

Solid Carbide Drills for Non-Ferrous Metal

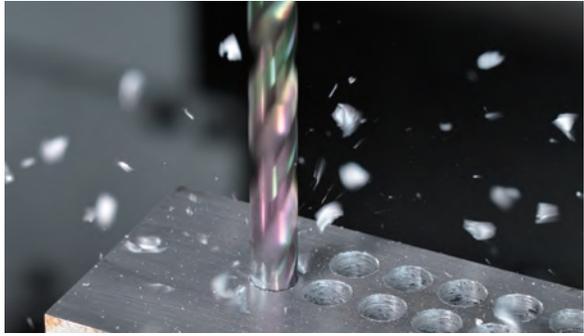
DLC Coated **NHGS** Series



**Low Resistance, High-Efficiency Drilling
of Aluminum Alloy**

DLC COATED DRILLS

NHGS TYPE

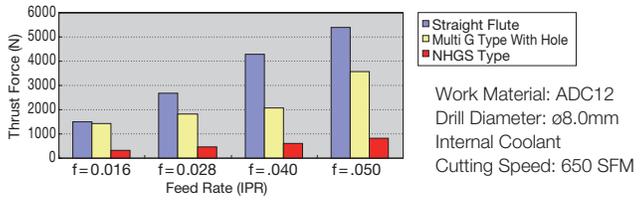


Characteristics

- High efficiency drilling**
AURORA COAT (DLC Coat) and low cutting resistance WL (Wide L) thinning drastically reduces cutting resistance.
- Stable Drilling Performance**
Special cutting edge design and WW (Wide W) margin improves hole quality.
- Longer tool life**
With AURORA COAT coupled with the cutting edge design, long and stable tool life can be achieved.
- Deep hole drilling possible**
Drills for deep hole drilling can be custom-made.
(Production range: Drill diameters: $\phi 3.0$ to $\phi 16.0$ mm
Total length: Available on inquiry)

Comparison of Cutting Resistance (Thrust Force)

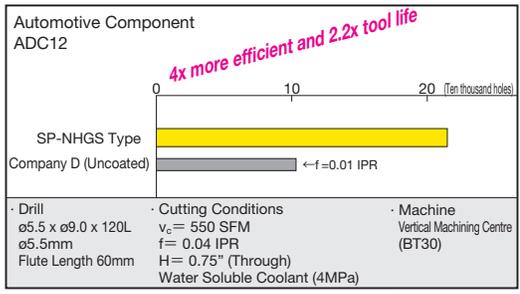
Drastic reduction in cutting resistance



Application Examples

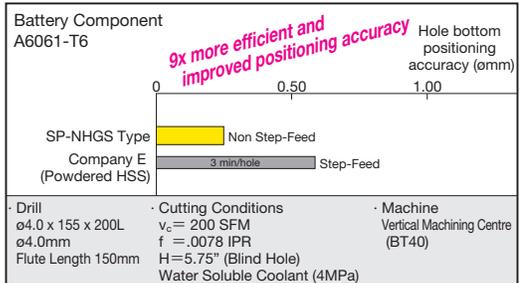
High Feed Drilling of Aluminium Alloy

Automotive Component using SP-NHGS Type



Deep Hole Drilling of Aluminium Alloy

Battery Component using SP-NHGS Type



DLC Coated Drills

Cast Iron	Ductile Cast Iron	Aluminium Alloy	Copper alloy	Composite CFRP	Aurora DLC Coat	W/Oil Hole	3D	5D	10D
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Diameter $\phi 3.0$ to $\phi 8.0$ mm

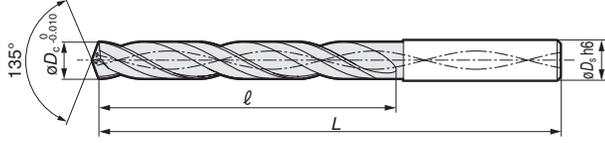
Diameter ϕD_c (mm)	Shank ϕD_s (mm)	Cat. No.	3D Type		5D Type		10D Type	
			Stock	Dimensions	Stock	Dimensions	Stock	Dimensions
			[3]	L L	[5]	L L	[10]	L L
3.0	3.0	MDW0300NHGS	★	68 17.5	★	78 28	★	92 42
3.1		MDW0310NHGS			★			
3.2		MDW0320NHGS	★		★		★	
3.3	4.0	MDW0330NHGS	★	72 20	★	86 32		106 49
3.4		MDW0340NHGS			★		★	
3.5		MDW0350NHGS	★		★		★	
3.6		MDW0360NHGS			★		★	
3.65		MDW0365NHGS	★		★			
3.66		MDW0366NHGS			★			
3.7	4.0	MDW0370NHGS		72 22.5	★	86 36		106 56
3.8		MDW0380NHGS			★			
3.9		MDW0390NHGS			★		★	
4.0		MDW0400NHGS	★		★		★	
4.1		MDW0410NHGS	★		★			
4.2		MDW0420NHGS	★		★			
4.3	5.0	MDW0430NHGS		80 25	★	98 40		124 63
4.4		MDW0440NHGS			★			
4.5		MDW0450NHGS	★		★		★	
4.6		MDW0460NHGS	★		★			
4.7		MDW0470NHGS			★			
4.8	5.0	MDW0480NHGS		80 27.5	★	98 44		124 70
4.9		MDW0490NHGS			★		★	
5.0		MDW0500NHGS	★		★		★	
5.1		MDW0510NHGS			★		★	
5.2		MDW0520NHGS	★		★			
5.3	6.0	MDW0530NHGS	★	82 27.5	★	100 44		136 77
5.4		MDW0540NHGS			★			
5.5		MDW0550NHGS	★		★		★	
5.6		MDW0560NHGS			★			
5.7		MDW0570NHGS			★			
5.8	6.0	MDW0580NHGS		82 30	★	100 48		136 84
5.9		MDW0590NHGS	★		★			
6.0		MDW0600NHGS	★		★		★	
6.1		MDW0610NHGS			★		★	
6.2		MDW0620NHGS			★			
6.3	7.0	MDW0630NHGS		88 32.5	★	109 52		151 91
6.4		MDW0640NHGS			★			
6.5		MDW0650NHGS	★		★		★	
6.6		MDW0660NHGS			★			
6.7		MDW0670NHGS	★		★		★	
6.8	7.0	MDW0680NHGS	★	88 35	★	109 56	★	151 98
6.9		MDW0690NHGS			★			
7.0		MDW0700NHGS	★		★		★	
7.1		MDW0710NHGS			★			
7.2		MDW0720NHGS			★		★	
7.3		MDW0730NHGS			★			
7.35	8.0	MDW0735NHGS	★	94 37.5	★	118 60		166 105
7.4		MDW0740NHGS	★		★			
7.5		MDW0750NHGS	★		★		★	
7.6		MDW0760NHGS			★			
7.7		MDW0770NHGS			★			
7.8	8.0	MDW0780NHGS	★	94 40	★	118 64	★	166 112
7.9		MDW0790NHGS			★			
8.0		MDW0800NHGS	★		★		★	

DLC Coated Drills

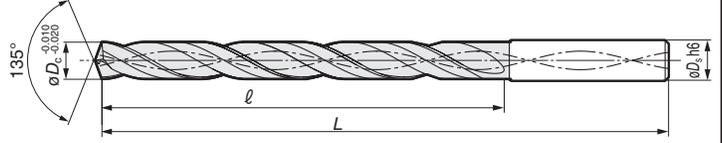
DLC COATED DRILLS NHGS TYPE



NHGS3/5 Type ø3.0 to ø16.0mm



NHGS10 Type ø3.0 to ø16.0mm



Diameter ø8.1 to ø13.0mm

Diameter øD _C (mm)	Shank øD _S (mm)	Cat. No.	3D Type		5D Type		10D Type	
			Stock	Dimensions	Stock	Dimensions	Stock	Dimensions
			[3]	L L	[5]	L L	[10]	L L
8.1	9.0	MDW0810NHGS <input type="checkbox"/>			★			
8.2		MDW0820NHGS <input type="checkbox"/>			★			
8.3		MDW0830NHGS <input type="checkbox"/>		100 42.5	★	127 68		181 119
8.4		MDW0840NHGS <input type="checkbox"/>			★			
8.5		MDW0850NHGS <input type="checkbox"/>	★		★		★	
8.6	9.0	MDW0860NHGS <input type="checkbox"/>	★		★			
8.7		MDW0870NHGS <input type="checkbox"/>			★			
8.8		MDW0880NHGS <input type="checkbox"/>	★	100 45	★	127 72		181 126
8.9		MDW0890NHGS <input type="checkbox"/>			★			
9.0		MDW0900NHGS <input type="checkbox"/>	★		★		★	
9.1	10.0	MDW0910NHGS <input type="checkbox"/>			★			
9.2		MDW0920NHGS <input type="checkbox"/>			★			
9.21		MDW0921NHGS <input type="checkbox"/>	★	106 47.5	★	136 76		196 133
9.3		MDW0930NHGS <input type="checkbox"/>			★			
9.4		MDW0940NHGS <input type="checkbox"/>	★		★			
9.5	MDW0950NHGS <input type="checkbox"/>	★		★		★		
9.6	10.0	MDW0960NHGS <input type="checkbox"/>			★			
9.7		MDW0970NHGS <input type="checkbox"/>			★			
9.8		MDW0980NHGS <input type="checkbox"/>		106 50	★	136 80	★	196 140
9.9		MDW0990NHGS <input type="checkbox"/>			★			
10.0		MDW1000NHGS <input type="checkbox"/>	★		★		★	
10.1	11.0	MDW1010NHGS <input type="checkbox"/>	★					
10.2		MDW1020NHGS <input type="checkbox"/>						
10.3		MDW1030NHGS <input type="checkbox"/>	★	116 52.5	★	149 84		215 147
10.4		MDW1040NHGS <input type="checkbox"/>			★			
10.5		MDW1050NHGS <input type="checkbox"/>	★		★		★	
10.6	11.0	MDW1060NHGS <input type="checkbox"/>	★		★			
10.7		MDW1070NHGS <input type="checkbox"/>						
10.8		MDW1080NHGS <input type="checkbox"/>		116 55		149 88		215 154
10.9		MDW1090NHGS <input type="checkbox"/>						
11.0		MDW1100NHGS <input type="checkbox"/>	★		★		★	
11.08	12.0	MDW1108NHGS <input type="checkbox"/>	★		★			
11.1		MDW1110NHGS <input type="checkbox"/>	★		★			
11.2		MDW1120NHGS <input type="checkbox"/>	★	122 57.5	★	158 92		230 161
11.3		MDW1130NHGS <input type="checkbox"/>						
11.4		MDW1140NHGS <input type="checkbox"/>	★		★			
11.5	MDW1150NHGS <input type="checkbox"/>	★		★		★		
11.6	12.0	MDW1160NHGS <input type="checkbox"/>						
11.7		MDW1170NHGS <input type="checkbox"/>						
11.8		MDW1180NHGS <input type="checkbox"/>		122 60		158 96		230 168
11.9		MDW1190NHGS <input type="checkbox"/>						
12.0		MDW1200NHGS <input type="checkbox"/>	★		★		★	
12.1	13.0	MDW1210NHGS <input type="checkbox"/>	★		★			
12.2		MDW1220NHGS <input type="checkbox"/>						
12.3		MDW1230NHGS <input type="checkbox"/>	★	128 62.5	★	167 100		245 175
12.4		MDW1240NHGS <input type="checkbox"/>						
12.5		MDW1250NHGS <input type="checkbox"/>	★		★		★	
12.6	13.0	MDW1260NHGS <input type="checkbox"/>						
12.7		MDW1270NHGS <input type="checkbox"/>						
12.8		MDW1280NHGS <input type="checkbox"/>		128 65		167 104		245 182
12.9		MDW1290NHGS <input type="checkbox"/>						
12.96		MDW1296NHGS <input type="checkbox"/>	★		★			
13.0	MDW1300NHGS <input type="checkbox"/>	★		★		★		

Diameter ø13.1 to ø16.0mm

Diameter øD _C (mm)	Shank øD _S (mm)	Cat. No.	3D Type		5D Type		10D Type	
			Stock	Dimensions	Stock	Dimensions	Stock	Dimensions
			[3]	L L	[5]	L L	[10]	L L
13.1	14.0	MDW1310NHGS <input type="checkbox"/>						
13.2		1320NHGS <input type="checkbox"/>						
13.3		1330NHGS <input type="checkbox"/>		134 68		176 108		260 189
13.4		1340NHGS <input type="checkbox"/>						
13.5		1350NHGS <input type="checkbox"/>	★		★			
13.6	14.0	MDW1360NHGS <input type="checkbox"/>						
13.7		1370NHGS <input type="checkbox"/>						
13.8		1380NHGS <input type="checkbox"/>		134 70		176 112		260 196
13.9		1390NHGS <input type="checkbox"/>						
14.0		1400NHGS <input type="checkbox"/>	★		★			
14.1	15.0	MDW1410NHGS <input type="checkbox"/>	★		★			
14.2		1420NHGS <input type="checkbox"/>						
14.3		1430NHGS <input type="checkbox"/>		140 72.5		185 116		275 203
14.4		1440NHGS <input type="checkbox"/>						
14.5		1450NHGS <input type="checkbox"/>	★		★			
14.6	15.0	MDW1460NHGS <input type="checkbox"/>						
14.7		1470NHGS <input type="checkbox"/>						
14.8		1480NHGS <input type="checkbox"/>		140 75		185 120		275 210
14.9		1490NHGS <input type="checkbox"/>	★		★			
14.96		1496NHGS <input type="checkbox"/>	★		★			
15.0	1500NHGS <input type="checkbox"/>	★		★				
15.1	16.0	MDW1510NHGS <input type="checkbox"/>						
15.2		1520NHGS <input type="checkbox"/>						
15.3		1530NHGS <input type="checkbox"/>		146 77.5		194 124		290 217
15.4		1540NHGS <input type="checkbox"/>						
15.5		1550NHGS <input type="checkbox"/>	★		★			
15.6	16.0	MDW1560NHGS <input type="checkbox"/>						
15.7		1570NHGS <input type="checkbox"/>						
15.8		1580NHGS <input type="checkbox"/>		146 80		194 128		290 224
15.9		1590NHGS <input type="checkbox"/>						
16.0		1600NHGS <input type="checkbox"/>	★		★			

Grade: DL1300

Please indicate 3, 5 or 10 in the when ordering.
(Example: MDW0850NHGS10)

Recommended Cutting Conditions

Drill Diameter øD _C (mm)	Cutting Conditions	Aluminium Casting/ Die Cast Aluminium	Wrought Aluminium Alloy
Up to ø6.0	V _c	260 - 460 - 650	260 - 400 - 650
	f	0.008 - 0.016 - 0.024	0.008 - 0.012 - 0.016
Up to ø10.0	V _c	330 - 600 - 820	330 - 500 - 820
	f	0.016 - 0.024 - 0.032	0.008 - 0.015 - 0.02
Up to ø16.0	V _c	400 - 650 - 820	400 - 590 - 820
	f	0.016 - 0.028 - .04	0.012 - 0.018 - 0.024

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

Min. - Optimum - Max.



SUMITOMO

CARBIDE - CBN - DIAMOND

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