKY15T	WPT4405	MK1KS	.8906	*TAWNH0057T	●
													.9063	TAWNH0058T	●
													.9219	TAWNH0059T	●
TAWMN0061	●	4.795	5.486	6.470	8.845	8.674	1.250	1/4-18	WS355521T	TKY15T	WPT4405	MK1KS	.9375	*TAWNH0060T	●
													.9531	TAWNH0061T	●
TAWMN0100	●	5.000	5.688	6.672	9.047	8.871	1.250	1/4-18	WS406023T	TKY25T	WPT4405	MK1KS	.9688	*TAWNH0062T	●
													.9844	TAWNH0063T	●
													1.0000	TAWNH0100T	●
TAWMN0102	●	5.201	5.933	6.878	9.253	9.068	1.250	1/4-18	WS406024T	TKY25T	WPT4405	MK1KS	1.0156	*TAWNH0101T	●
													1.0313	TAWNH0102T	●

* Clamp Torque (lbf-in) : WS304517T=31, WS304518T=31, WS355520T=49, WS355521T=49, WS406023T=75, WS406024T=75

Note 1) The above dimensions (*) are for when installing the inserts.

Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

● : USA Stock

Holder		Dimensions (inch)							*				DC (inch)	Insert	
Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	CNT	Insert Screw	Wrench	Plate	Anti-seize Lubricant		Order Number	Stock VP15TF
TAWMN0105	●	5.406	6.136	7.081	9.456	9.265	1.250	1/4-18	WS406024T	TKY25T	WPT4405	MK1KS	1.0469	*TAWNH0103T	●
													1.0625	**TAWNH0104T**	●
													1.0781	**TAWNH0105T**	●
TAWMN0107	●	5.610	6.380	7.286	9.661	9.462	1.250	1/4-18	WS508026T	TKY27T	WPT4405	MK1KS	1.0938	*TAWNH0106T	●
													1.1094	**TAWNH0107T**	●
TAWMN0110	●	5.815	6.583	7.488	9.863	9.658	1.250	1/4-18	WS508027T	TKY27T	WPT4405	MK1KS	1.1250	*TAWNH0108T	●
													1.1406	**TAWNH0109T**	●
													1.1563	**TAWNH0110T**	●
TAWMN0112	●	6.020	6.788	7.890	10.265	10.052	1.250	1/4-18	WS508027T	TKY27T	WPT4405	MK1KS	1.1719	*TAWNH0111T	●
													1.1875	**TAWNH0112T**	●

* Clamp Torque (lbf-in) : WS406024T=75, WS508026T=110, WS508027T=110

ISO13399 ➤ L003
INSERTS ➤ L237
CUTTING CONDITIONS ➤ L236
HOW TO USE ➤ L236

TAW

- Wavy cutting edge design for good chip control.
- Serration geometry for accurate insert location.

P | M | K | N | S | H

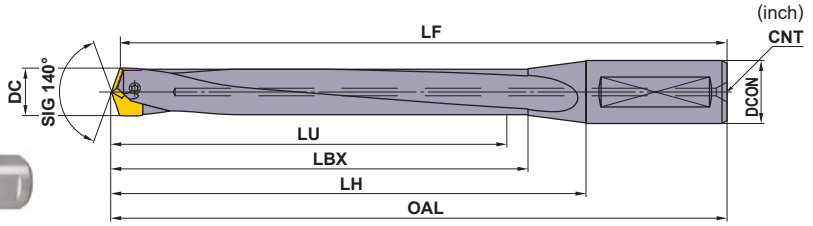
.5625≤DC≤.6875	.7031≤DC≤1.1719	DC=1.1875
−.00063 −.00134	−.00079 −.00161	−.00098 −.00197

(inch)

INCH STANDARD

L/D=8

Internal Coolant



Holder		Dimensions (inch)							*				DC (inch)	Insert	
Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	CNT	Insert Screw	Wrench	Plate	Anti-seize Lubricant		Order Number	Stock VP15TF
TAWLN0049	●	5.961	6.512	7.417	9.669	9.535	1.000	1/8-27	WS304517T	TKY10T	WPT4405	MK1KS	.7344	*TAWNH0047T	●
													.7500	TAWNH0048T	●
													.7656	TAWNH0049T	●
TAWLN0051	●	6.280	6.835	7.740	9.992	9.850	1.000	1/8-27	WS304518T	TKY10T	WPT4405	MK1KS	.7813	*TAWNH0050T	●
													.7969	TAWNH0051T	●
TAWLN0054	●	6.602	7.156	8.101	10.353	10.205	1.000	1/8-27	WS304518T	TKY10T	WPT4405	MK1KS	.8125	*TAWNH0052T	●
													.8281	TAWNH0053T	●
													.8438	TAWNH0054T	●
TAWLN0056	●	6.925	7.479	8.424	10.676	10.520	1.000	1/8-27	WS355520T	TKY15T	WPT4405	MK1KS	.8594	*TAWNH0055T	●
													.8750	TAWNH0056T	●
TAWLN0059	●	7.248	7.800	8.942	11.193	11.031	1.000	1/8-27	WS355521T	TKY15T	WPT4405	MK1KS	.8906	*TAWNH0057T	●
													.9063	TAWNH0058T	●
													.9219	TAWNH0059T	●
TAWLN0061	●	7.571	8.124	9.305	11.679	11.508	1.250	1/4-18	WS355521T	TKY15T	WPT4405	MK1KS	.9375	*TAWNH0060T	●
													.9531	TAWNH0061T	●
TAWLN0100	●	7.894	8.444	9.625	11.999	11.823	1.250	1/4-18	WS406023T	TKY25T	WPT4405	MK1KS	.9688	*TAWNH0062T	●
													.9844	TAWNH0063T	●
													1.0000	TAWNH0100T	●
TAWLN0102	●	8.213	8.768	9.949	12.323	12.138	1.250	1/4-18	WS406024T	TKY25T	WPT4405	MK1KS	1.0156	*TAWNH0101T	●
													1.0313	TAWNH0102T	●

* Clamp Torque (lbf-in) : WS304517T=31, WS304518T=31, WS355520T=49, WS355521T=49, WS406023T=75, WS406024T=75

Note 1) The above dimensions (*) are for when installing the inserts.

Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

● : USA Stock

Holder		Dimensions (inch)							*				DC (inch)	Insert	
Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	CNT	Insert Screw	Wrench	Plate	Anti-seize Lubricant		Order Number	Stock VP15TF
TAWLN0105	●	8.535	9.089	10.270	12.644	12.453	1.250	1/4-18	WS406024T	TKY25T	WPT4405	MK1KS	1.0469	*TAWNH0103T	●
													1.0625	**TAWNH0104T**	●
													1.0781	**TAWNH0105T**	●
TAWLN0107	●	8.858	9.412	10.593	12.967	12.768	1.250	1/4-18	WS508026T	TKY27T	WPT4405	MK1KS	1.0938	*TAWNH0106T	●
													1.1094	**TAWNH0107T**	●
TAWLN0110	●	9.181	9.733	10.914	13.288	13.083	1.250	1/4-18	WS508027T	TKY27T	WPT4405	MK1KS	1.1250	*TAWNH0108T	●
													1.1406	**TAWNH0109T**	●
													1.1563	**TAWNH0110T**	●
TAWLN0112	●	9.504	10.056	11.433	13.807	13.594	1.250	1/4-18	WS508027T	TKY27T	WPT4405	MK1KS	1.1719	*TAWNH0111T	●
													1.1875	**TAWNH0112T**	●

* Clamp Torque (lbf-in) : WS406024T=75, WS508026T=110, WS508027T=110

ISO13399 ➤ L003
INSERTS ➤ L237
CUTTING CONDITIONS ➤ L236
HOW TO USE ➤ L236

TAW

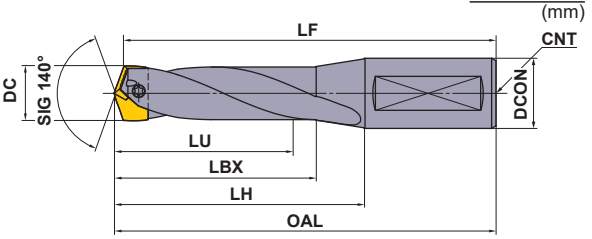
- Wavy cutting edge design for good chip control.
- Serration geometry for accurate insert location.

P | M | K | N | S | H

18<DC≤30
0
−0.021
(mm)

METRIC STANDARD

Internal Coolant



Hole Depth (L/D)	Holder Order Number	Stock	LU	LBX	LH	OAL	LF	DCON	Insert Screw *	Wrench	Plate	Anti-seize Lubricant	DC (mm)	Insert Order Number	Stock VP15TF
3	TAWSN1900S25	★	58.9	71.4	102.4	158.4	155.0	25	WS304517T	TKY10T	WPT4405	MK1KS	18.5	* TAWNH1850T	●
													18.6	TAWNH1860T	●
													18.7	TAWNH1870T	●
5	TAWMN1900S25	★	95.9	110.4	137.4	193.4	190.0	25	WS304517T	TKY10T	WPT4405	MK1KS	18.8	TAWNH1880T	●
													18.9	TAWNH1890T	●
													19.0	TAWNH1900T	●
8	TAWLN1900S25	★	151.4	165.5	188.5	244.5	241.0	25	WS304517T	TKY10T	WPT4405	MK1KS	19.1	TAWNH1910T	●
													19.2	TAWNH1920T	●
													19.3	TAWNH1930T	●
													19.4	TAWNH1940T	●
3	TAWSN2000S25	★	62.0	75.5	102.5	158.5	155.0	25	WS304518T	TKY10T	WPT4405	MK1KS	19.5	* TAWNH1950T	●
													19.6	TAWNH1960T	●
5	TAWMN2000S25	★	101.0	116.6	142.6	198.6	195.0	25	WS304518T	TKY10T	WPT4405	MK1KS	19.7	TAWNH1970T	●
													19.8	TAWNH1980T	●
8	TAWLN2000S25	★	159.5	173.7	196.7	252.7	249.0	25	WS304518T	TKY10T	WPT4405	MK1KS	19.9	TAWNH1990T	●
													20.0	TAWNH2000T	●
3	TAWSN2100S25	★	65.2	78.7	102.7	158.7	155.0	25	WS304518T	TKY10T	WPT4405	MK1KS	20.5	TAWNH2050T	●
5	TAWMN2100S25	★	106.2	121.8	142.8	198.8	195.0	25	WS304518T	TKY10T	WPT4405	MK1KS			
8	TAWLN2100S25	★	167.7	181.9	205.9	261.9	258.0	25	WS304518T	TKY10T	WPT4405	MK1KS	21.0	TAWNH2100T	●
3	TAWSN2200S25	★	68.4	83.2	108.2	164.2	160.3	25	WS355520T	TKY15T	WPT4405	MK1KS	21.5	TAWNH2150T	●
5	TAWMN2200S25	★	111.4	128.3	148.3	204.3	200.3	25	WS355520T	TKY15T	WPT4405	MK1KS			
8	TAWLN2200S25	★	175.9	190.0	214.0	270.0	266.0	25	WS355520T	TKY15T	WPT4405	MK1KS	22.0	TAWNH2200T	●

* Clamp Torque (lbf-in) : WS304517T=31, WS304518T=31, WS355520T=49

Note 1) The above dimensions (*) are for when installing the inserts.

Note 2) Please contact us for any geometry that is not in this catalog (e.g. different diameter and length).

● : USA Stock

Hole Depth (L/D)	Holder Order Number	Stock	Dimensions (mm) LU	LBX	LH	OAL	LF	DCON	* Insert Screw	Wrench	Plate	Anti-seize Lubricant	DC (mm)	Insert Order Number	Stock VP15TF
3	**TAWSN2300S25**	★	71.6	86.4	108.4	164.4	160.3	25	WS355521T	TKY15T	WPT4405	MK1KS	22.5	* **TAWNH2250T**	●
5	**TAWMN2300S25**	★	116.6	133.4	158.4	214.4	210.3	25	WS355521T	TKY15T	WPT4405	MK1KS			
8	**TAWLN2300S25**	★	184.1	198.2	227.2	283.2	279.0	25	WS355521T	TKY15T	WPT4405	MK1KS	23.0	**TAWNH2300T**	●
3	**TAWSN2400S32**	★	74.8	90.6	114.6	174.6	170.3	32	WS355521T	TKY15T	WPT4405	MK1KS	23.5	* **TAWNH2350T**	●
5	**TAWMN2400S32**	★	121.8	139.6	164.6	224.6	220.3	32	WS355521T	TKY15T	WPT4405	MK1KS			
8	**TAWLN2400S32**	★	192.3	206.4	236.4	296.4	292.0	32	WS355521T	TKY15T	WPT4405	MK1KS	24.0	**TAWNH2400T**	●
3	**TAWSN2500S32**	★	78.0	93.1	115.1	175.1	170.6	32	WS406023T	TKY25T	WPT4405	MK1KS	24.5	* **TAWNH2450T**	●
5	**TAWMN2500S32**	★	127.0	145.1	170.1	230.1	225.6	32	WS406023T	TKY25T	WPT4405	MK1KS			
8	**TAWLN2500S32**	★	200.5	214.6	244.6	304.6	300.0	32	WS406023T	TKY25T	WPT4405	MK1KS	25.0	**TAWNH2500T**	●
3	**TAWSN2600S32**	★	81.1	97.2	120.2	180.2	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS	25.5	* **TAWNH2550T**	●
5	**TAWMN2600S32**	★	132.1	151.3	175.3	235.3	230.6	32	WS406024T	TKY25T	WPT4405	MK1KS			
8	**TAWLN2600S32**	★	208.6	222.8	252.8	312.8	308.0	32	WS406024T	TKY25T	WPT4405	MK1KS	26.0	**TAWNH2600T**	●
3	**TAWSN2700S32**	★	84.3	99.4	120.4	180.4	175.6	32	WS406024T	TKY25T	WPT4405	MK1KS	26.5	* **TAWNH2650T**	●
5	**TAWMN2700S32**	★	137.3	156.5	180.5	240.5	235.6	32	WS406024T	TKY25T	WPT4405	MK1KS			
8	**TAWLN2700S32**	★	216.8	230.9	260.9	320.9	316.0	32	WS406024T	TKY25T	WPT4405	MK1KS	27.0	**TAWNH2700T**	●
3	**TAWSN2800S32**	★	87.5	102.2	125.2	185.2	180.2	32	WS508026T	TKY27T	WPT4405	MK1KS	27.5	* **TAWNH2750T**	●
5	**TAWMN2800S32**	★	142.5	162.3	185.3	245.3	240.2	32	WS508026T	TKY27T	WPT4405	MK1KS			
8	**TAWLN2800S32**	★	225.0	239.1	269.1	329.1	324.0	32	WS508026T	TKY27T	WPT4405	MK1KS	28.0	**TAWNH2800T**	●
3	**TAWSN2900S32**	★	90.7	105.4	130.4	190.4	185.2	32	WS508027T	TKY27T	WPT4405	MK1KS	28.5	* **TAWNH2850T**	●
5	**TAWMN2900S32**	★	147.7	167.4	190.4	250.4	245.2	32	WS508027T	TKY27T	WPT4405	MK1KS			
8	**TAWLN2900S32**	★	233.2	247.3	277.3	337.3	332.0	32	WS508027T	TKY27T	WPT4405	MK1KS	29.0	**TAWNH2900T**	●
3	**TAWSN3000S32**	★	93.9	109.6	130.6	190.6	185.2	32	WS508027T	TKY27T	WPT4405	MK1KS	29.5	* **TAWNH2950T**	●
5	**TAWMN3000S32**	★	152.9	172.6	200.6	260.6	255.2	32	WS508027T	TKY27T	WPT4405	MK1KS			
8	**TAWLN3000S32**	★	241.4	255.5	290.5	350.5	345.0	32	WS508027T	TKY27T	WPT4405	MK1KS	30.0	**TAWNH3000T**	●

* Clamp Torque (lbf-in) : WS355521T=49, WS406023T=75, WS406024T=75, WS508026T=110, WS508027T=110

ISO13399 ➤ L003
INSERTS ➤ L237
CUTTING CONDITIONS ➤ L236
HOW TO USE ➤ L236

TAW

RECOMMENDED CUTTING CONDITIONS

Workpiece Material		DC	ϕ.5625"—ϕ.6094" ϕ14.0—ϕ15.4mm		ϕ.6250"—ϕ.7188" ϕ15.5—ϕ18.4mm		ϕ.7344"—ϕ.8438" ϕ18.5—ϕ21.4mm	
		Conditions / Hardness	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)
P	Mild Steel	≤180HB	230 (195—295)	.008 (.006—.010)	260 (195—330)	.010 (.008—.012)	295 (230—360)	.010 (.008—.012)
P	Carbon Steel Alloy Steel	180—280HB	230 (195—295)	.008 (.006—.010)	260 (195—330)	.010 (.008—.012)	260 (195—330)	.010 (.008—.012)
P	Carbon Steel Alloy Steel	280—350HB	195 (165—260)	.006 (.005—.007)	230 (165—295)	.008 (.006—.010)	230 (165—295)	.008 (.006—.010)
M	Stainless Steel	≤200HB	165 (130—195)	.006 (.005—.007)	165 (130—195)	.006 (.005—.007)	195 (165—230)	.008 (.006—.009)
K	Gray Cast Iron	Tensile Strength ≤350MPa	230 (165—295)	.008 (.006—.010)	330 (195—395)	.010 (.008—.012)	390 (195—460)	.010 (.008—.012)
K	Ductile Cast Iron	Tensile Strength ≤450MPa	230 (165—295)	.008 (.006—.010)	260 (195—295)	.010 (.008—.012)	260 (195—295)	.010 (.008—.012)

Workpiece Material		DC	ϕ.8594"—ϕ.9531" ϕ21.5—ϕ24.4mm		ϕ.9688"—ϕ1.0781" ϕ24.5—ϕ27.4mm		ϕ1.0938"—ϕ1.1875" ϕ27.5—ϕ30.4mm	
		Conditions / Hardness	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)	Cutting Speed **vc** (SFM)	Feed **fr** (IPR)
P	Mild Steel	≤180HB	330 (260—390)	.012 (.010—.014)	360 (260—390)	.012 (.010—.014)	360 (260—390)	.012 (.010—.014)
P	Carbon Steel Alloy Steel	180—280HB	295 (230—360)	.012 (.010—.014)	330 (260—390)	.012 (.010—.014)	330 (260—390)	.012 (.010—.014)
P	Carbon Steel Alloy Steel	280—350HB	260 (195—330)	.010 (.008—.012)	295 (230—360)	.010 (.008—.012)	295 (230—360)	.010 (.008—.012)
M	Stainless Steel	≤200HB	195 (165—230)	.008 (.006—.009)	230 (195—260)	.010 (.008—.011)	230 (195—260)	.010 (.008—.011)
K	Gray Cast Iron	Tensile Strength ≤350MPa	425 (260—490)	.014 (.010—.016)	460 (295—525)	.014 (.010—.016)	460 (295—525)	.016 (.012—.018)
K	Ductile Cast Iron	Tensile Strength ≤450MPa	295 (195—330)	.012 (.010—.014)	330 (260—360)	.012 (.010—.014)	330 (260—360)	.012 (.010—.014)

NOTES ON USE

■INSERT INSTALLATION

- Loosen insert screw of holder to install insert.
- Mesh the insert serration to holder grooves.
- Fasten the insert screw using the provided wrench while holding rake face of the insert lightly with your thumb. (Figure 1)
- Check that there is no clearance between the insert bottom and holder flute end. (Figure 2)

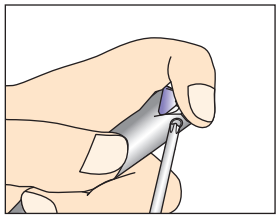


Figure 1

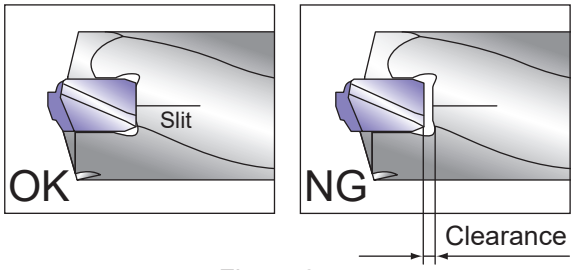


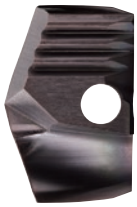
Figure 2

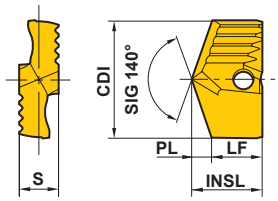
■NOTE ON INSERT REPLACEMENT

- Clean insert guide grooves by blowing air before installing a new insert.
- Clean the “slit” underneath the insert on the holder with the provided plate.
- Use the provided anti-seize lubricant for lubricating the threads of the insert screw.

INSERTS

INCH STANDARD





For General Use

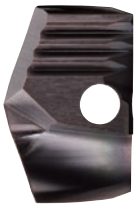
Order Number	Coated	Dimensions (inch)					Applicable Holder	
	VP15TF	CDI	INSL	LF	PL	S	Inch	Metric
TAWNH0047T	●	.7344	.484	.366	.120	.276	TAWS/M/LN0049	TAWS/M/LN1900S25
TAWNH0048T	●	.7500	.484	.362	.123	.276		
TAWNH0049T	●	.7656	.484	.362	.123	.276		
TAWNH0050T	●	.7813	.484	.358	.127	.276	TAWS/M/LN0051	TAWS/M/LN2000S25
TAWNH0051T	●	.7969	.484	.354	.131	.276		
TAWNH0052T	●	.8125	.484	.350	.134	.276	TAWS/M/LN0054	TAWS/M/LN2100S25
TAWNH0053T	●	.8281	.484	.346	.138	.276		
TAWNH0054T	●	.8438	.484	.346	.138	.276		
TAWNH0055T	●	.8594	.555	.417	.140	.315	TAWS/M/LN0056	TAWS/M/LN2200S25
TAWNH0056T	●	.8750	.555	.413	.143	.315		
TAWNH0057T	●	.8906	.555	.409	.147	.315	TAWS/M/LN0059	TAWS/M/LN2300S25
TAWNH0058T	●	.9063	.555	.406	.150	.315		
TAWNH0059T	●	.9219	.555	.406	.150	.315		
TAWNH0060T	●	.9375	.555	.402	.154	.315	TAWS/M/LN0061	TAWS/M/LN2400S32
TAWNH0061T	●	.9531	.555	.398	.157	.315		
TAWNH0062T	●	.9688	.618	.461	.159	.354	TAWS/M/LN0100	TAWS/M/LN2500S32
TAWNH0063T	●	.9844	.618	.457	.163	.354		
TAWNH0100T	●	1.0000	.618	.457	.163	.354		
TAWNH0101T	●	1.0156	.618	.453	.166	.354	TAWS/M/LN0102	TAWS/M/LN2600S32
TAWNH0102T	●	1.0313	.618	.449	.170	.354		
TAWNH0103T	●	1.0469	.618	.445	.174	.354	TAWS/M/LN0105	TAWS/M/LN2700S32
TAWNH0104T	●	1.0625	.618	.445	.174	.354		
TAWNH0105T	●	1.0781	.618	.441	.177	.354		
TAWNH0106T	●	1.0938	.661	.484	.179	.394	TAWS/M/LN0107	TAWS/M/LN2800S32
TAWNH0107T	●	1.1094	.661	.480	.183	.394		
TAWNH0108T	●	1.1250	.661	.476	.186	.394	TAWS/M/LN0110	TAWS/M/LN2900S32
TAWNH0109T	●	1.1406	.661	.476	.186	.394		
TAWNH0110T	●	1.1563	.661	.472	.190	.394		
TAWNH0111T	●	1.1719	.661	.469	.193	.394	TAWS/M/LN0112	TAWS/M/LN3000S32
TAWNH0112T	●	1.1875	.661	.465	.197	.394		

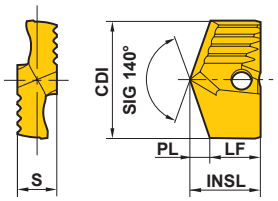
● : USA Stock
<One insert in one case>

TAW

INSERTS

METRIC STANDARD





For General Use

Order Number	Coated	Dimensions (mm)					Applicable Holder	
	VP15TF	CDI	INSL	LF	PL	S	Inch	Metric
TAWNH1850T	●	18.5	12.7	9.3	3.4	7.0		
TAWNH1860T	●	18.6	12.7	9.3	3.4	7.0		
TAWNH1870T	●	18.7	12.7	9.3	3.4	7.0		
TAWNH1880T	●	18.8	12.7	9.3	3.4	7.0	TAWSN0049	TAWSN1900S25
TAWNH1890T	●	18.9	12.7	9.3	3.4	7.0	TAWMN0049	TAWMN1900S25
TAWNH1900T	●	19.0	12.7	9.2	3.5	7.0	TAWLN0049	TAWLN1900S25
TAWNH1910T	●	19.1	12.7	9.2	3.5	7.0		
TAWNH1920T	●	19.2	12.7	9.2	3.5	7.0		
TAWNH1930T	●	19.3	12.7	9.2	3.5	7.0		
TAWNH1940T	●	19.4	12.7	9.2	3.5	7.0		
TAWNH1950T	●	19.5	12.6	9.1	3.5	7.0		
TAWNH1960T	●	19.6	12.7	9.1	3.6	7.0		
TAWNH1970T	●	19.7	12.7	9.1	3.6	7.0	TAWSN0051	TAWSN2000S25
TAWNH1980T	●	19.8	12.7	9.1	3.6	7.0	TAWMN0051	TAWMN2000S25
TAWNH1990T	●	19.9	12.7	9.1	3.6	7.0	TAWLN0051	TAWLN2000S25
TAWNH2000T	●	20.0	12.6	9.0	3.6	7.0		
TAWNH2050T	●	20.5	12.6	8.9	3.7	7.0	TAWSN0054	TAWSN2100S25
TAWNH2100T	●	21.0	12.6	8.8	3.8	7.0	TAWMN0054	TAWMN2100S25
							TAWLN0054	TAWLN2100S25
TAWNH2150T	●	21.5	14.5	10.6	3.9	8.0	TAWSN0056	TAWSN2200S25
TAWNH2200T	●	22.0	14.5	10.5	4.0	8.0	TAWMN0056	TAWMN2200S25
							TAWLN0056	TAWLN2200S25
TAWNH2250T	●	22.5	14.5	10.4	4.1	8.0	TAWSN0059	TAWSN2300S25
TAWNH2300T	●	23.0	14.5	10.3	4.2	8.0	TAWMN0059	TAWMN2300S25
							TAWLN0059	TAWLN2300S25
TAWNH2350T	●	23.5	14.5	10.2	4.3	8.0	TAWSN0061	TAWSN2400S32
TAWNH2400T	●	24.0	14.5	10.1	4.4	9.0	TAWMN0061	TAWMN2400S32
							TAWLN0061	TAWLN2400S32
TAWNH2450T	●	24.5	16.2	11.7	4.5	9.0	TAWSN0100	TAWSN2500S32
TAWNH2500T	●	25.0	16.1	11.6	4.5	9.0	TAWMN0100	TAWMN2500S32
							TAWLN0100	TAWLN2500S32
TAWNH2550T	●	25.5	16.1	11.5	4.6	9.0	TAWSN0102	TAWSN2600S32
TAWNH2600T	●	26.0	16.1	11.4	4.7	9.0	TAWMN0102	TAWMN2600S32
							TAWLN0102	TAWLN2600S32
TAWNH2650T	●	26.5	16.1	11.3	4.8	9.0	TAWSN0105	TAWSN2700S32
TAWNH2700T	●	27.0	16.1	11.2	4.9	9.0	TAWMN0105	TAWMN2700S32
							TAWLN0105	TAWLN2700S32
TAWNH2750T	●	27.5	17.3	12.3	5.0	10.0	TAWSN0107	TAWSN2800S32
TAWNH2800T	●	28.0	17.3	12.2	5.1	10.0	TAWMN0107	TAWMN2800S32
							TAWLN0107	TAWLN2800S32
TAWNH2850T	●	28.5	17.3	12.1	5.2	10.0	TAWSN0110	TAWSN2900S32
TAWNH2900T	●	29.0	17.3	12.0	5.3	10.0	TAWMN0110	TAWMN2900S32
							TAWLN0110	TAWLN2900S32
TAWNH2950T	●	29.5	17.3	11.9	5.4	10.0	TAWSN0112	TAWSN3000S32
TAWNH3000T	●	30.0	17.3	11.8	5.5	10.0	TAWMN0112	TAWMN3000S32
							TAWLN0112	TAWLN3000S32

● : USA Stock
<One insert in one case>