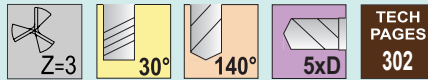


**TOLERANCES**

<i>d</i>	+0.000" -0.005" (+0.000 -0.127mm)
<i>l<sub>1</sub></i>	+0.125" -0.125" (+3.175 -3.175mm)
<i>l<sub>2</sub></i>	+0.125" -0.125" (+3.175 -3.175mm)

**Series 1180**

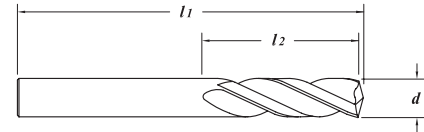
.1575" - .3150"  
(4.000mm - 8.000mm)



Recommended for aluminum and other soft materials <40 Rc

**Alumastar Coated**

- High performance solid submicron grain carbide drill
- No spot drilling required
- Unique point geometry and coating for higher speeds and feeds
- Up to 5x longer tool life than Zrn coated drills
- High performance drill point
- Live tooling recommended on lathe processes



HIGH PERFORMANCE DRILLS

EDP#	<i>d</i> † Diameter		<i>l<sub>1</sub></i> Overall Length	<i>l<sub>2</sub></i> Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
70166	.1575	4.000	65	24	41.14	39.35	37.56	35.77	
70191	.1772	4.500	65	25	43.46	41.57	39.68	37.79	
70211	.1875	3/16"	4.763	2-3/4"	1-1/4"	44.60	42.66	40.72	38.78
70216	.1890	#12	4.801	2-3/4"	1-1/4"	46.25	44.24	42.23	40.22
70221	.1910	#11	4.851	2-3/4"	1-1/4"	46.54	44.52	42.49	40.47
70226	.1935	#10	4.914	2-3/4"	1-1/4"	46.83	44.79	42.76	40.72
70231	.1969		5.000	75	32	47.41	45.35	43.29	41.23
70236	.1990	#8	5.055	3"	1-5/16"	47.64	45.57	43.50	41.43
70241	.2010	#7	5.105	3"	1-5/16"	47.83	45.75	43.67	41.59
70246	.2031	13/64"	5.159	3"	1-5/16"	48.17	46.08	43.98	41.89
70251	.2040	#6	5.182	3"	1-3/8"	48.50	46.39	44.28	42.17
70256	.2055	#5	5.220	3"	1-3/8"	48.82	46.70	44.57	42.45
70261	.2090	#4	5.309	3"	1-3/8"	49.09	46.96	44.82	42.69
70266	.2130	#3	5.410	3"	1-3/8"	49.42	47.27	45.12	42.97
70271	.2165		5.500	75	35	49.70	47.54	45.38	43.22
70276	.2188	7/32"	5.558	3"	1-3/8"	50.00	47.83	45.65	43.48
70281	.2210	#2	5.613	3"	1-3/8"	51.00	48.79	46.57	44.35
70286	.2280	#1	5.791	3"	1-3/8"	51.24	49.02	46.79	44.56
70296	.2344	15/64"	5.954	3-1/4"	1-1/2"	52.28	50.01	47.73	45.46
70301	.2362		6.000	82	38	52.43	50.15	47.87	45.59
70306	.2380	B	6.045	3-1/4"	1-5/8"	52.57	50.28	48.00	45.71
70311	.2420	C	6.147	3-1/4"	1-5/8"	52.91	50.61	48.31	46.01
70316	.2460	D	6.248	3-1/4"	1-5/8"	53.23	50.92	48.60	46.29
70321	.2500	1/4" / E	6.350	3-1/4"	1-5/8"	53.51	51.18	48.86	46.53
70326	.2559		6.500	82	41	56.76	54.30	51.83	49.36
70331	.2570	F	6.528	3-1/4"	1-11/16"	57.62	55.11	52.61	50.10
70336	.2610	G	6.629	3-1/2"	1-11/16"	58.50	55.96	53.41	50.87
70341	.2656	17/64"	6.746	3-1/2"	1-11/16"	59.36	56.78	54.20	51.62
70346	.2660	H	6.756	3-1/2"	1-11/16"	60.27	57.65	55.03	52.41
70351	.2720	I	6.909	3-1/2"	1-11/16"	61.13	58.48	55.82	53.16
70356	.2756		7.000	88	43	62.00	59.30	56.61	53.91
70361	.2770	J	7.036	3-1/2"	1-11/16"	62.88	60.15	57.41	54.68
70371	.2812	9/32"	7.142	3-1/2"	1-3/4"	64.65	61.84	59.03	56.22
70376	.2900	L	7.366	3-1/2"	1-3/4"	65.46	62.61	59.77	56.92
70381	.2953		7.500	95	44	66.32	63.44	60.55	57.67
70386	.2969	19/64"	7.541	3-3/4"	1-7/8"	66.90	63.99	61.08	58.17
70391	.3020	N	7.671	3-3/4"	1-7/8"	69.33	66.32	63.30	60.29
70396	.3125	5/16"	7.938	3-3/4"	1-7/8"	69.51	66.48	63.46	60.44
70401	.3150		8.000	95	48	73.35	70.16	66.97	63.78

continued →

Series 1180 (continued)

.3160" - .6299"  
(8.026mm - 16.000mm)

EDP#	<i>d</i> † Diameter		<i>l</i> <sub>1</sub> Overall Length	<i>l</i> <sub>2</sub> Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
70406	.3160	O	8.026	3-3/4"	1-7/8"	73.35	70.16	66.97	63.78
70411	.3230	P	8.204	3-3/4"	2-3/32"	73.59	70.39	67.19	63.99
70416	.3281	21/64"	8.334	4"	2-3/32"	74.22	70.99	67.77	64.54
70421	.3320	Q	8.433	4"	2-3/32"	75.58	72.29	69.01	65.72
70426	.3346		8.500	100	53	76.10	72.79	69.48	66.17
70431	.3390	R	8.611	4"	2-3/32"	77.99	74.60	71.21	67.82
70436	.3438	11/32"	8.733	4"	2-3/16"	80.55	77.04	73.54	70.04
70441	.3480	S	8.839	4"	2-3/16"	85.18	81.48	77.77	74.07
70446	.3543		9.000	100	55	85.64	81.92	78.19	74.47
70451	.3580	T	9.093	4-1/4"	2-9/32"	90.24	86.32	82.39	78.47
70456	.3594	23/64"	9.129	4-1/4"	2-9/32"	90.72	86.78	82.83	78.89
70461	.3680	U	9.347	4-1/4"	2-9/32"	94.98	90.85	86.72	82.59
70466	.3740		9.500	108	58	95.82	91.65	87.49	83.32
70471	.3750	3/8"	9.525	4-1/4"	2-3/8"	96.68	92.48	88.27	84.07
70476	.3770	V	9.576	4-1/4"	2-3/8"	99.25	94.93	90.62	86.30
70481	.3860	W	9.804	4-1/2"	2-3/8"	100.83	96.45	92.06	87.68
70486	.3906	25/64"	9.921	4-1/2"	2-3/8"	101.96	97.53	93.09	88.66
70491	.3937		10.000	114	60	104.72	100.17	95.61	91.06
70496	.3970	X	10.084	4-1/2"	2-1/2"	105.79	101.19	96.59	91.99
70501	.4040	Y	10.262	4-1/2"	2-9/16"	108.71	103.98	99.26	94.53
70506	.4062	13/32"	10.317	4-1/2"	2-9/16"	109.56	104.80	100.03	95.27
70511	.4134		10.500	114	67	110.48	105.68	100.87	96.07
70516	.4219	27/64"	10.716	4-1/2"	2-11/16"	111.40	106.56	101.71	96.87
70521	.4331		11.000	114	68	118.85	113.69	108.52	103.35
70526	.4375	7/16"	11.113	4-3/4"	2-13/16"	119.29	114.10	108.92	103.73
70531	.4528		11.500	120	70	126.86	121.34	115.83	110.31
70536	.4531	29/64"	11.509	4-3/4"	2-7/8"	126.86	121.34	115.83	110.31
70541	.4688	15/32"	11.909	4-3/4"	2-7/8"	132.78	127.01	121.23	115.46
70546	.4724		12.000	120	73	133.12	127.34	121.55	115.76
70551	.4844	31/64"	12.304	5-5/16"	3"	135.48	129.59	123.70	117.81
70556	.4921		12.500	135	75	136.99	131.03	125.08	119.12
70561	.5000	1/2"	12.700	5-3/8"	3-1/16"	137.25	131.29	125.32	119.35
70566	.5118		13.000	136	78	151.01	144.44	137.88	131.31
70571	.5156	33/64"	13.096	5-3/8"	3-1/8"	154.24	147.53	140.83	134.12
70576	.5312	17/32"	13.492	5-11/16"	3-5/16"	157.57	150.72	143.87	137.02
70581	.5469	35/64"	13.891	5-13/16"	3-3/8"	163.98	156.85	149.72	142.59
70586	.5512		14.000	148	86	167.23	159.96	152.69	145.42
70591	.5625	9/16"	14.287	5-15/16"	3-1/2"	178.71	170.94	163.17	155.40
70596	.5781	37/64"	14.683	6"	3-1/2"	184.78	176.75	168.71	160.68
70601	.5906		15.000	152	90	188.00	179.83	171.65	163.48
70606	.5938	19/32"	15.082	6"	3-9/16"	188.90	180.69	172.47	164.26
70611	.6094	39/64"	15.478	6-3/16"	3-11/16"	204.78	195.88	186.97	178.07
70616	.6250	5/8"	15.875	6-5/16"	3-3/4"	206.56	197.58	188.60	179.62
70621	.6299		16.000	160	95	210.89	201.72	192.55	183.38