Special Tool Configurations

Special Overall and/or Flute Lengths
While we recommend using a standard overall and flute length whenever possible, there are situations where the use of special overall and/or flute lengths are warranted. If you have any questions on the relative merits of using special lengths, CJT's application specialists will be glad to be of assistance.

Special Point Geometries
With many applications, special point geometries can increase tool life and/or performance. Any type of point that can be put on a high speed drill can be put on a solid carbide drill and most on a carbide tipped drill with some exceptions.

Some of the special point geometries we offer:

- **Ball nose and radial lip point grinds**
- **Double angle points**
- **Flat points (180 degrees)**
- **Split points**
- **"K" notch points**
- **Zero and negative rake cutting edges**
- **Polyrake point**
- **Spur and Brad points**

Double Margin Drills
Both solid carbide and carbide tipped drills can be made with "double margin" construction for applications requiring added stability and straightness while drilling.

Multiple Diameter Step Tools
Drills, reamers and end mills can all be produced as step tools. Solid carbide and carbide tipped construction is available in non-coolant fed and with internal coolant holes.

Special Coatings
TiAlCN and Wc/C are two examples of the special coatings available. Our application specialist will help you determine which coating is appropriate for your application.

Ask our Application Specialist
The above are some examples of special purpose drill configurations we make. For more information on what we can produce or what we would recommend in special situations please contact CJT's application specialists.

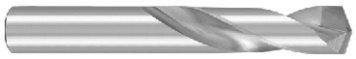
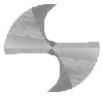
Aerospace Specials
Refer to page 45 for more information.

Phone: 630-690-5933 800-323-2299 Fax: 630-690-6355

Carbide Tip Non-Coolant Fed Drills

GENERAL PURPOSE & AEROSPACE


Style 110 General purpose, screw machine length. For cast aluminum, bronze, cast and ductile irons, fiberglass, hard plastics and other abrasive materials. **Page. 32**

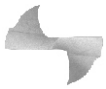



Style 115 General purpose, 135°split point, screw machine length. For cast aluminum, bronze, cast and ductile irons, titaniums, fiberglass, hard plastics and non-ferrous metals. **Page. 34**


Style 120 General purpose, jobber length. For cast aluminum, bronze, cast and ductile irons, fiberglass, hard plastics, other non-ferrous materials. Not recommended for soft steels. **Page. 36**


Style 125 General purpose, 135° split point, jobber length. For cast aluminum, bronze, cast and ductile irons, titaniums, fiberglass, hard plastics and non-ferrous metals. **Page. 40**


Style 130 General purpose, taper length, tanged. For cast aluminum, bronze, cast and ductile irons, fiberglass, hard plastics and non-ferrous materials. **Page. 42**

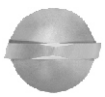
Style 140 General purpose, Morse taper shank. For cast aluminum, bronze, cast and ductile irons, fiberglass, hard plastics and non-ferrous materials. **Page. 44**


Style 129 Aerospace, 135° NAS907 (P3) split point, aircraft (12”) extension length. For cast aluminum, bronze, cast and ductile irons, titaniums, graphite, fiberglass, hard plastics and non-ferrous metals. **Page. 46**

HEAVY DUTY


Style 150 Hard steel, die drill. Extra thick carbide tip, high temperature braze. For hardened and case hardened steels. **Page. 48**

SPECIAL PURPOSE

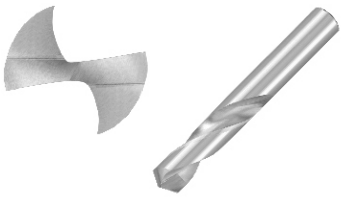



Style 162 Precision glass and tile drill. Carbide tip offers excellent abrasion resistance when drilling glass, tile, mirrors and ceramics. **Page. 50**


Style 163 Bowling Ball drill, Silver & Deming style. Brazed carbide tip on high helix masonry flute is ideal for the economic drilling of carbon, hard plastics, concrete, plaster, wall board, stone, brick and asphalt. **Page. 51**

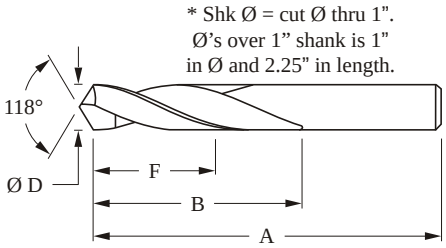
Style 110

Premium carbide grade provides excellent wear resistance when cutting cast aluminum, bronze, cast and ductile irons, fiberglass, hard plastics and other abrasive materials. Not recommended for soft steels.



- Right hand spiral, right hand cut, heavy duty high speed steel body.
- 2 to 2.5 times faster speed of standard high speed steel yields faster holes with better hole finish.
- 118° cam relieved point, strong edge, free cutting.
- Allow 2.5 x Ø of flute for chip exit up to 1/4" (6.35mm), 2 x Ø up to 7/16" (11.1mm) and 1.5 x Ø over 7/16".

Diameter Tolerances					
Nominal Size		Cutting Ø		Shank Ø	
		Inch	mm	Inch	mm
Through	.2500"	+.0000	+0.000	+.0000	+0.000
	6.35mm	-.0010	-0.025	-.0030	-0.076
.2501"	.5000"	+.0000	+0.000	+.0000	+0.000
6.36mm To	12.7mm	-.0010	-0.025	-.0045	-0.114
.5001"	And Up	+.0000	+0.000	+.0000	+0.000
12.7mm		-.0010	-0.025	-.0030	-0.076



EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
11001250	1/8	3.175	.1250	1-7/8	48.	7/8	22.	.52	13.	.0981 - .1290	2.492 - 3.277
11001378		3.5	.1378	2-1/16	52.	1	25.	.61	15.	.1291 - .1590	3.279 - 4.039
11001406	9/64	3.572	.1406								
11001562	5/32	3.967	.1562								
11001575		4.	.1575								
11001719	11/64	4.366	.1719	2-3/16	56.	1-1/8	29.	.70	18.	.1591 - .1910	4.041 - 4.851
11001772		4.5	.1772								
11001875	3/16	4.763	.1875								
11001969		5.	.1969	2-3/8	60.	1-1/4	32.	.72	18.	.1911 - .2210	4.854 - 5.613
11002010	*7*	5.105	.2010								
11002031	13/64	5.159	.2031								
11002130	*3*	5.41	.2130								
11002165		5.5	.2165								
11002188	7/32	5.558	.2188								
11002280	1	5.791	.2280	2-1/2	64.	1-3/8	35.	.83	21.	.2211 - .2530	5.616 - 6.426
11002344	15/64	5.954	.2344								
11002362		6.	.2362								
11002460	*D*	6.248	.2460								
11002500	1/4	6.35	.2500								
11002559		6.5	.2559	2-11/16	68.	1-1/2	38.	.88	22.	.2531 - .2840	6.429 - 7.214
11002570	*F*	6.528	.2570								
11002610	*G*	6.629	.2610								
11002656	17/64	6.746	.2656								
11002660	*H*	6.756	.2660								
11002720	*I*	6.909	.2720								
11002756		7.	.2756								
11002812	9/32	7.142	.2812								
11002953		7.5	.2953	2-13/16	71.	1-5/8	41.	1.0	25.	.2841 - .3160	7.216 - 8.026
11002969	19/64	7.541	.2969								
11003125	5/16	7.938	.3125								
11003150		8.	.3150								
11003160	*O*	8.026	.3160								

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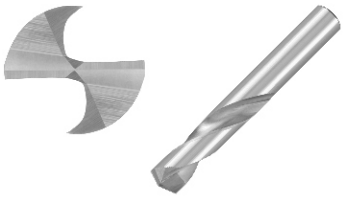
Style 110

EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
11003281	21/64	8.334	.3281	3	76.	1-11/16	43.	1.0	25.	.3161 - .3470	8.029 - 8.814
11003320	*Q*	8.433	.3320								
11003346		8.5	.3346								
11003390	*R*	8.611	.3390								
11003438	11/32	8.733	.3438								
11003543		9.	.3543	3-1/8	79.	1-13/16	46.	1.0	27.	.3471 - .3780	8.816 - 9.601
11003594	23/64	9.129	.3594								
11003680	*U*	9.347	.3680								
11003740		9.5	.3740								
11003750	3/8	9.525	.3750								
11003860	*W*	9.804	.3860	3-5/16	84.	1-15/16	49.	1.1	28.	.3781 - .4100	9.604 - 10.414
11003906	25/64	9.921	.3906								
11003937		10.	.3937								
11003970	*X*	10.084	.3970								
11004062	13/32	10.317	.4062								
11004134		10.5	.4134	3-7/16	87.	2-1/16	52.	1.2	30.	.4101 - .4410	10.417 - 11.201
11004219	27/64	10.716	.4219								
11004331		11.	.4331								
11004375	7/16	11.113	.4375								
11004528		11.5	.4528	3-5/8	92.	2-1/8	54.	1.2	30.	.4411 - .4730	11.204 - 12.014
11004531	29/64	11.509	.4531								
11004688	15/32	11.908	.4688								
11004724		12.	.4724								
11004844	31/64	12.304	.4844	3 3/4	95.	2-1/4	57.	1.3	33.	.4731 - .5040	12.017 - 12.802
11004921		12.5	.4921								
11005000	1/2	12.7	.5000								
11005118		13.	.5118	3-7/8	98.	2-3/8	60.	1.4	36.	.5041 - .5340	12.804 - 13.564
11005312	17/32	13.492	.5312								
11005315		13.5	.5315								
11005512		14.	.5512	4	102.	2-1/2	64.	1.5	39.	.5341 - .5650	13.566 - 14.351
11005625	9/16	14.288	.5625								
11005938	19/32	15.083	.5938	4-1/8	105.	2-5/8	67.	1.6	41.	.5651 - .5960	14.354 - 15.138
11006250	5/8	15.875	.6250	4-1/4	108.	2-3/4	70.	1.7	44.	.5961 - .6280	15.141 - 15.951
11006562	21/32	16.667	.6562	4-1/2	114.	2-7/8	73.	1.8	46.	.6281 - .6590	15.954 - 16.739
11006875	11/16	17.463	.6875	4-5/8	117.					.6591 - .6900	16.741 - 17.526
11007188	23/32	18.258	.7188	4-3/4	121.	3	76.	1.9	48.	.6901 - .7210	17.529 - 18.313
11007500	3/4	19.05	.7500	5	127.	3-1/8	79.	2	51.	.7211 - .7530	18.316 - 19.126
11007812	25/32	19.842	.7812	5-1/8	130.	3-1/4	83.			.7531 - .7840	19.129 - 19.914
11008125	13/16	20.638	.8125	5-1/4	133.	3-3/8	86.	2.2	55.	.7841 - .8150	19.916 - 20.701
11008438	27/32	21.433	.8438	5-3/8	137.	3-1/2	89.	2.3	58.	.8151 - .8460	20.704 - 21.488
11008750	7/8	22.225	.8750	5-1/2	140.					.8461 - .8780	21.491 - 22.301
11009062	29/32	23.017	.9062	5-5/8	143.	3-5/8	92.	2.4	61.	.8781 - .9090	22.304 - 23.089
11009375	15/16	23.813	.9375	5-3/4	146.	3-3/4	95.	2.5	63.	.9091 - .9400	23.091 - 23.876
11009688	31/32	24.608	.9688	5-7/8	149.	3-7/8	98.	2.6	66.	.9401 - .9710	23.879 - 24.663
11010000	1*	25.4	1.0000	6	152.	4	102.	2.7	68.	.9711 - 1.0030	24.666 - 25.476
11010625	1-1/16*	26.988	1.0625	6-1/4	159.			2.6	66.	1.0310 - 1.0650	26.187 - 27.051
11011250	1-1/8*	28.575	1.1250	6-3/8	162.					1.0930 - 1.1280	27.762 - 28.651
11011875	1-3/16*	30.163	1.1875	6-5/8	168.	4-1/4	108.	2.7	69.	1.1560 - 1.1900	29.362 - 30.266
11012500	1-1/4*	31.75	1.2500	6-3/4	171.	4-3/8	111.	2.9	73.	1.2180 - 1.2530	30.937 - 31.826

* Shk Ø = cut Ø thru 1".
Ø's over 1" shank is 1"
in Ø and 2.25" in length

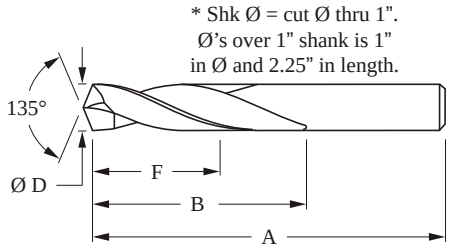
Style 115

Premium carbide grade provides excellent wear resistance when cutting cast aluminum, bronze, cast and ductile irons, titaniums, fiberglass, hard plastics and non-ferrous metals. Not recommended for soft steels.



- 135° four facet split point improves true position and is an excellent starting drill for longer coolant fed drills.
- 2 to 2.5 times faster speed than standard high speed steel with better hole finish.
- Right hand spiral, right hand cut, heavy duty high speed steel body.
- Allow 2.5 x Ø of flute for chip exit up to 1/4" (6.35mm), 2 x Ø up to 7/16" (11.1mm) and 1.5 x Ø over 7/16".

Diameter Tolerances					
Nominal Size		Cutting Ø		Shank Ø	
		Inch	mm	Inch	mm
Through	.2500"	+.0000	+0.000	+.0000	+0.000
	6.35mm	-.0010	-0.025	-.0030	-0.076
.2501"	.5000"	+.0000	+0.000	+.0000	+0.000
6.36mm To	12.7mm	-.0010	-0.025	-.0045	-0.114
.5001"	And Up	+.0000	+0.000	+.0000	+0.000
12.7mm		-.0010	-0.025	-.0030	-0.076



EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
11501250	1/8	3.175	.1250	1-7/8	48.	7/8	22.	.52	13.	.0981 - .1290	2.492 - 3.277
11501378		3.5	.1378	2-1/16	52.	1	25.	.61	15.	.1291 - .1590	3.279 - 4.039
11501406	9/64	3.571	.1406								
11501562	5/32	3.967	.1562								
11501575		4.	.1575								
11501719	11/64	4.366	.1719	2-3/16	56.	1-1/8	29.	.70	18.	.1591 - .1910	4.041 - 4.851
11501772		4.5	.1772								
11501875	3/16	4.763	.1875								
11501969		5.	.1969	2-3/8	60.	1-1/4	32.	.72	18.	.1911 - .2210	4.854 - 5.613
11502010	*7*	5.105	.2010								
11502031	13/64	5.159	.2031								
11502130	3	5.41	.2130								
11502165		5.5	.2165								
11502188	7/32	5.558	.2188								
11502344	15/64	5.954	.2344	2-1/2	64.	1-3/8	35.	.83	21.	.2211 - .2530	5.616 - 6.426
11502362		6.	.2362								
11502460	*D*	6.248	.2460								
11502500	1/4	6.35	.2500								
11502559		6.5	.2559	2-11/16	68.	1-1/2	38.	.88	22.	.2531 - .2840	6.429 - 7.214
11502570	*F*	6.528	.2570								
11502610	*G*	6.629	.2610								
11502656	17/64	6.746	.2656								
11502720	*I*	6.909	.2720								
11502756		7.	.2756								
11502812	9/32	7.142	.2812								
11502953		7.5	.2953	2-13/16	71.	1-5/8	41.	1.0	25.	.2841 - .3160	7.216 - 8.026
11502969	19/64	7.541	.2969								
11503125	5/16	7.938	.3125								
11503150		8.	.3150								
11503160	*O*	8.026	.3160								
11503281	21/64	8.334	.3281	3	76.	1-11/16	43.	1.0	25.	.3161 - .3470	8.029 - 8.814
11503320	*Q*	8.433	.3320								

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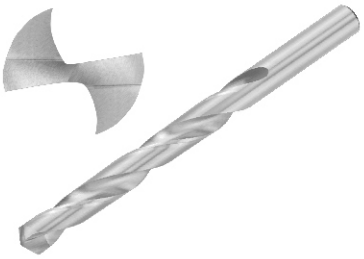
Style 115

EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
11503346		8.5	.3346	3	76.	1-11/16	43.	1.0	25.	.3161 - .3470	8.029 - 8.814
11503390	*R*	8.611	.3390								
11503438	11/32	8.733	.3438								
11503543		9.	.3543	3-1/8	79.	1-13/16	46.	1.0	27.	.3471 - .3780	8.816 - 9.601
11503594	23/64	9.129	.3594								
11503680	*U*	9.347	.3680								
11503740		9.5	.3740								
11503750	3/8	9.525	.3750								
11503860	*W*	9.804	.3860	3-5/16	84.	1-15/16	49.	1.1	28.	.3781 - .4100	9.604 - 10.414
11503906	25/64	9.921	.3906								
11503937		10.	.3937								
11504062	13/32	10.317	.4062								
11504134		10.5	.4134	3-7/16	87.	2-1/16	52.	1.2	30.	.4101 - .4410	10.417 - 11.201
11504219	27/64	10.716	.4219								
11504331		11.	.4331								
11504375	7/16	11.113	.4375								
11504528		11.5	.4528	3-5/8	92.	2-1/8	54.	1.2	30.	.4411 - .4730	11.204 - 12.014
11504531	29/64	11.509	.4531								
11504688	15/32	11.908	.4688								
11504724		12.	.4724								
11504844	31/64	12.303	.4844	3-3/4	95.	2-1/4	57.	1.3	33.	.4731 - .5040	12.017 - 12.802
11504921		12.5	.4921								
11505000	1/2	12.7	.5000								
11505118		13.	.5118	3-7/8	98.	2-3/8	60.	1.4	36.	.5041 - .5340	12.804 - 13.564
11505312	17/32	13.492	.5312								
11505315		13.5	.5315								
11505512		14.	.5512	4	102.	2-1/2	64.	1.5	38.	.5341 - .5650	13.566 - 14.351
11505625	9/16	14.288	.5625								
11505938	19/32	15.083	.5938	4-1/8	105.	2-5/8	67.	1.6	41.	.5651 - .5960	14.354 - 15.138
11506250	5/8	15.875	.6250	4-1/4	108.	2-3/4	70.	1.7	43.	.5961 - .6280	15.141 - 15.951
11506562	21/32	16.667	.6562	4-1/2	114.	2-7/8	73.	1.8	46.	.6281 - .6590	15.954 - 16.739
11506875	11/16	17.463	.6875	4-5/8	117.					.6591 - .6900	16.741 - 17.526
11507188	23/32	18.256	.7188	4-3/4	121.	3	76.	1.9	48.	.6901 - .7210	17.529 - 18.313
11507500	3/4	19.05	.7500	5	127.	3-1/8	79.	2.0	51.	.7211 - .7530	18.316 - 19.126
11507812	25/32	19.842	.7812	5-1/8	130.	3-1/4	83.			.7531 - 7840	19.129 - 19.914
11508125	13/16	20.638	.8125	5-1/4	133.	3-3/8	86.	2.2	56.	.7841 - .8150	19.916 - 20.702
11508438	27/32	21.433	.8438	5-3/8	137.	3-1/2	89.	2.3	58.	.8151 - .8460	20.704 - 21.488
11508750	7/8	22.225	.8750	5-1/2	140.					.8461 - .8780	21.491 - 22.301
11509062	29/32	23.017	.9062	5-5/8	143.	3-5/8	92.	2.4	61.	.8781 - .9090	22.304 - 23.089
11509375	15/16	23.813	.9375	5-3/4	146.	3-3/4	95.	2.5	64.	.9091 - .9400	23.091 - 23.876
11509688	31/32	24.608	.9688	5-7/8	149.	3-7/8	98.	2.6	66.	.9401 - .9710	23.879 - 24.663
11510000	1*	25.4	1.0000	6	152.	4	102.	2.7	69.	.9711 - 1.0030	24.666 - 25.476
11510625	1-1/16*	26.988	1.0625	6-1/4	159.			2.6	66.	1.0310 - 1.0650	26.187 - 27.051
11511250	1-1/8*	28.575	1.1250	6-3/8	162.					1.0930 - 1.1280	27.762 - 28.651
11511875	1-3/16*	30.163	1.1875	6-5/8	168.	4-1/4	108.	2.7	69.	1.1560 - 1.1900	29.362 - 30.226
11512500	1-1/4*	31.75	1.2500	6-3/4	171.	4-3/8	111.	2.9	74.	1.2180 - 1.2530	30.937 - 31.826

* Shk Ø = cut Ø thru 1".
Ø's over 1", shank is 1"
in Ø and 2.25" in length

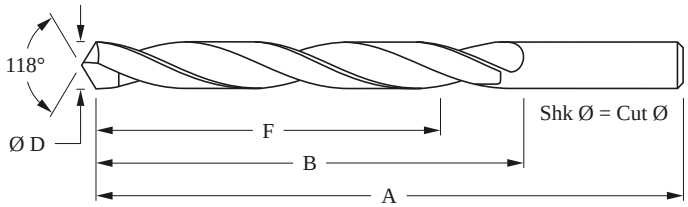
Style 120

Premium carbide grade provides excellent wear resistance when cutting cast aluminum, bronze, cast and ductile irons, fiberglass, hard plastics, other non-ferrous materials. Not recommended for soft steels.



- Right hand spiral, right hand cut, heavy duty high speed steel body.
- 2 to 2.5 times faster speed of standard high speed steel yields faster holes with better hole finish.
- 118° cam relieved point, strong edge, free cutting.
- Tang (automotive) drive available with quick delivery.
- For intermediate decimal sizes see grind down range column.
- Allow 2.5 x Ø of flute for chip exit up to 1/4" (6.35mm), 2 x Ø up to 7/16" (11.1mm) and 5 x Ø over 7/16".

Diameter Tolerances					
Nominal Size		Cutting Ø		Shank Ø	
		Inch	mm	Inch	mm
Through	.2500"	+.0000	+0.000	+.0000	+0.000
	6.35mm	-.0007	-0.018	-.0030	-0.076
.2501"	.5000"	+.0000	+0.000	+.0000	+0.000
6.36mm To	12.7mm	-.0010	-0.025	-.0045	-0.114
.5001"	And Up	+.0000	+0.000	+.0000	+0.000
12.7mm		-.0010	-0.025	-.0030	-0.076



EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
12000980	*40*	2.489	.0980	2-3/4	70.	1-5/8	41.	1.3	32.	.0980 - .1290	2.489 - 3.277
12000995	*39*	2.527	.0995								
12001015	*38*	2.578	.1015								
12001040	*37*	2.642	.1040								
12001065	*36*	2.705	.1065								
12001094	7/64	2.778	.1094								
12001100	*35*	2.794	.1100								
12001110	*34*	2.819	.1110								
12001130	*33*	2.87	.1130								
12001160	*32*	2.946	.1160								
12001181		3.	.1181								
12001200	*31*	3.048	.1200								
12001220		3.1	.1220								
12001250	1/8	3.175	.1250								
12001260		3.2	.1260								
12001285	*30*	3.264	.1285								
12001299		3.3	.1299	3-1/8	79.	2	51.	1.6	41.	.1291 - .1590	3.279 - 4.039
12001339		3.4	.1339								
12001360	*29*	3.454	.1360								
12001378		3.5	.1378								
12001405	*28*	3.569	.1405								
12001406	9/64	3.571	.1406								
12001417		3.6	.1417								
12001440	*27*	3.658	.1440								
12001457		3.7	.1457								
12001470	*26*	3.734	.1470								
12001495	*25*	3.797	.1495								
12001496		3.8	.1496								
12001520	*24*	3.861	.1520								
12001535		3.9	.1535								
12001540	*23*	3.912	.1540								
12001562	5/32	3.967	.1562								
12001570	*22*	3.988	.1570								
12001575		4.	.1575								
12001590	*21*	4.039	.1590								

Shk Ø = Cut Ø

Phone: 630-690-5933 800-323-2299 Fax: 630-690-6355

Style 120

EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
12001610	*20*	4.089	.1610								
12001614		4.1	.1614								
12001654		4.2	.1654								
12001660	*19*	4.216	.1660								
12001693		4.3	.1693								
12001695	*18*	4.305	.1695								
12001719	11/64	4.366	.1719								
12001730	*17*	4.394	.1730								
12001732		4.4	.1732	3-1/2	89.	2-5/16	59.	1.9	48.	.1591 - .1910	4.041 - 4.851
12001770	*16*	4.496	.1770								
12001772		4.5	.1772								
12001800	*15*	4.572	.1800								
12001811		4.6	.1811								
12001820	*14*	4.623	.1820								
12001850	*13*	4.7	.1850								
12001875	3/16	4.763	.1875								
12001890	*12*	4.801	.1890								
12001910	*11*	4.851	.1910								
12001929		4.9	.1929								
12001935	*10*	4.915	.1935								
12001960	*9*	4.978	.1960								
12001969		5.	.1969								
12001990	*8*	5.055	.1990								
12002008		5.1	.2008								
12002010	*7*	5.105	.2010								
12002031	13/64	5.159	.2031								
12002040	*6*	5.182	.2040								
12002047		5.2	.2047	3-3/4	95.	2-1/2	64.	2	50.	.1911 - .2210	4.854 - 5.613
12002055	*5*	5.22	.2055								
12002087		5.3	.2087								
12002090	*4*	5.309	.2090								
12002126		5.4	.2126								
12002130	*3*	5.41	.2130								
12002165		5.5	.2165								
12002188	7/32	5.558	.2188								
12002205		5.6	.2205								
12002210	*2*	5.613	.2210								
12002244		5.7	.2244								
12002280	*1*	5.791	.2280								
12002283		5.8	.2283								
12002323		5.9	.2323								
12002340	*A*	5.944	.2340								
12002344	15/64	5.954	.2344								
12002362		6.	.2362								
12002380	*B*	6.045	.2380	4	102.	2-3/4	70.	2.2	56.	.2211 - .2530	5.616 - 6.426
12002402		6.1	.2402								
12002420	*C*	6.147	.2420								
12002441		6.2	.2441								
12002460	*D*	6.248	.2460								
12002480		6.3	.2480								
12002500	1/4	6.35	.2500								
12002520		6.4	.2520								
12002559		6.5	.2559								
12002570	*F*	6.528	.2570	4-1/4	108.	2-15/16	75.	2.3	59.	.2531 - .2840	6.429 - 7.214
12002598		6.6	.2598								
12002610	*G*	6.629	.2610								

Shk Ø = Cut Ø

Style 120

EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
12002638		6.7	.2638								
12002656	17/64	6.746	.2656								
12002660	*H*	6.756	.2660								
12002677		6.8	.2677								
12002717		6.9	.2717								
12002720	*I*	6.909	.2720	4-1/4	108.	2-15/16	75.	2.3	59.	.2531 - .2840	6.429 - 7.214
12002756		7.	.2756								
12002770	*J*	7.036	.2770								
12002795		7.1	.2795								
12002810	*K*	7.137	.2810								
12002812	9/32	7.142	.2812								
12002835		7.2	.2835								
12002874		7.3	.2874								
12002900	*L*	7.366	.2900								
12002913		7.4	.2913								
12002950	*M*	7.493	.2950								
12002953		7.5	.2953								
12002969	19/64	7.541	.2969								
12002992		7.6	.2992								
12003020	*N*	7.671	.3020	4-1/2	114.	3-3/16	81.	2.6	65.	.2841 - .3160	7.216 - 8.026
12003031		7.7	.3031								
12003071		7.8	.3071								
12003110		7.9	.3110								
12003125	5/16	7.938	.3125								
12003150		8.	.3150								
12003160	*O*	8.026	.3160								
12003189		8.1	.3189								
12003228		8.2	.3228								
12003230	*P*	8.204	.3230								
12003268		8.3	.3268								
12003281	21/64	8.334	.3281								
12003307		8.4	.3307								
12003320	*Q*	8.433	.3320	4-3/4	121.	3-7/16	87.	2.7	69.	.3161 - .3470	8.029 - 8.814
12003346		8.5	.3346								
12003386		8.6	.3386								
12003390	*R*	8.611	.3390								
12003425		8.7	.3425								
12003438	11/32	8.733	.3438								
12003465		8.8	.3465								
12003480	*S*	8.839	.3480								
12003504		8.9	.3504								
12003543		9.	.3543								
12003580	*T*	9.093	.3580								
12003583		9.1	.3583								
12003594	23/64	9.129	.3594								
12003622		9.2	.3622	5	127.	3-5/8	92.	2.9	73.	.3471 - .3780	8.816 - 9.601
12003661		9.3	.3661								
12003680	*U*	9.347	.3680								
12003701		9.4	.3701								
12003740		9.5	.3740								
12003750	3/8	9.525	.3750								
12003770	*V*	9.576	.3770								
12003780		9.6	.3780								
12003819		9.7	.3819	5-1/4	133.	3-7/8	98.	3.1	78.	.3781 - .4100	9.604 - 10.414
12003858		9.8	.3858								

Shk Ø = Cut Ø

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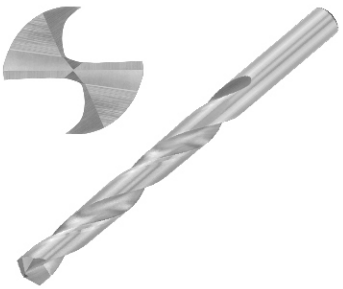
Style 120

EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
12003860	*W*	9.804	.3860	5-1/4	133.	3-7/8	98.	3.1	78.	.3781 - .4100	9.604 - 10.414
12003898		9.9	.3898								
12003906	25/64	9.921	.3906								
12003937		10.	.3937								
12003970	*X*	10.084	.3970								
12003976		10.1	.3976								
12004016		10.2	.4016								
12004040	*Y*	10.262	.4040								
12004055		10.3	.4055								
12004062	13/32	10.317	.4062								
12004094		10.4	.4094								
12004130	*Z*	10.49	.4130	5-1/2	140.	4-1/16	103.	3.2	81.	.4101 - .4410	10.417 - 11.201
12004134		10.5	.4134								
12004173		10.6	.4173								
12004213		10.7	.4213								
12004219	27/64	10.716	.4219								
12004252		10.8	.4252								
12004291		10.9	.4291								
12004331		11.	.4331								
12004370		11.1	.4370								
12004375	7/16	11.113	.4375								
12004409		11.2	.4409								
12004449		11.3	.4449	5-3/4	146.	4-5/16	110.	3.4	86.	.4411 - .4730	11.204 - 12.014
12004488		11.4	.4488								
12004528		11.5	.4528								
12004531	29/64	11.509	.4531								
12004567		11.6	.4567								
12004606		11.7	.4606								
12004646		11.8	.4646								
12004685		11.9	.4685								
12004688	15/32	11.908	.4688								
12004724		12.	.4724								
12004764		12.1	.4764	6	152.	4-1/2	114.	3.5	90.	.4731 - .5040	12.017 - 12.802
12004803		12.2	.4803								
12004843		12.3	.4843								
12004844	31/64	12.304	.4844								
12004882		12.4	.4882								
12004921		12.5	.4921								
12004961		12.6	.4961								
12005000	1/2	12.7	.5000								
12005039		12.8	.5039								
12005079		12.9	.5079	6-5/8	168.	4-13/16	122.	3.9	98.	.5041 - .5340	12.804 - 13.564
12005118		13.	.5118								
12005156	33/64	13.096	.5156								
12005312	17/32	13.492	.5312								
12005469	35/64	13.891	.5469							.5341 - .5650	13.566 - 14.351
12005625	9/16	14.288	.5625								
12005781	37/64	14.684	.5781	6-5/8	168.	5-3/16	132.	3.8	97.	.5781 only	14.684
12005938	19/32	15.083	.5938	7-1/8	181.	5-3/16	132.	4.2	107.	.5651 - .5960	14.354 - 15.138
12006094	39/64	15.479	.6094							.5961 - .6280	15.141 - 15.951
12006250	5/8	15.875	.6250								
12006406	41/64	16.271	.6406					4.1	104.	.6281 - .6590	15.954 - 16.739
12006562	21/32	16.667	.6562								
12006719	43/64	17.066	.6719	7-5/8	194.	5-5/8	143.	4.5	114.	.6591 - .6900	16.741 - 17.526
12006875	11/16	17.463	.6875								

Shk Ø = Cut Ø

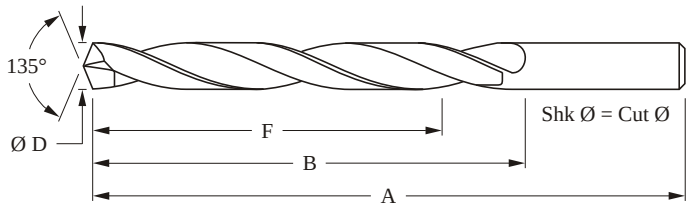
Style 125

Premium carbide grade provides excellent wear resistance when cutting cast aluminum, bronze, cast and ductile irons, titaniums, fiberglass, hard plastics and non-ferrous metals. Not recommended for soft steels.



- 135° four facet split point improves true position on CNC applications.
- 2 to 2.5 times faster speed than standard high speed steel with better hole finish.
- Tang (automotive) drive available with quick delivery.
- Right hand spiral, right hand cut, heavy duty high speed steel bodies.
- Allow 2.5 x Ø of flute for chip exit up to 1/4" (6.35mm), 2 x Ø up to 7/16" (11.1mm) and 1.5 x Ø over 7/16".

Diameter Tolerances					
Nominal Size		Cutting Ø		Shank Ø	
		Inch	mm	Inch	mm
Through	.2500"	+.0000	+0.000	+.0000	+0.000
	6.35mm	-.0007	-0.018	-.0030	-0.076
.2501"	.5000"	+.0000	+0.000	+.0000	+0.000
6.36mm To	12.7mm	-.0010	-0.025	-.0045	-0.114
.5001"	And Up	+.0000	+0.000	+.0000	+0.000
12.7mm		-.0010	-0.025	-.0030	-0.076



EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
12501160	*32*	2.946	.1160	2-3/4	70.	1-5/8	41.	1.3	33.	.0980 - .1290	2.489 - 3.277
12501200	*31*	3.048	.1200								
12501250	1/8	3.175	.1250								
12501285	*30*	3.264	.1285								
12501360	*29*	3.454	.1360	3-1/8	79.	2	51.	1.6	41.	.1291 - .1590	3.279 - 4.039
12501405	*28*	3.569	.1405								
12501406	9/64	3.571	.1406								
12501440	*27*	3.658	.1440								
12501470	*26*	3.734	.1470								
12501495	*25*	3.797	.1495								
12501520	*24*	3.861	.1520								
12501540	*23*	3.912	.1540								
12501562	5/32	3.967	.1562								
12501570	*22*	3.988	.1570								
12501590	*21*	4.039	.1590								
12501610	*20*	4.089	.1610	3-1/2	89.	2-5/16	59.	1.9	48.	.1591 - .1910	4.041 - 4.851
12501660	*19*	4.216	.1660								
12501695	*18*	4.305	.1695								
12501719	11/64	4.366	.1719								
12501730	*17*	4.394	.1730								
12501770	*16*	4.496	.1770								
12501800	*15*	4.572	.1800								
12501820	*14*	4.623	.1820								
12501850	*13*	4.7	.1850								
12501875	3/16	4.763	.1875								
12501890	*12*	4.801	.1890								
12501910	*11*	4.851	.1910								
12501935	*10*	4.915	.1935	3-3/4	95.	2-1/2	64.	2	51.	.1911 - .2210	4.854 - 5.613
12501960	*9*	4.978	.1960								
12501990	*8*	5.055	.1990								
12502010	*7*	5.105	.2010								
12502031	13/64	5.159	.2031								
12502040	*6*	5.182	.2040								
12502055	*5*	5.22	.2055								
12502090	*4*	5.309	.2090								
12502130	*3*	5.41	.2130								

Shk Ø = Cut Ø

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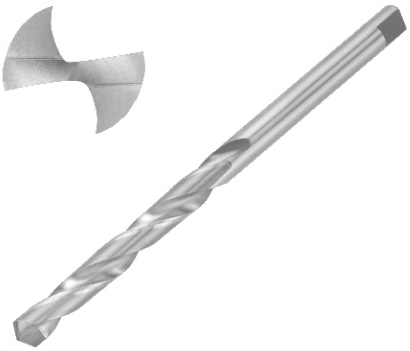
Style 125

EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch/ *Wire*	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
12502188	7/32	5.558	.2188	3-3/4	95.	2-1/2	64.	2	51.	.1911 - .2210	4.854 - 5.613
12502210	*2*	5.613	.2210								
12502280	*1*	5.791	.2280	4	102.	2-3/4	70.	2.2	56.	.2211 - .2530	5.616 - 6.426
12502340	*A*	5.944	.2340								
12502344	15/64	5.954	.2344								
12502380	*B*	6.045	.2380								
12502420	*C*	6.147	.2420								
12502460	*D*	6.248	.2460								
12502500	1/4	6.35	.2500								
12502570	*F*	6.528	.2570	4-1/4	108.	2-15/16	75.	2.3	59.	.2531 - .2840	6.429 - 7.214
12502610	*G*	6.629	.2610								
12502656	17/64	6.746	.2656								
12502660	*H*	6.756	.2660								
12502720	*I*	6.909	.2720								
12502770	*J*	7.036	.2770								
12502810	*K*	7.137	.2810								
12502812	9/32	7.142	.2812								
12502900	*L*	7.366	.2900	4-1/2	114.	3-3/16	81.	2.6	66.	.2841 - .3160	7.216 - 8.026
12502950	*M*	7.493	.2950								
12502969	19/64	7.541	.2969								
12503020	*N*	7.671	.3020								
12503125	5/16	7.938	.3125								
12503160	*O*	8.026	.3160								
12503230	*P*	8.204	.3230	4-3/4	121.	3-7/16	87.	2.7	69.	.3161 - .3470	8.029 - 8.814
12503281	21/64	8.334	.3281								
12503320	*Q*	8.433	.3320								
12503390	*R*	8.611	.3390								
12503438	11/32	8.733	.3438								
12503480	*S*	8.839	.3480	5	127.	3-5/8	92.	2.9	74.	.3471 - .3780	8.816 - 9.601
12503580	*T*	9.093	.3580								
12503594	23/64	9.129	.3594								
12503680	*U*	9.347	.3680								
12503750	3/8	9.525	.3750								
12503770	*V*	9.576	.3770								
12503860	*W*	9.804	.3860	5-1/4	133.	3-7/8	98.	3.1	78.	.3781 - .4100	9.604 - 10.414
12503906	25/64	9.921	.3906								
12503970	*X*	10.084	.3970								
12504040	*Y*	10.262	.4040								
12504062	13/32	10.317	.4062								
12504130	*Z*	10.49	.4130	5-1/2	140.	4-1/16	103.	3.2	81.	.4101 - .4410	10.417 - 11.201
12504219	27/64	10.716	.4219								
12504375	7/16	11.113	.4375								
12504531	29/64	11.509	.4531	5-3/4	146.	4-5/16	110.	3.4	86.	.4411 - .4730	11.204 - 12.014
12504688	15/32	11.908	.4688								
12504844	31/64	12.304	.4844	6	152.	4-1/2	114.	3.5	89.	.4731 - .5040	12.017 - 12.802
12505000	1/2	12.7	.5000								
12505156	33/64	13.096	.5156	6-5/8	168.	4-13/16	122.	3.9	99.	.5041 - .5340	12.804 - 13.564
12505312	17/32	13.492	.5312								
12505469	35/64	13.891	.5469	6-5/8	168.	4-13/16	122.	3.9	99.	.5341 - .5650	13.566-14.351
12505625	9/16	14.288	.5625								
12505781	37/64	14.684	.5781	6-5/8	168.	5-3/16	132.	3.8	97.	.5781 only	14.684
12505938	19/32	15.083	.5938	7-1/8	181.	5-3/16	132.	4.2	107.	.5651 - .5960	14.354 - 15.138
12506094	39/64	15.479	.6094							.5961 - .6280	15.141 - 15.951
12506250	5/8	15.875	.6250								
12506406	41/64	16.271	.6406	7-1/8	181.	5-3/16	132.	4.1	104.	.6281 - .6590	15.954 - 16.739
12506562	21/32	16.667	.6562								
12506719	43/64	17.066	.6719	7-5/8	194.	5-5/8	143.	4.5	114.	.6591 - .6900	16.741 - 17.526
12506875	11/16	17.463	.6875								

Shk Ø = Cut Ø

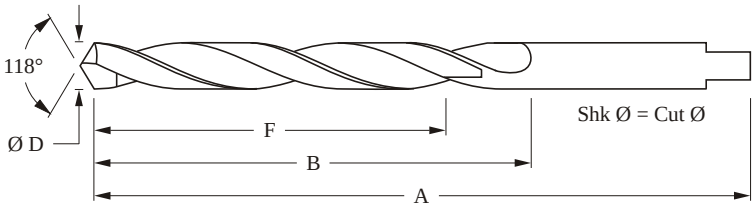
Style 130

Premium carbide grade provides excellent wear resistance when cutting cast aluminum, bronze, cast and ductile irons, fiberglass, hard plastics and non-ferrous materials.



- 118° cam relieved point, strong edge, free cutting.
- Right hand spiral, right hand cut, heavy duty high speed steel body.
- 2 to 2.5 times faster speed of standard high speed steel yields faster holes with better hole finish.
- Tanged shank provides positive drive.
- Allow 2.5 x Ø of flute for chip exit up to 1/4" (6.35mm), 2 x Ø up to 7/16" (11.1mm) and 1.5 x Ø over 7/16".

Diameter Tolerances					
Nominal Size		Cutting Ø		Shank Ø	
		Inch	mm	Inch	mm
Through	.2500"	+.0000	+0.000	+.0000	+0.000
	6.35mm	-.0007	-0.018	-.0030	-0.076
.2501"	.5000"	+.0000	+0.000	+.0000	+0.000
6.36mm To	12.7mm	-.0010	-0.025	-.0045	-0.114
.5001"	And Up	+.0000	+0.000	+.0000	+0.000
12.7mm		-.0010	-0.025	-.0030	-0.076



EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
13001250	1/8	3.175	.1250	5-1/8	130.	2-3/4	70.	2.4	61.	.0981 - .1290	2.492 - 3.277
13001406	9/64	3.571	.1406	5-3/8	137.	3	76.	2.6	66.	.1291 - .1590	3.279 - 4.039
13001562	5/32	3.967	.1562								
13001719	11/64	4.366	.1719	5-3/4	146.	3-3/8	86.	2.9	75.	.1591 - .1910	4.041 - 4.851
13001875	3/16	4.763	.1875								
13001969		5.	.1969	6	152.	3-5/8	92.	3.1	79.	.1911 - .2210	4.854 - 5.613
13002031	13/64	5.159	.2031								
13002165		5.5	.2165								
13002188	7/32	5.558	.2188								
13002344	15/64	5.954	.2344	6-1/8	156.	3-3/4	95.	3.2	81.	.2211 - .2530	5.616 - 6.426
13002362		6.	.2362								
13002500	1/4	6.35	.2500								
13002559		6.5	.2559	6-1/4	159.	3-7/8	98.	3.3	83.	.2531 - .2840	6.429 - 7.214
13002656	17/64	6.746	.2656								
13002756		7.	.2756								
13002812	9/32	7.142	.2812								
13002953		7.5	.2953	6-3/8	162.	4	102.	3.4	86.	.2841 - .3160	7.216 - 8.026
13002969	19/64	7.541	.2969								
13003125	5/16	7.938	.3125								
13003150		8.	.3150								
13003281	21/64	8.344	.3281	6-1/2	165.	4-1/8	105.	3.4	86.	.3161 - .3470	8.029 - 8.814
13003346		8.5	.3346								
13003438	11/32	8.733	.3438								
13003543		9.	.3543	6-3/4	171.	4-1/4	108.	3.5	88.	.3471 - .3780	8.816 - 9.601
13003594	23/64	9.129	.3594								
13003740		9.5	.3740								
13003750	3/8	9.525	.3750								
13003906	25/64	9.921	.3906	7	178.	4-3/8	111.	3.6	90.	.3781 - .4100	9.604 - 10.414
13003937		10.	.3937								
13004062	13/32	10.317	.4062								

Shk Ø = Cut Ø

Phone: 630-690-5933 800-323-2299 Fax: 630-690-6355

Style 130

EDP #	Cutting Ø "D"		Dec. Equiv.	Overall Length "A"		Flute Length "B"		Usable Flute at Full Regrind "F"		Grind Down Range	
	Inch	mm	Inch	Inch	mm	Inch	mm	Inch	mm	Inch	mm
13004134		10.5	.4134	7-1/4	184.	4-5/8	117.	3.8	96.	.4101 - .4410	10.417 - 11.201
13004219	27/64	10.716	.4219								
13004331		11.	.4331								
13004375	7/16	11.113	.4375								
13004528		11.5	.4528	7-1/2	191.	4-3/4	121.	3.8	96.	.4411 - .4730	11.204 - 12.014
13004531	29/64	11.509	.4531								
13004688	15/32	11.908	.4688								
13004724		12.	.4724								
13004844	31/64	12.304	.4844	7-3/4	197.	4-3/4	121.	3.8	96.	.4731 - .5040	12.017 - 12.802
13004921		12.5	.4921								
13005000	1/2	12.7	.5000								
13005118		13.	.5118	8	203.	4-3/4	121.	3.8	96.	.5041 - .5340	12.804 - 13.564
13005156	33/64	13.096	.5156								
13005312	17/32	13.492	.5312								
13005315		13.5	.5315								
13005469	35/64	13.891	.5469	8-1/4	210.	4-7/8	124.	3.9	99.	.5341 - .5650	13.566 - 14.351
13005512		14.	.5512								
13005625	9/16	14.288	.5625								
13005709		14.5	.5709	8-3/4	222.	4-7/8	124.	3.9	99.	.5651 - .5960	14.354 - 15.138
13005781	37/64	14.684	.5781								
13005906		15.	.5906								
13005938	19/32	15.083	.5938								
13006094	39/64	15.479	.6094	8-3/4	222.	4-7/8	124.	3.9	99.	.5961 - .6280	15.141 - 15.951
13006102		15.5	.6102								
13006250	5/8	15.875	.6250								
13006299		16.	.6299	9	229.	5-1/8	130.	4	103.	.6281 - .6590	15.954 - 16.739
13006406	41/64	16.271	.6406								
13006496		16.5	.6496								
13006562	21/32	16.667	.6562								
13006693		17.	.6693	9-1/4	235.	5-3/8	137.	4.3	108.	.6591 - .6900	16.741 - 17.526
13006719	43/64	17.066	.6719								
13006875	11/16	17.463	.6875								
13006890		17.5	.6890								
13007031	45/64	17.859	.7031	9-1/2	241.	5-5/8	143.	4.5	115.	.6901 - .7210	17.529 - 18.313
13007087		18.	.7087								
13007188	23/32	18.258	.7188								
13007283		18.5	.7283	9-3/4	248.	5-7/8	149.	4.7	120.	.7211 - .7530	18.316 - 19.126
13007344	47/64	18.654	.7344								
13007480		19.	.7480								
13007500	3/4	19.05	.7500								
13008125	13/16	20.638	.8125	10	254.	6-1/8	156.	4.9	125.	.7841 - .8150	19.916 - 20.701
13008750	7/8	22.225	.8750							.8461 - .8780	21.491 - 22.301
13009375	15/16	23.813	.9375	10-3/4	273.	6-1/8	156.	4.9	124.	.9091 - .9400	23.091 - 23.876
13010000	1	25.4	1.0000	11	279.	6-3/8	162.	5	128.	.9711 - 1.0030	24.666 - 25.476

Shk Ø = Cut Ø