

BLACKMAMBA
CoolantFed Drill

SOLID CARBIDE

Drills REAMERS

2 FLUTE 30° HELIX
142° Point Angle

2 FLUTE 18° HELIX
142° Point Angle

3 FLUTE
Drill

REAMER

COBRA



CARBIDE®
Power. Precision. Performance.

Pictorial Index - Drills

HIGH PERFORMANCE DRILLS

D.01-46



D.01-18

Non-Coolant Drills
- 3XD, 5XD & 8XD - 140° Point Angle - 30° Helix
Inch, Letter, Number and Metric



D.19-32

BLACKMAMBA - The CoolantFed Drills
- 3XD, 5XD & 8XD - 140° Point Angle - 30° Helix
Inch, Letter, Number and Metric



D.33-36

2 Flute 15° Helix 140° Point Angle
-3XD & 5XD - 140° Point Angle - 15° Helix
Metric



D.37-38

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Metric



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- 118° Point Angle - 22° Helix
Inch, Letter, Number and Metric



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- 140° Point Angle
Inch, Letter, Number and Metric



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D.75

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- 60°, 82° and 90°
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D.79

Countersink
- 60°, 82° and 90°
- Single, 3 and 6 Flute
Fraction and Metric

CHUCKING REAMERS - Inch, Letter, Number and Metric

D.80-86

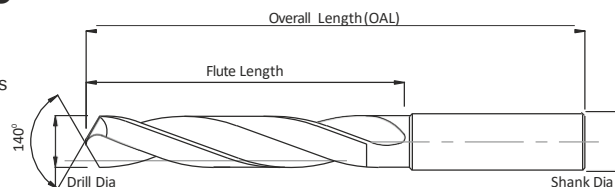
TECHNICAL DATA

D.87-96

Non-Coolant Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

- 140° point angle and high performance geometry allows for high penetration rates
- Provides accurate hole sizing as well as near burnished holes
- The Cobra drill comes standard with TiAlN coating that provides unparalleled performance in difficult to machine applications
- Manufactured from premium submicron grain carbide



DESCRIPTION								EDP #
Fraction Size	Letter / Wire	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
1/16	-	1.59		0.0625	1/8	5/8	1-5/8	51250
-	52	1.61		0.0635	1/8	11/16	1-5/8	51251
-	51	1.70		0.0670	1/8	11/16	1-5/8	51252
-	50	1.78	2-56	0.0700	1/8	11/16	1-5/8	51253
-	49	1.85		0.0730	1/8	11/16	1-5/8	51254
-	48	1.93		0.0760	1/8	11/16	1-5/8	51255
5/64	-	1.98		0.0781	1/8	11/16	1-5/8	51256
-	47	1.99	3-48	0.0785	1/8	3/4	1-5/8	51257
-	-	2.00		0.0787	3mm	20mm	50mm	51258
-	46	2.06		0.0810	1/8	3/4	2	51259
-	45	2.08		0.0820	1/8	3/4	2	51260
-	44	2.18		0.0860	1/8	3/4	2	51261
-	43	2.26	4-40	0.0890	1/8	3/4	2	51262
-	42	2.37		0.0935	1/8	3/4	2	51263
3/32	-	2.38		0.0938	1/8	3/4	2	51264
-	41	2.44		0.0960	1/8	13/16	2	51265
-	40	2.49		0.0980	1/8	13/16	2	51266
-	-	2.50	M3x0.50	0.0984	3mm	20mm	50mm	51267
-	39	2.53		0.0995	1/8	13/16	2	51268
-	38	2.58	5-40	0.1015	1/8	13/16	2	51269
-	37	2.64	5-44	0.1040	1/8	13/16	2	51270
-	36	2.71		0.1065	1/8	13/16	2	51271
7/64	-	2.78	6-32	0.1094	1/8	13/16	2	51272
-	35	2.79	6-32	0.1100	1/8	7/8	2	51273
-	34	2.82		0.1110	1/8	7/8	2	51274
-	33	2.87	6-40	0.1130	1/8	7/8	2	51275
-	32	2.95		0.1160	1/8	7/8	2	51276
-	-	3.00		0.1181	6mm	20mm	62mm	51300
-	31	3.05		0.1200	1/4	7/8	2	51301
-	-	3.10		0.1220	6mm	20mm	62mm	55919
1/8	-	3.17		0.1250	1/4	3/4	2-1/2	51464
-	-	3.20		0.1260	6mm	20mm	62mm	55920
-	30	3.26		0.1285	1/4	3/4	2-1/2	51302
-	-	3.30	M4x0.7	0.1299	6mm	20mm	62mm	51304
-	-	3.40	8-32	0.1334	6mm	20mm	62mm	51305
-	29	3.45	8-36	0.1360	1/4	3/4	2-1/2	51306
-	-	3.50		0.1378	6mm	20mm	62mm	51308
-	28	3.57		0.1405	1/4	3/4	2-1/2	51309
9/64	-	3.57		0.1406	1/4	3/4	2-1/2	51468
-	-	3.60		0.1417	6mm	20mm	62mm	55921



HP Drills

Non-Coolant Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

HP Drills

DESCRIPTION								EDP #
Fraction Size	Letter / Wire	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	27	3.66		0.1440	1/4	3/4	2-1/2	51310
-	-	3.70		0.1457	6mm	20mm	62mm	51312
-	26	3.73		0.1470	1/4	3/4	2-1/2	51311
-	25	3.80	10-24	0.1495	1/4	3/4	2-1/2	51313
-	24	3.86		0.1520	1/4	3/4	2-1/2	51314
-	-	3.90		0.1535	6mm	24mm	66mm	55922
-	23	3.91		0.1540	1/4	15/16	2-5/8	51315
5/32	-	3.97		0.1562	1/4	15/16	2-5/8	51472
-	22	3.99		0.1570	1/4	15/16	2-5/8	51473
-	-	4.00		0.1575	6mm	24mm	66mm	51316
-	21	4.04	10-32	0.1590	1/4	15/16	2-5/8	51317
-	20	4.09		0.1610	1/4	15/16	2-5/8	51318
-	-	4.10		0.1614	6mm	24mm	66mm	55923
-	-	4.20		0.1654	6mm	24mm	66mm	51320
-	19	4.22	M5x0.8	0.1660	1/4	15/16	2-5/8	51321
-	18	4.30		0.1695	1/4	15/16	2-5/8	51322
11/64	-	4.37		0.1719	1/4	15/16	2-5/8	51476
-	17	4.39		0.1730	1/4	15/16	2-5/8	51323
-	-	4.40		0.1732	6mm	24mm	66mm	55925
-	16	4.49	12-24	0.1770	1/4	15/16	2-5/8	51319
-	-	4.50		0.1772	6mm	24mm	66mm	51324
-	15	4.57		0.1800	1/4	15/16	2-5/8	51325
-	-	4.60	12-28	0.1811	6mm	24mm	66mm	55926
-	14	4.62	12-28	0.1820	1/4	15/16	2-5/8	51326
-	-	4.65		0.1830	6mm	24mm	66mm	55927
-	13	4.70		0.1850	1/4	15/16	2-5/8	51327
-	-	4.76		0.1874	6mm	24mm	66mm	55928
3/16	-	4.76		0.1875	1/4	15/16	2-5/8	51480
-	12	4.80		0.1890	1/4	15/16	2-5/8	51481
-	11	4.85		0.1910	1/4	15/16	2-5/8	51482
-	-	4.90		0.1929	6mm	24mm	66mm	55929
-	10	4.91		0.1935	1/4	15/16	2-5/8	51483
-	9	4.98		0.1960	1/4	15/16	2-5/8	51379
-	-	5.00	M6x1.0	0.1969	6mm	24mm	66mm	51328
-	8	5.05		0.1990	1/4	15/16	2-5/8	51329
-	-	5.10		0.2008	6mm	24mm	66mm	51330
-	7	5.10	1/4-20	0.2010	1/4	15/16	2-5/8	51331
13/64	-	5.16		0.2031	1/4	15/16	2-5/8	51484
-	6	5.18		0.2040	1/4	15/16	2-5/8	51485
-	-	5.20		0.2047	6mm	24mm	66mm	51332
-	5	5.22		0.2055	1/4	15/16	2-5/8	51333
-	-	5.30		0.2087	6mm	24mm	66mm	55930
-	4	5.31		0.2090	1/4	15/16	2-5/8	51334
-	-	5.40		0.2126	6mm	24mm	66mm	55931



Non-Coolant Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION						EDP # Coated TiAlN
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
-	3	5.41	1/4-28	0.2130	1/4	15/16	2-5/8	51335
-	-	5.50		0.2165	6mm	24mm	66mm	51336
7/32	-	5.56		0.2188	1/4	15/16	2-5/8	51488
-	-	5.60		0.2205	6mm	24mm	66mm	55932
-	2	5.61		0.2210	1/4	15/16	2-5/8	51337
-	-	5.70		0.2244	6mm	24mm	66mm	55933
-	1	5.79		0.2280	1/4	15/16	2-5/8	51338
-	-	5.80		0.2283	6mm	24mm	66mm	55934
-	-	5.90		0.2323	6mm	24mm	66mm	55935
-	A	5.94		0.2340	1/4	15/16	2-5/8	51339
15/64	-	5.95		0.2344	1/4	15/16	2-5/8	51303
-	-	6.00	M7x1.0	0.2362	6mm	24mm	66mm	51340
-	B	6.04		0.2380	1/4	1-11/32	3-1/8	51341
-	-	6.10		0.2402	8mm	34mm	79mm	51342
-	C	6.15		0.2420	1/4	1-11/32	3-1/8	55941
-	-	6.20		0.2441	8mm	34mm	79mm	51344
-	D	6.25		0.2460	1/4	1-11/32	3-1/8	51343
-	-	6.30		0.2480	8mm	34mm	79mm	55936
1/4	E	6.35		0.2500	1/4	1-11/32	3-1/8	51492
-	-	6.40		0.2520	8mm	34mm	79mm	55937
-	-	6.50		0.2559	8mm	34mm	79mm	51348
-	F	6.53	5/16-18	0.2570	5/16	1-11/32	3-1/8	51345
-	-	6.60		0.2598	8mm	34mm	79mm	55938
-	G	6.63		0.2610	5/16	1-11/32	3-1/8	51346
-	-	6.70		0.2638	8mm	34mm	79mm	55939
17/64	-	6.75		0.2656	5/16	1-11/32	3-1/8	51307
-	H	6.76	M8x1.25	0.2660	5/16	1-11/32	3-1/8	51347
-	-	6.80		0.2677	8mm	34mm	79mm	55940
-	-	6.83		0.2689	8mm	34mm	79mm	51352
-	-	6.90	5/16-24	0.2717	8mm	34mm	79mm	51353
-	I	6.91	5/16-24	0.2720	5/16	1-11/32	3-1/8	51354
-	-	7.00	M8x1.0	0.2756	8mm	34mm	79mm	51356
-	J	7.03		0.2770	5/16	1-39/64	3-1/8	51349
-	-	7.10		0.2795	8mm	41mm	79mm	51350
-	K	7.14		0.2810	5/16	1-39/64	3-1/8	51351
9/32	-	7.14		0.2812	5/16	1-39/64	3-1/8	51496
-	-	7.20		0.2835	8mm	41mm	79mm	51355
-	-	7.30		0.2874	8mm	41mm	79mm	55942
-	L	7.37		0.2900	5/16	1-39/64	3-1/8	51357
-	-	7.40		0.2913	8mm	41mm	79mm	55943
-	M	7.49		0.2950	5/16	1-39/64	3-1/8	51358
-	-	7.50		0.2953	8mm	41mm	79mm	51360
19/64	-	7.54		0.2969	5/16	1-39/64	3-1/8	51361
-	-	7.60		0.2992	8mm	41mm	79mm	51299
-	N	7.67		0.3020	8mm	41mm	79mm	51362



HP Drills

Non-Coolant Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

HP Drills

		DESCRIPTION						EDP #
Fraction Size	Letter / Wire	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	-	7.70		0.3031	8mm	41mm	79mm	55944
-	-	7.80		0.3071	8mm	41mm	79mm	55945
-	-	7.90		0.3110	8mm	41mm	79mm	55946
5/16	-	7.94	3/8-16	0.3125	5/16	1-39/64	3-1/8	51500
-	-	8.00		0.3150	8mm	41mm	79mm	51364
-	0	8.03		0.3160	3/8	1-27/32	3-1/2	51365
-	-	8.10		0.3189	10mm	47mm	89mm	55947
-	-	8.20		0.3228	10mm	47mm	89mm	55948
-	P	8.20		0.3230	3/8	1-27/32	3-1/2	51366
-	-	8.30		0.3268	10mm	47mm	89mm	55949
21/64	-	8.33		0.3281	3/8	1-27/32	3-1/2	51367
-	-	8.40		0.3307	10mm	47mm	89mm	55951
-	Q	8.43	3/8-24	0.3320	3/8	1-27/32	3-1/2	51363
-	-	8.50	M10x1.5	0.3346	10mm	47mm	89mm	51368
-	-	8.60		0.3386	10mm	47mm	89mm	55952
-	R	8.61		0.3390	3/8	1-27/32	3-1/2	51369
-	-	8.70		0.3425	10mm	47mm	89mm	51370
11/32	-	8.73		0.3438	3/8	1-27/32	3-1/2	51504
-	-	8.80	M10x1.25	0.3464	10mm	47mm	89mm	51372
-	S	8.84		0.3480	3/8	1-27/32	3-1/2	51374
-	-	8.90		0.3504	10mm	47mm	89mm	55953
-	-	9.00		0.3543	10mm	47mm	89mm	51376
-	T	9.09		0.3580	3/8	1-27/32	3-1/2	51377
-	-	9.10		0.3583	10mm	47mm	89mm	55955
23/64	-	9.13		0.3594	3/8	1-27/32	3-1/2	51378
-	-	9.20		0.3622	10mm	47mm	89mm	51380
-	-	9.30		0.3661	10mm	47mm	89mm	55956
-	U	9.35	7/16-14	0.3680	3/8	1-27/32	3-1/2	51381
-	-	9.40		0.3701	10mm	47mm	89mm	55957
-	-	9.50		0.3740	10mm	47mm	89mm	51384
3/8	-	9.52		0.3750	3/8	1-27/32	3-1/2	56640
-	V	9.57		0.3770	7/16	1-27/32	3-1/2	51385
-	-	9.60		0.3780	10mm	47mm	89mm	55959
-	-	9.70		0.3819	10mm	47mm	89mm	55960
-	-	9.80		0.3858	10mm	47mm	89mm	55961
-	W	9.80	7/16-20	0.3860	7/16	1-27/32	3-1/2	51386
-	-	9.90		0.3898	10mm	47mm	89mm	55962
25/64	-	9.92		0.3906	7/16	1-27/32	3-1/2	51387
-	-	10.00		0.3937	10mm	47mm	89mm	51388
-	X	10.08		0.3970	7/16	2-5/32	4	51389
-	-	10.10		0.3976	12mm	55mm	102mm	55964
-	-	10.20		0.4016	12mm	55mm	102mm	51392
-	Y	10.26		0.4040	7/16	2-5/32	4	51390
-	-	10.30		0.4055	12mm	55mm	102mm	55965
13/32	-	10.32		0.4062	7/16	2-5/32	4	51391



Non-Coolant Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION					EDP #
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	Coated TiAlN
-	-	10.40		0.4094	12mm	55mm	55966
-	Z	10.49		0.4130	7/16	2-5/32	51359
-	-	10.50		0.4134	12mm	55mm	51396
-	-	10.60		0.4173	12mm	55mm	55967
-	-	10.70		0.4213	12mm	55mm	55968
27/64	-	10.72	1/2-13	0.4219	7/16	2-5/32	51397
-	-	10.80	M12x1.25	0.4252	12mm	55mm	56642
-	-	10.90		0.4291	12mm	55mm	55969
-	-	11.00		0.4331	12mm	55mm	56641
-	-	11.10		0.4370	12mm	55mm	55970
7/16	-	11.11		0.4375	7/16	2-5/32	51512
-	-	11.20		0.4409	12mm	55mm	55971
-	-	11.30		0.4449	12mm	55mm	55972
-	-	11.40		0.4488	12mm	55mm	55973
-	-	11.50	1/2-20	0.4528	12mm	55mm	56643
29/64	-	11.51		0.4531	1/2	2-5/32	56644
-	-	11.60		0.4567	12mm	55mm	55974
-	-	11.70		0.4606	12mm	55mm	55975
-	-	11.80		0.4646	12mm	55mm	55976
-	-	11.90		0.4685	12mm	55mm	55977
15/32	-	11.91		0.4688	1/2	2-5/32	56645
-	-	12.00	M14x2.0	0.4724	12mm	55mm	56646
-	-	12.10		0.4764	14mm	60mm	55980
-	-	12.20	9/16-12	0.4803	14mm	60mm	56647
31/64	-	12.30		0.4844	1/2	2-3/8	56648
-	-	12.40		0.4882	14mm	60mm	55982
-	-	12.50	M14x1.5	0.4922	14mm	60mm	56649
-	-	12.60		0.4961	14mm	60mm	55983
1/2	-	12.70		0.5000	1/2	2-3/8	51516
-	-	12.80		0.5039	14mm	60mm	55985
-	-	12.90		0.5079	14mm	60mm	55986
-	-	13.00		0.5118	14mm	60mm	56650
33/64	-	13.10		0.5157	9/16	2-3/8	55987
-	-	13.20		0.5197	14mm	60mm	55988
-	-	13.30		0.5236	14mm	60mm	55989
-	-	13.40		0.5276	14mm	60mm	55990
17/32	-	13.49	5/8-11	0.5312	9/16	2-3/8	56651
-	-	13.50		0.5315	14mm	60mm	56652
-	-	13.60		0.5354	14mm	60mm	55991
-	-	13.70		0.5394	14mm	60mm	55992
-	-	13.80		0.5433	14mm	60mm	55993
35/64	-	13.89		0.5469	9/16	2-3/8	55994
-	-	13.90		0.5472	14mm	60mm	55995
-	-	14.00	M16x2.0	0.5512	14mm	60mm	56653
-	-	14.10		0.5551	16mm	65mm	55996



Shank Dia: h6
Drill Dia: h7



HP Drills

Non-Coolant Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

HP Drills

DESCRIPTION								EDP #
Fraction Size	Letter / Wire	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	-	14.20		0.5591	16mm	65mm	115mm	55997
9/16	-	14.28		0.5625	9/16	2-9/16	4-1/2	56654
-	-	14.30		0.5630	16mm	65mm	115mm	55998
-	-	14.40		0.5669	16mm	65mm	115mm	55999
-	-	14.50	M16x1.5	0.5708	16mm	65mm	115mm	56655
-	-	14.60		0.5748	16mm	65mm	115mm	56000
37/64	-	14.68	5/8-18	0.5780	5/8	2-9/16	4-1/2	56001
-	-	14.70		0.5787	16mm	65mm	115mm	56002
-	-	14.80		0.5827	16mm	65mm	115mm	55950
-	-	14.90		0.5866	16mm	65mm	115mm	56003
-	-	15.00		0.5906	16mm	65mm	115mm	51436
19/32	-	15.08		0.5938	5/8	2-9/16	4-1/2	56657
-	-	15.10		0.5945	16mm	65mm	115mm	56004
-	-	15.20		0.5984	16mm	65mm	115mm	56005
-	-	15.30		0.6024	16mm	65mm	115mm	56006
-	-	15.40		0.6063	16mm	65mm	115mm	56007
39/64	-	15.48		0.6094	5/8	2-9/16	4-1/2	56008
-	-	15.50	M18x2.5	0.6102	16mm	65mm	115mm	51440
-	-	15.60		0.6142	16mm	65mm	115mm	56009
-	-	15.70		0.6181	16mm	65mm	115mm	56010
-	-	15.80		0.6220	16mm	65mm	115mm	56011
-	-	15.87		0.6248	16mm	65mm	115mm	56012
5/8	-	15.88		0.6250	5/8	2-9/16	4-1/2	51524
-	-	15.90		0.6260	16mm	65mm	115mm	56013
-	-	16.00		0.6299	16mm	65mm	115mm	56014
-	-	16.10		0.6339	18mm	73mm	123mm	56015
-	-	16.20		0.6378	18mm	73mm	123mm	56016
41/64	-	16.27		0.6406	11/16	2-7/8	4-27/32	56017
-	-	16.30		0.6417	18mm	73mm	123mm	56018
-	-	16.40		0.6457	18mm	73mm	123mm	56019
-	-	16.50	M18x1.5	0.6496	18mm	73mm	123mm	56020
-	-	16.60		0.6535	18mm	73mm	123mm	56021
21/32	-	16.67	3/4-10	0.6562	11/16	2-7/8	4-27/32	56658
-	-	16.70		0.6575	18mm	73mm	123mm	56022
-	-	16.80		0.6614	18mm	73mm	123mm	56023
-	-	16.90		0.6654	18mm	73mm	123mm	56024
-	-	17.00		0.6693	18mm	73mm	123mm	51448
43/64	-	17.07		0.6720	11/16	2-7/8	4-27/32	56026
-	-	17.10		0.6732	18mm	73mm	123mm	56027
-	-	17.20		0.6772	18mm	73mm	123mm	56028
-	-	17.30		0.6811	18mm	73mm	123mm	56029
-	-	17.40		0.6850	18mm	73mm	123mm	56030
11/16	-	17.46	3/4-16	0.6875	11/16	2-7/8	4-27/32	56031
-	-	17.50	M20x2.5	0.6890	18mm	73mm	123mm	56032
-	-	17.60		0.6929	18mm	73mm	123mm	56033



Non-Coolant Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION						EDP # Coated TiAlN
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
-	-	17.70		0.6969	18mm	73mm	123mm	56034
-	-	17.80		0.7008	18mm	73mm	123mm	56035
45/64	-	17.86		0.7031	3/4	2-7/8	4-27/32	56036
-	-	17.90		0.7047	18mm	73mm	123mm	56037
-	-	18.00		0.7087	18mm	73mm	123mm	51452
-	-	18.10		0.7126	20mm	79mm	131mm	56039
-	-	18.20		0.7165	20mm	79mm	131mm	56040
23/32	-	18.25		0.7187	3/4	3-1/8	5-5/32	56038
-	-	18.30		0.7205	20mm	79mm	131mm	56041
-	-	18.40		0.7244	20mm	79mm	131mm	56042
-	-	18.50	M20x1.5	0.7283	20mm	79mm	131mm	56043
-	-	18.60		0.7323	20mm	79mm	131mm	56044
47/64	-	18.65		0.7344	3/4	3-1/8	5-5/32	56045
-	-	18.70		0.7362	20mm	79mm	131mm	56046
-	-	18.80		0.7402	20mm	79mm	131mm	56047
-	-	18.90		0.7441	20mm	79mm	131mm	56048
-	-	19.00		0.7480	20mm	79mm	131mm	51456
3/4	-	19.05		0.7500	3/4	3-1/8	5-5/32	51528
-	-	19.10		0.7520	20mm	79mm	131mm	56051
-	-	19.20		0.7559	20mm	79mm	131mm	56052
-	-	19.30		0.7598	20mm	79mm	131mm	56053
49/64	-	19.45	7/8-9	0.7657	13/16	3-1/8	5-5/32	56054
-	-	19.50		0.7677	20mm	79mm	131mm	56055
-	-	19.60		0.7717	20mm	79mm	131mm	56056
-	-	19.70		0.7756	20mm	79mm	131mm	56057
-	-	19.80		0.7795	20mm	79mm	131mm	56058
-	-	19.90		0.7835	20mm	79mm	131mm	56059
-	-	20.00		0.7874	20mm	79mm	131mm	51460

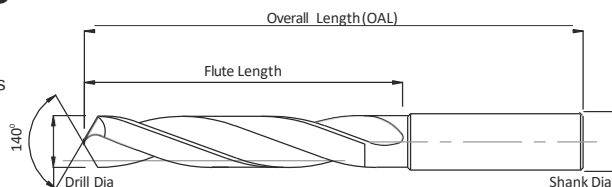


HP Drills

Non-Coolant Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

- 140° point angle and high performance geometry allows for high penetration rates
- Provides accurate hole sizing as well as near burnished holes
- The Cobra drill comes standard with TiAlN coating that provides unparalleled performance in difficult to machine applications
- Manufactured from premium submicron grain carbide



HP Drills

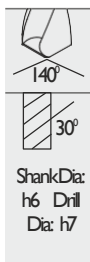
			DESCRIPTION					EDP #
Fraction Size	Letter / Wire	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	-	1.19	0-80	0.0469	3mm	20mm	50mm	53000
-	53	1.51	1-64	0.0595	1/8	3/4	2	53001
1/16	-	1.59		0.0625	1/8	3/4	2	53004
-	52	1.61		0.0635	1/8	3/4	2	53005
-	51	1.70		0.0670	1/8	3/4	2	53006
-	50	1.78	2-56	0.0700	1/8	7/8	2	53007
-	49	1.85		0.0730	1/8	7/8	2	53008
-	48	1.93		0.0760	1/8	7/8	2	53009
5/64	-	1.98		0.0781	1/8	7/8	2	53010
-	47	1.99	3-48	0.0785	1/8	7/8	2	53011
-	-	2.00		0.0787	3mm	22mm	62mm	53012
-	46	2.06		0.0810	1/8	7/8	2	53013
-	45	2.08		0.0820	1/8	7/8	2	53014
-	44	2.18		0.0860	1/8	1.0	2	53015
-	43	2.26	4-40	0.0890	1/8	1.0	2	53016
-	42	2.37		0.0935	1/8	1.0	2	53017
3/32	-	2.38		0.0938	1/8	1.0	2	53018
-	41	2.44		0.0960	1/8	1.0	2	53019
-	40	2.49		0.0980	1/8	1.0	2	53020
-	-	2.50	M3x0.5	0.0984	3mm	28mm	62mm	53021
-	39	2.53		0.0995	1/8	1-1/8	2-1/2	53022
-	38	2.58	5-40	0.1015	1/8	1-1/8	2-1/2	53023
-	37	2.64	5-44	0.1040	1/8	1-1/8	2-1/2	53024
-	36	2.71		0.1065	1/8	1-1/8	2-1/2	53025
7/64	-	2.78	6-32	0.1094	1/8	1-1/8	2-1/2	53026
-	35	2.79	6-32	0.1100	1/8	1-1/8	2-1/2	53027
-	34	2.82		0.1110	1/8	1-1/8	2-1/2	53028
-	33	2.87	6-40	0.1130	1/8	1-1/8	2-1/2	53029
-	32	2.95		0.1160	1/8	1-1/8	2-1/2	53031
-	-	3.00		0.1181	6mm	28mm	66mm	56659
-	31	3.05		0.1200	1/4	1-1/8	2-5/8	51534
-	-	3.10		0.1220	6mm	28mm	66mm	51536
1/8	-	3.17		0.1250	1/4	1-1/8	2-5/8	56660
-	-	3.20		0.1260	6mm	28mm	66mm	55800
-	30	3.26		0.1285	1/4	1-1/8	2-5/8	51530
-	-	3.30	M4x0.7	0.1299	6mm	28mm	66mm	51540
-	-	3.40		0.1334	6mm	28mm	66mm	53035
-	-	3.40	8-32	0.1339	6mm	28mm	66mm	55805
-	29	3.45	8-36	0.1360	1/4	1-1/8	2-5/8	51542
-	-	3.50		0.1378	6mm	28mm	66mm	56661



Non-Coolant Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION						EDP # Coated TiAlN
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
9/64	-	3.57		0.1406	1/4	1-1/8	2-5/8	55856
-	-	3.60		0.1417	6mm	28mm	66mm	55801
-	27	3.66		0.1440	1/4	1-1/8	2-5/8	51551
-	-	3.70		0.1457	6mm	28mm	66mm	51548
-	26	3.73		0.1470	1/4	1-1/8	2-5/8	51549
-	25	3.80	10-24	0.1495	1/4	1-1/8	2-5/8	53037
-	-	3.80	10-24	0.1496	6mm	28mm	66mm	55802
-	24	3.86		0.1520	1/4	1-27/64	3	51552
-	-	3.90		0.1535	6mm	36mm	74mm	55803
-	23	3.91		0.1540	1/4	1-27/64	3	53039
5/32	-	3.97		0.1562	1/4	1-27/64	3	51554
-	22	3.99		0.1570	1/4	1-27/64	3	51555
-	-	4.00		0.1575	6mm	36mm	74mm	56662
-	21	4.04	10-32	0.1590	1/4	1-27/64	3	51557
-	20	4.09		0.1610	1/4	1-27/64	3	51558
-	-	4.10		0.1614	6mm	36mm	74mm	55804
-	-	4.20		0.1654	6mm	36mm	74mm	51560
-	19	4.22	M5x0.8	0.1660	1/4	1-27/64	3	51561
-	-	4.30		0.1693	6mm	36mm	74mm	53041
-	18	4.30		0.1695	1/4	1-27/64	3	51563
11/64	-	4.37		0.1719	1/4	1-27/64	3	54042
-	17	4.39		0.1730	1/4	1-27/64	3	54043
-	-	4.40		0.1732	6mm	36mm	74mm	55806
-	-	4.50		0.1772	6mm	36mm	74mm	51564
-	15	4.57		0.1800	1/4	1-27/64	3	54044
-	-	4.60	12-28	0.1811	6mm	36mm	74mm	55807
-	14	4.62	12-28	0.1820	1/4	1-27/64	3	51566
-	-	4.65		0.1830	6mm	36mm	74mm	55808
-	13	4.70		0.1850	1/4	1-27/64	3	51567
3/16	-	4.76		0.1875	1/4	1-3/4	3-1/4	54041
-	12	4.80		0.1890	1/4	1-3/4	3-1/4	54045
-	-	4.80		0.1891	6mm	44mm	82mm	56663
-	11	4.85		0.1910	1/4	1-3/4	3-1/4	51569
-	-	4.90		0.1929	6mm	44mm	82mm	55809
-	10	4.91		0.1935	1/4	1-3/4	3-1/4	51570
-	9	4.98		0.1960	1/4	1-3/4	3-1/4	54047
-	-	5.00	M6x1.0	0.1969	6mm	44mm	82mm	51572
-	8	5.05		0.1990	1/4	1-3/4	3-1/4	51573
-	-	5.10		0.2008	6mm	44mm	82mm	51576
-	7	5.10	1/4-20	0.2010	1/4	1-3/4	3-1/4	54048
13/64	-	5.16		0.2031	1/4	1-3/4	3-1/4	51578
-	6	5.18		0.2040	1/4	1-3/4	3-1/4	51579
-	-	5.20		0.2047	6mm	44mm	82mm	56664
-	5	5.22		0.2055	1/4	1-3/4	3-1/4	51581
-	-	5.30		0.2087	6mm	44mm	82mm	55810



HP Drills

Non-Coolant Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION						EDP # Coated TiAlN
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
-	4	5.31		0.2090	1/4	1-3/4	3-1/4	51582
-	-	5.40		0.2126	6mm	44mm	82mm	55811
-	3	5.41	1/4-28	0.2130	1/4	1-3/4	3-1/4	54050
-	-	5.50		0.2165	6mm	44mm	82mm	51584
7/32	-	5.56		0.2189	1/4	1-3/4	3-1/4	55812
-	-	5.60		0.2205	6mm	44mm	82mm	55813
-	2	5.61		0.2210	1/4	1-3/4	3-1/4	55870
-	-	5.70		0.2244	6mm	44mm	82mm	55814
-	1	5.79		0.2280	1/4	1-3/4	3-1/4	55881
-	-	5.80		0.2283	6mm	44mm	82mm	51588
-	-	5.90		0.2323	6mm	44mm	82mm	55815
15/64	-	5.95		0.2344	1/4	1-3/4	3-1/4	51590
-	-	6.00	M7x1.0	0.2362	6mm	44mm	82mm	56665
-	B	6.04		0.2380	1/4	2-1/8	3-37/64	51593
-	-	6.10		0.2402	8mm	53mm	91mm	55816
-	C	6.15		0.2420	1/4	2-1/8	3-37/64	51594
-	-	6.20		0.2441	8mm	53mm	91mm	55817
-	D	6.25		0.2460	1/4	2-1/8	3-37/64	54052
-	-	6.30		0.2480	8mm	53mm	91mm	51596
1/4	E	6.35		0.2500	1/4	2-1/8	3-37/64	56666
-	-	6.40		0.2520	8mm	53mm	91mm	55818
-	-	6.50		0.2559	8mm	53mm	91mm	51600
-	F	6.53	5/16-18	0.2570	5/16	2-1/8	3-37/64	54054
-	-	6.60		0.2598	8mm	53mm	91mm	55819
-	G	6.63		0.2610	5/16	2-1/8	3-37/64	51602
-	-	6.70		0.2638	8mm	53mm	91mm	55820
17/64	-	6.75		0.2656	5/16	2-1/8	3-37/64	56667
-	H	6.76	M8x1.25	0.2660	5/16	2-1/8	3-37/64	51603
-	-	6.80		0.2678	8mm	53mm	91mm	56668
-	-	6.90	5/16-24	0.2717	8mm	53mm	91mm	51605
-	I	6.91	5/16-24	0.2720	5/16	2-1/8	3-37/64	51606
-	-	7.00	M8x1.0	0.2756	8mm	53mm	91mm	51608
-	J	7.03		0.2770	5/16	2-1/8	3-37/64	51609
-	-	7.10		0.2795	8mm	53mm	91mm	54061
-	K	7.14		0.2810	5/16	2-1/8	3-37/64	51611
9/32	-	7.14		0.2812	5/16	2-1/8	3-37/64	56669
-	-	7.20		0.2835	8mm	53mm	91mm	55821
-	-	7.30		0.2874	8mm	53mm	91mm	55822
-	L	7.37		0.2900	5/16	2-1/8	3-37/64	54063
-	-	7.40		0.2913	8mm	53mm	91mm	55823
-	M	7.49		0.2950	5/16	2-1/8	3-37/64	51614
-	-	7.50		0.2953	8mm	53mm	91mm	51612
19/64	-	7.54		0.2969	5/16	2-1/8	3-37/64	56639
-	-	7.60		0.2992	8mm	53mm	91mm	55824
-	N	7.67		0.3020	8mm	2-1/8	3-37/64	51615



Non-Coolant Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION						EDP # Coated TiAlN
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
-	-	7.70		0.3031	8mm	53mm	91mm	55825
-	-	7.80		0.3071	8mm	53mm	91mm	56670
-	-	7.90		0.3110	8mm	53mm	91mm	55826
5/16	-	7.94	3/8-16	0.3125	5/16	2-1/8	3-37/64	56671
-	-	8.00		0.3150	8mm	53mm	91mm	51620
-	O	8.03		0.3160	3/8	2-13/32	4-1/16	51617
-	-	8.10		0.3189	10mm	61mm	103mm	55827
-	P	8.20		0.3230	3/8	2-13/32	4-1/16	51618
-	-	8.30		0.3268	10mm	61mm	103mm	55828
21/64	-	8.33		0.3281	3/8	2-13/32	4-1/16	56672
-	-	8.40		0.3307	10mm	61mm	103mm	55829
-	Q	8.43	3/8-24	0.3320	3/8	2-13/32	4-1/16	54068
-	-	8.50	M10x1.5	0.3346	10mm	61mm	103mm	51624
-	-	8.60		0.3386	10mm	61mm	103mm	55830
-	R	8.61		0.3390	3/8	2-13/32	4-1/16	51626
-	-	8.61		0.3390	10mm	61mm	103mm	51627
-	-	8.70		0.3425	10mm	61mm	103mm	55831
11/32	-	8.73		0.3438	3/8	2-13/32	4-1/16	56673
-	-	8.80	M10x1.25	0.3465	10mm	61mm	103mm	51628
-	S	8.84		0.3480	3/8	2-13/32	4-1/16	51629
-	-	8.90		0.3504	10mm	61mm	103mm	55832
-	-	9.00		0.3543	10mm	61mm	103mm	51632
-	-	9.10		0.3583	10mm	61mm	103mm	51631
23/64	-	9.13		0.3594	3/8	2-13/32	4-1/16	56674
-	-	9.20		0.3622	10mm	61mm	103mm	51636
-	-	9.30		0.3661	10mm	61mm	103mm	55834
-	U	9.35	7/16-14	0.3680	3/8	2-13/32	4-1/16	51638
-	-	9.40		0.3701	10mm	61mm	103mm	55835
-	-	9.50		0.3740	10mm	61mm	103mm	51640
3/8	-	9.52		0.3750	3/8	2-13/32	4-1/16	56675
-	V	9.57		0.3770	7/16	2-13/32	4-1/16	51641
-	-	9.60		0.3780	10mm	61mm	103mm	55836
-	-	9.70		0.3819	10mm	61mm	103mm	55837
-	W	9.80	7/16-20	0.3860	7/16	2-13/32	4-1/16	51642
-	-	9.80		0.3860	10mm	61mm	103mm	51644
-	-	9.90		0.3898	10mm	61mm	103mm	55838
25/64	-	9.92		0.3906	7/16	2-13/32	4-1/16	56676
-	-	10.00		0.3937	10mm	61mm	103mm	51648
-	X	10.08		0.3970	7/16	2-13/32	4-1/16	51650
-	-	10.10		0.3976	12mm	71mm	118mm	55839
-	-	10.20		0.4016	12mm	71mm	118mm	51652
-	Y	10.26		0.4040	7/16	2-7/16	4-11/16	51654
-	-	10.30	M12x1.75	0.4055	12mm	71mm	118mm	55840
13/32	-	10.32		0.4062	7/16	2-7/16	4-11/16	56677



Shank Dia: h6
Drill Dia: h7



HP Drills

Non-Coolant Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

DESCRIPTION								EDP #
Fraction Size	Letter / Wire	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	-	10.40		0.4094	12mm	71mm	118mm	55841
-	Z	10.49		0.4130	7/16	2-7/16	4-11/16	51655
-	-	10.50		0.4134	12mm	71mm	118mm	51656
-	-	10.60		0.4173	12mm	71mm	118mm	55842
-	-	10.70		0.4213	12mm	71mm	118mm	55843
27/64	-	10.72	1/2-13	0.4219	7/16	2-7/16	4-11/16	56678
-	-	10.80	M12x1.25	0.4252	12mm	71mm	118mm	51660
-	-	10.90		0.4291	12mm	71mm	118mm	55844
-	-	11.00		0.4331	12mm	71mm	118mm	51664
-	-	11.10		0.4370	12mm	71mm	118mm	55845
7/16	-	11.11		0.4375	7/16	2-7/16	4-11/16	56679
-	-	11.20		0.4409	12mm	71mm	118mm	55846
-	-	11.30		0.4449	12mm	71mm	118mm	55847
-	-	11.40		0.4488	12mm	71mm	118mm	55848
-	-	11.50	1/2-20	0.4528	12mm	71mm	118mm	51668
29/64	-	11.51		0.4531	1/2	2-7/16	4-11/16	56680
-	-	11.60		0.4567	12mm	71mm	118mm	55849
-	-	11.70		0.4606	12mm	71mm	118mm	55850
-	-	11.80		0.4646	12mm	71mm	118mm	56681
-	-	11.90		0.4685	12mm	71mm	118mm	55851
15/32	-	11.91		0.4688	1/2	2-7/16	4-11/16	56682
-	-	12.00	M14x2.0	0.4724	12mm	71mm	118mm	56683
-	-	12.10		0.4764	14mm	77mm	124mm	55852
-	-	12.20	9/16-12	0.4803	14mm	77mm	124mm	54080
-	-	12.30		0.4843	14mm	77mm	124mm	56684
31/64	-	12.30		0.4844	1/2	3	4-7/8	56685
-	-	12.40		0.4882	14mm	77mm	124mm	55853
-	-	12.50	M14x1.5	0.4921	14mm	77mm	124mm	56686
-	-	12.60		0.4961	14mm	77mm	124mm	55854
1/2	-	12.70		0.5000	1/2	3	4-7/8	56687
-	-	12.80		0.5039	14mm	77mm	124mm	56688
-	-	12.90	9/16-18	0.5079	14mm	77mm	124mm	55855
-	-	13.00		0.5118	14mm	77mm	124mm	56689
33/64	-	13.10		0.5156	9/16	3	4-7/8	56690
-	-	13.20		0.5197	14mm	77mm	124mm	55857
-	-	13.30		0.5236	14mm	77mm	124mm	55858
-	-	13.40		0.5276	14mm	77mm	124mm	55859
17/32	-	13.49	5/8-11	0.5312	9/16	3	4-7/8	56691
-	-	13.50		0.5315	14mm	77mm	124mm	56692
-	-	13.60		0.5354	14mm	77mm	124mm	55860
-	-	13.70		0.5394	14mm	77mm	124mm	55861
-	-	13.80		0.5433	14mm	77mm	124mm	55862
35/64	-	13.89		0.5469	9/16	3	4-7/8	51816
-	-	13.90		0.5472	14mm	77mm	124mm	55864



Non-Coolant Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION						EDP # Coated TiAlN
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
-	-	14.00	M16x2	0.5512	14mm	77mm	124mm	56693
-	-	14.10		0.5551	16mm	83mm	133mm	55865
-	-	14.20		0.5591	16mm	83mm	133mm	55866
9/16	-	14.29		0.5625	9/16	3-17/64	5-1/4	51820
-	-	14.30		0.5630	16mm	83mm	133mm	55867
-	-	14.40		0.5669	16mm	83mm	133mm	55868
-	-	14.50	M16x1.50	0.5709	16mm	83mm	133mm	56694
-	-	14.60		0.5748	16mm	83mm	133mm	55869
37/64	-	14.68		0.5781	5/8	3-17/64	5-1/4	51824
-	-	14.70		0.5787	16mm	83mm	133mm	55871
-	-	14.80		0.5827	16mm	83mm	133mm	55872
-	-	14.90		0.5866	16mm	83mm	133mm	55873
-	-	15.00		0.5906	16mm	83mm	133mm	56695
19/32	-	15.08		0.5938	5/8	3-1/4	5-1/4	51828
-	-	15.10		0.5945	16mm	83mm	133mm	55874
-	-	15.20		0.5984	16mm	83mm	133mm	55875
-	-	15.30		0.6024	16mm	83mm	133mm	55876
-	-	15.40		0.6063	16mm	83mm	133mm	55877
39/64	-	15.48		0.6094	5/8	3-1/4	5-1/4	51832
-	-	15.50	M18x2.5	0.6102	16mm	83mm	133mm	56696
-	-	15.60		0.6142	16mm	83mm	133mm	55878
-	-	15.70		0.6181	16mm	83mm	133mm	55879
-	-	15.80		0.6220	16mm	83mm	133mm	55880
5/8	-	15.86		0.6250	5/8	3-1/4	5-1/4	51836
-	-	15.90		0.6260	16mm	83mm	133mm	55882
-	-	16.00		0.6299	16mm	83mm	133mm	56697
-	-	16.10		0.6339	18mm	92mm	143mm	55883
-	-	16.20		0.6378	18mm	92mm	143mm	55884
41/64	-	16.23		0.6406	11/16	3-5/8	5-5/8	51840
-	-	16.30		0.6417	18mm	92mm	143mm	55885
-	-	16.40		0.6457	18mm	92mm	143mm	55886
-	-	16.50	M18x1.5	0.6496	18mm	92mm	143mm	56698
-	-	16.60		0.6535	18mm	92mm	143mm	55887
21/32	-	16.67	3/4-10	0.6563	11/16	3-21/32	5-5/8	51844
-	-	16.70		0.6575	18mm	92mm	143mm	55888
-	-	16.80		0.6614	18mm	92mm	143mm	55889
-	-	16.90		0.6654	18mm	92mm	143mm	55890
-	-	17.00		0.6692	18mm	92mm	143mm	56699
43/64	-	17.06		0.6719	11/16	3-21/32	5-5/8	51848
-	-	17.10		0.6732	18mm	92mm	143mm	55891
-	-	17.20		0.6772	18mm	92mm	143mm	55892
-	-	17.30		0.6811	18mm	92mm	143mm	55893
-	-	17.40		0.6850	18mm	92mm	143mm	55894
11/16	-	17.45	3/4x16	0.6875	11/16	3-21/32	5-5/8	51852



HP Drills

Non-Coolant Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

HP Drills

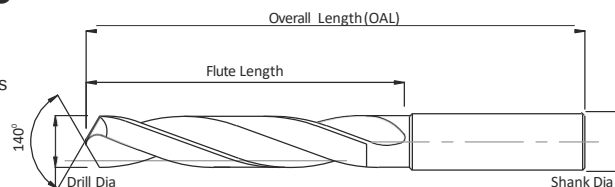
Fraction Size	Letter / Wire	DESCRIPTION						EDP # Coated TiAlN
		Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	
-	-	17.50	M20x2.5	0.6890	18mm	92mm	143mm	56700
-	-	17.60		0.6929	18mm	92mm	143mm	55895
-	-	17.70		0.6969	18mm	92mm	143mm	55896
-	-	17.80		0.7008	18mm	92mm	143mm	55897
45/64	-	17.84		0.7031	3/4	3-31/32	6	51856
-	-	17.90		0.7047	18mm	92mm	143mm	55899
-	-	18.00		0.7086	18mm	92mm	143mm	56701
-	-	18.10		0.7126	20mm	101mm	153mm	55900
-	-	18.20		0.7165	20mm	101mm	153mm	55901
23/32	-	18.24		0.7188	3/4	3-31/32	6	51860
-	-	18.30		0.7205	20mm	101mm	153mm	55902
-	-	18.40		0.7244	20mm	101mm	153mm	55903
-	-	18.50	M20x1.5	0.7283	20mm	101mm	153mm	55904
-	-	18.60		0.7323	20mm	101mm	153mm	55905
47/64	-	18.64		0.7344	3/4	3-31/32	6	51864
-	-	18.70		0.7362	20mm	101mm	153mm	55906
-	-	18.80		0.7402	20mm	101mm	153mm	55907
-	-	18.90		0.7441	20mm	101mm	153mm	55908
-	-	19.00		0.7480	20mm	101mm	153mm	55909
3/4	-	19.05		0.7500	3/4	3-31/32	6	51868
-	-	19.10		0.7520	20mm	101mm	153mm	55910
-	-	19.20		0.7559	20mm	101mm	153mm	55911
-	-	19.30		0.7598	20mm	101mm	153mm	55912
49/64	-	19.44	7/8-9	0.7656	13/16	3-31/32	6	55913
-	-	19.50		0.7677	20mm	101mm	153mm	55914
-	-	19.60		0.7717	20mm	101mm	153mm	55915
-	-	19.70		0.7756	20mm	101mm	153mm	55916
-	-	19.80		0.7795	20mm	101mm	153mm	55917
-	-	19.90		0.7835	20mm	101mm	153mm	55918
-	-	20.00		0.7874	20mm	101mm	153mm	56798



Non-Coolant Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

- 140° point angle and high performance geometry allows for high penetration rates
- Provides accurate hole sizing as well as near burnished holes
- The Cobra drill comes standard with TiAlN coating that provides unparalleled performance in difficult to machine applications
- Manufactured from premium submicron grain carbide



DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	3.00		0.1181	6mm	34mm	72mm	51870
-	3.10		0.1220	6mm	34mm	72mm	56334
1/8	3.17		0.1250	1/4	1-1/2	2-1/2	52075
-	3.20		0.1260	6mm	34mm	72mm	56335
-	3.30	M4x0.7	0.1299	6mm	34mm	72mm	56336
-	3.40	8-32	0.1339	6mm	34mm	72mm	56337
-	3.50		0.1378	6mm	34mm	72mm	51872
9/64	3.57		0.1406	1/4	1-1/2	2-1/2	52001
-	3.60		0.1417	6mm	34mm	72mm	56338
-	3.70		0.1457	6mm	34mm	72mm	51876
-	3.80	10-24	0.1496	6mm	43mm	81mm	51880
-	3.90		0.1535	6mm	43mm	81mm	56339
5/32	3.97		0.1562	1/4	1-1/2	3-1/4	52047
-	4.00		0.1575	6mm	43mm	81mm	51884
-	4.10		0.1614	6mm	43mm	81mm	56340
-	4.20		0.1654	6mm	43mm	81mm	51888
11/64	4.37		0.1719	1/4	1-1/2	3-1/4	52049
-	4.40		0.1732	6mm	43mm	81mm	56343
-	4.50		0.1771	6mm	43mm	81mm	51892
-	4.60	12-28	0.1811	6mm	57mm	95mm	56344
-	4.65		0.1830	6mm	57mm	95mm	56345
-	4.70		0.1850	6mm	57mm	95mm	56346
3/16	4.76		0.1875	1/4	2-1/4	4	56702
-	4.80		0.1880	6mm	57mm	95mm	51896
-	4.90		0.1929	6mm	57mm	95mm	56349
-	5.00	M6x1.0	0.1969	6mm	57mm	95mm	51900
-	5.10		0.2008	6mm	57mm	95mm	51904
13/64	5.16		0.2031	1/4	2-1/4	4	52051
-	5.20		0.2047	6mm	57mm	95mm	51908
-	5.30		0.2087	6mm	57mm	95mm	56350
-	5.40		0.2126	6mm	57mm	95mm	56351
-	5.41	1/4-28	0.2130	6mm	57mm	95mm	56379
-	5.50		0.2165	6mm	57mm	95mm	51912
7/32	5.56		0.2188	1/4	2-1/4	4	51871
-	5.60		0.2205	6mm	57mm	95mm	56352
-	5.70		0.2244	6mm	57mm	95mm	56353
-	5.80		0.2283	6mm	57mm	95mm	51916
-	5.90		0.2323	6mm	57mm	95mm	56354
15/64	5.95		0.2344	1/4	2-1/4	4	51873
-	6.00	M7x1.0	0.2362	6mm	57mm	95mm	51920



HP Drills

Non-Coolant Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

HP Drills

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	6.10		0.2402	8mm	76mm	114mm	56355
-	6.20		0.2441	8mm	76mm	114mm	56356
-	6.30		0.2480	8mm	76mm	114mm	51924
1/4	6.35		0.2500	1/4	3	4-1/2	56703
-	6.40		0.2520	8mm	76mm	114mm	56357
-	6.50		0.2559	8mm	76mm	114mm	51928
-	6.60		0.2598	8mm	76mm	114mm	56358
-	6.70		0.2638	8mm	76mm	114mm	56359
17/64	6.75		0.2656	5/16	3	4-1/2	56704
-	6.80		0.2667	8mm	76mm	114mm	51932
-	6.90	5/16-24	0.2716	8mm	76mm	114mm	56360
-	7.00	M8x1.0	0.2756	8mm	76mm	114mm	51936
-	7.10		0.2795	8mm	76mm	114mm	56361
9/32	7.14		0.2812	5/16	3	4-1/2	56705
-	7.20		0.2835	8mm	76mm	114mm	56363
-	7.30		0.2874	8mm	76mm	114mm	56364
-	7.40		0.2913	8mm	76mm	114mm	56365
-	7.50		0.2953	8mm	76mm	114mm	51940
19/64	7.54		0.2969	5/16	3	4-1/2	56706
-	7.60		0.2992	8mm	76mm	114mm	56366
-	7.70		0.3031	8mm	76mm	114mm	56367
-	7.80		0.3071	8mm	76mm	114mm	51944
-	7.90		0.3110	8mm	76mm	114mm	56368
5/16	7.94	3/8-16	0.3125	5/16	3	4-1/2	56707
-	8.00		0.3150	8mm	76mm	114mm	51948
-	8.10		0.3189	10mm	95mm	142mm	56370
-	8.20		0.3228	10mm	95mm	142mm	56371
-	8.30		0.3268	10mm	95mm	142mm	56372
21/64	8.33		0.3281	3/8	3-3/4	5-3/4	56708
-	8.40		0.3307	10mm	95mm	142mm	56373
-	8.50	M10x1.5	0.3346	10mm	95mm	142mm	51952
-	8.60		0.3386	10mm	95mm	142mm	56374
-	8.70		0.3425	10mm	95mm	142mm	56375
11/32	8.73		0.3438	3/8	3-3/4	5-3/4	56709
-	8.80	M10x1.25	0.3465	10mm	95mm	142mm	51956
-	8.90		0.3504	10mm	95mm	142mm	56376
-	9.00		0.3543	10mm	95mm	142mm	51960
-	9.10		0.3583	10mm	95mm	142mm	56377
23/64	9.13		0.3594	3/8	3-3/4	5-3/4	56710
-	9.20		0.3622	10mm	95mm	142mm	51964
-	9.30		0.3661	10mm	95mm	142mm	56378
-	9.50		0.3701	10mm	95mm	142mm	51968
-	9.52		0.3748	10mm	95mm	142mm	56380
3/8	9.52		0.3750	3/8	3-3/4	5-3/4	56711



Non-Coolant Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	9.60		0.3780	10mm	95mm	142mm	56381
-	9.70		0.3819	10mm	95mm	142mm	56382
-	9.80	7/16-20	0.3858	10mm	95mm	142mm	51972
-	9.90		0.3898	10mm	95mm	142mm	56383
25/64	9.92		0.3906	7/16	4-1/2	6-1/2	56712
-	10.00		0.3937	10mm	95mm	142mm	51976
-	10.10		0.3976	12mm	114mm	162mm	56384
-	10.20		0.4016	12mm	114mm	162mm	51980
-	10.30	M12x1.75	0.4055	12mm	114mm	162mm	56385
13/32	10.32		0.4062	7/16	4-1/2	6-1/2	56713
-	10.40		0.4094	12mm	114mm	162mm	56386
-	10.50		0.4134	12mm	114mm	162mm	51984
-	10.60		0.4173	12mm	114mm	162mm	56388
-	10.70		0.4213	12mm	114mm	162mm	56389
27/64	10.72	1/2-13	0.4219	7/16	4-1/2	6-1/2	56714
-	10.80	M12x1.25	0.4252	12mm	114mm	162mm	51988
-	10.90		0.4291	12mm	114mm	162mm	56392
-	11.00		0.4331	12mm	114mm	162mm	51992
-	11.10		0.4370	12mm	114mm	162mm	56393
7/16	11.11		0.4375	7/16	4-1/2	6-1/2	56799
-	11.20		0.4409	12mm	114mm	162mm	56395
-	11.30		0.4449	12mm	114mm	162mm	56396
-	11.40		0.4488	12mm	114mm	162mm	56397
-	11.50	1/2-20	0.4528	12mm	114mm	162mm	51996
29/64	11.51		0.4531	1/2	5-1/4	7	56715
-	11.60		0.4567	12mm	114mm	162mm	56399
-	11.70		0.4606	12mm	114mm	162mm	56400
-	11.80		0.4646	12mm	114mm	162mm	56143
-	11.90		0.4685	12mm	114mm	162mm	56402
15/32	11.91		0.4688	1/2	5-1/4	7	56718
-	12.00	M14x2.0	0.4724	12mm	114mm	162mm	56165
-	12.10		0.4764	14mm	133mm	178mm	56403
-	12.20	9/16-12	0.4803	14mm	133mm	178mm	56404
-	12.30		0.4843	14mm	133mm	178mm	56189
31/64	12.30		0.4844	1/2	5-1/4	7	52108
-	12.40		0.4882	14mm	133mm	178mm	56405
-	12.50	M14x1.5	0.4921	14mm	133mm	178mm	56201
-	12.60		0.4961	14mm	133mm	178mm	56406
1/2	12.70		0.5000	1/2	5-1/4	7	52112
-	12.80		0.5039	14mm	133mm	178mm	56243
-	12.90		0.5079	14mm	133mm	178mm	56408
-	13.00	9/16-18	0.5118	14mm	133mm	178mm	56247
33/64	13.10		0.5157	9/16	5-1/4	7	52116
-	13.20		0.5197	14mm	133mm	178mm	56409



HP Drills

Non-Coolant Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

HP Drills

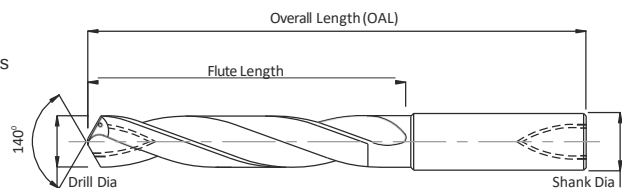
DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAIN
-	13.30		0.5236	14mm	133mm	178mm	56410
-	13.40		0.5276	14mm	133mm	178mm	56411
17/32	13.49	5/8-11	0.5312	9/16	5-1/4	7	52120
-	13.50		0.5315	14mm	133mm	178mm	56260
-	13.60		0.5354	14mm	133mm	178mm	56412
-	13.70		0.5394	14mm	133mm	178mm	56413
-	13.80		0.5433	14mm	133mm	178mm	56414
35/64	13.89		0.5469	9/16	5-1/4	178mm	52124
-	13.90		0.5472	14mm	133mm	178mm	56417
-	14.00	M16x2.0	0.5512	14mm	133mm	178mm	56264
-	14.10		0.5551	16mm	133mm	178mm	56419
-	14.20		0.5591	16mm	133mm	178mm	56420
9/16	14.29		0.5626	9/16	5-1/4	7	52128
-	14.30		0.5630	16mm	152mm	203mm	56421
-	14.40		0.5669	16mm	152mm	203mm	56422
-	14.50	M16x1.5	0.5709	16mm	152mm	203mm	56270
-	14.60		0.5748	16mm	152mm	203mm	56423
37/64	14.68	5/8-18	0.5780	5/8	6	8	52132
-	14.70		0.5787	16mm	152mm	203mm	56425
-	14.80		0.5827	16mm	152mm	203mm	56426
-	14.90		0.5866	16mm	152mm	203mm	56427
-	15.00		0.5906	16mm	152mm	203mm	56271
19/32	15.08		0.5938	5/8	6	8	52136
-	15.10		0.5945	16mm	152mm	203mm	56428
-	15.20		0.5984	16mm	152mm	203mm	56429
-	15.30		0.6024	16mm	152mm	203mm	56430
-	15.40		0.6063	16mm	152mm	203mm	56431
39/64	15.48		0.6094	5/8	6	8	52140
-	15.50	M18x2.5	0.6102	16mm	152mm	203mm	56274
-	15.60		0.6142	16mm	152mm	203mm	56433
-	15.70		0.6181	16mm	152mm	203mm	56434
-	15.80		0.6220	16mm	152mm	203mm	56435
5/8	15.87		0.6250	5/8	6	8	52144
-	15.90		0.6260	16mm	152mm	203mm	52043
-	16.00		0.6299	16mm	152mm	203mm	56729



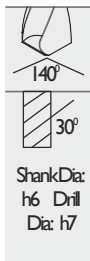
BLACKMAMBA - CoolantFed Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

- 140° point angle and high performance geometry allows for high penetration rates
- Cobra's high performance high penetration drills provide accurate hole sizing as well as near burnished holes
- Manufactured from premium submicron grain carbide



DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	3.00		0.1181	6mm	20mm	62mm	50520
-	3.10		0.1220	6mm	20mm	62mm	56062
1/8	3.17		0.1250	1/4	3/4	2-1/2	50130
-	3.20		0.1260	6mm	20mm	62mm	56063
-	3.30	M4x0.7	0.1299	6mm	20mm	62mm	50521
-	3.40	8-32	0.1334	6mm	20mm	62mm	50131
-	3.50		0.1378	6mm	20mm	62mm	50522
9/64	3.57		0.1406	1/4	3/4	2-1/2	56065
-	3.60		0.1417	6mm	20mm	62mm	50132
-	3.70		0.1456	6mm	20mm	62mm	50523
-	3.90		0.1535	6mm	24mm	66mm	56067
5/32	3.97		0.1562	1/4	15/16	2-5/8	50133
-	4.00		0.1575	6mm	24mm	66mm	50524
-	4.10		0.1614	6mm	24mm	66mm	56068
-	4.20		0.1654	6mm	24mm	66mm	50525
11/64	4.37	12-24	0.1719	1/4	15/16	2-5/8	50134
-	4.37		0.1720	6mm	24mm	66mm	56070
-	4.40		0.1732	6mm	24mm	66mm	56071
-	4.50		0.1772	6mm	24mm	66mm	50526
-	4.60	12-28	0.1811	6mm	24mm	66mm	56072
-	4.65		0.1830	6mm	24mm	66mm	56073
-	4.76		0.1874	6mm	24mm	66mm	56074
3/16	4.76		0.1875	1/4	15/16	2-5/8	50135
-	4.80		0.1890	6mm	24mm	66mm	50129
-	4.90		0.1929	6mm	24mm	66mm	56076
-	5.00	M6x1.0	0.1969	6mm	24mm	66mm	50527
-	5.10		0.2008	6mm	24mm	66mm	50136
13/64	5.16	1/4-20	0.2031	1/4	15/16	2-5/8	50137
-	5.20		0.2047	6mm	24mm	66mm	50528
-	5.30		0.2087	6mm	24mm	66mm	56077
-	5.40		0.2126	6mm	24mm	66mm	56078
-	5.50		0.2165	6mm	24mm	66mm	50529
7/32	5.56		0.2188	1/4	15/16	2-5/8	50138
-	5.60		0.2205	6mm	24mm	66mm	56079
-	5.70		0.2244	6mm	24mm	66mm	56080
-	5.80		0.2283	6mm	24mm	66mm	56081
-	5.90		0.2323	6mm	24mm	66mm	56082
15/64	5.95		0.2344	1/4	15/16	2-5/8	50139
-	6.00	M7x1.0	0.2362	6mm	24mm	66mm	50530
-	6.10		0.2402	8mm	34mm	79mm	50140



HP Drills

BLACKMAMBA - CoolantFed Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

HP Drills

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	6.20		0.2441	8mm	34mm	79mm	50531
-	6.30		0.2480	8mm	34mm	79mm	56083
1/4	6.35		0.2500	1/4	1-11/32	3-1/8	56730
-	6.40		0.2520	8mm	34mm	79mm	56085
-	6.50		0.2559	8mm	34mm	79mm	50532
-	6.60		0.2598	8mm	34mm	79mm	56087
-	6.70		0.2638	8mm	34mm	79mm	56088
17/64	6.75		0.2656	5/16	1-11/32	3-1/8	56731
-	6.80		0.2677	8mm	34mm	79mm	56089
-	6.83		0.2689	8mm	34mm	79mm	50533
-	6.90	5/16-24	0.2717	8mm	34mm	79mm	50143
-	7.00	M8x1	0.2756	8mm	34mm	79mm	50534
-	7.10		0.2795	8mm	41mm	79mm	50144
9/32	7.14		0.2812	5/16	1-39/64	3-1/8	56732
-	7.20		0.2835	8mm	41mm	79mm	50535
-	7.30		0.2874	8mm	41mm	79mm	56091
-	7.40		0.2913	8mm	41mm	79mm	56092
-	7.50		0.2953	8mm	41mm	79mm	50536
19/64	7.54		0.2969	5/16	1-39/64	3-1/8	50517
-	7.60		0.2992	8mm	41mm	79mm	56094
-	7.70		0.3031	8mm	41mm	79mm	56095
-	7.80		0.3071	8mm	41mm	79mm	56096
-	7.90		0.3110	8mm	41mm	79mm	56097
5/16	7.94	3/8-16	0.3125	5/16	1-39/64	3-1/8	56733
-	8.00		0.3150	8mm	41mm	79mm	50537
-	8.10		0.3189	10mm	47mm	89mm	56098
-	8.20		0.3228	10mm	47mm	89mm	56605
-	8.30		0.3268	10mm	47mm	89mm	56099
21/64	8.33		0.3281	3/8	1-27/32	3-1/2	50580
-	8.40		0.3307	10mm	47mm	89mm	56100
-	8.50	M10x1.5	0.3346	10mm	47mm	89mm	50538
-	8.60		0.3386	10mm	47mm	89mm	56101
-	8.70		0.3425	10mm	47mm	89mm	50515
-	8.73		0.3437	10mm	47mm	89mm	56103
11/32	8.73		0.3438	3/8	1-27/32	3-1/2	56734
-	8.80	M10x1.25	0.3465	10mm	47mm	89mm	50539
-	8.90		0.3504	10mm	47mm	89mm	56735
-	9.00		0.3543	10mm	47mm	89mm	50540
-	9.10		0.3583	10mm	47mm	89mm	56611
23/64	9.13		0.3594	3/8	1-27/32	3-1/2	50518
-	9.20		0.3622	10mm	47mm	89mm	50541
-	9.30		0.3661	10mm	47mm	89mm	56105
-	9.40		0.3701	10mm	47mm	89mm	56736
-	9.50		0.3740	10mm	47mm	89mm	50542



BLACKMAMBA - CoolantFed Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
3/8	9.52		0.3750	3/8	1-27/32	3-1/2	56737
-	9.60		0.3780	10mm	47mm	89mm	56107
-	9.70		0.3819	10mm	47mm	89mm	56738
-	9.80	7/16-20	0.3858	10mm	47mm	89mm	56109
-	9.90		0.3898	10mm	47mm	89mm	56739
25/64	9.92		0.3906	7/16	1-27/32	3-1/2	50584
-	10.00		0.3937	10mm	47mm	89mm	50543
-	10.10		0.3976	12mm	55mm	102mm	56111
-	10.20		0.4016	12mm	55mm	102mm	50544
-	10.30	M12x1.75	0.4055	12mm	55mm	102mm	56740
13/32	10.32		0.4062	7/16	2-11/64	4	56741
-	10.40		0.4094	12mm	55mm	102mm	56113
-	10.50		0.4134	12mm	55mm	102mm	50545
-	10.60		0.4173	12mm	55mm	102mm	56115
-	10.70		0.4213	12mm	55mm	102mm	56742
27/64	10.72	1/2-13	0.4219	7/16	2-11/64	4	50566
-	10.80	M12x1.25	0.4252	12mm	55mm	102mm	50546
-	10.90		0.4291	12mm	55mm	102mm	56117
-	11.00		0.4331	12mm	55mm	102mm	50547
-	11.10		0.4370	12mm	55mm	102mm	56743
7/16	11.11		0.4375	7/16	2-11/64	4	56744
-	11.20		0.4409	12mm	55mm	102mm	56119
-	11.30		0.4449	12mm	55mm	102mm	56745
-	11.40		0.4488	12mm	55mm	102mm	56121
-	11.50	1/2-20	0.4528	12mm	55mm	102mm	50548
29/64	11.51		0.4531	1/2	2-11/64	4	50565
-	11.60		0.4567	12mm	55mm	102mm	56123
-	11.70		0.4606	12mm	55mm	102mm	56746
-	11.80		0.4646	12mm	55mm	102mm	56125
-	11.90		0.4685	12mm	55mm	102mm	56127
15/32	11.91		0.4688	1/2	2-11/64	4	56747
-	12.00	M14x2.0	0.4724	12mm	55mm	102mm	50549
-	12.10		0.4764	14mm	60mm	107mm	56748
-	12.20	9/16-12	0.4803	14mm	60mm	107mm	50564
31/64	12.30		0.4844	1/2	2-3/8	4-1/4	50561
-	12.40		0.4882	14mm	60mm	107mm	56749
-	12.50	M14x1.5	0.4921	14mm	60mm	107mm	50550
-	12.60		0.4961	14mm	60mm	107mm	56131
1/2	12.70		0.5000	1/2	2-3/8	4-1/4	56750
-	12.80		0.5039	14mm	60mm	107mm	56751
-	12.90	9/16-18	0.5079	14mm	60mm	107mm	56133
-	13.00		0.5118	14mm	60mm	107mm	50551
33/64	13.01		0.5156	9/16	2-3/8	4-1/4	56752
-	13.20		0.5197	14mm	60mm	107mm	56135



HP Drills

BLACKMAMBA - CoolantFed Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

HP Drills

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	13.30		0.5236	14mm	60mm	107mm	56753
-	13.40		0.5276	14mm	60mm	107mm	56137
17/32	13.49	5/8-11	0.5312	9/16	2-3/8	4-1/4	56754
-	13.50		0.5315	14mm	60mm	107mm	50552
-	13.60		0.5354	14mm	60mm	107mm	56755
-	13.70		0.5394	14mm	60mm	107mm	56139
-	13.80		0.5433	14mm	60mm	107mm	56756
35/64	13.89		0.5469	9/16	2-3/8	4-1/4	56141
-	13.90		0.5472	14mm	60mm	107mm	56757
-	14.00	M16x2.0	0.5512	14mm	60mm	107mm	50553
-	14.10		0.5551	16mm	65mm	115mm	56758
-	14.20		0.5591	16mm	65mm	115mm	56145
9/16	14.29		0.5625	9/16	2-9/16	4-1/2	56759
-	14.30		0.5630	16mm	65mm	115mm	56147
-	14.40		0.5669	16mm	65mm	115mm	56760
-	14.50	M16x1.5	0.5709	16mm	65mm	115mm	50554
-	14.60		0.5748	16mm	65mm	115mm	56149
37/64	14.68	5/8-18	0.5781	5/8	2-9/16	4-1/2	56151
-	14.70		0.5787	16mm	65mm	115mm	56761
-	14.80		0.5827	16mm	65mm	115mm	56153
-	14.90		0.5866	16mm	65mm	115mm	56762
-	15.00		0.5906	16mm	65mm	115mm	50555
19/32	15.08		0.5938	5/8	2-9/16	4-1/2	50595
-	15.10		0.5945	16mm	65mm	115mm	56155
-	15.20		0.5984	16mm	65mm	115mm	56763
-	15.30		0.6024	16mm	65mm	115mm	56157
-	15.40		0.6063	16mm	65mm	115mm	56764
39/64	15.48		0.6094	5/8	2-9/16	4-1/2	56159
-	15.50	M18x2.5	0.6102	16mm	65mm	115mm	50556
-	15.60		0.6142	16mm	65mm	115mm	56161
-	15.70		0.6181	16mm	65mm	115mm	56765
-	15.80		0.6220	16mm	65mm	115mm	56163
-	15.87		0.6248	16mm	65mm	115mm	56766
5/8	15.88		0.6250	5/8	2-9/16	4-1/2	50596
-	15.90		0.6260	16mm	65mm	115mm	55958
-	16.00		0.6299	16mm	65mm	115mm	50557
-	16.10		0.6339	18mm	73mm	123mm	56167
-	16.20		0.6378	18mm	73mm	123mm	56767
41/64	16.27		0.6406	11/16	2-7/8	4-27/32	56169
-	16.30		0.6417	18mm	73mm	123mm	56768
-	16.40		0.6457	18mm	73mm	123mm	56171
-	16.50	M18x1.5	0.6496	18mm	73mm	123mm	56769
-	16.60		0.6535	18mm	73mm	123mm	56173
21/32	16.67	3/4-10	0.6562	11/16	2-7/8	4-27/32	50598



BLACKMAMBA - CoolantFed Drills 140° Point Angle

3XD - Inch, Letter, Number and Metric

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	16.70		0.6575	18mm	73mm	123mm	56770
-	16.80		0.6614	18mm	73mm	123mm	56175
-	16.90		0.6654	18mm	73mm	123mm	56771
-	17.00		0.6693	18mm	73mm	123mm	50559
43/64	17.07		0.6720	11/16	2-7/8	4-27/32	56177
-	17.10		0.6732	18mm	73mm	123mm	56772
-	17.20		0.6772	18mm	73mm	123mm	56179
-	17.30		0.6811	18mm	73mm	123mm	56773
-	17.40		0.6850	18mm	73mm	123mm	56181
11/16	17.46	3/4-16	0.6874	11/16	2-7/8	4-27/32	50599
-	17.50	M20x2.5	0.6890	18mm	73mm	123mm	56183
-	17.60		0.6929	18mm	73mm	123mm	56774
-	17.70		0.6969	18mm	73mm	123mm	56185
-	17.80		0.7008	18mm	73mm	123mm	56775
45/64	17.86		0.7031	3/4	2-7/8	4-27/32	56187
-	17.90		0.7047	18mm	73mm	123mm	56776
-	18.00		0.7087	18mm	73mm	123mm	50560
-	18.10		0.7126	20mm	79mm	131mm	56777
-	18.20		0.7165	20mm	79mm	131mm	56191
23/32	18.25		0.7187	3/4	3-1/8	5-5/32	56778
-	18.30		0.7205	20mm	79mm	131mm	56780
-	18.40		0.7244	20mm	79mm	131mm	56193
-	18.50	M20x1.5	0.7283	20mm	79mm	131mm	56781
-	18.60		0.7323	20mm	79mm	131mm	56195
47/64	18.65		0.7343	3/4	3-1/8	5-5/32	56782
-	18.70		0.7362	20mm	79mm	131mm	56197
-	18.80		0.7402	20mm	79mm	131mm	56783
-	18.90		0.7441	20mm	79mm	131mm	56199
-	19.00		0.7480	20mm	79mm	131mm	50562
3/4	19.05		0.7500	3/4	3-1/8	5-5/32	56784
-	19.10		0.7520	20mm	79mm	131mm	56785
-	19.20		0.7559	20mm	79mm	131mm	56203
-	19.30		0.7598	20mm	79mm	131mm	56786
49/64	19.45	7/8-9	0.7657	13/16	3-1/8	5-5/32	56205
-	19.50		0.7677	20mm	79mm	131mm	56787
-	19.60		0.7717	20mm	79mm	131mm	56207
-	19.70		0.7756	20mm	79mm	131mm	56788
-	19.80		0.7795	20mm	79mm	131mm	56209
-	19.90		0.7835	20mm	79mm	131mm	56789
-	20.00		0.7874	20mm	79mm	131mm	50563

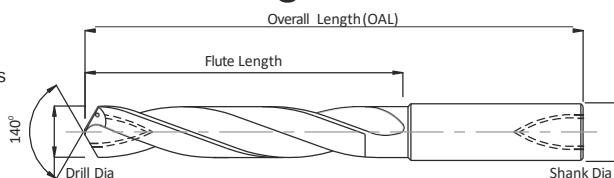


HP Drills

BLACKMAMBA - CoolantFed Drills 140° Point Angle

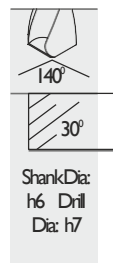
5XD - Inch, Letter, Number and Metric

- 140° point angle and high performance geometry allows for high penetration rates
- Cobra's high performance high penetration drills provide accurate hole sizing as well as near burnished holes
- Manufactured from premium submicron grain carbide



HP Drills

		DESCRIPTION					EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAIN
-	3.00		0.1181	4mm	28mm	66mm	55101
-	3.00		0.1181	6mm	28mm	66mm	55100
-	3.10		0.1220	4mm	28mm	66mm	55105
-	3.10		0.1220	6mm	28mm	66mm	55104
1/8	3.17		0.1250	1/4	1-1/8	2-5/8	53030
-	3.20		0.1260	6mm	28mm	66mm	56211
-	3.30	M4x0.7	0.1299	4mm	28mm	66mm	55109
-	3.30	M4x0.7	0.1299	6mm	28mm	66mm	55108
-	3.40	8-32	0.1339	4mm	28mm	66mm	53032
-	3.40	8-32	0.1339	6mm	28mm	66mm	56790
-	3.50		0.1378	4mm	28mm	66mm	55113
-	3.50		0.1378	6mm	28mm	66mm	55112
9/64	3.57		0.1406	1/4	1-1/8	2-5/8	56628
-	3.60		0.1417	6mm	28mm	66mm	56213
-	3.80		0.1450	6mm	28mm	66mm	56265
-	3.70		0.1457	4mm	28mm	66mm	55117
-	3.70		0.1457	6mm	28mm	66mm	55116
-	3.80	10-24	0.1496	4mm	28mm	66mm	55121
-	3.80	10-24	0.1496	6mm	28mm	66mm	55120
-	3.90		0.1535	6mm	36mm	74mm	56215
5/32	3.97		0.1562	1/4	1-27/64	3	53038
-	4.00		0.1575	4mm	36mm	74mm	55125
-	4.00		0.1575	6mm	36mm	74mm	55124
-	4.10		0.1614	6mm	36mm	74mm	56791
-	4.20		0.1654	6mm	36mm	74mm	55128
-	4.30		0.1693	6mm	36mm	74mm	53043
11/64	4.37		0.1719	1/4	1-27/64	3	53045
-	4.40		0.1732	6mm	36mm	74mm	56792
-	4.50		0.1771	6mm	36mm	74mm	55132
-	4.60	12-28	0.1811	6mm	36mm	74mm	56219
-	4.65		0.1830	6mm	36mm	74mm	56793
-	4.70		0.1850	6mm	36mm	74mm	53048
3/16	4.76		0.1875	1/4	1-3/4	3-1/4	53050
-	4.80		0.1891	6mm	44mm	82mm	55136
-	4.90		0.1929	6mm	44mm	82mm	56221
-	5.00	M6x1.0	0.1969	6mm	44mm	82mm	55140
-	5.10		0.2008	6mm	44mm	82mm	55144
13/64	5.16		0.2031	1/4	1-3/4	3-1/4	53057
-	5.20		0.2047	6mm	44mm	82mm	55148
-	5.30		0.2087	6mm	44mm	82mm	56794
-	5.40		0.2126	6mm	44mm	82mm	56223
-	5.50		0.2165	6mm	44mm	82mm	55152



BLACKMAMBA - CoolantFed Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
7/32	5.56		0.2189	1/4	1-3/4	3-1/4	56795
-	5.60		0.2205	6mm	44mm	82mm	56225
-	5.70		0.2244	6mm	44mm	82mm	56796
-	5.80		0.2283	6mm	44mm	82mm	55156
-	5.90		0.2323	6mm	44mm	82mm	56227
15/64	5.95		0.2344	1/4	1-3/4	3-1/4	53062
-	6.00	M7x1.0	0.2362	6mm	44mm	82mm	55160
-	6.10		0.2402	8mm	53mm	91mm	56228
-	6.20		0.2441	8mm	53mm	91mm	56229
-	6.30		0.2480	8mm	53mm	91mm	55164
1/4	6.35		0.2500	1/4	2-1/8	3-37/64	55000
-	6.40		0.2520	8mm	53mm	91mm	56230
-	6.50		0.2559	8mm	53mm	91mm	55168
-	6.60		0.2598	8mm	53mm	91mm	56231
-	6.70		0.2638	8mm	53mm	91mm	56232
17/64	6.75		0.2656	5/16	2-1/8	3-37/64	55002
-	6.80		0.2677	8mm	53mm	91mm	55172
-	6.90	5/16-24	0.2717	8mm	53mm	91mm	53070
-	7.00	M8x1.0	0.2756	8mm	53mm	91mm	55176
-	7.10		0.2795	8mm	53mm	91mm	53073
9/32	7.14		0.2812	5/16	2-1/8	3-37/64	55004
-	7.20		0.2835	8mm	53mm	91mm	56233
-	7.30		0.2874	8mm	53mm	91mm	56234
-	7.40		0.2913	8mm	53mm	91mm	56235
-	7.50		0.2953	8mm	53mm	91mm	55180
19/64	7.54		0.2969	5/16	2-1/8	3-37/64	55006
-	7.60		0.2992	8mm	53mm	91mm	56236
-	7.70		0.3031	8mm	53mm	91mm	56237
-	7.80		0.3071	8mm	53mm	91mm	55184
-	7.90		0.3110	8mm	53mm	91mm	56238
5/16	7.94	3/8-16	0.3125	5/16	2-1/8	3-37/64	55008
-	8.00		0.3150	8mm	53mm	91mm	55188
-	8.10		0.3189	10mm	61mm	103mm	56239
-	8.20		0.3228	10mm	61mm	103mm	56240
-	8.30		0.3268	10mm	61mm	103mm	56241
21/64	8.33		0.3281	3/8	2-13/32	4-1/16	55010
-	8.40		0.3307	10mm	61mm	103mm	56242
-	8.50	M10x1.5	0.3346	10mm	61mm	103mm	55192
-	8.60		0.3386	10mm	61mm	103mm	56244
-	8.70		0.3425	10mm	61mm	103mm	56245
11/32	8.73		0.3438	3/8	2-13/32	4-1/16	55012
-	8.80	M10x1.25	0.3465	10mm	61mm	103mm	55196
-	8.90		0.3504	10mm	61mm	103mm	56246
-	9.00		0.3543	10mm	61mm	103mm	55200
-	9.10		0.3583	10mm	61mm	103mm	53084



HP Drills

BLACKMAMBA - CoolantFed Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

HP Drills

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
23/64	9.13		0.3594	3/8	2-13/32	4-1/16	55014
-	9.20		0.3622	10mm	61mm	103mm	55204
-	9.30		0.3661	10mm	61mm	103mm	56248
-	9.40		0.3701	10mm	61mm	103mm	56249
-	9.50		0.3740	10mm	61mm	103mm	55208
3/8	9.52		0.3750	3/8	2-13/32	4-1/16	55016
-	9.60		0.3780	10mm	61mm	103mm	56250
-	9.70		0.3819	10mm	61mm	103mm	56251
-	9.80		0.3858	10mm	61mm	103mm	55212
-	9.90		0.3898	10mm	61mm	103mm	56252
25/64	9.92		0.3906	7/16	2-13/32	4-1/16	55018
-	10.00		0.3937	10mm	61mm	103mm	55216
-	10.10		0.3976	12mm	71mm	118mm	56253
-	10.20		0.4016	12mm	71mm	118mm	55220
-	10.30	M12x1.75	0.4055	12mm	71mm	118mm	56254
13/32	10.32		0.4062	7/16	2-7/16	4-11/16	55020
-	10.40		0.4094	12mm	71mm	118mm	56255
-	10.50		0.4134	12mm	71mm	118mm	55224
-	10.60		0.4173	12mm	71mm	118mm	56256
-	10.70		0.4213	12mm	71mm	118mm	56257
27/64	10.72	1/2-13	0.4219	7/16	2-7/16	4-11/16	55022
-	10.80	M12x1.25	0.4252	12mm	71mm	118mm	55228
-	10.90		0.4291	12mm	71mm	118mm	56258
-	11.00		0.4331	12mm	71mm	118mm	55232
-	11.10		0.4370	12mm	71mm	118mm	56259
7/16	11.11		0.4375	7/16	2-7/16	4-11/16	55024
-	11.20		0.4409	12mm	71mm	118mm	56261
-	11.30		0.4449	12mm	71mm	118mm	56262
-	11.40		0.4488	12mm	71mm	118mm	56263
-	11.50	1/2-20	0.4528	12mm	71mm	118mm	55236
29/64	11.51		0.4531	1/2	2-7/16	4-11/16	55026
-	11.60		0.4567	12mm	71mm	118mm	56266
-	11.70		0.4606	12mm	71mm	118mm	56267
-	11.80		0.4646	12mm	71mm	118mm	55240
-	11.90		0.4685	12mm	71mm	118mm	56268
15/32	11.91		0.4688	1/2	2-7/16	4-11/16	55028
-	12.00	M14x2.0	0.4724	12mm	71mm	118mm	55244
-	12.10		0.4764	14mm	77mm	124mm	56269
-	12.20	9/16-12	0.4803	14mm	77mm	124mm	53091
-	12.30		0.4843	14mm	77mm	124mm	55248
31/64	12.30		0.4844	1/2	3	4-7/8	55030
-	12.40		0.4882	14mm	77mm	124mm	56272
-	12.50	M14x1.5	0.4921	14mm	77mm	124mm	55252
-	12.60		0.4961	14mm	77mm	124mm	56273
1/2	12.70		0.5000	1/2	3	4-7/8	55032



BLACKMAMBA - CoolantFed Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	12.80		0.5039	14mm	77mm	124mm	55256
-	12.90	9/16-18	0.5079	14mm	77mm	124mm	56629
-	13.00		0.5118	14mm	77mm	124mm	55260
33/64	13.10		0.5156	9/16	3	4-7/8	55034
-	13.20		0.5197	14mm	77mm	124mm	56275
-	13.30		0.5236	14mm	77mm	124mm	56276
-	13.40		0.5276	14mm	77mm	124mm	56277
17/32	13.49	5/8-11	0.5312	9/16	3	4-7/8	55036
-	13.50		0.5315	14mm	77mm	124mm	55264
-	13.60		0.5354	14mm	77mm	124mm	56278
-	13.70		0.5394	14mm	77mm	124mm	56279
-	13.80		0.5433	14mm	77mm	124mm	56280
33/64	13.89		0.5469	9/16	3	4-7/8	55038
-	13.90		0.5472	14mm	77mm	124mm	56281
-	14.00	M16x2	0.5512	14mm	77mm	124mm	55268
-	14.10		0.5551	16mm	83mm	133mm	56282
-	14.20		0.5591	16mm	83mm	133mm	56283
9/16	14.29		0.5625	9/16	3-17/64	5-1/4	55040
-	14.30		0.5630	16mm	83mm	133mm	56284
-	14.40		0.5669	16mm	83mm	133mm	56285
-	14.50	M16x1.50	0.5709	16mm	83mm	133mm	55272
-	14.60		0.5748	16mm	83mm	133mm	56286
37/64	14.68		0.5781	5/8	3-17/64	5-1/4	55042
-	14.70		0.5787	16mm	83mm	133mm	56287
-	14.80		0.5827	16mm	83mm	133mm	56288
-	14.90		0.5866	16mm	83mm	133mm	56289
-	15.00		0.5906	16mm	83mm	133mm	55276
19/32	15.08		0.5938	5/8	3-1/4	5-1/4	55044
-	15.10		0.5945	16mm	83mm	133mm	56290
-	15.20		0.5984	16mm	83mm	133mm	56291
-	15.30		0.6024	16mm	83mm	133mm	56292
-	15.40		0.6063	16mm	83mm	133mm	56293
39/64	15.48		0.6094	5/8	3-1/4	5-1/4	56294
-	15.50	M18x2.5	0.6102	16mm	83mm	133mm	55280
-	15.60		0.6142	16mm	83mm	133mm	56295
-	15.70		0.6181	16mm	83mm	133mm	56296
-	15.80		0.6220	16mm	83mm	133mm	56297
5/8	15.87		0.6250	5/8	3-1/4	5-1/4	55048
-	15.90		0.6260	16mm	83mm	133mm	56299
-	16.00		0.6299	16mm	83mm	133mm	55284
-	16.10		0.6339	18mm	92mm	143mm	56300
-	16.20		0.6378	18mm	92mm	143mm	56301
41/64	16.23		0.6406	11/16	3-5/8	5-5/8	55050
-	16.30		0.6417	18mm	92mm	143mm	56302



HP Drills

BLACKMAMBA - CoolantFed Drills 140° Point Angle

5XD - Inch, Letter, Number and Metric

HP Drills

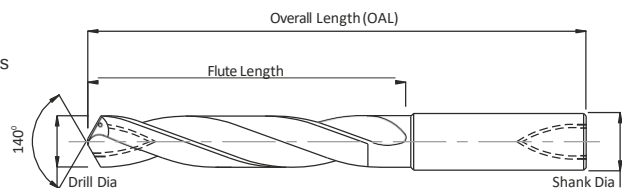
DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	16.40		0.6457	18mm	92mm	143mm	56303
-	16.50	M18x1.5	0.6496	18mm	92mm	143mm	55288
-	16.60		0.6535	18mm	92mm	143mm	56304
21/32	16.67	3/4-10	0.6563	11/16	3-5/8	5-5/8	55052
-	16.70		0.6575	18mm	92mm	143mm	56305
-	16.80		0.6614	18mm	92mm	143mm	56306
-	16.90		0.6654	18mm	92mm	143mm	56307
-	17.00		0.6692	18mm	92mm	143mm	55292
43/64	17.06		0.6719	11/16	3-5/8	5-5/8	55054
-	17.10		0.6732	18mm	93mm	143mm	56308
-	17.20		0.6772	18mm	92mm	143mm	56309
-	17.30		0.6811	18mm	92mm	143mm	56310
-	17.40		0.6850	18mm	92mm	143mm	56311
11/16	17.45	3/4-16	0.6875	11/16	3-5/8	5-5/8	55056
-	17.50	M20x2.5	0.6890	18mm	92mm	143mm	55296
-	17.60		0.6929	18mm	92mm	143mm	56312
-	17.70		0.6969	18mm	92mm	143mm	56313
-	17.80		0.7008	18mm	92mm	143mm	56314
45/64	17.84		0.7031	3/4	3-5/8	5-5/8	55058
-	17.90		0.7047	18mm	92mm	143mm	56315
-	18.00		0.7086	18mm	92mm	143mm	55300
-	18.10		0.7126	20mm	100mm	153mm	56316
-	18.20		0.7165	20mm	100mm	153mm	56317
23/32	18.24		0.7188	3/4	3-15/16	6	55060
-	18.30		0.7205	20mm	100mm	153mm	56318
-	18.40		0.7244	20mm	100mm	153mm	56319
-	18.50	M20x1.5	0.7283	20mm	100mm	153mm	56320
-	18.60		0.7323	20mm	100mm	153mm	56321
47/64	18.64		0.7344	3/4	3-15/16	6	55062
-	18.70		0.7362	20mm	100mm	153mm	56322
-	18.80		0.7402	20mm	100mm	153mm	56323
-	18.90		0.7441	20mm	100mm	153mm	56324
-	19.00		0.7480	20mm	100mm	153mm	56325
3/4	19.05		0.7500	3/4	3-15/16	6	55064
-	19.10		0.7520	20mm	100mm	153mm	56326
-	19.20		0.7559	20mm	100mm	153mm	56327
-	19.30		0.7598	20mm	100mm	153mm	56328
49/64	19.44		0.7656	3/4	3-15/16	6	55605
-	19.50	7/8-9	0.7677	20mm	100mm	153mm	56329
-	19.60		0.7717	20mm	100mm	153mm	56330
-	19.70		0.7756	20mm	100mm	153mm	56331
-	19.80		0.7795	20mm	100mm	153mm	56332
25/32	19.84		0.7812	13/16	3-15/16	6	55338
-	19.90		0.7835	20mm	100mm	153mm	56333
-	20.00		0.7874	20mm	100mm	153mm	55304



BLACKMAMBA - CoolantFed Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

- 140° point angle and high performance geometry allows for high penetration rates
- Cobra's high performance high penetration drills provide accurate hole sizing as well as near burnished holes
- Manufactured from premium submicron grain carbide



DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	3.00		0.1181	6mm	34mm	72mm	55320
-	3.10		0.1220	6mm	34mm	72mm	56483
1/8	3.17		0.1250	1/4	1-1/2	2-1/2	55321
-	3.20		0.1260	6mm	34mm	72mm	56484
-	3.30	M4x0.7	0.1299	6mm	34mm	72mm	56485
-	3.40	8-32	0.1339	6mm	34mm	72mm	56486
-	3.50		0.1378	4mm	34mm	72mm	55351
-	3.50		0.1378	6mm	34mm	72mm	55350
9/64	3.57		0.1406	1/4	1-1/2	2-1/2	55322
-	3.60		0.1417	6mm	34mm	72mm	56487
-	3.70		0.1457	4mm	34mm	72mm	55355
-	3.70		0.1457	6mm	34mm	72mm	55354
-	3.80	10-24	0.1496	4mm	43mm	81mm	55359
-	3.80	10-24	0.1496	6mm	43mm	81mm	55358
-	3.90		0.1535	6mm	43mm	81mm	56489
5/32	3.97		0.1562	1/4	1-1/2	3-1/4	55323
-	4.00		0.1575	4mm	43mm	81mm	55363
-	4.00		0.1575	6mm	43mm	81mm	55362
-	4.10		0.1614	6mm	43mm	81mm	56490
-	4.20		0.1654	6mm	43mm	81mm	55366
-	4.30		0.1693	6mm	43mm	81mm	56491
11/64	4.37		0.1719	1/4	1-1/2	3-1/4	55324
-	4.40		0.1732	6mm	43mm	81mm	56492
-	4.50		0.1772	6mm	43mm	81mm	55370
-	4.60	12-28	0.1811	6mm	43mm	81mm	56493
-	4.70		0.1850	6mm	43mm	81mm	56495
3/16	4.76		0.1875	1/4	2-1/4	4	55325
-	4.80		0.1890	6mm	57mm	95mm	55374
-	4.90		0.1929	6mm	57mm	95mm	56632
-	5.00	M6x1.0	0.1969	6mm	57mm	95mm	55378
-	5.10		0.2008	6mm	57mm	95mm	55382
13/64	5.16		0.2031	1/4	2-1/4	4	55326
-	5.20		0.2047	6mm	57mm	95mm	55386
-	5.30		0.2087	6mm	57mm	95mm	56496
-	5.40		0.2126	6mm	57mm	95mm	56497
-	5.50		0.2165	6mm	57mm	95mm	55390
7/32	5.56		0.2188	1/4	2-1/4	4	55327
-	5.60		0.2205	6mm	57mm	95mm	56498



HP Drills

BLACKMAMBA - CoolantFed Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

HP Drills

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	5.70		0.2244	6mm	57mm	95mm	56499
-	5.80		0.2283	6mm	57mm	95mm	55394
-	5.90		0.2323	6mm	57mm	95mm	56500
15/64	5.95		0.2344	1/4	2-1/4	4	55328
-	6.00	M7x1.0	0.2362	6mm	57mm	95mm	55398
-	6.10		0.2402	8mm	76mm	114mm	56501
-	6.20		0.2441	8mm	76mm	114mm	56502
-	6.30		0.2480	8mm	76mm	114mm	55402
1/4	6.35		0.2500	1/4	3	4-1/2	55600
-	6.40		0.2520	8mm	76mm	114mm	56503
-	6.50		0.2560	8mm	76mm	114mm	55406
-	6.60		0.2598	8mm	76mm	114mm	56504
-	6.70		0.2638	8mm	76mm	114mm	56505
17/64	6.75		0.2656	5/16	3	4-1/2	55604
-	6.80		0.2667	8mm	76mm	114mm	55410
-	6.90	5/16-24	0.2716	8mm	76mm	114mm	56506
-	7.00	M8x1.0	0.2756	8mm	76mm	114mm	55414
-	7.10		0.2795	8mm	76mm	114mm	56507
9/32	7.14		0.2812	5/16	3	4-1/2	55608
-	7.20		0.2835	8mm	76mm	114mm	56508
-	7.30		0.2874	8mm	76mm	114mm	56509
-	7.40		0.2913	8mm	76mm	114mm	56510
-	7.50		0.2953	8mm	76mm	114mm	55418
19/64	7.54		0.2969	5/16	3	4-1/2	55612
-	7.60		0.2992	8mm	76mm	114mm	56511
-	7.70		0.3031	8mm	76mm	114mm	56512
-	7.80		0.3071	8mm	76mm	114mm	55422
-	7.90		0.3110	8mm	76mm	114mm	56513
5/16	7.94	3/8-16	0.3125	5/16	3	4-1/2	55616
-	8.00		0.3150	8mm	76mm	114mm	55426
-	8.10		0.3189	10mm	95mm	142mm	56514
-	8.20		0.3228	10mm	95mm	142mm	56515
-	8.30		0.3268	10mm	95mm	142mm	56516
21/64	8.33		0.3281	3/8	3-3/4	5-3/4	55620
-	8.40		0.3307	10mm	95mm	142mm	56517
-	8.50	M10x1.5	0.3346	10mm	95mm	142mm	55430
-	8.60		0.3386	10mm	95mm	142mm	56518
-	8.70		0.3425	10mm	95mm	142mm	56519
11/32	8.73		0.3438	3/8	3-3/4	5-3/4	55624
-	8.80	M10x1.25	0.3466	10mm	95mm	142mm	55434
-	8.90		0.3504	10mm	95mm	142mm	56520
-	9.00		0.3543	10mm	95mm	142mm	55438
-	9.10		0.3583	10mm	95mm	142mm	56521
23/64	9.13		0.3594	3/8	3-3/4	5-3/4	55628



BLACKMAMBA - CoolantFed Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

DESCRIPTION							EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	9.20		0.3622	10mm	95mm	142mm	55442
-	9.30		0.3661	10mm	95mm	142mm	56522
-	9.40		0.3701	10mm	95mm	142mm	56523
-	9.50		0.3740	10mm	95mm	142mm	55446
3/8	9.52		0.3750	3/8	3-3/4	5-3/4	55632
-	9.60		0.3780	10mm	95mm	142mm	56524
-	9.70		0.3819	10mm	95mm	142mm	56525
-	9.80	7/16-20	0.3858	10mm	95mm	142mm	55450
-	9.90		0.3898	10mm	95mm	142mm	56526
25/64	9.92		0.3906	7/16	4-1/2	6-1/2	55636
-	10.00		0.3937	10mm	95mm	142mm	55454
-	10.10		0.3976	12mm	114mm	162mm	56527
-	10.20		0.4016	12mm	114mm	162mm	55458
-	10.30	M12x1.75	0.4055	12mm	114mm	162mm	56528
13/32	10.32		0.4062	7/16	4-1/2	6-1/2	55640
-	10.40		0.4094	12mm	114mm	162mm	56529
-	10.50		0.4134	12mm	114mm	162mm	55462
-	10.60		0.4173	12mm	114mm	162mm	56530
-	10.70		0.4213	12mm	114mm	162mm	56531
27/64	10.72	1/2-13	0.4219	7/16	4-1/2	6-1/2	55644
-	10.80	M12x1.25	0.4252	12mm	114mm	162mm	55466
-	10.90		0.4291	12mm	114mm	162mm	56532
-	11.00		0.4331	12mm	114mm	162mm	55470
-	11.10		0.4370	12mm	114mm	162mm	56533
7/16	11.11		0.4375	7/16	4-1/2	6-1/2	55648
-	11.20		0.4409	12mm	114mm	162mm	56534
-	11.30		0.4449	12mm	114mm	162mm	56535
-	11.40		0.4488	12mm	114mm	162mm	56536
-	11.50	1/2-20	0.4528	12mm	114mm	162mm	55474
29/64	11.51		0.4531	1/2	5-1/4	7	55652
-	11.60		0.4567	12mm	114mm	162mm	56537
-	11.70		0.4606	12mm	114mm	162mm	56538
-	11.80		0.4646	12mm	114mm	162mm	55478
-	11.90		0.4685	12mm	114mm	162mm	56540
15/32	11.91		0.4688	1/2	5-1/4	7	55656
-	12.00	M14x2.0	0.4724	12mm	114mm	162mm	55482
-	12.10		0.4764	14mm	133mm	178mm	56342
-	12.20	9/16-12	0.4803	14mm	133mm	178mm	56542
-	12.30		0.4843	14mm	133mm	178mm	55486
31/64	12.30		0.4844	1/2	5-1/4	7	55660
-	12.40		0.4882	14mm	133mm	178mm	56543
-	12.50	M14x1.5	0.4921	14mm	133mm	178mm	55490
-	12.60		0.4961	14mm	133mm	178mm	56544
1/2	12.70		0.5000	1/2	5-1/4	7	55664
-	12.80		0.5039	14mm	133mm	178mm	55494



HP Drills

BLACKMAMBA - CoolantFed Drills 140° Point Angle

8XD - Inch, Letter, Number and Metric

HP Drills

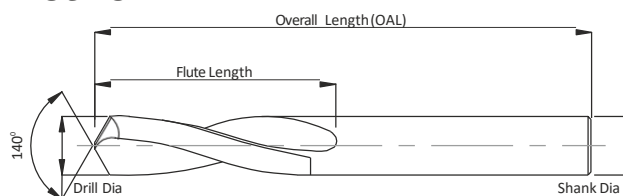
		DESCRIPTION					EDP #
Fraction Size	Metric	Drill Tap Size	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Coated TiAlN
-	12.90	9/16-18	0.5079	14mm	133mm	178mm	56545
-	13.00		0.5118	14mm	133mm	178mm	55498
33/64	13.09		0.5156	9/16	5-1/4	7	55668
-	13.10		0.5157	14mm	133mm	178mm	56546
-	13.20		0.5197	14mm	133mm	178mm	56547
-	13.30		0.5236	14mm	133mm	178mm	56548
-	13.40		0.5276	14mm	133mm	178mm	56549
17/32	13.49	5/8-11	0.5312	9/16	5-1/4	7	55672
-	13.50		0.5315	14mm	133mm	178mm	55502
-	13.60		0.5354	14mm	133mm	178mm	56551
-	13.70		0.5394	14mm	133mm	178mm	56552
-	13.80		0.5433	14mm	133mm	178mm	56553
35/64	13.89		0.5469	9/16	5-1/4	7	56554
-	13.90		0.5472	14mm	133mm	178mm	56555
-	14.00	M16x2.0	0.5512	14mm	133mm	178mm	55506
-	14.10		0.5551	16mm	152mm	203mm	56556
-	14.20		0.5591	16mm	152mm	203mm	56557
9/16	14.28		0.5625	9/16	5-1/4	7	55680
-	14.30		0.5630	16mm	152mm	203mm	56559
-	14.40		0.5669	16mm	152mm	203mm	56560
-	14.50	M16x1.5	0.5709	16mm	152mm	203mm	55510
-	14.60		0.5748	16mm	152mm	203mm	56562
37/64	14.68	5/8-18	0.5781	5/8	6	8	56563
-	14.70		0.5787	16mm	152mm	203mm	56564
-	14.80		0.5827	16mm	152mm	203mm	56565
-	14.90		0.5866	16mm	152mm	203mm	56566
-	15.00		0.5906	16mm	152mm	203mm	55514
19/32	15.08		0.5938	5/8	6	8	55688
-	15.10		0.5945	16mm	152mm	203mm	56567
-	15.20		0.5984	16mm	152mm	203mm	56568
-	15.30		0.6024	16mm	152mm	203mm	56569
-	15.40		0.6063	16mm	152mm	203mm	56570
39/64	15.48		0.6094	5/8	6	8	56571
-	15.50	M18x2.5	0.6102	16mm	152mm	203mm	55518
-	15.60		0.6142	16mm	152mm	203mm	56572
-	15.70		0.6181	16mm	152mm	203mm	56574
-	15.80		0.6220	16mm	152mm	203mm	56575
5/8	15.87		0.6250	5/8	6	8	55696
-	15.90		0.6260	16mm	152mm	203mm	56576
-	16.00		0.6299	16mm	152mm	203mm	55522



2 Flute 15° Helix 140° Point Angle - Metric

3XD

- Self centering point
- Designed for difficult to machine materials including High Alloy Steel, Stainless Steel, Inconel, and other Alloys



DESCRIPTION				EDP #		
Drill Dia	Shank Dia	Flute Length	OAL	Uncoated	Coated TiAlN	CH
3.00	6	20	62	74500	74502	74504
3.10	6	20	62	74506	74508	74510
3.20	6	20	62	74512	74514	74516
3.30	6	20	62	74518	74520	74522
3.40	6	20	62	74524	74526	74528
3.50	6	20	62	74530	74532	74534
3.60	6	20	62	74536	74538	74540
3.70	6	20	62	74542	74544	74546
3.80	6	24	66	74548	74550	74552
3.90	6	24	66	74554	74556	74558
4.00	6	24	66	74560	74562	74564
4.10	6	24	66	74566	74568	74570
4.20	6	24	66	74572	74574	74576
4.30	6	24	66	74578	74580	74582
4.40	6	24	66	74584	74586	74588
4.50	6	24	66	74590	74592	74594
4.60	6	24	66	74596	74598	74600
4.70	6	24	66	74602	74604	74606
4.80	6	28	66	74608	74610	74612
4.90	6	28	66	74614	74616	74618
5.00	6	28	66	74620	74622	74624
5.10	6	28	66	74626	74628	74630
5.20	6	28	66	74632	74634	74636
5.30	6	28	66	74638	74640	74642
5.40	6	28	66	74644	74646	74648
5.50	6	28	66	74650	74652	74654
5.60	6	28	66	74656	74658	74660
5.70	6	28	66	74662	74664	74666
5.80	6	28	66	74668	74670	74672
5.90	6	28	66	74674	74676	74678
6.00	6	28	66	74680	74682	74684
6.10	8	34	79	74686	74688	74690
6.20	8	34	79	74692	74694	74696
6.30	8	34	79	74698	74700	74702
6.40	8	34	79	74704	74706	74708
6.50	8	34	79	74710	74712	74714
6.80	8	34	79	74716	74718	74720
7.00	8	34	79	74722	74724	74726
7.50	8	41	79	74728	74730	74732
7.80	8	41	79	74734	74736	74738



HP Drills

2 Flute 15° Helix 140° Point Angle - Metric

3XD

HP Drills

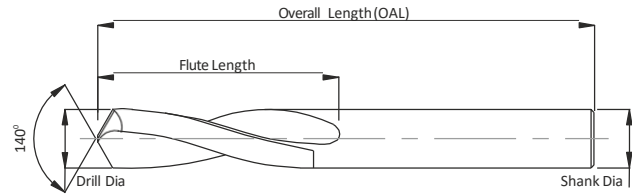
DESCRIPTION				EDP #		
Drill Dia	Shank Dia	Flute Length	OAL	Uncoated	TiAlN	Coated CH
8.00	8	41	79	74740	74742	74744
8.20	10	47	89	74746	74748	74750
8.50	10	47	89	74752	74754	74756
8.70	10	47	89	74758	74760	74762
8.90	10	47	89	74764	74766	74768
9.00	10	47	79	74770	74772	74774
9.50	10	47	89	74776	74778	74780
9.80	10	47	89	74788	74790	74792
10.00	10	47	89	74794	74796	74798
10.20	12	55	102	74800	74802	74804
10.50	12	55	102	74806	74808	74810
11.00	12	55	102	74812	74814	74816
11.50	12	55	102	74818	74820	74822
12.00	12	55	102	74824	74826	74828
12.50	14	60	107	74830	74832	74834
12.70	14	60	107	74836	74838	74840
13.00	14	60	107	74842	74844	74846
13.30	14	60	107	74848	74850	74852
14.00	14	60	107	74854	74856	74858
14.50	16	65	115	74860	74862	74864
15.00	16	65	115	74866	74868	74870
15.50	16	65	115	74872	74874	74876
16.00	16	65	115	74878	74880	74882



2 Flute 15° Helix 140° Point Angle - Metric

5XD

- Self centering point
- Designed for difficult to machine materials including High Alloy Steel, Stainless Steel, Inconel, and other Alloys



DESCRIPTION				EDP #
Drill Dia	Shank Dia	Flute Length	OAL	Coated TiAlN
3.00	6	28	66	56102
3.10	6	28	66	56104
3.20	6	28	66	56106
3.30	6	28	66	56108
3.40	6	28	66	56110
3.50	6	28	66	56112
3.60	6	28	66	56114
3.70	6	28	66	56116
3.80	6	36	74	56118
3.90	6	36	74	56120
4.00	6	36	74	56122
4.10	6	36	74	56124
4.20	6	36	74	56126
4.30	6	36	74	56128
4.40	6	36	74	56130
4.50	6	36	74	56132
4.60	6	36	74	56134
4.70	6	36	74	56136
4.80	6	44	82	56138
4.90	6	44	82	56140
5.00	6	44	82	56142
5.10	6	44	82	56144
5.20	6	44	82	56146
5.30	6	44	82	56148
5.40	6	44	82	56150
5.50	6	44	82	56152
5.60	6	44	82	56154
5.70	6	44	82	56156
5.80	6	44	82	56158
5.90	6	44	82	56160
6.00	6	44	82	56162
6.10	8	53	91	56164
6.20	8	53	91	56166
6.30	8	53	91	56168
6.40	8	53	91	56170
6.50	8	53	91	56172
6.80	8	53	91	56174
7.00	8	53	91	56176
7.50	8	53	91	56178
7.80	8	53	91	56180



HP Drills

2 Flute 15° Helix 140° Point Angle - Metric

5XD

HP Drills

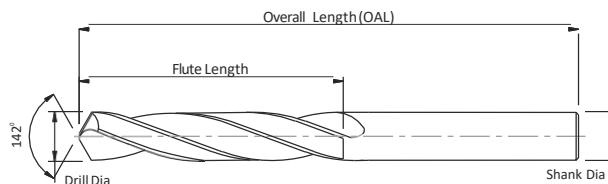
DESCRIPTION				EDP #
Drill Dia	Shank Dia	Flute Length	OAL	Coated TiAlN
8.00	8	53	91	56182
8.20	10	61	103	56184
8.50	10	61	103	56186
8.70	10	61	103	56188
8.90	10	61	103	56190
9.00	10	61	103	56192
9.50	10	61	103	56194
9.80	10	61	103	56196
10.00	10	61	103	56198
10.20	12	71	118	56200
10.50	12	71	118	56202
11.00	12	71	118	56204
11.50	12	71	118	56206
12.00	12	71	118	56208
12.50	14	77	124	56210
12.70	14	77	124	56212
13.00	14	77	124	56214
13.30	14	77	124	56216
14.00	14	77	124	56218
14.50	16	83	133	56220
15.00	16	83	133	56222
15.50	16	83	133	56224
16.00	16	83	133	56226



2 Flute 18° Helix 142° Point Angle - Metric

3XD

- Designed for Cast Iron
- Double margin
- Self centering
- High-efficiency flute profile
- Stable low-thrust point form



DESCRIPTION					EDP #		
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Uncoated	TiAlN	Coated CH
5.20	5.2	28	22	82	51670	51671	51672
6.00	6.0	30	24	82	51673	51674	51675
6.10	6.1	35	28	94	51676	51677	51678
6.20	6.2	35	28	94	51679	51680	51681
6.30	6.3	35	28	94	51682	51683	51684
6.60	6.6	35	28	94	51685	51686	51687
6.70	6.7	35	28	94	51688	51689	51690
6.80	6.8	35	28	94	51691	51692	51693
7.00	7.0	40	32	94	51694	51695	51696
7.20	7.2	40	32	94	51697	51698	51699
7.40	7.4	40	32	94	51700	51701	51702
7.80	7.8	40	32	94	51703	51704	51705
8.00	8.0	40	32	94	51706	51707	51708
8.10	8.1	44	35	106	51709	51710	51711
8.20	8.2	44	35	106	51712	51713	51714
8.30	8.3	44	35	106	51715	51716	51717
8.40	8.4	44	35	106	51718	51719	51720
8.50	8.5	44	35	106	51721	51722	51723
8.60	8.6	44	35	106	51724	51725	51726
8.70	8.7	50	40	106	51727	51728	51729
8.90	8.9	50	40	106	51730	51731	51732
9.00	9.0	50	40	106	51733	51734	51735
9.30	9.3	50	40	106	51736	51737	51738
9.40	9.4	50	40	106	51739	51740	51741
9.50	9.5	50	40	106	51742	51743	51744
9.60	9.6	50	40	106	51745	51746	51747
9.70	9.7	50	40	106	51748	51749	51750
9.90	9.9	50	40	106	51751	51752	51753
10.00	10.0	50	40	106	51754	51755	51756
10.20	10.2	55	44	122	51757	51758	51759
10.40	10.4	55	44	122	51760	51761	51762
10.60	10.6	60	48	122	51763	51764	51765
11.00	11.0	60	48	122	51766	51767	51768
11.50	11.5	60	48	122	51769	51770	51771
11.80	11.8	60	48	122	51772	51773	51774
12.00	12.0	60	48	122	51775	51776	51777
12.20	12.2	64	51	128	51778	51779	51780
12.50	12.5	64	51	128	51781	51782	51783
12.80	12.8	64	51	128	51784	51785	51786
13.00	13.0	64	51	128	51787	51788	51789



Shank Dia: h6
Drill Dia: h7



HP Drills

2 Flute 18° Helix 142° Point Angle - Metric

3XD



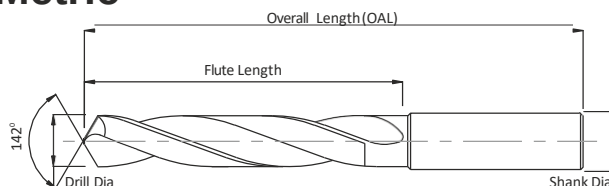
DESCRIPTION					EDP #		
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Uncoated	Coated TiAlN	CH
13.80	13.8	64	51	128	51790	51791	51792
13.90	13.9	64	51	128	51793	51794	51795
14.00	14.0	64	51	128	51796	51797	51798
14.20	14.2	74	59	140	51799	51800	51801
14.50	14.5	74	59	140	51802	51803	51804
15.00	15.0	74	59	140	51805	51806	51807
15.50	15.5	74	59	140	51808	51809	51810
16.00	16.0	74	59	140	51811	51812	51813



2 Flute 27° Helix 142° Point Angle - Metric

3XD

- Designed for Stainless Steel
- Stable low-thrust point form
- Maximum Metal Removal Rates (MRR)
- Lower cost per hole
- High-efficiency flute profile

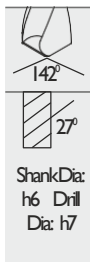


DESCRIPTION					EDP #		
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Uncoated	Coated TiAlN	CH
5.00	5.0	26	20	62	50900	50901	50902
5.10	5.1	26	20	62	50903	50904	50905
5.50	5.5	28	21	66	50906	50907	50908
5.80	5.8	28	21	66	50909	50910	50911
6.00	6.0	28	21	66	50912	50913	50914
6.10	6.1	31	23	70	50915	50916	50917
6.50	6.5	31	23	70	50918	50919	50920
6.80	6.8	34	25	74	50921	50922	50923
6.90	6.9	34	25	74	50924	50925	50926
7.00	7.0	34	25	74	50927	50928	50929
7.50	7.5	34	25	74	50930	50931	50932
7.80	7.8	37	27	79	50933	50934	50935
8.00	8.0	37	27	79	50936	50937	50938
8.10	8.1	37	27	79	50939	50940	50941
8.40	8.4	37	27	79	50942	50943	50944
8.50	8.5	37	27	79	50945	50946	50947
8.60	8.6	40	29	84	50948	50949	50950
8.70	8.7	40	29	84	50951	50952	50953
8.80	8.8	40	29	84	50954	50955	50956
9.00	9.0	40	29	84	50957	50958	50959
9.50	9.5	40	29	84	50960	50961	50962
9.60	9.6	43	31	89	50963	50964	50965
9.80	9.8	43	31	89	50966	50967	50968
10.00	10.0	43	31	89	50969	50970	50971
10.20	10.2	43	31	89	50972	50973	50974

2 Flute 27° Helix 142° Point Angle - Metric

3XD

DESCRIPTION					EDP #		
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Uncoated	Coated TiAlN	CH
10.40	10.4	43	31	89	50975	50976	50977
10.50	10.5	43	31	89	50978	50979	50980
11.00	11.0	47	33	95	50981	50982	50983
11.20	11.2	47	33	95	50984	50985	50986
11.50	11.5	47	33	95	50987	50988	50989
11.80	11.8	47	33	95	50990	50991	50992
12.00	12.0	51	35	102	50993	50994	50995
12.20	12.2	51	35	102	50996	50997	50998
12.50	12.5	51	35	102	51400	51401	51402
12.70	12.7	51	35	102	51403	51404	51405
13.00	13.0	51	35	102	51406	51407	51408
13.50	13.5	54	37	107	51409	51410	51411
14.00	14.0	54	37	107	51412	51413	51414
14.10	14.1	56	38	111	51415	51416	51417
14.20	14.2	56	38	111	51418	51419	51420
14.50	14.5	56	38	111	51421	51422	51423
15.00	15.0	56	38	111	51424	51425	51426
15.25	15.25	58	38	115	51427	51428	51429
15.50	15.5	58	38	115	51430	51431	51432
16.00	16.0	58	38	115	51433	51434	51435

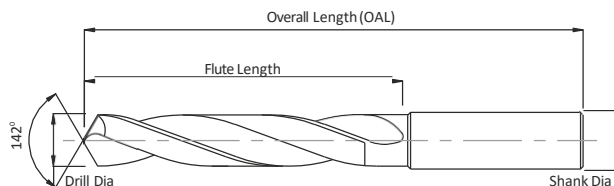


HP Drills

2 Flute 27° Helix 142° Point Angle - Metric

5XD

- Recommended for Stainless Steel
- Rapid chip evacuation
- High-efficiency flute profile
- Stable low-thrust point form



HP Drills

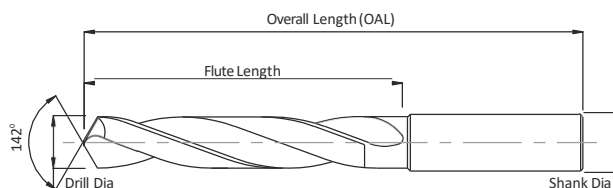
DESCRIPTION					EDP #
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Coated TiAlN
5.00	5.0	52	39	86	51502
5.10	5.1	52	39	86	51505
5.50	5.5	57	43	86	51508
5.80	5.8	57	43	93	51511
6.00	6.0	57	43	93	51514
6.10	6.1	63	47	101	51517
6.50	6.5	63	47	101	51520
6.80	6.8	69	52	109	51523
6.90	6.9	69	52	109	51526
7.00	7.0	69	52	109	51529
7.50	7.5	69	52	109	51532
7.80	7.8	75	56	117	51535
8.00	8.0	75	56	117	51538
8.10	8.1	75	56	117	51541
8.40	8.4	75	56	117	51544
8.50	8.5	75	56	117	51547
8.60	8.6	81	61	125	51550
8.70	8.7	81	61	125	51553
9.00	9.0	81	61	125	51556
9.50	9.5	81	61	125	51559
9.60	9.6	87	65	133	51562
9.80	9.8	87	65	133	51565
10.00	10.0	87	65	133	51568
10.20	10.2	87	65	133	51571
10.40	10.4	87	65	133	51574
10.50	10.5	87	65	133	51577
11.00	11.0	94	71	142	51580
11.20	11.2	94	71	142	51583
11.50	11.5	94	71	142	51586
12.00	12.0	101	76	151	51589
12.20	12.2	101	76	151	51592
12.50	12.5	101	76	151	51595
13.00	13.0	101	76	151	51598
13.50	13.5	108	81	160	51601
14.00	14.0	108	81	160	51604
14.10	14.1	114	86	169	51607
14.20	14.2	114	86	169	51610
14.50	14.5	114	86	169	51613
15.00	15.0	114	86	169	51616
15.50	15.5	120	90	178	51619
16.00	16.0	120	90	178	51622



2 Flute 30° Helix 142° Point Angle - Metric

3XD

- Designed for broad range of materials
- High-efficiency flute Profile
- Maximum Metal Removal Rates (MRR)
- Lower cost per hole
- Stable, low-thrust point form



DESCRIPTION					EDP #		
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Uncoated	Coated TiAlN	CH
2.50	2.5	14	11	43	50150	50151	50152
2.90	2.9	16	12	46	50153	50154	50155
3.00	3	16	13	57	50156	50157	50158
3.10	4	22	18	63	50159	50160	50161
3.20	4	22	18	63	50162	50163	50164
3.30	4	22	18	63	50165	50166	50167
3.40	4	22	18	63	50168	50169	50170
3.50	4	22	18	63	50171	50172	50173
3.60	4	22	18	63	50174	50175	50176
3.70	4	22	18	63	50177	50178	50179
3.80	4	22	18	63	50180	50181	50182
3.90	4	22	18	63	50183	50184	50185
4.00	4	22	18	63	50186	50187	50188
4.10	5	26	21	63	50189	50190	50191
4.20	5	26	21	63	50192	50193	50194
4.30	5	26	21	63	50195	50196	50197
4.40	5	26	21	63	50198	50199	50200
4.50	5	26	21	63	50201	50202	50203
4.60	5	26	21	63	50204	50205	50206
4.70	5	26	21	63	50207	50208	50209
4.80	5	26	21	63	50210	50211	50212
4.90	5	26	21	63	50213	50214	50215
5.00	5	26	21	63	50216	50217	50218
5.10	6	30	24	76	50219	50220	50221
5.20	6	30	24	76	50222	50223	50224
5.30	6	30	24	76	50225	50226	50227
5.40	6	30	24	76	50228	50229	50230
5.50	6	30	24	76	50231	50232	50233
5.70	6	30	24	76	50234	50235	50236
5.80	6	30	24	76	50237	50238	50239
5.90	6	30	24	76	50240	50241	50242
6.00	6	30	24	76	50243	50244	50245
6.10	8	35	28	82	50246	50247	50248
6.20	8	35	28	82	50249	50250	50251
6.30	8	35	28	82	50252	50253	50254
6.40	8	35	28	82	50255	50256	50257
6.50	8	35	28	82	50258	50259	50260
6.60	8	35	28	82	50261	50262	50263
6.70	8	35	28	82	50264	50265	50266
6.80	8	35	28	82	50267	50268	50269



Shank Dia: h6
Drill Dia: h7



HP Drills

2 Flute 30° Helix 142° Point Angle - Metric

3XD

HP Drills

DESCRIPTION					EDP #		
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Uncoated	TiAlN	Coated CH
6.90	8	35	28	82	50270	50271	50272
7.00	8	35	28	82	50273	50274	50275
7.10	8	38	31	82	50276	50277	50278
7.20	8	38	31	82	50279	50280	50281
7.30	8	38	31	82	50282	50283	50284
7.40	8	38	31	82	50285	50286	50287
7.50	8	38	31	82	50288	50289	50290
7.60	8	38	31	82	50291	50292	50293
7.70	8	38	31	82	50294	50295	50296
7.80	8	38	31	82	50297	50298	50299
7.90	8	38	31	82	50300	50301	50302
8.00	8	38	31	82	50303	50304	50305
8.10	10	43	35	89	50306	50307	50308
8.20	10	43	35	89	50309	50310	50311
8.30	10	43	35	89	50312	50313	50314
8.40	10	43	35	89	50315	50316	50317
8.50	10	43	35	89	50318	50319	50320
8.60	10	43	35	89	50321	50322	50323
8.70	10	43	35	89	50324	50325	50326
8.80	10	43	35	89	50327	50328	50329
8.90	10	43	35	89	50330	50331	50332
9.00	10	43	35	89	50333	50334	50335
9.10	10	43	35	89	50336	50337	50338
9.20	10	43	35	89	50339	50340	50341
9.25	10	43	35	89	50342	50343	50344
9.30	10	43	35	89	50345	50346	50347
9.40	10	43	35	89	50348	50349	50350
9.50	10	43	35	89	50351	50352	50353
9.60	10	43	35	89	50354	50355	50356
9.70	10	43	35	89	50357	50358	50359
9.80	10	43	35	89	50360	50361	50362
9.90	10	43	35	89	50363	50364	50365
10.00	10	43	35	89	50366	50367	50368
10.10	12	51	41	101	50369	50370	50371
10.20	12	51	41	101	50372	50373	50374
10.30	12	51	41	101	50375	50376	50377
10.40	12	51	41	101	50378	50379	50380
10.50	12	51	41	101	50381	50382	50383
10.60	12	51	41	101	50384	50385	50386
10.70	12	51	41	101	50387	50388	50389
10.80	12	51	41	101	50390	50391	50392
10.90	12	51	41	101	50393	50394	50395
11.00	12	51	41	101	50396	50397	50398
11.10	12	51	41	101	50399	50400	50401



2 Flute 30° Helix 142° Point Angle - Metric

3XD

DESCRIPTION					EDP #		
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Uncoated	TiAlN	Coated CH
11.20	12	51	41	101	50402	50403	50404
11.30	12	51	41	101	50405	50406	50407
11.40	12	51	41	101	50408	50409	50410
11.50	12	51	41	101	50411	50412	50413
11.60	12	51	41	101	50414	50415	50416
11.70	12	51	41	101	50417	50418	50419
11.80	12	51	41	101	50420	50421	50422
11.90	12	51	41	101	50423	50424	50425
12.00	12	51	41	101	50426	50427	50428
12.10	14	54	43	107	50429	50430	50431
12.50	14	54	43	107	50432	50433	50434
12.80	14	54	43	107	50435	50436	50437
12.83	14	54	43	107	50438	50439	50440
12.90	14	54	43	107	50441	50442	50443
13.00	14	54	43	107	50444	50445	50446
13.50	14	54	43	107	50447	50448	50449
13.70	14	54	43	107	50450	50451	50452
14.00	14	54	43	107	50453	50454	50455
14.50	16	60	48	117	50456	50457	50458
14.70	16	60	48	117	50459	50460	50461
15.00	16	60	48	117	50462	50463	50464
15.30	16	60	48	117	50465	50466	50467
15.50	16	60	48	117	50468	50469	50470
15.70	16	60	48	117	50471	50472	50473
16.00	16	60	48	117	50474	50475	50476
16.08	18	63	51	122	50477	50478	50479
16.30	18	63	51	122	50480	50481	50482
16.50	18	63	51	122	50483	50484	50485
17.00	18	63	51	122	50486	50487	50488
17.50	18	63	51	122	50489	50490	50491
18.00	18	63	51	122	50492	50493	50494
18.50	20	70	56	133	50495	50496	50497
19.16	20	70	56	133	50498	50499	50500
19.25	20	70	56	133	50501	50502	50503
19.30	20	70	56	133	50504	50505	50506
19.50	20	70	56	133	50507	50508	50509
20.00	20	70	56	133	50510	50511	50512

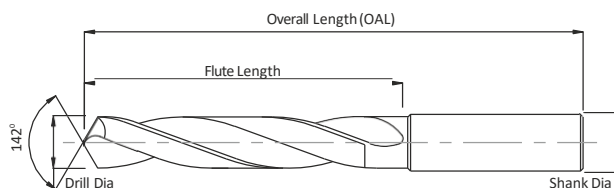


HP Drills

2 Flute 30° Helix 142° Point Angle - Metric

5XD

- Designed for broad range of materials
- Stable low-thrust point form
- Maximum Metal Removal Rates (MRR)
- Lower cost per hole
- High-efficiency flute profile



HP Drills

DESCRIPTION					EDP #
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Coated TiAlN
2.50	2.5	30	23	57	50567
2.90	2.9	33	25	61	50570
3.00	3	24	19	63	50573
3.10	4	32	26	69	50576
3.20	4	32	26	69	50579
3.30	4	32	26	69	50582
3.40	4	32	26	69	50585
3.50	4	32	26	69	50588
3.60	4	32	26	69	50591
3.70	4	32	26	69	50594
3.80	4	32	26	69	50597
3.90	4	32	26	69	50600
4.00	4	32	26	69	50603
4.10	5	38	30	80	50606
4.20	5	38	30	80	50609
4.30	5	38	30	80	50612
4.40	5	38	30	80	50615
4.50	5	38	30	80	50618
4.60	5	38	30	80	50621
4.70	5	38	30	80	50624
4.80	5	38	30	80	50627
4.90	5	38	30	80	50630
5.00	5	38	30	80	50633
5.10	6	40	32	82	50636
5.20	6	40	32	82	50639
5.30	6	40	32	82	50642
5.40	6	40	32	82	50645
5.50	6	40	32	82	50648
5.70	6	40	32	82	50651
5.80	6	40	32	82	50654
5.90	6	40	32	82	50657
6.00	6	40	32	82	50660
6.10	8	48	38	91	50663
6.20	8	48	38	91	50666
6.30	8	48	38	91	50669
6.40	8	48	38	91	50672
6.50	8	48	38	91	50675
6.60	8	48	38	91	50678
6.70	8	48	38	91	50681
6.80	8	48	38	91	50684



2 Flute 30° Helix 142° Point Angle - Metric

5XD

DESCRIPTION					EDP #
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Coated TiAlN
6.90	8	48	38	91	50687
7.00	8	48	38	91	50690
7.10	8	48	38	91	50693
7.20	8	48	38	91	50696
7.30	8	48	38	91	50699
7.40	8	48	38	91	50702
7.50	8	48	38	91	50705
7.60	8	48	38	91	50708
7.70	8	48	38	91	50711
7.80	8	48	38	91	50714
7.90	8	48	38	91	50717
8.00	8	48	38	91	50720
8.10	10	55	44	103	50723
8.20	10	55	44	103	50726
8.30	10	55	44	103	50729
8.40	10	55	44	103	50732
8.50	10	55	44	103	50735
8.60	10	55	44	103	50738
8.70	10	55	44	103	50741
8.80	10	55	44	103	50744
8.90	10	55	44	103	50747
9.00	10	55	44	103	50750
9.10	10	55	44	103	50753
9.20	10	55	44	103	50756
9.25	10	55	44	103	50759
9.30	10	55	44	103	50762
9.40	10	55	44	103	50765
9.50	10	55	44	103	50768
9.60	10	55	44	103	50771
9.70	10	55	44	103	50774
9.80	10	55	44	103	50777
9.90	10	55	44	103	50780
10.00	10	55	44	103	50783
10.10	12	60	48	120	50786
10.20	12	60	48	120	50789
10.30	12	60	48	120	50792
10.40	12	60	48	120	50795
10.50	12	60	48	120	50798
10.60	12	60	48	120	50801
10.70	12	60	48	120	50804
10.80	12	60	48	120	50807
10.90	12	60	48	120	50810
11.00	12	60	48	120	50813
11.10	12	66	53	120	50816



HP Drills

2 Flute 30° Helix 142° Point Angle - Metric

5XD

HP Drills

DESCRIPTION					EDP #
Drill Dia	Shank Dia	Flute Length	LOC	OAL	Coated TiAIN
11.20	12	66	53	120	50819
11.30	12	66	53	120	50822
11.40	12	66	53	120	50825
11.50	12	66	53	120	50828
11.60	12	66	53	120	50831
11.70	12	66	53	120	50834
11.80	12	66	53	120	50837
11.90	12	66	53	120	50840
12.00	12	66	53	120	50843
12.10	14	72	58	126	50846
12.50	14	72	58	126	50849
12.80	14	72	58	126	50852
12.83	14	72	58	126	50855
12.90	14	72	58	126	50858
13.00	14	72	58	126	50861
13.50	14	77	62	134	50864
13.70	14	77	62	134	50867
14.00	14	77	62	134	50870
14.50	16	80	64	140	50873
14.70	16	80	64	140	50876
15.00	16	80	64	140	50879
15.30	16	82	66	146	50882
15.50	16	82	66	146	50885
15.70	16	82	66	146	50888
16.00	16	82	66	146	50891

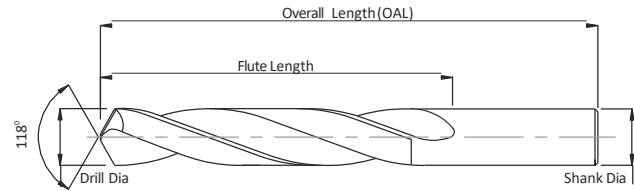


HP Drills

Jobber Length Drills

Inch, Letter, Number and Metric

- Manufactured from premium submicron grain carbide
- Precision ground carbide drills are designed for high feed rate and good chip evacuation
- 118° four facet point angle, right hand cut-right hand spiral



DESCRIPTION						EDP #		
Fraction Size	Letter / Wire	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiN	TiAlN
-	80	0.34	0.0135	3/16	1-1/4	30020	30045	30021
-	79	0.37	0.0145	3/16	1-1/4	30022	30029	30023
1/64	-	0.40	0.0156	3/16	1-1/4	30018	30037	30019
-	78	0.41	0.0160	3/16	1-1/4	30024	30047	30025
-	77	0.46	0.0180	3/16	1-1/4	30026	30027	30028
-	76	0.51	0.0200	1/4	1-1/4	30030	30031	30032
-	75	0.53	0.0210	1/4	1-1/4	30034	30035	30036
-	74	0.57	0.0225	1/4	1-1/4	30038	30039	30040
-	73	0.61	0.0240	1/4	1-1/4	30042	30043	30044
-	72	0.64	0.0250	5/16	1-1/4	30046	30049	30048
-	71	0.66	0.0260	5/16	1-1/4	30050	30051	30052
-	70	0.71	0.0280	5/16	1-1/4	30054	30055	30056
-	69	0.74	0.0292	5/16	1-1/4	30058	30059	30060
-	68	0.79	0.0310	5/16	1-1/4	30062	30061	30063
1/32	-	0.80	0.0312	5/16	1-1/4	30066	30057	30068
-	-	0.80	0.0315	12mm	31mm	30067	30070	30069
-	67	0.81	0.0320	5/16	1-1/4	30064	30053	30065
-	66	0.84	0.0330	5/16	1-1/4	30074	30075	30076
-	65	0.89	0.0350	5/8	1-3/8	30078	30079	30080
-	-	0.90	0.0354	16mm	35mm	30081	30105	30083
-	64	0.91	0.0360	5/8	1-3/8	30082	30073	30084
-	63	0.94	0.0370	5/8	1-3/8	30086	30087	30088
-	62	0.97	0.0380	5/8	1-3/8	30090	30091	30092
-	61	0.99	0.0390	5/8	1-3/8	30094	30095	30096
-	-	1.00	0.0393	1/16	38mm	30098	30101	30100
-	60	1.02	0.0400	3/4	1-1/2	30102	30103	30104
-	59	1.04	0.0410	3/4	1-1/2	30106	30107	30108
-	58	1.07	0.0420	3/4	1-1/2	30110	30111	30112
-	57	1.09	0.0430	3/4	1-1/2	30114	30115	30116
-	-	1.10	0.0433	19mm	38mm	30118	30109	30120
-	56	1.18	0.0465	3/4	1-1/2	30122	30124	30123
3/64	-	1.19	0.0469	3/4	1-1/2	30126	30129	30128
-	-	1.20	0.0472	19mm	38mm	30130	30113	30131
-	-	1.25	0.0492	19mm	38mm	30132	30085	30133
-	-	1.30	0.0512	19mm	38mm	30134	30137	30136
-	55	1.32	0.0520	3/4	1-1/2	30138	30140	30139
-	54	1.40	0.0550	3/4	1-1/2	30142	30144	30143
-	-	1.40	0.0551	19mm	38mm	30146	30145	30147
-	-	1.45	0.0571	19mm	38mm	30148	30121	30149
-	-	1.50	0.0591	19mm	38mm	30150	30153	30152



GP Drills



Jobber Length Drills

Inch, Letter, Number and Metric

DESCRIPTION						EDP #		
Fraction Size	Letter / Wire	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiN	Coated TiAlN
-	53	1.51	0.0595	3/4	1-1/2	30154	30156	30155
1/16	-	1.59	0.0625	3/4	1-1/2	30158	30160	30159
-	-	1.60	0.0630	19mm	38mm	30162	30165	30164
-	52	1.61	0.0635	3/4	1-1/2	30166	30168	30167
-	-	1.70	0.0669	19mm	38mm	30170	30173	30172
-	51	1.70	0.0670	3/4	1-1/2	30174	30176	30175
-	50	1.78	0.0700	7/8	1-3/4	30178	30180	30179
-	-	1.80	0.0709	22mm	44mm	30182	30185	30184
-	49	1.85	0.0730	7/8	1-3/4	30186	30188	30187
-	-	1.90	0.0748	22mm	44mm	30190	30193	30192
-	48	1.93	0.0760	7/8	1-3/4	30194	30196	30195
5/64	-	1.98	0.0781	7/8	1-3/4	30198	30200	30199
-	47	1.99	0.0785	7/8	1-3/4	30202	30204	30203
-	-	2.00	0.0787	22mm	44mm	30206	30217	30208
-	46	2.06	0.0810	7/8	1-3/4	30210	30213	30211
-	45	2.08	0.0820	7/8	1-3/4	30214	30216	30215
-	-	2.10	0.0827	22mm	44mm	30218	30221	30220
-	44	2.18	0.0860	1	2	30222	30224	30223
-	-	2.20	0.0866	25mm	50mm	30226	30229	30228
-	43	2.26	0.0890	1	2	30230	30232	30231
-	-	2.30	0.0906	25mm	50mm	30234	30225	30236
-	42	2.37	0.0935	1	2	30238	30240	30239
3/32	-	2.38	0.0938	1	2	30242	30244	30243
-	-	2.40	0.0945	25mm	50mm	30246	30249	30248
-	41	2.44	0.0960	1	2	30250	30252	30251
-	40	2.49	0.0980	1	2	30254	30256	30255
-	-	2.50	0.0984	25mm	50mm	30258	30261	30260
-	39	2.53	0.0995	1-1/4	2-1/4	30262	30264	30263
-	38	2.58	0.1015	1-1/4	2-1/4	30266	30268	30267
-	-	2.60	0.1024	32mm	57mm	30270	30273	30272
-	37	2.64	0.1040	1-1/4	2-1/4	30274	30276	30275
-	-	2.70	0.1063	32mm	57mm	30278	30281	30280
-	36	2.71	0.1065	1-1/4	2-1/4	30282	30284	30283
7/64	-	2.78	0.1094	1-1/4	2-1/4	30286	30289	30287
-	35	2.79	0.1100	1-1/4	2-1/4	30290	30292	30291
-	-	2.80	0.1102	32mm	57mm	30294	30297	30296
-	34	2.82	0.1110	1-1/4	2-1/4	30298	30300	30299
-	33	2.87	0.1130	1-1/4	2-1/4	30302	30304	30303
-	-	2.90	0.1142	32mm	57mm	30306	30309	30308
-	32	2.95	0.1160	1-1/4	2-1/4	30310	30312	30311
-	-	3.00	0.1181	32mm	57mm	30314	30317	30316
-	31	3.05	0.1200	1-1/4	2-1/4	30318	30320	30319
-	-	3.10	0.1220	32mm	57mm	30322	30325	30324
1/8	-	3.18	0.1250	1-1/4	2-1/4	30326	30328	30329



Jobber Length Drills

Inch, Letter, Number and Metric

DESCRIPTION						EDP #		
Fraction Size	Letter / Wire	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiN	TiAlN
-	-	3.20	0.1260	32mm	57mm	30330	30333	30332
-	30	3.26	0.1285	1-1/4	2-1/4	30334	30336	30335
-	-	3.30	0.1299	32mm	57mm	30338	30341	30340
-	-	3.40	0.1339	35mm	63mm	30342	30345	30344
-	29	3.45	0.1360	1-3/8	2-1/2	30346	30348	30347
-	-	3.50	0.1378	35mm	63mm	30350	30353	30352
-	28	3.57	0.1405	1-3/8	2-1/2	30354	30356	30355
9/64	-	3.57	0.1406	1-3/8	2-1/2	30358	30360	30359
-	-	3.60	0.1417	35mm	63mm	30362	30365	30364
-	27	3.66	0.1440	1-3/8	2-1/2	30366	30368	30367
-	-	3.70	0.1457	35mm	63mm	30370	30373	30372
-	26	3.73	0.1470	1-3/8	2-1/2	30374	30376	30375
-	25	3.80	0.1495	1-3/8	2-1/2	30378	30380	30379
-	-	3.80	0.1496	35mm	63mm	30382	30385	30384
-	24	3.86	0.1520	1-3/8	2-1/2	30386	30388	30387
-	-	3.90	0.1535	35mm	63mm	30390	30393	30392
-	23	3.91	0.1540	1-3/8	2-1/2	30394	30396	30395
5/32	-	3.97	0.1562	1-3/8	2-1/2	30398	30400	30399
-	22	3.99	0.1570	1-3/8	2-1/2	30402	30404	30403
-	-	4.00	0.1575	35mm	63mm	30406	30409	30408
-	21	4.04	0.1590	1-3/8	2-1/2	30410	30412	30411
-	20	4.09	0.1610	1-3/8	2-1/2	30414	30416	30415
-	-	4.10	0.1614	35mm	63mm	30418	30421	30420
-	-	4.20	0.1654	41mm	70mm	30422	30425	30424
-	19	4.22	0.1660	1-5/8	2-3/4	30426	30428	30427
-	-	4.30	0.1693	41mm	70mm	30430	30433	30432
-	18	4.31	0.1695	1-5/8	2-3/4	30434	30436	30435
11/64	-	4.37	0.1719	1-5/8	2-3/4	30438	30440	30439
-	17	4.39	0.1730	1-5/8	2-3/4	30442	30444	30443
-	-	4.40	0.1732	41mm	70mm	30446	30449	30448
-	16	4.50	0.1770	1-5/8	2-3/4	30450	30452	30451
-	-	4.50	0.1772	41mm	70mm	30454	30457	30456
-	15	4.57	0.1800	1-5/8	2-3/4	30458	30460	30459
-	-	4.60	0.1811	41mm	70mm	30462	30465	30464
-	14	4.62	0.1820	1-5/8	2-3/4	30466	30468	30467
-	-	4.70	0.1850	41mm	70mm	30470	30473	30472
-	13	4.70	0.1850	1-5/8	2-3/4	30474	30477	30475
3/16	-	4.76	0.1875	1-5/8	2-3/4	30478	30479	30480
-	-	4.80	0.1890	41mm	70mm	30482	30485	30484
-	12	4.80	0.1890	1-5/8	2-3/4	30486	30488	30487
-	11	4.85	0.1910	1-5/8	2-3/4	30490	30492	30491
-	-	4.90	0.1929	41mm	70mm	30494	30497	30496
-	10	4.91	0.1935	1-5/8	2-3/4	30498	30500	30499
-	9	4.98	0.1960	1-3/4	3	30502	30504	30503



GP Drills



Jobber Length Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #		
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiN	TiAlN
-	-	5.00	0.1968	44mm	75mm	30506	30509	30508
-	8	5.05	0.1990	1-3/4	3	30510	30512	30511
-	-	5.10	0.2008	44mm	75mm	30514	30517	30516
-	7	5.11	0.2010	1-3/4	3	30518	30520	30519
13/64	-	5.16	0.2031	1-3/4	3	30522	30524	30523
-	6	5.18	0.2040	1-3/4	3	30526	30528	30527
-	-	5.20	0.2047	44mm	75mm	30530	30533	30532
-	5	5.22	0.2055	1-3/4	3	30534	30536	30535
-	-	5.30	0.2087	44mm	75mm	30538	30541	30540
-	4	5.31	0.2090	1-3/4	3	30542	30544	30543
-	-	5.40	0.2126	44mm	75mm	30546	30549	30548
-	3	5.41	0.2130	1-3/4	3	30550	30552	30551
-	-	5.50	0.2165	44mm	75mm	30554	30557	30556
7/32	-	5.55	0.2187	1-3/4	3	30558	30560	30559
-	-	5.60	0.2205	44mm	75mm	30562	30565	30564
-	2	5.61	0.2210	1-3/4	3	30566	30568	30567
-	-	5.70	0.2244	44mm	75mm	30570	30573	30572
-	1	5.79	0.2280	1-3/4	3	30574	30576	30575
-	-	5.80	0.2283	50mm	82mm	30578	30581	30580
-	-	5.90	0.2323	50mm	82mm	30582	30585	30584
-	A	5.94	0.2340	2.0	3-1/4	30590	30592	30591
15/64	-	5.95	0.2344	2.0	3-1/4	30594	30596	30595
-	-	6.00	0.2362	50mm	82mm	30598	30601	30600
-	B	6.04	0.2380	2.0	3-1/4	30602	30604	30603
-	-	6.10	0.2402	50mm	82mm	30606	30609	30608
-	C	6.15	0.2420	2.0	3-1/4	30610	30612	30611
-	-	6.20	0.2441	50mm	82mm	30614	30617	30616
-	D	6.25	0.2460	2.0	3-1/4	30618	30620	30619
-	-	6.30	0.2480	50mm	82mm	30622	30625	30624
1/4	E	6.35	0.2500	2.0	3-1/4	30626	30629	30628
-	-	6.40	0.2520	50mm	82mm	30630	30633	30632
-	-	6.50	0.2559	50mm	82mm	30634	30637	30636
-	F	6.53	0.2570	2.0	3-1/4	30638	30640	30639
-	-	6.60	0.2598	50mm	82mm	30642	30645	30644
-	G	6.63	0.2610	2-1/8	3-1/2	30646	30648	30647
-	-	6.70	0.2638	54mm	89mm	30650	30653	30652
17/64	-	6.75	0.2656	2-1/8	3-1/2	30654	30656	30655
-	H	6.76	0.2660	2-1/8	3-1/2	30658	30660	30659
-	-	6.80	0.2677	54mm	89mm	30662	30665	30664
-	-	6.90	0.2717	54mm	89mm	30666	30669	30668
-	I	6.91	0.2720	2-1/8	3-1/2	30670	30672	30671
-	-	7.00	0.2756	54mm	89mm	30674	30677	30676
-	J	7.04	0.2770	2-1/8	3-1/2	30678	30680	30679
-	-	7.10	0.2795	54mm	89mm	30682	30685	30684



Jobber Length Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #		
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiN	TiAlN
-	K	7.14	0.2810	2-1/8	3-1/2	30686	30688	30687
9/32	-	7.14	0.2812	2-1/8	3-1/2	30690	30692	30691
-	-	7.20	0.2835	54mm	89mm	30694	30657	30695
-	-	7.25	0.2854	54mm	89mm	30696	30089	30697
-	-	7.30	0.2874	54mm	89mm	30698	30689	30700
-	L	7.37	0.2900	2-1/8	3-1/2	30702	30704	30703
-	-	7.40	0.2913	54mm	89mm	30706	30709	30708
-	M	7.49	0.2950	2-3/8	3-3/4	30710	30712	30711
-	-	7.50	0.2953	60mm	95mm	30714	30717	30716
19/64	-	7.54	0.2969	2-3/8	3-3/4	30718	30720	30719
-	-	7.60	0.2992	60mm	95mm	30722	30725	30724
-	N	7.67	0.3020	2-3/8	3-3/4	30726	30728	30727
-	-	7.70	0.3031	60mm	95mm	30730	30733	30732
-	-	7.80	0.3071	60mm	95mm	30734	30737	30736
-	-	7.90	0.3110	60mm	95mm	30738	30741	30740
5/16	-	7.94	0.3125	2-3/8	3-3/4	30742	30743	30744
-	-	8.00	0.3150	60mm	95mm	30746	30749	30748
-	O	8.03	0.3160	2-3/8	3-3/4	30750	30752	30751
-	-	8.10	0.3189	60mm	95mm	30754	30757	30756
-	-	8.20	0.3228	60mm	95mm	30758	30761	30760
-	P	8.21	0.3230	2-3/8	3-3/4	30762	30764	30763
-	-	8.30	0.3268	60mm	95mm	30766	30769	30768
21/64	-	8.33	0.3281	2-1/2	4	30770	30772	30771
-	-	8.40	0.3307	63mm	100mm	30774	30777	30776
-	Q	8.43	0.3320	2-1/2	4	30778	30780	30779
-	-	8.50	0.3346	63mm	100mm	30782	30785	30784
-	-	8.60	0.3386	63mm	100mm	30786	30789	30788
-	R	8.61	0.3390	2-1/2	4	30790	30792	30791
-	-	8.70	0.3425	63mm	100mm	30794	30797	30796
11/32	-	8.73	0.3438	2-1/2	4	30798	30800	30799
-	-	8.80	0.3465	63mm	100mm	30802	30805	30804
-	S	8.84	0.3480	2-1/2	4	30806	30808	30807
-	-	8.90	0.3504	63mm	100mm	30810	30813	30812
-	-	9.00	0.3543	70mm	100mm	30814	30817	30816
-	T	9.09	0.3580	2-3/4	4-1/4	30818	30820	30819
-	-	9.10	0.3583	70mm	108mm	30822	30825	30824
23/64	-	9.13	0.3594	2-3/4	4-1/4	30826	30828	30827
-	-	9.20	0.3622	70mm	108mm	30830	30833	30832
-	-	9.30	0.3661	70mm	108mm	30834	30837	30836
-	U	9.35	0.3680	2-3/4	4-1/4	30838	30840	30839
-	-	9.40	0.3701	70mm	108mm	30842	30845	30844
-	-	9.50	0.3740	70mm	108mm	30846	30849	30848
3/8	-	9.53	0.3750	2-3/4	4-1/4	30850	30852	30851
-	V	9.58	0.3770	2-3/4	4-1/4	30854	30856	30855



GP Drills



Jobber Length Drills

Inch, Letter, Number and Metric

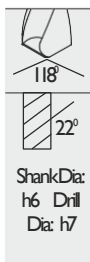
Fraction Size	Letter / Wire	DESCRIPTION				EDP #		
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiN	TiAlN
-	-	9.60	0.3780	70mm	108mm	30858	30861	30860
-	-	9.70	0.3819	70mm	108mm	30862	30865	30864
-	-	9.80	0.3858	70mm	108mm	30866	30869	30868
-	W	9.81	0.3860	2-7/8	4-1/2	30870	30872	30871
-	-	9.90	0.3898	73mm	114mm	30874	30877	30876
25/64	-	9.92	0.3906	2-7/8	4-1/2	30878	30880	30879
-	-	10.00	0.3937	73mm	114mm	30882	30885	30884
-	X	10.08	0.3970	2-7/8	4-1/2	30886	30888	30887
-	-	10.20	0.4016	73mm	114mm	30894	30905	30896
-	Y	10.26	0.4040	2-7/8	4-1/2	30898	30890	30899
-	-	10.30	0.4055	73mm	114mm	30900	30901	30902
13/32	-	10.32	0.4062	2-7/8	4-1/2	30906	30908	30907
-	Z	10.49	0.4130	2-7/8	4-1/2	30914	30916	30915
-	-	10.50	0.4134	73mm	114mm	30918	30921	30920
27/64	-	10.72	0.4219	2-7/8	4-1/2	30930	30932	30931
-	-	10.75	0.4232	73mm	114mm	30936	30938	30937
-	-	11.00	0.4331	73mm	114mm	30942	30945	30944
7/16	-	11.11	0.4375	2-7/8	4-1/2	30950	30953	30952
-	-	11.50	0.4528	76mm	120mm	30966	30969	30968
29/64	-	11.51	0.4531	3	4-3/4	30970	30972	30971
15/32	-	11.91	0.4688	3	4-3/4	30990	30992	30991
-	-	12.00	0.4724	76mm	120mm	30994	30997	30996
31/64	-	12.30	0.4844	3	4-3/4	31010	31012	31011
-	-	12.50	0.4920	76mm	120mm	31014	31017	31016
1/2	-	12.70	0.5000	3	4-3/4	31026	31128	31028
-	-	12.90	0.5079	76mm	120mm	31029	31126	31033
-	-	13.00	0.5118	76mm	120mm	31030	31130	31031
17/32	-	13.49	0.5313	3	4-3/4	31036	31136	31032
-	-	13.50	0.5315	76mm	120mm	31041	31142	31044
-	-	14.00	0.5512	76mm	120mm	31052	31154	31056
9/16	-	14.29	0.5625	4	6	31034	31156	31035
-	-	14.50	0.5709	100mm	150mm	31059	31158	31060
37/64	-	14.68	0.5781	4	6	31061	31152	31064
-	-	15.00	0.5906	100mm	150mm	31062	31146	31063
19/32	-	15.08	0.5937	4	6	31038	31160	31039
39/64	-	15.47	0.6094	4	6	31040	31124	31045
-	-	15.50	0.6102	100mm	150mm	31065	31162	31098
5/8	-	15.88	0.6250	4	6	31042	31164	31043
-	-	16.00	0.6299	100mm	150mm	31071	31122	31072
-	-	16.50	0.6496	100mm	150mm	31080	31166	31081
21/32	-	16.67	0.6562	4	6	31046	31168	31047
-	-	17.00	0.6693	100mm	150mm	31083	31170	31084
43/64	-	17.06	0.6719	4	6	31085	31116	31088
11/16	-	17.46	0.6875	4	6	31050	31172	31051



Jobber Length Drills

Inch, Letter, Number and Metric

		DESCRIPTION				EDP #		
Fraction Size	Letter / Wire	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiN	TiAlN
-	-	17.50	0.6890	100mm	150mm	31086	31174	31087
45/64	-	17.85	0.7031	4	6	31091	31112	31094
-	-	18.00	0.7087	100mm	150mm	31089	31176	31090
23/32	-	18.25	0.7187	4	6	31054	31110	31055
-	-	18.50	0.7283	100mm	150mm	31092	31178	31093
47/64	-	18.65	0.7344	4	6	31070	31114	31120
-	-	19.00	0.7480	100mm	150mm	31095	31180	31096
3/4	-	19.05	0.7500	4	6	31066	31182	31099
49/64	-	19.44	0.7656	4	6	31190	31192	31194
25/32	-	19.87	0.7812	4	6	31067	31184	31068
-	-	20.00	0.7874	100mm	150mm	31101	31186	31102
13/16	-	20.63	0.8125	4	6	31107	31198	31132
7/8	-	22.22	0.8750	4	6	31104	31188	31105
1.0	-	25.40	1.0000	4	6	31074	31118	31075



GP Drills



Jobber Drills - Sets

1/8" and 1/4"

EDP # 31078

29 Piece Set

Sizes 1/16 to 1/2" by 64ths

Includes Metal Case

EDP # 31077

20 Piece Set

Sizes 61 to 80 Complete

Includes Metal Case

EDP # 31148

25 Piece Set

Sizes 1.0 to 13.0mm by .5mm

Includes Metal Case

EDP # 31150

60 Piece Set

Sizes 1 to 60 Complete

Include Metal Case

EDP # 31140

26 Piece Set

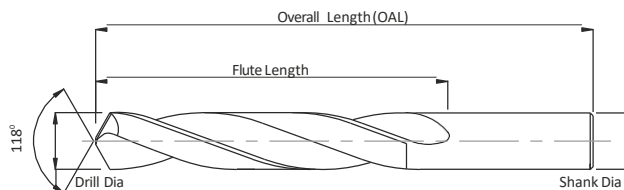
Sizes A to Z Complete

Includes Metal Case

Jobber Length Drills

DIN 338

- Manufactured from premium submicron grain carbide
- Precision ground carbide drills are designed for high feed rate and good chip evacuation
- 118° four facet point angle, right hand cut-right hand spiral



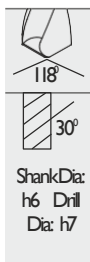
DESCRIPTION			EDP #	
Drill Dia	Flute Length	OAL	Uncoated	Coated TiAIN
0.80	10	30	51000	58000
1.00	12	34	51002	58002
1.10	14	36	51004	58004
1.20	16	38	51006	58006
1.30	16	38	51008	58008
1.40	18	40	51010	58010
1.50	18	40	51012	58012
1.60	20	43	51014	58014
1.70	20	43	51016	58016
1.80	22	46	51018	58018
1.90	22	46	51020	58020
2.00	24	49	51022	58022
2.10	24	49	51024	58024
2.20	27	53	51026	58026
2.30	27	53	51028	58028
2.40	30	57	51030	58030
2.50	30	57	51032	58032
2.60	30	57	51034	58034
2.70	33	61	51036	58036
2.80	33	61	51038	58038
2.90	33	61	51040	58040
3.00	33	61	51042	58042
3.10	36	65	51044	58044
3.20	36	65	51046	58046
3.30	36	65	51048	58048
3.40	39	70	51050	58050
3.50	39	70	51052	58052
3.60	39	70	51054	58054
3.70	39	70	51056	58056
3.80	43	75	51058	58058
3.90	43	75	51060	58060
4.00	43	75	51062	58062
4.10	43	75	51064	58064
4.20	43	75	51066	58066
4.30	47	80	51068	58068
4.40	47	80	51070	58070
4.50	47	80	51072	58072
4.60	47	80	51074	58074
4.70	47	80	51076	58076
4.80	52	86	51078	58078



Jobber Length Drills

DIN 338

DESCRIPTION			EDP #	
Drill Dia	Flute Length	OAL	Uncoated	Coated TiAlN
4.90	52	86	51080	58080
5.00	52	86	51082	58082
5.10	52	86	51084	58084
5.20	52	86	51086	58086
5.30	52	86	51088	58088
5.40	57	93	51090	58090
5.50	57	93	51092	58092
5.60	57	93	51094	58094
5.70	57	93	51096	58096
5.80	57	93	51098	58098
5.90	57	93	51100	58100
6.00	57	93	51102	58102
6.10	63	101	51104	58104
6.20	63	101	51106	58106
6.30	63	101	51108	58108
6.40	63	101	51110	58110
6.50	63	101	51112	58112
6.60	63	101	51114	58114
6.70	63	101	51116	58116
6.80	69	109	51118	58118
6.90	69	109	51120	58120
7.00	69	109	51122	58122
7.10	69	109	51124	58124
7.20	69	109	51126	58126
7.30	69	109	51128	58128
7.40	69	109	51130	58130
7.50	69	109	51132	58132
7.60	75	117	51134	58134
7.70	75	117	51136	58136
7.80	75	117	51138	58138
7.90	75	117	51140	58140
8.00	75	117	51142	58142
8.10	75	117	51144	58144
8.20	75	117	51146	58146
8.30	75	117	51148	58148
8.40	75	117	51150	58150
8.50	75	117	51152	58152
8.60	81	125	51154	58154
8.70	81	125	51156	58156
8.80	81	125	51158	58158
8.90	81	125	51160	58160
9.00	81	125	51162	58162
9.10	81	125	51164	58164
9.20	81	125	51166	58166



GP Drills

Jobber Length Drills

DIN 338

GP Drills

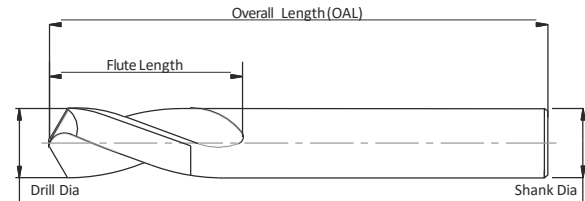
DESCRIPTION			EDP #	
Drill Dia	Flute Length	OAL	Uncoated	Coated TiAlN
9.30	81	125	51168	58168
9.40	81	125	51170	58170
9.50	81	125	51172	58172
9.60	87	133	51174	58174
9.70	87	133	51176	58176
9.80	87	133	51178	58178
9.90	87	133	51180	58180
10.00	87	133	51182	58182
10.20	87	133	51184	58184
10.30	87	133	51186	58186
10.50	87	133	51188	58188
11.00	94	142	51190	58190
11.50	94	142	51192	58192
12.00	101	151	51194	58194
12.50	101	151	51196	58196
12.90	101	151	51198	58198
13.00	101	151	51200	58200
13.50	108	160	51202	58202
14.00	108	160	51204	58204
14.50	114	169	51206	58206
15.00	114	169	51208	58208
15.50	120	178	51210	58210
16.00	120	178	51212	58212
16.50	125	184	51214	58214
17.00	125	184	51216	58216
17.50	130	191	51218	58218
18.00	130	191	51220	58220
18.50	130	191	51222	58222
19.00	130	191	51224	58224
20.00	130	191	51226	58226



Stub Length Drills

DIN 6539

- Manufactured from premium sub micron grain carbide
- Precision ground carbide drills are designed for high feed rate and good chip evacuation
- 118° four facet point angle, right hand cut-right hand spiral



DESCRIPTION				EDP #		
Drill Dia	Shank Dia	Flute Length	OAL	Uncoated	Coated TiAlN	CH
1.00	1.00	6	26	31109	31111	31113
1.10	1.10	7	28	31115	31117	31119
1.20	1.20	8	30	31121	31123	31125
1.30	1.30	8	30	31127	31129	31131
1.40	1.40	9	32	31133	31135	31137
1.50	1.50	9	32	31139	31141	31143
1.60	1.60	10	34	31145	31147	31149
1.70	1.70	10	34	31151	31153	31155
1.80	1.80	11	36	31157	31159	31161
1.90	1.90	11	36	31163	31165	31167
2.00	2.00	12	38	31169	31171	31173
2.10	2.10	12	38	31175	31177	31179
2.20	2.20	13	40	31181	31183	31185
2.30	2.30	13	40	31187	31189	31191
2.40	2.40	14	43	31193	31195	31197
2.50	2.50	14	43	31199	31201	31203
2.60	2.60	14	43	31205	31207	31209
2.70	2.70	16	46	31211	31213	31215
2.80	2.80	16	46	31217	31219	31221
2.90	2.90	16	46	31223	31225	31227
3.00	3.00	16	46	31229	31231	31233
3.10	3.10	18	49	31235	31237	31239
3.20	3.20	18	49	31241	31243	31245
3.30	3.30	18	49	31247	31249	31251
3.40	3.40	20	52	31253	31255	31257
3.50	3.50	20	52	31259	31261	31263
3.60	3.60	20	52	31265	31267	31269
3.70	3.70	20	52	31271	31273	31275
3.80	3.80	22	55	31277	31279	31281
3.90	3.90	22	55	31283	31285	31287
4.00	4.00	22	55	31289	31291	31293
4.10	4.10	22	55	31295	31297	31299
4.20	4.20	22	55	31301	31303	31305
4.30	4.30	24	58	31307	31309	31311
4.40	4.40	24	58	31313	31315	31317
4.50	4.50	24	58	31319	31321	31323
4.60	4.60	24	58	31325	31327	31329
4.70	4.70	24	58	31331	31333	31335
4.80	4.80	26	62	31337	31339	31341
4.90	4.90	26	62	31343	31345	31347



GP Drills

Stub Length Drills

DIN 6539

GP Drills

DESCRIPTION				EDP #		
Drill Dia	Shank Dia	Flute Length	OAL	Uncoated	Coated TiAlN	CH
5.00	5.00	26	62	31349	31351	31353
5.10	5.10	26	62	31355	31357	31359
5.20	5.20	26	62	31361	31363	31365
5.30	5.30	26	62	31367	31369	31371
5.40	5.40	28	66	31373	31375	31377
5.50	5.50	28	66	31379	31381	31383
5.60	5.60	28	66	31385	31387	31389
5.70	5.70	28	66	31391	31393	31395
5.80	5.80	28	66	31397	31399	31401
5.90	5.90	28	66	31403	31405	31407
6.00	6.00	28	66	31409	31411	31413
6.10	6.10	28	66	31522	31553	31654
6.20	6.20	28	66	31523	31634	31585
6.30	6.30	28	66	31621	31555	31586
6.40	6.40	28	66	31525	31635	31587
6.50	6.50	31	70	31415	31417	31419
6.60	6.60	34	74	31526	31557	31655
6.70	6.70	34	74	31527	31637	31589
6.80	6.80	34	74	31421	31423	31425
6.90	6.90	34	74	31622	31559	31590
7.00	7.00	34	74	31427	31429	31431
7.10	7.10	34	74	31529	31638	31591
7.20	7.20	34	74	31530	31561	31656
7.30	7.30	34	74	31531	31639	31593
7.40	7.40	34	74	31623	31563	31594
7.50	7.50	34	74	31433	31435	31437
7.60	7.60	37	79	31533	31641	31595
7.70	7.70	37	79	31534	31565	31657
7.80	7.80	37	79	31439	31441	31443
7.90	7.90	37	79	31535	31642	31597
8.00	8.00	37	79	31445	31447	31449
8.10	8.10	37	79	31625	31567	31598
8.20	8.20	37	79	31537	31643	31599
8.30	8.30	37	79	31538	31569	31658
8.40	8.40	37	79	31539	31645	31601
8.50	8.50	37	79	31451	31453	31455
8.60	8.60	40	84	31626	31571	31602
8.70	8.70	40	84	31541	31646	31603
8.80	8.80	40	84	31457	31459	31461
8.90	8.90	40	84	31542	31573	31659
9.00	9.00	40	84	31463	31465	31467
9.10	9.10	40	84	31543	31647	31605
9.20	9.20	40	84	31627	31575	31606
9.30	9.30	40	84	31545	31649	31607



Stub Length Drills

DIN 6539

Drill Dia	DESCRIPTION			EDP #		
	Shank Dia	Flute Length	OAL	Uncoated	Coated TiAlN	CH
9.40	9.40	40	84	31629	31577	31660
9.50	9.50	40	84	31469	31471	31473
9.60	9.60	43	89	31547	31650	31609
9.70	9.70	43	89	31630	31579	31610
9.80	9.80	43	89	31549	31651	31611
9.90	9.90	43	89	31631	31581	31661
10.00	10.00	43	89	31475	31477	31479
10.20	10.20	43	89	31481	31483	31485
10.50	10.50	43	89	31487	31489	31491
10.80	10.80	47	95	31551	31653	31613
11.00	11.00	47	95	31493	31495	31497
11.50	11.50	47	95	31499	31501	31503
12.00	12.00	51	102	31505	31507	31509
12.50	12.50	51	102	31511	31513	31515
13.00	13.00	51	102	31517	31519	31521
14.00	14.00	60	107	31633	31583	31614

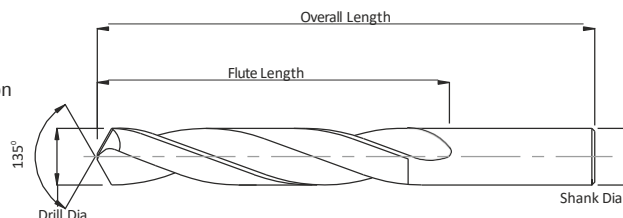


GP Drills

Screw Machine Length Drills

Inch, Letter, Number and Metric

- Produces very close hole size and location, often eliminating a reaming operation
- For use in drilling alloy steels, Stainless steels, and high strength alloys
- Produces a tight, double curl chip for excellent chip flow
- Stubby design provides for more rigidity and higher feed rates



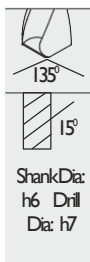
		DESCRIPTION				EDP #	
Fraction Size	Letter / Wire	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
1/32	-	0.79	0.0312	1/2	1-1/2	35014	35015
-	-	1.00	0.0394	12.5mm	38mm	35016	35017
-	60	1.02	0.0400	1/2	1-1/2	35000	35001
-	59	1.04	0.0410	1/2	1-1/2	35002	35003
-	58	1.07	0.0420	1/2	1-1/2	35004	35005
-	57	1.09	0.0430	1/2	1-1/2	35006	35007
-	56	1.18	0.0465	1/2	1-1/2	35018	35019
3/64	-	1.19	0.0469	1/2	1-1/2	35022	35023
-	-	1.20	0.0473	12.7mm	38mm	35024	35025
-	55	1.32	0.0520	1/2	1-1/2	35034	35035
-	54	1.40	0.0550	1/2	1-1/2	35038	35039
-	-	1.50	0.0591	13mm	38mm	35046	35047
-	53	1.51	0.0595	1/2	1-1/2	35050	35051
1/16	-	1.59	0.0625	5/8	1-5/8	35054	35055
-	-	1.60	0.0630	16mm	41mm	35058	35059
-	52	1.61	0.0635	11/16	1-11/16	35062	35063
-	-	1.70	0.0669	17mm	43mm	35066	35067
-	51	1.70	0.0670	11/16	1-11/16	35070	35071
-	50	1.78	0.0700	11/16	1-11/16	35074	35075
-	-	1.80	0.0709	17mm	43mm	35078	35079
-	49	1.85	0.0730	11/16	1-11/16	35082	35083
-	-	1.90	0.0748	17mm	43mm	35086	35087
-	48	1.93	0.0760	11/16	1-11/16	35090	35091
5/64	-	1.98	0.0781	11/16	1-11/16	35094	35095
-	47	1.99	0.0785	3/4	1-3/4	35098	35099
-	-	2.00	0.0787	19mm	45mm	35102	35103
-	46	2.06	0.0810	3/4	1-3/4	35106	35107
-	45	2.08	0.0820	3/4	1-3/4	35110	35111
-	-	2.10	0.0827	19mm	45mm	35114	35115
-	44	2.18	0.0860	3/4	1-3/4	35118	35119
-	-	2.20	0.0866	19mm	45mm	35122	35123
-	43	2.26	0.0890	3/4	1-3/4	35126	35127
-	-	2.30	0.0906	19mm	45mm	35130	35131
-	42	2.37	0.0935	3/4	1-3/4	35134	35135
3/32	-	2.38	0.0938	3/4	1-3/4	35138	35139
-	-	2.40	0.0945	19mm	45mm	35142	35143
-	41	2.44	0.0960	13/16	1-13/16	35146	35147
-	40	2.49	0.0980	13/16	1-13/16	35150	35151
-	-	2.50	0.0984	21mm	46mm	35154	35155
-	39	2.53	0.0995	13/16	1-13/16	35158	35159



Screw Machine Length Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #	
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	38	2.58	0.1015	13/16	1-13/16	35162	35163
-	-	2.60	0.1024	21mm	46mm	35166	35167
-	37	2.64	0.1040	13/16	1-13/16	35170	35171
-	-	2.70	0.1063	21mm	46mm	35174	35175
-	36	2.71	0.1065	13/16	1-13/16	35178	35179
7/64	-	2.78	0.1094	13/16	1-13/16	35182	35183
-	35	2.79	0.1100	7/8	1-7/8	35186	35187
-	-	2.80	0.1102	22mm	48mm	35190	35191
-	34	2.82	0.1110	7/8	1-7/8	35194	35195
-	33	2.87	0.1130	7/8	1-7/8	35198	35199
-	-	2.90	0.1142	22mm	48mm	35202	35203
-	32	2.95	0.1160	7/8	1-7/8	35206	35207
-	-	3.00	0.1181	22mm	48mm	35210	35211
-	31	3.05	0.1200	7/8	1-7/8	35214	35215
-	-	3.10	0.1220	22mm	48mm	35218	35219
1/8	-	3.18	0.1250	7/8	1-7/8	35222	35223
-	-	3.20	0.1260	22mm	48mm	35226	35227
-	30	3.26	0.1285	15/16	1-15/16	35230	35231
-	-	3.30	0.1299	24mm	49mm	35234	35235
-	-	3.40	0.1339	24mm	49mm	35238	35239
-	29	3.45	0.1360	15/16	1-15/16	35242	35243
-	-	3.50	0.1378	24mm	52mm	35246	35247
-	28	3.57	0.1405	15/16	1-15/16	35250	35251
9/64	-	3.57	0.1406	15/16	1-15/16	35254	35255
-	-	3.60	0.1417	24mm	49mm	35258	35259
-	27	3.66	0.1440	1	2-1/16	35262	35263
-	-	3.70	0.1457	25.4mm	52mm	35266	35267
-	26	3.73	0.1470	1	2-1/16	35270	35271
-	25	3.80	0.1495	1	2-1/16	35274	35275
-	-	3.80	0.1496	25.4mm	52mm	35278	35279
-	24	3.86	0.1520	1	2-1/16	35282	35283
-	-	3.90	0.1535	25.4mm	52mm	35286	35287
-	23	3.91	0.1540	1	2-1/16	35290	35291
5/32	-	3.97	0.1562	1	2-1/16	35294	35295
-	22	3.99	0.1570	1-1/16	2-1/8	35298	35299
-	-	4.00	0.1575	27mm	54mm	35302	35303
-	21	4.04	0.1590	1-1/16	2-1/8	35306	35307
-	20	4.09	0.1610	1-1/16	2-1/8	35310	35311
-	-	4.10	0.1614	27mm	54mm	35314	35315
-	-	4.20	0.1654	27mm	54mm	35318	35319
-	19	4.22	0.1660	1-1/16	2-1/8	35322	35323
-	-	4.30	0.1693	27mm	54mm	35326	35327
-	18	4.31	0.1695	1-1/16	2-1/8	35330	35331
11/64	-	4.37	0.1719	1-1/16	2-1/8	35334	35335



GP Drills

Screw Machine Length Drills

Inch, Letter, Number and Metric

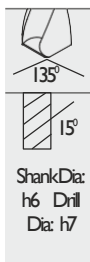
Fraction Size	Letter / Wire	DESCRIPTION				EDP #	
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	17	4.39	0.1730	1-1/8	2-3/16	35338	35339
-	-	4.40	0.1732	29mm	56mm	35342	35343
-	16	4.50	0.1770	1-1/8	2-3/16	35346	35347
-	-	4.50	0.1772	29mm	56mm	35350	35351
-	15	4.57	0.1800	1-1/8	2-3/16	35354	35355
-	-	4.60	0.1811	29mm	56mm	35358	35359
-	14	4.62	0.1820	1-1/8	2-3/16	35362	35363
-	-	4.70	0.1850	29mm	56mm	35366	35367
-	13	4.70	0.1850	1-1/8	2-3/16	35370	35371
3/16	-	4.76	0.1875	1-1/8	2-3/16	35374	35375
-	-	4.80	0.1890	30mm	57mm	35378	35379
-	12	4.80	0.1890	1-3/16	2-1/4	35382	35383
-	11	4.85	0.1910	1-3/16	2-1/4	35386	35387
-	-	4.90	0.1929	30mm	57mm	35390	35391
-	10	4.91	0.1935	1-3/16	2-1/4	35394	35395
-	9	4.98	0.1960	1-3/16	2-1/4	35398	35399
-	-	5.00	0.1968	30mm	57mm	35402	35403
-	8	5.05	0.1990	1-3/16	2-1/4	35406	35407
-	-	5.10	0.2008	30mm	57mm	35410	35411
-	7	5.11	0.2010	1-3/16	2-1/4	35414	35415
13/64	-	5.16	0.2031	1-3/16	2-1/4	35418	35419
-	6	5.18	0.2040	1-1/4	2-3/8	35422	35423
-	-	5.20	0.2047	32mm	60mm	35426	35427
-	5	5.22	0.2055	1-1/4	2-3/8	35430	35431
-	-	5.30	0.2087	32mm	60mm	35434	35435
-	4	5.31	0.2090	1-1/4	2-3/8	35438	35439
-	-	5.40	0.2126	32mm	60mm	35442	35443
-	3	5.41	0.2130	1-1/4	2-3/8	35446	35447
-	-	5.50	0.2165	32mm	60mm	35450	35451
7/32	-	5.55	0.2188	1-1/4	2-3/8	35454	35455
-	-	5.60	0.2205	33mm	62mm	35458	35459
-	2	5.61	0.2210	1-5/16	2-7/16	35462	35463
-	-	5.70	0.2244	33mm	62mm	35466	35467
-	1	5.79	0.2280	1-5/16	2-7/16	35470	35471
-	-	5.80	0.2283	33mm	62mm	35474	35475
-	-	5.90	0.2323	33mm	62mm	35478	35479
-	A	5.94	0.2340	1-5/16	2-7/16	35482	35483
15/64	-	5.95	0.2344	1-5/16	2-7/16	35486	35487
-	-	6.00	0.2362	35mm	64mm	35490	35491
-	B	6.05	0.2380	1-3/8	2-1/2	35494	35495
-	-	6.10	0.2402	35mm	64mm	35498	35499
-	C	6.15	0.2420	1-3/8	2-1/2	35502	35503
-	-	6.20	0.2441	35mm	64mm	35506	35507
-	D	6.25	0.2460	1-3/8	2-1/2	35510	35511



Screw Machine Length Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #	
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	-	6.30	0.2480	35mm	64mm	35514	35515
1/4	E	6.35	0.2500	1-3/8	2-1/2	35518	35519
-	-	6.40	0.2520	35mm	64mm	35522	35523
-	-	6.50	0.2559	35mm	64mm	35526	35527
-	F	6.53	0.2570	1-7/16	2-5/8	35530	35531
-	G	6.63	0.2610	1-7/16	2-5/8	35538	35539
17/64	-	6.75	0.2656	1-7/16	2-5/8	35546	35547
-	H	6.76	0.2660	1-1/2	2-11/16	35550	35551
-	-	6.80	0.2677	38mm	68mm	35554	35555
-	I	6.91	0.2720	1-1/2	2-11/16	35562	35563
-	-	7.00	0.2756	38mm	68mm	35566	35567
-	J	7.04	0.2770	1-1/2	2-11/16	35570	35571
-	K	7.14	0.2810	1-1/2	2-11/16	35578	35579
9/32	-	7.14	0.2812	1-1/2	2-11/16	35582	35583
-	L	7.37	0.2900	1-9/16	2-3/4	35594	35595
-	M	7.49	0.2950	1-9/16	2-3/4	35602	35603
-	-	7.50	0.2953	40mm	70mm	35606	35607
19/64	-	7.54	0.2969	1-9/16	2-3/4	35610	35611
-	N	7.67	0.3020	1-5/8	2-13/16	35618	35619
5/16	-	7.94	0.3125	1-5/8	2-13/16	35634	35635
-	-	8.00	0.3150	41mm	71mm	35638	35639
-	O	8.03	0.3160	1-11/16	2-15/16	35642	35643
-	P	8.21	0.3230	1-11/16	2-15/16	35654	35655
21/64	-	8.33	0.3281	1-11/16	2-15/16	35662	35663
-	Q	8.43	0.3320	1-11/16	3	35670	35671
-	-	8.50	0.3346	43mm	76mm	35674	35675
-	R	8.61	0.3390	1-11/16	3	35682	35683
11/32	-	8.73	0.3438	1-11/16	3	35690	35691
-	-	8.80	0.3607	44mm	78mm	35640	35641
-	S	8.84	0.3480	1-3/4	3-1/16	35698	35699
-	-	9.00	0.3543	44mm	78mm	35706	35707
-	T	9.09	0.3580	1-3/4	3-1/16	35710	35711
23/64	-	9.13	0.3594	1-3/4	3-1/16	35718	35719
-	U	9.35	0.3680	1-13/16	3-1/8	35730	35731
-	-	9.50	0.3740	46mm	79mm	35738	35739
3/8	-	9.53	0.3750	1-13/16	3-1/8	35742	35743
-	V	9.58	0.3770	1-7/8	3-1/4	35746	35747
-	W	9.81	0.3860	1-7/8	3-1/4	35762	35763
25/64	-	9.92	0.3906	1-7/8	3-1/4	35770	35771
-	-	10.00	0.3937	48mm	83mm	35774	35775
-	X	10.08	0.3970	1-15/16	3-5/16	35778	35779
-	Y	10.26	0.4040	1-15/16	3-5/16	35790	35791
13/32	-	10.32	0.4062	1-15/16	3-5/16	35798	35799
-	Z	10.49	0.4130	2	3-3/8	35806	35807



GP Drills

Screw Machine Length Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #	
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	-	10.50	0.4134	51mm	86mm	35810	35811
27/64	-	10.72	0.4219	2	3-3/8	35822	35823
-	-	11.00	0.4331	52mm	87mm	35834	35835
7/16	-	11.11	0.4375	2-1/16	3-7/16	35842	35843
-	-	11.50	0.4528	54mm	90mm	35858	35859
29/64	-	11.51	0.4531	2-1/8	3-9/16	35862	35863
15/32	-	11.91	0.4688	2-1/8	3-5/8	35882	35883
-	-	12.00	0.4724	54mm	92mm	35886	35887
31/64	-	12.30	0.4844	2-3/16	3-11/16	35902	35903
-	-	12.50	0.4921	55mm	95mm	35910	35911
1/2	-	12.70	0.5000	2-1/4	3-3/4	35918	35919



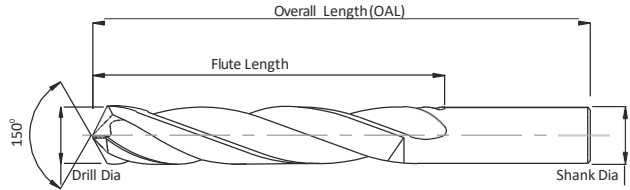
Shank Dia: h6
Drill Dia: h7



3 Flute Drills

Inch and Metric

- Ideal drill when precise hole dimension is required
- 3 Flute design allows higher MRR, produces more straight holes
- 150° six facet self-centering drill
- Manufactured from premium submicron grain carbide



DESCRIPTION					EDP #	
Fraction Size	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	3.00	0.1181	20mm	50mm	39560	39561
1/8	3.18	0.1250	3/4	1-7/8	39510	39563
-	3.30	0.1299	20mm	50mm	39565	39566
-	3.50	0.1378	20mm	50mm	39570	39571
9/64	3.57	0.1406	13/16	1-15/16	39511	39573
5/32	3.97	0.1562	7/8	2-1/16	39512	39574
-	4.00	0.1575	23mm	50mm	39575	39576
11/64	4.37	0.1719	7/8	2-1/8	39513	39578
-	4.50	0.1770	24mm	55mm	39580	39581
3/16	4.76	0.1875	15/16	2-3/16	39514	39583
-	4.80	0.1890	24mm	55mm	39585	39586
-	5.00	0.1968	24mm	55mm	39590	39591
13/64	5.16	0.2031	1	2-1/4	39515	39593
-	5.50	0.2165	29mm	63mm	39595	39596
7/32	5.55	0.2187	1-1/16	2-3/8	39516	39598
15/64	5.95	0.2344	1-1/8	2-7/16	39517	39599
-	6.00	0.2362	29mm	63mm	39600	39601
1/4	6.35	0.2500	1-3/16	2-1/2	39518	39603
-	6.50	0.2559	29mm	63mm	39605	39606
17/64	6.75	0.2656	1-1/4	2-5/8	39519	39609
-	6.80	0.2677	34mm	69mm	39610	39611
-	7.00	0.2756	34mm	69mm	39615	39616
9/32	7.14	0.2812	1-5/16	2-11/16	39520	39621
-	7.50	0.2953	34mm	69mm	39620	39624
19/64	7.54	0.2969	1-3/8	2-3/4	39521	39618
	7.70	0.3031	38mm	75mm	39623	39619
5/16	7.94	0.3125	1-7/16	2-13/16	39522	39628
-	8.00	0.3150	38mm	75mm	39625	39626
21/64	8.33	0.3281	1-1/2	2-15/16	39523	39629
-	8.50	0.3346	38mm	75mm	39630	39631
11/32	8.73	0.3438	1-1/2	3	39524	39633
-	9.00	0.3543	41mm	80mm	39635	39636
23/64	9.13	0.3594	1-9/16	3-1/16	39525	39638
-	9.50	0.3740	41mm	80mm	39640	39641
3/8	9.53	0.3750	1-5/8	3-1/8	39526	39634
25/64	9.92	0.3906	1-5/8	3-1/4	39527	39639
-	10.00	0.3937	41mm	80mm	39645	39646
-	10.20	0.4016	41mm	80mm	39650	39651
13/32	10.32	0.4062	1-5/8	3-5/16	39528	39643
-	10.50	0.4134	41mm	80mm	39655	39656



Shank Dia: h6
Drill Dia: h7



GP Drills

3 Flute Drills

Inch and Metric

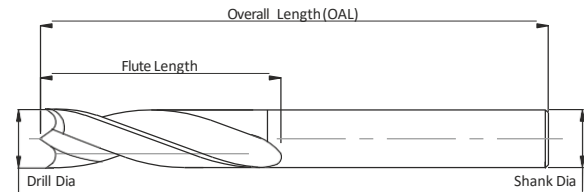
DESCRIPTION					EDP #	
Fraction Size	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
27/64	10.72	0.4219	1-21/32	3-3/8	39529	39644
-	10.80	0.4252	45mm	88mm	39660	39661
-	11.00	0.4331	45mm	88mm	39665	39666
7/16	11.11	0.4375	1-3/4	3-7/16	39530	39648
-	11.50	0.4528	48mm	92mm	39670	39671
29/64	11.51	0.4531	1-7/8	3-7/16	39531	39649
15/32	11.91	0.4688	1-7/8	3-5/8	39532	39653
-	12.00	0.4724	48mm	92mm	39675	39676
31/64	12.30	0.4844	2	3-11/16	39533	39654
-	12.50	0.4920	58mm	102mm	39680	39681
1/2	12.70	0.5000	2	3-3/4	39534	39658
33/64	13.10	0.5156	2	3-7/8	39535	39659
17/32	13.49	0.5313	2	3-7/8	39536	39662
35/64	13.89	0.5469	2-1/8	4	39537	39663
9/16	14.29	0.5625	2-1/8	4	39538	39664
37/64	14.68	0.5781	2-1/8	4	39539	39668
19/32	15.08	0.5937	2-1/8	4	39540	39669
39/64	15.48	0.6094	2-1/8	4	39541	39673
5/8	15.88	0.6250	2-1/4	4-1/4	39542	39674
41/64	16.27	0.6406	2-1/4	4-1/4	39543	39678
21/32	16.67	0.6562	2-1/4	4-1/4	39544	39679
43/64	17.07	0.6719	2-1/4	4-1/4	39545	39683
11/16	17.46	0.6875	2-7/8	4-5/8	39546	39684
45/64	17.86	0.7031	2-7/8	4-5/8	39547	39685
23/32	18.25	0.7187	2-7/8	4-5/8	39548	39686
47/64	18.65	0.7344	2-7/8	4-5/8	39549	39687
3/4	19.05	0.7500	3-1/8	5	39550	39688



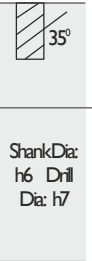
Graphite Drills

Metric

- Eliminate tears at exit
- Designed for drilling graphite and reinforced composite materials
- Manufactured from premium submicron grain carbide



DESCRIPTION				EDP #
Drill Dia	Shank Diameter	Flute Length	OAL	Uncoated
2.40	2.4	12.5	44	52000
2.50	2.5	12.5	46	52002
2.60	2.6	12.5	46	52004
2.70	2.7	12.5	46	52006
2.80	2.8	16	48	52008
2.90	2.9	16	48	52010
3.00	3.0	16	48	52012
3.10	3.1	16	48	52014
3.20	3.2	16	48	52016
3.30	3.3	17.5	49	52018
3.40	3.4	17.5	49	52020
3.50	3.5	17.5	49	52022
3.60	3.6	17.5	49	52024
3.70	3.7	19	52	52026
3.80	3.8	19	52	52028
3.90	3.9	19	52	52030
4.00	4.0	22	54	52032
4.10	4.1	22	54	52034
4.20	4.2	22	54	52036
4.30	4.3	22	54	52038
4.40	4.4	24	56	52040
4.50	4.5	24	56	52042
4.60	4.6	24	56	52044
4.70	4.7	24	56	52046
4.80	4.8	25.5	57	52048
4.90	4.9	25.5	57	52050
5.00	5.0	25.5	57	52052
5.10	5.1	25.5	57	52054
5.20	5.2	27	60	52056
5.30	5.3	27	60	52058
5.40	5.4	27	60	52060
5.50	5.5	27	60	52062
5.60	5.6	28.5	62	52064
5.70	5.7	28.5	62	52066
5.80	5.8	28.5	62	52068
5.90	5.9	28.5	62	52070
6.00	6.0	32	64	52072
6.10	6.1	32	64	52074
6.20	6.2	32	64	52076
6.30	6.3	32	64	52078



GP Drills

Graphite Drills

Metric

DESCRIPTION				EDP #
Drill Dia	Shank Diameter	Flute Length	OAL	Uncoated
6.40	6.4	32	64	52080
6.50	6.5	33.5	67	52082
7.00	7.0	35	68	52084
7.50	7.5	35	70	52086
8.00	8.0	38	71	52088
8.50	8.5	39.5	75	52090
9.00	9.0	39.5	78	52092
9.50	9.5	41.5	79	52094
10.00	10.0	44.5	84	52096
10.50	10.5	46	86	52098
11.00	11.0	47.5	87	52100
11.50	11.5	51	92	52102
12.00	12.0	54	94	52104



Shank Dia:
h6 Drill
Dia: h7

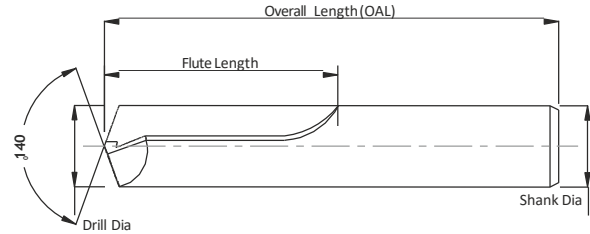


GP Drills

Straight Flute Drills

Inch, Letter, Number and Metric

- The added web strength of the straight flutes and special point configuration easily penetrates work pieces with minimal deflection
- Designed to be used in hardened steel, Stainless steels, and other exotic materials 38-40 Rockwell "C" scale
- Accurately sized holes are produced without annealing or softening the work piece
- Reamer type finishes are easily produced



DESCRIPTION						EDP #	
Fraction Size	Letter / Wire	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
1/32	-	0.79	0.0312	1/2	1-1/2	32014	32015
-	-	1.00	0.0394	12mm	38mm	32018	32019
-	60	-	0.0400	1/2	1-1/2	32000	32001
-	59	-	0.0410	1/2	1-1/2	32002	32003
-	58	-	0.0420	1/2	1-1/2	32004	32005
-	57	-	0.0430	1/2	1-1/2	32006	32007
-	-	1.10	0.0433	12mm	38mm	32020	32021
-	56	1.18	0.0465	1/2	1-1/2	32024	32025
3/64	-	1.19	0.0469	1/2	1-1/2	32028	32027
-	-	1.20	0.0472	12mm	38mm	32029	32026
-	-	1.30	0.0511	12mm	38mm	32030	32031
-	55	1.32	0.0520	1/2	1-1/2	32032	32033
-	54	-	0.0550	1/2	1-1/2	32036	32037
-	-	1.40	0.0551	12mm	38mm	32038	32039
-	-	1.50	0.0591	12mm	38mm	32040	32041
-	53	1.51	0.0595	1/2	1-1/2	32044	32045
1/16	-	1.59	0.0625	5/8	1-1/2	32048	32049
-	-	1.60	0.0630	16mm	38mm	32050	32051
-	52	1.61	0.0635	11/16"	1-11/16	32052	32053
-	-	1.70	0.0669	17mm	43mm	32054	32055
-	51	1.70	0.0670	11/16	1-11/16	32056	32057
-	50	1.78	0.0700	11/16	1-11/16	32060	32061
-	-	1.80	0.0708	17mm	43mm	32062	32063
-	49	1.85	0.0730	11/16	1-11/16	32064	32065
-	-	1.90	0.0748	17mm	43mm	32066	32067
-	48	1.93	0.0760	11/16	1-11/16	32068	32069
5/64	-	1.98	0.0781	11/16	1-11/16	32072	32073
-	47	1.99	0.0785	3/4	1-3/4	32076	32077
-	-	2.00	0.0787	19mm	44mm	32080	32081
-	46	2.06	0.0810	3/4	1-3/4	32084	32085
-	45	2.08	0.0820	3/4	1-3/4	32088	32089
-	-	2.10	0.0826	19mm	44mm	32090	32091
-	44	2.18	0.0860	3/4	1-3/4	32092	32093
-	-	2.20	0.0866	19mm	44mm	32094	32095
-	43	2.26	0.0890	3/4	1-3/4	32096	32097
-	-	2.30	0.0905	19mm	44mm	32098	32099
-	42	2.37	0.0935	3/4	1-3/4	32100	32101
3/32	-	2.38	0.0938	3/4	1-3/4	32104	32105
-	-	2.40	0.0944	19mm	44mm	32106	32107
-	41	2.44	0.0960	13/16	1-13/16	32108	32109



Shank Dia: h6
Drill Dia: h7



GP Drills

Straight Flute Drills

Inch, Letter, Number and Metric

DESCRIPTION						EDP #	
Fraction Size	Letter / Wire	Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	40	2.49	0.0980	13/16	1-13/16	32112	32113
-	-	2.50	0.0984	21mm	46mm	32116	32117
-	39	2.53	0.0995	13/16	1-13/16	32120	32121
-	38	2.58	0.1015	13/16	1-13/16	32124	32125
-	-	2.60	0.1024	21mm	46mm	32126	32127
-	37	2.64	0.1040	13/16	1-13/16	32128	32129
-	-	2.70	0.1063	21mm	46mm	32130	32131
-	36	2.71	0.1065	13/16	1-13/16	32132	32133
7/64	-	2.78	0.1094	13/16	1-13/16	32136	32137
-	35	2.79	0.1100	7/8	1-7/8	32140	32141
-	-	2.80	0.1103	22mm	48mm	32142	32143
-	34	2.82	0.1110	7/8	1-7/8	32144	32145
-	33	2.87	0.1130	7/8	1-7/8	32148	32149
-	-	2.90	0.1141	22mm	48mm	32150	32151
-	32	2.95	0.1160	7/8	1-7/8	32152	32153
-	-	3.00	0.1181	22mm	48mm	32156	32157
-	31	3.05	0.1200	7/8"	1-7/8	32160	32161
-	-	3.10	0.1221	22mm	48mm	32164	32165
1/8	-	3.18	0.1250	7/8	1-7/8	32168	32170
-	-	3.20	0.1260	22mm	48mm	32172	32173
-	30	3.26	0.1285	15/16	1-15/16	32176	32177
-	-	3.30	0.1290	24mm	50mm	32180	32181
-	-	3.40	0.1339	24mm	50mm	32184	32185
-	29	3.45	0.1360	15/16	1-15/16	32188	32189
-	-	3.50	0.1378	24mm	52mm	32192	32193
-	28	3.57	0.1405	15/16	1-15/16	32196	32197
9/64	-	3.57	0.1406	15/16	1-15/16	32200	32201
-	-	3.60	0.1418	24mm	50mm	32204	32205
-	27	3.66	0.1440	1	2-1/16	32208	32209
-	-	3.70	0.1457	25.4mm	51mm	32212	32213
-	26	3.73	0.1470	1	2-1/16	32216	32217
-	25	-	0.1495	1	2-1/16	32220	32221
-	-	3.80	0.1496	25.4mm	51mm	32224	32225
-	24	3.86	0.1520	1	2-1/16	32228	32229
-	-	3.90	0.1535	25.4mm	51mm	32232	32233
-	23	3.91	0.1540	1	2-1/16	32236	32237
5/32	-	3.97	0.1562	1	2-1/16	32240	32241
-	22	3.99	0.1570	1-1/16	2-1/8	32244	32245
-	-	4.00	0.1575	27mm	53mm	32248	32249
-	21	4.04	0.1590	1-1/16	2-1/8	32252	32253
-	20	4.09	0.1610	1-1/16	2-1/8	32256	32257
-	-	4.10	0.1614	27mm	53mm	32260	32261
-	-	4.20	0.1654	27mm	53mm	32264	32265
-	19	4.22	0.1660	1-1/16	2-1/8	32268	32269



Shank Dia: h6 Drill Dia: h7



Straight Flute Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #	
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	-	4.30	0.1693	27mm	53mm	32272	32273
-	18	4.31	0.1695	1-1/16	2-1/8	32276	32277
11/64	-	4.37	0.1719	1-1/16	2-1/8	32280	32281
-	17	4.39	0.1730	1-1/8	2-3/16	32284	32285
-	-	4.40	0.1732	29mm	55mm	32288	32289
-	16	4.50	0.1770	1-1/8	2-3/16	32292	32293
-	-	4.50	0.1772	29mm	55mm	32296	32297
-	15	4.57	0.1800	1-1/8	2-3/16	32300	32301
-	-	4.60	0.1811	29mm	55mm	32304	32305
-	14	4.62	0.1820	1-1/8	2-3/16	32308	32309
-	13	4.70	0.1850	1-1/8	2-3/16	32312	32313
3/16	-	4.76	0.1875	1-1/8	2-3/16	32316	32317
-	-	4.80	0.1890	29mm	55mm	32320	32321
-	12	-	0.1890	1-3/16	2-1/4	32324	32325
-	11	4.85	0.1910	1-3/16	2-1/4	32328	32329
-	-	4.90	0.1930	30mm	57mm	32332	32333
-	10	4.91	0.1935	1-3/16	2-1/4	32336	32337
-	9	4.98	0.1960	1-3/16	2-1/4	32340	32341
-	-	5.00	0.1969	30mm	57mm	32344	32345
-	8	5.05	0.1990	1-3/16	2-1/4	32348	32349
-	-	5.10	0.2008	30mm	57mm	32352	32353
-	7	5.11	0.2010	1-3/16	2-1/4	32356	32357
13/64	-	5.16	0.2031	1-3/16	2-1/4	32360	32361
-	6	5.18	0.2040	1-1/4	2-3/8	32364	32365
-	-	5.20	0.2047	32mm	60mm	32368	32369
-	5	5.22	0.2055	1-1/4	2-3/8	32372	32373
-	-	5.30	0.2087	32mm	60mm	32376	32377
-	4	5.31	0.2090	1-1/4	2-3/8	32380	32381
-	-	5.40	0.2126	32mm	60mm	32384	32385
-	3	5.41	0.2130	1-1/4	2-3/8	32388	32389
-	-	5.50	0.2165	32mm	60mm	32392	32393
7/32	-	5.55	0.2188	1-1/4	2-3/8	32396	32397
-	-	5.60	0.2205	32mm	60mm	32400	32401
-	2	5.61	0.2210	1-5/16	2-7/16	32404	32405
-	-	5.70	0.2244	33mm	62mm	32408	32409
-	1	5.79	0.2280	1-5/16	2-7/16	32412	32413
-	-	5.80	0.2284	33mm	62mm	32416	32417
-	-	5.90	0.2324	33mm	62mm	32420	32421
-	A	5.94	0.2340	1-5/16	2-7/16	32424	32425
15/64	-	5.95	0.2344	1-5/16	2-7/16	32428	32429
-	-	6.00	0.2362	33mm	62mm	32432	32433
-	B	6.05	0.2380	1-3/8	2-1/2	32436	32437
-	-	6.10	0.2411	35mm	64mm	32440	32441
-	C	6.15	0.2420	1-3/8	2-1/2	32444	32445



Shank Dia: h6 Drill Dia: h7



GP Drills

Straight Flute Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #	
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	-	6.20	0.2441	35mm	64mm	32448	32449
-	D	6.25	0.2461	1-3/8	2-1/2	32452	32453
-	-	6.30	0.2480	35mm	64mm	32456	32457
1/4	E	6.35	0.2500	1-3/8	2-1/2	32460	32461
-	-	6.40	0.2518	35mm	64mm	32464	32465
-	-	6.50	0.2559	35mm	64mm	32468	32469
-	F	6.53	0.2570	1-7/16	2-5/8	32472	32473
-	G	6.53	0.2610	1-7/16	2-5/8	32480	32481
17/64	-	6.75	0.2656	1-7/16	2-5/8	32488	32489
-	H	6.76	0.2660	1-1/2	2-11/16	32492	32493
-	I	6.91	0.2720	1-1/2	2-11/16	32504	32505
-	-	7.00	0.2756	38mm	68mm	32508	32509
-	J	7.04	0.2770	1-1/2	2-11/16	32512	32513
-	K	7.14	0.2810	1-1/2	2-11/16	32518	32519
9/32	-	7.14	0.2812	1-1/2	2-11/16	32520	32521
-	L	7.37	0.2900	1-9/16	2-3/4	32532	32533
-	M	7.49	0.2950	1-9/16	2-3/4	32540	32541
-	-	7.50	0.2953	40mm	70mm	32544	32545
19/64	-	7.54	0.2969	1-9/16	2-3/4	32548	32549
-	N	7.67	0.3020	1-5/8	2-13/16	32556	32557
5/16	-	7.94	0.3125	1-5/8	2-13/16	32572	32573
-	-	8.00	0.3150	41mm	71mm	32576	32577
-	O	8.03	0.3160	1-11/16	2-15/16	32580	32581
-	P	8.21	0.3230	1-11/16	2-15/16	32592	32593
21/64	-	8.33	0.3281	1-11/16	2-15/16	32600	32601
-	Q	8.43	0.3320	1-11/16	3	32608	32609
-	-	8.50	0.3246	43mm	76mm	32612	32613
-	R	8.61	0.3390	1-11/16	3	32620	32621
11/32	-	8.73	0.3438	1-11/16	3	32628	32629
-	S	8.84	0.3480	1-3/4	3-1/16	32636	32637
-	-	9.00	0.3543	44mm	78mm	32644	32645
-	T	9.09	0.3580	1-3/4	3-1/16	32648	32649
23/64	-	9.13	0.3594	1-3/4	3-1/16	32656	32657
-	U	9.35	0.3680	1-3/4	3-1/16	32668	32669
-	-	9.50	0.3740	46mm	79mm	32676	32677
3/8	-	9.53	0.3750	1-13/16	3-1/8	32680	32681
-	V	9.58	0.3770	1-7/8	3-1/4	32684	32685
-	W	9.81	0.3860	1-7/8	3-1/4	32700	32701
25/64	-	9.92	0.3906	1-7/8	3-1/4	32708	32709
-	-	10.00	0.3937	48mm	83mm	32712	32713
-	X	10.08	0.3970	1-15/16	3-5/16	32716	32717
-	Y	10.26	0.4040	1-15/16	3-5/16	32728	32729
13/32	-	10.32	0.4062	1-15/16	3-5/16	32736	32737
-	Z	10.49	0.4130	2.0	3-3/8	32744	32745



Shank Dia: h6 Drill Dia: h7



Straight Flute Drills

Inch, Letter, Number and Metric

Fraction Size	Letter / Wire	DESCRIPTION				EDP #	
		Metric	Decimal Equiv.	Flute Length	OAL	Uncoated	Coated TiAlN
-	-	10.50	0.4134	51mm	86mm	32748	32749
27/64	-	10.72	0.4219	2	3-3/8	32760	32761
-	-	11.00	0.4331	52mm	87mm	32772	32773
7/16	-	11.11	0.4375	2-1/16	3-7/16	32776	32777
-	-	11.50	0.4528	54mm	90mm	32780	32781
29/64	-	11.51	0.4531	2-1/8	3-9/16	32784	32785
15/32	-	11.91	0.4688	2-1/8	3-9/16	32788	32789
-	-	12.00	0.4724	54mm	92mm	32792	32793
31/64	-	12.30	0.4844	2-3/16	3-11/16	32796	32797
-	-	12.50	0.4921	57mm	95mm	32800	32801
1/2	-	12.70	0.5000	2-1/4	3-3/4	32804	32805

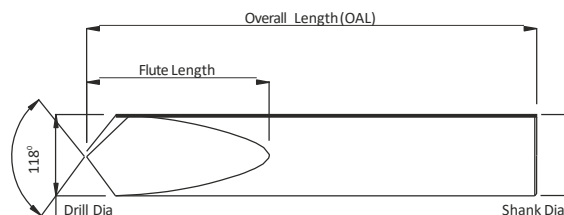


GP Drills

Spade Drills

Inch and Metric

- Ideal for drilling thin sheet materials
- Designed for shallow hole drilling, do not exceed two diameters deep
- Heavy duty web reduces breakage
- Manufactured from premium submicron grain carbide



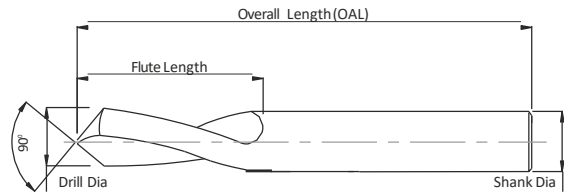
DESCRIPTION					EDP #
Drill Dia	Decimal Equiv.	Shank Diameter	Flute Length	OAL	Uncoated
1/32	0.0312	1/32	3/16	1-1/4	32920
3/64	0.0469	3/64	7/32	1-1/2	32926
1/16	0.0625	1/16	5/16	1-1/2	32932
5/64	0.0781	5/64	7/16	1-1/2	32938
3/32	0.0938	3/32	7/16	1-1/2	32944
7/64	0.1094	7/64	7/16	1-1/2	32950
3mm	0.1181	3mm	10mm	38mm	32956
1/8	0.1250	1/8	7/16	1-1/2	32962
9/64	0.1406	9/64	1/2	2	32968
5/32	0.1562	5/32	9/16	2	32974
4mm	0.1575	4mm	12mm	50mm	32980
11/64	0.1719	11/64	9/16	2	32986
3/16	0.1875	3/16	9/16	2	32992
7/32	0.2188	7/32	19/32	2	32998
6mm	0.2362	6mm	16mm	50mm	33004
1/4	0.2500	1/4	11/16	2	33010
9/32	0.2812	9/32	7/8	2-1/2	33016
5/16	0.3125	5/16	7/8	2-1/2	33022
8mm	0.3150	8mm	22mm	63mm	33028
11/32	0.3438	11/32	15/16	2-1/2	33034
3/8	0.3750	3/8	1-1/8	2-1/2	33040
10mm	0.3937	10mm	25mm	63mm	33046
13/32	0.4062	13/32	1-1/8	2-1/2	33052
7/16	0.4375	7/16	1-3/16	2-1/2	33058
15/32	0.4687	15/32	1-3/16	2-1/2	33064
12mm	0.4724	12mm	28mm	63mm	33070
1/2	0.5000	1/2	1-3/16	2-1/2	33076



2 Flute N/C Spotting Drills

Inch and Metric

- Ideal for chamfering or spot drilling
- For centering and countersinking on NC and CNC Machines
- Manufactured from premium submicron level carbide grain



DESCRIPTION				EDP #		
Drill Dia	Decimal Equiv.	Flute Length	OAL	90°	Uncoated 120°	145°
1/8	0.1250	9/16	1-1/2	31900	31902	31903
3/16	0.1875	3/4	2	31904	31906	31905
5mm	0.1969	14mm	62mm	31930	31932	31933
6mm	0.2362	16mm	66mm	31934	31936	31935
1/4	0.2500	1	2-1/2	31908	31910	31911
5/16	0.3125	1	2-1/2	31912	31914	31915
8mm	0.3150	21mm	79mm	31938	31940	31939
3/8	0.3750	1	2-1/2	31916	31918	31919
10mm	0.3937	25mm	89mm	31942	31944	31943
12mm	0.4724	30mm	102mm	31946	31948	31947
1/2	0.5000	1-1/4	3	31920	31922	31923
16mm	0.6299	37.5mm	115mm	31950	31952	31951
20mm	0.7874	45mm	131mm	31954	31956	31955



Shank Dia:
h6 Drill
Dia: h7

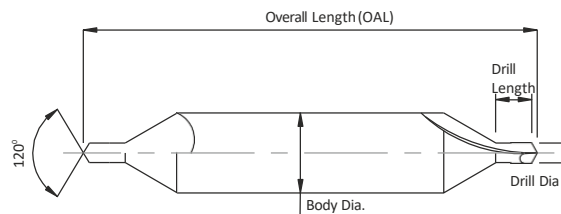
GP Drills



Combined Drills and Countersink

Inch and Metric

- Ideal for chamfering
- For centering and countersinking on NC and CNC Machines
- Manufactured from premium submicron level carbide grain



60° Combined Drills Regular Length - Fraction

DESCRIPTION				EDP #		
Size	Drill Dia	Body Dia	OAL	Uncoated	Coated TiAlN	CH
00	0.025	1/8	1-1/4	31504	31544	31546
0	1/32	1/8	1-1/4	31508	31548	31550
1	3/64	1/8	1-1/4	31512	31552	31554
2	5/64	3/16	1-7/8	31516	31556	31558
3	7/64	1/4	2	31520	31560	31562
4	1/8	5/16	2-1/8	31524	31564	31566
5	3/16	7/16	2-3/4	31528	31568	31570
6	7/32	1/2	3	31532	31572	31574
7	1/4	5/8	3-1/4	31536	31576	31578
8	5/16	3/4	3-1/4	31540	31580	31582



60° Combined Drills Regular Length - Metric

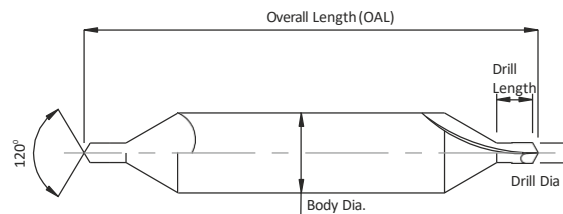
DESCRIPTION			EDP #	
Drill Dia	Body Dia	OAL	Uncoated	Coated TiAlN
1	3.15	31.5	31700	31704
1.25	3.15	31.5	31708	31712
1.6	4	35.5	31716	31720
2	5	40	31724	31728
2.5	6.3	45	31732	31736
3.15	8	50	31740	31744
4	10	56	31748	31752
5	12.5	63	31756	31760



Combined Drills and Countersink

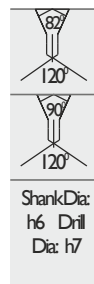
Inch and Metric

- Ideal for chamfering
- For centering and countersinking on NC and CNC Machines
- Manufactured from premium submicron level carbide grain



60° Combined Drills Long Length - Fraction

DESCRIPTION				EDP #
Size	Drill Dia	Body Dia	OAL	Uncoated
1	3/64	1/8	4	31664
2	5/64	3/16	4	31668
3	7/64	1/4	4	31672
4	1/8	5/16	4	31676
5	3/16	7/16	6	31680
6	7/32	1/2	6	31684
7	1/4	5/8	6	31688
8	5/16	3/4	6	31692



GP Drills

82° and 90° Combined Drills Regular Length - Fraction

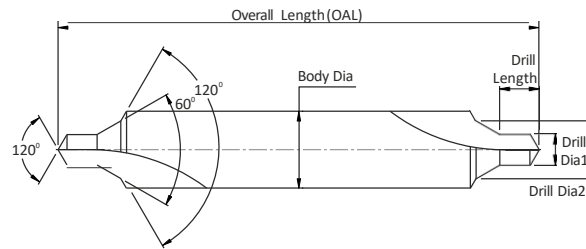
DESCRIPTION				EDP #	
Numbers	Drill Dia	Body Dia	OAL	82° Uncoated	90°
00	0.025	1/8	1-1/4	31584	31624
0	1/32	1/8	1-1/4	31588	31628
1	3/64	1/8	1-1/4	31592	31632
2	5/64	3/16	1-7/8	31596	31636
3	7/64	1/4	2	31600	31640
4	1/8	5/16	2-1/8	31604	31644
5	3/16	7/16	2-3/4	31608	31648
6	7/32	1/2	3	31612	31652



Combined Drill Form B

Regular Length

- Centerdrill is a dual-purpose drill which includes a 60° angle for burnishing and a 120° flare for chamfering
- This drill is used for the heaviest of work applications



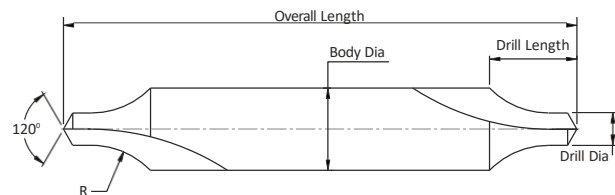
DESCRIPTION					EDP #	
Drill Dia (d1)	Drill Dia (d2)	Drill Length	Body Dia	OAL	Uncoated	Coated TiAlN
1.00	2.12	1.30	4.00	35.50	25950	25951
1.25	2.65	1.60	5.00	40.00	25952	25953
1.60	3.35	2.00	6.30	45.00	25954	25955
2.00	4.25	2.50	8.00	50.00	25956	25957
2.50	5.30	3.10	10.00	56.00	25958	25959
3.15	6.70	3.90	11.20	60.00	25960	25961
4.00	8.50	5.00	14.00	67.00	25962	25963
5.00	10.60	6.30	18.00	75.00	25964	25965



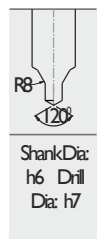
Combined Drill Form R

Regular Length

- Special purpose drill for producing radius centre holes.
- This drill is used for the heaviest of work applications.



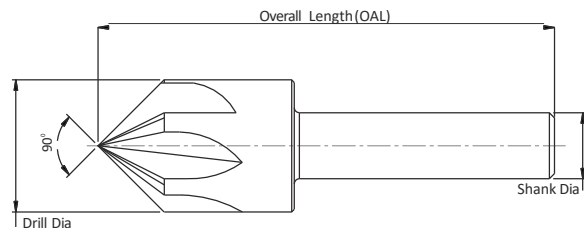
DESCRIPTION						EDP #	
Drill Dia	Body Dia	Drill Length	OAL	Radius R MAX	Radius R MIN	Uncoated	Coated TiAlN
1.00	3.15	3.00	31.50	3.15	2.50	25966	25967
1.25	3.15	3.35	31.50	4.00	3.15	25968	25969
1.60	4.00	4.25	35.50	5.00	4.00	25970	25971
2.00	5.00	5.30	40.00	6.30	5.00	25972	25973
2.50	6.30	6.70	45.00	8.00	6.30	25974	25975
3.15	8.00	8.50	50.00	10.00	8.00	25976	25977
4.00	10.00	10.60	56.00	12.50	10.00	25978	25979
5.00	12.50	13.20	63.00	16.00	12.50	25980	25981



Countersink

Inch and Metric

- Ideal for chamfering
- For centering and countersinking on NC and CNC Machines
- Manufactured from premium submicron level carbide grain



Single Flute Countersink

DESCRIPTION			EDP #			EDP #		
Drill Dia	Shank Dia	OAL	Uncoated			TiAlN Coated		
			60°	82°	90°	60°	82°	90°
1/8	1/8	1-1/2	38000	38004	38008	38001	38005	38009
3/16	3/16	2	38020	38024	38028	38021	38025	38029
1/4	1/4	2	38040	38044	38048	38041	38045	38049
3/8	1/4	2	38060	38064	38068	38061	38065	38069
1/2	1/4	2	38080	38084	38088	38081	38085	38089
5/8	1/2	2-3/4	38100	38104	38108	38101	38105	38109
3/4	1/2	2-3/4	38120	38124	38128	38121	38125	38129
1	1/2	3	38140	38144	38148	38141	38145	38149
1-1/4	3/4	3-1/4	38160	38164	38168	38161	38165	38169

Three Flute Countersink

DESCRIPTION			EDP #			EDP #	
Drill Dia	Shank Dia	OAL	Uncoated			TiAlN Coated	
			60°	82°	90°	82°	90°
1/8	1/8	1-1/2	38331	38300	38400	38301	38401
3/16	3/16	2	38332	38304	38404	38305	38405
1/4	1/4	2	38333	38308	38408	38309	38409
5/16	3/8	2-1/2	38334	38312	38412	38313	38413
3/8	1/4	2-1/2	38335	38316	38416	38317	38417
1/2	1/4	2-3/4	38337	38320	38420	38321	38421
5/8	3/8	3	38338	38324	38424	38325	38425
3/4	3/8	3	38339	38328	38428	38327	38429
1	1/2	3-1/2	38340	38344	38436	38330	38437



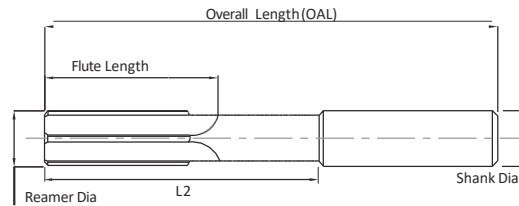
Six Flute Countersink

DESCRIPTION			EDP #			EDP #		
Drill Dia	Shank Dia	OAL	Uncoated			TiAlN Coated		
			60°	82°	90°	60°	82°	90°
1/8	1/8	1-1/2	38600	38604	38608	38601	38605	38609
3/16	3/16	2	38620	38624	38628	38621	38625	38629
1/4	1/4	2	38640	38644	38648	38641	38645	38649
5/16	1/4	2-1/2	38660	38664	38668	38661	38665	38669
3/8	1/4	2-1/2	38680	38684	38688	38681	38685	38689
1/2	1/4	2-1/2	38700	38704	38708	38701	38705	38709
5/8	1/2	2-5/8	38720	38724	38728	38721	38725	38729
3/4	1/2	2-3/4	38740	38744	38748	38741	38745	38749
7/8	1/2	3	38760	38764	38768	38761	38765	38769
1	1/2	3	38780	38784	38788	38781	38785	38789
1-1/4	3/4	3-1/4	38800	38804	38808	38801	38805	38809
1-1/2	3/4	3-1/2	38820	38824	38828	38821	38825	38829

Chucking Reamers

Inch, Letter, Number and Metric

- 4 Flutes in sizes up to .2540"; 6 flutes in sizes .2570" and up
- General purpose reaming in all materials including steel and alloys up to RC40, Stainless, Aluminum, Brass, Bronze, and Plastics



Reamers

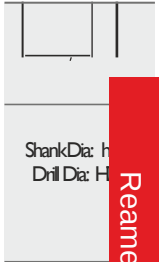
DESCRIPTION						EDP #
Decimal Equiv.	Fraction Size	Letter / Wire	Metric	Flute Length	OAL	Uncoated
0.0280	-	70	0.71	1/4	1-1/2	36000
0.0292	-	69	0.74	1/4	1-1/2	36002
0.0310	-	68	0.79	1/4	1-1/2	36004
0.0312	1/32	-	0.80	1/4	1-1/2	36006
0.0320	-	67	0.81	1/4	1-1/2	36008
0.0330	-	66	0.84	1/4	1-1/2	36010
0.0350	-	65	0.89	1/4	1-1/2	36022
0.0360	-	64	0.91	1/4	1-1/2	36026
0.0370	-	63	0.94	1/4	1-1/2	36030
0.0380	-	62	0.97	1/4	1-1/2	36034
0.0390	-	61	0.99	1/4	1-1/2	36038
0.0393	-	-	1.00	1/4	1-1/2	36042
0.0400	-	60	1.02	1/4	1-1/2	36046
0.0410	-	59	1.04	1/4	1-1/2	36050
0.0420	-	58	1.07	3/8	1-1/2	36054
0.0430	-	57	1.09	3/8	1-1/2	36058
0.0465	-	56	1.18	3/8	1-1/2	36062
0.0469	3/64	-	1.19	3/8	1-1/2	36066
0.0472	-	-	1.20	8mm	35mm	36070
0.0492	-	-	1.25	10mm	38mm	36074
0.0512	-	-	1.30	10mm	38mm	36078
0.0520	-	55	1.32	3/8	1-1/2	36082
0.0531	-	-	1.35	10mm	38mm	36086
0.0550	-	54	1.40	3/8	1-1/2	36090
0.0551	-	-	1.40	10mm	38mm	36094
0.0571	-	-	1.45	10mm	38mm	36098
0.0591	-	-	1.50	10mm	38mm	36102
0.0595	-	53	1.51	3/8	1-1/2	36106
0.0610	-	-	1.55	10mm	38mm	36110
0.0620	-	-	1.57	3/8	1-1/2	36112
0.0625	1/16	-	1.59	3/8	1-1/2	36114
0.0630	-	-	1.60	10mm	38mm	36118
0.0635	-	52	1.61	3/8	1-1/2	36122
0.0640	-	-	1.63	3/8	1-1/2	36124
0.0650	-	-	1.65	10mm	38mm	36126
0.0669	-	-	1.70	11mm	44mm	36130
0.0670	-	51	1.70	1/2	1-3/4	36134
0.0689	-	-	1.75	11mm	44mm	36138
0.0700	-	50	1.78	1/2	1-3/4	36142
0.0709	-	-	1.80	11mm	44mm	36146



Chucking Reamers

Inch, Letter, Number and Metric

Decimal Equiv.	Fraction Size	DESCRIPTION				EDP #
		Letter / Wire	Metric	Flute Length	OAL	Uncoated
0.0728	-	-	1.85	11mm	44mm	36150
0.0730	-	49	1.85	1/2	1-3/4	36154
0.0748	-	-	1.90	11mm	44mm	36158
0.0760	-	48	1.93	1/2	1-3/4	36162
0.0768	-	-	1.95	11mm	44mm	36166
0.0781	5/64	-	1.98	1/2	1-3/4	36170
0.0785	-	47	1.99	1/2	1-3/4	36174
0.0787	-	-	2.00	11mm	44mm	36178
0.0800	-	-	2.03	1/2	1-3/4	36180
0.0807	-	-	2.05	13mm	51mm	36182
0.0810	-	46	2.06	1/2	2	36186
0.0820	-	45	2.08	1/2	2	36190
0.0827	-	-	2.10	13mm	51mm	36194
0.0846	-	-	2.15	13mm	51mm	36198
0.0860	-	44	2.18	1/2	2	36202
0.0866	-	-	2.20	13mm	51mm	36206
0.0886	-	-	2.25	13mm	51mm	36210
0.0890	-	43	2.26	1/2	2	36214
0.0906	-	-	2.30	13mm	51mm	36218
0.0915	-	-	2.32	1/2	2	36220
0.0925	-	-	2.35	13mm	51mm	36222
0.0930	-	-	2.36	1/2	2	36224
0.0935	-	42	2.37	1/2	2	36226
0.0938	3/32	-	2.38	1/2	2	36230
0.0940	-	-	2.39	1/2	2	36232
0.0945	-	-	2.40	13mm	51mm	36234
0.0950	-	-	2.41	1/2	2	36236
0.0960	-	41	2.44	5/8	2-1/4	36238
0.0965	-	-	2.45	16mm	57mm	36242
0.0980	-	40	2.49	5/8	2-1/4	36246
0.0984	-	-	2.50	5/8	2-1/4	36250
0.0995	-	39	2.53	5/8	2-1/4	36254
0.1015	-	38	2.58	5/8	2-1/4	36258
0.1024	-	-	2.60	16mm	57mm	36262
0.1040	-	37	2.64	5/8	2-1/4	36266
0.1063	-	-	2.70	16mm	57mm	36270
0.1065	-	36	2.71	5/8	2-1/4	36274
0.1083	-	-	2.75	16mm	57mm	36278
0.1094	7/64	-	2.78	5/8	2-1/4	36282
0.1100	-	35	2.79	5/8	2-1/4	36286
0.1102	-	-	2.80	16mm	57mm	36290
0.1110	-	34	2.82	5/8	2-1/4	36294
0.1130	-	33	2.87	5/8	2-1/4	36298
0.1142	-	-	2.90	16mm	57mm	36302



Reamers



Chucking Reamers

Inch, Letter, Number and Metric

Reamers

		DESCRIPTION				EDP #
Decimal Equiv.	Fraction Size	Letter / Wire	Metric	Flute Length	OAL	Uncoated
0.1160	-	32	2.95	5/8	2-1/4	36306
0.1181	-	-	3.00	16mm	57mm	36310
0.1200	-	31	3.05	5/8	2-1/4	36314
0.1220	-	-	3.10	16mm	57mm	36318
0.1230	-	-	3.12	5/8	2-1/4	36320
0.1240	-	-	3.15	5/8	2-1/4	36322
0.1245	-	-	3.16	5/8	2-1/4	36326
0.1247	-	-	3.17	5/8	2-1/4	36328
0.1250	1/8	-	3.18	5/8	2-1/4	36330
0.1255	-	-	3.19	5/8	2-1/4	36331
0.1260	-	-	3.20	5/8	2-1/4	36332
0.1260	-	-	3.20	16mm	57mm	36334
0.1265	-	-	3.21	5/8	2-1/4	36335
0.1270	-	-	3.23	5/8	2-1/4	36336
0.1285	-	30	3.26	5/8	2-1/4	36338
0.1299	-	-	3.30	19mm	57mm	36342
0.1310	-	-	3.33	3/4	2-1/2	36344
0.1319	-	-	3.35	19mm	57mm	36346
0.1339	-	-	3.40	19mm	57mm	36350
0.1350	-	-	3.43	3/4	2-1/2	36352
0.1358	-	-	3.45	19mm	57mm	36354
0.1360	-	29	3.45	3/4	2-1/2	36358
0.1378	-	-	3.50	3/4	2-1/2	36362
0.1398	-	-	3.55	19mm	57mm	36366
0.1405	-	28	3.57	3/4	2-1/2	36370
0.1406	9/64	-	3.57	3/4	2-1/2	36374
0.1417	-	-	3.60	19mm	57mm	36378
0.1437	-	-	3.65	19mm	57mm	36382
0.1440	-	27	3.66	3/4	2-1/2	36386
0.1457	-	-	3.70	19mm	64mm	36390
0.1470	-	26	3.73	3/4	2-1/2	36394
0.1476	-	-	3.75	19mm	64mm	36398
0.1495	-	25	3.80	3/4	2-1/2	36402
0.1496	-	-	3.80	19mm	64mm	36406
0.1520	-	24	3.86	3/4	2-1/2	36410
0.1535	-	-	3.90	19mm	64mm	36414
0.1540	-	23	3.91	3/4	2-1/2	36418
0.1555	-	-	3.95	19mm	64mm	36422
0.1562	5/32	-	3.97	3/4	2-1/2	36426
0.1570	-	22	3.99	3/4	2-1/2	36430
0.1575	-	-	4.00	19mm	64mm	36434
0.1585	-	-	4.03	3/4	2-1/2"	36436
0.1590	-	21	4.04	3/4	2-1/2	36438
0.1594	-	-	4.05	19mm	64mm	36442

Shank Dia: h6
Drill Dia: H7



Chucking Reamers

Inch, Letter, Number and Metric

Decimal Equiv.	Fraction Size	DESCRIPTION				EDP #
		Letter / Wire	Metric	Flute Length	OAL	
0.1610	-	20	4.09	7/8	2-3/4	36446
0.1614	-	-	4.10	22mm	70mm	36450
0.1634	-	-	4.15	22mm	70mm	36454
0.1640	-	-	4.17	7/8	2-3/4	36456
0.1654	-	-	4.20	22mm	70mm	36458
0.1660	-	19	4.22	7/8	2-3/4	36462
0.1673	-	-	4.25	22mm	70mm	36466
0.1693	-	-	4.30	22mm	70mm	36470
0.1695	-	18	4.31	7/8	2-3/4	36474
0.1713	-	-	4.35	22mm	70mm	36478
0.1719	11/64	-	4.37	7/8	2-3/4	36482
0.1730	-	17	4.39	7/8	2-3/4	36486
0.1732	-	-	4.40	22mm	70mm	36490
0.1752	-	-	4.45	22mm	70mm	36494
0.1760	-	-	4.47	7/8	2-3/4	36492
0.1770	-	16	4.50	7/8	2-3/4	36498
0.1772	-	-	4.50	22mm	70mm	36502
0.1791	-	-	4.55	22mm	70mm	36506
0.1800	-	15	4.57	7/8	2-3/4	36510
0.1811	-	-	4.60	22mm	70mm	36514
0.1820	-	14	4.62	7/8	2-3/4	36518
0.1831	-	-	4.65	22mm	70mm	36522
0.1850	-	-	4.70	22mm	70mm	36526
0.1850	-	13	4.70	7/8	2-3/4	36530
0.1855	-	-	4.71	7/8	2-3/4	36532
0.1865	-	-	4.74	7/8	2-3/4	36533
0.1870	-	-	4.75	22mm	70mm	36534
0.1875	3/16	-	4.76	7/8	2-3/4	36538
0.1880	-	-	4.78	7/8	2-3/4	36540
0.1885	-	-	4.79	7/8	2-3/4	36542
0.1889	-	-	4.80	22mm	70mm	36546
0.1890	-	12	4.80	7/8	2-3/4	36550
0.1895	-	-	4.81	7/8	2-3/4	36551
0.1900	-	-	4.83	7/8	2-3/4	36552
0.1909	-	-	4.85	22mm	70mm	36554
0.1910	-	11	4.85	1	3	36558
0.1920	-	-	4.88	25mm	76mm	36560
0.1929	-	-	4.90	25mm	76mm	36562
0.1935	-	10	4.91	1	3	36566
0.1949	-	-	4.95	25mm	76mm	36570
0.1960	-	9	4.98	1	3	36574
0.1968	-	-	5.00	25mm	76mm	36578
0.1988	-	-	5.05	25mm	76mm	36582
0.1990	-	8	5.05	1	3	36586



Reamers



Chucking Reamers

Inch, Letter, Number and Metric

		DESCRIPTION				EDP #
Decimal Equiv.	Fraction Size	Letter / Wire	Metric	Flute Length	OAL	Uncoated
0.2008	-	-	5.10	25mm	76mm	36590
0.2010	-	7	5.11	1	3	36594
0.2028	-	-	5.15	25mm	76mm	36598
0.2031	13/64	-	5.16	1	3	36602
0.2040	-	6	5.18	1	3	36606
0.2047	-	-	5.20	25mm	76mm	36610
0.2055	-	5	5.22	1	3	36614
0.2067	-	-	5.25	25mm	76mm	36618
0.2087	-	-	5.30	25mm	76mm	36622
0.2090	-	4	5.31	1	3	36626
0.2106	-	-	5.35	25mm	76mm	36630
0.2126	-	-	5.40	25mm	76mm	36634
0.2130	-	3	5.41	1	3	36638
0.2146	-	-	5.45	25mm	76mm	36642
0.2160	-	-	5.49	1	3	36644
0.2165	-	-	5.50	25mm	76mm	36646
0.2185	-	-	5.55	25mm	76mm	36650
0.2187	7/32	-	5.55	1	3	36654
0.2205	-	-	5.60	25mm	76mm	36658
0.2210	-	2	5.61	1	3	36662
0.2224	-	-	5.65	25mm	76mm	36666
0.2244	-	-	5.70	25mm	76mm	36670
0.2264	-	-	5.75	25mm	76mm	36674
0.2280	-	1	5.79	1	3	36678
0.2283	-	-	5.80	25mm	76mm	36682
0.2303	-	-	5.85	25mm	76mm	36686
0.2323	-	-	5.90	25mm	76mm	36690
0.2340	-	A	5.94	1	3	36694
0.2343	-	-	5.95	25mm	76mm	36698
0.2344	15/64	-	5.95	1	3	36702
0.2362	-	-	6.00	25mm	76mm	36706
0.2380	-	B	6.05	1	3	36710
0.2402	-	-	6.10	25mm	76mm	36714
0.2420	-	C	6.15	1	3	36718
0.2441	-	-	6.20	25mm	76mm	36722
0.2450	-	-	6.22	1	3	36724
0.2460	-	D	6.25	1	3	36726
0.2461	-	-	6.25	25mm	76mm	36730
0.2480	-	-	6.30	25mm	76mm	36734
0.2485	-	-	6.31	1	3	36735
0.2490	-	-	6.32	1	3	36736
0.2495	-	-	6.34	1	3	36738
0.2500	1/4	E	6.35	1	3	36742
0.2505	-	-	6.36	1	3	36743

Shank Dia: h6
Drill Dia: H7



Chucking Reamers

Inch, Letter, Number and Metric

		DESCRIPTION				EDP #
Decimal Equiv.	Fraction Size	Letter / Wire	Metric	Flute Length	OAL	Uncoated
0.2510	-	-	6.37	1	3	36746
0.2515	-	-	6.39	1	3	36748
0.2520	-	-	6.40	25mm	76mm	36750
0.2530	-	-	6.43	1	3	36749
0.2540	-	-	6.45	1	3	36751
0.2550	-	-	6.48	1	3	36752
0.2559	-	-	6.50	29mm	83mm	36754
0.2570	-	F	6.53	1-1/8	3-1/4	36758
0.2610	-	G	6.63	1-1/8	3-1/4	36762
0.2656	17/64	-	6.75	1-1/8	3-1/4	36766
0.2660	-	H	6.76	1-1/8	3-1/4	36770
0.2720	-	I	6.91	1-1/8	3-1/4	36774
0.2756	-	-	7.00	29mm	83mm	36778
0.2770	-	J	7.04	1-1/8	3-1/4	36782
0.2810	-	K	7.14	1-1/8	3-1/4	36786
0.2812	9/32	-	7.14	1-1/18	3-1/4	36790
0.2900	-	L	7.37	1-1/8	3-1/4	36794
0.2950	-	M	7.49	1-1/8	3-1/4	36798
0.2953	-	-	7.50	29mm	83mm	36802
0.2969	19/64	-	7.54	1-1/8	3-1/4	36806
0.3020	-	N	7.67	1-1/8	3-1/4	36810
0.3100	-	-	7.87	1-1/8	3-1/4	36809
0.3105	-	-	7.89	1-1/8	3-1/4	36811
0.3115	-	-	7.91	1-1/8	3-1/4	36812
0.3120	-	-	7.92	1-1/8	3-1/4	36813
0.3125	5/16	-	7.94	1-1/8	3-1/4	36814
0.3130	-	-	7.95	1-1/8	3-1/4	36816
0.3135	-	-	7.96	1-1/8	3-1/4	36818
0.3140	-	-	7.98	1-1/8	3-1/4	36820
0.3150	-	-	8.00	29mm	83mm	36822
0.3160	-	O	8.03	1-1/4	3-1/2	36826
0.3230	-	P	8.21	1-1/4	3-1/2	36830
0.3260	-	-	8.28	1-1/4	3-1/2	36837
0.3281	21/64	-	8.33	1-1/4	3-1/2	36834
0.3320	-	Q	8.43	1-1/4	3-1/2	36838
0.3330	-	-	8.46	1-1/4	3-1/2	36839
0.3346	-	-	8.50	32mm	89mm	36842
0.3390	-	R	8.61	1-1/4	3-1/2	36846
0.3438	11/32	-	8.73	1-1/4	3-1/2	36850
0.3480	-	S	8.84	1-1/4	3-1/2	36854
0.3543	-	-	9.00	32mm	89mm	36858
0.3580	-	T	9.09	1-1/4	3-1/2	36862
0.3594	23/64	-	9.13	1-1/4	3-1/2	36866
0.3620	-	-	9.19	1-1/4	3-1/2	36869



Reamers



Chucking Reamers

Inch, Letter, Number and Metric

		DESCRIPTION				EDP #
Decimal Equiv.	Fraction Size	Letter / Wire	Metric	Flute Length	OAL	Uncoated
0.3680	-	U	9.35	1-1/4	3-1/2	36870
0.3730	-	-	9.47	1-1/4	3-1/2	36872
0.3740	-	-	9.50	32mm	89mm	36874
0.3745	-	-	9.51	1-1/4	3-1/2	36876
0.3750	3/8	-	9.53	1-1/4	3-1/2	36878
0.3755	-	-	9.54	1-1/4	3-1/2	36880
0.3760	-	-	9.55	1-1/4	3-1/2	36882
0.3770	-	V	9.58	1-1/4	3-1/2	36886
0.3800	-	-	9.65	1-1/4	3-1/2	36889
0.3860	-	W	9.81	1-1/4	3-1/2	36890
0.3906	25/64	-	9.92	1-1/4	3-1/2	36894
0.3937	-	-	10.00	38mm	102mm	36898
0.3970	-	X	10.08	1-1/4	3-1/2	36902
0.4040	-	Y	10.26	1-1/4	3-1/2	36906
0.4062	13/32	-	10.32	1-1/4	3-1/2	36910
0.4130	-	Z	10.49	1-1/4	3-1/2	36914
0.4134	-	-	10.50	38mm	102mm	36918
0.4219	27/64	-	10.72	1-3/8	4	36922
0.4331	-	-	11.00	38mm	102mm	36926
0.4355	-	-	11.06	1-3/8	4	36927
0.4365	-	-	11.09	1-3/8	4	36928
0.4370	-	-	11.10	1-3/8	4	36929
0.4375	7/16	-	11.11	1-3/8	4	36930
0.4385	-	-	11.14	1-3/8	4	36932
0.4420	-	-	11.22	1-3/8	4	36933
0.4528	-	-	11.50	38mm	102mm	36934
0.4531	29/64	-	11.51	1-3/8	4	36938
0.4688	15/32	-	11.91	1-3/8	4	36942
0.4724	-	-	12.00	38mm	102mm	36946
0.4844	31/64	-	12.30	1-1/2	4	36950
0.4980	-	-	12.65	1-1/2	4	36951
0.4990	-	-	12.67	1-1/2	4	36952
0.4995	-	-	12.69	1-1/2	4	36953
0.5000	1/2	-	12.70	1-1/2	4	36954
0.5005	-	-	12.71	1-1/2	4	36956
0.5010	-	-	12.73	1-1/2	4	36958
0.5020	-	-	12.75	1-1/2	4	36959
0.5030	-	-	12.78	1-1/2	4	36960
0.5040	-	-	12.80	1-1/2	4	36961
0.5050	-	-	12.83	1-1/2	4	36962
0.5625	9/16	-	14.28	2-1/4	5	36970
0.5905	-	-	15.00	44mm	102mm	36974
0.6250	5/8	-	15.87	2-1/4	5	36978
0.6299	-	-	16.00	1-1/2	4	36980
0.7500	3/4	-	19.05	2-1/4	5	36990

Shank Dia: h6
Drill Dia: H7



Speeds and Feeds

Jobber Length Drills

Material Group	Material Type	Cutting Speed (Vc)	
		(m/min)	(SFM)
Steel	Structural Steel	60 - 70	197 - 230
	Free Cutting Steel	60 - 70	197 - 230
	Unalloyed Heat Treatable Steel	60 - 70	197 - 230
	Unalloyed Case Hard Steel	60 - 70	197 - 230
	Alloyed Case Hardened Steel	50 - 60	164 - 197
	Nitriding Steel	40 - 50	131 - 164
Acid Resistant /	Stainless Steel,	20 - 25	66 - 82
Stainless Steel	Sulphured Austenitic Steel, Martensitic		
High Tensile Steel	Alloyed Heat Treatable Steel	40 - 50	131 - 164
	Tool Steel	40 - 50	131 - 164
	High Speed Steel		
Cast Materials	Spring Steel	20 - 25	66 - 82
	Cast Iron	70 - 80	230 - 263
	Spheroidal Graphite and Malleable Ci	60 - 70	197 - 230
	Chilled Ci	10	32 - 49
Aluminum and	Aluminum Alloys	150 - 180	492 - 590
Aluminum Alloys	Al Wrought Alloys	150 - 180	492 - 590
	Al Cast Alloys < 10%si	100 - 130	328 - 427
	Al Cast Alloys > 10%si	100 - 130	328 - 427
	Special Alloys	15 - 18	49 - 60
Non Ferrous Metals	Ti and Ti Alloys	15 - 20	49 - 65
	Copper Low Alloyed	60 - 70	197 - 230
	Brass	130 - 150	425 - 492
	Bronze	100 - 110	328 - 360
Magnesium Alloys	Mg Alloys	120 - 150	393 - 492

Material	Diameter									
	Feed Rate (mm/rev)									
	Feed Rate (IPR)									
	2.00	3.00	5.00	6.00	8.00	10.00	12.00	16.00	20.00	25.00
	5/64"	7/64"	3/16"	15/64"	5/16"	25/64"	15/32"	5/8"	3/4"	1"
Steel	0.05	0.08	0.10	0.125	0.15	0.18	0.20	0.23	0.25	0.30
	0.002	0.0032	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.012
High Tensile Steels / Acid Resistant	0.03	0.05	0.07	0.085	0.12	0.14	0.15	0.18	0.21	0.25
	0.0012	0.002	0.003	0.004	0.005	0.0055	0.006	0.007	0.0083	0.010
Cast Material	0.06	0.09	0.12	0.15	0.18	0.20	0.22	0.25	0.28	0.30
	0.0024	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.012
Aluminum Alloys	0.09	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
	0.004	0.005	0.007	0.009	0.01	0.012	0.012	0.014	0.016	0.017
Titanium Alloys	0.015	0.03	0.04	0.06	0.08	0.10	0.11	0.13	0.016	0.18
	0.0006	0.0012	0.0015	0.0024	0.003	0.004	0.0043	0.005	0.006	0.007
Non Ferrous	0.06	0.08	0.10	0.13	0.18	0.2	0.20	0.25	0.30	0.35
	0.0024	0.003	0.004	0.005	0.007	0.008	0.008	0.01	0.012	0.014
Mg Alloys	0.07	0.09	0.125	0.16	0.18	0.20	0.23	0.25	0.28	0.32
	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.013

Speeds and Feeds

Material Group	Material Type	Cutting Speed (Vc-m/min)			
		30°	27°	18°	15°
Steel	Structural Steel	100 - 125	75 - 85		60 - 80
	Free Cutting Steel	100 - 120	80 - 90		60 - 90
	Unalloyed Heat Treatable Steel	75 - 90	65 - 75		60 - 75
	Unalloyed Case Hard Steel	75 - 90	70 - 80		60 - 70
	Alloyed Case Hardened Steel	80 - 100	60 - 75		50 - 75
	Nitriding Steel				50 - 60
Acid Resistant /	Stainless Steel,	40 - 50	40 - 55		25 - 35
Stainless Steel	Sulphured Austenitic Steel, Martensitic				
High Tensile Steel	Low Carbon Steel	105 - 125	80 - 90		70 - 85
	Alloyed Heat Treatable Steel	65 - 75	55 - 65		50 - 60
	Tool Steel	50 - 65	40 - 50		30 - 40
	High Speed Steel	50 - 65	40 - 50		25 - 35
	Spring Steel	50 - 65	40 - 50		30 - 35
Cast Materials	Cast Iron	100 - 130	110 - 130	120 - 135	100 - 120
	Spheroidal Graphite and Malleable Ci	80 - 100	70 - 90	75 - 100	75 - 100
	Chilled Ci	30 - 40	35 - 45	50 - 60	20 - 25
Aluminum and Aluminum Alloys	Aluminum Alloys				120 - 150
	Al Wrought Alloys				120 - 150
	Al Cast Alloys < 10%si				80 - 110
	Al Cast Alloys > 10%si				80 - 110
Special Alloys	Special Alloys	20 - 25	25		15 - 20
	Ti and Ti Alloys	20 - 30	35		20 - 25
Non Ferrous Metals	Copper Low Alloyed				50 - 60
	Brass				100 - 120
	Bronze				40 - 60
Magnesium Alloys	Mg Alloys				120 - 150

Material	Diameter									
	Feed Rate (mm/rev)									
	2.00	3.00	5.00	6.00	8.00	10.00	12.00	16.00	20.00	25.00
Steel	0.05	0.08	0.10	0.13	0.16	0.20	0.22	0.25	0.28	0.30
High Tensile Steels / Acid Resistant	0.04	0.05	0.07	0.1	0.12	0.16	0.15	0.20	0.23	0.28
Cast Material	0.06	0.09	0.12	0.16	0.18	0.21	0.23	0.25	0.28	0.30
Aluminum Alloys	0.08	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
Titanium Alloys	0.02	0.03	0.05	0.06	0.08	0.10	0.11	0.14	0.18	0.20
Non Ferrous	0.06	0.07	0.10	0.12	0.16	0.18	0.20	0.23	0.26	0.30
Mg Alloys	0.07	0.09	0.12	0.16	0.20	0.23	0.25	0.28	0.30	0.32

Speeds and Feeds

BlackMamba - The CoolantFed Drills

Material Group	Material Type	Cutting Speed (Vc)	
		(m/min)	(SFM)
Steel	Structural Steel	80 - 100	263 - 328
	Free Cutting Steel	100 - 120	328 - 393
	Unalloyed Heat Treatable Steel	80 - 90	263 - 295
	Unalloyed Case Hard Steel	90 - 100	295 - 328
	Alloyed Case Hardened Steel	50 - 75	164 - 246
	Nitriding Steel	70 - 80	230 - 262
Acid Resistant /	Stainless Steel,	30 - 40	98 - 131
Stainless Steel	Sulphured Austenitic Steel, Martensitic		
High Tensile Steel	Alloyed Heat Treatable Steel	60 - 80	197 - 262
	Tool Steel	40 - 50	131 - 164
	High Speed Steel	30 - 40	98 - 131
	Spring Steel	30 - 40	98 - 131
Cast Materials	Cast Iron	125 - 150	409 - 491
	Spheroidal Graphite and Malleable Ci	95 - 115	311 - 376
	Chilled Ci	30 - 40	98 - 131
Aluminum and	Aluminum Alloys	175 - 200	574 - 656
Aluminum Alloys	Al Wrought Alloys	175 - 200	574 - 656
	Al Cast Alloys < 10%si	160 - 180	525 - 590
	Al Cast Alloys > 10%si	160 - 180	525 - 590
Special Alloys	Special Alloys	20 - 25	66 - 82
	Ti and Ti Alloys	20 - 30	66 - 98
Non Ferrous Metals	Copper Low Alloyed	75 - 90	246 - 295
	Brass	160 - 180	524 - 590
	Bronze	75 - 90	246 - 295
Magnesium Alloys	Mg Alloys	180 - 200	574 - 656

Material	Diameter									
	Feed Rate (mm/rev)									
	Feed Rate (IPR)									
	2.00 5/64"	3.00 7/64"	5.00 3/16"	6.00 15/64"	8.00 5/16"	10.00 25/64"	12.00 15/32"	16.00 5/8"	20.00 3/4"	25.00 1"
Steel	0.06	0.10	0.12	0.15	0.17	0.20	0.23	0.28	0.30	0.35
	0.002	0.004	0.005	0.006	0.007	0.008	0.009	0.011	0.012	0.014
High Tensile Steels / Acid Resistant	0.04	0.06	0.08	0.1	0.13	0.16	0.16	0.20	0.25	0.30
	0.0016	0.002	0.003	0.004	0.005	0.006	0.006	0.008	0.01	0.012
Cast Material	0.07	0.10	0.14	0.17	0.20	0.23	0.23	0.28	0.3	0.35
	0.003	0.004	0.006	0.007	0.008	0.009	0.009	0.011	0.012	0.014
Aluminum Alloys	0.09	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
	0.004	0.005	0.007	0.009	0.01	0.012	0.012	0.014	0.016	0.017
Titanium Alloys	0.02	0.04	0.05	0.07	0.09	0.11	0.11	0.14	0.18	0.20
	0.001	0.002	0.002	0.003	0.004	0.004	0.004	0.006	0.007	0.008
Non Ferrous	0.06	0.08	0.10	0.13	0.18	0.2	0.20	0.25	0.30	0.35
	0.002	0.003	0.004	0.005	0.007	0.008	0.008	0.01	0.012	0.014
Mg Alloys	0.08	0.10	0.13	0.18	0.21	0.25	0.25	0.28	0.31	0.35
	0.003	0.004	0.005	0.007	0.008	0.01	0.01	0.011	0.012	0.014

Speeds and Feeds

Non Coolant Drills 140° Point Angle

Material Group	Material Type	Cutting Speed (Vc-m/min)		
		3XD	5XD	8XD
Steel	Structural Steel	60 - 80	50 - 70	40 - 60
	Free Cutting Steel	70 - 90	60 - 80	50 - 70
	Unalloyed Heat Treatable Steel	60 - 75	50 - 65	40 - 55
	Unalloyed Case Hard Steel	60 - 70	50 - 60	40 - 50
	Alloyed Case Hardened Steel	65 - 75	55 - 65	50 - 60
	Nitriding Steel	50 - 60	45 - 55	40 - 50
Acid Resistant / Stainless Steel	Stainless Steel,	25 - 35	20 - 30	15 - 25
	Sulphured Austenitic Steel, Martensitic			
High Tensile Steel	Low Carbon Steel	50 - 60	45 - 55	40 - 50
	Alloyed Heat Treatable Steel	30 - 40	25 - 35	20 - 30
	Tool Steel	25 - 35	20 - 30	20 - 30
	High Speed Steel	30 - 35	25 - 30	23 - 28
	Spring Steel	100 - 120	80 - 100	70 - 90
Cast Materials	Cast Iron	75 - 100	65 - 90	60 - 80
	Spheroidal Graphite and Malleable Ci	20 - 25	18 - 23	15 - 20
	Chilled Ci	150 - 180	130 - 160	110 - 130
Aluminum and Aluminum Alloys	Aluminum Alloys	150 - 180	130 - 160	110 - 130
	Al Wrought Alloys	100 - 130	80 - 110	70 - 100
	Al Cast Alloys < 10%si	100 - 130	80 - 110	70 - 100
	Al Cast Alloys > 10%si	15 - 20	12 - 17	10 - 15
Special Alloys	Special Alloys	20 - 25	17 - 23	15 - 20
	Ti and Ti Alloys	60 - 70	50 - 60	40 - 50
Non Ferrous Metals	Copper Low Alloyed	130 - 150	110 - 130	100 - 120
	Brass	60 - 75	50 - 65	45 - 55
	Bronze	150 - 180	120 - 150	100 - 125
Magnesium Alloys	Mg Alloys			

Material	Diameter									
	Feed Rate (mm/rev)									
	2.00	3.00	5.00	6.00	8.00	10.00	12.00	16.00	20.00	25.00
Steel	0.05	0.08	0.10	0.125	0.15	0.18	0.20	0.23	0.25	0.30
High Tensile Steels / Acid Resistant	0.03	0.05	0.07	0.085	0.12	0.14	0.15	0.18	0.21	0.25
Cast Material	0.06	0.09	0.12	0.15	0.18	0.20	0.22	0.25	0.28	0.30
Aluminum Alloys	0.09	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
Titanium Alloys	0.015	0.03	0.04	0.06	0.08	0.10	0.11	0.13	0.016	0.18
Non Ferrous	0.06	0.08	0.10	0.13	0.18	0.2	0.20	0.25	0.30	0.35
Mg Alloys	0.07	0.09	0.125	0.16	0.18	0.20	0.23	0.25	0.28	0.32

Speeds and Feeds

Straight Flute Drill and 3 Flute Drill

Material Group	Material Type	Cutting Speed (Vc)			
		Straight Flute Drills (m/min)		3 Flute Drills (SFM)	
Steel	Structural Steel	60	193		
	Free Cutting Steel	60	193		
	Unalloyed Heat Treatable Steel	45	147		
	Unalloyed Case Hard Steel	45	147		
	Alloyed Case Hardened Steel	30	98		
	Nitriding Steel	30	98		
Acid Resistant / Stainless Steel	Stainless Steel,	40	131		
	Sulphured Austenitic Steel, Martensitic				
	High Tensile Steel	55	180		
	Medium Carbon Steel	45	147		
	Alloyed Heat Treatable Steel	30	98		
	Tool Steel	30	98		
	High Speed Steel	25	82		
	Spring Steel	30	98		
	Aluminum and			200 - 215	654 - 703
	Aluminum Alloys			200 - 215	654 - 703
	Al Cast Alloys < 10%si			200 - 215	654 - 703
	Al Cast Alloys > 10%si			150 - 165	491 - 540
Non Ferrous Metals	Copper Low Alloyed			70 - 80	229 - 262
	Brass			70 - 80	229 - 262
	Bronze			70 - 80	229 - 262
Plastics	Duro Plastics			90 - 100	294 - 327
	Thermo Plastics			90 - 100	294 - 327

Material	Diameter									
	Feed Rate (mm/rev)									
	Feed Rate (IPR)									
	2.00 5/64"	3.00 7/64"	5.00 3/16"	6.00 15/64"	8.00 5/16"	10.00 25/64"	12.00 15/32"	16.00 5/8"	20.00 3/4"	25.00 1"
Steel	0.05	0.08	0.10	0.125	0.15	0.18	0.20	0.23	0.25	0.30
	0.002	0.0032	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.012
High Tensile Steels / Acid Resistant	0.03	0.05	0.07	0.085	0.12	0.14	0.15	0.18	0.21	0.25
	0.0012	0.002	0.003	0.004	0.005	0.0055	0.006	0.007	0.0083	0.010
Cast Material	0.06	0.09	0.12	0.15	0.18	0.20	0.22	0.25	0.28	0.30
	0.0024	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.012
Aluminum Alloys	0.09	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
	0.004	0.005	0.007	0.009	0.01	0.012	0.012	0.014	0.016	0.017
Titanium Alloys	0.015	0.03	0.04	0.06	0.08	0.10	0.11	0.13	0.016	0.18
	0.0006	0.0012	0.0015	0.0024	0.003	0.004	0.0043	0.005	0.006	0.007
Non Ferrous	0.06	0.08	0.10	0.13	0.18	0.2	0.20	0.25	0.30	0.35
	0.0024	0.003	0.004	0.005	0.007	0.008	0.008	0.01	0.012	0.014
Mg Alloys	0.07	0.09	0.125	0.16	0.18	0.20	0.23	0.25	0.28	0.32
	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.013

Speeds and Feeds Drills

Graphite Drill

Material Group	Material Type	Cutting Speed (Vc) (m/min)
Steel	Structural Steel	:
	Free Cutting Steel	
	Unalloyed Heat Treatable Steel	
	Unalloyed Case Hard Steel	
	Alloyed Case Hardened Steel	
	Nitriding Steel	
Acid Resistant / Stainless Steel	Stainless Steel,	
	Sulphured Austenitic Steel, Martensitic	
	Low Carbon Steel	
	Medium Carbon Steel	
	Alloyed Heat Treatable Steel	
	Tool Steel	
High Tensile Steel	High Speed Steel	
	Spring Steel	
	Cast Iron	
	Spheroidal Graphite and Malleable Ci	
	Chilled Ci	
	Aluminum Alloys	110 - 130
Aluminum and Aluminum Alloys	Al Wrought Alloys	110 - 130
	Al Cast Alloys < 10%Si	90 - 110
	Al Cast Alloys > 10%Si	80 - 100
	Special Alloys	
Special Alloys	Ti and Ti Alloys	
	Copper Low Alloyed	80 - 100
	Brass	80 - 100
	Bronze	75 - 95
Plastics	Duro Plastics	80 - 100
	Thermo Plastics	80 - 100
Magnesium Alloys	Mg Alloys	90 - 110

Material	Diameter									
	Feed Rate (mm/rev)									
	2.00	3.00	5.00	6.00	8.00	10.00	12.00	16.00	20.00	25.00
Aluminum Alloys	0.09	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
Non Ferrous	0.06	0.08	0.10	0.13	0.18	0.2	0.20	0.25	0.30	0.35
Mg Alloys	0.07	0.09	0.125	0.16	0.18	0.20	0.23	0.25	0.28	0.32

Speeds and Feeds

Combined Drills and Spotting Drill

Material Group	Material Type	Cutting Speed (Vc)	
		(m/min)	(SFM)
Steel	Structural Steel	50 - 80	164 - 262
	Free Cutting Steel	80 - 90	262 - 294
	Unalloyed Heat Treatable Steel	50 - 70	164 - 229
	Unalloyed Case Hard Steel	30 - 40	98 - 131
	Alloyed Case Hardened Steel	40 - 50	131 - 164
	Nitriding Steel	30 - 40	98 - 131
	Acid Resistant / Stainless Steel	35 - 50	114 - 164
	Sulphured Austenitic Steel, Martensitic		
	High Tensile Steel	40 - 60	131 - 196
	Tool Steel	30 - 50	98 - 164
Cast Materials	High Speed Steel	30 - 40	98 - 131
	Spring Steel		
	Cast Iron	50 - 80	164 - 262
	Spheroidal Graphite and Malleable Ci	50 - 80	164 - 262
	Chilled Ci	30 - 40	98 - 131
	Aluminum and Aluminum Alloys	100 - 150	327 - 491
	Al Wrought Alloys	100 - 150	327 - 491
	Al Cast Alloys < 10%si	75 - 100	245 - 327
	Al Cast Alloys > 10%si	50 - 70	164 - 229
	Special Alloys	30 - 40	98 - 131
Non Ferrous Metals	Ti and Ti Alloys	20 - 30	65 - 98
	Copper Low Alloyed	120 - 150	393 - 491
	Brass	120 - 150	393 - 491
	Bronze	40 - 60	131 - 196
	Magnesium Alloys	100 - 120	327 - 393

Material	Diameter									
	Feed Rate (mm/rev)									
	Feed Rate (IPR)									
	2.00 5/64"	3.00 7/64"	5.00 3/16"	6.00 15/64"	8.00 5/16"	10.00 25/64"	12.00 15/32"	16.00 5/8"	20.00 3/4"	25.00 1"
Steel	0.05	0.08	0.10	0.125	0.15	0.18	0.20	0.23	0.25	0.30
	0.002	0.0032	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.012
High Tensile Steels / Acid Resistant	0.03	0.05	0.07	0.085	0.12	0.14	0.15	0.18	0.21	0.25
	0.0012	0.002	0.003	0.004	0.005	0.0055	0.006	0.007	0.0083	0.010
Cast Material	0.06	0.09	0.12	0.15	0.18	0.20	0.22	0.25	0.28	0.30
	0.0024	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.012
Aluminum Alloys	0.09	0.12	0.18	0.22	0.26	0.3	0.30	0.35	0.40	0.43
	0.004	0.005	0.007	0.009	0.01	0.012	0.012	0.014	0.016	0.017
Titanium Alloys	0.015	0.03	0.04	0.06	0.08	0.10	0.11	0.13	0.016	0.18
	0.0006	0.0012	0.0015	0.0024	0.003	0.004	0.0043	0.005	0.006	0.007
Non Ferrous	0.06	0.08	0.10	0.13	0.18	0.2	0.20	0.25	0.30	0.35
	0.0024	0.003	0.004	0.005	0.007	0.008	0.008	0.01	0.012	0.014
Mg Alloys	0.07	0.09	0.125	0.16	0.18	0.20	0.23	0.25	0.28	0.32
	0.003	0.004	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.013

Speeds and Feeds

Reamers

Material Group	Material Type	Cutting Speed (Vc)	
		(m/min)	(SFM)
Steel	Structural Steel	50 - 65	164 - 213
	Free Cutting Steel	50 - 65	164 - 213
	Unalloyed Heat Treatable Steel	50 - 60	164 - 193
	Unalloyed Case Hard Steel	50 - 60	164 - 193
	Alloyed Case Hardened Steel	45 - 55	147 - 180
	Nitriding Steel	40 - 50	131 - 164
Acid Resistant / Stainless Steel	Stainless Steel,	20 - 25	65 - 82
	Sulphured Austenitic Steel, Martensitic		
	High Tensile Steel		
	Low Carbon Steel	65 - 70	213 - 229
	Medium Carbon Steel	50 - 60	164 - 193
	Alloyed Heat Treatable Steel	35 - 45	115 - 147
	Tool Steel	20 - 30	65 - 98
	High Speed Steel	15 - 25	49 - 82
	Spring Steel	15 - 25	49 - 82
Cast Materials	Cast Iron	55 - 65	180 - 213
	Spheroidal Graphite and Malleable Ci	40 - 55	131 - 180
	Chilled Ci	20 - 30	65 - 98
Aluminum and Aluminum Alloys	Aluminum Alloys	140 - 160	458 - 523
	Al Wrought Alloys	120 - 135	393 - 442
	Al Cast Alloys < 10%Si	110 - 125	360 - 409
	Al Cast Alloys > 10%Si	75 - 85	245 - 278
Special Alloys	Special Alloys	15 - 25	49 - 82
	Ti and Ti Alloys	20 - 30	65 - 98
Non Ferrous Metals	Copper Low Alloyed	65 - 75	213 - 245
	Brass	60 - 70	193 - 229
	Bronze	55 - 65	180 - 213
Plastics	Duro Plastics	60 - 70	193 - 229
	Thermo Plastics	75 - 85	245 - 278
Magnesium Alloys	Mg Alloys	95 - 105	311 - 344

Speeds and Feeds

Reamers

Material	Diameter						
	Feed Rate (mm/rev)						
	Feed Rate (IPR)						
	2.00 5/64"	3.00 7/64"	5.00 3/16"	6.00 15/64"	8.00 5/16"	10.00 25/64"	12.00 15/32"
Steel	0.08	0.12	0.15	0.18	0.20	0.23	0.25
	0.0031	0.0047	0.006	0.007	0.008	0.009	0.010
High Tensile Steels / Acid Resistant	0.06	0.10	0.12	0.14	0.16	0.18	0.20
	0.0024	0.004	0.0047	0.0055	0.0063	0.007	0.008
Cast Material	0.07	0.11	0.14	0.16	0.19	0.22	0.25
	0.0026	0.0043	0.0055	0.0063	0.0075	0.0086	0.010
Aluminum Alloys	0.10	0.15	0.20	0.22	0.24	0.26	0.30
	0.004	0.006	0.008	0.0086	0.0094	0.010	0.12
Titanium Alloys	0.04	0.06	0.08	0.10	0.12	0.15	0.18
	0.0016	0.0024	0.0031	0.004	0.0047	0.006	0.007
Non Ferrous	0.08	0.10	0.13	0.17	0.21	0.26	0.28
	0.0031	0.004	0.0051	0.0067	0.0083	0.010	0.011
Mg Alloys	0.12	0.15	0.18	0.22	0.26	0.3	0.35
	0.0047	0.006	0.007	0.0086	0.010	0.012	0.014

Coating Details

Technical Data

Coating Type	TiAlN Futura Nano	TiN Titanium Nitride	CH Helica (AlCr)
Micro Hardness(HV0.05)	3300	2300	3000
Coefficient Of Friction Against Steel	0.30-0.35	0.4	0.25
Maximum Service Temperature °c	900	600	1100
Coating Colour	Violet Grey	Gold Yellow	Copper
Features	Increased Cutting	Protection	Abrasions Resistance
	Stability	Against	Maximum Toughness
	Protection	Abrasive and	Extra Shear Strength
	Against Abrasive	Adhesive Wear	
	Wear and Erosion		