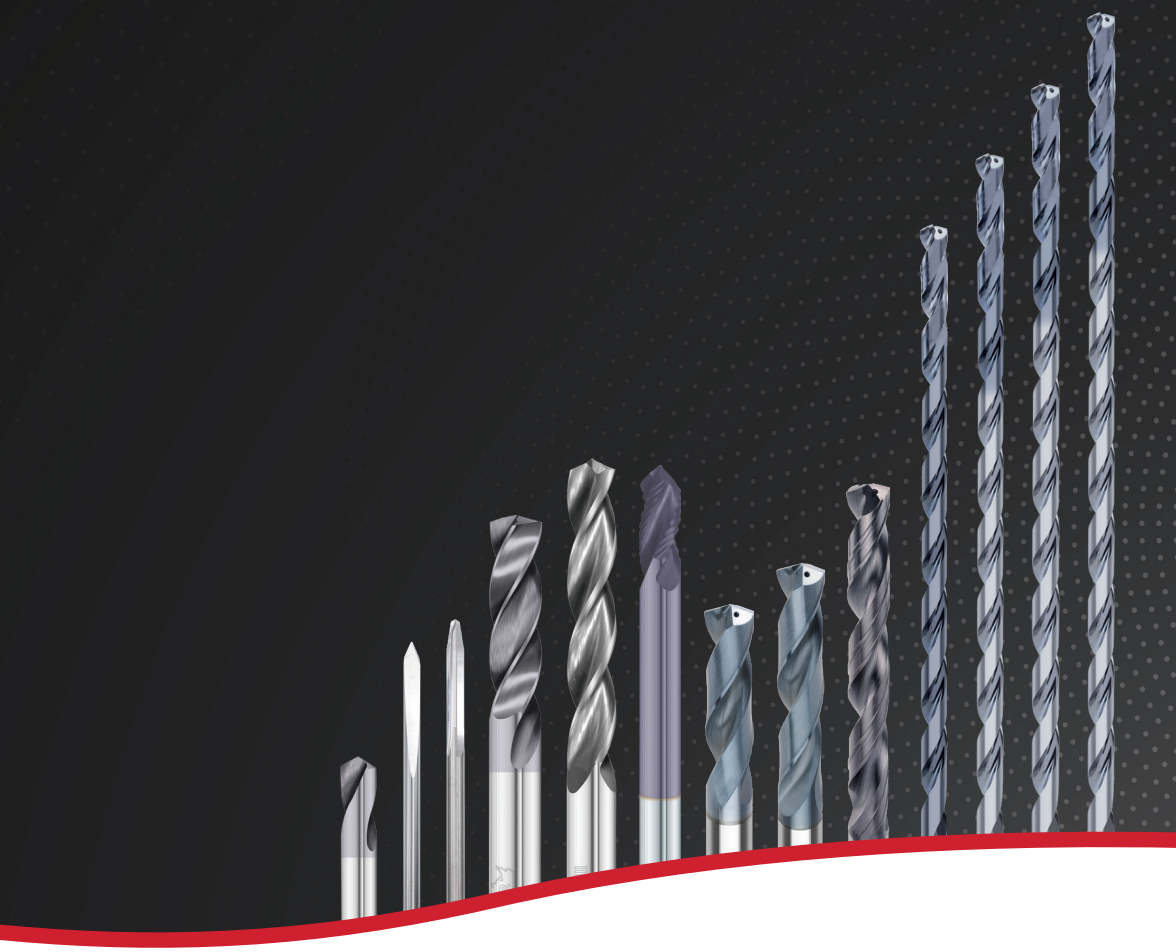
DRILL GUIDE

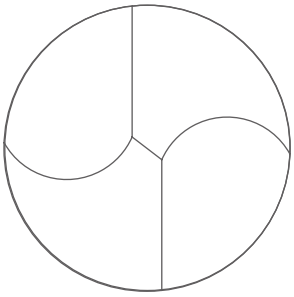


FULLERTON TOOL COMPANY

InovaTools® GERMAN TOOLS GROUP

Carbro

1535 NC Spotting Drill



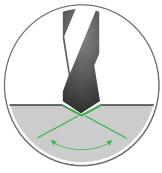
CAM RELIEVED POINT
90°, 120°, 150°
Point angles

2 FLUTES
Right hand spiral
Right hand cut

DURA CARB (Micrograin)

TOLERANCE:

Shank Diameter:	+.0000”	- .0005”
Cutter Diameter:	+.0000”	- .0005”



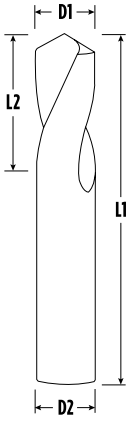
CORRECT ANGLE

INCORRECT ANGLE

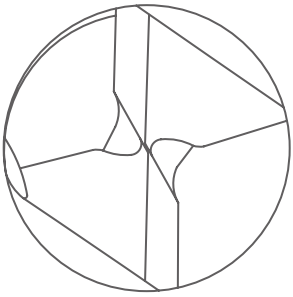
OPTIMUM SPOT DRILL ANGLE

A spotting drill should have a slightly larger point angle than your drill. A smaller point angle could result in drill damage. This is from shock loading when the outer portion of the cutting edge contacts the workpiece before the center.

D1 CUTTING DIA		L2 FLUTE LENGTH	D2 SHANK DIA	L1 OVERALL	POINT ANGLE	EDP Number	
						UNCOATED	FC 7
1/8	.1250	5/8	1/8	2 1/2	90°	15450	15451
		5/8	1/8	2 1/2	120°	15350	15351
		5/8	1/8	2 1/2	150°	15736	15747
3/16	.1875	3/4	3/16	2 1/2	90°	15453	15452
		3/4	3/16	2 1/2	120°	15353	15352
		3/4	3/16	2 1/2	150°	15758	15748
1/4	.2500	1	1/4	2 1/2	90°	15462	15463
		1	1/4	2 1/2	120°	15362	15363
		1	1/4	2 1/2	150°	15774	15749
5/16	.3125	1	5/16	2 1/2	90°	15464	15466
		1	5/16	2 1/2	120°	15364	15367
		1	5/16	2 1/2	150°	15778	15750
3/8	.3750	1 1/4	3/8	3	90°	15468	15469
		1 1/4	3/8	3	120°	15368	15369
		1 1/4	3/8	3	150°	15782	15751
1/2	.5000	1 1/4	1/2	3	90°	15477	15473
		1 1/4	1/2	3	120°	15377	15373
		1 1/4	1/2	3	150°	15790	15752
3/4	.7500	1 1/2	3/4	4	90°	15708	15475
		1 1/2	3/4	4	120°	15709	15375
		1 1/2	3/4	4	150°	15707	15753



1505 DOMINATOR



144º DOMINATOR POINT

2 FLUTES
30º Helix
Right hand spiral
Right hand cut

DOUBLE MARGIN

DURA CARB (Micrograin)

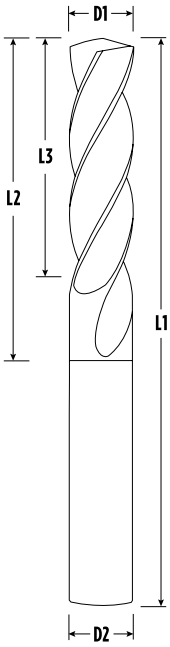
TOLERANCE:

Shank Diameter:	+.0000"	- .0005"
	+.000mm	- .013mm
Cutter Diameter:	+.0000"	- .0005"
	+.00mm	- .013mm

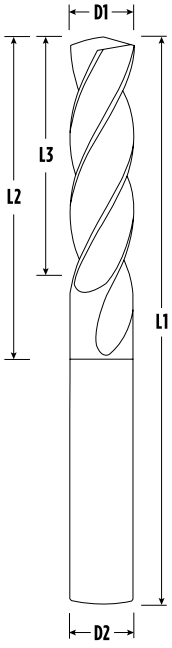
P STEEL | M STAINLESS | K CAST IRON | S SUPERALLOY | H HARDENED

HIGH PERFORMANCE

D1 CUTTING DIA		L2 FLUTE LENGTH	L3 CLEARED	D2 SHANK DIA	L1 OVERALL	COOLANT THROUGH	EDP FC 7
36	.1065	9/16	15/32	.1250	2		15003
3.00	.1181	38.00	30.00	3.00	76.00	✓	15710
1/8	.1250	5/8	1/2	.1250	2		15006
3.30	.1299	38.00	30.00	6.00	76.00		15180
4.00	.1575	38.00	30.00	4.00	76.00	✓	15711
21	.1590	13/16	21/32	.1875	3		15251
4.20	.1654	38.00	30.00	6.00	76.00		15181
16	.1770	7/8	23/32	.1875	3		15252
3/16	.1875	15/16	3/4	.1875	3		15257
3/16	.1875	1 5/16	1 41/64	.1875	3 1/4	✓	15329
5.00	.1969	38.00	30.00	6.00	76.00		15613
5.00	.1969	38.00	30.00	5.00	76.00	✓	15712
7	.2010	1 1/2	1 1/8	.2500	3		15615
13/64	.2031	1 1/2	1 1/8	.2500	3		15653
5	.2055	1	13/16	.2500	3		15259
3	.2130	1 3/32	29/32	.2500	3		15260
7/32	.2188	1 3/32	7/8	.2500	3		15263
2	.2210	1 3/32	7/8	.2500	3		15330
6.00	.2362	38.00	30.00	6.00	76.00		15610
6.00	.2362	50.00	42.00	6.00	101.00	✓	15713
1/4	.2500	1 1/2	1 1/8	.2500	3		15614
1/4	.2500	2 3/8	2	.2500	4	✓	15636
6.50	.2559	32.00	26.19	8.00	76.00		15264
F	.2570	1 1/2	1 1/8	.3125	3		15529
F	.2570	1 1/2	1 1/8	.2500	3		15616
F	.2570	2 3/8	2	.2500	4	✓	15638
17/64	.2656	1 1/2	1 1/8	.2500	3		15617
6.80	.2677	38.00	30.00	8.00	76.00		15619
I	.2720	1 1/2	1 1/8	.3125	3		15618
I	.2720	2 3/8	2	.2500	4	✓	15640
9/32	.2812	1 1/2	1 1/8	.3125	3		15621
19/64	.2969	1 1/2	1 1/8	.3125	3		15623
5/16	.3125	1 1/2	1 1/8	.3125	3		15620
5/16	.3125	2 3/8	2	.3125	4	✓	15642
8.00	.3150	38.00	30.00	8.00	76.00		15612
8.00	.3150	63.00	54.00	8.00	101.00	✓	15715
P	.3230	2	1 1/2	.3750	4		15651



1505 DOMINATOR™



D1 CUTTING DIA		L2 FLUTE LENGTH	L3 CLEARED	D2 SHANK DIA	L1 OVERALL	COOLANT THROUGH	EDP FC 7
21/64	.3281	2	1 1/2	.3750	4		15625
11/32	.3438	2	1 1/2	.3750	4		15629
23/64	.3594	2 1/2	2	.3750	4	✓	15349
23/64	.3594	2	1 1/2	.3750	4		15630
U	.3680	2	1 1/2	.3750	4		15175
U	.3680	2 1/2	2	.3750	4	✓	15378
3/8	.3750	2	1 1/2	.3750	4		15622
3/8	.3750	2 1/2	2	.3750	4	✓	15644
25/64	.3906	2 3/4	2 3/8	.4375	4 1/2	✓	15380
25/64	.3906	2 1/4	1 3/4	.4375	4		15631
10.00	.3937	57.00	45.00	10.00	100.00		15637
10.20	.4016	57.00	45.00	12.00	125.00		15632
13/32	.4062	2 3/4	2 3/8	.4375	4 1/2	✓	15382
13/32	.4062	2 1/4	1 3/4	.4375	4		15633
27/64	.4219	2 1/4	1 3/4	.4375	4		15624
27/64	.4219	2 1/2	2	.4375	4	✓	15646
7/16	.4375	2 1/4	1 3/4	.4375	4		15626
7/16	.4375	2 1/2	2	.4375	4	✓	15648
29/64	.4531	2 1/2	2	.5000	4 1/2		15635
15/32	.4688	3 1/4	2 25/32	.5000	5	✓	15388
15/32	.4688	2 1/2	2	.5000	4 1/2		15679
12.00	.4724	63.00	50.00	12.00	125.00		15680
31/64	.4844	3 3/8	2 7/8	.5000	5	✓	15389
31/64	.4844	2 1/2	2	.5000	4 1/2		15681
1/2	.5000	2 1/2	2	.5000	4 1/2		15628
1/2	.5000	3 1/2	3	.5000	6	✓	15650
17/32	.5312	4	3 1/2	.6250	6		15176
17/32	.5312	4	3 1/2	.6250	6	✓	15393
9/16	.5625	4	3 1/2	.5625	6	✓	15652
9/16	.5625	4	3 1/2	.5625	6		15693
37/64	.5781	4	3 1/2	.6250	6	✓	15398
15.00	.5906	101.00	88.00	16.00	150.00	✓	15718
5/8	.6250	4	3 1/2	.6250	6	✓	15654
5/8	.6250	4	3 1/2	.6250	6		15685
16.00	.6299	101.00	88.00	16.00	150.00	✓	15719
21/32	.6562	4	3 1/2	.7500	6		15177
1/16	.6875	4	3 1/2	.7500	6	✓	15649
1/16	.6875	4	3 1/2	.7500	6		15686
3/4	.7500	4	3 1/2	.7500	6	✓	15656
3/4	.7500	4	3 1/2	.7500	6		15687
49/64	.7656	4	3 1/2	.8750	6		15178
7/8	.8750	4	3 1/2	.8750	6		15179

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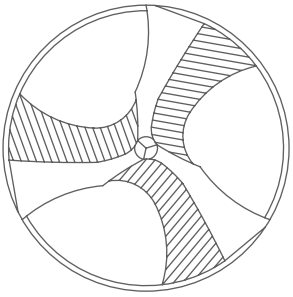
1565 AlumaDrill™



130º
HIGH PERFORMANCE POINT

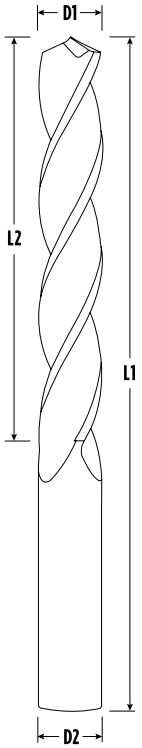
3 PARABOLIC STYLE FLUTES
30º Helix
Right hand spiral
Right hand cut

DURA CARB (Micrograin)

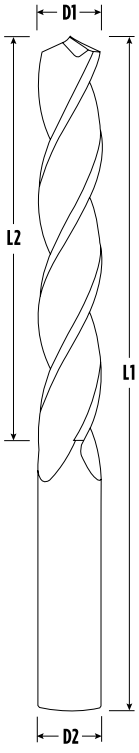
TOLERANCE:

Shank Diameter:	+.0000" - .0005"
	+.000mm - .013mm
Cutter Diameter:	+.0000" - .0005"
	+.00mm - .013mm

D1 CUTTING DIA		L2 FLUTE LENGTH	D2 SHANK DIA	L1 OVERALL	EDP UC
1/16	.0625	3/4	.0625	1 1/2	15424
51	.0670	3/4	.0670	1 1/2	19000
49	.0730	7/8	.0730	1 3/4	19001
5/64	.0781	7/8	.0781	1 3/4	15425
2.00	.0787	25.00	3.00	50.00	19002
45	.0820	7/8	.0820	1 3/4	19003
43	.0890	1	.0890	2	15445
2.30	.0906	25.00	3.00	50.00	19004
3/32	.0938	1	.0938	2	15426
40	.0980	1 1/4	.0980	2 1/4	15600
2.50	.0984	16.00	3.0	50.00	19059
2.60	.1024	32.00	3.00	57.00	19005
36	.1065	1 1/4	.1065	2 1/4	15601
7/64	.1094	1 1/4	.1094	2 1/4	15427
33	.1130	1 1/4	.1130	2 1/4	15602
2.90	.1142	32.00	3.00	57.00	19006
3.00	.1181	22.00	3.00	38.00	19007
3.00	.1181	32.00	3.00	57.00	15675
1/8	.1250	7/8	.1250	1 1/2	19008
1/8	.1250	1 1/4	.1250	2 1/4	15428
30	.1285	1 3/8	.1285	2 1/2	15603
3.30	.1299	35.00	6.00	64.00	15231
29	.1360	1 3/8	.1360	2 1/2	15604
9/64	.1406	1 3/8	.1406	2 1/2	15429
3.70	.1457	35.00	6.00	64.00	19009
25	.1495	1 3/8	.1495	2 1/2	15605
24	.1520	1 3/8	.1520	2 1/2	19010
5/32	.1562	1 3/8	.1562	2 1/2	15430
22	.1570	1 3/8	.1570	2 1/2	15606
4.00	.1575	23.00	6.00	50.00	19011
4.00	.1575	35.00	6.00	64.00	15677
21	.1590	1 3/8	.1590	2 1/2	19012
4.20	.1654	45.00	6.00	76.00	15232
4.30	.1693	45.00	6.00	76.00	19013
11/64	.1719	1 5/8	.1719	2 3/4	15431
17	.1730	1 5/8	.1730	2 3/4	19014
16	.1770	1 5/8	.1770	2 3/4	19015
15	.1800	1 5/8	.1800	2 3/4	19016
4.60	.1811	45.00	6.00	76.00	19017
4.70	.1850	45.00	6.00	76.00	19060
3/16	.1875	1	.1875	2	19018
3/16	.1875	1 5/8	.1875	2 3/4	15432
9	.1960	1 3/4	.1960	3	19019
5.00	.1969	45.00	6.00	76.00	15683
8	.1990	1 3/4	.1990	3	19020
7	.2010	1 3/4	.2010	3	15226
13/64	.2031	1 3/4	.2031	3	15433



1565 AlumaDrill™

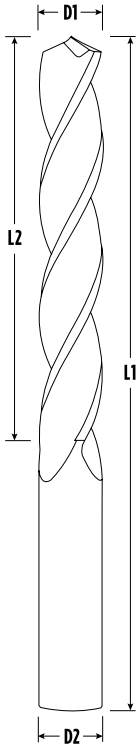


D1 CUTTING DIA		L2 FLUTE LENGTH	D2 SHANK DIA	L1 OVERALL	EDP Number UC
5.20	.2047	50.00	6.00	82.00	19021
3	.2130	1 3/4	.2130	3	15607
7/32	.2188	1 3/4	.2188	3	15434
5.60	.2205	50.00	6.00	82.00	19061
1	.2280	1 3/4	.2280	3	19022
15/64	.2344	2	.2344	3 1/4	15435
6.00	.2362	32.00	6.00	64.00	19023
6.00	.2362	50.00	6.00	82.00	15688
1/4	.2500	1 1/4	.2500	2 1/2	19024
1/4	.2500	2	.2500	3 1/4	15436
F	.2570	2 1/8	.2570	3 1/2	15608
6.80	.2677	54.00	8.00	100.00	15233
I	.2720	2 1/8	.2720	3 1/2	15609
7.00	.2756	36.00	8.00	76.00	19025
7.00	.2756	54.00	8.00	100.00	15689
9/32	.2812	2 1/8	.2812	3 1/2	15437
7.30	.2874	54.00	8.00	100.00	19026
7.40	.2913	54.00	8.00	100.00	19027
7.50	.2953	54.00	8.00	100.00	19028
7.80	.3071	60.00	8.00	100.00	15234
5/16	.3125	1 5/8	.3125	3	19029
5/16	.3125	2 3/8	.3125	4	15438
8.00	.3150	40.00	8.00	76.00	19030
8.00	.3150	60.00	8.00	100.00	15690
Q	.3320	2 1/2	.3320	4	19031
8.50	.3346	63.00	10.00	100.00	15235
11/32	.3438	2 1/2	.3438	4	15439
9.00	.3543	63.00	10.00	100.00	19032
9.30	.3661	63.00	10.00	100.00	19062
U	.3680	2 1/2	.3680	4	15227
9.50	.3740	63.00	10.00	100.00	15236
3/8	.3750	1 3/4	.3750	3	19033
3/8	.3750	2 1/2	.3750	4	15440
25/64	.3906	2 7/8	.3906	4 1/2	19034
10.00	.3937	44.00	10.00	76.00	19035
10.00	.3937	63.00	10.00	100.00	15691
10.20	.4016	73.00	12.00	125.00	15237
13/32	.4062	2 7/8	.4062	4 1/2	15441
10.60	.4173	73.00	12.00	125.00	19036
27/64	.4219	2 7/8	.4219	4 1/2	15228
11.00	.4331	73.00	12.00	125.00	15242
7/16	.4375	2 7/8	.4375	4 1/2	15442
11.30	.4448	73.00	12.00	125.00	19037
29/64	.4531	3	.4531	4 3/4	15446
15/32	.4688	3	.4688	4 3/4	15443
12.00	.4724	50.00	12.00	100.00	19038

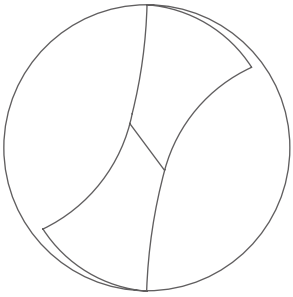
N
N-FERROUS

HIGH PERFORMANCE

D1 CUTTING DIA		L2 FLUTE LENGTH	D2 SHANK DIA	L1 OVERALL	EDP Number UC
12.00	.4724	76.00	12.00	125.00	15692
12.10	.4764	76.00	14.00	125.00	19039
12.25	.4823	76.00	14.00	125.00	15243
31/64	.4844	3	.4844	4 3/4	15229
12.50	.4921	76.00	14.00	125.00	19040
1/2	.5000	2	.5000	3 1/2	19041
1/2	.5000	2	.5000	4	19058
1/2	.5000	3	.5000	4 3/4	15444
1/2	.5000	4	.5000	6	15489
12.80	.5039	76.00	14.00	125.00	19042
13.00	.5118	76.00	14.00	125.00	15244
33/64	.5156	3 1/4	.5156	5	19043
13.20	.5197	76.00	14.00	125.00	19044
17/32	.5312	4	.5312	6	15490
13.60	.5354	76.00	14.00	125.00	19045
14.00	.5512	101.00	14.00	150.00	15238
9/16	.5625	4	.5625	6	15491
14.50	.5709	101.00	16.00	150.00	19046
37/64	.5781	4	.5781	6	19047
14.80	.5827	101.00	16.00	150.00	19048
15.00	.5906	101.00	16.00	150.00	15694
19/32	.5938	4	.5938	6	15492
15.20	.5984	101.00	16.00	150.00	19049
15.50	.6102	101.00	16.00	150.00	15239
5/8	.6250	2 5/8	.6250	4 1/2	19050
5/8	.6250	4	.6250	6	15493
16.00	.6299	67.00	16.00	112.50	19051
16.00	.6299	101.00	16.00	150.00	15695
16.50	.6496	101.00	18.00	150.00	15696
21/32	.6562	4	.6562	6	15494
17.00	.6693	101.00	18.00	150.00	15697
11/16	.6875	4	.6875	6	15495
17.50	.6890	101.00	18.00	150.00	15240
17.90	.7047	101.00	20.00	150.00	19052
23/32	.7188	4	.7188	6	15496
18.40	.7244	101.00	20.00	150.00	19053
18.50	.7283	101.00	20.00	150.00	19054
3/4	.7500	2 5/8	.7500	4 1/2	19055
3/4	.7500	4	.7500	6	15497
19.20	.7559	101.00	20.00	150.00	19056
49/64	.7656	4	.7656	6	15230
19.50	.7677	101.00	20.00	150.00	15241
20.00	.7874	67.00	20.00	125.00	19057
20.00	.7874	101.00	20.00	150.00	15698
7/8	.8750	4	.8750	6	15498
1	1.0000	4	1.0000	6	15499



2305 Center Drill

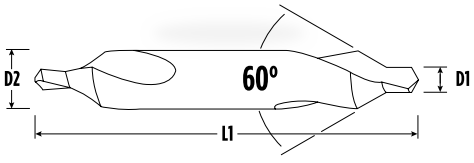


118º CAM RELIEVED POINT
For better chip flow

60º INCLUDED ANGLE

2 FLUTES
Right Hand Spiral
Right Hand Cut

DURA CARB (Micrograin)

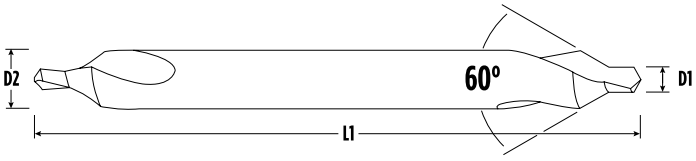


TOOL NUMBER	D1 PILOT DIAMETER		D2 BODY	L1 OVERALL	EDP		
					UNCOATED 60°	TiAlN 60°	UNCOATED 90°
000	.0200	-	.1250	1 1/2	23000	23109	23004
00	.0250	-	.1250	1 1/2	23001	23110	23005
0	1/32	1/32	.1250	1 1/2	23100	23111	23300
1	3/64	3/64	.1250	1 1/2	23101	23112	23301
2	5/64	5/64	.1875	2	23102	23113	23302
3	7/64	7/64	.2500	2	23103	23114	23303
4	1/8	1/8	.3125	2 1/8	23104	23115	23304
5	3/16	3/16	.4375	2 3/4	23105	23116	23305
6	7/32	7/32	.5000	3	23106	23117	23306
7	1/4	1/4	.6250	3 1/4	23107	23118	23307
8	5/16	5/16	.7500	3 1/2	23108	23119	23308

U
UNIVERSAL

NEW PRODUCT

EXTENDED LENGTH CENTER DRILLS



TOOL NUMBER	D1 PILOT DIAMETER		D2 BODY	L1 OVERALL	EDP	
					UC	TiALN
1	0.0469	3/64	0.1250	4	23120	23121
2	0.0781	5/64	0.1875	4	23122	23123
3	0.1094	7/64	0.2500	4	23124	23125
4	0.1250	1/8	0.3125	6	23126	23127
5	0.1875	3/16	0.4375	6	23128	23128
6	0.2188	7/32	0.5000	6	23130	23131
7	0.2500	1/4	0.6250	6	23132	23133
8	0.3125	5/16	0.7500	6	23134	23135

EXTENDED LENGTH
Center Drills

TOLERANCE:
Shank Diameter: h6
Pilot Diameter: +.0030" - .0000"

1505

NON-COOLANT DOMINATOR DRILL

Two 30° RH Spiral Flutes
144° High Performance Point
Non-Coolant

Not Recommended for Plastics. Composites are only recommended in unique situations.*

The parameters listed for tool series that are stocked uncoated are based on running an uncoated tool. If a coating is applied to the tools, the SFM can be increased by approximately 25%. All speed and feed recommendations should be considered only as a starting point. Start with conservative speeds and feeds while analyzing the rigidity of the process. Then cautiously progress incrementally to achieve optimum performance.

SPEEDS & FEEDS

		Imperial (in)						Metric (mm)					
		1/8	1/4	3/8	1/2	3/4	1	3	6	10	12	19	25
High Si Aluminum >10%	RPM	12,224	6,112	4,075	3,056	2,037	1,528	12,936	6,468	3,881	3,234	2,042	1,552
	IPM	49	43	37	31	29	24	1242	1087	931	776	724	621
	SFM	400	400	400	400	400	400	122	122	122	122	122	122
	IPR	.004	.007	.009	.010	.014	.016	0.10	0.17	0.24	0.24	0.35	0.40
Low Si Aluminum <10%	RPM	18,336	9,168	6,112	4,584	3,056	2,292	19,404	9,702	5,821	4,851	3,064	2,328
	IPM	73	64	55	46	43	37	1863	1630	1397	1164	1087	931
	SFM	600	600	600	600	600	600	183	183	183	183	183	183
	IPR	.004	.007	.009	.010	.014	.016	0.10	0.17	0.24	0.24	0.35	0.40
Brass & Copper	RPM	10,696	5,348	3,565	2,674	1,783	1,337	11,319	5,659	3,396	2,830	1,787	1,358
	IPM	43	32	29	27	21	19	1087	815	724	679	543	475
	SFM	350	350	350	350	350	350	107	107	107	107	107	107
	IPR	.004	.006	.008	.010	.012	.014	0.10	0.14	0.21	0.24	0.30	0.35
Graphite	RPM	15,280	7,640	5,093	3,820	2,547	1,910	16,170	8,085	4,851	4,042	2,553	1,940
	IPM	76	50	38	34	31	31	1940	1261	970	873	776	776
	SFM	500	500	500	500	500	500	152	152	152	152	152	152
	IPR	.005	.007	.008	.009	.012	.016	0.12	0.16	0.20	0.22	0.30	0.40
Cast Iron	RPM	10,696	5,348	3,565	2,674	1,783	1,337	11,319	5,659	3,396	2,830	1,787	1,358
	IPM	86	67	57	53	39	33	2173	1698	1449	1358	996	849
	SFM	350	350	350	350	350	350	107	107	107	107	107	107
	IPR	.008	.013	.016	.020	.022	.025	0.19	0.30	0.43	0.48	0.56	0.63
Hardened Steels >48RC	RPM	1,834	917	611	458	306	229	1,940	970	582	485	306	233
	IPM	4	3	2	2	2	1	93	70	62	58	39	29
	SFM	60	60	60	60	60	60	18	18	18	18	18	18
	IPR	.002	.003	.004	.005	.005	.005	0.05	0.07	0.11	0.12	0.13	0.13
Steels	RPM	3,667	1,834	1,222	917	611	458	3,881	1,940	1,164	970	613	466
	IPM	9	7	10	9	8	6	233	186	248	233	194	146
	SFM	120	120	120	120	120	120	37	37	37	37	37	37
	IPR	.003	.004	.008	.010	.013	.013	0.06	0.10	0.21	0.24	0.32	0.31
Stainless Steels	RPM	3,056	1,528	1,019	764	509	382	3,234	1,617	970	808	511	388
	IPM	8	5	5	5	4	3	194	136	129	126	103	78
	SFM	100	100	100	100	100	100	30	30	30	30	30	30
	IPR	.003	.004	.005	.007	.008	.008	0.06	0.08	0.13	0.16	0.20	0.20
Super Alloy (Nickel based Inconel)	RPM	1,834	917	611	458	306	229	1,940	970	582	485	306	233
	IPM	6	5	4	4	2	2	140	116	101	93	62	47
	SFM	60	60	60	60	60	60	18	18	18	18	18	18
	IPR	.003	.005	.007	.008	.008	.008	0.07	0.12	0.17	0.19	0.20	0.20
Titanium	RPM	3,056	1,528	1,019	764	509	382	3,234	1,617	970	808	511	388
	IPM	8	6	5	5	3	3	194	155	129	126	84	68
	SFM	100	100	100	100	100	100	30	30	30	30	30	30
	IPR	.003	.004	.005	.007	.007	.007	0.06	0.10	0.13	0.16	0.16	0.18

1565

ALUMADRILL

Three 30° RH Spiral Flutes
130° High Performance Point

Not Recommended for Cast Iron, Hardened Steels >48 RC, Steels, Stainless Steels, or Super Alloys (Nickel based, Inconel). Composites are only recommended in unique situations.*

The parameters listed for tool series that are stocked uncoated are based on running an uncoated tool. If a coating is applied to the tools, the SFM can be increased by approximately 25%. All speed and feed recommendations should be considered only as a starting point. Start with conservative speeds and feeds while analyzing the rigidity of the process. Then cautiously progress incrementally to achieve optimum performance.

SPEEDS & FEEDS

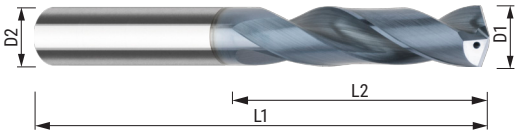
		Imperial (in)						Metric (mm)					
		1/8	1/4	3/8	1/2	3/4	1	3	6	10	12	19	25
High Si Aluminum >10%	RPM	12,224	6,112	4,075	3,056	2,037	1,528	12,936	6,468	3,881	3,234	2,042	1,552
	IPM	49	40	41	31	33	31	1242	1009	1035	776	828	776
	SFM	400	400	400	400	400	400	122	122	122	122	122	122
	IPR	.004	.007	.010	.010	.016	.020	0.10	0.16	0.27	0.24	0.41	0.50
Low Si Aluminum <10%	RPM	15,280	7,640	5,093	3,820	2,547	1,910	16,170	8,085	4,851	4,042	2,553	1,940
	IPM	76	61	64	48	51	48	1940	1552	1617	1213	1294	1213
	SFM	500	500	500	500	500	500	152	152	152	152	152	152
	IPR	.005	.008	.013	.013	.020	.025	0.12	0.19	0.33	0.30	0.51	0.63
Plastics	RPM	12,224	6,112	4,075	3,056	2,037	1,528	12,936	6,468	3,881	3,234	2,042	1,552
	IPM	49	40	41	31	33	31	1242	1009	1035	776	828	776
	SFM	400	400	400	400	400	400	122	122	122	122	122	122
	IPR	.004	.007	.010	.010	.016	.020	0.10	0.16	0.27	0.24	0.41	0.50
Brass & Copper	RPM	16,808	8,404	5,603	4,202	2,801	2,101	17,787	8,893	5,336	4,447	2,808	2,134
	IPM	67	55	56	53	45	42	1708	1387	1423	1334	1138	1067
	SFM	550	550	550	550	550	550	168	168	168	168	168	168
	IPR	.004	.007	.010	.013	.016	.020	0.10	0.16	0.27	0.30	0.41	0.50
Graphite	RPM	7,640	3,820	2,547	1,910	1,273	955	8,085	4,042	2,425	2,021	1,277	970
	IPM	31	25	25	19	20	19	776	631	647	485	517	485
	SFM	250	250	250	250	250	250	76	76	76	76	76	76
	IPR	.004	.007	.010	.010	.016	.020	0.10	0.16	0.27	0.24	0.41	0.50
Titanium	RPM	3,056	1,528	1,019	764	509	382	3,234	1,617	970	808	511	388
	IPM	8	6	5	5	3	3	194	155	129	126	84	68
	SFM	100	100	100	100	100	100	30	30	30	30	30	30
	IPR	.003	.004	.005	.007	.007	.007	0.06	0.10	0.13	0.16	0.16	0.18

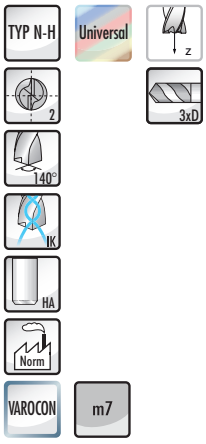
InovaTools®
GERMAN TOOLS GROUP

INO Solid carbide drills

Article-No. **752...**

Solid carbide drill 3xD



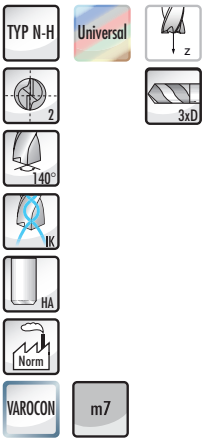


D1 m7	Inch	Decimal Equivalent	D2 h6	L2	L1	Article-No.
3,000		0,1181	6,00	20	62	752.030.00
3,100		0,1220	6,00	20	62	752.031.00
3,175	1/8	0,1250	6,00	20	62	752.3175.00
3,200		0,1260	6,00	20	62	752.032.00
3,250		0,1280	6,00	20	62	752.325.00
3,300		0,1299	6,00	20	62	752.033.00
3,400		0,1339	6,00	20	62	752.034.00
3,500		0,1378	6,00	20	62	752.035.00
3,572	9/64	0,1406	6,00	20	62	752.3572.00
3,600		0,1417	6,00	20	62	752.036.00
3,700		0,1457	6,00	20	62	752.037.00
3,800		0,1496	6,00	24	66	752.038.00
3,900		0,1535	6,00	24	66	752.039.00
3,969	5/32	0,1563	6,00	24	66	752.3969.00
4,000		0,1575	6,00	24	66	752.040.00
4,100		0,1614	6,00	24	66	752.041.00
4,200		0,1654	6,00	24	66	752.042.00
4,300		0,1693	6,00	24	66	752.043.00
4,366	11/64	0,1719	6,00	24	66	752.4366.00
4,400		0,1732	6,00	24	66	752.044.00
4,500		0,1772	6,00	24	66	752.045.00
4,600		0,1811	6,00	24	66	752.046.00
4,650		0,1831	6,00	24	66	752.465.00
4,700		0,1850	6,00	24	66	752.047.00
4,763	3/16	0,1875	6,00	28	66	752.4763.00
4,800		0,1890	6,00	28	66	752.048.00
4,900		0,1929	6,00	28	66	752.049.00
5,000		0,1969	6,00	28	66	752.050.00
5,100		0,2008	6,00	28	66	752.051.00
5,159	13/64	0,2031	6,00	28	66	752.5159.00
5,200		0,2047	6,00	28	66	752.052.00
5,300		0,2087	6,00	28	66	752.053.00
5,400		0,2126	6,00	28	66	752.054.00
5,500		0,2165	6,00	28	66	752.055.00
5,550		0,2185	6,00	28	66	752.555.00
5,556	7/32	0,2187	6,00	28	66	752.5556.00
5,600		0,2205	6,00	28	66	752.056.00
5,700		0,2244	6,00	28	66	752.057.00
5,800		0,2283	6,00	28	66	752.058.00
5,900		0,2323	6,00	28	66	752.059.00
6,000		0,2362	6,00	28	66	752.060.00
6,100		0,2402	8,00	34	79	752.061.00
6,200		0,2441	8,00	34	79	752.062.00
6,300		0,2480	8,00	34	79	752.063.00
6,350	1/4	0,2500	8,00	34	79	752.6350.00
6,400		0,2520	8,00	34	79	752.064.00
6,500		0,2559	8,00	34	79	752.065.00
6,600		0,2598	8,00	34	79	752.066.00
6,700		0,2638	8,00	34	79	752.067.00
6,747	17/64	0,2656	8,00	34	79	752.6747.00
6,800		0,2677	8,00	34	79	752.068.00
6,900		0,2717	8,00	34	79	752.069.00
7,000		0,2756	8,00	34	79	752.070.00
7,100		0,2795	8,00	41	79	752.071.00
7,144	9/32	0,2813	8,00	41	79	752.7144.00
7,200		0,2835	8,00	41	79	752.072.00
7,300		0,2874	8,00	41	79	752.073.00
7,400		0,2913	8,00	41	79	752.074.00
7,500		0,2953	8,00	41	79	752.075.00
7,541	19/64	0,2969	8,00	41	79	752.7541.00
7,600		0,2992	8,00	41	79	752.076.00
7,700		0,3031	8,00	41	79	752.077.00
7,800		0,3071	8,00	41	79	752.078.00
7,900		0,3110	8,00	41	79	752.079.00
7,938	5/16	0,3125	8,00	41	79	752.7938.00
8,000		0,3150	8,00	41	79	752.080.00
8,100		0,3189	10,00	47	89	752.081.00
8,200		0,3228	10,00	47	89	752.082.00
8,300		0,3268	10,00	47	89	752.083.00
8,400		0,3307	10,00	47	89	752.084.00
8,500		0,3346	10,00	47	89	752.085.00
8,600		0,3386	10,00	47	89	752.086.00

INO Solid carbide drills

Article-No. **752...**

Solid carbide drill 3xD

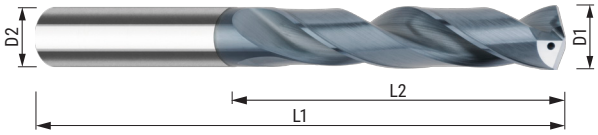


D1 m7	Inch	Decimal Equivalent	D2 h6	L2	L1	Article-No.
8,700		0,3425	10,00	47	89	752.087.00
8,731	11/32	0,3437	10,00	47	89	752.8731.00
8,800		0,3465	10,00	47	89	752.088.00
8,900		0,3504	10,00	47	89	752.089.00
9,000		0,3543	10,00	47	89	752.090.00
9,100		0,3583	10,00	47	89	752.091.00
9,128	23/64	0,3594	10,00	47	89	752.9128.00
9,200		0,3622	10,00	47	89	752.092.00
9,300		0,3661	10,00	47	89	752.093.00
9,400		0,3701	10,00	47	89	752.094.00
9,500		0,3740	10,00	47	89	752.095.00
9,525	3/8	0,3750	10,00	47	89	752.9525.00
9,600		0,3780	10,00	47	89	752.096.00
9,700		0,3819	10,00	47	89	752.097.00
9,800		0,3858	10,00	47	89	752.098.00
9,900		0,3898	10,00	47	89	752.099.00
9,922	25/64	0,3906	10,00	47	89	752.9922.00
10,000		0,3937	10,00	47	89	752.100.00
10,100		0,3976	12,00	55	102	752.101.00
10,200		0,4016	12,00	55	102	752.102.00
10,300		0,4055	12,00	55	102	752.103.00
10,319	13/32	0,4063	12,00	55	102	752.10319.00
10,400		0,4094	12,00	55	102	752.104.00
10,500		0,4134	12,00	55	102	752.105.00
10,600		0,4173	12,00	55	102	752.106.00
10,700		0,4213	12,00	55	102	752.107.00
10,716	27/64	0,4219	12,00	55	102	752.10716.00
10,800		0,4252	12,00	55	102	752.108.00
10,900		0,4291	12,00	55	102	752.109.00
11,000		0,4331	12,00	55	102	752.110.00
11,100		0,4370	12,00	55	102	752.111.00
11,113	7/16	0,4375	12,00	55	102	752.11113.00
11,200		0,4409	12,00	55	102	752.112.00
11,300		0,4449	12,00	55	102	752.113.00
11,400		0,4488	12,00	55	102	752.114.00
11,500		0,4528	12,00	55	102	752.115.00
11,509	29/64	0,4531	12,00	55	102	752.11509.00
11,600		0,4567	12,00	55	102	752.116.00
11,700		0,4606	12,00	55	102	752.117.00
11,800		0,4646	12,00	55	102	752.118.00
11,900		0,4685	12,00	55	102	752.119.00
11,906	15/32	0,4687	12,00	55	102	752.11906.00
12,000		0,4724	12,00	55	102	752.120.00
12,200		0,4803	14,00	60	107	752.122.00
12,300		0,4843	14,00	60	107	752.123.00
12,303	31/64	0,4844	14,00	60	107	752.12303.00
12,500		0,4921	14,00	60	107	752.125.00
12,700	1/2	0,5000	14,00	60	107	752.12700.00
12,800		0,5039	14,00	60	107	752.128.00
13,000		0,5118	14,00	60	107	752.130.00
13,494	17/32	0,5313	14,00	60	107	752.13494.00
13,500		0,5315	14,00	60	107	752.135.00
13,800		0,5433	14,00	60	107	752.138.00
14,000		0,5512	14,00	60	107	752.140.00
14,200		0,5591	16,00	65	115	752.142.00
14,288	9/16	0,5625	16,00	65	115	752.14288.00
14,500		0,5709	16,00	65	115	752.145.00
14,800		0,5827	16,00	65	115	752.148.00
15,000		0,5906	16,00	65	115	752.150.00
15,100		0,5945	16,00	65	115	752.151.00
15,200		0,5984	16,00	65	115	752.152.00
15,500		0,6102	16,00	65	115	752.155.00
15,800		0,6220	16,00	65	115	752.158.00
15,875	5/8	0,6250	16,00	65	115	752.15875.00
16,000		0,6299	16,00	65	115	752.160.00
16,500		0,6496	18,00	73	123	752.165.00
16,800		0,6614	18,00	73	123	752.168.00
17,000		0,6693	18,00	73	123	752.170.00
17,300		0,6811	18,00	73	123	752.173.00
17,500		0,6890	18,00	73	123	752.175.00
17,700		0,6969	18,00	73	123	752.177.00
17,800		0,7008	18,00	73	123	752.178.00
18,000		0,7087	18,00	73	123	752.180.00
18,500		0,7283	20,00	79	131	752.185.00
19,000		0,7480	20,00	79	131	752.190.00
19,500		0,7677	20,00	79	131	206.193.00
19,500		0,7677	20,00	79	131	206.195.00
19,800		0,7795	20,00	79	131	206.198.00
20,000		0,7874	20,00	79	131	206.200.00

InovaTools® GERMAN TOOLS GROUP

INO Solid carbide drills

Article-No. **753...**



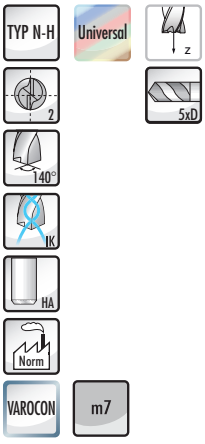
Solid carbide drill 5xD

TYP N-H | Universal | z | 2 | 5xD | 140° | IK | HA | Norm | VAROCON | m7

D1 m7	Inch	Decimal Equivalent	D2 h6	L2	L1	Article-No.
1,000		0,0394	3,00	10	55	753.010.00
1,100		0,0433	3,00	12	55	753.011.00
1,200		0,0472	3,00	12	55	753.012.00
1,300		0,0512	3,00	12	55	753.013.00
1,400		0,0551	3,00	12	55	753.014.00
1,500		0,0591	3,00	12	55	753.015.00
1,600		0,0630	3,00	16	55	753.016.00
1,700		0,0669	3,00	16	55	753.017.00
1,800		0,0709	3,00	16	55	753.018.00
1,900		0,0748	3,00	16	55	753.019.00
2,000		0,0787	3,00	16	57	753.020.00
2,100		0,0827	3,00	21	57	753.021.00
2,200		0,0866	3,00	21	57	753.022.00
2,300		0,0906	3,00	21	57	753.023.00
2,400		0,0945	3,00	21	57	753.024.00
2,500		0,0984	3,00	21	57	753.025.00
2,600		0,1024	3,00	21	57	753.026.00
2,700		0,1063	3,00	21	57	753.027.00
2,800		0,1102	3,00	21	57	753.028.00
2,900		0,1142	3,00	21	57	753.029.00
3,000		0,1181	6,00	28	66	753.030.00
3,100		0,1220	6,00	28	66	753.031.00
3,175	1/8	0,1250	6,00	28	66	753.3175.00
3,200		0,1260	6,00	28	66	753.032.00
3,250		0,1280	6,00	28	66	753.325.00
3,300		0,1299	6,00	28	66	753.033.00
3,400		0,1339	6,00	28	66	753.034.00
3,500		0,1378	6,00	28	66	753.035.00
3,572	9/64	0,1406	6,00	28	66	753.3572.00
3,600		0,1417	6,00	28	66	753.036.00
3,650		0,1437	6,00	28	66	753.365.00
3,700		0,1457	6,00	28	66	753.037.00
3,800		0,1496	6,00	36	74	753.038.00
3,900		0,1535	6,00	36	74	753.039.00
3,969	5/32	0,1563	6,00	36	74	753.3969.00
4,100		0,1614	6,00	36	74	753.041.00
4,200		0,1654	6,00	36	74	753.042.00
4,300		0,1693	6,00	36	74	753.043.00
4,366	11/64	0,1719	6,00	36	74	753.4366.00
4,400		0,1732	6,00	36	74	753.044.00
4,500		0,1772	6,00	36	74	753.045.00
4,600		0,1811	6,00	36	74	753.046.00
4,650		0,1831	6,00	36	74	753.465.00
4,700		0,1850	6,00	36	74	753.047.00
4,763	3/16	0,1875	6,00	44	82	753.4763.00
4,800		0,1890	6,00	44	82	753.048.00
4,900		0,1929	6,00	44	82	753.049.00
5,000		0,1969	6,00	44	82	753.050.00
5,100		0,2008	6,00	44	82	753.051.00
5,159	13/64	0,2031	6,00	44	82	753.5159.00
5,200		0,2047	6,00	44	82	753.052.00
5,250		0,2067	6,00	44	82	753.5250.00
5,300		0,2087	6,00	44	82	753.053.00
5,400		0,2126	6,00	44	82	753.054.00
5,500		0,2165	6,00	44	82	753.055.00
5,550		0,2185	6,00	44	82	753.555.00
5,556	7/32	0,2187	6,00	44	82	753.5556.00
5,600		0,2205	6,00	44	82	753.056.00
5,700		0,2244	6,00	44	82	753.057.00
5,800		0,2283	6,00	44	82	753.058.00
5,900		0,2323	6,00	44	82	753.059.00
6,000		0,2362	6,00	44	82	753.060.00
6,100		0,2402	8,00	53	91	753.061.00
6,200		0,2441	8,00	53	91	753.062.00
6,300		0,2480	8,00	53	91	753.063.00
6,350	1/4	0,2500	8,00	53	91	753.6350.00
6,400		0,2520	8,00	53	91	753.064.00
6,500		0,2559	8,00	53	91	753.065.00
6,600		0,2598	8,00	53	91	753.066.00
6,700		0,2638	8,00	53	91	753.067.00
6,747	17/64	0,2656	8,00	53	91	753.6747.00
6,800		0,2677	8,00	53	91	753.068.00
6,900		0,2717	8,00	53	91	753.069.00
7,000		0,2756	8,00	53	91	753.070.00
7,100		0,2795	8,00	53	91	753.071.00
7,144	9/32	0,2813	8,00	53	91	753.7144.00
7,200		0,2835	8,00	53	91	753.072.00
7,300		0,2874	8,00	53	91	753.073.00
7,400		0,2913	8,00	53	91	753.074.00
7,500		0,2953	8,00	53	91	753.075.00
7,541	19/64	0,2969	8,00	53	91	753.7541.00

Article-No. **753...**

Solid carbide drill 5xD



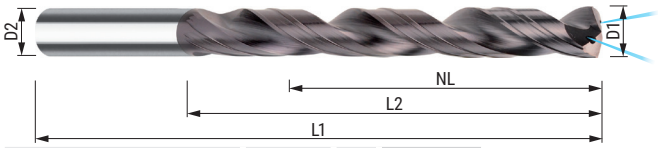
D1 m7	Inch	Decimal Equivalent	D2 h6	L2	L1	Article-No.
7,600		0,2992	8,00	53	91	753.076.00
7,700		0,3031	8,00	53	91	753.077.00
7,800		0,3071	8,00	53	91	753.078.00
7,900		0,3110	8,00	53	91	753.079.00
7,938	5/16	0,3125	8,00	53	91	753.7938.00
8,000		0,3150	8,00	53	91	753.080.00
8,100		0,3189	10,00	61	103	753.081.00
8,200		0,3228	10,00	61	103	753.082.00
8,300		0,3268	10,00	61	103	753.083.00
8,400		0,3307	10,00	61	103	753.084.00
8,500		0,3346	10,00	61	103	753.085.00
8,600		0,3386	10,00	61	103	753.086.00
8,700		0,3425	10,00	61	103	753.087.00
8,731	11/32	0,3437	10,00	61	103	753.8731.00
8,800		0,3465	10,00	61	103	753.088.00
8,900		0,3504	10,00	61	103	753.089.00
9,000		0,3543	10,00	61	103	753.090.00
9,100		0,3583	10,00	61	103	753.091.00
9,128	23/64	0,3594	10,00	61	103	753.9128.00
9,200		0,3622	10,00	61	103	753.092.00
9,300		0,3661	10,00	61	103	753.093.00
9,400		0,3701	10,00	61	103	753.094.00
9,500		0,3740	10,00	61	103	753.095.00
9,525	3/8	0,3750	10,00	61	103	753.9525.00
9,600		0,3780	10,00	61	103	753.096.00
9,700		0,3819	10,00	61	103	753.097.00
9,800		0,3858	10,00	61	103	753.098.00
9,900		0,3898	10,00	61	103	753.099.00
9,922	25/64	0,3906	10,00	61	103	753.9922.00
10,000		0,3937	10,00	61	103	753.100.00
10,100		0,3976	12,00	71	118	753.101.00
10,200		0,4016	12,00	71	118	753.102.00
10,300		0,4055	12,00	71	118	753.103.00
10,319	13/32	0,4063	12,00	71	118	753.10319.00
10,400		0,4094	12,00	71	118	753.104.00
10,500		0,4134	12,00	71	118	753.105.00
10,600		0,4173	12,00	71	118	753.106.00
10,700		0,4213	12,00	71	118	753.107.00
10,716	27/64	0,4219	12,00	71	118	753.10716.00
10,800		0,4252	12,00	71	118	753.108.00
10,900		0,4291	12,00	71	118	753.109.00
11,000		0,4331	12,00	71	118	753.110.00
11,100		0,4370	12,00	71	118	753.111.00
11,113	7/16	0,4375	12,00	71	118	753.11113.00
11,200		0,4409	12,00	71	118	753.112.00
11,300		0,4449	12,00	71	118	753.113.00
11,400		0,4488	12,00	71	118	753.114.00
11,500		0,4528	12,00	71	118	753.115.00
11,509	29/64	0,4531	12,00	71	118	753.11509.00
11,550		0,4547	12,00	71	118	753.1155.00
11,600		0,4567	12,00	71	118	753.116.00
11,700		0,4606	12,00	71	118	753.117.00
11,800		0,4646	12,00	71	118	753.118.00
11,900		0,4685	12,00	71	118	753.119.00
11,906	15/32	0,4687	12,00	71	118	753.11906.00
12,000		0,4724	12,00	71	118	753.120.00
12,200		0,4803	14,00	77	124	753.122.00
12,300		0,4843	14,00	77	124	753.123.00
12,303	31/64	0,4844	14,00	77	124	753.12303.00
12,500		0,4921	14,00	77	124	753.125.00
12,700	1/2	0,5000	14,00	77	124	753.12700.00
12,800		0,5039	14,00	77	124	753.128.00
13,000		0,5118	14,00	77	124	753.130.00
13,494	17/32	0,5313	14,00	77	124	753.13494.00
13,500		0,5315	14,00	77	124	753.135.00
13,800		0,5433	14,00	77	124	753.138.00
14,000		0,5512	14,00	77	124	753.140.00
14,200		0,5591	14,00	83	133	753.142.00
14,288	9/16	0,5625	16,00	83	133	753.14288.00
14,500		0,5709	16,00	83	133	753.145.00
15,000		0,5906	16,00	83	133	753.150.00
15,500		0,6102	16,00	83	133	753.152.00
15,500		0,6102	16,00	83	133	753.15210
15,500		0,6102	16,00	83	133	753.155.00
15,800		0,6220	16,00	83	133	753.158.00
15,875	5/8	0,6250	16,00	83	133	753.15875.00
16,000		0,6299	16,00	83	133	753.160.00
16,500		0,6496	18,00	93	143	753.165.00
16,800		0,6614	18,00	93	143	753.168.00
17,000		0,6693	18,00	93	143	753.170.00
17,500		0,6890	18,00	93	143	753.175.00
17,800		0,7008	18,00	93	143	753.178.00
18,000		0,7087	18,00	93	143	753.180.00
18,500		0,7283	18,00	101	153	753.185.00
19,000		0,7480	20,00	101	153	753.190.00
19,500		0,7677	20,00	101	153	207.195.00
20,000		0,7874	20,00	101	153	207.200.00

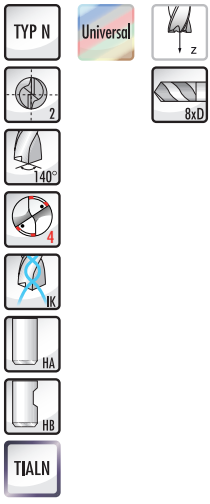
InovaTools®
GERMAN TOOLS GROUP

INO Solid carbide drills

Article-No. **708...**

Solid carbide drill with internal coolant hole 8xD





.00 HA Schaft/Shank
.10 HB Schaft/Shank
.20 HE Schaft/Shank

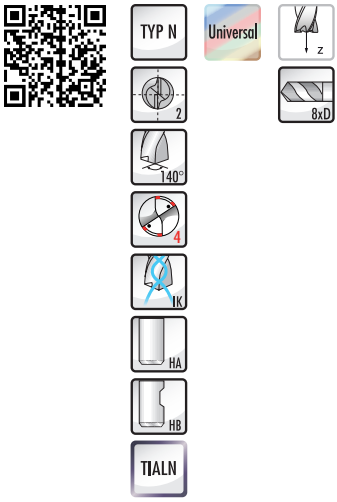
D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
1,000		0,0394	3,00	11	55	9,0	708.010
1,100		0,0433	3,00	17	55	13,5	708.011
1,200		0,0472	3,00	17	55	13,5	708.012
1,300		0,0512	3,00	17	55	13,5	708.013
1,400		0,0551	3,00	17	55	13,5	708.014
1,500		0,0591	3,00	22	65	17,5	708.015
1,600		0,0630	3,00	22	65	17,5	708.016
1,700		0,0669	3,00	22	65	17,5	708.017
1,800		0,0709	3,00	22	65	17,5	708.018
1,900		0,0748	3,00	22	65	17,5	708.019
2,000		0,0787	3,00	28	74	22,5	708.020
2,100		0,0827	3,00	28	74	22,5	708.021
2,200		0,0866	3,00	28	74	22,5	708.022
2,300		0,0906	3,00	28	74	22,5	708.023
2,400		0,0945	3,00	28	74	22,5	708.024
2,500		0,0984	3,00	28	81	22,5	708.025
2,600		0,1024	3,00	32	81	22,5	708.026
2,700		0,1063	3,00	32	81	22,5	708.027
2,800		0,1102	3,00	32	81	22,5	708.028
2,900		0,1142	3,00	32	81	22,5	708.029
3,000		0,1181	6,00	34	72	27,0	708.030
3,100		0,1220	6,00	34	72	27,0	708.031
3,175	1/8	0,1250	6,00	34	72	27,0	708.3175
3,200		0,1260	6,00	34	72	27,0	708.032
3,300		0,1299	6,00	34	72	27,0	708.033
3,400		0,1339	6,00	34	72	27,0	708.034
3,500		0,1378	6,00	34	72	27,0	708.035
3,572	9/64	0,1406	6,00	34	72	27,0	708.3572
3,600		0,1417	6,00	34	72	27,0	708.036
3,700		0,1457	6,00	34	72	27,0	708.037
3,800		0,1496	6,00	43	86	35,0	708.038
3,900		0,1535	6,00	43	86	35,0	708.039
3,969	5/32	0,1563	6,00	43	86	35,0	708.3969
4,000		0,1575	6,00	43	86	35,0	708.040
4,100		0,1614	6,00	43	86	35,0	708.041
4,200		0,1654	6,00	43	86	35,0	708.042
4,300		0,1693	6,00	43	86	35,0	708.043
4,366	11/64	0,1719	6,00	43	86	35,0	708.4366
4,400		0,1732	6,00	43	86	35,0	708.044
4,500		0,1772	6,00	43	86	35,0	708.045
4,600		0,1811	6,00	43	86	35,0	708.046
4,700		0,1850	6,00	57	95	45,0	708.047
4,763	3/16	0,1875	6,00	57	95	45,0	708.4763
4,800		0,1890	6,00	57	95	45,0	708.048
4,900		0,1929	6,00	57	95	45,0	708.049
5,000		0,1969	6,00	57	95	45,0	708.050

D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
5,100		0,2008	6,00	57	95	45,0	708.051
5,159	13/64	0,2031	6,00	57	95	45,0	708.5159
5,200		0,2047	6,00	57	95	45,0	708.052
5,300		0,2087	6,00	57	95	45,0	708.053
5,400		0,2126	6,00	57	95	45,0	708.054
5,500		0,2165	6,00	57	95	45,0	708.055
5,556	7/32	0,2187	6,00	57	95	45,0	708.5556
5,600		0,2205	6,00	57	95	45,0	708.056
5,700		0,2244	6,00	57	95	45,0	708.057
5,800		0,2283	6,00	57	95	45,0	708.058
5,900		0,2323	6,00	57	95	45,0	708.059
6,000		0,2362	6,00	57	95	45,0	708.060
6,100		0,2402	8,00	76	114	52,0	708.061
6,200		0,2441	8,00	76	114	52,0	708.062
6,300		0,2480	8,00	76	114	52,0	708.063
6,350	1/4	0,2500	8,00	76	114	52,0	708.6350
6,400		0,2520	8,00	76	114	52,0	708.064
6,500		0,2559	8,00	76	114	52,0	708.065
6,600		0,2598	8,00	76	114	52,0	708.066
6,700		0,2638	8,00	76	114	52,0	708.067
6,747	17/64	0,2656	8,00	76	114	52,0	708.6747
6,800		0,2677	8,00	76	114	52,0	708.068
6,900		0,2717	8,00	76	114	52,0	708.069
7,000		0,2756	8,00	76	114	52,0	708.070
7,100		0,2795	8,00	76	114	52,0	708.071
7,144	9/32	0,2813	8,00	76	114	52,0	708.7144
7,200		0,2835	8,00	76	114	52,0	708.072
7,300		0,2874	8,00	76	114	52,0	708.073
7,400		0,2913	8,00	76	114	52,0	708.074
7,500		0,2953	8,00	76	114	52,0	708.075

INO Solid carbide drills

Article-No. **708...**

Solid carbide drill with internal coolant hole 8xD



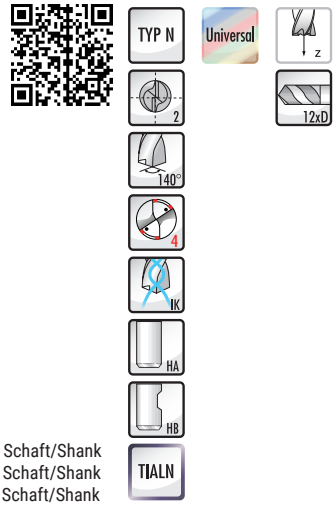
D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
7,541	19/64	0,2969	8,00	76	114	52,0	708.7541
7,600		0,2992	8,00	76	114	52,0	708.076
7,700		0,3031	8,00	76	114	52,0	708.077
7,800		0,3071	8,00	76	114	52,0	708.078
7,900		0,3110	8,00	76	114	52,0	708.079
7,938	5/16	0,3125	10,00	76	114	52,0	708.7938
8,000		0,3150	10,00	76	114	52,0	708.080
8,100		0,3189	10,00	95	142	76,0	708.081
8,200		0,3228	10,00	95	142	76,0	708.082
8,300		0,3268	10,00	95	142	76,0	708.083
8,400		0,3307	10,00	95	142	76,0	708.084
8,500		0,3346	10,00	95	142	76,0	708.085
8,600		0,3386	10,00	95	142	76,0	708.086
8,700		0,3425	10,00	95	142	76,0	708.087
8,731	11/32	0,3437	10,00	95	142	76,0	708.8731
8,800		0,3465	10,00	95	142	76,0	708.088
8,900		0,3504	10,00	95	142	76,0	708.089
9,000		0,3543	10,00	95	142	76,0	708.090
9,100		0,3583	10,00	95	142	76,0	708.091
9,128	23/64	0,3594	10,00	95	142	76,0	708.9128
9,200		0,3622	10,00	95	142	76,0	708.092
9,300		0,3661	10,00	95	142	76,0	708.093
9,400		0,3701	10,00	95	142	76,0	708.094
9,500		0,3740	10,00	95	142	76,0	708.095
9,525	3/8	0,3750	10,00	95	142	76,0	708.9525
9,600		0,3780	10,00	95	142	76,0	708.096
9,700		0,3819	10,00	95	142	76,0	708.097
9,800		0,3858	10,00	95	142	76,0	708.098
9,900		0,3898	10,00	95	142	76,0	708.099
9,922	25/64	0,3906	10,00	95	142	76,0	708.9922
10,000		0,3937	10,00	95	142	76,0	708.100
10,100		0,3976	12,00	114	162	90,0	708.101
10,200		0,4016	12,00	114	162	90,0	708.102
10,300		0,4055	12,00	114	162	90,0	708.103
10,319	13/32	0,4063	12,00	114	162	90,0	708.10319
10,400		0,4094	12,00	114	162	90,0	708.104
10,500		0,4134	12,00	114	162	90,0	708.105
10,600		0,4173	12,00	114	162	90,0	708.106
10,700		0,4213	12,00	114	162	90,0	708.107
10,716	27/64	0,4219	12,00	114	162	90,0	708.10716
10,800		0,4252	12,00	114	162	90,0	708.108
10,900		0,4291	12,00	114	162	90,0	708.109
11,000		0,4331	12,00	114	162	90,0	708.110
11,100		0,4370	12,00	114	162	90,0	708.111
11,113	7/16	0,4375	12,00	114	162	90,0	708.11113
11,200		0,4409	12,00	114	162	90,0	708.112
11,300		0,4449	12,00	114	162	90,0	708.113
11,400		0,4488	12,00	114	162	90,0	708.114
11,500		0,4528	12,00	114	162	90,0	708.115
11,509	29/64	0,4531	12,00	114	162	90,0	708.11509
11,600		0,4567	12,00	114	162	90,0	708.116
11,700		0,4606	12,00	114	162	90,0	708.117
11,800		0,4646	12,00	114	162	90,0	708.118
11,900		0,4685	12,00	114	162	90,0	708.119
11,906	15/32	0,4687	12,00	114	162	90,0	708.11906
12,000		0,4724	12,00	114	162	90,0	708.120
12,200		0,4803	14,00	133	184	106,0	708.122
12,303	31/64	0,4844	14,00	133	184	106,0	708.12303
12,500		0,4921	14,00	133	184	106,0	708.125
12,700	1/2	0,5000	14,00	133	184	106,0	708.12700
12,800		0,5039	14,00	133	184	106,0	708.128
13,000		0,5118	14,00	133	184	106,0	708.130
13,494	17/32	0,5313	14,00	133	184	106,0	708.13494
13,500		0,5315	14,00	133	184	106,0	708.135
14,000		0,5512	14,00	133	184	106,0	708.140
14,288	9/16	0,5625	16,00	152	203	122,0	708.14288
14,500		0,5709	16,00	152	203	122,0	708.145
15,000		0,5906	16,00	152	203	122,0	708.150
15,500		0,6102	16,00	152	203	122,0	708.155
15,800		0,6102	16,00	152	203	122,0	708.158
15,875	5/8	0,6250	16,00	152	203	122,0	708.15875
16,000		0,6299	16,00	152	203	122,0	708.160
16,500		0,6496	18,00	171	222	150,0	708.165
17,000		0,6693	18,00	171	222	150,0	708.170
17,500		0,6890	18,00	171	222	150,0	708.175
18,000		0,7087	18,00	171	222	150,0	708.180
18,500		0,7283	20,00	190	243	170,0	708.185
19,000		0,7480	20,00	190	243	170,0	708.190
20,000		0,7874	20,00	190	243	170,0	708.200

InovaTools® GERMAN TOOLS GROUP

INO Solid carbide drills

Article-No. **710...**

Solid carbide drill with internal coolant hole 12xD



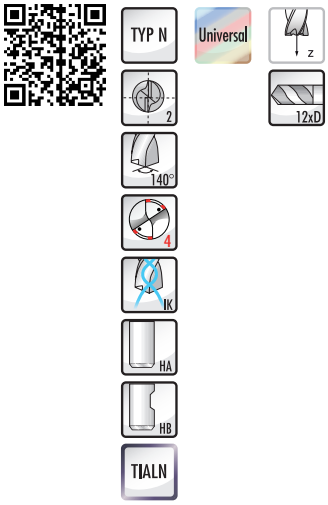
.00 HA Schaft/Shank
.10 HB Schaft/Shank
.20 HE Schaft/Shank

D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
1,00		0,0394	3,00	15	55	12,0	710.010..00
1,10		0,0433	3,00	23	55	18,5	710.011.00
1,20		0,0472	3,00	23	55	18,5	710.012.00
1,30		0,0512	3,00	23	55	18,5	710.013.00
1,40		0,0551	3,00	23	55	18,5	710.014.00
1,50		0,0591	3,00	30	65	24,0	710.015.00
1,60		0,0630	3,00	30	65	24,0	710.016.00
1,70		0,0669	3,00	30	65	24,0	710.017.00
1,80		0,0709	3,00	30	65	24,0	710.018.00
1,90		0,0748	3,00	30	65	24,0	710.019.00
2,00		0,0787	3,00	38	74	30,5	710.020..00
2,10		0,0827	3,00	38	74	30,5	710.021.00
2,20		0,0866	3,00	38	74	30,5	710.022.00
2,30		0,0906	3,00	38	74	30,5	710.023.00
2,40		0,0945	3,00	38	74	30,5	710.024.00
2,50		0,0984	3,00	44	81	30,5	710.025.00
2,60		0,1024	3,00	44	81	30,5	710.026.00
2,70		0,1063	3,00	44	81	30,5	710.027.00
2,80		0,1102	3,00	44	81	30,5	710.028.00
2,90		0,1142	3,00	44	81	30,5	710.029.00
3,00		0,1181	6,00	54	92	48,0	710.030...
3,10		0,1220	6,00	54	92	48,0	710.031...
3,175	1/8	0,1250	6,00	54	92	48,0	710.3175...
3,200		0,1260	6,00	54	92	48,0	710.032...
3,300		0,1299	6,00	54	92	48,0	710.033...
3,400		0,1339	6,00	54	92	48,0	710.034...
3,500		0,1378	6,00	54	92	48,0	710.035...
3,572	9/64	0,1406	6,00	54	92	48,0	710.3572...
3,600		0,1417	6,00	54	92	48,0	710.036...
3,700		0,1457	6,00	54	92	48,0	710.037...
3,800		0,1496	6,00	64	102	58,0	710.038...
3,900		0,1535	6,00	64	102	58,0	710.039...
3,969	5/32	0,1563	6,00	64	102	58,0	710.3969...
4,000		0,1575	6,00	64	102	58,0	710.040...
4,100		0,1614	6,00	64	102	58,0	710.041...
4,200		0,1654	6,00	64	102	58,0	710.042...
4,300		0,1693	6,00	64	102	58,0	710.043...
4,366	11/64	0,1719	6,00	64	102	58,0	710.4366...
4,400		0,1732	6,00	64	102	58,0	710.044...
4,500		0,1772	6,00	64	102	58,0	710.045...
4,600		0,1811	6,00	64	102	58,0	710.046...
4,700		0,1850	6,00	64	102	58,0	710.047...
4,763	3/16	0,1875	6,00	78	118	70,0	710.4763...
4,800		0,1890	6,00	78	118	70,0	710.048...
4,900		0,1929	6,00	78	118	70,0	710.049...
5,000		0,1969	6,00	78	118	70,0	710.050...
5,100		0,2008	6,00	78	118	70,0	710.051...
5,159	13/64	0,2031	6,00	78	118	70,0	710.5159...
5,200		0,2047	6,00	78	118	70,0	710.052...
5,300		0,2087	6,00	78	118	70,0	710.053...
5,400		0,2126	6,00	78	118	70,0	710.054...
5,500		0,2165	6,00	78	118	70,0	710.055...
5,556	7/32	0,2187	6,00	78	118	70,0	710.5556...
5,600		0,2205	6,00	78	118	70,0	710.056...
5,700		0,2244	6,00	78	118	70,0	710.057...
5,800		0,2283	6,00	78	118	70,0	710.058...
5,900		0,2323	6,00	78	118	70,0	710.059...
6,000		0,2362	6,00	78	118	70,0	710.060...
6,100		0,2402	8,00	108	146	94,0	710.061...
6,200		0,2441	8,00	108	146	94,0	710.062...
6,300		0,2480	8,00	108	146	94,0	710.063...
6,350	1/4	0,2500	8,00	108	146	94,0	710.6350...
6,400		0,2520	8,00	108	146	94,0	710.064...
6,500		0,2559	8,00	108	146	94,0	710.065...
6,600		0,2598	8,00	108	146	94,0	710.066...
6,700		0,2638	8,00	108	146	94,0	710.067...
6,747	17/64	0,2656	8,00	108	146	94,0	710.6747...
6,800		0,2677	8,00	108	146	94,0	710.068...
6,900		0,2717	8,00	108	146	94,0	710.069...
7,000		0,2756	8,00	108	146	94,0	710.070...
7,100		0,2795	8,00	108	146	94,0	710.071...
7,144	9/32	0,2813	8,00	108	146	94,0	710.7144...
7,200		0,2835	8,00	108	146	94,0	710.072...
7,300		0,2874	8,00	108	146	94,0	710.073...
7,400		0,2913	8,00	108	146	94,0	710.074...
7,500		0,2953	8,00	108	146	94,0	710.075...
7,541	19/64	0,2969	8,00	108	146	94,0	710.7541...

INO Solid carbide drills

Article-No. **710...**

Solid carbide drill with internal coolant hole 12xD



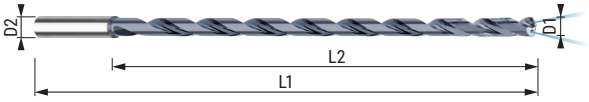
D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
7,600		0,2992	8,00	108	146	94,0	710.076...
7,700		0,3031	8,00	108	146	94,0	710.077...
7,800		0,3071	8,00	108	146	94,0	710.078...
7,900		0,3110	8,00	108	146	94,0	710.079...
7,938	5/16	0,3125	8,00	108	146	94,0	710.7938...
8,000		0,3150	8,00	108	146	94,0	710.080...
8,100		0,3189	10,00	120	162	110,0	710.081...
8,200		0,3228	10,00	120	162	110,0	710.082...
8,300		0,3268	10,00	120	162	110,0	710.083...
8,400		0,3307	10,00	120	162	110,0	710.084...
8,500		0,3346	10,00	120	162	110,0	710.085...
8,600		0,3386	10,00	120	162	110,0	710.086...
8,700		0,3425	10,00	120	162	110,0	710.087...
8,731	11/32	0,3437	10,00	120	162	110,0	710.8731...
8,800		0,3465	10,00	120	162	110,0	710.088...
8,900		0,3504	10,00	120	162	110,0	710.089...
9,000		0,3543	10,00	120	162	110,0	710.090...
9,100		0,3583	10,00	120	162	110,0	710.091...
9,128	23/64	0,3594	10,00	120	162	110,0	710.9128...
9,200		0,3622	10,00	120	162	110,0	710.092...
9,300		0,3661	10,00	120	162	110,0	710.093...
9,400		0,3701	10,00	120	162	110,0	710.094...
9,500		0,3740	10,00	120	162	110,0	710.095...
9,525	3/8	0,3750	10,00	120	162	110,0	710.9525...
9,600		0,3780	10,00	120	162	110,0	710.096...
9,700		0,3819	10,00	120	162	110,0	710.097...
9,800		0,3858	10,00	120	162	110,0	710.098...
9,900		0,3898	10,00	120	162	110,0	710.099...
9,922	25/64	0,3906	10,00	120	162	110,0	710.9922...
10,000		0,3937	10,00	120	162	110,0	710.1.....
10,100		0,3976	12,00	156	204	142,0	710.101...
10,200		0,4016	12,00	156	204	142,0	710.102...
10,300		0,4055	12,00	156	204	142,0	710.103...
10,319	13/32	0,4063	12,00	156	204	142,0	710.10319...
10,400		0,4094	12,00	156	204	142,0	710.104...
10,500		0,4134	12,00	156	204	142,0	710.105...
10,600		0,4173	12,00	156	204	142,0	710.106...
10,700		0,4213	12,00	156	204	142,0	710.107...
10,716	27/64	0,4219	12,00	156	204	142,0	710.10716...
10,800		0,4252	12,00	156	204	142,0	710.108...
10,900		0,4291	12,00	156	204	142,0	710.109...
11,000		0,4331	12,00	156	204	142,0	710.110...
11,100		0,4370	12,00	156	204	142,0	710.111...
11,113	7/16	0,4375	12,00	156	204	142,0	710.11113...
11,200		0,4409	12,00	156	204	142,0	710.112...
11,300		0,4449	12,00	156	204	142,0	710.113...
11,400		0,4488	12,00	156	204	142,0	710.114...
11,500		0,4528	12,00	156	204	142,0	710.115...
11,509	29/64	0,4531	12,00	156	204	142,0	710.11509...
11,600		0,4567	12,00	156	204	142,0	710.116...
11,700		0,4606	12,00	156	204	142,0	710.117...
11,800		0,4646	12,00	156	204	142,0	710.118...
11,900		0,4685	12,00	156	204	142,0	710.119...
11,906	15/32	0,4687	12,00	156	204	142,0	710.11906...
12,000		0,4724	12,00	156	204	142,0	710.120...
12,303	31/64	0,4844	14,00	182	230	166,0	710.12303...
12,500		0,4921	14,00	182	230	166,0	710.125...
12,700	1/2	0,5000	14,00	182	230	166,0	710.127.....
12,800		0,5039	14,00	182	230	166,0	710.128...
13,000		0,5118	14,00	182	230	166,0	710.130...
13,494	17/32	0,5313	14,00	182	230	166,0	710.13494...
13,500		0,5315	14,00	182	230	166,0	710.135...
13,800		0,5433	14,00	182	230	166,0	710.138...
14,000		0,5512	14,00	182	230	166,0	710.140...
14,288	9/16	0,5625	16,00	208	260	192,0	710.14288...
14,500		0,5709	16,00	208	260	192,0	710.145...
14,800		0,5827	16,00	208	260	192,0	710.148...
15,000		0,5906	16,00	208	260	192,0	710.150...
15,500		0,6102	16,00	208	260	192,0	710.155...
15,800		0,6220	16,00	208	260	192,0	710.158...
15,875	5/8	0,6250	16,00	208	260	192,0	710.15875...
16,000		0,6299	16,00	208	260	192,0	710.160...
16,500		0,6496	18,00	234	285	216,0	710.165...
16,800		0,6614	18,00	234	285	216,0	710.168...
17,000		0,6693	18,00	234	285	216,0	710.170...
17,500		0,6890	18,00	234	285	216,0	710.175...
17,800		0,7008	18,00	234	285	216,0	710.178...
18,000		0,7087	18,00	234	285	216,0	710.180...
18,500		0,7283	20,00	258	310	238,0	710.185...
18,800		0,7402	20,00	258	310	238,0	710.188...
19,000		0,7480	20,00	258	310	238,0	710.190...
19,500		0,7677	20,00	258	310	238,0	710.195...
19,800		0,7795	20,00	258	310	238,0	710.198...
20,000		0,7874	20,00	258	310	238,0	710.200...

InovaTools® GERMAN TOOLS GROUP

INO Solid carbide deep hole drills

Article-No. **908...**

Solid carbide deep hole drill **DEEPMAX 15xD**



D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
1,000		0,0394	3,00	18,2	60	18	908.010.00
1,100		0,0433	3,00	20,2	60	20	908.011.00
1,200		0,0472	3,00	24,2	60	24	908.012.00
1,300		0,0512	3,00	24,2	60	24	908.013.00
1,400		0,0551	3,00	27,2	60	27	908.014.00
1,500		0,0591	3,00	27,2	60	27	908.015.00
1,600		0,0630	3,00	30,2	65	30	908.016.00
1,700		0,0669	3,00	30,2	65	30	908.017.00
1,800		0,0709	3,00	35,2	65	35	908.018.00
1,900		0,0748	3,00	35,2	65	35	908.019.00
2,000		0,0787	4,00	35,5	65	35	908.020.00
2,100		0,0827	4,00	40,5	75	40	908.021.00
2,200		0,0866	4,00	40,5	75	40	908.022.00
2,300		0,0906	4,00	40,5	75	40	908.023.00
2,400		0,0945	4,00	45,5	75	45	908.024.00
2,500		0,0984	4,00	45,5	75	45	908.025.00
2,600		0,1024	4,00	48,5	80	48	908.026.00
2,700		0,1063	4,00	48,5	80	48	908.027.00
2,800		0,1102	4,00	50,5	80	50	908.028.00
2,900		0,1142	4,00	50,5	80	50	908.029.00
3,000		0,1181	6,00	55,5	100	55	908.030.00
3,100		0,1220	6,00	55,5	100	55	908.031.00
3,175	1/8	0,1250	6,00	60,5	100	60	908.3175.00
3,200		0,1260	6,00	60,5	100	60	908.032.00
3,300		0,1299	6,00	60,5	100	60	908.033.00
3,400		0,1339	6,00	60,5	100	60	908.034.00
3,500		0,1378	6,00	65,5	100	65	908.035.00
3,572	9/64	0,1406	6,00	65,5	100	65	908.3572.00
3,600		0,1417	6,00	65,5	108	65	908.036.00
3,700		0,1457	6,00	70,5	108	70	908.037.00
3,800		0,1496	6,00	70,5	108	70	908.038.00
3,900		0,1535	6,00	70,5	108	70	908.039.00
3,969	5/32	0,1563	6,00	75,5	115	75	908.3969.00
4,000		0,1575	6,00	75,5	115	75	908.040.00
4,100		0,1614	6,00	75,5	115	75	908.041.00
4,200		0,1654	6,00	75,5	115	75	908.042.00
4,300		0,1693	6,00	80,5	115	80	908.043.00
4,400		0,1732	6,00	80,5	115	80	908.044.00
4,500		0,1772	6,00	80,5	115	80	908.045.00
4,600		0,1811	6,00	80,5	130	85	908.046.00
4,700		0,1850	6,00	80,5	130	85	908.047.00
4,763	3/16	0,1875	6,00	90,5	130	90	908.4763.00
4,800		0,1890	6,00	90,5	130	90	908.048.00
4,900		0,1929	6,00	90,5	130	90	908.049.00
5,000		0,1969	6,00	90,5	130	90	908.050.00

Recommendation:

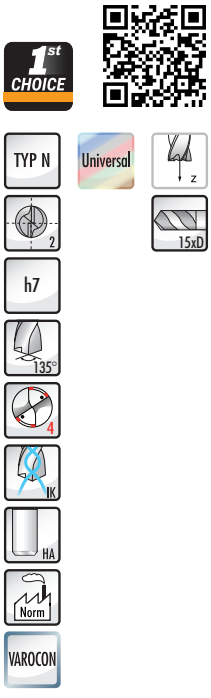
Maximum drilling depth: Flute length (see table) minus 1.5 x nominal diameter

INO Solid carbide deep hole drills

Article-No. **908...**

Solid carbide deep hole drill **DEEPMAX 15xD**

D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
5,100		0,2008	6,00	95,5	130	95	908.051.00
5,200		0,2047	6,00	95,5	130	95	908.052.00
5,300		0,2087	6,00	95,5	130	95	908.053.00
5,400		0,2126	6,00	95,5	130	95	908.054.00
5,500		0,2165	6,00	100,5	145	100	908.055.00
5,556	7/32	0,2187	6,00	100,5	145	100	908.5556.00
5,600		0,2205	6,00	100,5	145	100	908.056.00
5,700		0,2244	6,00	100,5	145	100	908.057.00
5,800		0,2283	6,00	100,5	145	100	908.058.00
5,900		0,2323	6,00	100,5	145	100	908.059.00
6,000		0,2362	6,00	100.5	145	100	908.060.00
6,100		0,2402	8,00	107,0	145	104	908.061.00
6,200		0,2441	8,00	107,0	145	104	908.062.00
6,300		0,2480	8,00	107,0	145	104	908.063.00
6,350	1/4	0,2500	8,00	107,0	145	104	908.6350.00
6,400		0,2520	8,00	107,0	145	104	908.064.00
6,500		0,2559	8,00	121,0	160	118	908.065.00
6,600		0,2598	8,00	121,0	160	118	908.066.00
6,700		0,2638	8,00	131,0	170	128	908.067.00
6,800		0,2677	8,00	131,0	170	128	908.068.00
6,900		0,2717	8,00	131,0	170	128	908.069.00
7,000		0,2756	8,00	131,0	170	128	908.070.00
7,144	9/32	0,2813	8,00	131,0	170	128	908.7144.00
7,500		0,2953	8,00	131,0	170	128	908.075.00
7,800		0,3071	8,00	141,0	180	138	908.078.00
7,938	5/16	0,3125	8,00	141,0	180	138	908.7938.00
8,000		0,3150	8,00	141,0	180	138	908.080.00
8,500		0,3346	10,00	155,0	198	152	908.085.00
8,731	11/32	0,3437	10,00	165,0	208	162	908.8731.00
8,800		0,3465	10,00	165,0	208	162	908.088.00
9,000		0,3543	10,00	165,0	208	162	908.090.00
9,500		0,3740	10,00	165,0	208	162	908.095.00
9,525	3/8	0,3750	10,00	165,0	208	162	908.9525.00
9,800		0,3858	10,00	165,0	208	162	908.098.00
10,000		0,3937	10,00	175,0	218	172	908.1.00.00
10,200		0,4016	12,00	187,0	235	184	908.102.00
10,319	13/32	0,4063	12,00	187,0	235	184	908.10319.00
10,500		0,4134	12,00	197,0	245	194	908.105.00
10,800		0,4252	12,00	197,0	245	194	908.108.00
11,000		0,4331	12,00	197,0	245	194	908.110.00
11,113	7/16	0,4375	12,00	197,0	245	194	908.11113.00
11,200		0,4409	12,00	197,0	245	194	908.112.00
11,500		0,4528	12,00	197,0	245	194	908.115.00
11,800		0,4646	12,00	207,0	255	204	908.118.00
11,906	15/32	0,4687	12,00	207,0	255	204	908.11906.00
12,000		0,4724	12,00	207,0	255	204	908.120.00



Recommendation:

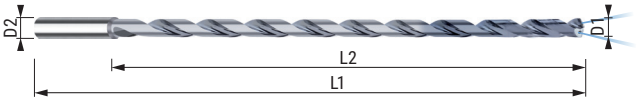
Maximum drilling depth: Flute length (see table) minus 1.5 x nominal diameter

InovaTools® GERMAN TOOLS GROUP

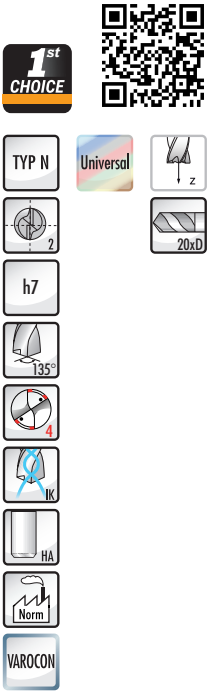
INO Solid carbide deep hole drills

Article-No. **909...**

Solid carbide deep hole drill **DEEPMAX 20xD**



D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
2,000		0,0787	4,00	45,50	95	45	909.020.00
2,100		0,0827	4,00	50,50	95	50	909.021.00
2,200		0,0866	4,00	50,50	95	50	909.022.00
2,300		0,0906	4,00	55,50	95	55	909.023.00
2,400		0,0945	4,00	55,50	95	55	909.024.00
2,500		0,0984	4,00	60,50	108	60	909.025.00
2,600		0,1024	4,00	60,50	108	60	909.026.00
2,700		0,1063	4,00	65,50	108	65	909.027.00
2,800		0,1102	4,00	65,50	108	65	909.028.00
2,900		0,1142	4,00	68,50	112	68	909.029.00
3,000		0,1181	6,00	68,50	112	68	909.030.00
3,175	1/8	0,1250	6,00	75,50	120	75	909.3175.00
3,200		0,1260	6,00	75,50	120	75	909.032.00
3,300		0,1299	6,00	75,50	120	75	909.033.00
3,500		0,1378	6,00	80,50	130	80	909.035.00
3,572	9/64	0,1406	6,00	80,50	130	80	909.3572.00
3,800		0,1496	6,00	90,50	140	90	909.038.00
3,969	5/32	0,1563	6,00	95,50	140	95	909.3969.00
4,000		0,1575	6,00	95,50	140	95	909.040.00
4,200		0,1654	6,00	95,50	140	95	909.042.00
4,500		0,1772	6,00	110,50	160	110	909.045.00
4,600		0,1811	6,00	110,50	160	110	909.046.00
4,763	3/16	0,1875	6,00	115,50	160	115	909.4763.00
4,800		0,1890	6,00	115,50	160	115	909.048.00
5,000		0,1969	6,00	115,50	160	115	909.050.00
5,500		0,2165	6,00	140,50	185	140	909.055.00
5,556	7/32	0,2187	6,00	140,50	185	140	909.5556.00
5,800		0,2283	6,00	140,50	185	140	909.058.00
6,000		0,2362	6,00	140,50	185	140	909.060.00
6,350	1/4	0,2500	8,00	150,00	190	147	909.6350.00
6,500		0,2559	8,00	150,00	190	147	909.065.00
6,800		0,2677	8,00	160,00	200	157	909.068.00
7,000		0,2756	8,00	170,00	210	167	909.070.00
7,144	9/32	0,2813	8,00	170,00	210	167	909.7144.00
7,500		0,2953	8,00	170,00	210	167	909.075.00
7,800		0,3071	8,00	190,00	230	187	909.078.00
7,938	5/16	0,3125	8,00	190,00	230	187	909.7938.00
8,000		0,3150	8,00	190,00	230	187	909.080.00
8,500		0,3346	10,00	196,00	240	193	909.085.00
8,731	11/32	0,3437	10,00	216,00	260	213	909.8731.00
8,800		0,3465	10,00	216,00	260	213	909.088.00
9,000		0,3543	10,00	216,00	260	213	909.090.00
9,525	3/8	0,3750	10,00	236,00	280	233	909.9525.00
9,800		0,3858	10,00	236,00	280	233	909.098.00
10,000		0,3937	10,00	236,00	280	233	909.1.00.00
10,200		0,4016	12,00	241,00	290	238	909.102.00
10,319	13/32	0,4063	12,00	241,00	290	238	909.10319.00
10,800		0,4252	12,00	266,00	315	263	909.108.00
11,113	7/16	0,4375	12,00	266,00	315	263	909.11113.00
11,800		0,4646	12,00	266,00	315	263	909.118.00
11,906	15/32	0,4687	12,00	266,00	315	263	909.11906.00
12,000		0,4724	12,00	266,00	315	263	909.120.00



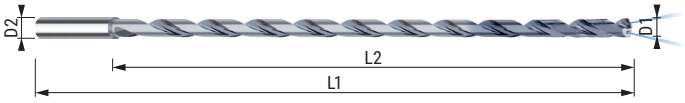
Recommendation:

Maximum drilling depth: Flute length (see table) minus 1.5 x nominal diameter

INO Solid carbide deep hole drills

Article-No. **910...**

Solid carbide deep hole drill **DEEPMAX 25xD**



D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
3,000		0,1181	6,00	85,5	130	85	910.030.00
3,175	1/8	0,1250	6,00	95,5	140	95	910.3175.00
3,200		0,1260	6,00	95,5	140	95	910.032.00
3,300		0,1299	6,00	95,5	140	95	910.033.00
3,500		0,1378	6,00	100,5	150	100	910.035.00
3,572	9/64	0,1406	6,00	100,5	150	100	910.3572.00
3,800		0,1496	6,00	105,5	150	105	910.038.00
3,969	5/32	0,1563	6,00	110,5	160	110	910.3969.00
4,000		0,1575	6,00	110,5	160	110	910.040.00
4,200		0,1654	6,00	120,5	170	120	910.042.00
4,500		0,1772	6,00	130,5	180	130	910.045.00
4,763	3/16	0,1875	6,00	140,5	190	140	910.4763.00
4,800		0,1890	6,00	140,5	190	140	910.048.00
5,000		0,1969	6,00	140,5	190	140	910.050.00
5,500		0,2165	6,00	160,5	210	160	910.055.00
5,556	7/32	0,2187	6,00	160,5	210	160	910.5556.00
5,800		0,2283	6,00	160,5	210	160	910.058.00
6,000		0,2362	6,00	170,5	220	170	910.060.00
6,350	1/4	0,2500	8,00	191,0	230	188	910.6350.00
6,500		0,2559	8,00	191,0	230	188	910.065.00
6,800		0,2677	8,00	191,0	230	188	910.068.00
7,000		0,2756	8,00	201,0	240	198	910.070.00
7,144	9/32	0,2813	8,00	201,0	240	198	910.7144.00
7,500		0,2953	8,00	214,0	250	211	910.075.00
7,800		0,3071	8,00	224,0	260	221	910.078.00
7,938	5/16	0,3125	8,00	224,0	260	221	910.7938.00
8,000		0,3150	8,00	224,0	260	221	910.080.00
8,500		0,3346	10,00	237,0	280	234	910.085.00
8,731	11/32	0,3437	10,00	247,0	290	244	910.8731.00
8,800		0,3465	10,00	247,0	290	244	910.088.00
9,000		0,3543	10,00	247,0	290	244	910.090.00
9,500		0,3740	10,00	267,0	310	264	910.095.00
9,525	3/8	0,3750	10,00	267,0	310	264	910.9525.00
9,800		0,3858	10,00	267,0	310	264	910.098.00
10,000		0,3937	10,00	267,0	310	264	910.100.00
10,200		0,4016	12,00	292,0	340	289	910.102.00
10,319	13/32	0,4063	12,00	292,0	340	289	910.10319.00
10,800		0,4252	12,00	302,0	350	299	910.108.00
11,113	7/16	0,4375	12,00	302,0	350	299	910.11113.00
11,800		0,4646	12,00	327,0	375	324	910.118.00
11,906	15/32	0,4687	12,00	327,0	375	324	910.11906.00
12,000		0,4724	12,00	327,0	375	324	910.120.00

1st CHOICE

TYP N | Universal | z | 25xD | 2 | h7 | 135° | 4 | IK | HA | Norm | VAROCON

Recommendation:

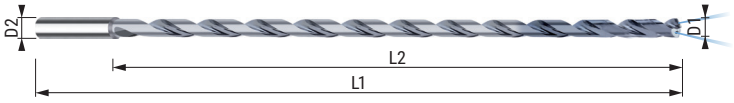
Maximum drilling depth: Flute length (see table) minus 1.5 x nominal diameter

InovaTools®
GERMAN TOOLS GROUP

INO Solid carbide deep hole drills

Article-No. **911...**

Solid carbide deep hole drill **DEEPMAX 30xD**



1st CHOICE

TYP N | Universal | z | 2 | 30xD | h7 | 135° | 4 | IK | HA | Norm | VAROCON

D1 h7	Inch	Decimal Equivalent	D2 h6	L2	L1	NL	Article-No.
2,000		0,0787	4,00	65,5	105	65	911.020.00
2,200		0,0866	4,00	75,5	115	75	911.022.00
2,300		0,0906	4,00	75,5	115	75	911.023.00
2,400		0,0945	4,00	85,5	130	85	911.024.00
2,500		0,0984	4,00	85,5	130	85	911.025.00
2,700		0,1063	4,00	95,5	140	95	911.027.00
2,800		0,1102	4,00	95,5	140	95	911.028.00
2,900		0,1142	4,00	95,5	140	95	911.029.00
3,000		0,1181	6,00	105,5	150	105	911.030.00
3,175	1/8	0,1250	6,00	105,5	150	105	991.3175.00
3,200		0,1260	6,00	105,5	150	105	911.032.00
3,300		0,1299	6,00	115,5	160	115	911.033.00
3,500		0,1378	6,00	115,5	160	115	911.035.00
3,572	9/64	0,1406	6,00	115,5	160	115	911.3572.00
3,800		0,1496	6,00	125,.5	175	125	911.038.00
3,969	5/32	0,1563	6,00	135,5	185	135	911.3969.00
4,000		0,1575	6,00	135,5	185	135	911.040.00
4,200		0,1654	6,00	135,5	185	135	911.042.00
4,500		0,1772	6,00	145,5	195	145	911.045.00
4,600		0,1811	6,00	155,5	205	155	911.046.00
4,763	3/16	0,1875	6,00	165,5	210	165	911.4763.00
4,800		0,1890	6,00	165,5	210	165	911.048.00
5,000		0,1969	6,00	165,5	210	165	911.050.00
5,500		0,2165	6,00	180,5	240	180	911.055.00
5,556	7/32	0,2187	6,00	180,5	240	180	911.5556.00
5,800		0,2283	6,00	190,5	240	190	911.058.00
6,000		0,2362	6,00	190,5	240	190	911.060.00
6,350	1/4	0,2500	6,00	190,5	240	190	911.6350.00
6,500		0,2559	8,00	222,0	260	219	911.065.00
6,800		0,2677	8,00	222,0	260	219	911.068.00
7,000		0,2756	8,00	232,0	270	229	911.070.00
7,144	9/32	0,2813	8,00	232,0	270	229	911.7144.00
7,500		0,2953	8,00	252,0	290	249	911.075.00
7,800		0,3071	8,00	262,0	300	259	911.078.00
7,938	5/16	0,3125	8,00	267,0	305	265	911.7938.00
8,000		0,3150	8,00	267,0	305	265	911.080.00
8,500		0,3346	10,00	278,0	320	276	911.085.00
8,731	11/32	0,3437	10,00	298,0	340	296	911.8731.00
8,800		0,3465	10,00	298,0	340	296	911.088.00
9,000		0,3543	10,00	298,0	340	296	911.090.00
9,500		0,3740	10,00	318,0	360	316	911.095.00
9,525	3/8	0,3750	10,00	318,0	360	316	911.9525.00
9,800		0,3858	10,00	338,0	380	336	911.098.00
10,000		0,3937	10,00	338,0	380	336	911.100.00

Recommendation:

Maximum drilling depth: Flute length (see table) minus 1.5 x nominal diameter

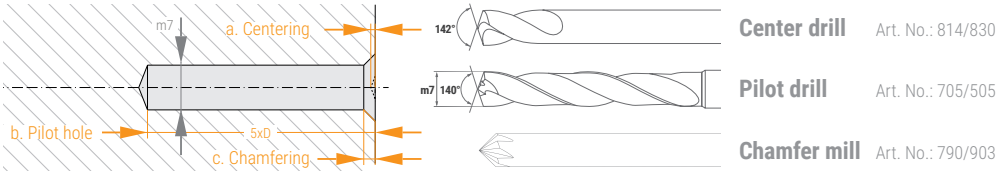
INO Solid carbide drills

Guidelines for deep hole drilling

When it comes to deep hole drilling, there are certain procedures and factors that are particularly important for ensuring reliable machining. The Deepmax is tailored to our 5xD **207 Series** standard drills, which are the ideal pilot drills.

1. Pilot hole

- **Uneven surfaces must be faced or face milled prior to drilling the pilot hole. We also recommend centering the workpiece.**
- **Use a two flute drilling tool with a 140° point angle and an m7 tolerance range. Should you be using a third-party product as your pilot drill, please make sure pilot drill diameter is M7 tolerance.**
- **The pilot hole should ideally have a depth of 5xD or at least 1.5xD.**
- **Centering and subsequent chamfering is absolutely essential for horizontal machining.**
- **Any chips must be removed from the pilot hole prior to drilling the deep hole.**



2. Deep hole

2.1. Entering the deep hole drill into the pilot hole

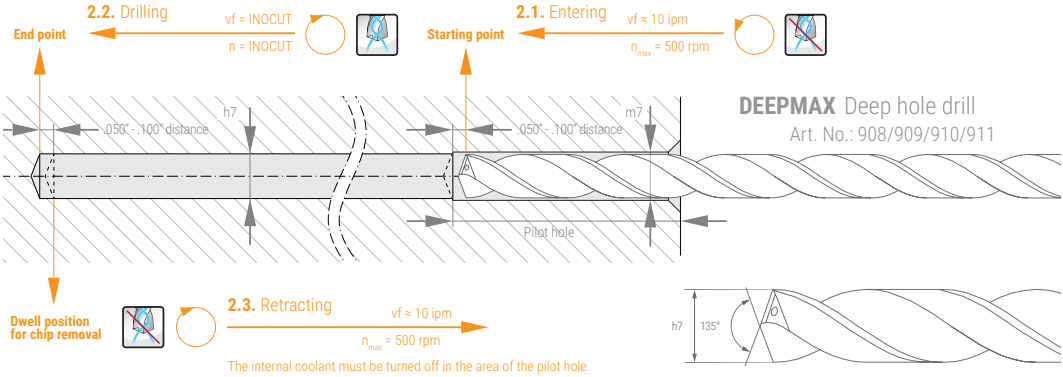
- The internal coolant must be turned off for this procedure.
- Set a maximum rotation speed of 500 rpm, preferably with anti-clockwise rotation, and a feed rate of around 10 ipm.
- Enter the drill to .050"-.100" short of the bottom of the pilot hole.

2.2. Deep hole drilling

- Please make sure you allow enough dwell time for the spindle to start and the internal coolant to build up pressure.
- We recommend using our INOCUT cutting data without chip evacuation (pecking). It should not be necessary to retract the drill for holes up to 30xD. Should additional chip removal be required, we recommend retracting the drill to 3xD. When reaching intersecting holes or making through holes, reduce the feed rate by 50% prior to breakout.

2.3. Retracting the deep hole drill

- After reaching the maximum depth, retract the deep hole drill by 050"-.100" (depending on the diameter) for chip removal. If the coolant pressure is too low, you might need to program some dwell time.
- Then reduce the rotation speed to a maximum of 500 rpm.
- Retract the drill out of the hole at a programmed feed rate of around 40 ipm max (not in rapid traverse).



Carbro

DRILL REAMERS
8213, 8214, 8216 SERIES

FOR DRILLING / REAMING IN ONE STEP

- Designed for Drilling/Reaming Fiberglass, Graphite, Laminates, and Composite materials.

AVAILABLE COATINGS:

CC1 – CVD Diamond Coating

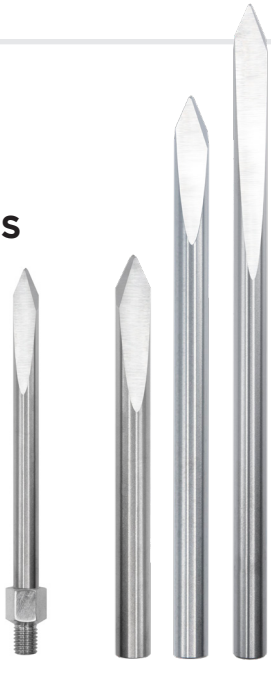
THREADED DRILL REAMERS

DAGGER DRILLS
8413, 8414, 8416 SERIES

FOR DRILLING GRAPHITE / EXPOXY LAMINATES

- Designed for Drilling composites, graphite, and fiberglass materials.

- Clean holes on entry and exit without delamination.



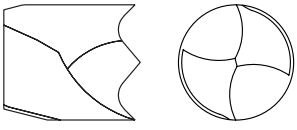
THREADED DAGGER DRILLS

Carbro

BRAD POINT DRILLS
8100 SERIES

FOR DRILLING KEVLAR LAMINATES
- Designed to drill reinforced Graphite, Kevlar, and Resin type materials.

BRAD POINT

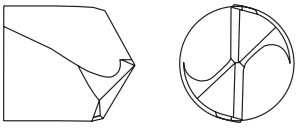


For drilling pliable materials like plastics and rubber. Works well in wood & other coarse grain materials.

8 FACET DRILLS
8400 SERIES

FOR DRILLING GRAPHITE /ALUMINUM LAMINATES
- Designed to Drill Composite/Aluminum stack material

8 FACET



SELF CENTERING - Produces less burr on exit side of hole. Helps the corner from breaking down.

Carbro

AIRCRAFT EXTENSION DRILLS
8466 SERIES

FOR DRILLING HARD TO REACH LOCATIONS.

- Designed for drilling holes where reach is normally not accessible with jobbers or taper.
- Feeds should be light to medium range.
- Not recommended for deep hole applications

135° SPLIT POINT

STAR DRILLS
8450 SERIES

FOR DRILLING HARDENDED AND TREATED MATERIAL.
Shortened OAL and flute for more strength.

- Modifications can be made for step drills.
- Wire, Fractional letter sizes;

Carbro

DOUBLE MARGIN DRILL
8500 SERIES

FOR DRILLING GRAPHITE /ALUMINUM LAMINATES

Designed with a second margin that burnishes the cavity, making a true hole and smoother finish while providing a more accurate, rounder drilled hole.

24HR EXPRESS REAMER
4350 / 4300 SERIES

STRAIGHT FLUTE STANDARD SIZES AVAILABLE

- Available with coatings at tolerances as Low as .0001”
- Steel Shanks on items with Cutting Diameter .3485”& over.
- Female Centers

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