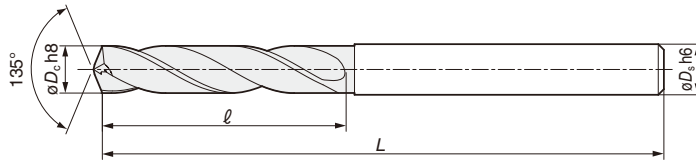


External Coolant Supply (GS Type)

Carbon Steel, Alloy Steel Up to 0.28%	Tempered Steel From 0.29%	Hardened Steel Up to 49HRC	Stainless Steel From 49HRC	Ti Alloy	Heat-resistant steel	Cast Iron	Ductile Cast Iron	Aluminium Alloy	Copper alloy	Composite CFRP
○	○	○	○	○	○	○	○	○	○	○



● GS Type



● Diameter $\phi 1.0$ to $\phi 6.5$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	2D Type			4D Type		
			Stock	Dimensions (mm)		Stock	Dimensions (mm)	
		2,4	2	L	ℓ	4	L	ℓ
1.0	3.0	MDW 0100GS	●			●		
1.1		0110GS	●			●		
1.2		0120GS	●			●		
1.3		0130GS	●	45	6	●	49	12
1.4		0140GS	●			●		
1.5		0150GS	●			●		
1.6		MDW 0160GS	●			●		
1.7		0170GS	●			●		
1.8		0180GS	●	45	8	●	49	15
1.9		0190GS	●			●		
2.0		0200GS	●			●		
2.1		MDW 0210GS	●			●		
2.2		0220GS	●			●		
2.3		0230GS	●	45	10	●	49	17
2.4		0240GS	●			●		
2.5	0250GS	●			●			
2.6	MDW 0260GS	●			●			
2.7	0270GS	●			●			
2.8	0280GS	●	45	13	●	49	19	
2.9	0290GS	●			●			
3.0	0300GS	●			●			
3.1	4.0	MDW 0310GS	●			●		
3.2		0320GS	●			●		
3.3		0330GS	●	54	19	●	60	24
3.4		0340GS	●			●		
3.5		0350GS	●			●		
3.6		MDW 0360GS	●			●		
3.7		0370GS	●			●		
3.8		0380GS	●	54	21	●	60	27
3.9		0390GS	●			●		
4.0		0400GS	●			●		
4.1	5.0	MDW 0410GS	●			●		
4.2		0420GS	●			●		
4.3		0430GS	●	61	23	●	76	31
4.4		0440GS	●			●		
4.5		0450GS	●			●		
4.6		MDW 0460GS	●			●		
4.7		0470GS	●			●		
4.8		0480GS	●	61	25	●	76	38
4.9		0490GS	●			●		
5.0		0500GS	●			●		
5.1	6.0	MDW 0510GS	●			●		
5.2		0520GS	●			●		
5.3		0530GS	●	65	25	●	81	39
5.4		0540GS	●			●		
5.5		0550GS	●			●		
5.6		MDW 0560GS	●			●		
5.7		0570GS	●			●		
5.8		0580GS	●	65	27	●	81	41
5.9		0590GS	●			●		
6.0		0600GS	●			●		
6.1	7.0	MDW 0610GS	●			●		
6.2		0620GS	●			●		
6.3		0630GS	●	73	31	●	83	42
6.4		0640GS	●			●		
6.5		0650GS	●			●		

● Diameter $\phi 6.6$ to $\phi 12.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	2D Type			4D Type			
			Stock	Dimensions (mm)		Stock	Dimensions (mm)		
		2,4	2	L	ℓ	4	L	ℓ	
6.6	7.0	MDW 0660GS	●			●			
6.7		0670GS	●			●			
6.8		0680GS	●	73	33	●	83	43	
6.9		0690GS	●			●			
7.0		0700GS	●			●			
7.1		8.0	MDW 0710GS	●			●		
7.2			0720GS	●			●		
7.3			0730GS	●	78	33	●	90	45
7.4			0740GS	●			●		
7.5			0750GS	●			●		
7.6	MDW 0760GS		●			●			
7.7	0770GS		●			●			
7.8	0780GS		●	78	36	●	90	48	
7.9	0790GS	●			●				
8.0	0800GS	●			●				
8.1	9.0	MDW 0810GS	●			●			
8.2		0820GS	●			●			
8.3		0830GS	●	82	36	●	98	53	
8.4		0840GS	●			●			
8.5		0850GS	●			●			
8.6		MDW 0860GS	●			●			
8.7		0870GS	●			●			
8.8		0880GS	●	82	38	●	98	55	
8.9		0890GS	●			●			
9.0		0900GS	●			●			
9.1	10.0	MDW 0910GS	●			●			
9.2		0920GS	●			●			
9.3		0930GS	●	87	38	●	105	58	
9.4		0940GS	●			●			
9.5		0950GS	●			●			
9.6		MDW 0960GS	●			●			
9.7		0970GS	●			●			
9.8		0980GS	●	87	41	●	105	60	
9.9		0990GS	●			●			
10.0		1000GS	●			●			
10.1	11.0	MDW 1010GS	●			●			
10.2		1020GS	●			●			
10.3		1030GS	●	93	41	●	114	66	
10.4		1040GS	●			●			
10.5		1050GS	●			●			
10.6		MDW 1060GS	●			●			
10.7		1070GS	●			●			
10.8		1080GS	●	93	45	●	114	68	
10.9		1090GS	●			●			
11.0		1100GS	●			●			
11.1	12.0	MDW 1110GS	●			●			
11.2		1120GS	●			●			
11.3		1130GS	●	100	45	●	121	71	
11.4		1140GS	●			●			
11.5		1150GS	●			●			
11.6		MDW 1160GS	●			●			
11.7		1170GS	●			●			
11.8		1180GS	●	100	47	●	121	73	
11.9		1190GS	●			●			
12.0		1200GS	●			●			

Grade: ACX70

Please indicate 2 or 4 in the □ when ordering.
(Example: MDW 0200GS2)



Super MultiDrills GS Type

External Coolant Supply (GS Type)

Carbon Steel, Alloy Steel Up to 0.28% From 0.28%	Tempered Steel	Hardened Steel Up to 45HRC From 45HRC	Stainless steel	Ti Alloy	Heat-treated steel	Cast Iron	Ductile Cast Iron	Aluminium Alloy	Copper alloy	Composite CFRP	DEX Coat	2D	4D
○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Diameter $\phi 12.1$ to $\phi 16.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	2D Type			4D Type		
			Stock	Dimensions (mm)		Stock	Dimensions (mm)	
			<input type="checkbox"/>	L	ℓ	<input type="checkbox"/>	L	ℓ
12.1	13.0	MDW 1210GS <input type="checkbox"/>	●			●		
12.2		1220GS <input type="checkbox"/>	●			●		
12.3		1230GS <input type="checkbox"/>	●	100	47	●	137	76
12.4		1240GS <input type="checkbox"/>	●			●		
12.5		1250GS <input type="checkbox"/>	●			●		
12.6		MDW 1260GS <input type="checkbox"/>	●			●		
12.7		1270GS <input type="checkbox"/>	●			●		
12.8		1280GS <input type="checkbox"/>	●	100	49	●	137	78
12.9		1290GS <input type="checkbox"/>	●			●		
13.0		1300GS <input type="checkbox"/>	●			●		
13.1	14.0	MDW 1310GS <input type="checkbox"/>	●			●		
13.2		1320GS <input type="checkbox"/>	●			●		
13.3		1330GS <input type="checkbox"/>	●	105	50	●	147	84
13.4		1340GS <input type="checkbox"/>	●			●		
13.5		1350GS <input type="checkbox"/>	●			●		
13.6		MDW 1360GS <input type="checkbox"/>	●			●		
13.7		1370GS <input type="checkbox"/>	●			●		
13.8		1380GS <input type="checkbox"/>	●	105	52	●	147	86
13.9		1390GS <input type="checkbox"/>	●			●		
14.0		1400GS <input type="checkbox"/>	●			●		
14.1	15.0	MDW 1410GS <input type="checkbox"/>	●			●		
14.2		1420GS <input type="checkbox"/>	●			●		
14.3		1430GS <input type="checkbox"/>	●	108	52	●	153	89
14.4		1440GS <input type="checkbox"/>	●			●		
14.5		1450GS <input type="checkbox"/>	●			●		
14.6		MDW 1460GS <input type="checkbox"/>	●			●		
14.7		1470GS <input type="checkbox"/>	●			●		
14.8		1480GS <input type="checkbox"/>	●	108	53	●	153	91
14.9		1490GS <input type="checkbox"/>	●			●		
15.0		1500GS <input type="checkbox"/>	●			●		
15.1	16.0	MDW 1510GS <input type="checkbox"/>	●			●		
15.2		1520GS <input type="checkbox"/>	●			●		
15.3		1530GS <input type="checkbox"/>	●	112	53	●	160	94
15.4		1540GS <input type="checkbox"/>	●			●		
15.5		1550GS <input type="checkbox"/>	●			●		
15.6		MDW 1560GS <input type="checkbox"/>	●			●		
15.7		1570GS <input type="checkbox"/>	●			●		
15.8		1580GS <input type="checkbox"/>	●	112	55	●	160	96
15.9		1590GS <input type="checkbox"/>	●			●		
16.0		1600GS <input type="checkbox"/>	●			●		

● Diameter $\phi 16.1$ to $\phi 20.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	2D Type			4D Type		
			Stock	Dimensions (mm)		Stock	Dimensions (mm)	
			<input type="checkbox"/>	L	ℓ	<input type="checkbox"/>	L	ℓ
16.1	17.0	MDW 1610GS <input type="checkbox"/>	●			●		
16.2		1620GS <input type="checkbox"/>	●			●		
16.3		1630GS <input type="checkbox"/>	●	116	56	●	167	98
16.4		1640GS <input type="checkbox"/>	●			●		
16.5		1650GS <input type="checkbox"/>	●			●		
16.6		MDW 1660GS <input type="checkbox"/>	●			●		
16.7		1670GS <input type="checkbox"/>	●			●		
16.8		1680GS <input type="checkbox"/>	●	116	57	●	167	98
16.9		1690GS <input type="checkbox"/>	●			●		
17.0		1700GS <input type="checkbox"/>	●			●		
17.1	18.0	MDW 1710GS <input type="checkbox"/>	●			●		
17.2		1720GS <input type="checkbox"/>	●			●		
17.3		1730GS <input type="checkbox"/>	●	120	58	●	167	100
17.4		1740GS <input type="checkbox"/>	●			●		
17.5		1750GS <input type="checkbox"/>	●			●		
17.6		MDW 1760GS <input type="checkbox"/>	●			●		
17.7		1770GS <input type="checkbox"/>	●			●		
17.8		1780GS <input type="checkbox"/>	●	120	59	●	167	102
17.9		1790GS <input type="checkbox"/>	●			●		
18.0		1800GS <input type="checkbox"/>	●			●		
18.1	19.0	MDW 1810GS <input type="checkbox"/>	●			●		
18.2		1820GS <input type="checkbox"/>	●			●		
18.3		1830GS <input type="checkbox"/>	●	123	59	●	179	104
18.4		1840GS <input type="checkbox"/>	●			●		
18.5		1850GS <input type="checkbox"/>	●			●		
18.6		MDW 1860GS <input type="checkbox"/>	●			●		
18.7		1870GS <input type="checkbox"/>	●			●		
18.8		1880GS <input type="checkbox"/>	●	123	60	●	179	106
18.9		1890GS <input type="checkbox"/>	●			●		
19.0		1900GS <input type="checkbox"/>	●			●		
19.1	20.0	MDW 1910GS <input type="checkbox"/>	●			●		
19.2		1920GS <input type="checkbox"/>	●			●		
19.3		1930GS <input type="checkbox"/>	●	127	61	●	179	110
19.4		1940GS <input type="checkbox"/>	●			●		
19.5		1950GS <input type="checkbox"/>	●			●		
19.6		MDW 1960GS <input type="checkbox"/>	●			●		
19.7		1970GS <input type="checkbox"/>	●			●		
19.8		1980GS <input type="checkbox"/>	●	127	62	●	179	114
19.9		1990GS <input type="checkbox"/>	●			●		
20.0		2000GS <input type="checkbox"/>	●			●		

Grade: ACX70

Please indicate 2 or 4 in the when ordering
(Example: MDW 1210GS4)

■ Recommended Cutting Conditions

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

Drill Diameter ϕD_c (mm)	Cutting Conditions	Soft Steel/General Steel (Up to 300HB)	Hardened Steel		Stainless Steel (Up to 200HB)	Grey Cast Iron FC250	Ductile Cast Iron FCD450
			(Up to 45HRC)	(Up to 60HRC)			
$\phi 3.0$	v_c	30 - 60 - 70	20 - 30 - 40	10 - 15 - 20	10 - 25 - 40	40 - 50 - 70	35 - 45 - 60
	f	0.1 - 0.15 - 0.2	0.06 - 0.07 - 0.08	0.05 - 0.07 - 0.08	0.06 - 0.08 - 0.12	0.15 - 0.2 - 0.25	0.12 - 0.15 - 0.2
$\phi 4.0$	v_c	30 - 60 - 80	20 - 30 - 40	10 - 15 - 20	10 - 25 - 45	40 - 50 - 70	35 - 45 - 60
	f	0.12 - 0.17 - 0.22	0.07 - 0.08 - 0.09	0.05 - 0.07 - 0.08	0.07 - 0.09 - 0.13	0.15 - 0.2 - 0.27	0.13 - 0.17 - 0.22
$\phi 5.0$	v_c	40 - 60 - 100	20 - 30 - 40	10 - 15 - 20	15 - 30 - 55	40 - 50 - 70	40 - 50 - 60
	f	0.15 - 0.2 - 0.25	0.08 - 0.09 - 0.1	0.05 - 0.07 - 0.08	0.08 - 0.1 - 0.15	0.15 - 0.2 - 0.3	0.15 - 0.2 - 0.25
$\phi 8.0$	v_c	40 - 80 - 120	20 - 40 - 40	10 - 15 - 20	15 - 35 - 55	40 - 50 - 80	50 - 60 - 70
	f	0.18 - 0.23 - 0.3	0.09 - 0.1 - 0.13	0.06 - 0.08 - 0.1	0.09 - 0.12 - 0.17	0.18 - 0.23 - 0.33	0.18 - 0.23 - 0.3
$\phi 10.0$	v_c	50 - 80 - 130	20 - 40 - 40	10 - 15 - 20	15 - 40 - 60	50 - 60 - 80	50 - 60 - 70
	f	0.2 - 0.25 - 0.35	0.1 - 0.12 - 0.15	0.06 - 0.08 - 0.1	0.1 - 0.15 - 0.2	0.2 - 0.3 - 0.35	0.2 - 0.25 - 0.35
$\phi 12.0$	v_c	50 - 80 - 130	20 - 40 - 40	10 - 15 - 20	15 - 40 - 60	50 - 65 - 80	50 - 60 - 70
	f	0.2 - 0.25 - 0.35	0.1 - 0.12 - 0.15	0.06 - 0.08 - 0.1	0.1 - 0.15 - 0.2	0.2 - 0.3 - 0.35	0.2 - 0.25 - 0.35
$\phi 16.0$	v_c	50 - 90 - 130	20 - 40 - 40	10 - 15 - 20	20 - 40 - 60	60 - 80 - 90	50 - 60 - 75
	f	0.22 - 0.26 - 0.35	0.1 - 0.12 - 0.15	0.07 - 0.09 - 0.11	0.1 - 0.15 - 0.2	0.22 - 0.3 - 0.35	0.22 - 0.28 - 0.35
$\phi 20.0$	v_c	60 - 100 - 140	20 - 40 - 40	10 - 15 - 20	20 - 40 - 60	60 - 80 - 100	50 - 60 - 80
	f	0.25 - 0.3 - 0.35	0.1 - 0.12 - 0.15	0.08 - 0.1 - 0.12	0.1 - 0.15 - 0.2	0.25 - 0.3 - 0.35	0.25 - 0.3 - 0.35

Min. - Optimum - Max.

Drilling

Solid

Special

Indexable

Reamer

Brazed

Others

HGS Type

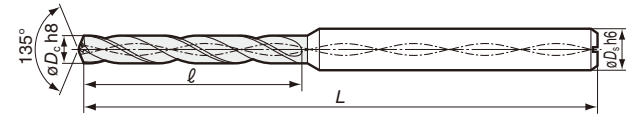
Internal Coolant Supply (HGS Type)

Carbon Steel	Alloy Steel	Tempered Steel	Hardened Steel	Stainless Steel	Ti Alloy	Heatresist steels	Cast Iron	Ductile Cast Iron	Aluminium Alloy	Copper alloy	Composite CFRP
Up to 0.28%	From 0.28%		Up to 45HRC	From 48HRC							



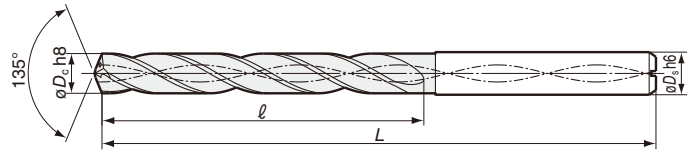
● HGS Type Diameter $\phi 1.5$ to $\phi 2.4$ mm

Single Margin



● HGS Type Diameter $\phi 2.5$ to $\phi 20.0$ mm

Double Margin



● Diameter $\phi 1.5$ to $\phi 7.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	3D Type		5D Type		8D Type	
			Stock	Dimensions (mm)	Stock	Dimensions (mm)	Stock	Dimensions (mm)
			3	L	5	L	8	L
1.5	3.0	MDW 0150HGS <input type="checkbox"/>	●	63 10	●	70 14	●	76 18.5
1.6		MDW 0160HGS <input type="checkbox"/>	●		●		●	
1.7		0170HGS <input type="checkbox"/>	●		●		●	
1.8		0180HGS <input type="checkbox"/>	●	63 12.5	●	70 19	●	76 24
1.9		0190HGS <input type="checkbox"/>	●		●		●	
2.0		0200HGS <input type="checkbox"/>	●		●		●	
2.1		MDW 0210HGS <input type="checkbox"/>	●		●		●	
2.2		0220HGS <input type="checkbox"/>	●		●		●	
2.3		0230HGS <input type="checkbox"/>	●	68 15	●	78 24	●	81 27.5
2.4		0240HGS <input type="checkbox"/>	●		●		●	
2.5		0250HGS <input type="checkbox"/>	●		●		●	
2.6		MDW 0260HGS <input type="checkbox"/>	●		●		●	
2.7		0270HGS <input type="checkbox"/>	●		●		●	
2.8		0280HGS <input type="checkbox"/>	●	68 17.5	●	78 28	●	81 33
2.9		0290HGS <input type="checkbox"/>	●		●		●	
3.0		0300HGS <input type="checkbox"/>	●		●		●	
3.1	4.0	MDW 0310HGS <input type="checkbox"/>	●		●		●	
3.2		0320HGS <input type="checkbox"/>	●		●		●	
3.3		0330HGS <input type="checkbox"/>	●	72 20	●	86 32	●	92 38.5
3.4		0340HGS <input type="checkbox"/>	●		●		●	
3.5		0350HGS <input type="checkbox"/>	●		●		●	
3.6		MDW 0360HGS <input type="checkbox"/>	●		●		●	
3.7		0370HGS <input type="checkbox"/>	●		●		●	
3.8		0380HGS <input type="checkbox"/>	●	72 22.5	●	86 36	●	92 44
3.9	0390HGS <input type="checkbox"/>	●		●		●		
4.0	0400HGS <input type="checkbox"/>	●		●		●		
4.1	5.0	MDW 0410HGS <input type="checkbox"/>	●		●		●	
4.2		0420HGS <input type="checkbox"/>	●		●		●	
4.3		0430HGS <input type="checkbox"/>	●	80 25	●	98 40	●	105 49.5
4.4		0440HGS <input type="checkbox"/>	●		●		●	
4.5		0450HGS <input type="checkbox"/>	●		●		●	
4.6		MDW 0460HGS <input type="checkbox"/>	●		●		●	
4.7		0470HGS <input type="checkbox"/>	●		●		●	
4.8		0480HGS <input type="checkbox"/>	●	80 27.5	●	98 44	●	105 55
4.9		0490HGS <input type="checkbox"/>	●		●		●	
5.0		0500HGS <input type="checkbox"/>	●		●		●	
5.1	6.0	MDW 0510HGS <input type="checkbox"/>	●		●		●	
5.2		0520HGS <input type="checkbox"/>	●		●		●	
5.3		0530HGS <input type="checkbox"/>	●	82 27.5	●	100 44	●	118 60.5
5.4		0540HGS <input type="checkbox"/>	●		●		●	
5.5		0550HGS <input type="checkbox"/>	●		●		●	
5.6		MDW 0560HGS <input type="checkbox"/>	●		●		●	
5.7		0570HGS <input type="checkbox"/>	●		●		●	
5.8		0580HGS <input type="checkbox"/>	●	82 30	●	100 48	●	118 66
5.9		0590HGS <input type="checkbox"/>	●		●		●	
6.0		0600HGS <input type="checkbox"/>	●		●		●	
6.1	7.0	MDW 0610HGS <input type="checkbox"/>	●		●		●	
6.2		0620HGS <input type="checkbox"/>	●		●		●	
6.3		0630HGS <input type="checkbox"/>	●	88 32.5	●	109 52	●	130 71.5
6.4		0640HGS <input type="checkbox"/>	●		●		●	
6.5		0650HGS <input type="checkbox"/>	●		●		●	
6.6		MDW 0660HGS <input type="checkbox"/>	●		●		●	
6.7		0670HGS <input type="checkbox"/>	●		●		●	
6.8		0680HGS <input type="checkbox"/>	●	88 35	●	109 56	●	130 77
6.9		0690HGS <input type="checkbox"/>	●		●		●	
7.0		0700HGS <input type="checkbox"/>	●		●		●	

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

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	3D Type		5D Type		8D Type		
			Stock	Dimensions (mm)	Stock	Dimensions (mm)	Stock	Dimensions (mm)	
			3	L	5	L	8	L	
7.1	8.0	MDW 0710HGS <input type="checkbox"/>	●		●		●		
7.2		0720HGS <input type="checkbox"/>	●		●		●		
7.3		0730HGS <input type="checkbox"/>	●	94 37.5	●	118 60	●	142 82.5	
7.4		0740HGS <input type="checkbox"/>	●		●		●		
7.5		0750HGS <input type="checkbox"/>	●		●		●		
7.6		MDW 0760HGS <input type="checkbox"/>	●		●		●		
7.7		0770HGS <input type="checkbox"/>	●		●		●		
7.8		0780HGS <input type="checkbox"/>	●	94 40	●	118 64	●	142 88	
7.9		0790HGS <input type="checkbox"/>	●		●		●		
8.0		0800HGS <input type="checkbox"/>	●		●		●		
8.1		9.0	MDW 0810HGS <input type="checkbox"/>	●		●		●	
8.2			0820HGS <input type="checkbox"/>	●		●		●	
8.3			0830HGS <input type="checkbox"/>	●	100 42.5	●	127 68	●	154 93.5
8.4			0840HGS <input type="checkbox"/>	●		●		●	
8.5			0850HGS <input type="checkbox"/>	●		●		●	
8.6			MDW 0860HGS <input type="checkbox"/>	●		●		●	
8.7	0870HGS <input type="checkbox"/>		●		●		●		
8.8	0880HGS <input type="checkbox"/>		●	100 45	●	127 72	●	154 99	
8.9	0890HGS <input type="checkbox"/>	●		●		●			
9.0	0900HGS <input type="checkbox"/>	●		●		●			
9.1	10.0	MDW 0910HGS <input type="checkbox"/>	●		●		●		
9.2		0920HGS <input type="checkbox"/>	●		●		●		
9.3		0930HGS <input type="checkbox"/>	●	106 47.5	●	136 76	●	166 104.5	
9.4		0940HGS <input type="checkbox"/>	●		●		●		
9.5		0950HGS <input type="checkbox"/>	●		●		●		
9.6		MDW 0960HGS <input type="checkbox"/>	●		●		●		
9.7		0970HGS <input type="checkbox"/>	●		●		●		
9.8		0980HGS <input type="checkbox"/>	●	106 50	●	136 80	●	166 110	
9.9		0990HGS <input type="checkbox"/>	●		●		●		
10.0		1000HGS <input type="checkbox"/>	●		●		●		
10.1	11.0	MDW 1010HGS <input type="checkbox"/>	●		●		●		
10.2		1020HGS <input type="checkbox"/>	●		●		●		
10.3		1030HGS <input type="checkbox"/>	●	116 52.5	●	149 84	●	182 115.5	
10.4		1040HGS <input type="checkbox"/>	●		●		●		
10.5		1050HGS <input type="checkbox"/>	●		●		●		
10.6		MDW 1060HGS <input type="checkbox"/>	●		●		●		
10.7		1070HGS <input type="checkbox"/>	●		●		●		
10.8		1080HGS <input type="checkbox"/>	●	116 55	●	149 88	●	182 121	
10.9		1090HGS <input type="checkbox"/>	●		●		●		
11.0		1100HGS <input type="checkbox"/>	●		●		●		
11.1	12.0	MDW 1110HGS <input type="checkbox"/>	●		●		●		
11.2		1120HGS <input type="checkbox"/>	●		●		●		
11.3		1130HGS <input type="checkbox"/>	●	122 57.5	●	158 92	●	194 126.5	
11.4		1140HGS <input type="checkbox"/>	●		●		●		
11.5		1150HGS <input type="checkbox"/>	●		●		●		
11.6		MDW 1160HGS <input type="checkbox"/>	●		●		●		
11.7		1170HGS <input type="checkbox"/>	●		●		●		
11.8		1180HGS <input type="checkbox"/>	●	122 60	●	158 96	●	194 132	
11.9		1190HGS <input type="checkbox"/>	●		●		●		
12.0		1200HGS <input type="checkbox"/>	●		●		●		

Grade: ACX70

Please indicate 3, 5 or 8 in the when ordering.
(Example: MDW 0250HGS3)

Note : The size of small hole ($\phi 1.5$ to $\phi 2.4$) is consistent with single margin specification.



Super MultiDrills HGS Type

Internal Coolant Supply (HGS Type)

Carbon Steel, Alloy Steel Up to 0.28% From 0.28%	Tempered Steel Up to 45HRC From 49HRC	Hardened Steel Up to 45HRC From 49HRC	Stainless steel	Ti Alloy	Heat-treated steel	Cast Iron	Ductile Cast Iron	Aluminum Alloy	Copper alloy	Composite CFRP
◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



● Diameter $\phi 12.1$ to $\phi 16.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	3D Type			5D Type			8D Type		
			Stock	Dimensions (mm)		Stock	Dimensions (mm)		Stock	Dimensions (mm)	
			3	L	ℓ	5	L	ℓ	8	L	ℓ
12.1	13.0	MDW 1210HGS	●			●					
12.2		1220HGS	●			●					
12.3		1230HGS	●	128	62.5	●	167	100		206	137.5
12.4		1240HGS	●			●					
12.5		1250HGS	●			●			●		
12.6		MDW 1260HGS	●			●					
12.7		1270HGS	●			●					
12.8		1280HGS	●	128	65	●	167	104		206	143
12.9		1290HGS	●			●					
13.0		1300HGS	●			●			●		
13.1	14.0	MDW 1310HGS	●			●					
13.2		1320HGS	●			●					
13.3		1330HGS	●	134	67.5	●	176	108		218	148.5
13.4		1340HGS	●			●					
13.5		1350HGS	●			●			●		
13.6		MDW 1360HGS	●			●					
13.7		1370HGS	●			●					
13.8		1380HGS	●	134	70	●	176	112		218	154
13.9		1390HGS	●			●					
14.0		1400HGS	●			●			●		
14.1	15.0	MDW 1410HGS	●			●					
14.2		1420HGS	●			●					
14.3		1430HGS	●	140	72.5	●	185	116		230	159.5
14.4		1440HGS	●			●					
14.5		1450HGS	●			●			●		
14.6		MDW 1460HGS	●			●					
14.7		1470HGS	●			●					
14.8		1480HGS	●	140	75	●	185	120		230	165
14.9		1490HGS	●			●					
15.0		1500HGS	●			●			●		
15.1	16.0	MDW 1510HGS	●			●					
15.2		1520HGS	●			●					
15.3		1530HGS	●	146	77.5	●	194	124		242	170.5
15.4		1540HGS	●			●					
15.5		1550HGS	●			●			●		
15.6		MDW 1560HGS	●			●					
15.7		1570HGS	●			●					
15.8		1580HGS	●	146	80	●	194	128		242	176
15.9		1590HGS	●			●					
16.0		1600HGS	●			●			●		

● Diameter $\phi 16.1$ to $\phi 20.0$ mm

Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	3D Type			5D Type			8D Type		
			Stock	Dimensions (mm)		Stock	Dimensions (mm)		Stock	Dimensions (mm)	
			3	L	ℓ	5	L	ℓ	8	L	ℓ
16.1	17.0	MDW 1610HGS	●			●					
16.2		1620HGS	●			●					
16.3		1630HGS	●	152	82.5	●	203	132			
16.4		1640HGS	●			●					
16.5		1650HGS	●			●			●		
16.6		MDW 1660HGS	●			●					
16.7		1670HGS	●			●					
16.8		1680HGS	●	152	85	●	203	136			
16.9		1690HGS	●			●					
17.0		1700HGS	●			●			●		
17.1	18.0	MDW 1710HGS	●			●					
17.2		1720HGS	●			●					
17.3		1730HGS	●	158	87.5	●	214	140			
17.4		1740HGS	●			●					
17.5		1750HGS	●			●			●		
17.6		MDW 1760HGS	●			●					
17.7		1770HGS	●			●					
17.8		1780HGS	●	158	90	●	214	144			
17.9		1790HGS	●			●					
18.0		1800HGS	●			●			●		
18.1	19.0	MDW 1810HGS	●			●					
18.2		1820HGS	●			●					
18.3		1830HGS	●	164	92.5	●	221	148			
18.4		1840HGS	●			●					
18.5		1850HGS	●			●			●		
18.6		MDW 1860HGS	●			●					
18.7		1870HGS	●			●					
18.8		1880HGS	●	164	95	●	221	152			
18.9		1890HGS	●			●					
19.0		1900HGS	●			●			●		
19.1	20.0	MDW 1910HGS	●			●					
19.2		1920HGS	●			●					
19.3		1930HGS	●	170	97.5	●	230	156			
19.4		1940HGS	●			●					
19.5		1950HGS	●			●			●		
19.6		MDW 1960HGS	●			●					
19.7		1970HGS	●			●					
19.8		1980HGS	●	170	100	●	230	160			
19.9		1990HGS	●			●					
20.0		2000HGS	●			●			●		

Grade: ACX70

Please indicate 3, 5 or 8 in the □ when ordering.
(Example: MDW 1210HGS5)

■ Recommended Cutting Conditions

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

Drill Diameter ϕD_c (mm)	Cutting Conditions	Soft Steel/General Steel (Up to 300HB)	Hardened Steel		Stainless Steel (Up to 200HB)	Grey Cast Iron FC250	Ductile Cast Iron FCD450	Ti-alloy 6Al-4V-Ti	Inconel Inco718
			(Up to 45HRC)	(Up to 60HRC)					
$\phi 3.0$	v_c	30 - 60 - 100	20 - 30 - 40	10 - 15 - 20	30 - 40 - 50	50 - 70 - 90	40 - 50 - 80	20 - 30 - 40	10 - 10 - 30
	f	0.1 - 0.15 - 0.2	0.06 - 0.07 - 0.08	0.05 - 0.07 - 0.08	0.06 - 0.08 - 0.12	0.15 - 0.2 - 0.25	0.12 - 0.15 - 0.2	0.08 - 0.09 - 0.1	0.05 - 0.06 - 0.08
$\phi 4.0$	v_c	40 - 70 - 110	20 - 30 - 40	10 - 15 - 20	30 - 40 - 55	50 - 70 - 90	40 - 50 - 80	20 - 30 - 40	10 - 10 - 30
	f	0.15 - 0.2 - 0.25	0.07 - 0.08 - 0.09	0.05 - 0.07 - 0.08	0.07 - 0.10 - 0.13	0.15 - 0.2 - 0.25	0.13 - 0.18 - 0.23	0.08 - 0.09 - 0.1	0.05 - 0.06 - 0.08
$\phi 5.0$	v_c	50 - 80 - 120	20 - 30 - 40	10 - 15 - 20	30 - 40 - 60	50 - 70 - 90	40 - 50 - 80	20 - 30 - 40	10 - 10 - 30
	f	0.15 - 0.2 - 0.25	0.08 - 0.09 - 0.1	0.05 - 0.07 - 0.08	0.08 - 0.12 - 0.15	0.15 - 0.2 - 0.3	0.15 - 0.2 - 0.25	0.08 - 0.09 - 0.1	0.05 - 0.06 - 0.08
$\phi 8.0$	v_c	60 - 90 - 140	20 - 40 - 40	10 - 15 - 20	30 - 45 - 70	60 - 80 - 100	50 - 60 - 90	20 - 30 - 40	15 - 15 - 30
	f	0.18 - 0.25 - 0.30	0.09 - 0.1 - 0.13	0.06 - 0.08 - 0.1	0.09 - 0.14 - 0.18	0.18 - 0.23 - 0.33	0.18 - 0.23 - 0.3	0.08 - 0.09 - 0.1	0.07 - 0.08 - 0.09
$\phi 10.0$	v_c	70 - 100 - 150	20 - 40 - 40	10 - 15 - 20	40 - 50 - 80	60 - 80 - 100	50 - 60 - 90	20 - 30 - 40	15 - 15 - 30
	f	0.2 - 0.25 - 0.35	0.1 - 0.12 - 0.15	0.06 - 0.08 - 0.1	0.1 - 0.15 - 0.2	0.2 - 0.3 - 0.35	0.2 - 0.25 - 0.35	0.08 - 0.1 - 0.12	0.08 - 0.09 - 0.1
$\phi 12.0$	v_c	70 - 100 - 150	20 - 40 - 40	10 - 15 - 20	40 - 50 - 80	60 - 80 - 100	50 - 60 - 90	20 - 30 - 40	15 - 15 - 30
	f	0.2 - 0.25 - 0.35	0.1 - 0.12 - 0.15	0.06 - 0.08 - 0.1	0.1 - 0.15 - 0.2	0.2 - 0.3 - 0.35	0.2 - 0.25 - 0.35	0.08 - 0.1 - 0.12	0.08 - 0.09 - 0.1
$\phi 16.0$	v_c	75 - 110 - 150	20 - 40 - 40	10 - 15 - 20	45 - 60 - 80	65 - 90 - 110	55 - 70 - 95	25 - 30 - 40	20 - 20 - 35
	f	0.22 - 0.22 - 0.35	0.1 - 0.12 - 0.15	0.07 - 0.09 - 0.11	0.1 - 0.15 - 0.2	0.25 - 0.3 - 0.35	0.22 - 0.27 - 0.37	0.09 - 0.11 - 0.13	0.08 - 0.09 - 0.1
$\phi 20.0$	v_c	80 - 120 - 160	20 - 40 - 40	10 - 15 - 20	45 - 60 - 80	70 - 100 - 120	60 - 80 - 100	25 - 30 - 40	20 - 20 - 35
	f	0.25 - 0.3 - 0.35	0.1 - 0.12 - 0.15	0.08 - 0.1 - 0.12	0.1 - 0.15 - 0.2	0.25 - 0.3 - 0.35	0.25 - 0.3 - 0.35	0.1 - 0.12 - 0.15	0.08 - 0.09 - 0.1

Min. - Optimum - Max.