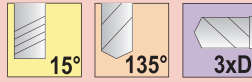


1510 - 2 Flute

Technical information: page 204-207

.0625" - .1575"
(1.59mm - 4.00mm)



TOLERANCES

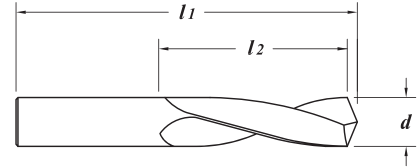
d	+.0000" -.0005" (+.0000 -.0127mm)	
l ₁	≤ 1/8"	+.125" -.062" (+3.175 -1.588mm)
	> 1/8"	+.125" -.125" (+3.175 -3.175mm)
l ₂	≤ 1/8"	+.125" -.062" (+3.175 -1.588mm)
	> 1/8"	+.125" -.125" (+3.175 -3.175mm)

Solid submicron grain carbide drill
Heavy web for extra rigidity and added strength
Thinned point

Recommended to run in titanium, inconel, hastalloy, waspalloy, and stainless steel

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †		l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
19070	.0625	1/16"	1.59	1-5/8"	5/8"	6.22	5.95	5.68
19075	.0635	#52	1.61	1-11/16"	11/16"	6.31	6.04	5.76
19080	.0670	#51	1.70	1-11/16"	11/16"	6.41	6.13	5.84
19085	.0700	#50	1.78	1-11/16"	11/16"	6.56	6.28	5.99
19090	.0730	#49	1.85	1-11/16"	11/16"	6.72	6.43	6.14
19095	.0760	#48	1.93	1-11/16"	11/16"	6.95	6.65	6.34
19100	.0781	5/64"	1.98	1-11/16"	11/16"	7.21	6.90	6.58
19105	.0785	#47	1.99	1-3/4"	3/4"	7.45	7.12	6.80
19115	.0787		2.00	45	19	7.57	7.24	6.92
19120	.0810	#46	2.06	1-3/4"	3/4"	7.69	7.35	7.02
19125	.0820	#45	2.08	1-3/4"	3/4"	7.91	7.57	7.23
19130	.0860	#44	2.18	1-3/4"	3/4"	8.18	7.83	7.48
19135	.0890	#43	2.26	1-3/4"	3/4"	8.42	8.06	7.70
19140	.0935	#42	2.37	1-3/4"	3/4"	8.53	8.15	7.79
19145	.0938	3/32"	2.38	1-3/4"	3/4"	8.74	8.35	7.98
19150	.0960	#41	2.44	1-13/16"	13/16"	8.80	8.41	8.03
19155	.0980	#40	2.49	1-13/16"	13/16"	8.92	8.54	8.14
19160	.0984		2.50	46	21	8.99	8.59	8.21
19165	.0995	#39	2.53	1-13/16"	13/16"	9.02	8.62	8.24
19170	.1015	#38	2.58	1-13/16"	13/16"	9.10	8.70	8.31
19175	.1040	#37	2.64	1-13/16"	13/16"	9.17	8.78	8.37
19180	.1065	#36	2.71	1-13/16"	13/16"	9.25	8.84	8.44
19185	.1094	7/64"	2.78	1-13/16"	13/16"	9.30	8.89	8.49
19190	.1100	#35	2.79	1-7/8"	7/8"	9.35	8.94	8.54
19195	.1110	#34	2.82	1-7/8"	7/8"	9.46	9.05	8.64
19200	.1130	#33	2.87	1-7/8"	7/8"	9.54	9.12	8.70
19205	.1160	#32	2.95	1-7/8"	7/8"	9.60	9.18	8.77
19210	.1181		3.00	48	22	9.70	9.28	8.86
19215	.1200	#31	3.05	1-7/8"	7/8"	9.79	9.36	8.93
19220	.1250	1/8"	3.17	1-7/8"	7/8"	9.89	9.46	9.03
19225	.1285	#30	3.26	1-15/16"	15/16"	10.15	9.71	9.27
19230	.1360	#29	3.45	1-15/16"	15/16"	10.42	9.96	9.52
19235	.1378		3.50	49	24	10.75	10.29	9.82
19240	.1405	#28	3.57	1-15/16"	15/16"	10.90	10.42	9.95
19245	.1406	9/64"	3.57	1-15/16"	15/16"	11.00	10.52	10.05
19250	.1440	#27	3.66	2-1/16"	1"	11.98	11.46	10.94
19255	.1470	#26	3.73	2-1/16"	1"	12.11	11.58	11.06
19260	.1495	#25	3.80	2-1/16"	1"	12.26	11.73	11.19
19265	.1520	#24	3.86	2-1/16"	1"	12.28	11.75	11.21
19270	.1540	#23	3.91	2-1/16"	1"	12.37	11.82	11.29
19275	.1562	5/32"	3.97	2-1/16"	1"	12.44	11.90	11.36
19280	.1570	#22	3.99	2-1/8"	1-1/16"	13.22	12.65	12.06
19285	.1575		4.00	54	27	13.38	12.80	12.22
								11.64

1510 - 2 Flute

.1590" - .3346"
(4.04mm - 8.50mm)

EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
19290	.1590	#21	4.04	2-1/8"	1-1/16"	13.55	12.96	12.38
19295	.1610	#20	4.09	2-1/8"	1-1/16"	13.66	13.06	12.47
19300	.1660	#19	4.22	2-1/8"	1-1/16"	14.21	13.59	12.97
19305	.1695	#18	4.30	2-1/8"	1-1/16"	14.37	13.75	13.12
19310	.1719	11/64"	4.37	2-1/8"	1-1/16"	14.66	14.03	13.38
19315	.1730	#17	4.39	2-3/16"	1-1/8"	14.88	14.24	13.59
19320	.1770	#16	4.49	2-3/16"	1-1/8"	15.05	14.39	13.74
19325	.1772		4.50	56	29	15.12	14.47	13.81
19330	.1800	#15	4.57	2-3/16"	1-1/8"	15.19	14.53	13.87
19335	.1820	#14	4.62	2-3/16"	1-1/8"	15.53	14.85	14.18
19340	.1850	#13	4.70	2-3/16"	1-1/8"	15.65	14.98	14.29
19345	.1875	3/16"	4.76	2-3/16"	1-1/8"	15.70	15.02	14.34
19350	.1890	#12	4.80	2-1/4"	1-3/16"	16.23	15.53	14.82
19355	.1910	#11	4.85	2-1/4"	1-3/16"	16.42	15.70	15.00
19360	.1935	#10	4.91	2-1/4"	1-3/16"	17.17	16.42	15.67
19365	.1960	#9	4.98	2-1/4"	1-3/16"	17.62	16.85	16.09
19370	.1969		5.00	57	30	17.71	16.94	16.17
19375	.1990	#8	5.05	2-1/4"	1-3/16"	17.85	17.07	16.30
19380	.2010	#7	5.10	2-1/4"	1-3/16"	18.37	17.57	16.76
19385	.2031	13/64"	5.16	2-1/4"	1-3/16"	18.50	17.70	16.89
19390	.2040	#6	5.18	2-3/8"	1-1/4"	18.89	18.06	17.24
19395	.2055	#5	5.22	2-3/8"	1-1/4"	19.27	18.43	17.60
19400	.2090	#4	5.31	2-3/8"	1-1/4"	19.61	18.76	17.91
19405	.2130	#3	5.41	2-3/8"	1-1/4"	19.96	19.09	18.22
19410	.2165		5.50	60	32	20.10	19.23	18.36
19415	.2188	7/32"	5.56	2-3/8"	1-1/4"	20.26	19.38	18.50
19420	.2210	#2	5.61	2-7/16"	1-5/16"	20.74	19.83	18.94
19425	.2280	#1	5.79	2-7/16"	1-5/16"	20.88	19.98	19.06
19430	.2340	A	5.94	2-7/16"	1-5/16"	20.91	20.01	19.09
19435	.2344	15/64"	5.95	2-7/16"	1-5/16"	20.97	20.05	19.15
19440	.2362		6.00	64	35	21.03	20.11	19.20
19445	.2380	B	6.04	2-1/2"	1-3/8"	21.11	20.20	19.27
19450	.2420	C	6.15	2-1/2"	1-3/8"	21.27	20.34	19.42
19455	.2460	D	6.25	2-1/2"	1-3/8"	21.43	20.50	19.57
19460	.2500	1/4" / E	6.35	2-1/2"	1-3/8"	21.56	20.62	19.69
19465	.2559		6.50	67	37	22.09	21.13	20.17
19470	.2570	F	6.53	2-5/8"	1-7/16"	22.56	21.58	20.59
19475	.2610	G	6.63	2-5/8"	1-7/16"	23.02	22.02	21.02
19480	.2656	17/64"	6.75	2-5/8"	1-7/16"	23.47	22.45	21.43
19485	.2660	H	6.76	2-11/16"	1-1/2"	24.15	23.10	22.05
19490	.2720	I	6.91	2-11/16"	1-1/2"	24.42	23.36	22.30
19495	.2756		7.00	68	38	24.64	23.57	22.50
19500	.2770	J	7.03	2-11/16"	1-1/2"	24.86	23.77	22.69
19505	.2810	K	7.14	2-11/16"	1-1/2"	25.06	23.97	22.88
19510	.2812	9/32"	7.14	2-11/16"	1-1/2"	25.20	24.11	23.00
19515	.2900	L	7.37	2-3/4"	1-9/16"	26.14	25.00	23.86
19520	.2950	M	7.49	2-3/4"	1-9/16"	27.97	26.75	25.53
19525	.2953		7.50	70	40	27.97	26.75	25.53
19530	.2969	19/64"	7.54	2-3/4"	1-9/16"	28.12	26.89	25.68
19535	.3020	N	7.67	2-13/16"	1-5/8"	29.63	28.34	27.05
19540	.3125	5/16"	7.94	2-13/16"	1-5/8"	29.73	28.44	27.14
19545	.3150		8.00	75	43	31.90	30.51	29.12
19550	.3160	O	8.03	2-15/16"	1-11/16"	31.90	30.51	29.12
19555	.3230	P	8.20	2-15/16"	1-11/16"	32.18	30.77	29.38
19560	.3281	21/64"	8.33	2-15/16"	1-11/16"	32.38	30.97	29.56
19565	.3320	Q	8.43	3"	1-11/16"	33.11	31.68	30.23
19570	.3346		8.50	76	43	33.44	31.98	30.52

continued →

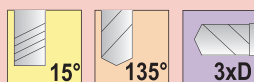
1510 - 2 Flute (continued)

.3390" - .6299"
(8.61mm - 16.00mm)

DRILLS

EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
19575	.3390	R	8.61	3"	1-11/16"	34.48	32.98	31.48	29.98
19580	.3438	11/32"	8.73	3"	1-11/16"	35.88	34.32	32.76	31.20
19585	.3480	S	8.84	3-1/16"	1-3/4"	36.37	34.79	33.21	31.63
19590	.3543		9.00	78	44	36.60	35.01	33.42	31.82
19595	.3580	T	9.09	3-1/16"	1-3/4"	36.73	35.13	33.54	31.94
19600	.3594	23/64"	9.13	3-1/16"	1-3/4"	36.98	35.37	33.77	32.16
19605	.3680	U	9.35	3-1/8"	1-13/16"	40.51	38.75	36.98	35.22
19610	.3740		9.50	79	46	40.89	39.11	37.34	35.56
19615	.3750	3/8"	9.52	3-1/8"	1-13/16"	41.20	39.42	37.62	35.83
19620	.3770	V	9.57	3-1/4"	1-7/8"	42.01	40.18	38.36	36.52
19625	.3860	W	9.80	3-1/4"	1-7/8"	42.89	41.03	39.16	37.29
19630	.3906	25/64"	9.92	3-1/4"	1-7/8"	43.52	41.63	39.74	37.85
19635	.3937		10.00	84	49	45.09	43.13	41.17	39.21
19640	.3970	X	10.08	3-5/16"	1-15/16"	46.40	44.39	42.37	40.35
19645	.4040	Y	10.26	3-5/16"	1-15/16"	46.78	44.74	42.71	40.67
19650	.4062	13/32"	10.32	3-5/16"	1-15/16"	48.47	46.36	44.26	42.15
19655	.4130	Z	10.49	3-3/8"	2"	48.98	46.85	44.72	42.60
19660	.4134		10.50	86	51	48.98	46.85	44.72	42.60
19665	.4219	27/64"	10.72	3-3/8"	2"	49.52	47.37	45.22	43.07
19670	.4331		11.00	87	52	53.80	51.46	49.12	46.78
19675	.4375	7/16"	11.11	3-7/16"	2-1/16"	53.80	51.46	49.12	46.78
19680	.4528		11.50	91	54	58.34	55.81	53.27	50.73
19685	.4531	29/64"	11.51	3-9/16"	2-1/8"	58.34	55.81	53.27	50.73
19690	.4688	15/32"	11.91	3-5/8"	2-1/8"	61.71	59.03	56.35	53.66
19695	.4724		12.00	94	56	61.93	59.24	56.54	53.85
19700	.4844	31/64"	12.30	3-11/16"	2-3/16"	62.42	59.71	56.99	54.28
19705	.4921		12.50	95	56	63.12	60.37	57.63	54.88
19710	.5000	1/2"	12.70	3-3/4"	2-1/4"	63.56	60.80	58.04	55.28
19715	.5118		13.00	107	60	83.21	79.59	75.97	72.35
19720	.5156	33/64"	13.10	4-1/4"	2-3/8"	85.43	81.71	78.00	74.29
19725	.5312	17/32"	13.49	4-1/4"	2-3/8"	87.65	83.84	80.03	76.22
19730	.5315		13.50	107	60	89.89	85.98	82.07	78.17
19735	.5469	35/64"	13.89	4-1/4"	2-3/8"	92.11	88.11	84.10	80.10
19740	.5512		14.00	107	60	94.37	90.26	86.16	82.06
19745	.5625	9/16"	14.29	4-1/2"	2-1/2"	102.91	98.44	93.96	89.48
19750	.5709		14.50	115	65	105.04	100.47	95.91	91.34
19755	.5781	37/64"	14.68	4-1/2"	2-1/2"	107.19	102.53	97.87	93.22
19760	.5906		15.00	115	65	109.38	104.62	99.86	95.11
19765	.5938	19/32"	15.08	4-1/2"	2-1/2"	110.01	105.23	100.44	95.66
19770	.6094	39/64"	15.48	4-1/2"	2-1/2"	110.61	105.81	100.99	96.19
19775	.6102		15.50	115	65	111.25	106.41	101.58	96.74
19780	.6250	5/8"	15.87	4-1/2"	2-1/2"	111.87	107.01	102.15	97.28
19785	.6299		16.00	115	65	114.85	109.86	104.86	99.87

.0625" - .1575"
(1.59mm - 4.00mm)



TOLERANCES

d	+0.000" -0.0005" (+0.000 -0.127mm)
h	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

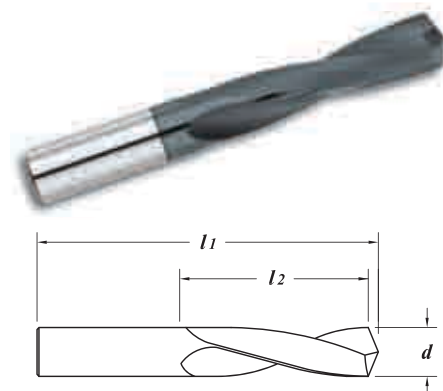
Balinit® HARDLUBE Coated

Solid submicron grain carbide drill
Excellent heat resistance and lubricity
Up to 40% faster than uncoated
Heavy web for extra rigidity and added strength
Thinned point

Recommended to run in titanium, inconel, hastalloy, waspalloy, and stainless steel

Live tooling recommended on lathe processes

Shank tolerance: -.0001" - .0004" (-.0025 / -.0100mm)



EDP#	d †		L ₁ Overall Length	L ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
19071	.0625	1/16"	1.59	1-5/8"	5/8"	7.88	7.54	7.20
19076	.0635	#52	1.61	1-11/16"	11/16"	7.98	7.63	7.28
19081	.0670	#51	1.70	1-11/16"	11/16"	8.07	7.72	7.37
19086	.0700	#50	1.78	1-11/16"	11/16"	8.23	7.87	7.51
19091	.0730	#49	1.85	1-11/16"	11/16"	8.39	8.03	7.66
19096	.0760	#48	1.93	1-11/16"	11/16"	8.61	8.24	7.86
19101	.0781	5/64"	1.98	1-11/16"	11/16"	8.87	8.49	8.10
19106	.0785	#47	1.99	1-3/4"	3/4"	9.11	8.72	8.32
19116	.0787		2.00	45	19	9.24	8.83	8.43
19121	.0810	#46	2.06	1-3/4"	3/4"	9.35	8.94	8.54
19126	.0820	#45	2.08	1-3/4"	3/4"	9.59	9.17	8.76
19131	.0860	#44	2.18	1-3/4"	3/4"	9.84	9.41	8.99
19136	.0890	#43	2.26	1-3/4"	3/4"	10.08	9.64	9.20
19141	.0935	#42	2.37	1-3/4"	3/4"	10.19	9.74	9.31
19146	.0938	3/32"	2.38	1-3/4"	3/4"	10.39	9.94	9.48
19151	.0960	#41	2.44	1-13/16"	13/16"	10.46	10.00	9.56
19156	.0980	#40	2.49	1-13/16"	13/16"	10.60	10.14	9.67
19161	.0984		2.50	46	21	10.65	10.18	9.72
19166	.0995	#39	2.53	1-13/16"	13/16"	10.69	10.22	9.77
19171	.1015	#38	2.58	1-13/16"	13/16"	10.76	10.30	9.83
19176	.1040	#37	2.64	1-13/16"	13/16"	10.84	10.37	9.89
19181	.1065	#36	2.71	1-13/16"	13/16"	10.91	10.43	9.96
19186	.1094	7/64"	2.78	1-13/16"	13/16"	10.97	10.49	10.02
19191	.1100	#35	2.79	1-7/8"	7/8"	11.01	10.54	10.06
19196	.1110	#34	2.82	1-7/8"	7/8"	11.13	10.64	10.16
19201	.1130	#33	2.87	1-7/8"	7/8"	11.19	10.70	10.21
19206	.1160	#32	2.95	1-7/8"	7/8"	11.26	10.77	10.29
19211	.1181		3.00	48	22	11.37	10.87	10.38
19216	.1200	#31	3.05	1-7/8"	7/8"	11.45	10.95	10.45
19221	.1250	1/8"	3.17	1-7/8"	7/8"	11.55	11.06	10.55
19226	.1285	#30	3.26	1-15/16"	15/16"	11.81	11.30	10.78
19231	.1360	#29	3.45	1-15/16"	15/16"	12.08	11.55	11.03
19236	.1378		3.50	49	24	12.42	11.88	11.34
19241	.1405	#28	3.57	1-15/16"	15/16"	12.56	12.01	11.47
19246	.1406	9/64"	3.57	1-15/16"	15/16"	12.67	12.12	11.56
19251	.1440	#27	3.66	2-1/16"	1"	13.64	13.05	12.46
19256	.1470	#26	3.73	2-1/16"	1"	13.77	13.17	12.57
19261	.1495	#25	3.80	2-1/16"	1"	13.93	13.32	12.72
19266	.1520	#24	3.86	2-1/16"	1"	13.95	13.34	12.73
19271	.1540	#23	3.91	2-1/16"	1"	14.03	13.42	12.81
19276	.1562	5/32"	3.97	2-1/16"	1"	14.10	13.49	12.88
19281	.1570	#22	3.99	2-1/8"	1-1/16"	14.88	14.24	13.59
19286	.1575		4.00	54	27	15.05	14.39	13.74

continued →

1510H - 2 Flute (continued)

.1590" - .3346"
(4.04mm - 8.50mm)

DRILLS

EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
19291	.1590	#21	4.04	2-1/8"	1-1/16"	15.22	14.55	13.89
19296	.1610	#20	4.09	2-1/8"	1-1/16"	15.32	14.65	13.99
19301	.1660	#19	4.22	2-1/8"	1-1/16"	15.87	15.18	14.49
19306	.1695	#18	4.30	2-1/8"	1-1/16"	16.04	15.34	14.64
19311	.1719	11/64"	4.37	2-1/8"	1-1/16"	16.33	15.62	14.90
19316	.1730	#17	4.39	2-3/16"	1-1/8"	16.54	15.82	15.10
19321	.1770	#16	4.49	2-3/16"	1-1/8"	16.71	15.98	15.26
19326	.1772		4.50	56	29	16.78	16.05	15.32
19331	.1800	#15	4.57	2-3/16"	1-1/8"	16.85	16.12	15.38
19336	.1820	#14	4.62	2-3/16"	1-1/8"	17.20	16.45	15.70
19341	.1850	#13	4.70	2-3/16"	1-1/8"	17.32	16.57	15.81
19346	.1875	3/16"	4.76	2-3/16"	1-1/8"	17.37	16.61	15.86
19351	.1890	#12	4.80	2-1/4"	1-3/16"	19.10	18.27	17.44
19356	.1910	#11	4.85	2-1/4"	1-3/16"	19.29	18.45	17.62
19361	.1935	#10	4.91	2-1/4"	1-3/16"	20.06	19.19	18.31
19366	.1960	#9	4.98	2-1/4"	1-3/16"	20.50	19.60	18.72
19371	.1969		5.00	57	30	20.59	19.70	18.80
19376	.1990	#8	5.05	2-1/4"	1-3/16"	20.72	19.81	18.92
19381	.2010	#7	5.10	2-1/4"	1-3/16"	21.26	20.33	19.41
19386	.2031	13/64"	5.16	2-1/4"	1-3/16"	21.37	20.45	19.51
19391	.2040	#6	5.18	2-3/8"	1-1/4"	21.76	20.81	19.86
19396	.2055	#5	5.22	2-3/8"	1-1/4"	22.15	21.18	20.23
19401	.2090	#4	5.31	2-3/8"	1-1/4"	22.48	21.51	20.53
19406	.2130	#3	5.41	2-3/8"	1-1/4"	22.83	21.84	20.84
19411	.2165		5.50	60	32	22.98	21.99	20.99
19416	.2188	7/32"	5.56	2-3/8"	1-1/4"	23.13	22.12	21.12
19421	.2210	#2	5.61	2-7/16"	1-5/16"	23.62	22.59	21.57
19426	.2280	#1	5.79	2-7/16"	1-5/16"	23.75	22.72	21.68
19431	.2340	A	5.94	2-7/16"	1-5/16"	23.81	22.77	21.74
19436	.2344	15/64"	5.95	2-7/16"	1-5/16"	23.84	22.80	21.77
19441	.2362		6.00	64	35	23.91	22.87	21.83
19446	.2380	B	6.04	2-1/2"	1-3/8"	23.99	22.95	21.90
19451	.2420	C	6.15	2-1/2"	1-3/8"	24.14	23.09	22.04
19456	.2460	D	6.25	2-1/2"	1-3/8"	24.30	23.24	22.19
19461	.2500	1/4" / E	6.35	2-1/2"	1-3/8"	24.45	23.39	22.33
19466	.2559		6.50	67	37	27.20	26.01	24.84
19471	.2570	F	6.53	2-5/8"	1-7/16"	27.66	26.46	25.26
19476	.2610	G	6.63	2-5/8"	1-7/16"	28.12	26.89	25.68
19481	.2656	17/64"	6.75	2-5/8"	1-7/16"	28.59	27.34	26.10
19486	.2660	H	6.76	2-11/16"	1-1/2"	29.26	27.99	26.71
19491	.2720	I	6.91	2-11/16"	1-1/2"	29.53	28.25	26.96
19496	.2756		7.00	68	38	29.73	28.44	27.14
19501	.2770	J	7.03	2-11/16"	1-1/2"	29.96	28.66	27.35
19506	.2810	K	7.14	2-11/16"	1-1/2"	30.17	28.86	27.55
19511	.2812	9/32"	7.14	2-11/16"	1-1/2"	30.30	28.97	27.66
19516	.2900	L	7.37	2-3/4"	1-9/16"	31.24	29.88	28.53
19521	.2950	M	7.49	2-3/4"	1-9/16"	33.07	31.64	30.19
19526	.2953		7.50	70	40	33.07	31.64	30.19
19531	.2969	19/64"	7.54	2-3/4"	1-9/16"	33.22	31.77	30.33
19536	.3020	N	7.67	2-13/16"	1-5/8"	34.74	33.23	31.72
19541	.3125	5/16"	7.94	2-13/16"	1-5/8"	34.84	33.32	31.81
19546	.3150		8.00	75	43	37.00	35.39	33.79
19551	.3160	O	8.03	2-15/16"	1-11/16"	37.00	35.39	33.79
19556	.3230	P	8.20	2-15/16"	1-11/16"	37.28	35.66	34.04
19561	.3281	21/64"	8.33	2-15/16"	1-11/16"	37.48	35.85	34.23
19566	.3320	Q	8.43	3"	1-11/16"	38.22	36.56	34.89
19571	.3346		8.50	76	43	38.53	36.86	35.18

1510H - 2 Flute (continued)

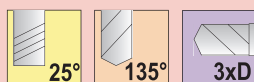
.3390" - .6299"
(8.61mm - 16.00mm)

EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
19576	.3390	R	8.61	3"	1-11/16"	39.59	37.87	36.15
19581	.3438	11/32"	8.73	3"	1-11/16"	40.99	39.21	37.42
19586	.3480	S	8.84	3-1/16"	1-3/4"	43.28	41.40	39.52
19591	.3543		9.00	78	44	43.52	41.63	39.74
19596	.3580	T	9.09	3-1/16"	1-3/4"	43.64	41.75	39.84
19601	.3594	23/64"	9.13	3-1/16"	1-3/4"	43.91	42.00	40.09
19606	.3680	U	9.35	3-1/8"	1-13/16"	47.42	45.36	43.30
19611	.3740		9.50	79	46	47.81	45.73	43.65
19616	.3750	3/8"	9.52	3-1/8"	1-13/16"	48.13	46.04	43.95
19621	.3770	V	9.57	3-1/4"	1-7/8"	49.93	47.76	45.59
19626	.3860	W	9.80	3-1/4"	1-7/8"	50.80	48.60	46.38
19631	.3906	25/64"	9.92	3-1/4"	1-7/8"	51.44	49.20	46.97
19636	.3937		10.00	84	49	53.01	50.70	48.40
19641	.3970	X	10.08	3-5/16"	1-15/16"	54.33	51.97	49.61
19646	.4040	Y	10.26	3-5/16"	1-15/16"	54.70	52.32	49.95
19651	.4062	13/32"	10.32	3-5/16"	1-15/16"	56.38	53.92	51.48
19656	.4130	Z	10.49	3-3/8"	2"	56.92	54.44	51.97
19661	.4134		10.50	86	51	56.92	54.44	51.97
19666	.4219	27/64"	10.72	3-3/8"	2"	57.46	54.96	52.47
19671	.4331		11.00	87	52	61.71	59.03	56.35
19676	.4375	7/16"	11.11	3-7/16"	2-1/16"	61.71	59.03	56.35
19681	.4528		11.50	91	54	66.27	63.39	60.51
19686	.4531	29/64"	11.51	3-9/16"	2-1/8"	66.27	63.39	60.51
19691	.4688	15/32"	11.91	3-5/8"	2-1/8"	69.63	66.60	63.58
19696	.4724		12.00	94	56	69.86	66.82	63.78
19701	.4844	31/64"	12.30	3-11/16"	2-3/16"	70.34	67.28	64.22
19706	.4921		12.50	95	56	71.04	67.95	64.86
19711	.5000	1/2"	12.70	3-3/4"	2-1/4"	71.50	68.39	65.28
19716	.5118		13.00	107	60	94.69	90.57	86.46
19721	.5156	33/64"	13.10	4-1/4"	2-3/8"	96.91	92.70	88.48
19726	.5312	17/32"	13.49	4-1/4"	2-3/8"	99.13	94.83	90.51
19731	.5315		13.50	107	60	101.37	96.96	92.55
19736	.5469	35/64"	13.89	4-1/4"	2-3/8"	103.59	99.09	94.59
19741	.5512		14.00	107	60	105.85	101.24	96.65
19746	.5625	9/16"	14.29	4-1/2"	2-1/2"	114.39	109.42	104.45
19751	.5709		14.50	115	65	116.52	111.46	106.39
19756	.5781	37/64"	14.68	4-1/2"	2-1/2"	118.67	113.52	108.36
19761	.5906		15.00	115	65	120.86	115.61	110.34
19766	.5938	19/32"	15.08	4-1/2"	2-1/2"	121.49	116.21	110.93
19771	.6094	39/64"	15.48	4-1/2"	2-1/2"	122.10	116.79	111.48
19776	.6102		15.50	115	65	122.73	117.40	112.06
19781	.6250	5/8"	15.87	4-1/2"	2-1/2"	123.35	117.99	112.63
19786	.6299		16.00	115	65	126.33	120.84	115.35

1520 - 2 Flute

Technical information: page 204-207

.0625" - .1575"
(1.59mm - 4.00mm)



TOLERANCES

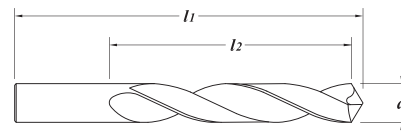
d	+.0000" - .0005" (+.0000 - .0127mm)	
l ₁	≤ 1/8"	+.125" - .062" (+3.175 - 1.588mm)
	> 1/8"	+.125" - .125" (+3.175 - 3.175mm)
l ₂	≤ 1/8"	+.125" - .062" (+3.175 - 1.588mm)
	> 1/8"	+.125" - .125" (+3.175 - 3.175mm)

Solid submicron grain carbide drill
No spotting required in most applications
4-facet self-centering point

Recommended to run in stainless steel alloys, mild steels and titanium alloys

Live tooling recommended on lathe processes

Shank tolerance: -.0001" - .0004" (-.0025 / -.0100mm)



EDP#	d †		l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
77165	.0625	1/16"	1.59	1-5/8"	5/8"	5.90	5.64	5.39
77170	.0635	#52	1.61	1-11/16"	11/16"	5.99	5.73	5.47
77175	.0670	#51	1.70	1-11/16"	11/16"	6.08	5.82	5.55
77180	.0700	#50	1.78	1-11/16"	11/16"	6.23	5.96	5.69
77185	.0730	#49	1.85	1-11/16"	11/16"	6.40	6.12	5.84
77190	.0760	#48	1.93	1-11/16"	11/16"	6.60	6.31	6.03
77195	.0781	5/64"	1.98	1-11/16"	11/16"	6.85	6.55	6.26
77200	.0785	#47	1.99	1-3/4"	3/4"	7.08	6.77	6.47
77205	.0787		2.00	45	19	7.19	6.87	6.56
77210	.0810	#46	2.06	1-3/4"	3/4"	7.31	6.99	6.68
77215	.0820	#45	2.08	1-3/4"	3/4"	7.52	7.20	6.86
77220	.0860	#44	2.18	1-3/4"	3/4"	7.78	7.44	7.10
77225	.0890	#43	2.26	1-3/4"	3/4"	7.99	7.64	7.29
77230	.0935	#42	2.37	1-3/4"	3/4"	8.10	7.75	7.39
77235	.0938	3/32"	2.38	1-3/4"	3/4"	8.29	7.92	7.57
77240	.0960	#41	2.44	1-13/16"	13/16"	8.36	8.00	7.63
77245	.0980	#40	2.49	1-13/16"	13/16"	8.50	8.12	7.76
77250	.0984		2.50	46	21	8.53	8.15	7.79
77255	.0995	#39	2.53	1-13/16"	13/16"	8.56	8.18	7.81
77260	.1015	#38	2.58	1-13/16"	13/16"	8.64	8.27	7.89
77265	.1040	#37	2.64	1-13/16"	13/16"	8.70	8.33	7.95
77270	.1065	#36	2.71	1-13/16"	13/16"	8.78	8.39	8.02
77275	.1094	7/64"	2.78	1-13/16"	13/16"	8.83	8.44	8.06
77280	.1100	#35	2.79	1-7/8"	7/8"	8.88	8.50	8.11
77285	.1110	#34	2.82	1-7/8"	7/8"	9.00	8.60	8.22
77290	.1130	#33	2.87	1-7/8"	7/8"	9.06	8.66	8.27
77295	.1160	#32	2.95	1-7/8"	7/8"	9.11	8.72	8.32
77300	.1181		3.00	48	22	9.22	8.82	8.42
77305	.1200	#31	3.05	1-7/8"	7/8"	9.28	8.87	8.47
77310	.1250	1/8"	3.17	1-7/8"	7/8"	9.39	8.99	8.57
77315	.1285	#30	3.26	1-15/16"	15/16"	9.64	9.22	8.80
77320	.1360	#29	3.45	1-15/16"	15/16"	9.89	9.46	9.03
77325	.1378		3.50	49	24	10.21	9.77	9.33
77330	.1405	#28	3.57	1-15/16"	15/16"	10.35	9.90	9.44
77335	.1406	9/64"	3.57	1-15/16"	15/16"	10.45	9.99	9.55
77340	.1440	#27	3.66	2-1/16"	1"	11.38	10.88	10.39
77345	.1470	#26	3.73	2-1/16"	1"	11.49	10.99	10.49
77350	.1495	#25	3.80	2-1/16"	1"	11.64	11.13	10.63
77355	.1520	#24	3.86	2-1/16"	1"	11.66	11.15	10.65
77360	.1540	#23	3.91	2-1/16"	1"	11.74	11.23	10.72
77365	.1562	5/32"	3.97	2-1/16"	1"	11.81	11.30	10.78
77370	.1570	#22	3.99	2-1/8"	1-1/16"	12.56	12.01	11.47
77375	.1575		4.00	54	27	12.71	12.16	11.61

1520 - 2 Flute (continued)

.1590" - .3346"
(4.04mm - 8.50mm)

EDP#	d^+ Diameter		Metric	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal								
77380	.1590	#21	4.04	2-1/8"	1-1/16"	12.86	12.30	11.74	11.19
77385	.1610	#20	4.09	2-1/8"	1-1/16"	12.97	12.41	11.85	11.27
77390	.1660	#19	4.22	2-1/8"	1-1/16"	13.49	12.91	12.31	11.73
77395	.1695	#18	4.30	2-1/8"	1-1/16"	13.66	13.06	12.47	11.88
77400	.1719	11/64"	4.37	2-1/8"	1-1/16"	13.94	13.33	12.72	12.12
77405	.1730	#17	4.39	2-3/16"	1-1/8"	14.13	13.52	12.91	12.29
77410	.1770	#16	4.49	2-3/16"	1-1/8"	14.29	13.67	13.05	12.43
77415	.1772		4.50	56	29	14.36	13.74	13.11	12.49
77420	.1800	#15	4.57	2-3/16"	1-1/8"	14.42	13.80	13.17	12.54
77425	.1820	#14	4.62	2-3/16"	1-1/8"	14.76	14.11	13.48	12.83
77430	.1850	#13	4.70	2-3/16"	1-1/8"	14.86	14.22	13.57	12.93
77435	.1875	3/16"	4.76	2-3/16"	1-1/8"	14.92	14.28	13.62	12.98
77440	.1890	#12	4.80	2-1/4"	1-3/16"	15.41	14.75	14.07	13.41
77445	.1910	#11	4.85	2-1/4"	1-3/16"	15.60	14.92	14.25	13.56
77450	.1935	#10	4.91	2-1/4"	1-3/16"	16.33	15.62	14.90	14.20
77455	.1960	#9	4.98	2-1/4"	1-3/16"	16.74	16.02	15.29	14.56
77460	.1969		5.00	57	30	16.84	16.11	15.37	14.64
77465	.1990	#8	5.05	2-1/4"	1-3/16"	16.95	16.21	15.48	14.74
77470	.2010	#7	5.10	2-1/4"	1-3/16"	17.45	16.69	15.93	15.17
77475	.2031	13/64"	5.16	2-1/4"	1-3/16"	17.59	16.82	16.06	15.29
77480	.2040	#6	5.18	2-3/8"	1-1/4"	17.94	17.16	16.38	15.60
77485	.2055	#5	5.22	2-3/8"	1-1/4"	18.31	17.51	16.72	15.92
77490	.2090	#4	5.31	2-3/8"	1-1/4"	18.64	17.83	17.01	16.20
77495	.2130	#3	5.41	2-3/8"	1-1/4"	18.96	18.14	17.31	16.48
77500	.2165		5.50	60	32	19.10	18.27	17.44	16.61
77505	.2188	7/32"	5.56	2-3/8"	1-1/4"	19.24	18.41	17.57	16.73
77510	.2210	#2	5.61	2-7/16"	1-5/16"	19.71	18.86	17.99	17.14
77515	.2280	#1	5.79	2-7/16"	1-5/16"	19.83	18.97	18.11	17.24
77520	.2340	A	5.94	2-7/16"	1-5/16"	19.87	19.01	18.15	17.28
77525	.2344	15/64"	5.95	2-7/16"	1-5/16"	19.92	19.05	18.18	17.32
77530	.2362		6.00	64	35	19.99	19.12	18.25	17.38
77535	.2380	B	6.04	2-1/2"	1-3/8"	20.06	19.19	18.31	17.44
77540	.2420	C	6.15	2-1/2"	1-3/8"	20.20	19.32	18.44	17.57
77545	.2460	D	6.25	2-1/2"	1-3/8"	20.35	19.47	18.58	17.70
77550	.2500	1/4" / E	6.35	2-1/2"	1-3/8"	20.50	19.60	18.72	17.83
77555	.2559		6.50	67	37	20.99	20.07	19.17	18.25
77560	.2570	F	6.53	2-5/8"	1-7/16"	21.43	20.50	19.57	18.64
77565	.2610	G	6.63	2-5/8"	1-7/16"	21.85	20.90	19.95	19.00
77570	.2656	17/64"	6.75	2-5/8"	1-7/16"	22.31	21.34	20.36	19.40
77575	.2660	H	6.76	2-11/16"	1-1/2"	22.94	21.94	20.95	19.95
77580	.2720	I	6.91	2-11/16"	1-1/2"	23.20	22.19	21.18	20.18
77585	.2756		7.00	68	38	23.39	22.37	21.35	20.34
77590	.2770	J	7.03	2-11/16"	1-1/2"	23.62	22.59	21.57	20.54
77595	.2810	K	7.14	2-11/16"	1-1/2"	23.83	22.79	21.76	20.72
77600	.2812	9/32"	7.14	2-11/16"	1-1/2"	23.94	22.90	21.86	20.82
77605	.2900	L	7.37	2-3/4"	1-9/16"	24.82	23.74	22.66	21.59
77610	.2950	M	7.49	2-3/4"	1-9/16"	26.56	25.41	24.25	23.10
77615	.2953		7.50	70	40	26.56	25.41	24.25	23.10
77620	.2969	19/64"	7.54	2-3/4"	1-9/16"	26.71	25.54	24.39	23.22
77625	.3020	N	7.67	2-13/16"	1-5/8"	28.14	26.92	25.70	24.47
77630	.3125	5/16"	7.94	2-13/16"	1-5/8"	28.25	27.02	25.79	24.56
77635	.3150		8.00	75	43	30.30	28.97	27.66	26.34
77640	.3160	O	8.03	2-15/16"	1-11/16"	30.30	28.97	27.66	26.34
77645	.3230	P	8.20	2-15/16"	1-11/16"	30.56	29.22	27.90	26.57
77650	.3281	21/64"	8.33	2-15/16"	1-11/16"	30.75	29.41	28.08	26.74
77655	.3320	Q	8.43	3"	1-11/16"	31.47	30.10	28.74	27.36
77660	.3346		8.50	76	43	31.75	30.37	29.00	27.61

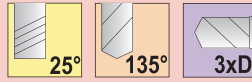
continued →

1520 - 2 Flute (continued)

.3390" - .5000"
(8.61mm - 12.70mm)

EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
77665	.3390	R	8.61	3"	1-11/16"	32.76	31.34	29.91	28.49
77670	.3438	11/32"	8.73	3"	1-11/16"	34.10	32.61	31.14	29.65
77675	.3480	S	8.84	3-1/16"	1-3/4"	34.55	33.05	31.54	30.05
77680	.3543		9.00	78	44	34.77	33.26	31.74	30.23
77685	.3580	T	9.09	3-1/16"	1-3/4"	34.90	33.38	31.87	30.35
77690	.3594	23/64"	9.13	3-1/16"	1-3/4"	35.14	33.61	32.08	30.56
77695	.3680	U	9.35	3-1/8"	1-13/16"	38.49	36.82	35.14	33.47
77700	.3740		9.50	79	46	38.84	37.16	35.46	33.78
77705	.3750	3/8"	9.52	3-1/8"	1-13/16"	39.15	37.44	35.74	34.04
77710	.3770	V	9.57	3-1/4"	1-7/8"	39.89	38.16	36.42	34.69
77715	.3860	W	9.80	3-1/4"	1-7/8"	40.74	38.97	37.19	35.42
77720	.3906	25/64"	9.92	3-1/4"	1-7/8"	41.35	39.55	37.75	35.95
77725	.3937		10.00	84	49	42.83	40.97	39.10	37.24
77730	.3970	X	10.08	3-5/16"	1-15/16"	44.09	42.17	40.25	38.33
77735	.4040	Y	10.26	3-5/16"	1-15/16"	44.44	42.50	40.57	38.65
77740	.4062	13/32"	10.32	3-5/16"	1-15/16"	46.05	44.04	42.05	40.04
77745	.4130	Z	10.49	3-3/8"	2"	46.55	44.52	42.50	40.48
77750	.4134		10.50	86	51	46.55	44.52	42.50	40.48
77755	.4219	27/64"	10.72	3-3/8"	2"	47.05	45.00	42.96	40.91
77760	.4331		11.00	87	52	51.10	48.87	46.65	44.43
77765	.4375	7/16"	11.11	3-7/16"	2-1/16"	51.10	48.87	46.65	44.43
77770	.4528		11.50	91	54	55.43	53.02	50.62	48.20
77775	.4531	29/64"	11.51	3-9/16"	2-1/8"	55.43	53.02	50.62	48.20
77780	.4688	15/32"	11.91	3-5/8"	2-1/8"	58.62	56.08	53.53	50.98
77785	.4724		12.00	94	56	58.84	56.28	53.73	51.17
77790	.4844	31/64"	12.30	3-11/16"	2-3/16"	59.30	56.72	54.14	51.56
77795	.4921		12.50	95	56	59.97	57.36	54.76	52.15
77800	.5000	1/2"	12.70	3-3/4"	2-1/4"	60.40	57.77	55.15	52.52

.0625" - .1575"
(1.59mm - 4.00mm)



TOLERANCES

d	+0.000" -0.005" (+0.000 -0.127mm)
h	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

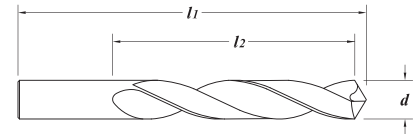
Balinit® HARDLUBE Coated

Solid submicron grain carbide drill
Excellent heat resistance and lubricity
No spotting required in most applications
4-facet self-centering point

Recommended to run in stainless steel alloys, mild steels and titanium alloys

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d † Diameter		l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
77166	.0625	1/16"	1.59	1-5/8"	5/8"	7.57	7.24	6.92
77171	.0635	#52	1.61	1-11/16"	11/16"	7.66	7.33	7.00
77176	.0670	#51	1.70	1-11/16"	11/16"	7.76	7.43	7.08
77181	.0700	#50	1.78	1-11/16"	11/16"	7.89	7.55	7.21
77186	.0730	#49	1.85	1-11/16"	11/16"	8.06	7.71	7.36
77191	.0760	#48	1.93	1-11/16"	11/16"	8.27	7.90	7.55
77196	.0781	5/64"	1.98	1-11/16"	11/16"	8.52	8.14	7.78
77201	.0785	#47	1.99	1-3/4"	3/4"	8.75	8.36	7.99
77206	.0787		2.00	45	19	8.86	8.48	8.09
77211	.0810	#46	2.06	1-3/4"	3/4"	8.98	8.58	8.20
77216	.0820	#45	2.08	1-3/4"	3/4"	9.18	8.79	8.38
77221	.0860	#44	2.18	1-3/4"	3/4"	9.43	9.03	8.61
77226	.0890	#43	2.26	1-3/4"	3/4"	9.65	9.24	8.81
77231	.0935	#42	2.37	1-3/4"	3/4"	9.78	9.35	8.92
77236	.0938	3/32"	2.38	1-3/4"	3/4"	9.96	9.53	9.10
77241	.0960	#41	2.44	1-13/16"	13/16"	10.03	9.59	9.15
77246	.0980	#40	2.49	1-13/16"	13/16"	10.15	9.71	9.27
77251	.0984		2.50	46	21	10.19	9.74	9.31
77256	.0995	#39	2.53	1-13/16"	13/16"	10.23	9.79	9.34
77261	.1015	#38	2.58	1-13/16"	13/16"	10.32	9.87	9.42
77266	.1040	#37	2.64	1-13/16"	13/16"	10.37	9.92	9.46
77271	.1065	#36	2.71	1-13/16"	13/16"	10.44	9.98	9.54
77276	.1094	7/64"	2.78	1-13/16"	13/16"	10.49	10.04	9.58
77281	.1100	#35	2.79	1-7/8"	7/8"	10.55	10.09	9.63
77286	.1110	#34	2.82	1-7/8"	7/8"	10.66	10.19	9.73
77291	.1130	#33	2.87	1-7/8"	7/8"	10.71	10.24	9.78
77296	.1160	#32	2.95	1-7/8"	7/8"	10.78	10.32	9.85
77301	.1181		3.00	48	22	10.89	10.41	9.94
77306	.1200	#31	3.05	1-7/8"	7/8"	10.94	10.46	9.99
77311	.1250	1/8"	3.17	1-7/8"	7/8"	11.07	10.59	10.10
77316	.1285	#30	3.26	1-15/16"	15/16"	11.30	10.82	10.32
77321	.1360	#29	3.45	1-15/16"	15/16"	11.55	11.06	10.55
77326	.1378		3.50	49	24	11.89	11.37	10.86
77331	.1405	#28	3.57	1-15/16"	15/16"	12.01	11.49	10.97
77336	.1406	9/64"	3.57	1-15/16"	15/16"	12.12	11.59	11.07
77341	.1440	#27	3.66	2-1/16"	1"	13.04	12.47	11.91
77346	.1470	#26	3.73	2-1/16"	1"	13.17	12.59	12.02
77351	.1495	#25	3.80	2-1/16"	1"	13.30	12.72	12.15
77356	.1520	#24	3.86	2-1/16"	1"	13.32	12.74	12.17
77361	.1540	#23	3.91	2-1/16"	1"	13.41	12.82	12.24
77366	.1562	5/32"	3.97	2-1/16"	1"	13.48	12.90	12.30
77371	.1570	#22	3.99	2-1/8"	1-1/16"	14.22	13.60	12.98
77376	.1575		4.00	54	27	14.37	13.75	13.12

continued →

1520H - 2 Flute (continued)

.1590" - .3346"
(4.04mm - 8.50mm)

DRILLS

EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
77381	.1590	#21	4.04	2-1/8"	1-1/16"	14.54	13.90	13.27
77386	.1610	#20	4.09	2-1/8"	1-1/16"	14.64	14.01	13.37
77391	.1660	#19	4.22	2-1/8"	1-1/16"	15.15	14.50	13.83
77396	.1695	#18	4.30	2-1/8"	1-1/16"	15.32	14.65	13.99
77401	.1719	11/64"	4.37	2-1/8"	1-1/16"	15.60	14.92	14.25
77406	.1730	#17	4.39	2-3/16"	1-1/8"	15.80	15.11	14.42
77411	.1770	#16	4.49	2-3/16"	1-1/8"	15.95	15.26	14.57
77416	.1772		4.50	56	29	16.03	15.33	14.63
77421	.1800	#15	4.57	2-3/16"	1-1/8"	16.10	15.40	14.70
77426	.1820	#14	4.62	2-3/16"	1-1/8"	16.42	15.70	15.00
77431	.1850	#13	4.70	2-3/16"	1-1/8"	16.53	15.81	15.09
77436	.1875	3/16"	4.76	2-3/16"	1-1/8"	16.59	15.87	15.14
77441	.1890	#12	4.80	2-1/4"	1-3/16"	18.30	17.50	16.71
77446	.1910	#11	4.85	2-1/4"	1-3/16"	18.47	17.67	16.87
77451	.1935	#10	4.91	2-1/4"	1-3/16"	19.20	18.37	17.52
77456	.1960	#9	4.98	2-1/4"	1-3/16"	19.61	18.76	17.91
77461	.1969		5.00	57	30	19.71	18.86	17.99
77466	.1990	#8	5.05	2-1/4"	1-3/16"	19.82	18.96	18.10
77471	.2010	#7	5.10	2-1/4"	1-3/16"	20.33	19.45	18.56
77476	.2031	13/64"	5.16	2-1/4"	1-3/16"	20.46	19.56	18.68
77481	.2040	#6	5.18	2-3/8"	1-1/4"	20.81	19.91	19.00
77486	.2055	#5	5.22	2-3/8"	1-1/4"	21.18	20.26	19.34
77491	.2090	#4	5.31	2-3/8"	1-1/4"	21.52	20.58	19.65
77496	.2130	#3	5.41	2-3/8"	1-1/4"	21.83	20.88	19.93
77501	.2165		5.50	60	32	21.99	21.03	20.07
77506	.2188	7/32"	5.56	2-3/8"	1-1/4"	22.11	21.15	20.19
77511	.2210	#2	5.61	2-7/16"	1-5/16"	22.58	21.60	20.61
77516	.2280	#1	5.79	2-7/16"	1-5/16"	22.71	21.73	20.74
77521	.2340	A	5.94	2-7/16"	1-5/16"	22.74	21.76	20.77
77526	.2344	15/64"	5.95	2-7/16"	1-5/16"	22.80	21.81	20.81
77531	.2362		6.00	64	35	22.86	21.86	20.87
77536	.2380	B	6.04	2-1/2"	1-3/8"	22.93	21.93	20.94
77541	.2420	C	6.15	2-1/2"	1-3/8"	23.09	22.08	21.08
77546	.2460	D	6.25	2-1/2"	1-3/8"	23.22	22.21	21.21
77551	.2500	1/4" / E	6.35	2-1/2"	1-3/8"	23.37	22.35	21.34
77556	.2559		6.50	67	37	26.09	24.96	23.83
77561	.2570	F	6.53	2-5/8"	1-7/16"	26.53	25.38	24.22
77566	.2610	G	6.63	2-5/8"	1-7/16"	26.96	25.78	24.62
77571	.2656	17/64"	6.75	2-5/8"	1-7/16"	27.41	26.22	25.03
77576	.2660	H	6.76	2-11/16"	1-1/2"	28.05	26.83	25.60
77581	.2720	I	6.91	2-11/16"	1-1/2"	28.31	27.08	25.84
77586	.2756		7.00	68	38	28.50	27.26	26.02
77591	.2770	J	7.03	2-11/16"	1-1/2"	28.71	27.47	26.22
77596	.2810	K	7.14	2-11/16"	1-1/2"	28.92	27.66	26.41
77601	.2812	9/32"	7.14	2-11/16"	1-1/2"	29.05	27.79	26.52
77606	.2900	L	7.37	2-3/4"	1-9/16"	29.92	28.62	27.32
77611	.2950	M	7.49	2-3/4"	1-9/16"	31.66	30.28	28.90
77616	.2953		7.50	70	40	31.66	30.28	28.90
77621	.2969	19/64"	7.54	2-3/4"	1-9/16"	31.81	30.43	29.05
77626	.3020	N	7.67	2-13/16"	1-5/8"	33.25	31.80	30.36
77631	.3125	5/16"	7.94	2-13/16"	1-5/8"	33.35	31.91	30.45
77636	.3150		8.00	75	43	35.40	33.86	32.32
77641	.3160	O	8.03	2-15/16"	1-11/16"	35.40	33.86	32.32
77646	.3230	P	8.20	2-15/16"	1-11/16"	35.66	34.11	32.56
77651	.3281	21/64"	8.33	2-15/16"	1-11/16"	35.86	34.30	32.74
77656	.3320	Q	8.43	3"	1-11/16"	36.58	34.99	33.39
77661	.3346		8.50	76	43	36.86	35.26	33.65

1520H - 2 Flute (continued)

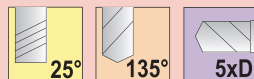
.3390" - .5000"
(8.61mm - 12.70mm)

EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
77666	.3390	R	8.61	3"	1-11/16"	37.87	36.22	34.57
77671	.3438	11/32"	8.73	3"	1-11/16"	39.21	37.50	35.80
77676	.3480	S	8.84	3-1/16"	1-3/4"	41.46	39.67	37.86
77681	.3543		9.00	78	44	41.68	39.87	38.05
77686	.3580	T	9.09	3-1/16"	1-3/4"	41.81	39.99	38.17
77691	.3594	23/64"	9.13	3-1/16"	1-3/4"	42.07	40.24	38.41
77696	.3680	U	9.35	3-1/8"	1-13/16"	45.40	43.42	41.44
77701	.3740		9.50	79	46	45.76	43.77	41.78
77706	.3750	3/8"	9.52	3-1/8"	1-13/16"	46.06	44.05	42.06
77711	.3770	V	9.57	3-1/4"	1-7/8"	47.83	45.75	43.67
77716	.3860	W	9.80	3-1/4"	1-7/8"	48.66	46.55	44.43
77721	.3906	25/64"	9.92	3-1/4"	1-7/8"	49.26	47.12	44.98
77726	.3937		10.00	84	49	50.76	48.56	46.35
77731	.3970	X	10.08	3-5/16"	1-15/16"	52.00	49.74	47.48
77736	.4040	Y	10.26	3-5/16"	1-15/16"	52.36	50.09	47.81
77741	.4062	13/32"	10.32	3-5/16"	1-15/16"	53.98	51.63	49.29
77746	.4130	Z	10.49	3-3/8"	2"	54.46	52.09	49.73
77751	.4134		10.50	86	51	54.46	52.09	49.73
77756	.4219	27/64"	10.72	3-3/8"	2"	54.98	52.59	50.20
77761	.4331		11.00	87	52	59.02	56.45	53.89
77766	.4375	7/16"	11.11	3-7/16"	2-1/16"	59.02	56.45	53.89
77771	.4528		11.50	91	54	63.36	60.60	57.84
77776	.4531	29/64"	11.51	3-9/16"	2-1/8"	63.36	60.60	57.84
77781	.4688	15/32"	11.91	3-5/8"	2-1/8"	66.56	63.67	60.77
77786	.4724		12.00	94	56	66.76	63.86	60.95
77791	.4844	31/64"	12.30	3-11/16"	2-3/16"	67.22	64.29	61.37
77796	.4921		12.50	95	56	67.88	64.93	61.97
77801	.5000	1/2"	12.70	3-3/4"	2-1/4"	68.32	65.34	62.38

TOLERANCES

d	+.0000" - .0005" (+.0000 - .0127mm)	
l ₁	≤ 1/8"	+.125" - .062" (+3.175 - 1.588mm)
	> 1/8"	+.125" - .125" (+3.175 - 3.175mm)
l ₂	≤ 1/8"	+.125" - .062" (+3.175 - 1.588mm)
	> 1/8"	+.125" - .125" (+3.175 - 3.175mm)

.0625" - .1575"
(1.59mm - 4.00mm)

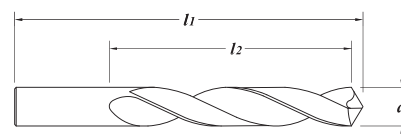


Solid submicron grain carbide drill
No spotting required in most applications
4-facet self-centering point
Adaptability when converting from high-speed steel

Recommended to run in stainless steel alloys, mild steels and titanium alloys

Live tooling recommended on lathe processes

Shank tolerance: -.0001" - .0004" (-.0025 / -.0100mm)



EDP#	d †		l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
89165	.0625	1/16"	1.59	1-5/8"	3/4"	5.90	5.64	5.39
89170	.0635	#52	1.61	1-11/16"	3/4"	5.99	5.73	5.47
89175	.0670	#51	1.70	1-11/16"	3/4"	6.08	5.82	5.55
89180	.0700	#50	1.78	1-11/16"	7/8"	6.23	5.96	5.69
89185	.0730	#49	1.85	1-11/16"	7/8"	6.40	6.12	5.84
89190	.0760	#48	1.93	1-11/16"	7/8"	6.60	6.31	6.03
89195	.0781	5/64"	1.98	1-11/16"	7/8"	6.85	6.55	6.26
89200	.0785	#47	1.99	1-3/4"	7/8"	7.08	6.77	6.47
89205	.0787		2.00	44	22	7.19	6.87	6.56
89210	.0810	#46	2.06	1-3/4"	7/8"	7.31	6.99	6.68
89215	.0820	#45	2.08	1-3/4"	7/8"	7.52	7.20	6.86
89220	.0860	#44	2.18	2"	1"	7.78	7.44	7.10
89225	.0890	#43	2.26	2"	1"	7.99	7.64	7.29
89230	.0935	#42	2.37	2"	1"	8.10	7.75	7.39
89235	.0938	3/32"	2.38	2"	1"	8.29	7.92	7.57
89240	.0960	#41	2.44	2"	1"	8.36	8.00	7.63
89245	.0980	#40	2.49	2"	1"	8.50	8.12	7.76
89250	.0984		2.50	57	32	8.53	8.15	7.79
89255	.0995	#39	2.53	2-1/4"	1-1/4"	8.56	8.18	7.81
89260	.1015	#38	2.58	2-1/4"	1-1/4"	8.68	8.31	7.92
89265	.1040	#37	2.64	2-1/4"	1-1/4"	8.79	8.40	8.03
89270	.1065	#36	2.71	2-1/4"	1-1/4"	8.90	8.52	8.13
89275	.1094	7/64"	2.78	2-1/4"	1-1/4"	9.06	8.66	8.27
89280	.1100	#35	2.79	2-1/4"	1-1/4"	9.15	8.76	8.35
89285	.1110	#34	2.82	2-1/4"	1-1/4"	9.26	8.85	8.46
89290	.1130	#33	2.87	2-1/4"	1-1/4"	9.42	9.02	8.60
89295	.1160	#32	2.95	2-1/4"	1-1/4"	9.54	9.12	8.70
89300	.1181		3.00	57	32	9.63	9.21	8.79
89305	.1200	#31	3.05	2-1/4"	1-1/4"	9.70	9.28	8.86
89310	.1250	1/8"	3.17	2-1/4"	1-1/4"	9.81	9.38	8.95
89315	.1285	#30	3.26	2-1/4"	1-1/4"	10.06	9.62	9.18
89320	.1360	#29	3.45	2-1/2"	1-3/8"	10.37	9.92	9.46
89325	.1378		3.50	63	35	10.70	10.23	9.78
89330	.1405	#28	3.57	2-1/2"	1-3/8"	10.83	10.36	9.88
89335	.1406	9/64"	3.57	2-1/2"	1-3/8"	10.93	10.45	9.98
89340	.1440	#27	3.66	2-1/2"	1-3/8"	11.38	10.88	10.39
89345	.1470	#26	3.73	2-1/2"	1-3/8"	11.49	10.99	10.49
89350	.1495	#25	3.80	2-1/2"	1-3/8"	11.64	11.13	10.63
89355	.1520	#24	3.86	2-1/2"	1-3/8"	11.66	11.15	10.65
89360	.1540	#23	3.91	2-1/2"	1-3/8"	11.74	11.23	10.72
89365	.1562	5/32"	3.97	2-1/2"	1-3/8"	11.81	11.30	10.78
89370	.1570	#22	3.99	2-1/2"	1-3/8"	12.56	12.01	11.47
89375	.1575		4.00	63	35	12.71	12.16	11.61

1205 - 2 Flute (continued)

.1590" - .3346"
(4.04mm - 8.50mm)

EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
89380	.1590	#21	4.04	2-1/2"	1-3/8"	12.86	12.30	11.74
89385	.1610	#20	4.09	2-1/2"	1-3/8"	12.97	12.41	11.85
89390	.1660	#19	4.22	2-3/4"	1-5/8"	13.49	12.91	12.31
89395	.1695	#18	4.30	2-3/4"	1-5/8"	13.66	13.06	12.47
89400	.1719	11/64"	4.37	2-3/4"	1-5/8"	13.94	13.33	12.72
89405	.1730	#17	4.39	2-3/4"	1-5/8"	14.13	13.52	12.91
89410	.1770	#16	4.49	2-3/4"	1-5/8"	14.29	13.67	13.05
89415	.1772		4.50	70	41	14.36	13.74	13.11
89420	.1800	#15	4.57	2-3/4"	1-5/8"	14.42	13.80	13.17
89425	.1820	#14	4.62	2-3/4"	1-5/8"	14.76	14.11	13.48
89430	.1850	#13	4.70	2-3/4"	1-5/8"	14.86	14.22	13.57
89435	.1875	3/16"	4.76	2-3/4"	1-5/8"	14.92	14.28	13.62
89440	.1890	#12	4.80	2-3/4"	1-5/8"	15.41	14.75	14.07
89445	.1910	#11	4.85	2-3/4"	1-5/8"	15.60	14.92	14.25
89450	.1935	#10	4.91	2-3/4"	1-5/8"	16.33	15.62	14.90
89455	.1960	#9	4.98	3"	1-3/4"	16.74	16.02	15.29
89460	.1969		5.00	76	44	16.84	16.11	15.37
89465	.1990	#8	5.05	3"	1-3/4"	16.95	16.21	15.48
89470	.2010	#7	5.10	3"	1-3/4"	17.45	16.69	15.93
89475	.2031	13/64"	5.16	3"	1-3/4"	17.59	16.82	16.06
89480	.2040	#6	5.18	3"	1-3/4"	17.94	17.16	16.38
89485	.2055	#5	5.22	3"	1-3/4"	18.31	17.51	16.72
89490	.2090	#4	5.31	3"	1-3/4"	18.64	17.83	17.01
89495	.2130	#3	5.41	3"	1-3/4"	18.96	18.14	17.31
89500	.2165		5.50	76	44	19.10	18.27	17.44
89505	.2188	7/32"	5.56	3"	1-3/4"	19.24	18.41	17.57
89510	.2210	#2	5.61	3"	1-3/4"	19.71	18.86	17.99
89515	.2280	#1	5.79	3"	1-3/4"	19.83	18.97	18.11
89520	.2340	A	5.94	3-1/4"	2"	20.06	19.19	18.31
89525	.2344	15/64"	5.95	3-1/4"	2"	20.11	19.24	18.37
89530	.2362		6.00	82	50	20.19	19.31	18.43
89535	.2380	B	6.04	3-1/4"	2"	20.26	19.38	18.50
89540	.2420	C	6.15	3-1/4"	2"	20.42	19.53	18.64
89545	.2460	D	6.25	3-1/4"	2"	20.56	19.67	18.77
89550	.2500	1/4" / E	6.35	3-1/4"	2"	20.71	19.80	18.91
89555	.2559		6.50	82	50	21.21	20.28	19.36
89560	.2570	F	6.53	3-1/4"	2"	21.65	20.71	19.77
89565	.2610	G	6.63	3-1/2"	2-1/8"	22.09	21.13	20.17
89570	.2656	17/64"	6.75	3-1/2"	2-1/8"	22.54	21.56	20.58
89575	.2660	H	6.76	3-1/2"	2-1/8"	23.18	22.17	21.16
89580	.2720	I	6.91	3-1/2"	2-1/8"	23.44	22.42	21.40
89585	.2756		7.00	88	54	23.63	22.60	21.57
89590	.2770	J	7.03	3-1/2"	2-1/8"	23.84	22.80	21.77
89595	.2810	K	7.14	3-1/2"	2-1/8"	24.06	23.00	21.96
89600	.2812	9/32"	7.14	3-1/2"	2-1/8"	24.19	23.14	22.09
89605	.2900	L	7.37	3-1/2"	2-1/8"	25.06	23.97	22.88
89610	.2950	M	7.49	3-3/4"	2-3/8"	26.82	25.66	24.49
89615	.2953		7.50	95	60	26.82	25.66	24.49
89620	.2969	19/64"	7.54	3-3/4"	2-3/8"	26.82	25.66	24.49
89625	.3020	N	7.67	3-3/4"	2-3/8"	28.43	27.20	25.96
89630	.3125	5/16"	7.94	3-3/4"	2-3/8"	28.54	27.30	26.05
89635	.3150		8.00	95	60	30.62	29.29	27.96
89640	.3160	O	8.03	3-3/4"	2-3/8"	30.62	29.29	27.96
89645	.3230	P	8.20	3-3/4"	2-3/8"	30.62	29.29	27.96
89650	.3281	21/64"	8.33	4"	2-1/2"	31.08	29.72	28.37
89655	.3320	Q	8.43	4"	2-1/2"	31.79	30.41	29.03
89660	.3346		8.50	101	63	32.07	30.68	29.29

continued →

1205 - 2 Flute (continued)

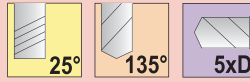
.3390" - .6299"
(8.61mm - 16.00mm)

DRILLS

EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
89665	.3390	R	8.61	4"	2-1/2"	33.09	31.66	30.21	28.78
89670	.3438	11/32"	8.73	4"	2-1/2"	34.44	32.95	31.45	29.95
89675	.3480	S	8.84	4"	2-1/2"	34.55	33.05	31.54	30.05
89680	.3543		9.00	101	63	34.77	33.26	31.74	30.23
89685	.3580	T	9.09	4-1/4"	2-3/4"	35.08	33.55	32.03	30.50
89690	.3594	23/64"	9.13	4-1/4"	2-3/4"	35.32	33.78	32.25	30.71
89695	.3680	U	9.35	4-1/4"	2-3/4"	40.09	38.34	36.61	34.86
89700	.3740		9.50	107	70	40.46	38.70	36.94	35.18
89705	.3750	3/8"	9.52	4-1/4"	2-3/4"	40.79	39.01	37.24	35.46
89710	.3770	V	9.57	4-1/4"	2-3/4"	41.55	39.74	37.94	36.13
89715	.3860	W	9.80	4-1/2"	2-7/8"	42.43	40.59	38.74	36.90
89720	.3906	25/64"	9.92	4-1/2"	2-7/8"	43.07	41.19	39.32	37.45
89725	.3937		10.00	114	73	44.63	42.68	40.75	38.80
89730	.3970	X	10.08	4-1/2"	2-7/8"	45.93	43.93	41.93	39.94
89735	.4040	Y	10.26	4-1/2"	2-7/8"	46.30	44.28	42.28	40.26
89740	.4062	13/32"	10.32	4-1/2"	2-7/8"	47.98	45.88	43.80	41.71
89745	.4130	Z	10.49	4-1/2"	2-7/8"	48.48	46.37	44.27	42.16
89750	.4134		10.50	114	73	48.48	46.37	44.27	42.16
89755	.4219	27/64"	10.72	4-1/2"	2-7/8"	49.03	46.89	44.76	42.63
89760	.4331		11.00	114	73	53.24	50.92	48.61	46.29
89765	.4375	7/16"	11.11	4-1/2"	2-7/8"	53.24	50.92	48.61	46.29
89770	.4528		11.50	120	76	57.74	55.23	52.72	50.21
89775	.4531	29/64"	11.51	4-3/4"	3"	57.74	55.23	52.72	50.21
89780	.4688	15/32"	11.91	4-3/4"	3"	61.08	58.43	55.76	53.11
89785	.4724		12.00	120	76	61.29	58.62	55.96	53.29
89790	.4844	31/64"	12.30	4-3/4"	3"	61.29	58.62	55.96	53.29
89795	.4921		12.50	120	76	62.91	60.17	57.44	54.70
89800	.5000	1/2"	12.70	4-3/4"	3"	62.91	60.17	57.44	54.70
89805	.5118		13.00	127	83	79.04	75.61	72.17	68.73
89810	.5156	33/64"	13.10	5"	3-1/4"	81.16	77.64	74.10	70.57
89815	.5312	17/32"	13.49	5"	3-1/4"	83.27	79.65	76.03	72.42
89820	.5315		13.50	127	83	85.39	81.68	77.97	74.26
89825	.5469	35/64"	13.89	5"	3-1/4"	87.52	83.71	79.90	76.10
89830	.5512		14.00	127	83	89.65	85.75	81.85	77.96
89835	.5625	9/16"	14.29	5"	3-1/4"	97.76	93.51	89.26	85.01
89840	.5709		14.50	127	83	99.80	95.46	91.12	86.78
89845	.5781	37/64"	14.68	5-1/4"	3-1/2"	101.84	97.41	92.98	88.56
89850	.5906		15.00	133	89	103.91	99.39	94.87	90.36
89855	.5938	19/32"	15.08	5-1/4"	3-1/2"	104.51	99.96	95.42	90.88
89860	.6094	39/64"	15.48	5-1/4"	3-1/2"	105.09	100.53	95.95	91.38
89865	.6102		15.50	133	89	105.70	101.10	96.50	91.90
89870	.6250	5/8"	15.87	5-1/4"	3-1/2"	106.28	101.66	97.03	92.41
89875	.6299		16.00	133	89	109.11	104.36	99.62	94.88

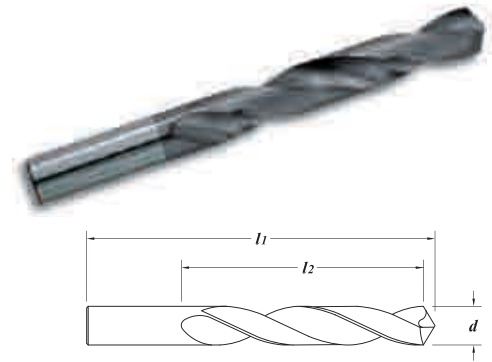
d	+0.000" -0.0005" (+0.000 -0.127mm)
h	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

.0625" - .1575"
(1.59mm - 4.00mm)



Balinit® HARDLUBE Coated

Solid submicron grain carbide drill
Excellent heat resistance and lubricity
Up to 40% faster than uncoated
No spotting required in most applications
4-facet self-centering point
Adaptability when converting from high-speed steel
Recommended to run in stainless steel alloys, mild steels and titanium alloys
Live tooling recommended on lathe processes
Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †		l ₁	l ₂	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric	Overall Length	Flute Length				
89166	.0625	1/16"	1.59	1-5/8"	3/4"	7.57	7.24	6.92
89171	.0635	#52	1.61	1-11/16"	3/4"	7.66	7.33	7.00
89176	.0670	#51	1.70	1-11/16"	3/4"	7.76	7.43	7.08
89181	.0700	#50	1.78	1-11/16"	7/8"	7.89	7.55	7.21
89186	.0730	#49	1.85	1-11/16"	7/8"	8.07	7.72	7.37
89191	.0760	#48	1.93	1-11/16"	7/8"	8.27	7.90	7.55
89196	.0781	5/64"	1.98	1-11/16"	7/8"	8.53	8.15	7.79
89201	.0785	#47	1.99	1-3/4"	7/8"	8.77	8.38	8.01
89206	.0787		2.00	44	22	8.86	8.48	8.09
89211	.0810	#46	2.06	1-3/4"	7/8"	8.99	8.59	8.21
89216	.0820	#45	2.08	1-3/4"	7/8"	9.19	8.80	8.39
89221	.0860	#44	2.18	2"	1"	9.45	9.04	8.63
89226	.0890	#43	2.26	2"	1"	9.66	9.25	8.82
89231	.0935	#42	2.37	2"	1"	9.78	9.35	8.92
89236	.0938	3/32"	2.38	2"	1"	9.96	9.53	9.10
89241	.0960	#41	2.44	2"	1"	10.05	9.61	9.17
89246	.0980	#40	2.49	2"	1"	10.17	9.72	9.29
89251	.0984		2.50	57	32	10.19	9.74	9.31
89256	.0995	#39	2.53	2-1/4"	1-1/4"	10.23	9.79	9.34
89261	.1015	#38	2.58	2-1/4"	1-1/4"	10.36	9.91	9.45
89266	.1040	#37	2.64	2-1/4"	1-1/4"	10.45	9.99	9.55
89271	.1065	#36	2.71	2-1/4"	1-1/4"	10.58	10.12	9.66
89276	.1094	7/64"	2.78	2-1/4"	1-1/4"	10.73	10.26	9.80
89281	.1100	#35	2.79	2-1/4"	1-1/4"	10.83	10.36	9.88
89286	.1110	#34	2.82	2-1/4"	1-1/4"	10.92	10.44	9.97
89291	.1130	#33	2.87	2-1/4"	1-1/4"	11.10	10.62	10.13
89296	.1160	#32	2.95	2-1/4"	1-1/4"	11.19	10.70	10.21
89301	.1181		3.00	57	32	11.29	10.81	10.32
89306	.1200	#31	3.05	2-1/4"	1-1/4"	11.38	10.88	10.39
89311	.1250	1/8"	3.17	2-1/4"	1-1/4"	11.47	10.97	10.47
89316	.1285	#30	3.26	2-1/4"	1-1/4"	11.73	11.22	10.71
89321	.1360	#29	3.45	2-1/2"	1-3/8"	12.04	11.52	10.99
89326	.1378		3.50	63	35	12.38	11.84	11.30
89331	.1405	#28	3.57	2-1/2"	1-3/8"	12.50	11.96	11.41
89336	.1406	9/64"	3.57	2-1/2"	1-3/8"	12.62	12.06	11.52
89341	.1440	#27	3.66	2-1/2"	1-3/8"	13.05	12.48	11.92
89346	.1470	#26	3.73	2-1/2"	1-3/8"	13.17	12.59	12.02
89351	.1495	#25	3.80	2-1/2"	1-3/8"	13.30	12.72	12.15
89356	.1520	#24	3.86	2-1/2"	1-3/8"	13.34	12.76	12.18
89361	.1540	#23	3.91	2-1/2"	1-3/8"	13.42	12.83	12.25
89366	.1562	5/32"	3.97	2-1/2"	1-3/8"	13.48	12.90	12.30
89371	.1570	#22	3.99	2-1/2"	1-3/8"	14.22	13.60	12.98
89376	.1575		4.00	63	35	14.38	13.76	13.14

continued →

1205H - 2 Flute (continued)

.1590" - .3346"
(4.04mm - 8.50mm)

DRILLS

EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
89381	.1590	#21	4.04	2-1/2"	1-3/8"	14.54	13.90	13.27
89386	.1610	#20	4.09	2-1/2"	1-3/8"	14.64	14.01	13.37
89391	.1660	#19	4.22	2-3/4"	1-5/8"	15.16	14.51	13.84
89396	.1695	#18	4.30	2-3/4"	1-5/8"	15.32	14.65	13.99
89401	.1719	11/64"	4.37	2-3/4"	1-5/8"	15.60	14.92	14.25
89406	.1730	#17	4.39	2-3/4"	1-5/8"	15.82	15.13	14.45
89411	.1770	#16	4.49	2-3/4"	1-5/8"	15.95	15.26	14.57
89416	.1772		4.50	70	41	16.04	15.34	14.64
89421	.1800	#15	4.57	2-3/4"	1-5/8"	16.10	15.40	14.70
89426	.1820	#14	4.62	2-3/4"	1-5/8"	16.42	15.70	15.00
89431	.1850	#13	4.70	2-3/4"	1-5/8"	16.54	15.82	15.10
89436	.1875	3/16"	4.76	2-3/4"	1-5/8"	16.60	15.88	15.15
89441	.1890	#12	4.80	2-3/4"	1-5/8"	18.30	17.50	16.71
89446	.1910	#11	4.85	2-3/4"	1-5/8"	18.47	17.67	16.87
89451	.1935	#10	4.91	2-3/4"	1-5/8"	19.20	18.37	17.52
89456	.1960	#9	4.98	3"	1-3/4"	19.61	18.76	17.91
89461	.1969		5.00	76	44	19.71	18.86	17.99
89466	.1990	#8	5.05	3"	1-3/4"	19.80	18.94	18.08
89471	.2010	#7	5.10	3"	1-3/4"	20.32	19.44	18.55
89476	.2031	13/64"	5.16	3"	1-3/4"	20.46	19.56	18.68
89481	.2040	#6	5.18	3"	1-3/4"	20.81	19.91	19.00
89486	.2055	#5	5.22	3"	1-3/4"	21.18	20.26	19.34
89491	.2090	#4	5.31	3"	1-3/4"	21.52	20.58	19.65
89496	.2130	#3	5.41	3"	1-3/4"	21.83	20.88	19.93
89501	.2165		5.50	76	44	21.98	21.02	20.06
89506	.2188	7/32"	5.56	3"	1-3/4"	22.10	21.14	20.18
89511	.2210	#2	5.61	3"	1-3/4"	22.57	21.59	20.60
89516	.2280	#1	5.79	3"	1-3/4"	22.70	21.72	20.73
89521	.2340	A	5.94	3-1/4"	2"	23.03	22.03	21.02
89526	.2344	15/64"	5.95	3-1/4"	2"	23.10	22.09	21.09
89531	.2362		6.00	82	50	23.17	22.16	21.15
89536	.2380	B	6.04	3-1/4"	2"	23.22	22.21	21.21
89541	.2420	C	6.15	3-1/4"	2"	23.38	22.36	21.35
89546	.2460	D	6.25	3-1/4"	2"	23.54	22.52	21.49
89551	.2500	1/4" / E	6.35	3-1/4"	2"	23.67	22.64	21.61
89556	.2559		6.50	82	50	26.64	25.49	24.33
89561	.2570	F	6.53	3-1/4"	2"	27.10	25.93	24.74
89566	.2610	G	6.63	3-1/2"	2-1/8"	27.52	26.32	25.13
89571	.2656	17/64"	6.75	3-1/2"	2-1/8"	27.98	26.76	25.54
89576	.2660	H	6.76	3-1/2"	2-1/8"	28.62	27.37	26.14
89581	.2720	I	6.91	3-1/2"	2-1/8"	28.88	27.62	26.37
89586	.2756		7.00	88	54	29.08	27.81	26.55
89591	.2770	J	7.03	3-1/2"	2-1/8"	29.28	28.01	26.73
89596	.2810	K	7.14	3-1/2"	2-1/8"	29.49	28.22	26.93
89601	.2812	9/32"	7.14	3-1/2"	2-1/8"	29.63	28.34	27.05
89606	.2900	L	7.37	3-1/2"	2-1/8"	30.52	29.19	27.87
89611	.2950	M	7.49	3-3/4"	2-3/8"	32.27	30.87	29.46
89616	.2953		7.50	95	60	32.27	30.87	29.46
89621	.2969	19/64"	7.54	3-3/4"	2-3/8"	32.27	30.87	29.46
89626	.3020	N	7.67	3-3/4"	2-3/8"	33.87	32.40	30.93
89631	.3125	5/16"	7.94	3-3/4"	2-3/8"	33.99	32.51	31.03
89636	.3150		8.00	95	60	36.05	34.48	32.92
89641	.3160	O	8.03	3-3/4"	2-3/8"	36.05	34.48	32.92
89646	.3230	P	8.20	3-3/4"	2-3/8"	36.05	34.48	32.92
89651	.3281	21/64"	8.33	4"	2-1/2"	36.50	34.91	33.33
89656	.3320	Q	8.43	4"	2-1/2"	37.23	35.61	34.00
89661	.3346		8.50	101	63	37.50	35.87	34.24

1205H - 2 Flute (continued)

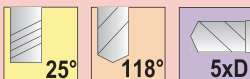
.3390" - .6299"
(8.61mm - 16.00mm)

EDP#	d^+ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
89666	.3390	R	8.61	4"	2-1/2"	38.52	36.85	35.17	33.50
89671	.3438	11/32"	8.73	4"	2-1/2"	39.88	38.15	36.42	34.68
89676	.3480	S	8.84	4"	2-1/2"	41.45	39.66	37.85	36.05
89681	.3543		9.00	101	63	41.69	39.88	38.06	36.25
89686	.3580	T	9.09	4-1/4"	2-3/4"	43.35	41.46	39.58	37.69
89691	.3594	23/64"	9.13	4-1/4"	2-3/4"	43.61	41.71	39.81	37.92
89696	.3680	U	9.35	4-1/4"	2-3/4"	48.38	46.28	44.17	42.07
89701	.3740		9.50	107	70	48.72	46.60	44.49	42.37
89706	.3750	3/8"	9.52	4-1/4"	2-3/4"	49.06	46.92	44.79	42.66
89711	.3770	V	9.57	4-1/4"	2-3/4"	50.25	48.07	45.88	43.70
89716	.3860	W	9.80	4-1/2"	2-7/8"	51.16	48.93	46.71	44.48
89721	.3906	25/64"	9.92	4-1/2"	2-7/8"	51.77	49.52	47.27	45.02
89726	.3937		10.00	114	73	53.33	51.01	48.69	46.37
89731	.3970	X	10.08	4-1/2"	2-7/8"	54.62	52.25	49.87	47.50
89736	.4040	Y	10.26	4-1/2"	2-7/8"	55.01	52.61	50.22	47.83
89741	.4062	13/32"	10.32	4-1/2"	2-7/8"	56.68	54.22	51.75	49.29
89746	.4130	Z	10.49	4-1/2"	2-7/8"	57.20	54.71	52.23	49.74
89751	.4134		10.50	114	73	57.20	54.71	52.23	49.74
89756	.4219	27/64"	10.72	4-1/2"	2-7/8"	57.73	55.22	52.71	50.20
89761	.4331		11.00	114	73	61.93	59.24	56.54	53.85
89766	.4375	7/16"	11.11	4-1/2"	2-7/8"	61.93	59.24	56.54	53.85
89771	.4528		11.50	120	76	66.45	63.55	60.66	57.78
89776	.4531	29/64"	11.51	4-3/4"	3"	66.45	63.55	60.66	57.78
89781	.4688	15/32"	11.91	4-3/4"	3"	69.78	66.75	63.71	60.68
89786	.4724		12.00	120	76	69.99	66.94	63.91	60.86
89791	.4844	31/64"	12.30	4-3/4"	3"	69.99	66.94	63.91	60.86
89796	.4921		12.50	120	76	71.61	68.50	65.38	62.28
89801	.5000	1/2"	12.70	4-3/4"	3"	71.61	68.50	65.38	62.28
89806	.5118		13.00	127	83	90.13	86.21	82.28	78.37
89811	.5156	33/64"	13.10	5"	3-1/4"	92.25	88.23	84.23	80.22
89816	.5312	17/32"	13.49	5"	3-1/4"	94.37	90.26	86.16	82.06
89821	.5315		13.50	127	83	96.48	92.29	88.09	83.90
89826	.5469	35/64"	13.89	5"	3-1/4"	98.60	94.32	90.03	85.74
89831	.5512		14.00	127	83	100.73	96.36	91.98	87.60
89836	.5625	9/16"	14.29	5"	3-1/4"	108.85	104.11	99.38	94.65
89841	.5709		14.50	127	83	110.88	106.06	101.24	96.42
89846	.5781	37/64"	14.68	5-1/4"	3-1/2"	112.92	108.01	103.11	98.20
89851	.5906		15.00	133	89	114.98	109.98	104.99	99.99
89856	.5938	19/32"	15.08	5-1/4"	3-1/2"	115.61	110.58	105.55	100.53
89861	.6094	39/64"	15.48	5-1/4"	3-1/2"	116.18	111.12	106.08	101.03
89866	.6102		15.50	133	89	116.78	111.71	106.63	101.55
89871	.6250	5/8"	15.87	5-1/4"	3-1/2"	117.36	112.26	107.16	102.06
89876	.6299		16.00	133	89	120.20	114.97	109.75	104.52

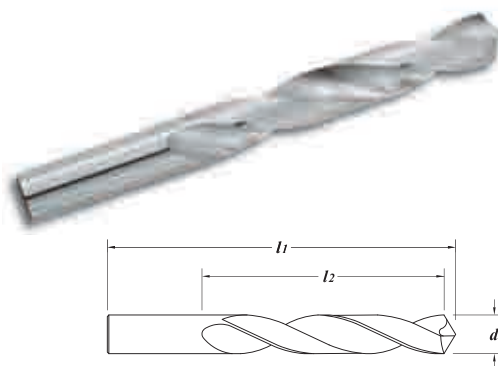
TOLERANCES

d	+.0000" - .0005" (+.0000 - .0127mm)	
l_1	$\leq 1/8"$	+.125" -.062" (+3.175 - 1.588mm)
	$> 1/8"$	+.125" -.125" (+3.175 - 3.175mm)
l_2	$\leq 1/8"$	+.125" -.062" (+3.175 - 1.588mm)
	$> 1/8"$	+.125" -.125" (+3.175 - 3.175mm)

.0625" - .1575"
(1.59mm - 4.00mm)



Solid submicron grain carbide drill
General purpose jobber style
Cam point ($\leq 1/8"$ diameter - 4-facet point)
Live tooling recommended on lathe processes
Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †		l_1	l_2	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
56165	.0625	1/16"	1.59	1-5/8"	3/4"	5.90	5.64	5.39
56170	.0635	#52	1.61	1-11/16"	3/4"	5.99	5.73	5.47
56175	.0670	#51	1.70	1-11/16"	3/4"	6.08	5.82	5.55
56180	.0700	#50	1.78	1-11/16"	7/8"	6.23	5.96	5.69
56185	.0730	#49	1.85	1-11/16"	7/8"	6.40	6.12	5.84
56190	.0760	#48	1.93	1-11/16"	7/8"	6.60	6.31	6.03
56195	.0781	5/64"	1.98	1-11/16"	7/8"	6.85	6.55	6.26
56200	.0785	#47	1.99	1-3/4"	7/8"	7.08	6.77	6.47
56205	.0787		2.00	44	22	7.19	6.87	6.56
56210	.0810	#46	2.06	1-3/4"	7/8"	7.31	6.99	6.68
56215	.0820	#45	2.08	1-3/4"	7/8"	7.52	7.20	6.86
56220	.0860	#44	2.18	2"	1"	7.78	7.44	7.10
56225	.0890	#43	2.26	2"	1"	7.99	7.64	7.29
56230	.0935	#42	2.37	2"	1"	8.10	7.75	7.39
56235	.0938	3/32"	2.38	2"	1"	8.29	7.92	7.57
56240	.0960	#41	2.44	2"	1"	8.36	8.00	7.63
56245	.0980	#40	2.49	2"	1"	8.50	8.12	7.76
56250	.0984		2.50	57	32	8.53	8.15	7.79
56255	.0995	#39	2.53	2-1/4"	1-1/4"	8.56	8.18	7.81
56260	.1015	#38	2.58	2-1/4"	1-1/4"	8.68	8.31	7.92
56265	.1040	#37	2.64	2-1/4"	1-1/4"	8.79	8.40	8.03
56270	.1065	#36	2.71	2-1/4"	1-1/4"	8.90	8.52	8.13
56275	.1094	7/64"	2.78	2-1/4"	1-1/4"	9.06	8.66	8.27
56280	.1100	#35	2.79	2-1/4"	1-1/4"	9.15	8.76	8.35
56285	.1110	#34	2.82	2-1/4"	1-1/4"	9.26	8.85	8.46
56290	.1130	#33	2.87	2-1/4"	1-1/4"	9.42	9.02	8.60
56295	.1160	#32	2.95	2-1/4"	1-1/4"	9.54	9.12	8.70
56300	.1181		3.00	57	32	9.63	9.21	8.79
56305	.1200	#31	3.05	2-1/4"	1-1/4"	9.70	9.28	8.86
56310	.1250	1/8"	3.17	2-1/4"	1-1/4"	9.81	9.38	8.95
56315	.1285	#30	3.26	2-1/4"	1-1/4"	10.06	9.62	9.18
56320	.1360	#29	3.45	2-1/2"	1-3/8"	10.37	9.92	9.46
56325	.1378		3.50	63	35	10.70	10.23	9.78
56330	.1405	#28	3.57	2-1/2"	1-3/8"	10.83	10.36	9.88
56335	.1406	9/64"	3.57	2-1/2"	1-3/8"	10.93	10.45	9.98
56340	.1440	#27	3.66	2-1/2"	1-3/8"	11.38	10.88	10.39
56345	.1470	#26	3.73	2-1/2"	1-3/8"	11.49	10.99	10.49
56350	.1495	#25	3.80	2-1/2"	1-3/8"	11.64	11.13	10.63
56355	.1520	#24	3.86	2-1/2"	1-3/8"	11.66	11.15	10.65
56360	.1540	#23	3.91	2-1/2"	1-3/8"	11.74	11.23	10.72
56365	.1562	5/32"	3.97	2-1/2"	1-3/8"	11.81	11.30	10.78
56370	.1570	#22	3.99	2-1/2"	1-3/8"	12.56	12.01	11.47
56375	.1575		4.00	63	35	12.71	12.16	11.61

1200 - 2 Flute (continued)

.1590" - .3346"
(4.04mm - 8.50mm)

EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
56380	.1590	#21	4.04	2-1/2"	1-3/8"	12.86	12.30	11.74
56385	.1610	#20	4.09	2-1/2"	1-3/8"	12.97	12.41	11.85
56390	.1660	#19	4.22	2-3/4"	1-5/8"	13.49	12.91	12.31
56395	.1695	#18	4.30	2-3/4"	1-5/8"	13.66	13.06	12.47
56400	.1719	11/64"	4.37	2-3/4"	1-5/8"	13.94	13.33	12.72
56405	.1730	#17	4.39	2-3/4"	1-5/8"	14.13	13.52	12.91
56410	.1770	#16	4.49	2-3/4"	1-5/8"	14.29	13.67	13.05
56415	.1772		4.50	70	41	14.36	13.74	13.11
56420	.1800	#15	4.57	2-3/4"	1-5/8"	14.42	13.80	13.17
56425	.1820	#14	4.62	2-3/4"	1-5/8"	14.76	14.11	13.48
56430	.1850	#13	4.70	2-3/4"	1-5/8"	14.86	14.22	13.57
56435	.1875	3/16"	4.76	2-3/4"	1-5/8"	14.92	14.28	13.62
56440	.1890	#12	4.80	2-3/4"	1-5/8"	15.41	14.75	14.07
56445	.1910	#11	4.85	2-3/4"	1-5/8"	15.60	14.92	14.25
56450	.1935	#10	4.91	2-3/4"	1-5/8"	16.33	15.62	14.90
56455	.1960	#9	4.98	3"	1-3/4"	16.74	16.02	15.29
56460	.1969		5.00	76	44	16.84	16.11	15.37
56465	.1990	#8	5.05	3"	1-3/4"	16.95	16.21	15.48
56470	.2010	#7	5.10	3"	1-3/4"	17.45	16.69	15.93
56475	.2031	13/64"	5.16	3"	1-3/4"	17.59	16.82	16.06
56480	.2040	#6	5.18	3"	1-3/4"	17.94	17.16	16.38
56485	.2055	#5	5.22	3"	1-3/4"	18.31	17.51	16.72
56490	.2090	#4	5.31	3"	1-3/4"	18.64	17.83	17.01
56495	.2130	#3	5.41	3"	1-3/4"	18.96	18.14	17.31
56500	.2165		5.50	76	44	19.10	18.27	17.44
56505	.2188	7/32"	5.56	3"	1-3/4"	19.24	18.41	17.57
56510	.2210	#2	5.61	3"	1-3/4"	19.71	18.86	17.99
56515	.2280	#1	5.79	3"	1-3/4"	19.83	18.97	18.11
56520	.2340	A	5.94	3-1/4"	2"	20.06	19.19	18.31
56525	.2344	15/64"	5.95	3-1/4"	2"	20.11	19.24	18.37
56530	.2362		6.00	82	50	20.19	19.31	18.43
56535	.2380	B	6.04	3-1/4"	2"	20.26	19.38	18.50
56540	.2420	C	6.15	3-1/4"	2"	20.42	19.53	18.64
56545	.2460	D	6.25	3-1/4"	2"	20.56	19.67	18.77
56550	.2500	1/4" / E	6.35	3-1/4"	2"	20.71	19.80	18.91
56555	.2559		6.50	82	50	21.21	20.28	19.36
56560	.2570	F	6.53	3-1/4"	2"	21.65	20.71	19.77
56565	.2610	G	6.63	3-1/2"	2-1/8"	22.09	21.13	20.17
56570	.2656	17/64"	6.75	3-1/2"	2-1/8"	22.54	21.56	20.58
56575	.2660	H	6.76	3-1/2"	2-1/8"	23.18	22.17	21.16
56580	.2720	I	6.91	3-1/2"	2-1/8"	23.44	22.42	21.40
56585	.2756		7.00	88	54	23.63	22.60	21.57
56590	.2770	J	7.03	3-1/2"	2-1/8"	23.84	22.80	21.77
56595	.2810	K	7.14	3-1/2"	2-1/8"	24.06	23.00	21.96
56600	.2812	9/32"	7.14	3-1/2"	2-1/8"	24.19	23.14	22.09
56605	.2900	L	7.37	3-1/2"	2-1/8"	25.06	23.97	22.88
56610	.2950	M	7.49	3-3/4"	2-3/8"	26.82	25.66	24.49
56615	.2953		7.50	95	60	26.82	25.66	24.49
56620	.2969	19/64"	7.54	3-3/4"	2-3/8"	26.82	25.66	24.49
56625	.3020	N	7.67	3-3/4"	2-3/8"	28.43	27.20	25.96
56630	.3125	5/16"	7.94	3-3/4"	2-3/8"	28.54	27.30	26.05
56635	.3150		8.00	95	60	30.62	29.29	27.96
56640	.3160	O	8.03	3-3/4"	2-3/8"	30.62	29.29	27.96
56645	.3230	P	8.20	3-3/4"	2-3/8"	30.62	29.29	27.96
56650	.3281	21/64"	8.33	4"	2-1/2"	31.08	29.72	28.37
56655	.3320	Q	8.43	4"	2-1/2"	31.79	30.41	29.03
56660	.3346		8.50	101	63	32.07	30.68	29.29

continued →

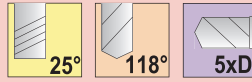
1200 - 2 Flute (continued)

.3390" - .5000"
(8.61mm - 12.70mm)

DRILLS

EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
56665	.3390	R	8.61	4"	2-1/2"	33.09	31.66	30.21	28.78
56670	.3438	11/32"	8.73	4"	2-1/2"	34.44	32.95	31.45	29.95
56675	.3480	S	8.84	4"	2-1/2"	34.55	33.05	31.54	30.05
56680	.3543		9.00	101	63	34.77	33.26	31.74	30.23
56685	.3580	T	9.09	4-1/4"	2-3/4"	35.08	33.55	32.03	30.50
56690	.3594	23/64"	9.13	4-1/4"	2-3/4"	35.32	33.78	32.25	30.71
56695	.3680	U	9.35	4-1/4"	2-3/4"	40.09	38.34	36.61	34.86
56700	.3740		9.50	107	70	40.46	38.70	36.94	35.18
56705	.3750	3/8"	9.52	4-1/4"	2-3/4"	40.79	39.01	37.24	35.46
56710	.3770	V	9.57	4-1/4"	2-3/4"	41.55	39.74	37.94	36.13
56715	.3860	W	9.80	4-1/2"	2-7/8"	42.43	40.59	38.74	36.90
56720	.3906	25/64"	9.92	4-1/2"	2-7/8"	43.07	41.19	39.32	37.45
56725	.3937		10.00	114	73	44.63	42.68	40.75	38.80
56730	.3970	X	10.08	4-1/2"	2-7/8"	45.93	43.93	41.93	39.94
56735	.4040	Y	10.26	4-1/2"	2-7/8"	46.30	44.28	42.28	40.26
56740	.4062	13/32"	10.32	4-1/2"	2-7/8"	47.98	45.88	43.80	41.71
56745	.4130	Z	10.49	4-1/2"	2-7/8"	48.48	46.37	44.27	42.16
56750	.4134		10.50	114	73	48.48	46.37	44.27	42.16
56755	.4219	27/64"	10.72	4-1/2"	2-7/8"	49.03	46.89	44.76	42.63
56760	.4331		11.00	114	73	53.24	50.92	48.61	46.29
56765	.4375	7/16"	11.11	4-1/2"	2-7/8"	53.24	50.92	48.61	46.29
56770	.4528		11.50	120	76	57.74	55.23	52.72	50.21
56775	.4531	29/64"	11.51	4-3/4"	3"	57.74	55.23	52.72	50.21
56780	.4688	15/32"	11.91	4-3/4"	3"	61.08	58.43	55.76	53.11
56785	.4724		12.00	120	76	61.29	58.62	55.96	53.29
56790	.4844	31/64"	12.30	4-3/4"	3"	61.29	58.62	55.96	53.29
56795	.4921		12.50	120	76	62.91	60.17	57.44	54.70
56800	.5000	1/2"	12.70	4-3/4"	3"	62.91	60.17	57.44	54.70

.0625" - .1575"
(1.59mm - 4.00mm)

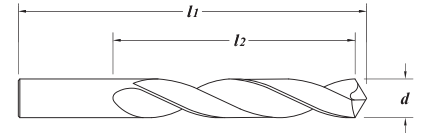


TOLERANCES

d	+0.000" -0.0005" (+0.000 -0.127mm)
h	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

Balinit® HARDLUBE Coated

Solid submicron grain carbide drill
General purpose jobber style
Excellent heat resistance and lubricity
Up to 40% faster than uncoated
Cam point (≤1/8" diameter is with 4-facet point)
Live tooling recommended on lathe processes
Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d † Diameter		l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
56166	.0625	1/16"	1.59	1-5/8"	3/4"	7.57	7.24	6.92
56171	.0635	#52	1.61	1-11/16"	3/4"	7.66	7.33	7.00
56176	.0670	#51	1.70	1-11/16"	3/4"	7.76	7.43	7.08
56181	.0700	#50	1.78	1-11/16"	7/8"	7.89	7.55	7.21
56186	.0730	#49	1.85	1-11/16"	7/8"	8.07	7.72	7.37
56191	.0760	#48	1.93	1-11/16"	7/8"	8.27	7.90	7.55
56196	.0781	5/64"	1.98	1-11/16"	7/8"	8.53	8.15	7.79
56201	.0785	#47	1.99	1-3/4"	7/8"	8.77	8.38	8.01
56206	.0787		2.00	44	22	8.86	8.48	8.09
56211	.0810	#46	2.06	1-3/4"	7/8"	8.99	8.59	8.21
56216	.0820	#45	2.08	1-3/4"	7/8"	9.19	8.80	8.39
56221	.0860	#44	2.18	2"	1"	9.45	9.04	8.63
56226	.0890	#43	2.26	2"	1"	9.66	9.25	8.82
56231	.0935	#42	2.37	2"	1"	9.78	9.35	8.92
56236	.0938	3/32"	2.38	2"	1"	9.96	9.53	9.10
56241	.0960	#41	2.44	2"	1"	10.05	9.61	9.17
56246	.0980	#40	2.49	2"	1"	10.17	9.72	9.29
56251	.0984		2.50	57	32	10.19	9.74	9.31
56256	.0995	#39	2.53	2-1/4"	1-1/4"	10.23	9.79	9.34
56261	.1015	#38	2.58	2-1/4"	1-1/4"	10.36	9.91	9.45
56266	.1040	#37	2.64	2-1/4"	1-1/4"	10.45	9.99	9.55
56271	.1065	#36	2.71	2-1/4"	1-1/4"	10.58	10.12	9.66
56276	.1094	7/64"	2.78	2-1/4"	1-1/4"	10.73	10.26	9.80
56281	.1100	#35	2.79	2-1/4"	1-1/4"	10.83	10.36	9.88
56286	.1110	#34	2.82	2-1/4"	1-1/4"	10.92	10.44	9.97
56291	.1130	#33	2.87	2-1/4"	1-1/4"	11.10	10.62	10.13
56296	.1160	#32	2.95	2-1/4"	1-1/4"	11.19	10.70	10.21
56301	.1181		3.00	57	32	11.29	10.81	10.32
56306	.1200	#31	3.05	2-1/4"	1-1/4"	11.38	10.88	10.39
56311	.1250	1/8"	3.17	2-1/4"	1-1/4"	11.47	10.97	10.47
56316	.1285	#30	3.26	2-1/4"	1-1/4"	11.73	11.22	10.71
56321	.1360	#29	3.45	2-1/2"	1-3/8"	12.04	11.52	10.99
56326	.1378		3.50	63	35	12.38	11.84	11.30
56331	.1405	#28	3.57	2-1/2"	1-3/8"	12.50	11.96	11.41
56336	.1406	9/64"	3.57	2-1/2"	1-3/8"	12.62	12.06	11.52
56341	.1440	#27	3.66	2-1/2"	1-3/8"	13.05	12.48	11.92
56346	.1470	#26	3.73	2-1/2"	1-3/8"	13.17	12.59	12.02
56351	.1495	#25	3.80	2-1/2"	1-3/8"	13.30	12.72	12.15
56356	.1520	#24	3.86	2-1/2"	1-3/8"	13.34	12.76	12.18
56361	.1540	#23	3.91	2-1/2"	1-3/8"	13.42	12.83	12.25
56366	.1562	5/32"	3.97	2-1/2"	1-3/8"	13.48	12.90	12.30
56371	.1570	#22	3.99	2-1/2"	1-3/8"	14.22	13.60	12.98
56376	.1575		4.00	63	35	14.38	13.76	13.14

continued →

1200H - 2 Flute (continued)

.1590" - .3346"
(4.04mm - 8.50mm)

DRILLS

EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
56381	.1590	#21	4.04	2-1/2"	1-3/8"	14.54	13.90	13.27
56386	.1610	#20	4.09	2-1/2"	1-3/8"	14.64	14.01	13.37
56391	.1660	#19	4.22	2-3/4"	1-5/8"	15.16	14.51	13.84
56396	.1695	#18	4.30	2-3/4"	1-5/8"	15.32	14.65	13.99
56401	.1719	11/64"	4.37	2-3/4"	1-5/8"	15.60	14.92	14.25
56406	.1730	#17	4.39	2-3/4"	1-5/8"	15.82	15.13	14.45
56411	.1770	#16	4.49	2-3/4"	1-5/8"	15.95	15.26	14.57
56416	.1772		4.50	70	41	16.04	15.34	14.64
56421	.1800	#15	4.57	2-3/4"	1-5/8"	16.10	15.40	14.70
56426	.1820	#14	4.62	2-3/4"	1-5/8"	16.42	15.70	15.00
56431	.1850	#13	4.70	2-3/4"	1-5/8"	16.54	15.82	15.10
56436	.1875	3/16"	4.76	2-3/4"	1-5/8"	16.60	15.88	15.15
56441	.1890	#12	4.80	2-3/4"	1-5/8"	18.30	17.50	16.71
56446	.1910	#11	4.85	2-3/4"	1-5/8"	18.47	17.67	16.87
56451	.1935	#10	4.91	2-3/4"	1-5/8"	19.20	18.37	17.52
56456	.1960	#9	4.98	3"	1-3/4"	19.61	18.76	17.91
56461	.1969		5.00	76	44	19.71	18.86	17.99
56466	.1990	#8	5.05	3"	1-3/4"	19.80	18.94	18.08
56471	.2010	#7	5.10	3"	1-3/4"	20.32	19.44	18.55
56476	.2031	13/64"	5.16	3"	1-3/4"	20.46	19.56	18.68
56481	.2040	#6	5.18	3"	1-3/4"	20.81	19.91	19.00
56486	.2055	#5	5.22	3"	1-3/4"	21.18	20.26	19.34
56491	.2090	#4	5.31	3"	1-3/4"	21.52	20.58	19.65
56496	.2130	#3	5.41	3"	1-3/4"	21.83	20.88	19.93
56501	.2165		5.50	76	44	21.98	21.02	20.06
56506	.2188	7/32"	5.56	3"	1-3/4"	22.10	21.14	20.18
56511	.2210	#2	5.61	3"	1-3/4"	22.57	21.59	20.60
56516	.2280	#1	5.79	3"	1-3/4"	22.70	21.72	20.73
56521	.2340	A	5.94	3-1/4"	2"	23.03	22.03	21.02
56526	.2344	15/64"	5.95	3-1/4"	2"	23.10	22.09	21.09
56531	.2362		6.00	82	50	23.17	22.16	21.15
56536	.2380	B	6.04	3-1/4"	2"	23.22	22.21	21.21
56541	.2420	C	6.15	3-1/4"	2"	23.38	22.36	21.35
56546	.2460	D	6.25	3-1/4"	2"	23.54	22.52	21.49
56551	.2500	1/4" / E	6.35	3-1/4"	2"	23.67	22.64	21.61
56556	.2559		6.50	82	50	26.64	25.49	24.33
56561	.2570	F	6.53	3-1/4"	2"	27.10	25.93	24.74
56566	.2610	G	6.63	3-1/2"	2-1/8"	27.52	26.32	25.13
56571	.2656	17/64"	6.75	3-1/2"	2-1/8"	27.98	26.76	25.54
56576	.2660	H	6.76	3-1/2"	2-1/8"	28.62	27.37	26.14
56581	.2720	I	6.91	3-1/2"	2-1/8"	28.88	27.62	26.37
56586	.2756		7.00	88	54	29.08	27.81	26.55
56591	.2770	J	7.03	3-1/2"	2-1/8"	29.28	28.01	26.73
56596	.2810	K	7.14	3-1/2"	2-1/8"	29.49	28.22	26.93
56601	.2812	9/32"	7.14	3-1/2"	2-1/8"	29.63	28.34	27.05
56606	.2900	L	7.37	3-1/2"	2-1/8"	30.52	29.19	27.87
56611	.2950	M	7.49	3-3/4"	2-3/8"	32.27	30.87	29.46
56616	.2953		7.50	95	60	32.27	30.87	29.46
56621	.2969	19/64"	7.54	3-3/4"	2-3/8"	32.27	30.87	29.46
56626	.3020	N	7.67	3-3/4"	2-3/8"	33.87	32.40	30.93
56631	.3125	5/16"	7.94	3-3/4"	2-3/8"	33.99	32.51	31.03
56636	.3150		8.00	95	60	36.05	34.48	32.92
56641	.3160	O	8.03	3-3/4"	2-3/8"	36.05	34.48	32.92
56646	.3230	P	8.20	3-3/4"	2-3/8"	36.05	34.48	32.92
56651	.3281	21/64"	8.33	4"	2-1/2"	36.50	34.91	33.33
56656	.3320	Q	8.43	4"	2-1/2"	37.23	35.61	34.00
56661	.3346		8.50	101	63	37.50	35.87	34.24

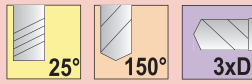
1200H - 2 Flute (continued)

.3390" - .5000"
(8.61mm - 12.70mm)

EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
56666	.3390	R	8.61	4"	2-1/2"	38.52	36.85	35.17
56671	.3438	11/32"	8.73	4"	2-1/2"	39.88	38.15	36.42
56676	.3480	S	8.84	4"	2-1/2"	41.45	39.66	37.85
56681	.3543		9.00	101	63	41.69	39.88	38.06
56686	.3580	T	9.09	4-1/4"	2-3/4"	43.35	41.46	39.58
56691	.3594	23/64"	9.13	4-1/4"	2-3/4"	43.61	41.71	39.81
56696	.3680	U	9.35	4-1/4"	2-3/4"	48.38	46.28	44.17
56701	.3740		9.50	107	70	48.72	46.60	44.49
56706	.3750	3/8"	9.52	4-1/4"	2-3/4"	49.06	46.92	44.79
56711	.3770	V	9.57	4-1/4"	2-3/4"	50.25	48.07	45.88
56716	.3860	W	9.80	4-1/2"	2-7/8"	51.16	48.93	46.71
56721	.3906	25/64"	9.92	4-1/2"	2-7/8"	51.77	49.52	47.27
56726	.3937		10.00	114	73	53.33	51.01	48.69
56731	.3970	X	10.08	4-1/2"	2-7/8"	54.62	52.25	49.87
56736	.4040	Y	10.26	4-1/2"	2-7/8"	55.01	52.61	50.22
56741	.4062	13/32"	10.32	4-1/2"	2-7/8"	56.68	54.22	51.75
56746	.4130	Z	10.49	4-1/2"	2-7/8"	57.20	54.71	52.23
56751	.4134		10.50	114	73	57.20	54.71	52.23
56756	.4219	27/64"	10.72	4-1/2"	2-7/8"	57.73	55.22	52.71
56761	.4331		11.00	114	73	61.93	59.24	56.54
56766	.4375	7/16"	11.11	4-1/2"	2-7/8"	61.93	59.24	56.54
56771	.4528		11.50	120	76	66.45	63.55	60.66
56776	.4531	29/64"	11.51	4-3/4"	3"	66.45	63.55	60.66
56781	.4688	15/32"	11.91	4-3/4"	3"	69.78	66.75	63.71
56786	.4724		12.00	120	76	69.99	66.94	63.91
56791	.4844	31/64"	12.30	4-3/4"	3"	69.99	66.94	63.91
56796	.4921		12.50	120	76	71.61	68.50	65.38
56801	.5000	1/2"	12.70	4-3/4"	3"	71.61	68.50	65.38

d	+0.000" -0.005" (+0.000 -0.127mm)	
l ₁	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)

.1094" - .2165"
(2.78mm - 5.50mm)

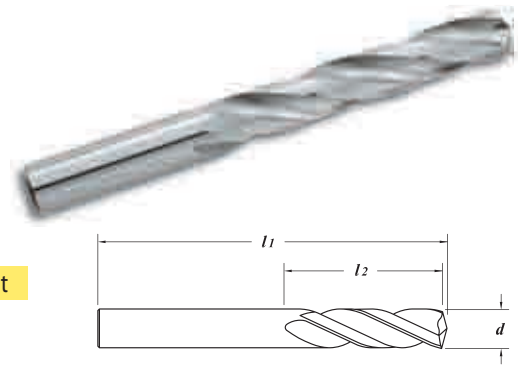


Solid submicron grain carbide drill
Near reamer finishes
Stub length reduces deflection and vibration
Tighter tolerance holes
Improved roundness and straightness

Recommended for cast aluminum, cast iron and materials with high silicon content

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †			l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric						
78275	.1094	7/64"	2.78	1-13/16"	13/16"	10.58	10.12	9.66	9.19
78280	.1100	#35	2.79	1-7/8"	7/8"	10.69	10.22	9.77	9.30
78285	.1110	#34	2.82	1-7/8"	7/8"	10.83	10.36	9.88	9.41
78290	.1130	#33	2.87	1-7/8"	7/8"	11.01	10.54	10.06	9.58
78295	.1160	#32	2.95	1-7/8"	7/8"	11.17	10.68	10.20	9.71
78300	.1181		3.00	48	22	11.26	10.77	10.29	9.80
78305	.1200	#31	3.05	1-7/8"	7/8"	11.35	10.86	10.36	9.87
78310	.1250	1/8"	3.17	1-7/8"	7/8"	11.49	10.99	10.49	9.99
78315	.1285	#30	3.26	1-15/16"	15/16"	11.79	11.28	10.76	10.25
78320	.1360	#29	3.45	1-15/16"	15/16"	12.11	11.58	11.06	10.52
78325	.1378		3.50	49	24	12.50	11.96	11.41	10.87
78330	.1405	#28	3.57	1-15/16"	15/16"	12.66	12.11	11.55	11.00
78335	.1406	9/64"	3.57	1-15/16"	15/16"	12.81	12.25	11.70	11.14
78340	.1440	#27	3.66	2-1/16"	1"	13.81	13.21	12.62	12.01
78345	.1470	#26	3.73	2-1/16"	1"	14.00	13.38	12.78	12.17
78350	.1495	#25	3.80	2-1/16"	1"	14.12	13.51	12.90	12.28
78355	.1520	#24	3.86	2-1/16"	1"	14.14	13.53	12.92	12.30
78360	.1540	#23	3.91	2-1/16"	1"	14.28	13.66	13.04	12.42
78365	.1562	5/32"	3.97	2-1/16"	1"	14.34	13.72	13.09	12.47
78370	.1570	#22	3.99	2-1/8"	1-1/16"	15.25	14.58	13.93	13.26
78375	.1575		4.00	54	27	15.25	14.58	13.93	13.26
78380	.1590	#21	4.04	2-1/8"	1-1/16"	15.61	14.93	14.25	13.57
78385	.1610	#20	4.09	2-1/8"	1-1/16"	15.61	14.93	14.25	13.57
78390	.1660	#19	4.22	2-1/8"	1-1/16"	15.74	15.05	14.36	13.69
78395	.1695	#18	4.30	2-1/8"	1-1/16"	15.84	15.15	14.47	13.77
78400	.1719	11/64"	4.37	2-1/8"	1-1/16"	15.94	15.25	14.56	13.86
78405	.1730	#17	4.39	2-3/16"	1-1/8"	16.67	15.94	15.23	14.50
78410	.1770	#16	4.49	2-3/16"	1-1/8"	16.85	16.12	15.38	14.65
78415	.1772		4.50	56	29	16.93	16.19	15.45	14.73
78420	.1800	#15	4.57	2-3/16"	1-1/8"	17.01	16.28	15.54	14.80
78425	.1820	#14	4.62	2-3/16"	1-1/8"	17.40	16.64	15.89	15.13
78430	.1850	#13	4.70	2-3/16"	1-1/8"	17.49	16.73	15.97	15.22
78435	.1875	3/16"	4.76	2-3/16"	1-1/8"	17.49	16.73	15.97	15.22
78440	.1890	#12	4.80	2-1/4"	1-3/16"	17.63	16.86	16.10	15.33
78445	.1910	#11	4.85	2-1/4"	1-3/16"	17.83	17.05	16.28	15.50
78450	.1935	#10	4.91	2-1/4"	1-3/16"	18.67	17.86	17.05	16.23
78455	.1960	#9	4.98	2-1/4"	1-3/16"	19.13	18.29	17.46	16.63
78460	.1969		5.00	57	30	19.24	18.41	17.57	16.73
78465	.1990	#8	5.05	2-1/4"	1-3/16"	19.38	18.53	17.69	16.85
78470	.2010	#7	5.10	2-1/4"	1-3/16"	19.96	19.09	18.22	17.36
78475	.2031	13/64"	5.16	2-1/4"	1-3/16"	20.72	19.81	18.92	18.01
78480	.2040	#6	5.18	2-3/8"	1-1/4"	20.83	19.93	19.02	18.12
78485	.2055	#5	5.22	2-3/8"	1-1/4"	20.94	20.02	19.12	18.20
78490	.2090	#4	5.31	2-3/8"	1-1/4"	21.29	20.36	19.44	18.51
78495	.2130	#3	5.41	2-3/8"	1-1/4"	21.66	20.72	19.78	18.83
78500	.2165		5.50	60	32	21.83	20.88	19.93	18.98

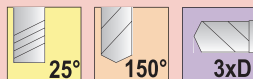
1120 - 3 Flute (continued)

.2188" - .5000"
(5.56mm - 12.70mm)

EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
78505	.2188	7/32"	5.56	2-3/8"	1-1/4"	22.01	21.05	20.09	19.14
78510	.2210	#2	5.61	2-7/16"	1-5/16"	22.55	21.57	20.58	19.60
78515	.2280	#1	5.79	2-7/16"	1-5/16"	22.65	21.66	20.69	19.70
78520	.2340	A	5.94	2-7/16"	1-5/16"	22.78	21.79	20.80	19.80
78525	.2344	15/64"	5.95	2-7/16"	1-5/16"	22.89	21.89	20.90	19.91
78530	.2362		6.00	64	35	22.95	21.95	20.96	19.96
78535	.2380	B	6.04	2-1/2"	1-3/8"	23.05	22.05	21.04	20.04
78540	.2420	C	6.15	2-1/2"	1-3/8"	23.21	22.20	21.20	20.19
78545	.2460	D	6.25	2-1/2"	1-3/8"	23.37	22.35	21.34	20.32
78550	.2500	1/4" / E	6.35	2-1/2"	1-3/8"	23.54	22.52	21.49	20.47
78555	.2559		6.50	67	37	24.13	23.08	22.03	20.98
78560	.2570	F	6.53	2-5/8"	1-7/16"	24.63	23.56	22.48	21.41
78565	.2610	G	6.63	2-5/8"	1-7/16"	25.00	23.91	22.83	21.74
78570	.2656	17/64"	6.75	2-5/8"	1-7/16"	25.49	24.38	23.28	22.16
78575	.2660	H	6.76	2-11/16"	1-1/2"	26.23	25.08	23.95	22.81
78580	.2720	I	6.91	2-11/16"	1-1/2"	26.55	25.40	24.24	23.09
78585	.2756		7.00	68	38	26.74	25.57	24.41	23.25
78590	.2770	J	7.03	2-11/16"	1-1/2"	26.97	25.79	24.63	23.45
78595	.2810	K	7.14	2-11/16"	1-1/2"	27.22	26.03	24.85	23.67
78600	.2812	9/32"	7.14	2-11/16"	1-1/2"	28.17	26.95	25.72	24.50
78605	.2900	L	7.37	2-3/4"	1-9/16"	29.23	27.97	26.70	25.42
78610	.2950	M	7.49	2-3/4"	1-9/16"	30.07	28.76	27.46	26.15
78615	.2953		7.50	70	40	30.07	28.76	27.46	26.15
78620	.2969	19/64"	7.54	2-3/4"	1-9/16"	30.07	28.76	27.46	26.15
78625	.3020	N	7.67	2-13/16"	1-5/8"	31.26	29.90	28.55	27.19
78630	.3125	5/16"	7.94	2-13/16"	1-5/8"	31.40	30.04	28.66	27.30
78635	.3150		8.00	75	43	33.66	32.20	30.74	29.28
78640	.3160	O	8.03	2-15/16"	1-11/16"	33.66	32.20	30.74	29.28
78645	.3230	P	8.20	2-15/16"	1-11/16"	33.66	32.20	30.74	29.28
78650	.3281	21/64"	8.33	2-15/16"	1-11/16"	35.14	33.61	32.08	30.56
78655	.3320	Q	8.43	3"	1-11/16"	35.96	34.40	32.83	31.27
78660	.3346		8.50	76	43	36.30	34.72	33.14	31.56
78665	.3390	R	8.61	3"	1-11/16"	37.41	35.79	34.15	32.53
78670	.3438	11/32"	8.73	3"	1-11/16"	38.97	37.27	35.58	33.88
78675	.3480	S	8.84	3-1/16"	1-3/4"	41.95	40.13	38.30	36.48
78680	.3543		9.00	78	44	42.23	40.39	38.56	36.72
78685	.3580	T	9.09	3-1/16"	1-3/4"	42.36	40.52	38.68	36.84
78690	.3594	23/64"	9.13	3-1/16"	1-3/4"	42.71	40.85	39.00	37.14
78695	.3680	U	9.35	3-1/8"	1-13/16"	45.59	43.61	41.63	39.64
78700	.3740		9.50	79	46	46.38	44.37	42.35	40.33
78705	.3750	3/8"	9.52	3-1/8"	1-13/16"	46.38	44.37	42.35	40.33
78710	.3770	V	9.57	3-1/4"	1-7/8"	46.94	44.90	42.86	40.81
78715	.3860	W	9.80	3-1/4"	1-7/8"	49.98	47.81	45.64	43.46
78720	.3906	25/64"	9.92	3-1/4"	1-7/8"	50.71	48.51	46.30	44.10
78725	.3937		10.00	84	49	52.54	50.25	47.98	45.69
78730	.3970	X	10.08	3-5/16"	1-15/16"	54.11	51.76	49.41	47.05
78735	.4040	Y	10.26	3-5/16"	1-15/16"	54.53	52.16	49.78	47.41
78740	.4062	13/32"	10.32	3-5/16"	1-15/16"	56.50	54.05	51.59	49.13
78745	.4130	Z	10.49	3-3/8"	2"	57.09	54.60	52.12	49.64
78750	.4134		10.50	86	51	57.09	54.60	52.12	49.64
78755	.4219	27/64"	10.72	3-3/8"	2"	57.74	55.23	52.72	50.21
78760	.4331		11.00	87	52	62.05	59.35	56.65	53.96
78765	.4375	7/16"	11.11	3-7/16"	2-1/16"	62.05	59.35	56.65	53.96
78770	.4528		11.50	91	54	67.31	64.39	61.45	58.53
78775	.4531	29/64"	11.51	3-9/16"	2-1/8"	67.31	64.39	61.45	58.53
78780	.4688	15/32"	11.91	3-5/8"	2-1/8"	71.22	68.12	65.02	61.93
78785	.4724		12.00	94	56	71.44	68.33	65.23	62.12
78790	.4844	31/64"	12.30	3-11/16"	2-3/16"	71.69	68.57	65.46	62.34
78795	.4921		12.50	95	56	72.90	69.73	66.56	63.40
78800	.5000	1/2"	12.70	3-3/4"	2-1/4"	73.33	70.14	66.96	63.76

d	+0.000" -0.005" (+0.000 -0.127mm)	
l ₁	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)

.1094" - .2165"
(2.78mm - 5.50mm)



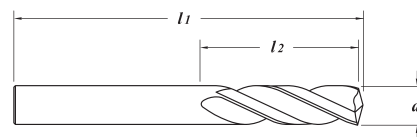
Balinit® HARDLUBE Coated

Solid submicron grain carbide drill
Near reamer finishes
Excellent heat resistance and lubricity
Up to 40% faster than uncoated
Stub length reduces deflection and vibration
Tighter tolerance holes
Improved roundness and straightness

Recommended for cast aluminum, cast iron and materials with high silicon content

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d † Diameter			l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
78276	.1094	7/64"	2.78	1-13/16"	13/16"	12.25	11.72	11.19	10.65
78281	.1100	#35	2.79	1-7/8"	7/8"	12.36	11.81	11.28	10.74
78286	.1110	#34	2.82	1-7/8"	7/8"	12.49	11.95	11.41	10.86
78291	.1130	#33	2.87	1-7/8"	7/8"	12.68	12.13	11.58	11.02
78296	.1160	#32	2.95	1-7/8"	7/8"	12.83	12.27	11.72	11.16
78301	.1181		3.00	48	22	12.93	12.37	11.80	11.24
78306	.1200	#31	3.05	1-7/8"	7/8"	13.01	12.45	11.88	11.32
78311	.1250	1/8"	3.17	1-7/8"	7/8"	13.17	12.59	12.02	11.45
78316	.1285	#30	3.26	1-15/16"	15/16"	13.46	12.88	12.28	11.70
78321	.1360	#29	3.45	1-15/16"	15/16"	13.77	13.17	12.57	11.97
78326	.1378		3.50	49	24	14.18	13.56	12.94	12.32
78331	.1405	#28	3.57	1-15/16"	15/16"	14.32	13.70	13.07	12.45
78336	.1406	9/64"	3.57	1-15/16"	15/16"	14.48	13.84	13.22	12.58
78341	.1440	#27	3.66	2-1/16"	1"	15.48	14.80	14.13	13.46
78346	.1470	#26	3.73	2-1/16"	1"	15.65	14.98	14.29	13.61
78351	.1495	#25	3.80	2-1/16"	1"	15.79	15.10	14.41	13.73
78356	.1520	#24	3.86	2-1/16"	1"	15.82	15.13	14.45	13.76
78361	.1540	#23	3.91	2-1/16"	1"	15.94	15.25	14.56	13.86
78366	.1562	5/32"	3.97	2-1/16"	1"	16.02	15.32	14.62	13.93
78371	.1570	#22	3.99	2-1/8"	1-1/16"	16.92	16.18	15.45	14.72
78376	.1575		4.00	54	27	16.92	16.18	15.45	14.72
78381	.1590	#21	4.04	2-1/8"	1-1/16"	17.27	16.53	15.78	15.02
78386	.1610	#20	4.09	2-1/8"	1-1/16"	17.27	16.53	15.78	15.02
78391	.1660	#19	4.22	2-1/8"	1-1/16"	17.40	16.64	15.89	15.13
78396	.1695	#18	4.30	2-1/8"	1-1/16"	17.49	16.73	15.97	15.22
78401	.1719	11/64"	4.37	2-1/8"	1-1/16"	17.61	16.84	16.08	15.31
78406	.1730	#17	4.39	2-3/16"	1-1/8"	18.34	17.53	16.74	15.94
78411	.1770	#16	4.49	2-3/16"	1-1/8"	18.51	17.71	16.90	16.10
78416	.1772		4.50	56	29	18.60	17.78	16.98	16.17
78421	.1800	#15	4.57	2-3/16"	1-1/8"	18.68	17.87	17.06	16.24
78426	.1820	#14	4.62	2-3/16"	1-1/8"	19.06	18.23	17.41	16.58
78431	.1850	#13	4.70	2-3/16"	1-1/8"	19.16	18.32	17.49	16.66
78436	.1875	3/16"	4.76	2-3/16"	1-1/8"	19.16	18.32	17.49	16.66
78441	.1890	#12	4.80	2-1/4"	1-3/16"	20.51	19.61	18.73	17.84
78446	.1910	#11	4.85	2-1/4"	1-3/16"	20.71	19.80	18.91	18.00
78451	.1935	#10	4.91	2-1/4"	1-3/16"	21.54	20.60	19.67	18.73
78456	.1960	#9	4.98	2-1/4"	1-3/16"	22.00	21.04	20.08	19.13
78461	.1969		5.00	57	30	22.11	21.15	20.19	19.23
78466	.1990	#8	5.05	2-1/4"	1-3/16"	22.26	21.29	20.32	19.35
78471	.2010	#7	5.10	2-1/4"	1-3/16"	22.83	21.84	20.84	19.85
78476	.2031	13/64"	5.16	2-1/4"	1-3/16"	23.59	22.56	21.54	20.51
78481	.2040	#6	5.18	2-3/8"	1-1/4"	23.71	22.68	21.65	20.62
78486	.2055	#5	5.22	2-3/8"	1-1/4"	23.82	22.78	21.75	20.71
78491	.2090	#4	5.31	2-3/8"	1-1/4"	24.17	23.12	22.07	21.02
78496	.2130	#3	5.41	2-3/8"	1-1/4"	24.54	23.47	22.41	21.34
78501	.2165		5.50	60	32	24.70	23.63	22.55	21.48

1120H - 3 Flute (continued)

.2188" - .5000"
(5.56mm - 12.70mm)

EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
78506	.2188	7/32"	5.56	2-3/8"	1-1/4"	24.88	23.80	22.63
78511	.2210	#2	5.61	2-7/16"	1-5/16"	25.42	24.32	23.20
78516	.2280	#1	5.79	2-7/16"	1-5/16"	25.52	24.41	23.31
78521	.2340	A	5.94	2-7/16"	1-5/16"	25.66	24.54	23.42
78526	.2344	15/64"	5.95	2-7/16"	1-5/16"	25.76	24.64	23.52
78531	.2362		6.00	64	35	25.83	24.71	23.59
78536	.2380	B	6.04	2-1/2"	1-3/8"	25.92	24.79	23.66
78541	.2420	C	6.15	2-1/2"	1-3/8"	26.09	24.96	23.83
78546	.2460	D	6.25	2-1/2"	1-3/8"	26.24	25.10	23.96
78551	.2500	1/4" / E	6.35	2-1/2"	1-3/8"	26.41	25.26	24.11
78556	.2559		6.50	67	37	29.23	27.97	26.70
78561	.2570	F	6.53	2-5/8"	1-7/16"	29.72	28.43	27.13
78566	.2610	G	6.63	2-5/8"	1-7/16"	30.09	28.78	27.47
78571	.2656	17/64"	6.75	2-5/8"	1-7/16"	30.60	29.27	27.93
78576	.2660	H	6.76	2-11/16"	1-1/2"	31.34	29.97	28.61
78581	.2720	I	6.91	2-11/16"	1-1/2"	31.65	30.27	28.89
78586	.2756		7.00	68	38	31.83	30.45	29.07
78591	.2770	J	7.03	2-11/16"	1-1/2"	32.07	30.68	29.29
78596	.2810	K	7.14	2-11/16"	1-1/2"	32.32	30.92	29.52
78601	.2812	9/32"	7.14	2-11/16"	1-1/2"	33.28	31.83	30.39
78606	.2900	L	7.37	2-3/4"	1-9/16"	34.33	32.83	31.35
78611	.2950	M	7.49	2-3/4"	1-9/16"	35.17	33.64	32.12
78616	.2953		7.50	70	40	35.17	33.64	32.12
78621	.2969	19/64"	7.54	2-3/4"	1-9/16"	35.17	33.64	32.12
78626	.3020	N	7.67	2-13/16"	1-5/8"	36.37	34.79	33.21
78631	.3125	5/16"	7.94	2-13/16"	1-5/8"	36.50	34.91	33.33
78636	.3150		8.00	75	43	38.77	37.09	35.40
78641	.3160	O	8.03	2-15/16"	1-11/16"	38.77	37.09	35.40
78646	.3230	P	8.20	2-15/16"	1-11/16"	38.77	37.09	35.40
78651	.3281	21/64"	8.33	2-15/16"	1-11/16"	40.25	38.50	36.74
78656	.3320	Q	8.43	3"	1-11/16"	41.07	39.28	37.50
78661	.3346		8.50	76	43	41.40	39.60	37.80
78666	.3390	R	8.61	3"	1-11/16"	42.52	40.66	38.82
78671	.3438	11/32"	8.73	3"	1-11/16"	44.08	42.16	40.24
78676	.3480	S	8.84	3-1/16"	1-3/4"	49.88	47.70	45.54
78681	.3543		9.00	78	44	50.15	47.96	45.79
78686	.3580	T	9.09	3-1/16"	1-3/4"	50.28	48.10	45.92
78691	.3594	23/64"	9.13	3-1/16"	1-3/4"	50.63	48.42	46.23
78696	.3680	U	9.35	3-1/8"	1-13/16"	53.52	51.19	48.87
78701	.3740		9.50	79	46	54.30	51.94	49.58
78706	.3750	3/8"	9.52	3-1/8"	1-13/16"	54.30	51.94	49.58
78711	.3770	V	9.57	3-1/4"	1-7/8"	54.85	52.47	50.08
78716	.3860	W	9.80	3-1/4"	1-7/8"	57.91	55.39	52.87
78721	.3906	25/64"	9.92	3-1/4"	1-7/8"	58.62	56.08	53.53
78726	.3937		10.00	84	49	60.46	57.82	55.20
78731	.3970	X	10.08	3-5/16"	1-15/16"	62.04	59.34	56.64
78736	.4040	Y	10.26	3-5/16"	1-15/16"	62.44	59.73	57.01
78741	.4062	13/32"	10.32	3-5/16"	1-15/16"	64.43	61.63	58.82
78746	.4130	Z	10.49	3-3/8"	2"	65.00	62.17	59.35
78751	.4134		10.50	86	51	65.00	62.17	59.35
78756	.4219	27/64"	10.72	3-3/8"	2"	65.67	62.81	59.96
78761	.4331		11.00	87	52	69.97	66.92	63.89
78766	.4375	7/16"	11.11	3-7/16"	2-1/16"	69.97	66.92	63.89
78771	.4528		11.50	91	54	75.24	71.97	68.70
78776	.4531	29/64"	11.51	3-9/16"	2-1/8"	75.24	71.97	68.70
78781	.4688	15/32"	11.91	3-5/8"	2-1/8"	79.14	75.70	72.26
78786	.4724		12.00	94	56	79.36	75.91	72.46
78791	.4844	31/64"	12.30	3-11/16"	2-3/16"	79.60	76.14	72.68
78796	.4921		12.50	95	56	80.84	77.32	73.81
78801	.5000	1/2"	12.70	3-3/4"	2-1/4"	81.24	77.71	74.18

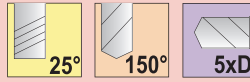
1100 - 3 Flute

Technical information: page 204-207

TOLERANCES

d	+.0000" -.0005" (+.0000 -.0127mm)	
l ₁	≤ 1/8"	+.125" -.062" (+3.175 -1.588mm)
	> 1/8"	+.125" -.125" (+3.175 -3.175mm)
l ₂	≤ 1/8"	+.125" -.062" (+3.175 -1.588mm)
	> 1/8"	+.125" -.125" (+3.175 -3.175mm)

.1094" - .2165"
(2.78mm - 5.50mm)



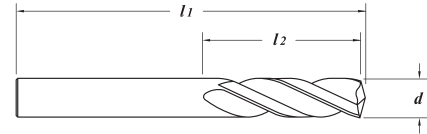
DRILLS

Solid submicron grain carbide drill
Near reamer finishes
Tighter tolerance holes
Improved roundness and straightness

Recommended for cast aluminum, cast iron and materials with high silicon content

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d [†] Diameter		l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
90275	.1094	7/64"	2.78	2-1/4"	1-1/4"	10.99	10.51	10.04
90280	.1100	#35	2.79	2-1/4"	1-1/4"	11.10	10.62	10.13
90285	.1110	#34	2.82	2-1/4"	1-1/4"	11.24	10.75	10.26
90290	.1130	#33	2.87	2-1/4"	1-1/4"	11.43	10.93	10.43
90295	.1160	#32	2.95	2-1/4"	1-1/4"	11.58	11.08	10.57
90300	.1181		3.00	57	32	11.67	11.16	10.65
90305	.1200	#31	3.05	2-1/4"	1-1/4"	11.75	11.24	10.73
90310	.1250	1/8"	3.17	2-1/4"	1-1/4"	11.91	11.39	10.87
90315	.1285	#30	3.26	2-1/4"	1-1/4"	12.20	11.67	11.14
90320	.1360	#29	3.45	2-1/2"	1-3/8"	12.58	12.03	11.49
90325	.1378		3.50	63	35	12.99	12.43	11.86
90330	.1405	#28	3.57	2-1/2"	1-3/8"	13.14	12.56	11.99
90335	.1406	9/64"	3.57	2-1/2"	1-3/8"	13.29	12.71	12.14
90340	.1440	#27	3.66	2-1/2"	1-3/8"	13.81	13.21	12.62
90345	.1470	#26	3.73	2-1/2"	1-3/8"	14.00	13.38	12.78
90350	.1495	#25	3.80	2-1/2"	1-3/8"	14.12	13.51	12.90
90355	.1520	#24	3.86	2-1/2"	1-3/8"	14.14	13.53	12.92
90360	.1540	#23	3.91	2-1/2"	1-3/8"	14.28	13.66	13.04
90365	.1562	5/32"	3.97	2-1/2"	1-3/8"	14.34	13.72	13.09
90370	.1570	#22	3.99	2-1/2"	1-3/8"	15.25	14.58	13.93
90375	.1575		4.00	63	35	15.25	14.58	13.93
90380	.1590	#21	4.04	2-1/2"	1-3/8"	15.61	14.93	14.25
90385	.1610	#20	4.09	2-1/2"	1-3/8"	15.61	14.93	14.25
90390	.1660	#19	4.22	2-3/4"	1-5/8"	15.74	15.05	14.36
90395	.1695	#18	4.30	2-3/4"	1-5/8"	15.84	15.15	14.47
90400	.1719	11/64"	4.37	2-3/4"	1-5/8"	15.94	15.25	14.56
90405	.1730	#17	4.39	2-3/4"	1-5/8"	16.67	15.94	15.23
90410	.1770	#16	4.49	2-3/4"	1-5/8"	16.85	16.12	15.38
90415	.1772		4.50	70	41	16.93	16.19	15.45
90420	.1800	#15	4.57	2-3/4"	1-5/8"	17.01	16.28	15.54
90425	.1820	#14	4.62	2-3/4"	1-5/8"	17.40	16.64	15.89
90430	.1850	#13	4.70	2-3/4"	1-5/8"	17.49	16.73	15.97
90435	.1875	3/16"	4.76	2-3/4"	1-5/8"	17.49	16.73	15.97
90440	.1890	#12	4.80	2-3/4"	1-5/8"	17.63	16.86	16.10
90445	.1910	#11	4.85	2-3/4"	1-5/8"	17.83	17.05	16.28
90450	.1935	#10	4.91	2-3/4"	1-5/8"	18.67	17.86	17.05
90455	.1960	#9	4.98	3"	1-3/4"	19.13	18.29	17.46
90460	.1969		5.00	76	44	19.24	18.41	17.57
90465	.1990	#8	5.05	3"	1-3/4"	19.38	18.53	17.69
90470	.2010	#7	5.10	3"	1-3/4"	19.96	19.09	18.22
90475	.2031	13/64"	5.16	3"	1-3/4"	20.72	19.81	18.92
90480	.2040	#6	5.18	3"	1-3/4"	20.83	19.93	19.02
90485	.2055	#5	5.22	3"	1-3/4"	20.94	20.02	19.12
90490	.2090	#4	5.31	3"	1-3/4"	21.29	20.36	19.44
90495	.2130	#3	5.41	3"	1-3/4"	21.66	20.72	19.78
90500	.2165		5.50	76	44	21.83	20.88	19.93

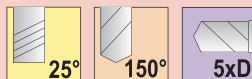
1100 - 3 Flute (continued)

.2188" - .5000"
(5.56mm - 12.70mm)

EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
90505	.2188	7/32"	5.56	3"	1-3/4"	22.01	21.05	20.09	19.14
90510	.2210	#2	5.61	3"	1-3/4"	22.55	21.57	20.58	19.60
90515	.2280	#1	5.79	3"	1-3/4"	22.65	21.66	20.69	19.70
90520	.2340	A	5.94	3-1/4"	2"	22.90	21.90	20.91	19.92
90525	.2344	15/64"	5.95	3-1/4"	2"	22.99	22.00	21.00	20.00
90530	.2362		6.00	82	50	23.07	22.07	21.06	20.06
90535	.2380	B	6.04	3-1/4"	2"	23.17	22.16	21.15	20.14
90540	.2420	C	6.15	3-1/4"	2"	23.33	22.31	21.30	20.28
90545	.2460	D	6.25	3-1/4"	2"	23.49	22.47	21.46	20.43
90550	.2500	1/4" / E	6.35	3-1/4"	2"	23.66	22.63	21.60	20.57
90555	.2559		6.50	82	50	24.24	23.19	22.13	21.08
90560	.2570	F	6.53	3-1/4"	2"	24.74	23.67	22.59	21.52
90565	.2610	G	6.63	3-1/2"	2-1/8"	26.04	24.91	23.77	22.64
90570	.2656	17/64"	6.75	3-1/2"	2-1/8"	26.55	25.40	24.24	23.09
90575	.2660	H	6.76	3-1/2"	2-1/8"	27.32	26.14	24.95	23.75
90580	.2720	I	6.91	3-1/2"	2-1/8"	27.65	26.45	25.25	24.04
90585	.2756		7.00	88	54	27.85	26.64	25.43	24.22
90590	.2770	J	7.03	3-1/2"	2-1/8"	28.09	26.87	25.65	24.43
90595	.2810	K	7.14	3-1/2"	2-1/8"	28.35	27.11	25.89	24.65
90600	.2812	9/32"	7.14	3-1/2"	2-1/8"	29.36	28.08	26.81	25.53
90605	.2900	L	7.37	3-1/2"	2-1/8"	30.45	29.13	27.80	26.48
90610	.2950	M	7.49	3-3/4"	2-3/8"	32.32	30.92	29.52	28.11
90615	.2953		7.50	95	60	32.32	30.92	29.52	28.11
90620	.2969	19/64"	7.54	3-3/4"	2-3/8"	32.32	30.92	29.52	28.11
90625	.3020	N	7.67	3-3/4"	2-3/8"	32.56	31.15	29.73	28.32
90630	.3125	5/16"	7.94	3-3/4"	2-3/8"	32.61	31.20	29.78	28.36
90635	.3150		8.00	95	60	35.00	33.48	31.95	30.43
90640	.3160	O	8.03	3-3/4"	2-3/8"	35.00	33.48	31.95	30.43
90645	.3230	P	8.20	3-3/4"	2-3/8"	35.00	33.48	31.95	30.43
90650	.3281	21/64"	8.33	4"	2-1/2"	36.61	35.02	33.43	31.83
90655	.3320	Q	8.43	4"	2-1/2"	37.47	35.84	34.22	32.58
90660	.3346		8.50	101	63	37.80	36.16	34.52	32.87
90665	.3390	R	8.61	4"	2-1/2"	38.98	37.28	35.59	33.89
90670	.3438	11/32"	8.73	4"	2-1/2"	40.59	38.82	37.07	35.30
90675	.3480	S	8.84	4"	2-1/2"	41.95	40.13	38.30	36.48
90680	.3543		9.00	101	63	42.23	40.39	38.56	36.72
90685	.3580	T	9.09	4-1/4"	2-3/4"	42.58	40.73	38.88	37.02
90690	.3594	23/64"	9.13	4-1/4"	2-3/4"	42.91	41.05	39.18	37.32
90695	.3680	U	9.35	4-1/4"	2-3/4"	45.83	43.84	41.85	39.85
90700	.3740		9.50	107	70	46.61	44.58	42.56	40.53
90705	.3750	3/8"	9.52	4-1/4"	2-3/4"	46.61	44.58	42.56	40.53
90710	.3770	V	9.57	4-1/4"	2-3/4"	48.39	46.29	44.18	42.08
90715	.3860	W	9.80	4-1/2"	2-7/8"	51.52	49.29	47.04	44.80
90720	.3906	25/64"	9.92	4-1/2"	2-7/8"	52.28	50.00	47.74	45.46
90725	.3937		10.00	114	73	54.18	51.82	49.47	47.11
90730	.3970	X	10.08	4-1/2"	2-7/8"	55.79	53.36	50.94	48.51
90735	.4040	Y	10.26	4-1/2"	2-7/8"	56.21	53.77	51.32	48.88
90740	.4062	13/32"	10.32	4-1/2"	2-7/8"	58.26	55.72	53.20	50.66
90745	.4130	Z	10.49	4-1/2"	2-7/8"	58.85	56.30	53.74	51.18
90750	.4134		10.50	114	73	58.85	56.30	53.74	51.18
90755	.4219	27/64"	10.72	4-1/2"	2-7/8"	59.53	56.94	54.35	51.76
90760	.4331		11.00	114	73	64.64	61.83	59.02	56.20
90765	.4375	7/16"	11.11	4-1/2"	2-7/8"	64.64	61.83	59.02	56.20
90770	.4528		11.50	120	76	70.12	67.07	64.02	60.98
90775	.4531	29/64"	11.51	4-3/4"	3"	70.12	67.07	64.02	60.98
90780	.4688	15/32"	11.91	4-3/4"	3"	74.18	70.96	67.74	64.51
90785	.4724		12.00	120	76	74.41	71.18	67.94	64.71
90790	.4844	31/64"	12.30	4-3/4"	3"	74.41	71.18	67.94	64.71
90795	.4921		12.50	120	76	76.39	73.07	69.74	66.42
90800	.5000	1/2"	12.70	4-3/4"	3"	76.39	73.07	69.74	66.42

d	+0.000" -0.005" (+0.000 -0.127mm)	
l ₁	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)

.1094" - .2165"
(2.78mm - 5.50mm)



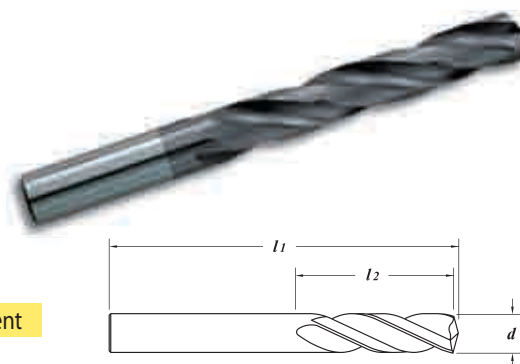
Balinit® HARDLUBE Coated

Solid submicron grain carbide drill
Near reamer finishes
Excellent heat resistance and lubricity
Up to 40% faster than uncoated
Tighter tolerance holes
Improved roundness and straightness

Recommended for cast aluminum, cast iron and materials with high silicon content

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †		l ₁	l ₂	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
90276	.1094	7/64"	2.78	2-1/4"	1-1/4"	12.66	12.11	11.55
90281	.1100	#35	2.79	2-1/4"	1-1/4"	12.77	12.22	11.66
90286	.1110	#34	2.82	2-1/4"	1-1/4"	12.92	12.36	11.79
90291	.1130	#33	2.87	2-1/4"	1-1/4"	13.10	12.53	11.96
90296	.1160	#32	2.95	2-1/4"	1-1/4"	13.24	12.67	12.08
90301	.1181		3.00	57	32	13.34	12.76	12.18
90306	.1200	#31	3.05	2-1/4"	1-1/4"	13.45	12.86	12.28
90311	.1250	1/8"	3.17	2-1/4"	1-1/4"	13.57	12.98	12.40
90316	.1285	#30	3.26	2-1/4"	1-1/4"	13.87	13.27	12.67
90321	.1360	#29	3.45	2-1/2"	1-3/8"	14.27	13.64	13.03
90326	.1378		3.50	63	35	14.66	14.03	13.38
90331	.1405	#28	3.57	2-1/2"	1-3/8"	14.82	14.18	13.53
90336	.1406	9/64"	3.57	2-1/2"	1-3/8"	14.96	14.30	13.66
90341	.1440	#27	3.66	2-1/2"	1-3/8"	15.49	14.81	14.14
90346	.1470	#26	3.73	2-1/2"	1-3/8"	15.67	14.99	14.31
90351	.1495	#25	3.80	2-1/2"	1-3/8"	15.80	15.11	14.42
90356	.1520	#24	3.86	2-1/2"	1-3/8"	15.82	15.13	14.45
90361	.1540	#23	3.91	2-1/2"	1-3/8"	15.95	15.26	14.57
90366	.1562	5/32"	3.97	2-1/2"	1-3/8"	16.02	15.32	14.62
90371	.1570	#22	3.99	2-1/2"	1-3/8"	16.92	16.18	15.45
90376	.1575		4.00	63	35	16.92	16.18	15.45
90381	.1590	#21	4.04	2-1/2"	1-3/8"	17.30	16.55	15.79
90386	.1610	#20	4.09	2-1/2"	1-3/8"	17.30	16.55	15.79
90391	.1660	#19	4.22	2-3/4"	1-5/8"	17.41	16.65	15.89
90396	.1695	#18	4.30	2-3/4"	1-5/8"	17.51	16.75	16.00
90401	.1719	11/64"	4.37	2-3/4"	1-5/8"	17.61	16.84	16.08
90406	.1730	#17	4.39	2-3/4"	1-5/8"	18.34	17.53	16.74
90411	.1770	#16	4.49	2-3/4"	1-5/8"	18.52	17.72	16.91
90416	.1772		4.50	70	41	18.61	17.79	16.98
90421	.1800	#15	4.57	2-3/4"	1-5/8"	18.69	17.88	17.07
90426	.1820	#14	4.62	2-3/4"	1-5/8"	19.07	18.24	17.42
90431	.1850	#13	4.70	2-3/4"	1-5/8"	19.16	18.32	17.49
90436	.1875	3/16"	4.76	2-3/4"	1-5/8"	19.16	18.32	17.49
90441	.1890	#12	4.80	2-3/4"	1-5/8"	20.50	19.60	18.72
90446	.1910	#11	4.85	2-3/4"	1-5/8"	20.70	19.79	18.90
90451	.1935	#10	4.91	2-3/4"	1-5/8"	21.54	20.60	19.67
90456	.1960	#9	4.98	3"	1-3/4"	22.00	21.04	20.08
90461	.1969		5.00	76	44	22.10	21.14	20.18
90466	.1990	#8	5.05	3"	1-3/4"	22.25	21.28	20.31
90471	.2010	#7	5.10	3"	1-3/4"	22.83	21.84	20.84
90476	.2031	13/64"	5.16	3"	1-3/4"	23.58	22.55	21.53
90481	.2040	#6	5.18	3"	1-3/4"	23.71	22.68	21.65
90486	.2055	#5	5.22	3"	1-3/4"	23.81	22.77	21.74
90491	.2090	#4	5.31	3"	1-3/4"	24.17	23.12	22.07
90496	.2130	#3	5.41	3"	1-3/4"	24.54	23.47	22.41
90501	.2165		5.50	76	44	24.70	23.63	22.55

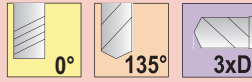
1100H - 3 Flute (continued)

.2188" - .5000"
(5.56mm - 12.70mm)

EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
90506	.2188	7/32"	5.56	3"	1-3/4"	24.88	23.80	22.71	21.63
90511	.2210	#2	5.61	3"	1-3/4"	25.41	24.30	23.20	22.09
90516	.2280	#1	5.79	3"	1-3/4"	25.52	24.41	23.31	22.19
90521	.2340	A	5.94	3-1/4"	2"	25.86	24.74	23.62	22.50
90526	.2344	15/64"	5.95	3-1/4"	2"	25.96	24.82	23.70	22.57
90531	.2362		6.00	82	50	26.04	24.91	23.77	22.64
90536	.2380	B	6.04	3-1/4"	2"	26.14	25.00	23.86	22.72
90541	.2420	C	6.15	3-1/4"	2"	26.29	25.15	24.00	22.86
90546	.2460	D	6.25	3-1/4"	2"	26.47	25.31	24.17	23.02
90551	.2500	1/4" / E	6.35	3-1/4"	2"	26.62	25.47	24.30	23.15
90556	.2559		6.50	82	50	29.69	28.40	27.11	25.82
90561	.2570	F	6.53	3-1/4"	2"	30.17	28.86	27.55	26.24
90566	.2610	G	6.63	3-1/2"	2-1/8"	31.48	30.11	28.75	27.37
90571	.2656	17/64"	6.75	3-1/2"	2-1/8"	31.99	30.60	29.21	27.82
90576	.2660	H	6.76	3-1/2"	2-1/8"	32.75	31.32	29.90	28.48
90581	.2720	I	6.91	3-1/2"	2-1/8"	33.09	31.66	30.21	28.78
90586	.2756		7.00	88	54	33.30	31.86	30.41	28.95
90591	.2770	J	7.03	3-1/2"	2-1/8"	33.55	32.09	30.63	29.17
90596	.2810	K	7.14	3-1/2"	2-1/8"	33.80	32.33	30.86	29.39
90601	.2812	9/32"	7.14	3-1/2"	2-1/8"	34.82	33.30	31.79	30.27
90606	.2900	L	7.37	3-1/2"	2-1/8"	35.90	34.34	32.78	31.22
90611	.2950	M	7.49	3-3/4"	2-3/8"	37.77	36.13	34.49	32.84
90616	.2953		7.50	95	60	37.77	36.13	34.49	32.84
90621	.2969	19/64"	7.54	3-3/4"	2-3/8"	37.77	36.13	34.49	32.84
90626	.3020	N	7.67	3-3/4"	2-3/8"	38.02	36.37	34.72	33.06
90631	.3125	5/16"	7.94	3-3/4"	2-3/8"	38.05	36.40	34.75	33.09
90636	.3150		8.00	95	60	40.44	38.68	36.92	35.16
90641	.3160	O	8.03	3-3/4"	2-3/8"	40.44	38.68	36.92	35.16
90646	.3230	P	8.20	3-3/4"	2-3/8"	40.44	38.68	36.92	35.16
90651	.3281	21/64"	8.33	4"	2-1/2"	42.05	40.22	38.39	36.57
90656	.3320	Q	8.43	4"	2-1/2"	42.91	41.05	39.18	37.32
90661	.3346		8.50	101	63	43.24	41.36	39.48	37.61
90666	.3390	R	8.61	4"	2-1/2"	44.43	42.49	40.57	38.64
90671	.3438	11/32"	8.73	4"	2-1/2"	46.03	44.03	42.03	40.03
90676	.3480	S	8.84	4"	2-1/2"	48.87	46.75	44.62	42.49
90681	.3543		9.00	101	63	49.14	47.01	44.87	42.73
90686	.3580	T	9.09	4-1/4"	2-3/4"	50.86	48.64	46.44	44.22
90691	.3594	23/64"	9.13	4-1/4"	2-3/4"	51.18	48.95	46.73	44.50
90696	.3680	U	9.35	4-1/4"	2-3/4"	54.09	51.74	49.39	47.04
90701	.3740		9.50	107	70	54.88	52.50	50.11	47.73
90706	.3750	3/8"	9.52	4-1/4"	2-3/4"	54.88	52.50	50.11	47.73
90711	.3770	V	9.57	4-1/4"	2-3/4"	57.10	54.61	52.14	49.65
90716	.3860	W	9.80	4-1/2"	2-7/8"	60.23	57.61	54.98	52.37
90721	.3906	25/64"	9.92	4-1/2"	2-7/8"	60.99	58.33	55.68	53.03
90726	.3937		10.00	114	73	62.88	60.14	57.41	54.67
90731	.3970	X	10.08	4-1/2"	2-7/8"	64.49	61.68	58.88	56.08
90736	.4040	Y	10.26	4-1/2"	2-7/8"	64.92	62.10	59.27	56.45
90741	.4062	13/32"	10.32	4-1/2"	2-7/8"	66.97	64.05	61.14	58.23
90746	.4130	Z	10.49	4-1/2"	2-7/8"	67.55	64.62	61.67	58.74
90751	.4134		10.50	114	73	67.55	64.62	61.67	58.74
90756	.4219	27/64"	10.72	4-1/2"	2-7/8"	68.23	65.27	62.30	59.33
90761	.4331		11.00	114	73	73.33	70.14	66.96	63.76
90766	.4375	7/16"	11.11	4-1/2"	2-7/8"	73.33	70.14	66.96	63.76
90771	.4528		11.50	120	76	78.83	75.40	71.98	68.55
90776	.4531	29/64"	11.51	4-3/4"	3"	78.83	75.40	71.98	68.55
90781	.4688	15/32"	11.91	4-3/4"	3"	82.90	79.29	75.69	72.08
90786	.4724		12.00	120	76	83.11	79.50	75.88	72.27
90791	.4844	31/64"	12.30	4-3/4"	3"	83.11	79.50	75.88	72.27
90796	.4921		12.50	120	76	85.09	81.39	77.69	74.00
90801	.5000	1/2"	12.70	4-3/4"	3"	85.09	81.39	77.69	74.00

d	+.0000" -.0005" (+.0000 -.0127mm)	
l ₁	≤ 1/8"	+.125" -.062" (+3.175 -1.588mm)
	> 1/8"	+.125" -.125" (+3.175 -3.175mm)
l ₂	≤ 1/8"	+.125" -.062" (+3.175 -1.588mm)
	> 1/8"	+.125" -.125" (+3.175 -3.175mm)

.0625" - .1660"
(1.59mm - 4.22mm)



Hard Metal

Solid submicron grain carbide drill

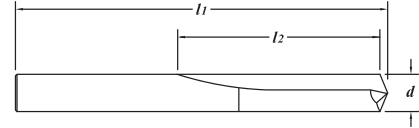
Straight flute design provides excellent rigidity

Materials 40 Rc and higher

Recommended for high nickel, cobalt based and powdered metals

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †			l ₁	l ₂				
	Decimal	Diameter	Metric	Overall Length	Flute Length	1-11	12-24	25-49	50-100
59165	.0625	1/16"	1.59	1-5/8"	5/8"	8.46	8.09	7.72	7.35
59180	.0700	#50	1.78	1-11/16"	3/4"	8.46	8.09	7.72	7.35
59185	.0730	#49	1.85	1-11/16"	3/4"	8.46	8.09	7.72	7.35
59190	.0760	#48	1.93	1-11/16"	3/4"	8.46	8.09	7.72	7.35
59195	.0781	5/64"	1.98	1-11/16"	3/4"	8.46	8.09	7.72	7.35
59200	.0785	#47	1.99	1-3/4"	7/8"	8.46	8.09	7.72	7.35
39000	.0787		2.00	50	22	8.46	8.09	7.72	7.35
59210	.0810	#46	2.06	2"	7/8"	8.46	8.09	7.72	7.35
59215	.0820	#45	2.08	2"	7/8"	8.46	8.09	7.72	7.35
59220	.0860	#44	2.18	2"	7/8"	8.46	8.09	7.72	7.35
59225	.0890	#43	2.26	2"	7/8"	8.46	8.09	7.72	7.35
59230	.0935	#42	2.37	2"	7/8"	8.46	8.09	7.72	7.35
59235	.0938	3/32"	2.38	2"	7/8"	8.46	8.09	7.72	7.35
59240	.0960	#41	2.44	2"	7/8"	9.63	9.21	8.79	8.37
59245	.0980	#40	2.49	2"	7/8"	9.63	9.21	8.79	8.37
39050	.0984		2.50	50	22	9.63	9.21	8.79	8.37
59255	.0995	#39	2.53	2"	7/8"	9.63	9.21	8.79	8.37
59260	.1015	#38	2.58	2"	7/8"	9.63	9.21	8.79	8.37
59265	.1040	#37	2.64	2"	7/8"	9.63	9.21	8.79	8.37
59270	.1065	#36	2.71	2"	7/8"	9.63	9.21	8.79	8.37
59275	.1094	7/64"	2.78	2"	1"	9.63	9.21	8.79	8.37
59280	.1100	#35	2.79	2"	1"	10.02	9.58	9.14	8.70
59285	.1110	#34	2.82	2"	1"	10.02	9.58	9.14	8.70
59290	.1130	#33	2.87	2"	1"	10.02	9.58	9.14	8.70
59295	.1160	#32	2.95	2"	1"	10.02	9.58	9.14	8.70
39100	.1181		3.00	50	25	10.02	9.58	9.14	8.70
59305	.1200	#31	3.05	2"	1"	10.02	9.58	9.14	8.70
59310	.1250	1/8"	3.17	2"	1"	9.24	8.83	8.43	8.03
59315	.1285	#30	3.26	2"	1"	10.90	10.42	9.95	9.47
59320	.1360	#29	3.45	2"	1"	10.90	10.42	9.95	9.47
39150	.1378		3.50	50	25	10.90	10.42	9.95	9.47
59330	.1405	#28	3.57	2"	1"	10.90	10.42	9.95	9.47
59335	.1406	9/64"	3.57	2"	1"	10.90	10.42	9.95	9.47
59340	.1440	#27	3.66	2"	1"	11.18	10.69	10.21	9.72
59345	.1470	#26	3.73	2"	1"	11.75	11.24	10.73	10.22
59350	.1495	#25	3.80	2"	1"	11.75	11.24	10.73	10.22
59355	.1520	#24	3.86	2"	1"	11.75	11.24	10.73	10.22
59360	.1540	#23	3.91	2"	1"	11.75	11.24	10.73	10.22
59365	.1562	5/32"	3.97	2-1/2"	1-1/8"	11.75	11.24	10.73	10.22
59370	.1570	#22	3.99	2-1/2"	1-1/8"	12.73	12.18	11.63	11.07
39200	.1575		4.00	63	28	12.73	12.18	11.63	11.07
59380	.1590	#21	4.04	2-1/2"	1-1/8"	13.02	12.46	11.89	11.33
59385	.1610	#20	4.09	2-1/2"	1-1/8"	13.02	12.46	11.89	11.33
59390	.1660	#19	4.22	2-1/2"	1-1/8"	13.52	12.93	12.34	11.75

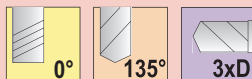
1500 - 2 Flute (continued)

.1695" - .5000"
(4.30mm - 12.70mm)

EDP#	$d^{\dagger}$ Diameter		Overall Length	l_1 Flute Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric							
59395	.1695	#18	4.30	2-1/2"	1-3/16"	13.52	12.93	12.34	11.75
59400	.1719	11/64"	4.37	2-1/2"	1-3/16"	13.52	12.93	12.34	11.75
59405	.1730	#17	4.39	2-1/2"	1-3/16"	13.81	13.21	12.62	12.01
59410	.1770	#16	4.49	2-1/2"	1-3/16"	13.81	13.21	12.62	12.01
39250	.1772		4.50	63	28	13.81	13.21	12.62	12.01
59420	.1800	#15	4.57	2-1/2"	1-3/16"	13.81	13.21	12.62	12.01
59425	.1820	#14	4.62	2-1/2"	1-3/16"	14.58	13.95	13.31	12.68
59430	.1850	#13	4.70	2-1/2"	1-3/16"	14.58	13.95	13.31	12.68
59435	.1875	3/16"	4.76	2-1/2"	1-3/16"	14.01	13.40	12.79	12.18
59440	.1890	#12	4.80	2-1/2"	1-3/16"	14.49	13.85	13.23	12.59
59445	.1910	#11	4.85	2-1/2"	1-3/16"	14.49	13.85	13.23	12.59
59450	.1935	#10	4.91	2-1/2"	1-1/4"	15.34	14.67	14.01	13.34
59455	.1960	#9	4.98	2-1/2"	1-1/4"	15.34	14.67	14.01	13.34
39300	.1969		5.00	63	32	15.34	14.67	14.01	13.34
59465	.1990	#8	5.05	2-1/2"	1-1/4"	15.85	15.16	14.47	13.78
59470	.2010	#7	5.10	2-1/2"	1-1/4"	15.85	15.16	14.47	13.78
59475	.2031	13/64"	5.16	2-1/2"	1-1/4"	15.85	15.16	14.47	13.78
59480	.2040	#6	5.18	2-1/2"	1-1/4"	16.72	16.00	15.27	14.54
59485	.2055	#5	5.22	2-1/2"	1-1/4"	16.72	16.00	15.27	14.54
59490	.2090	#4	5.31	2-1/2"	1-1/4"	16.72	16.00	15.27	14.54
59495	.2130	#3	5.41	2-1/2"	1-1/4"	16.72	16.00	15.27	14.54
39350	.2165		5.50	63	32	16.72	16.00	15.27	14.54
59505	.2188	7/32"	5.56	2-1/2"	1-1/2"	16.72	16.00	15.27	14.54
59510	.2210	#2	5.61	2-1/2"	1-1/2"	17.89	17.11	16.33	15.56
59515	.2280	#1	5.79	2-1/2"	1-1/2"	17.89	17.11	16.33	15.56
59525	.2344	15/64"	5.95	2-1/2"	1-1/2"	19.93	19.06	18.19	17.33
39400	.2362		6.00	63	38	19.93	19.06	18.19	17.33
59550	.2500	1/4"	6.35	2-1/2"	1-1/2"	18.76	17.95	17.13	16.32
39450	.2559		6.50	63	38	22.74	21.76	20.77	19.78
59570	.2656	17/64"	6.75	2-1/2"	1-1/2"	22.74	21.76	20.77	19.78
39500	.2756		7.00	63	38	23.33	22.31	21.30	20.28
59600	.2812	9/32"	7.14	2-1/2"	1-1/2"	23.33	22.31	21.30	20.28
39520	.2953		7.50	63	41	24.49	23.43	22.36	21.30
59620	.2969	19/64"	7.54	2-1/2"	1-5/8"	24.49	23.43	22.36	21.30
59630	.3125	5/16"	7.94	2-1/2"	1-5/8"	24.49	23.43	22.36	21.30
39540	.3150		8.00	63	41	25.77	24.65	23.54	22.41
59650	.3281	21/64"	8.33	3"	1-5/8"	26.53	25.38	24.22	23.07
39560	.3346		8.50	76	41	29.64	28.35	27.06	25.77
59670	.3438	11/32"	8.73	3"	1-5/8"	29.64	28.35	27.06	25.77
39580	.3543		9.00	76	41	32.18	30.77	29.38	27.98
59690	.3594	23/64"	9.13	3"	1-3/4"	32.18	30.77	29.38	27.98
39600	.3740		9.50	76	41	35.09	33.56	32.04	30.51
59705	.3750	3/8"	9.52	3"	1-3/4"	35.09	33.56	32.04	30.51
59720	.3906	25/64"	9.92	3"	1-3/4"	39.64	37.92	36.20	34.48
39620	.3937		10.00	76	44	39.64	37.92	36.20	34.48
59740	.4062	13/32"	10.32	3"	1-3/4"	44.31	42.39	40.46	38.53
39640	.4134		10.50	76	44	46.37	44.36	42.34	40.32
59755	.4219	27/64"	10.72	3"	1-3/4"	48.80	46.68	44.55	42.43
39660	.4331		11.00	76	44	49.67	47.51	45.35	43.19
59765	.4375	7/16"	11.11	3"	1-3/4"	49.67	47.51	45.35	43.19
39680	.4528		11.50	76	44	51.11	48.88	46.66	44.44
59775	.4531	29/64"	11.51	3"	1-3/4"	52.08	49.82	47.56	45.29
59780	.4688	15/32"	11.91	3"	1-3/4"	52.08	49.82	47.56	45.29
39700	.4724		12.00	76	44	52.08	49.82	47.56	45.29
59790	.4844	31/64"	12.30	3"	1-3/4"	52.08	49.82	47.56	45.29
39720	.4921		12.50	76	44	53.26	50.94	48.63	46.31
59800	.5000	1/2"	12.70	3"	1-3/4"	53.26	50.94	48.63	46.31

d	+0.000" -0.005" (+0.000 -0.127mm)	
l ₁	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)

.0625" - .1660"
(1.59mm - 4.22mm)



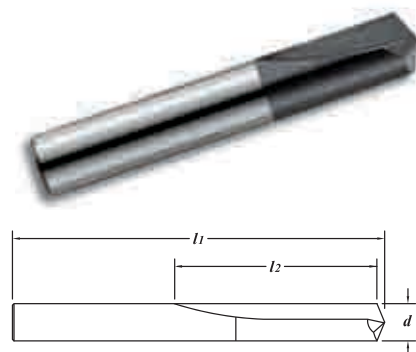
Hard Metal - *Balinit*® HARDLUBE Coated

Solid submicron grain carbide drill
Straight flute design provides excellent rigidity
Materials 40 Rc and higher
Excellent heat resistance and lubricity
Up to 40% faster than uncoated

Recommended for high nickel, cobalt based and powdered metals

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †		l ₁	l ₂	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
59166	.0625	1/16"	1.59	1-5/8"	5/8"	10.14	9.70	9.26
59181	.0700	#50	1.78	1-11/16"	3/4"	10.14	9.70	9.26
59186	.0730	#49	1.85	1-11/16"	3/4"	10.14	9.70	9.26
59191	.0760	#48	1.93	1-11/16"	3/4"	10.14	9.70	9.26
59196	.0781	5/64"	1.98	1-11/16"	3/4"	10.14	9.70	9.26
59201	.0785	#47	1.99	1-3/4"	7/8"	10.14	9.70	9.26
39001	.0787		2.00	50	22	10.14	9.70	9.26
59211	.0810	#46	2.06	2"	7/8"	10.14	9.70	9.26
59216	.0820	#45	2.08	2"	7/8"	10.14	9.70	9.26
59221	.0860	#44	2.18	2"	7/8"	10.14	9.70	9.26
59226	.0890	#43	2.26	2"	7/8"	10.14	9.70	9.26
59231	.0935	#42	2.37	2"	7/8"	10.14	9.70	9.26
59236	.0938	3/32"	2.38	2"	7/8"	10.14	9.70	9.26
59241	.0960	#41	2.44	2"	7/8"	11.29	10.81	10.32
59246	.0980	#40	2.49	2"	7/8"	11.29	10.81	10.32
39051	.0984		2.50	50	22	11.29	10.81	10.32
59256	.0995	#39	2.53	2"	7/8"	11.29	10.81	10.32
59261	.1015	#38	2.58	2"	7/8"	11.29	10.81	10.32
59266	.1040	#37	2.64	2"	7/8"	11.29	10.81	10.32
59271	.1065	#36	2.71	2"	7/8"	11.29	10.81	10.32
59276	.1094	7/64"	2.78	2"	1"	11.29	10.81	10.32
59281	.1100	#35	2.79	2"	1"	11.70	11.19	10.68
59286	.1110	#34	2.82	2"	1"	11.70	11.19	10.68
59291	.1130	#33	2.87	2"	1"	11.70	11.19	10.68
59296	.1160	#32	2.95	2"	1"	11.70	11.19	10.68
39101	.1181		3.00	50	25	11.70	11.19	10.68
59306	.1200	#31	3.05	2"	1"	11.70	11.19	10.68
59311	.1250	1/8"	3.17	2"	1"	10.91	10.43	9.96
59316	.1285	#30	3.26	2"	1"	12.56	12.01	11.47
59321	.1360	#29	3.45	2"	1"	12.56	12.01	11.47
39151	.1378		3.50	50	25	12.56	12.01	11.47
59331	.1405	#28	3.57	2"	1"	12.56	12.01	11.47
59336	.1406	9/64"	3.57	2"	1"	12.56	12.01	11.47
59341	.1440	#27	3.66	2"	1"	12.84	12.28	11.73
59346	.1470	#26	3.73	2"	1"	13.45	12.86	12.28
59351	.1495	#25	3.80	2"	1"	13.45	12.86	12.28
59356	.1520	#24	3.86	2"	1"	13.45	12.86	12.28
59361	.1540	#23	3.91	2"	1"	13.45	12.86	12.28
59366	.1562	5/32"	3.97	2-1/2"	1-1/8"	13.45	12.86	12.28
59371	.1570	#22	3.99	2-1/2"	1-1/8"	14.40	13.78	13.16
39201	.1575		4.00	63	28	14.40	13.78	13.16
59381	.1590	#21	4.04	2-1/2"	1-1/8"	14.70	14.06	13.42
59386	.1610	#20	4.09	2-1/2"	1-1/8"	14.70	14.06	13.42
59391	.1660	#19	4.22	2-1/2"	1-1/8"	15.19	14.53	13.87

1500H - 2 Flute (continued)

.1695" - .5000"
(4.30mm - 12.70mm)

EDP#	$d^{\dagger}$		l_1	l_2	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric	Overall Length	Flute Length			
59396	.1695	#18	4.30	2-1/2"	1-3/16"	15.19	14.53	13.21
59401	.1719	11/64"	4.37	2-1/2"	1-3/16"	15.19	14.53	13.21
59406	.1730	#17	4.39	2-1/2"	1-3/16"	15.49	14.81	13.47
59411	.1770	#16	4.49	2-1/2"	1-3/16"	15.49	14.81	13.47
39251	.1772		4.50	63	28	15.49	14.81	13.47
59421	.1800	#15	4.57	2-1/2"	1-3/16"	15.49	14.81	13.47
59426	.1820	#14	4.62	2-1/2"	1-3/16"	16.24	15.54	14.12
59431	.1850	#13	4.70	2-1/2"	1-3/16"	16.24	15.54	14.12
59436	.1875	3/16"	4.76	2-1/2"	1-3/16"	15.68	15.00	13.63
59441	.1890	#12	4.80	2-1/2"	1-3/16"	17.35	16.59	15.08
59446	.1910	#11	4.85	2-1/2"	1-3/16"	17.35	16.59	15.08
59451	.1935	#10	4.91	2-1/2"	1-1/4"	18.21	17.42	16.63
59456	.1960	#9	4.98	2-1/2"	1-1/4"	18.21	17.42	16.63
39301	.1969		5.00	63	32	18.21	17.42	16.63
59466	.1990	#8	5.05	2-1/2"	1-1/4"	18.71	17.90	17.09
59471	.2010	#7	5.10	2-1/2"	1-1/4"	18.71	17.90	17.09
59476	.2031	13/64"	5.16	2-1/2"	1-1/4"	18.71	17.90	17.09
59481	.2040	#6	5.18	2-1/2"	1-1/4"	19.59	18.74	17.89
59486	.2055	#5	5.22	2-1/2"	1-1/4"	19.59	18.74	17.89
59491	.2090	#4	5.31	2-1/2"	1-1/4"	19.59	18.74	17.89
59496	.2130	#3	5.41	2-1/2"	1-1/4"	19.59	18.74	17.89
39351	.2165		5.50	63	32	19.59	18.74	17.89
59506	.2188	7/32"	5.56	2-1/2"	1-1/2"	19.59	18.74	17.89
59511	.2210	#2	5.61	2-1/2"	1-1/2"	20.78	19.87	18.97
59516	.2280	#1	5.79	2-1/2"	1-1/2"	20.78	19.87	18.97
59526	.2344	15/64"	5.95	2-1/2"	1-1/2"	22.80	21.81	20.81
39401	.2362		6.00	63	38	22.80	21.81	20.81
59551	.2500	1/4"	6.35	2-1/2"	1-1/2"	21.63	20.70	19.75
39451	.2559		6.50	63	38	27.87	26.66	25.45
59571	.2656	17/64"	6.75	2-1/2"	1-1/2"	27.87	26.66	25.45
39501	.2756		7.00	63	38	28.43	27.20	25.96
59601	.2812	9/32"	7.14	2-1/2"	1-1/2"	28.43	27.20	25.96
39521	.2953		7.50	63	41	29.61	28.32	27.03
59621	.2969	19/64"	7.54	2-1/2"	1-5/8"	29.61	28.32	27.03
59631	.3125	5/16"	7.94	2-1/2"	1-5/8"	29.61	28.32	27.03
39541	.3150		8.00	63	41	30.89	29.55	28.20
59651	.3281	21/64"	8.33	3"	1-5/8"	31.64	30.26	28.88
39561	.3346		8.50	76	41	34.76	33.25	31.73
59671	.3438	11/32"	8.73	3"	1-5/8"	34.76	33.25	31.73
39581	.3543		9.00	76	41	37.61	35.97	34.34
59691	.3594	23/64"	9.13	3"	1-3/4"	37.61	35.97	34.34
39601	.3740		9.50	76	41	40.53	38.77	37.00
59706	.3750	3/8"	9.52	3"	1-3/4"	40.53	38.77	37.00
59721	.3906	25/64"	9.92	3"	1-3/4"	45.54	43.57	41.58
39621	.3937		10.00	76	44	45.54	43.57	41.58
59741	.4062	13/32"	10.32	3"	1-3/4"	50.21	48.03	45.84
39641	.4134		10.50	76	44	52.27	49.99	47.73
59756	.4219	27/64"	10.72	3"	1-3/4"	54.70	52.32	49.95
39661	.4331		11.00	76	44	55.57	53.15	50.73
59766	.4375	7/16"	11.11	3"	1-3/4"	55.57	53.15	50.73
39681	.4528		11.50	76	44	57.00	54.53	52.04
59776	.4531	29/64"	11.51	3"	1-3/4"	57.98	55.46	52.94
59781	.4688	15/32"	11.91	3"	1-3/4"	57.98	55.46	52.94
39701	.4724		12.00	76	44	57.98	55.46	52.94
59791	.4844	31/64"	12.30	3"	1-3/4"	57.98	55.46	52.94
39721	.4921		12.50	76	44	59.14	56.58	54.00
59801	.5000	1/2"	12.70	3"	1-3/4"	59.14	56.58	54.00

TOLERANCES

d	+.0000" - .0005" (+.0000 - .0127mm)	
l_1	$\leq 1/8"$	+.125" -.062" (+3.175 - 1.588mm)
	$> 1/8"$	+.125" -.125" (+3.175 - 3.175mm)
l_2	$\leq 1/8"$	+.125" -.062" (+3.175 - 1.588mm)
	$> 1/8"$	+.125" -.125" (+3.175 - 3.175mm)



Double Margin

Solid submicron grain carbide drill

Strong core geometry with double margins for chip breakage and clearance

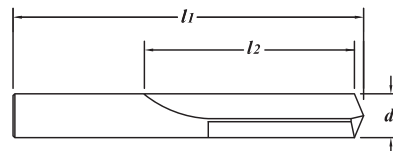
'G' style flutes

4-facet point

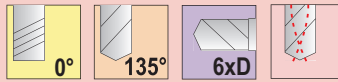
Recommended for fast drilling in aircraft alloys, cast aluminum and high silicon content materials

Live tooling recommended on lathe processes

Shank tolerance: -.0001" -.0004" (-.0025 / -.0100mm)



EDP#	d †		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
57460	.1250	1/8"	3.17	3-1/4"	14.93	14.29	13.63	12.99
57470	.1575		4.00	86	17.06	16.32	15.57	14.83
57480	.1875	3/16"	4.76	3-5/8"	19.41	18.56	17.72	16.88
57490	.1969		5.00	95	20.91	20.01	19.09	18.19
57500	.2362		6.00	101	24.02	22.98	21.93	20.89
57510	.2500	1/4"	6.35	4"	24.63	23.56	22.48	21.41
57520	.3125	5/16"	7.94	4-3/8"	37.55	35.92	34.29	32.66
57530	.3150		8.00	111	39.93	38.19	36.45	34.72
57540	.3750	3/8"	9.52	4-3/4"	49.40	47.25	45.10	42.95
57550	.3937		10.00	124	57.02	54.55	52.06	49.59
57560	.4375	7/16"	11.11	5-1/8"	68.55	65.56	62.59	59.60
57570	.4724		12.00	136	77.28	73.92	70.56	67.20
57580	.5000	1/2"	12.70	5-1/2"	79.25	75.81	72.35	68.91
57590	.5512		14.00	150	107.40	102.73	98.06	93.39
57600	.5625	9/16"	14.29	6"	116.51	111.45	106.38	101.32
57610	.5906		15.00	157	135.90	129.99	124.08	118.18
57620	.6250	5/8"	15.87	6-3/8"	139.18	133.13	127.08	121.02
57630	.6299		16.00	164	142.38	136.19	130.00	123.80



TOLERANCES

d	$+0.000" -0.0005" (+0.000 -0.0127\text{mm})$
h	$\leq 1/8"$ $+0.125" -0.062" (+3.175 -1.588\text{mm})$
	$> 1/8"$ $+0.125" -0.125" (+3.175 -3.175\text{mm})$
l	$\leq 1/8"$ $+0.125" -0.062" (+3.175 -1.588\text{mm})$
	$> 1/8"$ $+0.125" -0.125" (+3.175 -3.175\text{mm})$

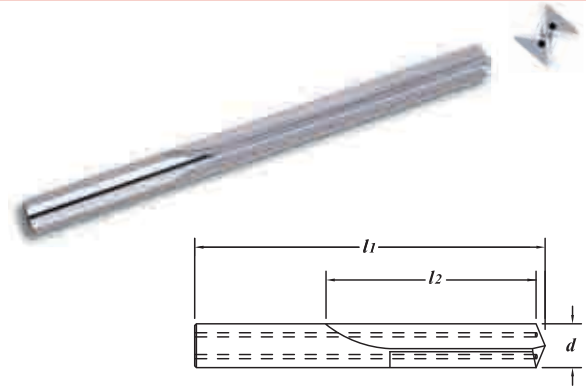
Double Margin

Solid submicron grain carbide drill
Coolant fed for accelerated feed rates and chip clearance
Strong core geometry with double margins for chip breakage and clearance
'G' style flutes
4-facet point

Recommended for fast drilling in aircraft alloys, cast aluminum and high silicon content materials

Live tooling recommended on lathe processes

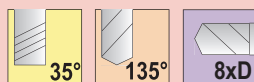
Shank tolerance: $-0.0001" -0.0004" (-0.0025 / -0.0100\text{mm})$



EDP#	$d^{\dagger}$		l_1	l_2	1-11	12-24	25-49	50-100
	Decimal	Diameter						
57710	.2362	6.00	110	59	44.80	42.86	40.90	38.96
57720	.2500	1/4"	6.35	4-1/2"	49.31	47.16	45.02	42.88
57730	.3125	5/16"	7.94	5"	58.31	55.78	53.24	50.71
57740	.3150	8.00	129	78	60.68	58.04	55.41	52.77
57750	.3750	3/8"	9.52	5-1/2"	75.48	72.20	68.92	65.63
57760	.3937	10.00	144	94	81.84	78.28	74.72	71.17
57770	.4375	7/16"	11.11	6"	96.45	92.26	88.07	83.87
57780	.4724	12.00	160	110	156.52	149.72	142.91	136.10
57790	.5000	1/2"	12.70	6-1/2"	165.56	158.36	151.16	143.97
57800	.5512	14.00	179	129	205.64	196.70	187.76	178.82
57810	.5625	9/16"	14.29	7-1/8"	227.38	217.48	207.60	197.71
57820	.5906	15.00	187	137	230.04	220.03	210.04	200.03
57830	.6250	5/8"	15.87	7-5/8"	249.38	238.53	227.70	216.85
57840	.6299	16.00	195	144	252.58	241.60	230.62	219.64

d	$+0.000" -0.005" (+0.000 -0.127\text{mm})$
l_1	$+0.125" -0.125" (+3.175 -3.175\text{mm})$
l_2	$+0.125" -0.125" (+3.175 -3.175\text{mm})$

.1875" - .3230"
(4.76mm - 8.20mm)



Parabolic - *Balinit*® HARDLUBE Coated

Solid submicron grain carbide drill

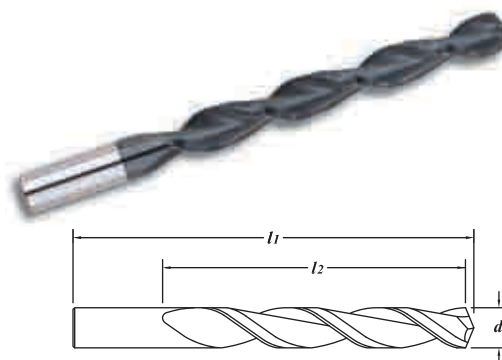
Wide open flutes and high helix remove chips quickly

Recommended for deep holes in soft, non-ferrous materials (aluminum, brass and bronze)

4-facet point

Live tooling recommended on lathe processes

Shank tolerance: $-0.0001" -0.0004" (-0.0025 / -0.0100\text{mm})$

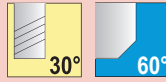


EDP#	d † Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
22436	.1875	3/16"	4.76	3-13/16"	2-5/16"	20.59	19.70	18.80	17.91
22441	.1890	#12	4.80	3-13/16"	2-5/16"	21.07	20.16	19.24	18.32
22446	.1910	#11	4.85	3-13/16"	2-5/16"	21.55	20.61	19.68	18.74
22451	.1935	#10	4.91	3-15/16"	2-7/16"	22.03	21.07	20.11	19.16
22456	.1960	#9	4.98	3-15/16"	2-7/16"	22.52	21.54	20.56	19.58
22461	.1969		5.00	100	62	22.99	22.00	21.00	20.00
22466	.1990	#8	5.05	3-15/16"	2-7/16"	23.39	22.37	21.35	20.34
22471	.2010	#7	5.10	3-15/16"	2-7/16"	23.81	22.77	21.74	20.70
22476	.2031	13/64"	5.16	3-15/16"	2-7/16"	24.19	23.14	22.09	21.04
22481	.2040	#6	5.18	3-15/16"	2-7/16"	24.59	23.51	22.44	21.38
22486	.2055	#5	5.22	4"	2-1/2"	25.00	23.91	22.83	21.74
22491	.2090	#4	5.31	4"	2-1/2"	25.39	24.28	23.18	22.08
22496	.2130	#3	5.41	4"	2-1/2"	25.78	24.66	23.54	22.42
22501	.2165		5.50	102	64	26.20	25.05	23.92	22.78
22506	.2188	7/32"	5.56	4"	2-1/2"	26.58	25.43	24.27	23.12
22511	.2210	#2	5.61	4"	2-1/2"	26.98	25.80	24.63	23.46
22516	.2280	#1	5.79	4-1/8"	2-5/8"	27.39	26.20	25.01	23.82
22521	.2340	A	5.94	4-1/8"	2-5/8"	27.78	26.57	25.37	24.16
22526	.2344	15/64"	5.95	4-1/8"	2-5/8"	28.17	26.95	25.72	24.50
22531	.2362		6.00	105	67	28.63	27.38	26.15	24.90
22536	.2380	B	6.04	4-1/8"	2-5/8"	28.79	27.54	26.28	25.03
22541	.2420	C	6.15	4-1/4"	2-3/4"	28.94	27.68	26.43	25.17
22546	.2460	D	6.25	4-1/4"	2-3/4"	29.09	27.82	26.56	25.29
22551	.2500	1/4" / E	6.35	4-1/4"	2-3/4"	29.23	27.97	26.70	25.42
22556	.2559		6.50	108	70	30.20	28.89	27.57	26.26
22561	.2570	F	6.53	4-3/8"	2-7/8"	31.48	30.11	28.75	27.37
22566	.2610	G	6.63	4-3/8"	2-7/8"	32.32	30.92	29.52	28.11
22571	.2656	17/64"	6.75	4-3/8"	2-7/8"	33.27	31.82	30.38	28.93
22576	.2660	H	6.76	4-3/8"	2-7/8"	34.36	32.86	31.38	29.88
22581	.2720	I	6.91	4-3/8"	2-7/8"	35.39	33.85	32.31	30.77
22586	.2756		7.00	111	73	36.45	34.87	33.28	31.70
22591	.2770	J	7.03	4-3/8"	2-7/8"	37.25	35.63	34.02	32.40
22596	.2810	K	7.14	4-7/16"	2-15/16"	38.05	36.40	34.75	33.09
22601	.2812	9/32"	7.14	4-7/16"	2-15/16"	38.90	37.20	35.52	33.82
22606	.2900	L	7.37	4-7/16"	2-15/16"	39.73	38.00	36.28	34.55
22611	.2950	M	7.49	4-7/16"	2-15/16"	40.53	38.77	37.00	35.25
22616	.2953		7.50	116	78	41.33	39.53	37.73	35.94
22621	.2969	19/64"	7.54	4-9/16"	3-1/16"	41.41	39.61	37.81	36.02
22626	.3020	N	7.67	4-9/16"	3-1/16"	41.51	39.70	37.90	36.09
22631	.3125	5/16"	7.94	4-11/16"	3-3/16"	41.54	39.73	37.93	36.12
22636	.3150		8.00	119	81	43.92	42.01	40.10	38.19
22641	.3160	O	8.03	4-11/16"	3-3/16"	44.92	42.96	41.01	39.06
22646	.3230	P	8.20	4-11/16"	3-3/16"	45.93	43.93	41.93	39.94

1800H - 2 Flute (continued)

.3281" - .6299"
(8.33mm - 16.00mm)

EDP#	d^+ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
22651	.3281	21/64"	8.33	4-11/16"	3-3/16"	46.94	44.90	42.86	40.81
22656	.3320	Q	8.43	4-15/16"	3-7/16"	47.98	45.88	43.80	41.71
22661	.3346		8.50	125	87	48.96	46.83	44.71	42.58
22666	.3390	R	8.61	4-15/16"	3-7/16"	50.50	48.31	46.11	43.92
22671	.3438	11/32"	8.73	4-15/16"	3-7/16"	52.01	49.75	47.49	45.23
22676	.3480	S	8.84	5"	3-1/2"	53.58	51.25	48.92	46.59
22681	.3543		9.00	127	89	55.12	52.73	50.33	47.93
22686	.3580	T	9.09	5"	3-1/2"	55.35	52.95	50.53	48.13
22691	.3594	23/64"	9.13	5"	3-1/2"	55.58	53.16	50.74	48.33
22696	.3680	U	9.35	5"	3-1/2"	55.79	53.36	50.94	48.51
22701	.3740		9.50	130	92	56.00	53.57	51.14	48.70
22706	.3750	3/8"	9.52	5-1/8"	3-5/8"	56.26	53.82	51.38	48.92
22711	.3770	V	9.57	5-1/8"	3-5/8"	58.13	55.60	53.07	50.54
22716	.3860	W	9.80	5-1/8"	3-5/8"	59.97	57.36	54.76	52.15
22721	.3906	25/64"	9.92	5-1/4"	3-3/4"	61.87	59.18	56.49	53.80
22726	.3937		10.00	133	95	63.71	60.94	58.17	55.40
22731	.3970	X	10.08	5-1/4"	3-3/4"	66.11	63.24	60.36	57.49
22736	.4040	Y	10.26	5-3/8"	3-7/8"	68.49	65.52	62.54	59.56
22741	.4062	13/32"	10.32	5-3/8"	3-7/8"	70.94	67.85	64.77	61.68
22746	.4130	Z	10.49	5-3/8"	3-7/8"	74.73	71.49	68.23	64.99
22751	.4134		10.50	137	98	74.73	71.49	68.23	64.99
22756	.4219	27/64"	10.72	5-7/16"	3-15/16"	78.15	74.74	71.35	67.95
22761	.4331		11.00	138	100	80.56	77.05	73.55	70.05
22766	.4375	7/16"	11.11	5-7/16"	3-15/16"	80.56	77.05	73.55	70.05
22771	.4528		11.50	141	103	81.70	78.15	74.60	71.04
22776	.4531	29/64"	11.51	5-9/16"	4-5/16"	81.70	78.15	74.60	71.04
22781	.4688	15/32"	11.91	5-9/16"	4-5/16"	82.83	79.23	75.62	72.02
22786	.4724		12.00	141	110	83.97	80.32	76.67	73.02
22791	.4844	31/64"	12.30	5-9/16"	4-5/16"	83.97	80.32	76.67	73.02
22796	.4921		12.50	152	114	85.94	82.20	78.46	74.72
22801	.5000	1/2"	12.70	6"	4-1/2"	85.94	82.20	78.46	74.72
22806	.5118		13.00	152	114	102.37	97.92	93.46	89.01
22811	.5156	33/64"	13.10	6"	4-1/2"	108.62	103.90	99.17	94.45
22816	.5312	17/32"	13.49	6-1/8"	4-5/8"	114.88	109.89	104.88	99.89
22821	.5315		13.50	156	117	114.88	109.89	104.88	99.89
22826	.5469	35/64"	13.89	6-1/8"	4-5/8"	121.14	115.88	110.60	105.34
22831	.5512		14.00	156	117	127.35	121.82	116.27	110.74
22836	.5625	9/16"	14.29	6-1/4"	4-3/4"	136.45	130.52	124.58	118.65
22841	.5709		14.50	159	121	140.92	134.79	128.67	122.54
22846	.5781	37/64"	14.68	6-1/4"	4-3/4"	141.66	135.50	129.34	123.18
22851	.5906		15.00	162	124	145.33	139.01	132.69	126.37
22856	.5938	19/32"	15.08	6-3/8"	4-7/8"	145.33	139.01	132.69	126.37
22861	.6094	39/64"	15.48	6-7/16"	4-15/16"	146.96	140.58	134.18	127.80
22866	.6102		15.50	164	125	146.96	140.58	134.18	127.80
22871	.6250	5/8"	15.87	6-9/16"	5-1/16"	148.61	142.15	135.68	129.22
22876	.6299		16.00	167	129	151.79	145.18	138.59	131.99



TOLERANCES

d	$+0.000" -0.005" (+0.000 -0.127\text{mm})$
l_1	$+0.125" -0.125" (+3.175 -3.175\text{mm})$
l_2	$+0.125" -0.125" (+3.175 -3.175\text{mm})$

Core

Solid submicron grain carbide drill

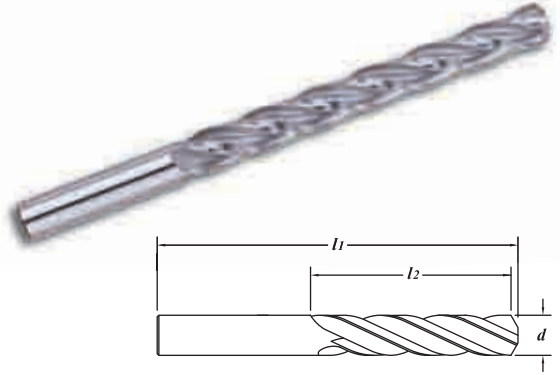
Cored applications only

Gets to finish diameter when too much material remains for reamer

60° lead chamfer allows easy follow through from existing hole

Live tooling recommended on lathe processes

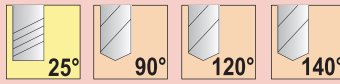
Shank tolerance: $-0.0001" -0.0004" (-0.0025 / -0.0100\text{mm})$



EDP#	$d^{\dagger}$			l_1	l_2	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric						
58500	.1875	3/16"	4.76	4"	2-1/2"	18.90	18.08	17.25	16.43
58510	.1969		5.00	102	64	19.38	18.53	17.69	16.85
58520	.2362		6.00	102	64	20.88	19.98	19.06	18.16
58530	.2500	1/4"	6.35	4"	2-1/2"	20.95	20.03	19.13	18.21
58540	.2756		7.00	102	64	25.96	24.82	23.70	22.57
58550	.3125	5/16"	7.94	4"	2-1/2"	28.54	27.30	26.05	24.81
58560	.3150		8.00	102	64	28.76	27.51	26.26	25.00
58570	.3543		9.00	127	89	39.48	37.76	36.05	34.33
58580	.3750	3/8"	9.52	5"	3-1/2"	44.08	42.16	40.24	38.32
58590	.3937		10.00	127	89	50.71	48.51	46.30	44.10
58600	.4331		11.00	127	89	54.75	52.36	49.98	47.60
58610	.4375	7/16"	11.11	5"	3-1/2"	55.33	52.93	50.51	48.11
58620	.4724		12.00	127	89	61.87	59.18	56.49	53.80
58630	.5000	1/2"	12.70	5"	3-1/2"	64.02	61.24	58.46	55.67
58640	.5118		13.00	152	114	79.84	76.37	72.89	69.43
58650	.5512		14.00	152	114	90.56	86.62	82.69	78.75
58660	.5625	9/16"	14.29	6"	4-1/2"	98.76	94.46	90.17	85.87
58670	.5906		15.00	152	114	104.96	100.39	95.83	91.27
58680	.6250	5/8"	15.87	6"	4-1/2"	107.35	102.68	98.01	93.35
58690	.6299		16.00	152	114	110.21	105.41	100.62	95.84

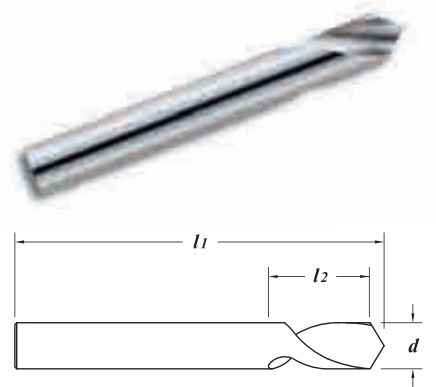
TOLERANCES

d	$+0.000" -0.005" (+0.000 -0.127\text{mm})$
l_1	$+0.125" -0.125" (+3.175 -3.175\text{mm})$



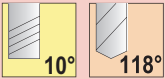
N/C Spotting

Solid submicron grain carbide drill
 For spotting to stabilize long drills
 Rough, angled or spherical surfaces
 No O.D. clearance
 For locating on true position
 Live tooling recommended on lathe processes
 Shank tolerance: $-0.0001" -0.0004" (-0.0025 / -0.0100\text{mm})$



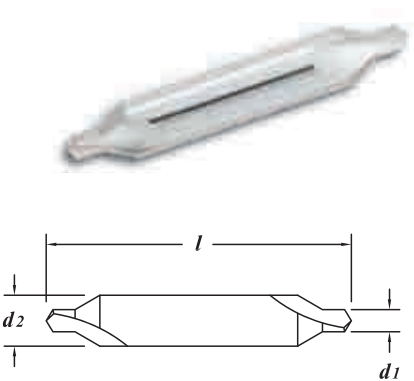
90° EDP#	120° EDP#	NEW 140° EDP#	d † Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
			Decimal	Metric						
91510	91580	91250	.1181	3.00	50	10	10.93	10.45	9.98	9.51
91000	91100	91260	.1250	3.17	2"	3/8"	10.93	10.45	9.98	9.51
91520	91590	91270	.1575	4.00	50	12	14.30	13.68	13.05	12.44
91010	91110	91280	.1875	4.76	3"	3/4"	14.30	13.68	13.05	12.44
91530	91600	91290	.1969	5.00	65	15	15.05	14.39	13.74	13.08
91540	91610	91300	.2362	6.00	65	20	16.98	16.24	15.51	14.77
91020	91120	91310	.2500	6.35	3"	3/4"	16.98	16.24	15.51	14.77
91550	91620	91320	.3150	8.00	75	25	20.55	19.66	18.76	17.87
91030	91130	91330	.3750	9.52	3"	1"	22.28	21.31	20.34	19.38
91560	91630	91340	.3937	10.00	88	25	30.75	29.41	28.08	26.74
91570	91640	91350	.4724	12.00	100	30	36.96	35.35	33.75	32.14
91040	91140	91360	.5000	12.70	4"	1"	38.44	36.76	35.10	33.43
91050	91170	91370	.5512	14.00	100	30	66.24	63.36	60.48	57.60
91060	91180	91380	.5625	14.29	4"	1"	72.23	69.09	65.95	62.81
91070	91190	91390	.6250	15.87	5"	1"	88.63	84.77	80.92	77.06
91080	91200	91400	.6299	16.00	125	30	90.99	87.04	83.08	79.12
91090	91210	91410	.7087	18.00	125	30	124.83	119.40	113.97	108.54
91150	91220	91420	.7500	19.05	5"	1"	128.21	122.64	117.06	111.49
91160	91230	91430	.7874	20.00	125	30	138.81	132.78	126.73	120.70

TOLERANCES	
d_1	$+0.003" - .000" (+.0076 - .0000\text{mm})$
d_2	$-.0001" - .0004" (-.0025 - .0102\text{mm})$

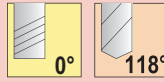


Combined Drill and Countersink

Solid submicron grain carbide drill
 For center drilling applications
 60° included countersink angle
 Live tooling recommended on lathe processes



EDP #	Number	d_1 †			d_2 Shank Diameter	l Overall Length	1-11	12-24	25-49	50-100
		Decimal	Diameter	Metric						
58030	1	.0469	3/64"	1.19	1/8"	1-1/2"	12.28	11.75	11.21	10.68
58040	2	.0781	5/64"	1.98	3/16"	2"	19.32	18.48	17.64	16.81
58050	3	.1094	7/64"	2.78	1/4"	2"	22.02	21.06	20.10	19.15
58060	4	.1250	1/8"	3.17	5/16"	2-1/8"	30.83	29.48	28.14	26.80
58070	5	.1875	3/16"	4.76	7/16"	2-3/4"	44.02	42.11	40.20	38.28
58080	6	.2188	7/32"	5.56	1/2"	3"	58.60	56.06	53.51	50.96
58090	7	.2500	1/4"	6.35	5/8"	3-1/8"	78.44	75.03	71.61	68.20
58100	8	.3125	5/16"	7.94	3/4"	3-3/8"	99.73	95.39	91.05	86.72



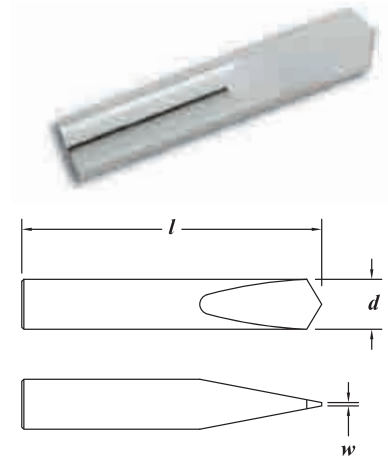
Spade

Solid submicron grain carbide drill

For shallow hole drilling / burnishing to a depth of 1 to 1.5 times the diameter

Live tooling recommended on lathe processes

Shank tolerance: $-0.0001'' - 0.0004''$ ($-0.0025 - 0.0100\text{mm}$)



EDP#	d †			l Overall Length	w Spade Width	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric						
57030	.0625	1/16"	1.59	1-5/8"	.010"	5.98	5.72	5.46	5.20
57040	.0781	5/64"	1.98	1-11/16"	.010"	6.30	6.03	5.75	5.48
57050	.0938	3/32"	2.38	1-11/16"	.015"	6.30	6.03	5.75	5.48
57060	.1094	7/64"	2.78	1-11/16"	.015"	6.97	6.67	6.36	6.06
57070	.1250	1/8"	3.17	1-11/16"	.015"	6.97	6.67	6.36	6.06
57080	.1562	5/32"	3.97	1-11/16"	.020"	7.31	6.99	6.68	6.35
57090	.1875	3/16"	4.76	2"	.020"	7.81	7.47	7.13	6.79
57100	.2188	7/32"	5.56	2"	.025"	10.74	10.28	9.81	9.34
57110	.2500	1/4"	6.35	2"	.025"	12.54	12.00	11.45	10.91
57120	.2812	9/32"	7.14	2"	.030"	14.48	13.84	13.22	12.58
57130	.3125	5/16"	7.94	2"	.030"	17.47	16.71	15.95	15.19
57140	.3438	11/32"	8.73	2-1/2"	.035"	18.91	18.09	17.26	16.44
57150	.3750	3/8"	9.52	2-1/2"	.035"	20.36	19.48	18.60	17.71
57160	.4062	13/32"	10.32	2-1/2"	.045"	24.28	23.22	22.17	21.11
57170	.4375	7/16"	11.11	2-1/2"	.050"	27.21	26.02	24.85	23.66
57180	.4688	15/32"	11.91	2-1/2"	.055"	31.39	30.02	28.66	27.29
57190	.5000	1/2"	12.70	3"	.060"	34.17	32.69	31.20	29.71