



Where **high performance**
is the **standard**®



M.A. FORD MAX
RANGE

Twister® HPD Performance Drills
With solid and through coolant options

www.mafordeurope.com



Where **high performance** is the **standard**®



Innovation is what drives us. Actively searching for fresh solutions to new technical and manufacturing challenges that enable our customers to improve productivity, accuracy and performance by relying on M.A.Ford® to deliver.

Our extensive range of tooling and 'Integrated Manufacturing Solutions' has developed and evolved to become a virtual byword for precision and performance. The principles of high precision and high quality extend beyond our tooling and are present in every aspect of M.A.Ford® Europe to ensure customer demands are consistently met at all levels.

Twister® HPD - Performance drilling with economy

When you need great performance with economic pricing, our Twister® HPD family of ALtima® coated drills is the 'go-to' choice for contract machining & small batch production of steels, stainless steels, cast irons, titanium and heat resistant alloys.

Twister® HPD checklist:

- 3.0mm - 16.0mm diameter
- Through and non-through coolant options
- 3x and 5x diameter flute length as standard
- Self-centring point eliminates spot drilling
- ALtima® coating for high heat resistance
- 45° corner chamfer improves hole break out and protects corner

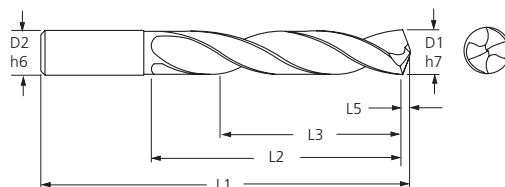


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Twister® HPD Performance Drill

Series HPDSS & HPDCS 3xD

Series HPDSS	3X		140°	30°	ALtima®	DIN 6537L 4.1 - 16.0mm	
Series HPDCS	3X		140°	30°	ALtima®	DIN 6537L 4.1 - 16.0mm	



Features

- Self centring point
- h7 tolerance
- h6 shank tolerance
- Wide material application area
- Economical choice

Benefits

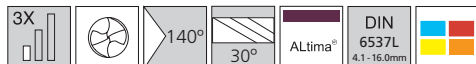
- Eliminates the need for spot drilling
- Precision holes
- Shrink fit applications
- Steels, Stainless Steels, Cast Irons, Titanium & Heat resistant alloys
- Perfect for contract machining and small batch production requiring a high-performance drill



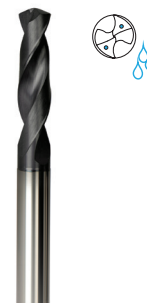
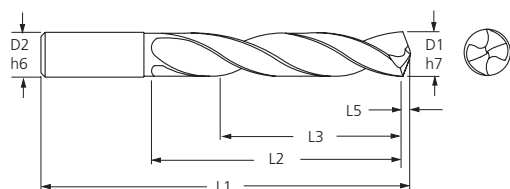
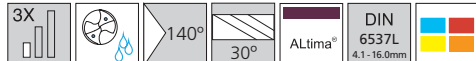
Tool Dimensions						Series HPDSS	Series HPDCS
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
3.0	3.0	62.0	20.0	14.0	0.46	HPDSS 0300A	HPDCS 0300A
3.1	4.0	62.0	20.0	14.0	0.48	HPDSS 0310A	HPDCS 0310A
3.2	4.0	62.0	20.0	14.0	0.49	HPDSS 0320A	HPDCS 0320A
3.3	4.0	62.0	20.0	14.0	0.51	HPDSS 0330A	HPDCS 0330A
3.4	4.0	62.0	20.0	14.0	0.52	HPDSS 0340A	HPDCS 0340A
3.5	4.0	62.0	20.0	14.0	0.54	HPDSS 0350A	HPDCS 0350A
3.6	4.0	62.0	20.0	14.0	0.55	HPDSS 0360A	HPDCS 0360A
3.7	4.0	62.0	20.0	14.0	0.57	HPDSS 0370A	HPDCS 0370A
3.8	4.0	66.0	24.0	17.0	0.58	HPDSS 0380A	HPDCS 0380A
3.9	4.0	66.0	24.0	17.0	0.60	HPDSS 0390A	HPDCS 0390A
4.0	4.0	66.0	24.0	17.0	0.61	HPDSS 0400A	HPDCS 0400A
4.1	6.0	66.0	24.0	17.0	0.64	HPDSS 0410A	HPDCS 0410A
4.2	6.0	66.0	24.0	17.0	0.64	HPDSS 0420A	HPDCS 0420A
4.3	6.0	66.0	24.0	17.0	0.66	HPDSS 0430A	HPDCS 0430A
4.4	6.0	66.0	24.0	17.0	0.67	HPDSS 0440A	HPDCS 0440A
4.5	6.0	66.0	24.0	17.0	0.69	HPDSS 0450A	HPDCS 0450A
4.6	6.0	66.0	24.0	17.0	0.71	HPDSS 0460A	HPDCS 0460A
4.7	6.0	66.0	24.0	17.0	0.72	HPDSS 0470A	HPDCS 0470A
4.8	6.0	66.0	28.0	20.0	0.74	HPDSS 0480A	HPDCS 0480A
4.9	6.0	66.0	28.0	20.0	0.75	HPDSS 0490A	HPDCS 0490A
5.0	6.0	66.0	28.0	20.0	0.77	HPDSS 0500A	HPDCS 0500A
5.1	6.0	66.0	28.0	20.0	0.78	HPDSS 0510A	HPDCS 0510A
5.2	6.0	66.0	28.0	20.0	0.80	HPDSS 0520A	HPDCS 0520A
5.3	6.0	66.0	28.0	20.0	0.81	HPDSS 0530A	HPDCS 0530A
5.4	6.0	66.0	28.0	20.0	0.83	HPDSS 0540A	HPDCS 0540A
5.5	6.0	66.0	28.0	20.0	0.84	HPDSS 0550A	HPDCS 0550A
5.6	6.0	66.0	28.0	20.0	0.86	HPDSS 0560A	HPDCS 0560A
5.7	6.0	66.0	28.0	20.0	0.87	HPDSS 0570A	HPDCS 0570A

Twister® HPD Performance Drill Series HPDSS & HPDCS 3xD

Series
HPDSS

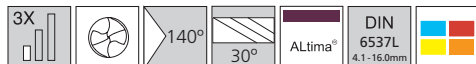
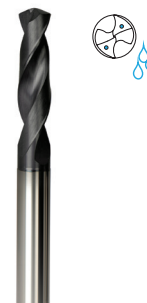
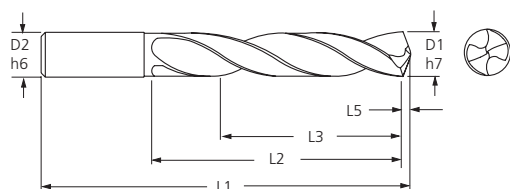
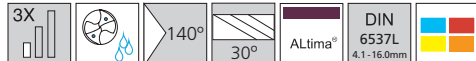


Series
HPDCS



Tool Dimensions						Series HPDSS	Series HPDCS
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
5.8	6.0	66.0	28.0	20.0	0.89	HPDSS 0580A	HPDCS 0580A
5.9	6.0	66.0	28.0	20.0	0.90	HPDSS 0590A	HPDCS 0590A
6.0	6.0	66.0	28.0	20.0	0.92	HPDSS 0600A	HPDCS 0600A
6.1	8.0	79.0	34.0	24.0	0.94	HPDSS 0610A	HPDCS 0610A
6.2	8.0	79.0	34.0	24.0	0.95	HPDSS 0620A	HPDCS 0620A
6.3	8.0	79.0	34.0	24.0	0.97	HPDSS 0630A	HPDCS 0630A
6.4	8.0	79.0	34.0	24.0	0.98	HPDSS 0640A	HPDCS 0640A
6.5	8.0	79.0	34.0	24.0	1.00	HPDSS 0650A	HPDCS 0650A
6.6	8.0	79.0	34.0	24.0	1.01	HPDSS 0660A	HPDCS 0660A
6.7	8.0	79.0	34.0	24.0	1.03	HPDSS 0670A	HPDCS 0670A
6.8	8.0	79.0	34.0	24.0	1.04	HPDSS 0680A	HPDCS 0680A
6.9	8.0	79.0	34.0	24.0	1.06	HPDSS 0690A	HPDCS 0690A
7.0	8.0	79.0	34.0	24.0	1.07	HPDSS 0700A	HPDCS 0700A
7.1	8.0	79.0	41.0	29.0	1.09	HPDSS 0710A	HPDCS 0710A
7.2	8.0	79.0	41.0	29.0	1.10	HPDSS 0720A	HPDCS 0720A
7.3	8.0	79.0	41.0	29.0	1.12	HPDSS 0730A	HPDCS 0730A
7.4	8.0	79.0	41.0	29.0	1.13	HPDSS 0740A	HPDCS 0740A
7.5	8.0	79.0	41.0	29.0	1.15	HPDSS 0750A	HPDCS 0750A
7.6	8.0	79.0	41.0	29.0	1.17	HPDSS 0760A	HPDCS 0760A
7.7	8.0	79.0	41.0	29.0	1.18	HPDSS 0770A	HPDCS 0770A
7.8	8.0	79.0	41.0	29.0	1.20	HPDSS 0780A	HPDCS 0780A
7.9	8.0	79.0	41.0	29.0	1.21	HPDSS 0790A	HPDCS 0790A
8.0	8.0	79.0	41.0	29.0	1.23	HPDSS 0800A	HPDCS 0800A
8.1	10.0	89.0	47.0	35.0	1.24	HPDSS 0810A	HPDCS 0810A
8.2	10.0	89.0	47.0	35.0	1.26	HPDSS 0820A	HPDCS 0820A
8.3	10.0	89.0	47.0	35.0	1.27	HPDSS 0830A	HPDCS 0830A
8.4	10.0	89.0	47.0	35.0	1.29	HPDSS 0840A	HPDCS 0840A
8.5	10.0	89.0	47.0	35.0	1.30	HPDSS 0850A	HPDCS 0850A
8.6	10.0	89.0	47.0	35.0	1.32	HPDSS 0860A	HPDCS 0860A
8.7	10.0	89.0	47.0	35.0	1.33	HPDSS 0870A	HPDCS 0870A
8.8	10.0	89.0	47.0	35.0	1.35	HPDSS 0880A	HPDCS 0880A
8.9	10.0	89.0	47.0	35.0	1.36	HPDSS 0890A	HPDCS 0890A
9.0	10.0	89.0	47.0	35.0	1.38	HPDSS 0900A	HPDCS 0900A
9.1	10.0	89.0	47.0	35.0	1.40	HPDSS 0910A	HPDCS 0910A
9.2	10.0	89.0	47.0	35.0	1.41	HPDSS 0920A	HPDCS 0920A
9.3	10.0	89.0	47.0	35.0	1.43	HPDSS 0930A	HPDCS 0930A
9.4	10.0	89.0	47.0	35.0	1.44	HPDSS 0940A	HPDCS 0940A
9.5	10.0	89.0	47.0	35.0	1.46	HPDSS 0950A	HPDCS 0950A
9.6	10.0	89.0	47.0	35.0	1.47	HPDSS 0960A	HPDCS 0960A

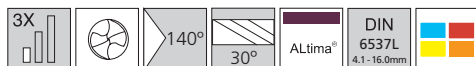
Twister® HPD Performance Drill Series HPDSS & HPDCS 3xD

Series
HPDSS

Series
HPDCS


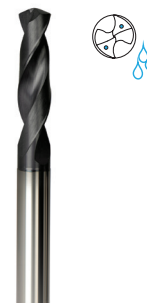
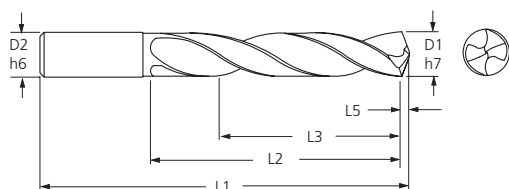
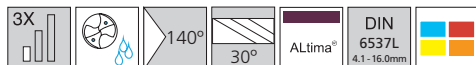
Tool Dimensions						Series HPDSS	Series HPDCS
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
9.7	10.0	89.0	47.0	35.0	1.49	HPDSS 0970A	HPDCS 0970A
9.8	10.0	89.0	47.0	35.0	1.50	HPDSS 0980A	HPDCS 0980A
9.9	10.0	89.0	47.0	35.0	1.52	HPDSS 0990A	HPDCS 0990A
10.0	10.0	89.0	47.0	35.0	1.53	HPDSS 1000A	HPDCS 1000A
10.1	12.0	102.0	55.0	40.0	1.55	HPDSS 1010A	HPDCS 1010A
10.2	12.0	102.0	55.0	40.0	1.56	HPDSS 1020A	HPDCS 1020A
10.3	12.0	102.0	55.0	40.0	1.58	HPDSS 1030A	HPDCS 1030A
10.4	12.0	102.0	55.0	40.0	1.59	HPDSS 1040A	HPDCS 1040A
10.5	12.0	102.0	55.0	40.0	1.61	HPDSS 1050A	HPDCS 1050A
10.6	12.0	102.0	55.0	40.0	1.63	HPDSS 1060A	HPDCS 1060A
10.7	12.0	102.0	55.0	40.0	1.64	HPDSS 1070A	HPDCS 1070A
10.8	12.0	102.0	55.0	40.0	1.66	HPDSS 1080A	HPDCS 1080A
10.9	12.0	102.0	55.0	40.0	1.67	HPDSS 1090A	HPDCS 1090A
11.0	12.0	102.0	55.0	40.0	1.69	HPDSS 1100A	HPDCS 1100A
11.1	12.0	102.0	55.0	40.0	1.70	HPDSS 1110A	HPDCS 1110A
11.2	12.0	102.0	55.0	40.0	1.72	HPDSS 1120A	HPDCS 1120A
11.3	12.0	102.0	55.0	40.0	1.73	HPDSS 1130A	HPDCS 1130A
11.4	12.0	102.0	55.0	40.0	1.75	HPDSS 1140A	HPDCS 1140A
11.5	12.0	102.0	55.0	40.0	1.76	HPDSS 1150A	HPDCS 1150A
11.6	12.0	102.0	55.0	40.0	1.78	HPDSS 1160A	HPDCS 1160A
11.7	12.0	102.0	55.0	40.0	1.79	HPDSS 1170A	HPDCS 1170A
11.8	12.0	102.0	55.0	40.0	1.81	HPDSS 1180A	HPDCS 1180A
11.9	12.0	102.0	55.0	40.0	1.82	HPDSS 1190A	HPDCS 1190A
12.0	12.0	102.0	55.0	40.0	1.84	HPDSS 1200A	HPDCS 1200A
12.1	14.0	107.0	60.0	43.0	1.86	HPDSS 1210A	HPDCS 1210A
12.2	14.0	107.0	60.0	43.0	1.87	HPDSS 1220A	HPDCS 1220A
12.3	14.0	107.0	60.0	43.0	1.89	HPDSS 1230A	HPDCS 1230A
12.4	14.0	107.0	60.0	43.0	1.90	HPDSS 1240A	HPDCS 1240A
12.5	14.0	107.0	60.0	43.0	1.92	HPDSS 1250A	HPDCS 1250A
12.6	14.0	107.0	60.0	43.0	1.93	HPDSS 1260A	HPDCS 1260A
12.7	14.0	107.0	60.0	43.0	1.95	HPDSS 1270A	HPDCS 1270A
12.8	14.0	107.0	60.0	43.0	1.96	HPDSS 1280A	HPDCS 1280A
12.9	14.0	107.0	60.0	43.0	1.99	HPDSS 1290A	HPDCS 1290A
13.0	14.0	107.0	60.0	43.0	1.98	HPDSS 1300A	HPDCS 1300A
13.1	14.0	107.0	60.0	43.0	2.01	HPDSS 1310A	HPDCS 1310A
13.2	14.0	107.0	60.0	43.0	2.02	HPDSS 1320A	HPDCS 1320A
13.3	14.0	107.0	60.0	43.0	2.04	HPDSS 1330A	HPDCS 1330A
13.4	14.0	107.0	60.0	43.0	2.05	HPDSS 1340A	HPDCS 1340A
13.5	14.0	107.0	60.0	43.0	2.07	HPDSS 1350A	HPDCS 1350A

Twister® HPD Performance Drill Series HPDSS & HPDCS 3xD

Series
HPDSS



Series
HPDCS

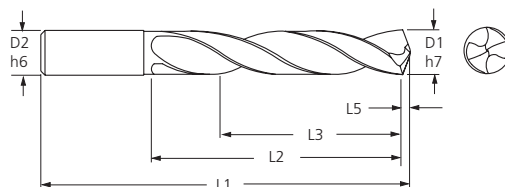


Tool Dimensions						Series HPDSS	Series HPDCS
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
13.6	14.0	107.0	60.0	43.0	2.09	HPDSS 1360A	HPDCS 1360A
13.7	14.0	107.0	60.0	43.0	2.10	HPDSS 1370A	HPDCS 1370A
13.8	14.0	107.0	60.0	43.0	2.12	HPDSS 1380A	HPDCS 1380A
13.9	14.0	107.0	60.0	43.0	2.13	HPDSS 1390A	HPDCS 1390A
14.0	14.0	107.0	60.0	43.0	2.15	HPDSS 1400A	HPDCS 1400A
14.1	16.0	115.0	65.0	45.0	2.16	HPDSS 1410A	HPDCS 1410A
14.2	16.0	115.0	65.0	45.0	2.18	HPDSS 1420A	HPDCS 1420A
14.3	16.0	115.0	65.0	45.0	2.19	HPDSS 1430A	HPDCS 1430A
14.4	16.0	115.0	65.0	45.0	2.21	HPDSS 1440A	HPDCS 1440A
14.5	16.0	115.0	65.0	45.0	2.22	HPDSS 1450A	HPDCS 1450A
14.6	16.0	115.0	65.0	45.0	2.24	HPDSS 1460A	HPDCS 1460A
14.7	16.0	115.0	65.0	45.0	2.25	HPDSS 1470A	HPDCS 1470A
14.8	16.0	115.0	65.0	45.0	2.27	HPDSS 1480A	HPDCS 1480A
14.9	16.0	115.0	65.0	45.0	2.28	HPDSS 1490A	HPDCS 1490A
15.0	16.0	115.0	65.0	45.0	2.30	HPDSS 1500A	HPDCS 1500A
15.1	16.0	115.0	65.0	45.0	2.32	HPDSS 1510A	HPDCS 1510A
15.2	16.0	115.0	65.0	45.0	2.33	HPDSS 1520A	HPDCS 1520A
15.3	16.0	115.0	65.0	45.0	2.35	HPDSS 1530A	HPDCS 1530A
15.4	16.0	115.0	65.0	45.0	2.36	HPDSS 1540A	HPDCS 1540A
15.5	16.0	115.0	65.0	45.0	2.38	HPDSS 1550A	HPDCS 1550A
15.6	16.0	115.0	65.0	45.0	2.39	HPDSS 1560A	HPDCS 1560A
15.7	16.0	115.0	65.0	45.0	2.41	HPDSS 1570A	HPDCS 1570A
15.8	16.0	115.0	65.0	45.0	2.42	HPDSS 1580A	HPDCS 1580A
15.9	16.0	115.0	65.0	45.0	2.44	HPDSS 1590A	HPDCS 1590A
16.0	16.0	115.0	65.0	45.0	2.45	HPDSS 1600A	HPDCS 1600A

Twister[®] HPD Performance Drill

Series HPDSR & HPDCR 5xD

Series HPDSR	5X		140°	30°	ALtima [®]	DIN 6537L (4.1-16.0mm)	
Series HPDCR	5X		140°	30°	ALtima [®]	DIN 6537L (4.1-16.0mm)	



Features

- Self centring point
- h7 tolerance
- h6 shank tolerance
- Wide material application area
- Economical choice

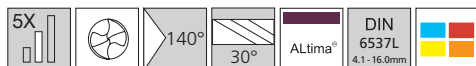
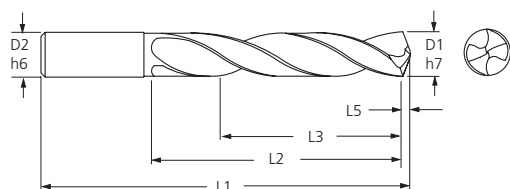
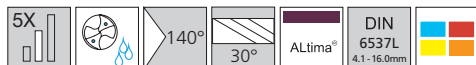
Benefits

- Eliminates the need for spot drilling
- Precision holes
- Shrink fit applications
- Steels, Stainless Steels, Cast Irons, Titanium & Heat resistant alloys
- Perfect for contract machining and small batch production requiring a high-performance drill



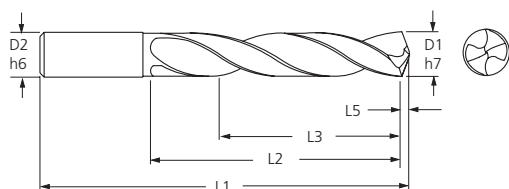
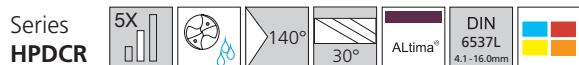
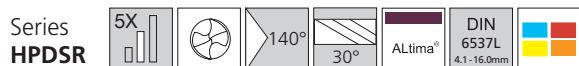
Tool Dimensions						Series HPDSR	Series HPDCR
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
3.0	3.0	66.0	28.0	23.0	0.46	HPDSR 0300A	HPDCR 0300A
3.1	4.0	66.0	28.0	23.0	0.48	HPDSR 0310A	HPDCR 0310A
3.2	4.0	66.0	28.0	23.0	0.49	HPDSR 0320A	HPDCR 0320A
3.3	4.0	66.0	28.0	23.0	0.51	HPDSR 0330A	HPDCR 0330A
3.4	4.0	66.0	28.0	23.0	0.52	HPDSR 0340A	HPDCR 0340A
3.5	4.0	66.0	28.0	23.0	0.54	HPDSR 0350A	HPDCR 0350A
3.6	4.0	66.0	28.0	23.0	0.55	HPDSR 0360A	HPDCR 0360A
3.7	4.0	66.0	28.0	23.0	0.57	HPDSR 0370A	HPDCR 0370A
3.8	4.0	74.0	36.0	29.0	0.58	HPDSR 0380A	HPDCR 0380A
3.9	4.0	74.0	36.0	29.0	0.60	HPDSR 0390A	HPDCR 0390A
4.0	4.0	74.0	36.0	29.0	0.61	HPDSR 0400A	HPDCR 0400A
4.1	6.0	74.0	36.0	29.0	0.64	HPDSR 0410A	HPDCR 0410A
4.2	6.0	74.0	36.0	29.0	0.64	HPDSR 0420A	HPDCR 0420A
4.3	6.0	74.0	36.0	29.0	0.66	HPDSR 0430A	HPDCR 0430A
4.4	6.0	74.0	36.0	29.0	0.67	HPDSR 0440A	HPDCR 0440A
4.5	6.0	74.0	36.0	29.0	0.69	HPDSR 0450A	HPDCR 0450A
4.6	6.0	74.0	36.0	29.0	0.71	HPDSR 0460A	HPDCR 0460A
4.7	6.0	74.0	36.0	29.0	0.72	HPDSR 0470A	HPDCR 0470A
4.8	6.0	82.0	44.0	35.0	0.74	HPDSR 0480A	HPDCR 0480A
4.9	6.0	82.0	44.0	35.0	0.75	HPDSR 0490A	HPDCR 0490A
5.0	6.0	82.0	44.0	35.0	0.77	HPDSR 0500A	HPDCR 0500A
5.1	6.0	82.0	44.0	35.0	0.78	HPDSR 0510A	HPDCR 0510A
5.2	6.0	82.0	44.0	35.0	0.80	HPDSR 0520A	HPDCR 0520A
5.3	6.0	82.0	44.0	35.0	0.81	HPDSR 0530A	HPDCR 0530A
5.4	6.0	82.0	44.0	35.0	0.83	HPDSR 0540A	HPDCR 0540A
5.5	6.0	82.0	44.0	35.0	0.84	HPDSR 0550A	HPDCR 0550A
5.6	6.0	82.0	44.0	35.0	0.86	HPDSR 0560A	HPDCR 0560A
5.7	6.0	82.0	44.0	35.0	0.87	HPDSR 0570A	HPDCR 0570A

Twister® HPD Performance Drill Series HPDSR & HPDCR 5xD

Series
HPDSR

Series
HPDCR


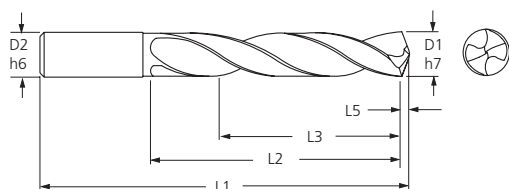
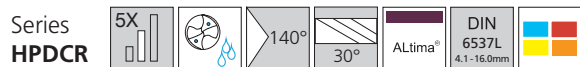
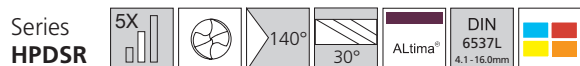
Tool Dimensions						Series HPDSR	Series HPDCR
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
5.8	6.0	82.0	44.0	35.0	0.89	HPDSR 0580A	HPDCR 0580A
5.9	6.0	82.0	44.0	35.0	0.90	HPDSR 0590A	HPDCR 0590A
6.0	6.0	82.0	44.0	35.0	0.92	HPDSR 0600A	HPDCR 0600A
6.1	8.0	91.0	53.0	43.0	0.94	HPDSR 0610A	HPDCR 0610A
6.2	8.0	91.0	53.0	43.0	0.95	HPDSR 0620A	HPDCR 0620A
6.3	8.0	91.0	53.0	43.0	0.97	HPDSR 0630A	HPDCR 0630A
6.4	8.0	91.0	53.0	43.0	0.98	HPDSR 0640A	HPDCR 0640A
6.5	8.0	91.0	53.0	43.0	1.00	HPDSR 0650A	HPDCR 0650A
6.6	8.0	91.0	53.0	43.0	1.01	HPDSR 0660A	HPDCR 0660A
6.7	8.0	91.0	53.0	43.0	1.03	HPDSR 0670A	HPDCR 0670A
6.8	8.0	91.0	53.0	43.0	1.04	HPDSR 0680A	HPDCR 0680A
6.9	8.0	91.0	53.0	43.0	1.06	HPDSR 0690A	HPDCR 0690A
7.0	8.0	91.0	53.0	43.0	1.07	HPDSR 0700A	HPDCR 0700A
7.1	8.0	91.0	53.0	43.0	1.09	HPDSR 0710A	HPDCR 0710A
7.2	8.0	91.0	53.0	43.0	1.10	HPDSR 0720A	HPDCR 0720A
7.3	8.0	91.0	53.0	43.0	1.12	HPDSR 0730A	HPDCR 0730A
7.4	8.0	91.0	53.0	43.0	1.13	HPDSR 0740A	HPDCR 0740A
7.5	8.0	91.0	53.0	43.0	1.15	HPDSR 0750A	HPDCR 0750A
7.6	8.0	91.0	53.0	43.0	1.17	HPDSR 0760A	HPDCR 0760A
7.7	8.0	91.0	53.0	43.0	1.18	HPDSR 0770A	HPDCR 0770A
7.8	8.0	91.0	53.0	43.0	1.20	HPDSR 0780A	HPDCR 0780A
7.9	8.0	91.0	53.0	43.0	1.21	HPDSR 0790A	HPDCR 0790A
8.0	8.0	91.0	53.0	43.0	1.23	HPDSR 0800A	HPDCR 0800A
8.1	10.0	103.0	61.0	49.0	1.24	HPDSR 0810A	HPDCR 0810A
8.2	10.0	103.0	61.0	49.0	1.26	HPDSR 0820A	HPDCR 0820A
8.3	10.0	103.0	61.0	49.0	1.27	HPDSR 0830A	HPDCR 0830A
8.4	10.0	103.0	61.0	49.0	1.29	HPDSR 0840A	HPDCR 0840A
8.5	10.0	103.0	61.0	49.0	1.30	HPDSR 0850A	HPDCR 0850A
8.6	10.0	103.0	61.0	49.0	1.32	HPDSR 0860A	HPDCR 0860A
8.7	10.0	103.0	61.0	49.0	1.33	HPDSR 0870A	HPDCR 0870A
8.8	10.0	103.0	61.0	49.0	1.35	HPDSR 0880A	HPDCR 0880A
8.9	10.0	103.0	61.0	49.0	1.36	HPDSR 0890A	HPDCR 0890A
9.0	10.0	103.0	61.0	49.0	1.38	HPDSR 0900A	HPDCR 0900A
9.1	10.0	103.0	61.0	49.0	1.40	HPDSR 0910A	HPDCR 0910A
9.2	10.0	103.0	61.0	49.0	1.41	HPDSR 0920A	HPDCR 0920A
9.3	10.0	103.0	61.0	49.0	1.43	HPDSR 0930A	HPDCR 0930A
9.4	10.0	103.0	61.0	49.0	1.44	HPDSR 0940A	HPDCR 0940A
9.5	10.0	103.0	61.0	49.0	1.46	HPDSR 0950A	HPDCR 0950A
9.6	10.0	103.0	61.0	49.0	1.47	HPDSR 0960A	HPDCR 0960A

Twister® HPD Performance Drill Series HPDSR & HPDCR 5xD



Tool Dimensions						Series HPDSR	Series HPDCR
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
9.7	10.0	103.0	61.0	49.0	1.49	HPDSR 0970A	HPDCR 0970A
9.8	10.0	103.0	61.0	49.0	1.50	HPDSR 0980A	HPDCR 0980A
9.9	10.0	103.0	61.0	49.0	1.52	HPDSR 0990A	HPDCR 0990A
10.0	10.0	103.0	61.0	49.0	1.53	HPDSR 1000A	HPDCR 1000A
10.1	12.0	118.0	71.0	56.0	1.55	HPDSR 1010A	HPDCR 1010A
10.2	12.0	118.0	71.0	56.0	1.56	HPDSR 1020A	HPDCR 1020A
10.3	12.0	118.0	71.0	56.0	1.58	HPDSR 1030A	HPDCR 1030A
10.4	12.0	118.0	71.0	56.0	1.59	HPDSR 1040A	HPDCR 1040A
10.5	12.0	118.0	71.0	56.0	1.61	HPDSR 1050A	HPDCR 1050A
10.6	12.0	118.0	71.0	56.0	1.63	HPDSR 1060A	HPDCR 1060A
10.7	12.0	118.0	71.0	56.0	1.64	HPDSR 1070A	HPDCR 1070A
10.8	12.0	118.0	71.0	56.0	1.66	HPDSR 1080A	HPDCR 1080A
10.9	12.0	118.0	71.0	56.0	1.67	HPDSR 1090A	HPDCR 1090A
11.0	12.0	118.0	71.0	56.0	1.69	HPDSR 1100A	HPDCR 1100A
11.1	12.0	118.0	71.0	56.0	1.70	HPDSR 1110A	HPDCR 1110A
11.2	12.0	118.0	71.0	56.0	1.72	HPDSR 1120A	HPDCR 1120A
11.3	12.0	118.0	71.0	56.0	1.73	HPDSR 1130A	HPDCR 1130A
11.4	12.0	118.0	71.0	56.0	1.75	HPDSR 1140A	HPDCR 1140A
11.5	12.0	118.0	71.0	56.0	1.76	HPDSR 1150A	HPDCR 1150A
11.6	12.0	118.0	71.0	56.0	1.78	HPDSR 1160A	HPDCR 1160A
11.7	12.0	118.0	71.0	56.0	1.79	HPDSR 1170A	HPDCR 1170A
11.8	12.0	118.0	71.0	56.0	1.81	HPDSR 1180A	HPDCR 1180A
11.9	12.0	118.0	71.0	56.0	1.82	HPDSR 1190A	HPDCR 1190A
12.0	12.0	118.0	71.0	56.0	1.84	HPDSR 1200A	HPDCR 1200A
12.1	14.0	124.0	77.0	60.0	1.86	HPDSR 1210A	HPDCR 1210A
12.2	14.0	124.0	77.0	60.0	1.87	HPDSR 1220A	HPDCR 1220A
12.3	14.0	124.0	77.0	60.0	1.89	HPDSR 1230A	HPDCR 1230A
12.4	14.0	124.0	77.0	60.0	1.90	HPDSR 1240A	HPDCR 1240A
12.5	14.0	124.0	77.0	60.0	1.92	HPDSR 1250A	HPDCR 1250A
12.6	14.0	124.0	77.0	60.0	1.93	HPDSR 1260A	HPDCR 1260A
12.7	14.0	124.0	77.0	60.0	1.95	HPDSR 1270A	HPDCR 1270A
12.8	14.0	124.0	77.0	60.0	1.96	HPDSR 1280A	HPDCR 1280A
12.9	14.0	124.0	77.0	60.0	1.99	HPDSR 1290A	HPDCR 1290A
13.0	14.0	124.0	77.0	60.0	1.98	HPDSR 1300A	HPDCR 1300A
13.1	14.0	124.0	77.0	60.0	2.01	HPDSR 1310A	HPDCR 1310A
13.2	14.0	124.0	77.0	60.0	2.02	HPDSR 1320A	HPDCR 1320A
13.3	14.0	124.0	77.0	60.0	2.04	HPDSR 1330A	HPDCR 1330A
13.4	14.0	124.0	77.0	60.0	2.05	HPDSR 1340A	HPDCR 1340A
13.5	14.0	124.0	77.0	60.0	2.07	HPDSR 1350A	HPDCR 1350A

Twister® HPD Performance Drill Series HPDSR & HPDCR 5xD



Tool Dimensions						Series HPDSR	Series HPDCR
Ø D1 (h7)	Ø D2 (h6)	L1	L2 (Max.)	L3	L5	Tool No.	Tool No.
13.6	14.0	124.0	77.0	60.0	2.09	HPDSR 1360A	HPDCR 1360A
13.7	14.0	124.0	77.0	60.0	2.10	HPDSR 1370A	HPDCR 1370A
13.8	14.0	124.0	77.0	60.0	2.12	HPDSR 1380A	HPDCR 1380A
13.9	14.0	124.0	77.0	60.0	2.13	HPDSR 1390A	HPDCR 1390A
14.0	14.0	124.0	77.0	60.0	2.15	HPDSR 1400A	HPDCR 1400A
14.1	16.0	133.0	83.0	63.0	2.16	HPDSR 1410A	HPDCR 1410A
14.2	16.0	133.0	83.0	63.0	2.18	HPDSR 1420A	HPDCR 1420A
14.3	16.0	133.0	83.0	63.0	2.19	HPDSR 1430A	HPDCR 1430A
14.4	16.0	133.0	83.0	63.0	2.21	HPDSR 1440A	HPDCR 1440A
14.5	16.0	133.0	83.0	63.0	2.22	HPDSR 1450A	HPDCR 1450A
14.6	16.0	133.0	83.0	63.0	2.24	HPDSR 1460A	HPDCR 1460A
14.7	16.0	133.0	83.0	63.0	2.25	HPDSR 1470A	HPDCR 1470A
14.8	16.0	133.0	83.0	63.0	2.27	HPDSR 1480A	HPDCR 1480A
14.9	16.0	133.0	83.0	63.0	2.28	HPDSR 1490A	HPDCR 1490A
15.0	16.0	133.0	83.0	63.0	2.30	HPDSR 1500A	HPDCR 1500A
15.1	16.0	133.0	83.0	63.0	2.32	HPDSR 1510A	HPDCR 1510A
15.2	16.0	133.0	83.0	63.0	2.33	HPDSR 1520A	HPDCR 1520A
15.3	16.0	133.0	83.0	63.0	2.35	HPDSR 1530A	HPDCR 1530A
15.4	16.0	133.0	83.0	63.0	2.36	HPDSR 1540A	HPDCR 1540A
15.5	16.0	133.0	83.0	63.0	2.38	HPDSR 1550A	HPDCR 1550A
15.6	16.0	133.0	83.0	63.0	2.39	HPDSR 1560A	HPDCR 1560A
15.7	16.0	133.0	83.0	63.0	2.41	HPDSR 1570A	HPDCR 1570A
15.8	16.0	133.0	83.0	63.0	2.42	HPDSR 1580A	HPDCR 1580A
15.9	16.0	133.0	83.0	63.0	2.44	HPDSR 1590A	HPDCR 1590A
16.0	16.0	133.0	83.0	63.0	2.45	HPDSR 1600A	HPDCR 1600A

Twister® HPD Performance Drill

Series HPDSS & HPDCS 3xD, Series HPDSR & HPDCR 5xD

Recommended cutting data

Workpiece Material Group		Material Type	HPDSS			HPDCS		
			3xD			3xD - Through Coolant		
			Low	Mid	High	Low	Mid	High
			Vc-m/min			Vc-m/min		
Steels	P	Low Carbon Steels ≤180HB	140	160	180	170	190	210
		Med Carbon / Alloy Steels 180-350HB	80	90	100	90	110	130
		Pre-Hardened Steels 35-45HRC	40	50	60	60	70	80
Stainless Steels	M	Martensitic Stainless - 400 Series	90	100	110	100	120	140
		Austenitic Stainless - 300 Series	40	50	60	60	70	80
Cast Irons	K	Grey Cast Iron	100	120	140	130	150	170
		Ductile Cast Iron	50	60	70	70	80	90

RPM Formula For Metric Drills - $RPM = (Vc \times 318) / \text{Drill } \varnothing D1$

Workpiece Material Group		Material Type	HPDSR			HPDCR		
			5xD			5xD - Through Coolant		
			Low	Mid	High	Low	Mid	High
			Vc-m/min			Vc-m/min		
Steels	P	Low Carbon Steels ≤180HB	130	150	170	160	180	200
		Med Carbon / Alloy Steels 180-350HB	70	80	90	90	100	110
		Pre-Hardened Steels 35-45HRC	40	50	60	50	60	70
Stainless Steels	M	Martensitic Stainless - 400 Series	80	90	100	90	110	130
		Austenitic Stainless - 300 Series	40	50	60	50	60	70
Cast Irons	K	Grey Cast Iron	90	110	130	120	140	160
		Ductile Cast Iron	40	50	60	60	70	80

RPM Formula For Metric Drills - $RPM = (Vc \times 318) / \text{Drill } \varnothing D1$

Workpiece Material Group		Material Type	Drill Diameter (mm)							
			3.0	4.0	5.0	6.0	8.0	10.0	12.0	16.0
			Feed (mm/rev)							
Steels	P	Low Carbon Steels ≤180HB	0.145	0.181	0.181	0.226	0.285	0.362	0.3632	0.453
		Med Carbon / Alloy Steels 180-350HB								
		Pre-Hardened Steels 35-45HRC								
Stainless Steels	M	Martensitic Stainless - 400 Series	0.07	0.09	0.09	0.11	0.14	0.18	0.18	0.225
		Austenitic Stainless - 300 Series								
Cast Irons	K	Grey Cast Iron	0.155	0.193	0.217	0.305	0.305	0.386	0.435	0.532
		Ductile Cast Iron								

Feedrate Formula For Metric Drills - $\text{Feed} = RPM \times \text{mm/rev}$



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