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Cutting Tools

ON THE FULL PATRIOT HP[®] 928 SOLID CARBIDE DRILL PRODUCT OFFERING

The Patriot HP[®] 928 Solid Carbide Drill has a 140° point angle and precision through coolant to optimize tool life, chip evacuation, and close hole tolerance.

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*Use promo code PATRIOT21 at checkout. Offer valid while supplies last. Promotion applies only to multiples of the same SKU for the Patriot HP 928 Solid Carbide Drill.



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928 Solid Carbide Drill

With a 140° point angle and precision through coolant to optimize tool life, chip evacuation, and close tolerance, the Patriot HP® 928 Series Solid Carbide Drill is designed to excel in all ISO class workpiece materials and in the most demanding applications.

Benefits

- Process security
- Optimal chip evacuation
- Increased tool life
- Improved surface finish
- Performs well in oil, emulsion, and dry conditions
- Cost savings



Application Area

- Multi-material drilling
- Ideal industry segment:
 - General engineering
 - Die and mold
 - Energy
 - Aerospace
 - Defense
 - Automotive

Specifications

Diameter	0.0314" to 0.7874"
Hole tolerances	H6, H8, H9
Length of diameter	3xD, 5xD, 8xD
Size	Standard & Metric



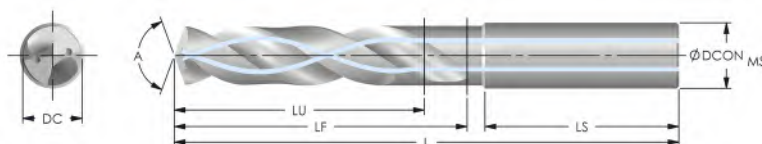
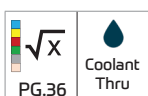
140° Drill point for optimal centering reducing runout

Chromium based coating providing superior heat protection in the cut

MQL compatible shank as a standard

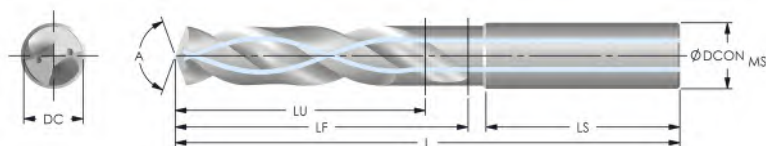
Reinforced flute face

DIN shanks - H6 tolerance on all sizes

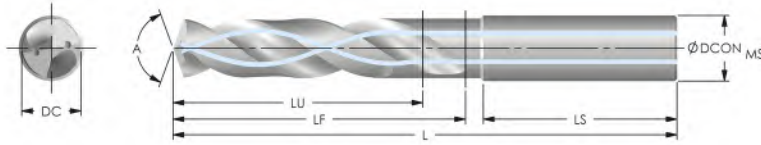
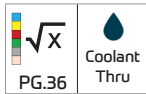
IMPERIAL SIZE


SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
#67	0.0320	0.1575	140.0	0.1181	0.1969	1.1024	2.2835	3XD	928-000-002
#67	0.0320	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	5XD	928-000-240
#67	0.0320	0.1575	140.0	0.2756	0.3543	1.1024	2.2835	8XD	928-000-478
#66	0.0330	0.1575	140.0	0.1181	0.1969	1.1024	2.2835	3XD	928-000-003
#66	0.0330	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	5XD	928-000-241
#66	0.0330	0.1575	140.0	0.2756	0.3543	1.1024	2.2835	8XD	928-000-479
#65	0.0350	0.1575	140.0	0.1181	0.1969	1.1024	2.2835	3XD	928-000-004
#65	0.0350	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	5XD	928-000-242
#65	0.0350	0.1575	140.0	0.2756	0.3543	1.1024	2.2835	8XD	928-000-480
#64	0.0360	0.1575	140.0	0.1181	0.1969	1.1024	2.2835	3XD	928-000-006
#64	0.0360	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	5XD	928-000-244
#64	0.0360	0.1575	140.0	0.2756	0.3543	1.1024	2.2835	8XD	928-000-482
#63	0.0370	0.1575	140.0	0.1181	0.1969	1.1024	2.2835	3XD	928-000-007
#63	0.0370	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	5XD	928-000-245
#63	0.0370	0.1575	140.0	0.2756	0.3543	1.1024	2.2835	8XD	928-000-483
#62	0.0380	0.1575	140.0	0.1181	0.1969	1.1024	2.2835	3XD	928-000-008
#62	0.0380	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	5XD	928-000-246
#62	0.0380	0.1575	140.0	0.2756	0.3543	1.1024	2.2835	8XD	928-000-484
#61	0.0390	0.1575	140.0	0.1181	0.1969	1.1024	2.2835	3XD	928-000-009
#61	0.0390	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	5XD	928-000-247
#61	0.0390	0.1575	140.0	0.2756	0.3543	1.1024	2.2835	8XD	928-000-485
#60	0.0400	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-011
#60	0.0400	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-249
#60	0.0400	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-487
#59	0.0410	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-012
#59	0.0410	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-250
#59	0.0410	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-488
#58	0.0420	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-013
#58	0.0420	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-251
#58	0.0420	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-489
#57	0.0430	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-014
#57	0.0430	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-252
#57	0.0430	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-490
#56	0.0465	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-017
#56	0.0465	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-255
#56	0.0465	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-493
3/64	0.0469	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-018
3/64	0.0469	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-256
3/64	0.0469	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-494
#55	0.0520	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-023
#55	0.0520	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-261
#55	0.0520	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-499
#54	0.0550	0.1575	140.0	0.1969	0.2756	1.1024	2.2835	3XD	928-000-025
#54	0.0550	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	5XD	928-000-263
#54	0.0550	0.1575	140.0	0.3937	0.4724	1.1024	2.2835	8XD	928-000-501

IMPERIAL SIZE

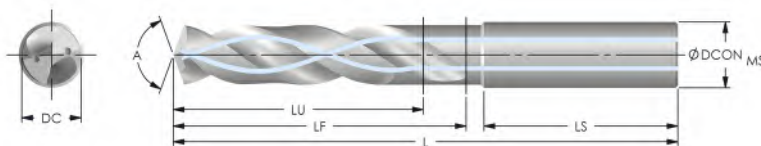


SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
#53	0.0595	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-028
#53	0.0595	0.1575	140.0	0.3543	0.4724	1.1024	2.2835	5XD	928-000-266
#53	0.0595	0.1575	140.0	0.5906	0.7087	1.1024	2.2835	8XD	928-000-504
1/16	0.0625	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-030
1/16	0.0625	0.1575	140.0	0.3543	0.4724	1.1024	2.2835	5XD	928-000-268
1/16	0.0625	0.1575	140.0	0.5906	0.7087	1.1024	2.2835	8XD	928-000-506
#52	0.0635	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-032
#52	0.0635	0.1575	140.0	0.3543	0.4724	1.1024	2.2835	5XD	928-000-270
#52	0.0635	0.1575	140.0	0.5906	0.7087	1.1024	2.2835	8XD	928-000-508
#51	0.0670	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-033
#51	0.0670	0.1575	140.0	0.3543	0.4724	1.1024	2.2835	5XD	928-000-271
#51	0.0670	0.1575	140.0	0.5906	0.7087	1.1024	2.2835	8XD	928-000-509
#50	0.0700	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-034
#50	0.0700	0.1575	140.0	0.3543	0.4724	1.1024	2.2835	5XD	928-000-272
#50	0.0700	0.1575	140.0	0.5906	0.7087	1.1024	2.2835	8XD	928-000-510
#49	0.0730	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-035
#49	0.0730	0.1575	140.0	0.3543	0.4724	1.1024	2.2835	5XD	928-000-273
#49	0.0730	0.1575	140.0	0.5906	0.7087	1.1024	2.2835	8XD	928-000-511
#48	0.0760	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-036
#48	0.0760	0.1575	140.0	0.5512	0.7087	1.1024	2.2835	5XD	928-000-274
#48	0.0760	0.1575	140.0	0.8661	1.0236	1.1024	2.5984	8XD	928-000-512
5/64	0.0781	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-037
5/64	0.0781	0.1575	140.0	0.5512	0.7087	1.1024	2.2835	5XD	928-000-275
5/64	0.0781	0.1575	140.0	0.8661	1.0236	1.1024	2.5984	8XD	928-000-513
#47	0.0785	0.1575	140.0	0.2362	0.3543	1.1024	2.2835	3XD	928-000-038
#47	0.0785	0.1575	140.0	0.5512	0.7087	1.1024	2.2835	5XD	928-000-276
#47	0.0785	0.1575	140.0	0.8661	1.0236	1.1024	2.5984	8XD	928-000-514
#46	0.0810	0.1575	140.0	0.3543	0.5118	1.1024	2.2835	3XD	928-000-040
#46	0.0810	0.1575	140.0	0.5512	0.7087	1.1024	2.2835	5XD	928-000-278
#46	0.0810	0.1575	140.0	0.8661	1.0236	1.1024	2.5984	8XD	928-000-516
#45	0.0820	0.1575	140.0	0.3543	0.5118	1.1024	2.2835	3XD	928-000-041
#45	0.0820	0.1575	140.0	0.5512	0.7087	1.1024	2.2835	5XD	928-000-279
#45	0.0820	0.1575	140.0	0.8661	1.0236	1.1024	2.5984	8XD	928-000-517
#44	0.0860	0.1575	140.0	0.3543	0.5118	1.1024	2.2835	3XD	928-000-042
#44	0.0860	0.1575	140.0	0.5512	0.7087	1.1024	2.2835	5XD	928-000-280
#44	0.0860	0.1575	140.0	0.8661	1.0236	1.1024	2.5984	8XD	928-000-518
#43	0.0890	0.1575	140.0	0.3543	0.5118	1.1024	2.2835	3XD	928-000-043
#43	0.0890	0.1575	140.0	0.5512	0.7087	1.1024	2.2835	5XD	928-000-281
#43	0.0890	0.1575	140.0	0.8661	1.0236	1.1024	2.5984	8XD	928-000-519
#42	0.0935	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-044
#42	0.0935	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-282
#42	0.0935	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-520
3/32	0.0938	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-045
3/32	0.0938	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-283
3/32	0.0938	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-521

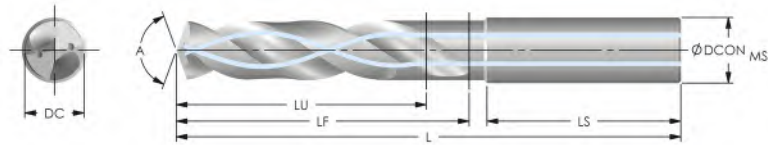
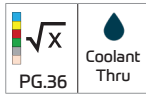
IMPERIAL SIZE


SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
#41	0.0960	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-046
#41	0.0960	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-284
#41	0.0960	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-522
#40	0.0980	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-047
#40	0.0980	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-285
#40	0.0980	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-523
#39	0.0995	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-049
#39	0.0995	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-287
#39	0.0995	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-525
#38	0.1015	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-050
#38	0.1015	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-288
#38	0.1015	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-526
#37	0.1040	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-051
#37	0.1040	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-289
#37	0.1040	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-527
#36	0.1065	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-052
#36	0.1065	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-290
#36	0.1065	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-528
7/64	0.1094	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-053
7/64	0.1094	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-291
7/64	0.1094	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-529
#35	0.1100	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-054
#35	0.1100	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-292
#35	0.1100	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-530
#34	0.1110	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-055
#34	0.1110	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-293
#34	0.1110	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-531
#33	0.1130	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-056
#33	0.1130	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-294
#33	0.1130	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-532
#32	0.1160	0.1575	140.0	0.4724	0.6693	1.1024	2.2835	3XD	928-000-057
#32	0.1160	0.1575	140.0	0.6693	0.8661	1.1024	2.2835	5XD	928-000-295
#32	0.1160	0.1575	140.0	0.9843	1.1811	1.1024	2.5984	8XD	928-000-533
#31	0.1200	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-059
#31	0.1200	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-297
#31	0.1200	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-535
1/8	0.1250	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-060
1/8	0.1250	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-298
1/8	0.1250	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-536
#30	0.1285	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-062
#30	0.1285	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-300
#30	0.1285	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-538
#29	0.1360	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-063
#29	0.1360	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-301
#29	0.1360	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-539

IMPERIAL SIZE

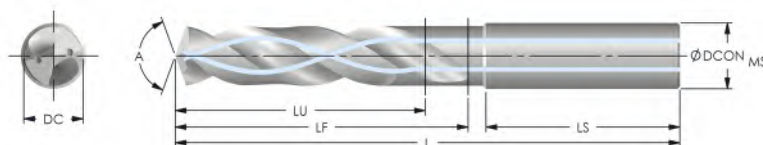
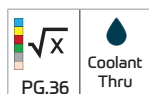


SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
#28	0.1405	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-065
#28	0.1405	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-303
#28	0.1405	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-541
9/64	0.1406	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-066
9/64	0.1406	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-304
9/64	0.1406	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-542
#27	0.1440	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-068
#27	0.1440	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-306
#27	0.1440	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-544
#26	0.1470	0.2362	140.0	0.5512	0.7874	1.4173	2.4409	3XD	928-000-069
#26	0.1470	0.2362	140.0	0.9055	1.1024	1.4173	2.5984	5XD	928-000-307
#26	0.1470	0.2362	140.0	1.2992	1.5748	1.4173	3.0709	8XD	928-000-545
#25	0.1495	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-070
#25	0.1495	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-308
#25	0.1495	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-546
#24	0.1520	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-071
#24	0.1520	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-309
#24	0.1520	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-547
#23	0.1540	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-073
#23	0.1540	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-311
#23	0.1540	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-549
5/32	0.1562	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-074
5/32	0.1562	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-312
5/32	0.1562	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-550
#22	0.1570	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-075
#22	0.1570	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-313
#22	0.1570	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-551
#21	0.1590	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-077
#21	0.1590	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-315
#21	0.1590	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-553
#20	0.1610	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-078
#20	0.1610	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-316
#20	0.1610	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-554
#19	0.1660	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-080
#19	0.1660	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-318
#19	0.1660	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-556
#18	0.1695	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-081
#18	0.1695	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-319
#18	0.1695	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-557
11/64	0.1719	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-082
11/64	0.1719	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-320
11/64	0.1719	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-558
#17	0.1730	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-083
#17	0.1730	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-321
#17	0.1730	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-559

IMPERIAL SIZE


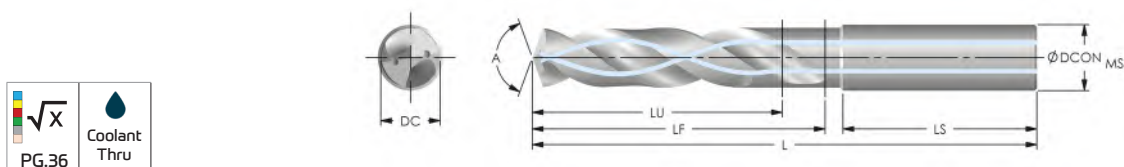
SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
#16	0.1770	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-085
#16	0.1770	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-323
#16	0.1770	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-561
#15	0.1800	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-087
#15	0.1800	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-325
#15	0.1800	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-563
#14	0.1820	0.2362	140.0	0.6693	0.9449	1.4173	2.5984	3XD	928-000-089
#14	0.1820	0.2362	140.0	1.1417	1.4173	1.4173	2.9134	5XD	928-000-327
#14	0.1820	0.2362	140.0	1.6142	1.9291	1.4173	3.4252	8XD	928-000-565
3/16	0.1875	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-091
3/16	0.1875	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-329
3/16	0.1875	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-567
#11	0.1910	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-093
#11	0.1910	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-331
#11	0.1910	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-569
#10	0.1935	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-095
#10	0.1935	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-333
#10	0.1935	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-571
#9	0.1960	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-096
#9	0.1960	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-334
#9	0.1960	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-572
#8	0.1990	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-098
#8	0.1990	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-336
#8	0.1990	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-574
#7	0.2010	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-100
#7	0.2010	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-338
#7	0.2010	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-576
13/64	0.2031	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-101
13/64	0.2031	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-339
13/64	0.2031	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-577
#6	0.2040	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-102
#6	0.2040	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-340
#6	0.2040	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-578
#5	0.2055	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-104
#5	0.2055	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-342
#5	0.2055	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-580
#4	0.2090	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-106
#4	0.2090	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-344
#4	0.2090	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-582
#3	0.2130	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-108
#3	0.2130	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-346
#3	0.2130	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-584
7/32	0.2188	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-110
7/32	0.2188	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-348
7/32	0.2188	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-586

IMPERIAL SIZE



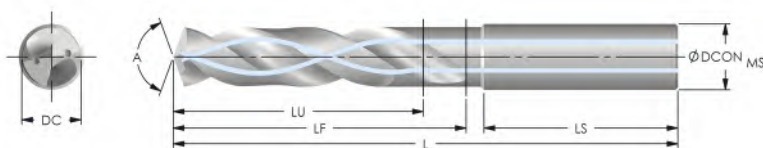
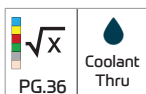
SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
#2	0.2210	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-112
#2	0.2210	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-350
#2	0.2210	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-588
#1	0.2280	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-114
#1	0.2280	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-352
#1	0.2280	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-590
A	0.2340	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-117
A	0.2340	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-355
A	0.2340	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-593
15/64	0.2344	0.2362	140.0	0.7874	1.1024	1.4173	2.5984	3XD	928-000-118
15/64	0.2344	0.2362	140.0	1.3780	1.7323	1.4173	3.2283	5XD	928-000-356
15/64	0.2344	0.2362	140.0	1.8898	2.2047	1.4173	3.7008	8XD	928-000-594
B	0.2380	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-120
B	0.2380	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-358
B	0.2380	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-596
C	0.2420	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-122
C	0.2420	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-360
C	0.2420	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-598
D	0.2460	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-124
D	0.2460	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-362
D	0.2460	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-600
E(1/4)	0.2500	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-126
E(1/4)	0.2500	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-364
E(1/4)	0.2500	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-602
F	0.2570	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-129
F	0.2570	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-367
F	0.2570	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-605
G	0.2610	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-131
G	0.2610	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-369
G	0.2610	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-607
17/64	0.2656	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-133
17/64	0.2656	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-371
17/64	0.2656	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-609
H	0.2660	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-134
H	0.2660	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-372
H	0.2660	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-610
I	0.2720	0.3150	140.0	0.9449	1.3386	1.4173	3.1102	3XD	928-000-137
I	0.2720	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-375
I	0.2720	0.3150	140.0	2.2441	2.6378	1.4173	4.1339	8XD	928-000-613
J	0.2770	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-139
J	0.2770	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-377
J	0.2770	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-615
K	0.2810	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-141
K	0.2810	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-379
K	0.2810	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-617
9/32	0.2812	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-142
9/32	0.2812	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-380
9/32	0.2812	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-618

IMPERIAL SIZE

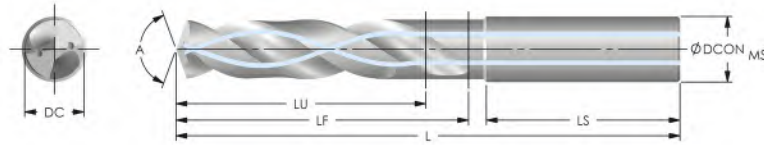
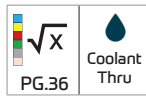


SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
L	0.2900	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-145
L	0.2900	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-383
L	0.2900	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-621
M	0.2950	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-147
M	0.2950	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-385
M	0.2950	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-623
19/64	0.2969	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-149
19/64	0.2969	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-387
19/64	0.2969	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-625
N	0.3020	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-151
N	0.3020	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-389
N	0.3020	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-627
5/16	0.3125	0.3150	140.0	1.1417	1.6142	1.4173	3.1102	3XD	928-000-155
5/16	0.3125	0.3150	140.0	1.6929	2.0866	1.4173	3.5827	5XD	928-000-393
5/16	0.3125	0.3150	140.0	2.5197	3.0315	1.4173	4.5276	8XD	928-000-631
O	0.3160	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-157
O	0.3160	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-395
O	0.3160	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-633
P	0.3230	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-160
P	0.3230	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-398
P	0.3230	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-636
21/64	0.3281	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-162
21/64	0.3281	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-400
21/64	0.3281	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-638
Q	0.3320	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-164
Q	0.3320	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-402
Q	0.3320	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-640
R	0.3390	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-167
R	0.3390	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-405
R	0.3390	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-643
11/32	0.3438	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-169
11/32	0.3438	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-407
11/32	0.3438	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-645
S	0.3480	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-171
S	0.3480	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-409
S	0.3480	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-647
T	0.3580	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-174
T	0.3580	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-412
T	0.3580	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-650
23/64	0.3594	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-176
23/64	0.3594	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-414
23/64	0.3594	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-652
U	0.3680	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-179
U	0.3680	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-417
U	0.3680	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-655

IMPERIAL SIZE

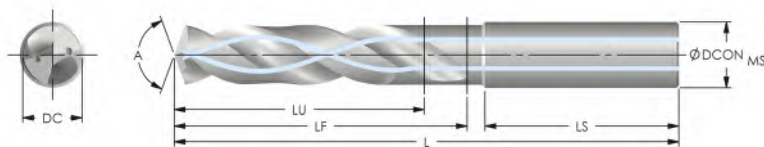
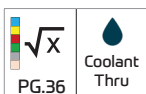


SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
3/8	0.3750	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-182
3/8	0.3750	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-420
3/8	0.3750	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-658
V	0.3770	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-183
V	0.3770	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-421
V	0.3770	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-659
W	0.3860	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-187
W	0.3860	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-425
W	0.3860	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-663
25/64	0.3906	0.3937	140.0	1.3780	1.8504	1.5748	3.5039	3XD	928-000-189
25/64	0.3906	0.3937	140.0	1.9291	2.4016	1.5748	4.0551	5XD	928-000-427
25/64	0.3906	0.3937	140.0	2.9528	3.5039	1.5748	5.1575	8XD	928-000-665
X	0.3970	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-191
X	0.3970	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-429
X	0.3970	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-667
Y	0.4040	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-192
Y	0.4040	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-430
Y	0.4040	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-668
13/32	0.4062	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-193
13/32	0.4062	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-431
13/32	0.4062	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-669
Z	0.4130	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-194
Z	0.4130	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-432
Z	0.4130	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-670
27/64	0.4219	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-196
27/64	0.4219	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-434
27/64	0.4219	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-672
7/16	0.4375	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-198
7/16	0.4375	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-436
7/16	0.4375	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-674
29/64	0.4531	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-200
29/64	0.4531	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-438
29/64	0.4531	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-676
15/32	0.4688	0.4724	140.0	1.5748	2.1654	1.7717	4.0157	3XD	928-000-201
15/32	0.4688	0.4724	140.0	2.2047	2.7953	1.7717	4.6457	5XD	928-000-439
15/32	0.4688	0.4724	140.0	3.6220	4.2520	1.7717	6.1024	8XD	928-000-677
31/64	0.4844	0.5512	140.0	1.6929	2.3622	1.7717	4.2126	3XD	928-000-203
31/64	0.4844	0.5512	140.0	2.3622	3.0315	1.7717	4.8819	5XD	928-000-441
31/64	0.4844	0.5512	140.0	4.3307	5.3150	1.7717	7.1654	8XD	928-000-679
1/2	0.5000	0.5512	140.0	1.6929	2.3622	1.7717	4.2126	3XD	928-000-205
1/2	0.5000	0.5512	140.0	2.3622	3.0315	1.7717	4.8819	5XD	928-000-443
1/2	0.5000	0.5512	140.0	4.3307	5.315	1.7717	7.1654	8XD	928-000-681
33/64	0.5156	0.5512	140.0	1.6929	2.3622	1.7717	4.2126	3XD	928-000-207
33/64	0.5156	0.5512	140.0	2.3622	3.0315	1.7717	4.8819	5XD	928-000-445
33/64	0.5156	0.5512	140.0	4.3307	5.3150	1.7717	7.1654	8XD	928-000-683

IMPERIAL SIZE


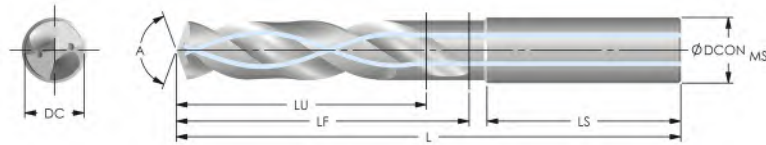
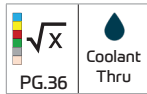
SIZE	DC [in.]	DCONMS [in.]	A [°]	LU [in.]	LF [in.]	LS [in.]	L [in.]	L/DC RATIO	PRODUCT #
17/32	0.5312	0.5512	140.0	1.6929	2.3622	1.7717	4.2126	3XD	928-000-208
17/32	0.5312	0.5512	140.0	2.3622	3.0315	1.7717	4.8819	5XD	928-000-446
17/32	0.5312	0.5512	140.0	4.3307	5.315	1.7717	7.1654	8XD	928-000-684
35/64	0.5469	0.5512	140.0	1.6929	2.3622	1.7717	4.2126	3XD	928-000-210
35/64	0.5469	0.5512	140.0	2.3622	3.0315	1.7717	4.8819	5XD	928-000-448
35/64	0.5469	0.5512	140.0	4.3307	5.315	1.7717	7.1654	8XD	928-000-686
9/16	0.5625	0.6299	140.0	1.7717	2.5591	1.8898	4.5276	3XD	928-000-212
9/16	0.5625	0.6299	140.0	2.4803	3.2677	1.8898	5.2362	5XD	928-000-450
9/16	0.5625	0.6299	140.0	5.0394	6.1024	1.8898	8.0315	8XD	928-000-688
37/64	0.5781	0.6299	140.0	1.7717	2.5591	1.8898	4.5276	3XD	928-000-214
37/64	0.5781	0.6299	140.0	2.4803	3.2677	1.8898	5.2362	5XD	928-000-452
37/64	0.5781	0.6299	140.0	5.0394	6.1024	1.8898	8.0315	8XD	928-000-690
19/32	0.5938	0.6299	140.0	1.7717	2.5591	1.8898	4.5276	3XD	928-000-216
19/32	0.5938	0.6299	140.0	2.4803	3.2677	1.8898	5.2362	5XD	928-000-454
19/32	0.5938	0.6299	140.0	5.0394	6.1024	1.8898	8.0315	8XD	928-000-692
39/64	0.6094	0.6299	140.0	1.7717	2.5591	1.8898	4.5276	3XD	928-000-217
39/64	0.6094	0.6299	140.0	2.4803	3.2677	1.8898	5.2362	5XD	928-000-455
39/64	0.6094	0.6299	140.0	5.0394	6.1024	1.8898	8.0315	8XD	928-000-693
5/8	0.6250	0.6299	140.0	1.7717	2.5591	1.8898	4.5276	3XD	928-000-219
5/8	0.6250	0.6299	140.0	2.4803	3.2677	1.8898	5.2362	5XD	928-000-457
5/8	0.6250	0.6299	140.0	5.0394	6.1024	1.8898	8.0315	8XD	928-000-695
41/64	0.6406	0.7087	140.0	2.0079	2.8740	1.8898	4.8425	3XD	928-000-221
41/64	0.6406	0.7087	140.0	2.7953	3.6614	1.8898	5.6299	5XD	928-000-459
41/64	0.6406	0.7087	140.0	5.6693	6.6929	1.8898	8.7795	8XD	928-000-697
21/32	0.6562	0.7087	140.0	2.0079	2.8740	1.8898	4.8425	3XD	928-000-223
21/32	0.6562	0.7087	140.0	2.7953	3.6614	1.8898	5.6299	5XD	928-000-461
21/32	0.6562	0.7087	140.0	5.6693	6.6929	1.8898	8.7795	8XD	928-000-699
43/64	0.6719	0.7087	140.0	2.0079	2.874	1.8898	4.8425	3XD	928-000-225
43/64	0.6719	0.7087	140.0	2.7953	3.6614	1.8898	5.6299	5XD	928-000-463
43/64	0.6719	0.7087	140.0	5.6693	6.6929	1.8898	8.7795	8XD	928-000-701
11/16	0.6875	0.7087	140.0	2.0079	2.8740	1.8898	4.8425	3XD	928-000-226
11/16	0.6875	0.7087	140.0	2.7953	3.6614	1.8898	5.6299	5XD	928-000-464
11/16	0.6875	0.7087	140.0	5.6693	6.6929	1.8898	8.7795	8XD	928-000-702
45/64	0.7031	0.7087	140.0	2.0079	2.8740	1.8898	4.8425	3XD	928-000-228
45/64	0.7031	0.7087	140.0	2.7953	3.6614	1.8898	5.6299	5XD	928-000-466
45/64	0.7031	0.7087	140.0	5.6693	6.6929	1.8898	8.7795	8XD	928-000-704
23/32	0.7188	0.7874	140.0	2.1654	3.1102	1.9685	5.1969	3XD	928-000-230
23/32	0.7188	0.7874	140.0	3.0315	3.9764	1.9685	6.0630	5XD	928-000-468
23/32	0.7188	0.7874	140.0	6.2992	7.2835	1.9685	9.6457	8XD	928-000-706
47/64	0.7344	0.7874	140.0	2.1654	3.1102	1.9685	5.1969	3XD	928-000-232
47/64	0.7344	0.7874	140.0	3.0315	3.9764	1.9685	6.0630	5XD	928-000-470
47/64	0.7344	0.7874	140.0	6.2992	7.2835	1.9685	9.6457	8XD	928-000-708
3/4	0.7500	0.7874	140.0	2.1654	3.1102	1.9685	5.1969	3XD	928-000-234
3/4	0.7500	0.7874	140.0	3.0315	3.9764	1.9685	6.0630	5XD	928-000-472
3/4	0.7500	0.7874	140.0	6.2992	7.2835	1.9685	9.6457	8XD	928-000-710
49/64	0.7656	0.7874	140.0	2.1654	3.1102	1.9685	5.1969	3XD	928-000-235
49/64	0.7656	0.7874	140.0	3.0315	3.9764	1.9685	6.0630	5XD	928-000-473
49/64	0.7656	0.7874	140.0	6.2992	7.2835	1.9685	9.6457	8XD	928-000-711
25/32	0.7812	0.7874	140.0	2.1654	3.1102	1.9685	5.1969	3XD	928-000-237
25/32	0.7812	0.7874	140.0	3.0315	3.9764	1.9685	6.0630	5XD	928-000-475
25/32	0.7812	0.7874	140.0	6.2992	7.2835	1.9685	9.6457	8XD	928-000-713

METRIC SIZE



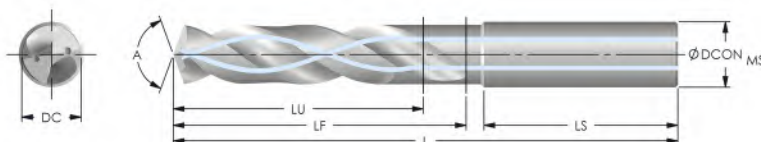
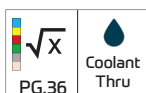
DC [mm]	DC [in.]	DCONMS [mm]	A [°]	LU [mm]	LF [mm]	LS [mm]	L [mm]	L/DC RATIO	PRODUCT #
0.80	0.0315	4.00	140.0	3.00	5.00	28.00	58.00	3XD	928-000-001
0.80	0.0315	4.00	140.0	5.00	7.00	28.00	58.00	5XD	928-000-239
0.80	0.0315	4.00	140.0	7.00	9.00	28.00	58.00	8XD	928-000-477
0.90	0.0354	4.00	140.0	3.00	5.00	28.00	58.00	3XD	928-000-005
0.90	0.0354	4.00	140.0	5.00	7.00	28.00	58.00	5XD	928-000-243
0.90	0.0354	4.00	140.0	7.00	9.00	28.00	58.00	8XD	928-000-481
1.00	0.0394	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-010
1.00	0.0394	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-248
1.00	0.0394	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-486
1.10	0.0433	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-015
1.10	0.0433	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-253
1.10	0.0433	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-491
1.12	0.0441	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-016
1.12	0.0441	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-254
1.12	0.0441	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-492
1.20	0.0472	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-019
1.20	0.0472	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-257
1.20	0.0472	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-495
1.25	0.0492	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-020
1.25	0.0492	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-258
1.25	0.0492	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-496
1.27	0.0500	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-021
1.27	0.0500	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-259
1.27	0.0500	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-497
1.30	0.0512	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-022
1.30	0.0512	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-260
1.30	0.0512	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-498
1.35	0.0531	4.00	140.0	5.00	7.00	28.00	58.00	3XD	928-000-024
1.35	0.0531	4.00	140.0	6.00	9.00	28.00	58.00	5XD	928-000-262
1.35	0.0531	4.00	140.0	10.00	12.00	28.00	58.00	8XD	928-000-500
1.45	0.0571	4.00	140.0	6.00	9.00	28.00	58.00	3XD	928-000-026
1.45	0.0571	4.00	140.0	9.00	12.00	28.00	58.00	5XD	928-000-264
1.45	0.0571	4.00	140.0	15.00	18.00	28.00	58.00	8XD	928-000-502
1.50	0.0590	4.00	140.0	6.00	9.00	28.00	58.00	3XD	928-000-027
1.50	0.0590	4.00	140.0	9.00	12.00	28.00	58.00	5XD	928-000-265
1.50	0.0590	4.00	140.0	15.00	18.00	28.00	58.00	8XD	928-000-503
1.55	0.0610	4.00	140.0	6.00	9.00	28.00	58.00	3XD	928-000-029
1.55	0.0610	4.00	140.0	9.00	12.00	28.00	58.00	5XD	928-000-267
1.55	0.0610	4.00	140.0	15.00	18.00	28.00	58.00	8XD	928-000-505
1.60	0.0630	4.00	140.0	6.00	9.00	28.00	58.00	3XD	928-000-031
1.60	0.0630	4.00	140.0	9.00	12.00	28.00	58.00	5XD	928-000-269
1.60	0.0630	4.00	140.0	15.00	18.00	28.00	58.00	8XD	928-000-507
2.00	0.0787	4.00	140.0	9.00	13.00	28.00	58.00	3XD	928-000-039
2.00	0.0787	4.00	140.0	14.00	18.00	28.00	58.00	5XD	928-000-277
2.00	0.0787	4.00	140.0	22.00	26.00	28.00	66.00	8XD	928-000-515

METRIC SIZE

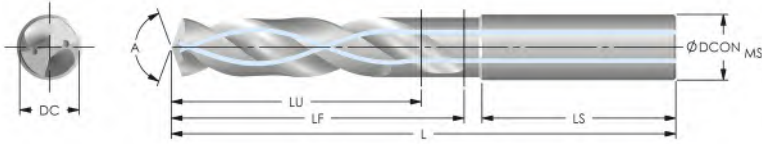
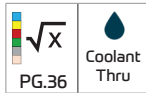


DC [mm]	DC [in.]	DCONMS [mm]	A [°]	LU [mm]	LF [mm]	LS [mm]	L [mm]	L/DC RATIO	PRODUCT #
2.50	0.0984	4.00	140.0.0	12.00	17.00	28.00	58.00	3XD	928-000-048
2.50	0.0984	4.00	140.0	17.00	22.00	28.00	58.00	5XD	928-000-286
2.50	0.0984	4.00	140.0	25.00	30.00	28.00	66.00	8XD	928-000-524
3.00	0.1181	6.00	140.0	14.00	20.00	36.00	62.00	3XD	928-000-058
3.00	0.1181	6.00	140.0	23.00	28.00	36.00	66.00	5XD	928-000-296
3.00	0.1181	6.00	140.0	33.00	40.00	36.00	78.00	8XD	928-000-534
3.20	0.1259	6.00	140.0	14.00	20.00	36.00	62.00	3XD	928-000-061
3.20	0.1259	6.00	140.0	23.00	28.00	36.00	66.00	5XD	928-000-299
3.20	0.1259	6.00	140.0	33.00	40.00	36.00	78.00	8XD	928-000-537
3.50	0.1378	6.00	140.0	14.00	20.00	36.00	62.00	3XD	928-000-064
3.50	0.1378	6.00	140.0	23.00	28.00	36.00	66.00	5XD	928-000-302
3.50	0.1378	6.00	140.0	33.00	40.00	36.00	78.00	8XD	928-000-540
3.60	0.1417	6.00	140.0	14.00	20.00	36.00	62.00	3XD	928-000-067
3.60	0.1417	6.00	140.0	23.00	28.00	36.00	66.00	5XD	928-000-305
3.60	0.1417	6.00	140.0	33.00	40.00	36.00	78.00	8XD	928-000-543
3.90	0.1535	6.00	140.0	17.00	24.00	36.00	66.00	3XD	928-000-072
3.90	0.1535	6.00	140.0	29.00	36.00	36.00	74.00	5XD	928-000-310
3.90	0.1535	6.00	140.0	41.00	49.00	36.00	87.00	8XD	928-000-548
4.00	0.1574	6.00	140.0	17.00	24.00	36.00	66.00	3XD	928-000-076
4.00	0.1574	6.00	140.0	29.00	36.00	36.00	74.00	5XD	928-000-314
4.00	0.1574	6.00	140.0	41.00	49.00	36.00	87.00	8XD	928-000-552
4.10	0.1614	6.00	140.0	17.00	24.00	36.00	66.00	3XD	928-000-079
4.10	0.1614	6.00	140.0	29.00	36.00	36.00	74.00	5XD	928-000-317
4.10	0.1614	6.00	140.0	41.00	49.00	36.00	87.00	8XD	928-000-555
4.40	0.1732	6.00	140.0	17.00	24.00	36.00	66.00	3XD	928-000-084
4.40	0.1732	6.00	140.0	29.00	36.00	36.00	74.00	5XD	928-000-322
4.40	0.1732	6.00	140.0	41.00	49.00	36.00	87.00	8XD	928-000-560
4.50	0.1771	6.00	140.0	17.00	24.00	36.00	66.00	3XD	928-000-086
4.50	0.1771	6.00	140.0	29.00	36.00	36.00	74.00	5XD	928-000-324
4.50	0.1771	6.00	140.0	41.00	49.00	36.00	87.00	8XD	928-000-562
4.60	0.1811	6.00	140.0	17.00	24.00	36.00	66.00	3XD	928-000-088
4.60	0.1811	6.00	140.0	29.00	36.00	36.00	74.00	5XD	928-000-326
4.60	0.1811	6.00	140.0	41.00	49.00	36.00	87.00	8XD	928-000-564
4.70	0.1850	6.00	140.0	17.00	24.00	36.00	66.00	3XD	928-000-090
4.70	0.1850	6.00	140.0	29.00	36.00	36.00	74.00	5XD	928-000-328
4.70	0.1850	6.00	140.0	41.00	49.00	36.00	87.00	8XD	928-000-566
4.80	0.1889	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-092
4.80	0.1889	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-330
4.80	0.1889	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-568
4.90	0.1929	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-094
4.90	0.1929	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-332
4.90	0.1929	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-570
5.00	0.1968	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-097
5.00	0.1968	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-335
5.00	0.1968	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-573

METRIC SIZE

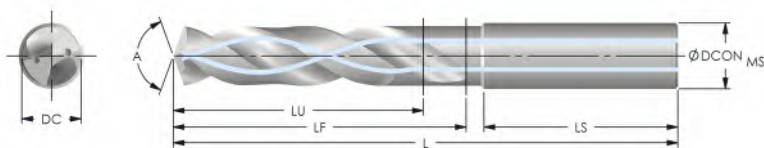
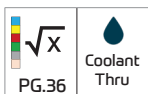


DC [mm]	DC [in.]	DCONMS [mm]	A [°]	LU [mm]	LF [mm]	LS [mm]	L [mm]	L/DC RATIO	PRODUCT #
5.10	0.2008	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-099
5.10	0.2008	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-337
5.10	0.2008	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-575
5.20	0.2047	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-103
5.20	0.2047	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-341
5.20	0.2047	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-579
5.30	0.2087	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-105
5.30	0.2087	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-343
5.30	0.2087	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-581
5.40	0.2126	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-107
5.40	0.2126	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-345
5.40	0.2126	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-583
5.50	0.2165	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-109
5.50	0.2165	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-347
5.50	0.2165	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-585
5.60	0.2205	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-111
5.60	0.2205	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-349
5.60	0.2205	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-587
5.70	0.2244	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-113
5.70	0.2244	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-351
5.70	0.2244	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-589
5.80	0.2283	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-115
5.80	0.2283	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-353
5.80	0.2283	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-591
5.90	0.2323	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-116
5.90	0.2323	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-354
5.90	0.2323	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-592
6.00	0.2362	6.00	140.0	20.00	28.00	36.00	66.00	3XD	928-000-119
6.00	0.2362	6.00	140.0	35.00	44.00	36.00	82.00	5XD	928-000-357
6.00	0.2362	6.00	140.0	48.00	56.00	36.00	94.00	8XD	928-000-595
6.10	0.2402	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-121
6.10	0.2402	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-359
6.10	0.2402	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-597
6.20	0.2441	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-123
6.20	0.2441	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-361
6.20	0.2441	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-599
6.30	0.2480	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-125
6.30	0.2480	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-363
6.30	0.2480	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-601
6.40	0.2520	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-127
6.40	0.2520	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-365
6.40	0.2520	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-603
6.50	0.2559	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-128
6.50	0.2559	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-366
6.50	0.2559	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-604

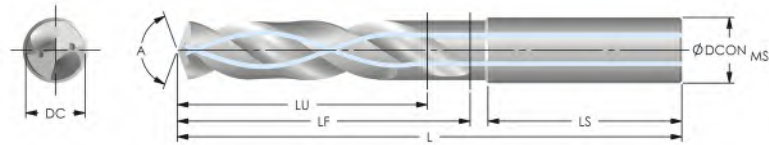
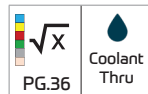
METRIC SIZE


DC [mm]	DC [in.]	DCONMS [mm]	A [°]	LU [mm]	LF [mm]	LS [mm]	L [mm]	L/DC RATIO	PRODUCT #
6.60	0.2598	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-130
6.60	0.2598	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-368
6.60	0.2598	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-606
6.70	0.2638	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-132
6.70	0.2638	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-370
6.70	0.2638	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-608
6.80	0.2677	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-135
6.80	0.2677	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-373
6.80	0.2677	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-611
6.90	0.2716	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-136
6.90	0.2716	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-374
6.90	0.2716	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-612
7.00	0.2756	8.00	140.0	24.00	34.00	36.00	79.00	3XD	928-000-138
7.00	0.2756	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-376
7.00	0.2756	8.00	140.0	57.00	67.00	36.00	105.00	8XD	928-000-614
7.10	0.2795	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-140
7.10	0.2795	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-378
7.10	0.2795	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-616
7.20	0.2835	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-143
7.20	0.2835	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-381
7.20	0.2835	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-619
7.30	0.2874	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-144
7.30	0.2874	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-382
7.30	0.2874	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-620
7.40	0.2913	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-146
7.40	0.2913	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-384
7.40	0.2913	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-622
7.50	0.2953	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-148
7.50	0.2953	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-386
7.50	0.2953	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-624
7.60	0.2992	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-150
7.60	0.2992	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-388
7.60	0.2992	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-626
7.70	0.3031	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-152
7.70	0.3031	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-390
7.70	0.3031	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-628
7.80	0.3071	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-153
7.80	0.3071	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-391
7.80	0.3071	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-629
7.90	0.3110	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-154
7.90	0.3110	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-392
7.90	0.3110	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-630
8.00	0.3150	8.00	140.0	29.00	41.00	36.00	79.00	3XD	928-000-156
8.00	0.3150	8.00	140.0	43.00	53.00	36.00	91.00	5XD	928-000-394
8.00	0.3150	8.00	140.0	64.00	77.00	36.00	115.00	8XD	928-000-632
8.10	0.3189	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-158
8.10	0.3189	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-396
8.10	0.3189	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-634

METRIC SIZE

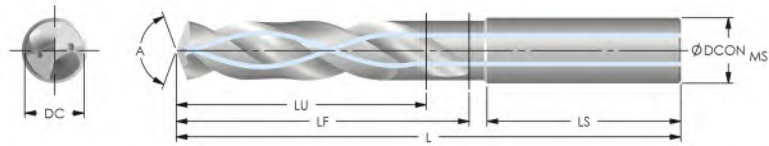
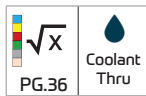


DC [mm]	DC [in.]	DCONMS [mm]	A [°]	LU [mm]	LF [mm]	LS [mm]	L [mm]	L/DC RATIO	PRODUCT #
8.20	0.3228	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-159
8.20	0.3228	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-397
8.20	0.3228	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-635
8.30	0.3268	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-161
8.30	0.3268	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-399
8.30	0.3268	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-637
8.40	0.3307	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-163
8.40	0.3307	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-401
8.40	0.3307	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-639
8.50	0.3346	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-165
8.50	0.3346	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-403
8.50	0.3346	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-641
8.60	0.3386	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-166
8.60	0.3386	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-404
8.60	0.3386	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-642
8.70	0.3425	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-168
8.70	0.3425	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-406
8.70	0.3425	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-644
8.80	0.3465	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-170
8.80	0.3465	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-408
8.80	0.3465	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-646
8.90	0.3504	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-172
8.90	0.3504	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-410
8.90	0.3504	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-648
9.00	0.3543	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-173
9.00	0.3543	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-411
9.00	0.3543	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-649
9.10	0.3583	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-175
9.10	0.3583	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-413
9.10	0.3583	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-651
9.20	0.3622	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-177
9.20	0.3622	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-415
9.20	0.3622	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-653
9.30	0.3661	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-178
9.30	0.3661	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-416
9.30	0.3661	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-654
9.40	0.3701	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-180
9.40	0.3701	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-418
9.40	0.3701	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-656
9.50	0.3740	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-181
9.50	0.3740	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-419
9.50	0.3740	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-657
9.60	0.3780	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-184
9.60	0.3780	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-422
9.60	0.3780	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-660

METRIC SIZE


DC [mm]	DC [in.]	DCONMS [mm]	A [°]	LU [mm]	LF [mm]	LS [mm]	L [mm]	L/DC RATIO	PRODUCT #
9.70	0.3819	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-185
9.70	0.3819	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-423
9.70	0.3819	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-661
9.80	0.3858	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-186
9.80	0.3858	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-424
9.80	0.3858	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-662
9.90	0.3898	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-188
9.90	0.3898	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-426
9.90	0.3898	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-664
10.00	0.3937	10.00	140.0	35.00	47.00	40.00	89.00	3XD	928-000-190
10.00	0.3937	10.00	140.0	49.00	61.00	40.00	103.00	5XD	928-000-428
10.00	0.3937	10.00	140.0	75.00	89.00	40.00	131.00	8XD	928-000-666
10.50	0.4134	12.00	140.0	40.00	55.00	45.00	102.00	3XD	928-000-195
10.50	0.4134	12.00	140.0	56.00	71.00	45.00	118.00	5XD	928-000-433
10.50	0.4134	12.00	140.0	92.00	108.00	45.00	155.00	8XD	928-000-671
11.00	0.4331	12.00	140.0	40.00	55.00	45.00	102.00	3XD	928-000-197
11.00	0.4331	12.00	140.0	56.00	71.00	45.00	118.00	5XD	928-000-435
11.00	0.4331	12.00	140.0	92.00	108.00	45.00	155.00	8XD	928-000-673
11.50	0.4528	12.00	140.0	40.00	55.00	45.00	102.00	3XD	928-000-199
11.50	0.4528	12.00	140.0	56.00	71.00	45.00	118.00	5XD	928-000-437
11.50	0.4528	12.00	140.0	92.00	108.00	45.00	155.00	8XD	928-000-675
12.00	0.4724	12.00	140.0	40.00	55.00	45.00	102.00	3XD	928-000-202
12.00	0.4724	12.00	140.0	56.00	71.00	45.00	118.00	5XD	928-000-440
12.00	0.4724	12.00	140.0	92.00	108.00	45.00	155.00	8XD	928-000-678
12.50	0.4921	14.00	140.0	43.00	60.00	45.00	107.00	3XD	928-000-204
12.50	0.4921	14.00	140.0	60.00	77.00	45.00	124.00	5XD	928-000-442
12.50	0.4921	14.00	140.0	110.00	135.00	45.00	182.00	8XD	928-000-680
13.00	0.5118	14.00	140.0	43.00	60.00	45.00	107.00	3XD	928-000-206
13.00	0.5118	14.00	140.0	60.00	77.00	45.00	124.00	5XD	928-000-444
13.00	0.5118	14.00	140.0	110.00	135.00	45.00	182.00	8XD	928-000-682
13.50	0.5315	14.00	140.0	43.00	60.00	45.00	107.00	3XD	928-000-209
13.50	0.5315	14.00	140.0	60.00	77.00	45.00	124.00	5XD	928-000-447
13.50	0.5315	14.00	140.0	110.00	135.00	45.00	182.00	8XD	928-000-685
14.00	0.5512	14.00	140.0	43.00	60.00	45.00	107.00	3XD	928-000-211
14.00	0.5512	14.00	140.0	60.00	77.00	45.00	124.00	5XD	928-000-449
14.00	0.5512	14.00	140.0	110.00	135.00	45.00	182.00	8XD	928-000-687
14.50	0.5709	16.00	140.0	45.00	65.00	48.00	115.00	3XD	928-000-213
14.50	0.5709	16.00	140.0	63.00	83.00	48.00	133.00	5XD	928-000-451
14.50	0.5709	16.00	140.0	128.00	155.00	48.00	204.00	8XD	928-000-689
15.00	0.5906	16.00	140.0	45.00	65.00	48.00	115.00	3XD	928-000-215
15.00	0.5906	16.00	140.0	63.00	83.00	48.00	133.00	5XD	928-000-453
15.00	0.5906	16.00	140.0	128.00	155.00	48.00	204.00	8XD	928-000-691
15.50	0.6102	16.00	140.0	45.00	65.00	48.00	115.00	3XD	928-000-218
15.50	0.6102	16.00	140.0	63.00	83.00	48.00	133.00	5XD	928-000-456
15.50	0.6102	16.00	140.0	128.00	155.00	48.00	204.00	8XD	928-000-694

METRIC SIZE



DC [mm]	DC [in.]	DCONMS [mm]	A [°]	LU [mm]	LF [mm]	LS [mm]	L [mm]	L/DC RATIO	PRODUCT #
16.00	0.6299	16.00	140.0	45.00	65.00	48.00	115.00	3XD	928-000-220
16.00	0.6299	16.00	140.0	63.00	83.00	48.00	133.00	5XD	928-000-458
16.00	0.6299	16.00	140.0	128.00	155.00	48.00	204.00	8XD	928-000-696
16.50	0.6496	18.00	140.0	51.00	73.00	48.00	123.00	3XD	928-000-222
16.50	0.6496	18.00	140.0	71.00	93.00	48.00	143.00	5XD	928-000-460
16.50	0.6496	18.00	140.0	144.00	170.00	48.00	223.00	8XD	928-000-698
17.00	0.6693	18.00	140.0	51.00	73.00	48.00	123.00	3XD	928-000-224
17.00	0.6693	18.00	140.0	71.00	93.00	48.00	143.00	5XD	928-000-462
17.00	0.6693	18.00	140.0	144.00	170.00	48.00	223.00	8XD	928-000-700
17.50	0.6890	18.00	140.0	51.00	73.00	48.00	123.00	3XD	928-000-227
17.50	0.6890	18.00	140.0	71.00	93.00	48.00	143.00	5XD	928-000-465
17.50	0.6890	18.00	140.0	144.00	170.00	48.00	223.00	8XD	928-000-703
18.00	0.7087	18.00	140.0	51.00	73.00	48.00	123.00	3XD	928-000-229
18.00	0.7087	18.00	140.0	71.00	93.00	48.00	143.00	5XD	928-000-467
18.00	0.7087	18.00	140.0	144.00	170.00	48.00	223.00	8XD	928-000-705
18.50	0.7283	20.00	140.0	55.00	79.00	50.00	132.00	3XD	928-000-231
18.50	0.7283	20.00	140.0	77.00	101.00	50.00	154.00	5XD	928-000-469
18.50	0.7283	20.00	140.0	160.00	185.00	50.00	245.00	8XD	928-000-707
19.00	0.7480	20.00	140.0	55.00	79.00	50.00	132.00	3XD	928-000-233
19.00	0.7480	20.00	140.0	77.00	101.00	50.00	154.00	5XD	928-000-471
19.00	0.7480	20.00	140.0	160.00	185.00	50.00	245.00	8XD	928-000-709
19.50	0.7677	20.00	140.0	55.00	79.00	50.00	132.00	3XD	928-000-236
19.50	0.7677	20.00	140.0	77.00	101.00	50.00	154.00	5XD	928-000-474
19.50	0.7677	20.00	140.0	160.00	185.00	50.00	245.00	8XD	928-000-712
20.00	0.7874	20.00	140.0	55.00	79.00	50.00	132.00	3XD	928-000-238
20.00	0.7874	20.00	140.0	77.00	101.00	50.00	154.00	5XD	928-000-476
20.00	0.7874	20.00	140.0	160.00	185.00	50.00	245.00	8XD	928-000-714

SOLID CARBIDE DRILL SPEEDS & FEEDS


				DRILL DIAMETER (INCH)						
ISO	MATERIAL	HARDNESS	Vc (SFM)*	≤ 1/16"	1/16" - 1/8"	1/8" - 1/4"	1/4" - 3/8"	3/8" - 1/2"	1/2" - 3/4"	3/4" - 1"
Fz = IPR(INCH PER REVOLUTION)*										
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 BHN or ≤ 28 HRC	210-510	.0008- .0030	.0030- .0055	.0040 - .0085	.0050 - .012	.0070 - .015	.0090 - .0175	.0100 - .0200
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 17-4 PH	≤ 375 BHN or ≤ 40 HRC	170-390	.0006- .0025	.0020- .0045	.0030- .0060	.0045 - .0080	.0060- .0120	.0070- .0145	.0080- .0175
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 275 BHN or ≤ 28 HRC	95-165	.0005 - .0025	.0020- .0045	.0035- .0060	.0040- .0085	.0055 - .0125	.0070- .0150	.0080- .0170
	STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 BHN or ≤ 28 HRC	80-140	.0004 - .0018	.0018- .0035	.0022 - .0045	.0033 - .0060	.0055 - .0090	.0060- .0140	.0070 - .0150
K	GRAY IRONS Class 20, 30, 40, 50, 60, G3000, G3500	≤ 220 BHN or ≤ 19 HRC	190-475	.0008 - .0040	.0030 - .0060	.0045- .0080	.0060- .0135	.0070 - .0140	.0010- .0160	.0120- .0200
	DUCTILE IRONS D&M series , 250, 300, 350, 400, 60-40-18, 65-45-12	"≤ 260 BHN or ≤ 26 HRC"	160-310	.0006 - .0030	.0028 - .0035	.0040- .0070	.0055- .010	.0070 - .0120	.0090- .0140	.0110- .0170
N	NON-FERROUS Aluminum, Aluminum cast, Brass, Copper, Bronze, Non Metallic	"≤ 271 BHN or ≤ 28 HRC"	350-950	.0010 - .0040	.0030- .0060	.0040- .0070	.0060 - .0115	.0075 - .0135	.0090 - .0150	.0100 - .0210
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	"≤ 375 BHN or ≤ 55 HRC"	55-145	.0008- .0030	.0010- .0040	.0017 - .0055	.0030 - .0073	.0055 - .0095	.0060 - .0100	.0070 - .0115
S	HR SUPER ALLOYS Inconel 718, Waspaloy, Hastelloy, Inconel 625, Stellite 31, Haynes 25, Rene 41	"≤ 275 BHN or ≤ 28 HRC"	95 -215	.0007 - .0020	.00012 - .0025	.0018- .0040	.0027- .0075	.0030 - .0075	.0050- .0090	.0060- .0110
	TITANIUM 6AL-4V, ASTM 1, 2, 3, 6AL-2S	"≤ 275 BHN or ≤ 28 HRC"	70-160	.0009 - .0030	.0015 - .0035	.0020- .00550	.0045 - .0100	.0075 - .0120	.0080- .0150	.0095- .0160

Recommendations

Productivity and tooling performance is not only influenced by grade and geometry, but also by clamping the tool securely and accurately as possible.

- It is recommended to use precision holders i.e. hydraulic, shrink fit
- It is recommended to use internal coolant – minimum recommended pressure 145 psi

**Speeds & feeds are starting recommendations only. Factors such as machine type, fixture, tooling rigidity, available horsepower, coolant delivery method and others will affect the performance significantly.*

YOUR COMPLETE TOOL MAKING AUTHORITY®

ARCH Cutting Tools is more than an American manufacturer of metal cutting tools. We are engineering the future.

We draw on over 100 years of collective engineering expertise and innovative materials to provide solutions for complex manufacturing processes. And we view every manufacturing challenge as an opportunity to collaborate and design cutting-edge solutions that maximize the end-user environment.

Whether it's a standard product, complex custom, reconditioned tool, or a complete tooling package, our solutions enable end-users to run longer, cut faster, and machine with greater precision.

We are Your Complete Tool Making Authority®.



V. 1.1.5