

Series 1160, 1180

NEW
ITEM.1562" - .1910"
(3.967mm - 4.851mm)TECH
PAGES
334

TOLERANCES

d	$+0.000" - .0005" (+0.000 - .0127\text{mm})$
l_1	$+0.125" - .125" (+3.175 - 3.175\text{mm})$
l_2	$+0.125" - .125" (+3.175 - 3.175\text{mm})$

Recommended for aluminum and other soft materials <40 Rc

Alumastar Coated

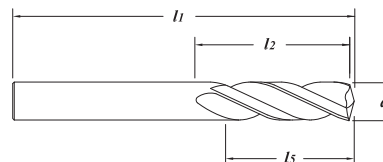
High performance solid submicron grain carbide drill

No spot drilling required

Unique point geometry and coating for higher speeds and feeds

High performance drill point

Live tooling recommended on lathe processes



3xD (1160) EDP#	5xD (1180) EDP#	d †			l_1	l_2	l_5				
		Decimal	Diameter	Metric	Overall Length	Flute Length	Max Drill Depth	1-11	12-24	25-49	50-100
70631		.1562	5/32"	3.967	2-1/16"	9/16"	.497"	42.99	41.12	39.25	37.38
	70161	.1562	5/32"	3.967	2-1/2"	1"	.809"	44.26	42.34	40.41	38.49
70633		.1570	#22	3.988	2-1/8"	5/8"	.500"	43.39	41.50	39.62	37.73
	70163	.1570	#22	3.988	2-1/2"	1"	.814"	44.59	42.65	40.71	38.77
70635		.1575		4.000	54	16	13	43.73	41.83	39.93	38.03
	70166	.1575		4.000	65	24	21	44.92	42.97	41.01	39.06
70637		.1590	#21	4.039	2-1/8"	5/8"	.506"	44.11	42.20	40.28	38.36
	70177	.1590	#21	4.039	2-1/2"	1"	.824"	45.23	43.26	41.30	39.33
70639		.1610	#20	4.089	2-1/8"	5/8"	.512"	44.49	42.56	40.62	38.69
	70179	.1610	#20	4.089	2-1/2"	1"	.834"	45.61	43.63	41.64	39.66
70641		.1660	#19	4.216	2-1/8"	5/8"	.528"	44.87	42.92	40.97	39.02
	70181	.1660	#19	4.216	2-3/4"	1-1/8"	.860"	45.93	43.93	41.94	39.94
70643		.1695	#18	4.305	2-1/8"	5/8"	.539"	45.22	43.25	41.29	39.32
	70183	.1695	#18	4.305	2-3/4"	1-1/8"	.878"	46.23	44.22	42.21	40.20
70645		.1719	11/64"	4.366	2-1/8"	5/8"	.547"	45.61	43.63	41.64	39.66
	70185	.1719	11/64"	4.366	2-3/4"	1-1/8"	.891"	46.56	44.54	42.51	40.49
70647		.1730	#17	4.394	2-3/16"	11/16"	.551"	45.98	43.98	41.98	39.98
	70187	.1730	#17	4.394	2-3/4"	1-1/8"	.897"	46.89	44.85	42.81	40.77
70649		.1770	#16	4.496	2-3/16"	11/16"	.563"	46.30	44.29	42.27	40.26
	70189	.1770	#16	4.496	2-3/4"	1-1/8"	.917"	47.24	45.19	43.13	41.08
70651		.1772		4.500	55	18	14	46.69	44.66	42.63	40.60
	70191	.1772		4.500	65	25	23	47.46	45.40	43.33	41.27
70653		.1800	#15	4.572	2-3/16"	11/16"	.573"	47.00	44.96	42.91	40.87
	70196	.1800	#15	4.572	2-3/4"	1-1/4"	.933"	47.86	45.78	43.70	41.62
70655		.1820	#14	4.623	2-3/16"	11/16"	.579"	47.44	45.38	43.31	41.25
	70201	.1820	#14	4.623	2-3/4"	1-1/4"	.943"	48.19	46.09	44.00	41.90
70657		.1850	#13	4.700	2-3/16"	11/16"	.589"	47.78	45.71	43.63	41.55
	70206	.1850	#13	4.700	2-3/4"	1-1/4"	.959"	48.54	46.43	44.32	42.21
70659		.1875	3/16"	4.763	2-3/16"	11/16"	.597"	48.16	46.07	43.97	41.88
	70211	.1875	3/16"	4.763	2-3/4"	1-1/4"	.972"	48.70	46.59	44.47	42.35
70661		.1890	#12	4.801	2-1/4"	3/4"	.601"	49.74	47.58	45.41	43.25
	70216	.1890	#12	4.801	2-3/4"	1-1/4"	.979"	50.51	48.31	46.12	43.92
70663		.1910	#11	4.851	2-1/4"	3/4"	.608"	50.20	48.02	45.83	43.65
	70221	.1910	#11	4.851	2-3/4"	1-1/4"	.990"	50.82	48.61	46.40	44.19

3xD (1160) EDP#	5xD (1180) EDP#	d † Diameter			l_1 Overall Length	l_2 Flute Length	l_5 Max Drill Depth	1-11	12-24	25-49	50-100
		Decimal		Metric							
70665		.1935	#10	4.914	2-1/4"	3/4"	.616"	50.50	48.30	46.11	43.91
	70226	.1935	#10	4.914	2-3/4"	1-1/4"	1.003"	51.14	48.92	46.69	44.47
70667		.1960	#9	4.978	2-1/4"	3/4"	.624"	50.85	48.64	46.43	44.22
	70229	.1960	#9	4.978	3"	1-5/16"	1.016"	51.44	49.20	46.97	44.73
70669		.1969		5.000	57	19	16	51.13	48.91	46.68	44.46
	70231	.1969		5.000	75	32	26	51.77	49.52	47.27	45.02
70671		.1990	#8	5.055	2-1/4"	3/4"	.633"	51.61	49.37	47.12	44.88
	70236	.1990	#8	5.055	3"	1-5/16"	1.031"	52.03	49.76	47.50	45.24
70673		.2010	#7	5.105	2-1/4"	3/4"	.640"	51.76	49.51	47.26	45.01
	70241	.2010	#7	5.105	3"	1-5/16"	1.042"	52.23	49.96	47.69	45.42
70675		.2031	13/64"	5.159	2-1/4"	3/4"	.646"	52.11	49.84	47.58	45.31
	70246	.2031	13/64"	5.159	3"	1-5/16"	1.053"	52.60	50.31	48.03	45.74
70677		.2040	#6	5.182	2-3/8"	7/8"	.649"	52.46	50.18	47.90	45.62
	70251	.2040	#6	5.182	3"	1-3/8"	1.057"	52.96	50.66	48.35	46.05
70679		.2055	#5	5.220	2-3/8"	7/8"	.654"	52.85	50.56	48.26	45.96
	70256	.2055	#5	5.220	3"	1-3/8"	1.065"	53.30	50.99	48.67	46.35
70681		.2090	#4	5.309	2-3/8"	7/8"	.665"	53.16	50.85	48.54	46.23
	70261	.2090	#4	5.309	3"	1-3/8"	1.083"	53.60	51.27	48.94	46.61
70683		.2130	#3	5.410	2-3/8"	7/8"	.678"	53.52	51.19	48.87	46.54
	70266	.2130	#3	5.410	3"	1-3/8"	1.104"	53.96	51.61	49.27	46.92
70685		.2165		5.500	60	22	18	53.85	51.51	49.17	46.83
	70271	.2165		5.500	75	35	29	54.28	51.92	49.56	47.20
70687		.2188	7/32"	5.558	2-3/8"	7/8"	.696"	54.30	51.94	49.58	47.22
	70276	.2188	7/32"	5.558	3"	1-3/8"	1.134"	54.60	52.23	49.85	47.48
70689		.2210	#2	5.613	2-7/16"	15/16"	.703"	54.69	52.32	49.94	47.56
	70281	.2210	#2	5.613	3"	1-3/8"	1.145"	55.69	53.27	50.85	48.43
70691		.2280	#1	5.791	2-7/16"	15/16"	.726"	55.11	52.71	50.32	47.92
	70286	.2280	#1	5.791	3"	1-3/8"	1.182"	55.96	53.53	51.09	48.66
70693		.2340	A	5.944	2-7/16"	15/16"	.745"	55.49	53.08	50.66	48.25
	70294	.2340	A	5.944	3-1/4"	1-1/2"	1.213"	56.52	54.07	51.61	49.15
70695		.2344	15/64"	5.954	2-7/16"	15/16"	.746"	55.91	53.48	51.05	48.62
	70296	.2344	15/64"	5.954	3-1/4"	1-1/2"	1.215"	57.09	54.60	52.12	49.64
70697		.2362		6.000	64	26	19	56.29	53.85	51.40	48.95
	70301	.2362		6.000	82	38	31	57.25	54.76	52.27	49.78
70699		.2380	B	6.045	2-1/2"	1"	.757"	56.68	54.22	51.75	49.29
	70306	.2380	B	6.045	3-1/4"	1-5/8"	1.233"	57.41	54.91	52.42	49.92
70701		.2420	C	6.147	2-1/2"	1"	.770"	57.14	54.66	52.17	49.69
	70311	.2420	C	6.147	3-1/4"	1-5/8"	1.254"	57.78	55.26	52.75	50.24
70703		.2460	D	6.248	2-1/2"	1"	.783"	57.45	54.96	52.46	49.96
	70316	.2460	D	6.248	3-1/4"	1-5/8"	1.275"	58.12	55.59	53.07	50.54
70705		.2500	1/4" / E	6.350	2-1/2"	1"	.796"	57.95	55.43	52.91	50.39
	70321	.2500	1/4" / E	6.350	3-1/4"	1-5/8"	1.296"	58.43	55.89	53.35	50.81
70707		.2510		6.375	2-1/2"	1"	.799"	58.70	56.14	53.59	51.04
	70911	.2510		6.375	3-1/4"	1-5/8"	1.300"	59.33	56.75	54.17	51.59
70709		.2559		6.500	66	28	21	60.97	58.32	55.67	53.02
	70326	.2559		6.500	82	41	34	61.99	59.29	56.60	53.90
70711		.2570	F	6.528	2-5/8"	1-1/8"	.818"	61.94	59.25	56.55	53.86
	70331	.2570	F	6.528	3-1/4"	1-11/16"	1.332"	62.92	60.18	57.45	54.71

continued →

Series 1160, 1180 (continued)

.2610" - .3594"
(6.629mm - 9.129mm)

3xD (1160) EDP#	5xD (1180) EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	l_5 Max Drill Depth	1-11	12-24	25-49	50-100
		Decimal		Metric							
70713		.2610	G	6.629	2-5/8"	1-1/8"	.831"	62.88	60.15	57.41	54.68
	70336	.2610	G	6.629	3-1/2"	1-11/16"	1.353"	63.88	61.11	58.33	55.55
70715		.2656	17/64"	6.746	2-5/8"	1-1/8"	.845"	63.83	61.05	58.28	55.50
	70341	.2656	17/64"	6.746	3-1/2"	1-11/16"	1.376"	64.83	62.01	59.19	56.37
70717		.2660	H	6.756	2-11/16"	1-3/16"	.846"	64.78	61.96	59.15	56.33
	70346	.2660	H	6.756	3-1/2"	1-11/16"	1.378"	65.81	62.95	60.09	57.23
70719		.2720	I	6.909	2-11/16"	1-3/16"	.866"	64.93	62.11	59.28	56.46
	70351	.2720	I	6.909	3-1/2"	1-11/16"	1.410"	66.76	63.86	60.95	58.05
70721		.2756		7.000	68	30	22	65.87	63.01	60.14	57.28
	70356	.2756		7.000	88	43	36	67.70	64.76	61.81	58.87
70723		.2770	J	7.036	2-11/16"	1-3/16"	.881"	66.79	63.89	60.98	58.08
	70361	.2770	J	7.036	3-1/2"	1-11/16"	1.435"	68.67	65.68	62.70	59.71
70725		.2812	9/32"	7.142	2-11/16"	1-3/16"	.895"	68.70	65.71	62.73	59.74
	70371	.2812	9/32"	7.142	3-1/2"	1-3/4"	1.457"	70.60	67.53	64.46	61.39
70727		.2900	L	7.366	2-3/4"	1-1/4"	.923"	69.63	66.61	63.58	60.55
	70376	.2900	L	7.366	3-1/2"	1-3/4"	1.503"	71.48	68.38	65.27	62.16
70728		.2950	M	7.493	2-3/4"	1-1/4"	.939"	70.98	67.89	64.81	61.72
	70378	.2950	M	7.493	3-3/4"	1-7/8"	1.529"	72.42	69.27	66.12	62.97
70729		.2953		7.500	70	32	24	70.98	67.89	64.81	61.72
	70381	.2953		7.500	95	44	39	72.42	69.27	66.12	62.97
70731		.2969	19/64"	7.541	2-3/4"	1-1/4"	.945"	71.62	68.51	65.39	62.28
	70386	.2969	19/64"	7.541	3-3/4"	1-7/8"	1.539"	73.05	69.87	66.70	63.52
70733		.3020	N	7.671	2-15/16"	1-7/16"	.961"	73.91	70.70	67.48	64.27
	70391	.3020	N	7.671	3-3/4"	1-7/8"	1.565"	75.70	72.41	69.12	65.83
70735		.3125	5/16"	7.938	2-15/16"	1-7/16"	.994"	74.18	70.95	67.73	64.50
	70396	.3125	5/16"	7.938	3-3/4"	1-7/8"	1.619"	75.90	72.60	69.30	66.00
70737		.3150		8.000	76	36	25	78.29	74.89	71.48	68.08
	70401	.3150		8.000	95	48	41	80.10	76.62	73.13	69.65
70739		.3160	O	8.026	2-15/16"	1-7/16"	1.006"	78.29	74.89	71.48	68.08
	70406	.3160	O	8.026	3-3/4"	1-7/8"	1.638"	80.10	76.62	73.13	69.65
70741		.3230	P	8.204	2-15/16"	1-7/16"	1.028"	78.86	75.43	72.00	68.57
	70411	.3230	P	8.204	3-3/4"	2-3/32"	1.674"	80.36	76.87	73.37	69.88
70743		.3281	21/64"	8.334	2-15/16"	1-7/16"	1.044"	80.30	76.81	73.32	69.83
	70416	.3281	21/64"	8.334	4"	2-3/32"	1.700"	81.05	77.53	74.00	70.48
70745		.3320	Q	8.433	3"	1-7/16"	1.056"	81.74	78.19	74.63	71.08
	70421	.3320	Q	8.433	4"	2-3/32"	1.720"	82.54	78.95	75.36	71.77
70747		.3346		8.500	76	36	27	82.10	78.53	74.96	71.39
	70426	.3346		8.500	100	53	44	83.10	79.49	75.87	72.26
70749		.3390	R	8.611	3"	1-7/16"	1.079"	84.31	80.64	76.98	73.31
	70431	.3390	R	8.611	4"	2-3/32"	1.757"	85.17	81.47	77.76	74.06
70751		.3438	11/32"	8.733	3"	1-7/16"	1.094"	86.15	82.40	78.66	74.91
	70436	.3438	11/32"	8.733	4"	2-3/16"	1.782"	87.95	84.13	80.30	76.48
70753		.3480	S	8.839	3-1/16"	1-1/2"	1.107"	90.09	86.17	82.26	78.34
	70441	.3480	S	8.839	4"	2-3/16"	1.803"	93.01	88.97	84.92	80.88
70755		.3543		9.000	78	38	29	92.38	88.36	84.35	80.33
	70446	.3543		9.000	100	55	47	93.52	89.45	85.39	81.32
70757		.3580	T	9.093	3-1/16"	1-1/2"	1.139"	97.18	92.95	88.73	84.50
	70451	.3580	T	9.093	4-1/4"	2-9/32"	1.855"	98.54	94.26	89.97	85.69
70759		.3594	23/64"	9.129	3-1/16"	1-1/2"	1.144"	97.78	93.53	89.28	85.03
	70456	.3594	23/64"	9.129	4-1/4"	2-9/32"	1.862"	99.06	94.75	90.45	86.14

3xD (1160) EDP#	5xD (1180) EDP#	d † Diameter			l_1 Overall Length	l_2 Flute Length	l_5 Max Drill Depth	1-11	12-24	25-49	50-100
		Decimal		Metric							
70761		.3680	U	9.347	3-1/8"	1-9/16"	1.171"	98.61	94.33	90.04	85.75
	70461	.3680	U	9.347	4-1/4"	2-9/32"	1.907"	103.72	99.21	94.70	90.19
70763		.3740		9.500	79	39	30	99.43	95.11	90.78	86.46
	70466	.3740		9.500	108	58	49	104.64	100.09	95.54	90.99
70765		.3750	3/8"	9.525	3-1/8"	1-9/16"	1.193"	100.03	95.68	91.33	86.98
	70471	.3750	3/8"	9.525	4-1/4"	2-3/8"	1.943"	105.57	100.98	96.39	91.80
70767		.3760		9.550	3-1/8"	1-9/16"	1.196"	101.94	97.50	93.07	88.64
	70913	.3760		9.550	4-1/4"	2-3/8"	1.948"	106.98	102.33	97.68	93.03
70769		.3770	V	9.576	3-1/4"	1-5/8"	1.200"	103.86	99.34	94.83	90.31
	70476	.3770	V	9.576	4-1/4"	2-3/8"	1.954"	108.38	103.66	98.95	94.24
70771		.3860	W	9.804	3-1/4"	1-5/8"	1.228"	105.67	101.08	96.48	91.89
	70481	.3860	W	9.804	4-1/2"	2-3/8"	2.000"	110.10	105.31	100.53	95.74
70773		.3906	25/64"	9.921	3-1/4"	1-5/8"	1.243"	107.01	102.36	97.70	93.05
	70486	.3906	25/64"	9.921	4-1/2"	2-3/8"	2.024"	111.33	106.49	101.65	96.81
70775		.3937		10.000	84	43	32	110.25	105.46	100.66	95.87
	70491	.3937		10.000	114	60	52	114.34	109.37	104.40	99.43
70777		.3970	X	10.084	3-5/16"	1-11/16"	1.263"	111.76	106.90	102.04	97.18
	70496	.3970	X	10.084	4-1/2"	2-1/2"	2.057"	115.52	110.50	105.47	100.45
70779		.4040	Y	10.262	3-5/16"	1-11/16"	1.286"	112.48	107.59	102.70	97.81
	70501	.4040	Y	10.262	4-1/2"	2-9/16"	2.094"	118.71	113.55	108.39	103.23
70781		.4062	13/32"	10.317	3-5/16"	1-11/16"	1.293"	115.95	110.91	105.87	100.83
	70506	.4062	13/32"	10.317	4-1/2"	2-9/16"	2.105"	119.63	114.43	109.23	104.03
70783		.4134		10.500	85	43	33	117.02	111.94	106.85	101.76
	70511	.4134		10.500	114	67	54	120.64	115.39	110.15	104.90
70785		.4219	27/64"	10.716	3-3/8"	1-11/16"	1.343"	118.14	113.00	107.87	102.73
	70516	.4219	27/64"	10.716	4-1/2"	2-11/16"	2.186"	121.65	116.36	111.07	105.78
70787		.4331		11.000	87	45	35	126.45	120.96	115.46	109.96
	70521	.4331		11.000	114	68	57	129.79	124.15	118.50	112.86
70789		.4375	7/16"	11.113	3-7/16"	1-3/4"	1.392"	126.80	121.29	115.77	110.26
	70526	.4375	7/16"	11.113	4-3/4"	2-13/16"	2.267"	130.27	124.61	118.94	113.28
70791		.4528		11.500	90	47	37	134.47	128.62	122.78	116.93
	70531	.4528		11.500	120	70	60	138.53	132.51	126.48	120.46
70793		.4531	29/64"	11.509	3-9/16"	1-13/16"	1.442"	134.47	128.62	122.78	116.93
	70536	.4531	29/64"	11.509	4-3/4"	2-7/8"	2.348"	138.53	132.51	126.48	120.46
70795		.4688	15/32"	11.909	3-11/16"	2-1/16"	1.491"	141.29	135.15	129.00	122.86
	70541	.4688	15/32"	11.909	4-3/4"	2-7/8"	2.429"	144.99	138.69	132.38	126.08
70797		.4724		12.000	93	53	38	141.70	135.54	129.38	123.22
	70546	.4724		12.000	120	73	62	145.37	139.05	132.73	126.41
70799		.4844	31/64"	12.304	3-11/16"	2-1/16"	1.541"	142.68	136.48	130.27	124.07
	70551	.4844	31/64"	12.304	5-5/16"	3"	2.510"	147.95	141.52	135.08	128.65
70801		.4921		12.500	95	53	40	144.10	137.83	131.57	125.30
	70556	.4921		12.500	135	75	65	149.59	143.09	136.58	130.08
70803		.5000	1/2"	12.700	3-3/4"	2-1/16"	1.591"	145.02	138.71	132.41	126.10
	70561	.5000	1/2"	12.700	5-3/8"	3-1/16"	2.591"	149.88	143.36	136.85	130.33
70805		.5010		12.725	3-3/4"	2-1/16"	1.594"	146.56	140.18	133.81	127.44
	70915	.5010		12.725	5-3/8"	3-1/16"	2.596"	151.56	144.97	138.38	131.79
70807		.5118		13.000	107	55	41	158.95	152.04	145.13	138.22
	70566	.5118		13.000	136	78	67	164.91	157.74	150.57	143.40

continued →

Series 1160, 1180 (continued)

.5156" - .6299"
(13.096mm - 16.000mm)

3xD (1160) EDP#	5xD (1180) EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	l_5 Max Drill Depth	1-11	12-24	25-49	50-100
		Decimal		Metric							
70809		.5156	33/64"	13.096	4-1/4"	2-3/16"	1.641"	162.71	155.64	148.56	141.49
	70571	.5156	33/64"	13.096	5-3/8"	3-1/8"	2.672"	168.43	161.11	153.78	146.46
70811		.5312	17/32"	13.492	4-1/4"	2-1/4"	1.690"	166.46	159.23	151.99	144.75
	70576	.5312	17/32"	13.492	5-11/16"	3-5/16"	2.753"	172.06	164.58	157.10	149.62
70813		.5469	35/64"	13.891	4-1/4"	2-1/4"	1.740"	173.95	166.39	158.82	151.26
	70581	.5469	35/64"	13.891	5-13/16"	3-3/8"	2.834"	179.07	171.28	163.50	155.71
70815		.5512		14.000	107	59	45	177.71	169.98	162.26	154.53
	70586	.5512		14.000	148	86	73	182.62	174.68	166.74	158.80
70817		.5625	9/16"	14.287	4-1/2"	2-3/8"	1.790"	189.03	180.81	172.59	164.37
	70591	.5625	9/16"	14.287	5-15/16"	3-1/2"	2.915"	195.16	186.67	178.19	169.70
70819		.5781	37/64"	14.683	4-1/2"	2-1/2"	1.840"	196.03	187.51	178.98	170.46
	70596	.5781	37/64"	14.683	6"	3-1/2"	2.996"	201.78	193.01	184.23	175.46
70821		.5906		15.000	115	64	48	199.64	190.96	182.28	173.60
	70601	.5906		15.000	152	90	78	205.30	196.37	187.45	178.52
NEW 70823		.5938	19/32"	15.082	4-1/2"	2-1/2"	1.890"	200.71	191.98	183.26	174.53
	70606	.5938	19/32"	15.082	6"	3-9/16"	3.077"	206.28	197.31	188.34	179.37
70825		.6094	39/64"	15.478	4-1/2"	2-9/16"	1.939"	201.74	192.97	184.20	175.43
	70611	.6094	39/64"	15.478	6-3/16"	3-11/16"	3.158"	223.62	213.90	204.17	194.45
70827		.6250	5/8"	15.875	4-1/2"	2-5/8"	1.989"	203.81	194.95	186.09	177.23
	70616	.6250	5/8"	15.875	6-5/16"	3-3/4"	3.239"	225.56	215.75	205.95	196.14
70829		.6299		16.000	115	66	51	208.73	199.65	190.58	181.50
	70621	.6299		16.000	160	95	83	230.29	220.28	210.26	200.25



*1180 Series
High Performance Drill in aluminum*